



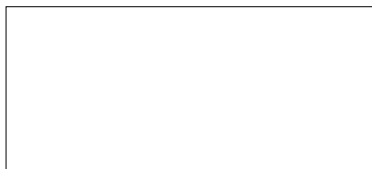
DSP Powered Music Production Environment

Installation Guide

Software-Keys

creamw@re[®]

fidelity at work.





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CreamWare GmbH, Siegburg, Germany.
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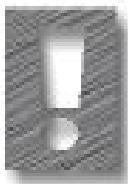


DSP Powered Music Production Environment

Installation Guide

Welcome

Thank you for choosing the Pulsar system. With Pulsar, you've acquired not only a very high-quality, state-of-the-art I/O card, but also one of the most advanced DSP systems currently available. New Pulsar applications (effects, synths, etc.) are continually being created by hundreds of developers around the world working with the SCOPE platform, ensuring the unfolding of a new audio world based on your new card. Our goal, with Pulsar and SCOPE, is to begin a new chapter in the development of audio technology - and we're quite pleased to have you already with us today.



Important Advice

Transients may occur on the Pulsar card outputs during startup of the computer or the Pulsar software. Equipment connected to the Pulsar card outputs should be switched on only *after* starting the Pulsar program, or its volume controls should be turned down until the software has been started, in order to avoid damage to this equipment. Likewise, the volume should be turned down, or the equipment switched off, *before* shutting down the computer.



The Pulsar card is hereby certified to conform to the requirements set forth in the guidelines for electromagnetic acceptability (89/336/EWG).

CreamWare Datentechnik GmbH, November 1998
Dr. Hans-Ulrich Hund

Pulsar system requirements

Absolute minimum system requirements:

CPU:	Pentium MMX 166MHz or faster
RAM:	64MB
Graphics card:	AGP or PCI, 4MB
Resolution:	1024 x 768, 16 bits
Operating system:	Windows 95 / Windows 98
Free hard disk space:	100 MB minimum

Recommended minimum system configuration:

CPU:	Pentium II 300MHz or faster
RAM:	more than 128MB (256 MB)
Graphics card:	AGP, 8MB or more, optional second graphics card
Resolution:	1024 x 768, 16 bits
Operating system:	Windows 95 / Windows 98
Free hard disk space:	100 MB minimum

Important notice regarding Matrox PCI graphics cards

1. Some PCI graphics cards can cause problems for Pulsar with the transfer of data via your computer's PCI bus. With Matrox cards, you can in most cases solve this problem by way of an entry in the file **C:\Windows\System.ini**:

```
[mga.driv]
PCI Chipset=1
```

Additional information on this topic can be found in the "Support" chapter of the manual.

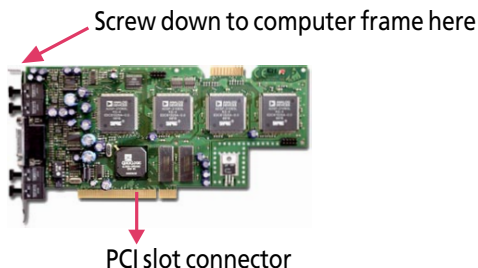
2. The "overclocking" of a PC can result in an increase in the PCI clock frequency - for example, to 37.5 MHz. However, the PCI bus is specified only for clock frequencies up to 33 MHz. Although Pulsar generally will also work at elevated PCI speeds up to and including 37.5 MHz, it cannot be guaranteed that Pulsar can be used in such a computer.

Hardware Installation

Installing The Pulsar Card

Note: If you are using more than one Pulsar card, be certain to read the special instructions in the Installation Guide (on page 36) regarding the cascading of multiple DSP cards (Pulsar/SCOPE/SRB).

1. Disconnect the power from your computer and remove the chassis cover or access panel.
2. Locate a free PCI card slot (usually lighter colored than the older ISA card slots, and smaller). It is generally a good idea to avoid using slot #1 if you can. See 'Notes' below.
3. Remove the rear panel coverplate for the selected card slot.
- 4.) Discharge any buildup of static electricity from yourself by briefly touching a grounded metal object (such as a radiator or water pipe, etc.). **NOTE:** the ground contact of an electrical cord or electrical outlet should **NOT** be used for this purpose, as this introduces a shock hazard.
- 5.) Remove the Pulsar card carefully from its packaging. **Do NOT, under ANY circumstances, touch the gold contacts (PCI/S/TDM bus) on the card!**
- 6.) Position the Pulsar card **carefully** in the selected PCI slot and then press straight downward on it from above until it is seated securely in the slot.
7. Use the retaining screw you removed in step 3 to secure the Pulsar card's metal mounting bracket to the computer chassis.



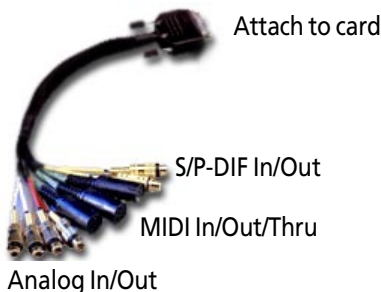
8. Replace the computer's housing or access panel and reconnect the power cable.
9. Connect the included cable whip assembly to the multi-pin connector on the Pulsar board as described below.

The Connector Assembly

Once the installation of the card is complete, you can attach the connector assembly to the Pulsar card and screw it into place.

The connector assembly is pictured below. It includes stereo unbalanced analog inputs and outputs which use RCA jacks, and S/P-DIF (Sony/Philips Digital Interface) coaxial stereo digital inputs and outputs, as well as MIDI In, MIDI Out and MIDI Thru connectors.

The Pulsar card also features two sets of ADAT optical digital I/O connectors. These are built directly onto the card and are not accessed via the connector assembly.



Pulsar Plus includes AES/EBU In/Out and symmetric XLR analog In/Out connections.

Now you're ready to install the Pulsar drivers and program software.



Installing the Pulsar Drivers (Windows 98/95*)

1. Power up your computer and launch Windows 98.
2. Windows will report that new hardware (a PCI multimedia device) has been found.
3. Windows will automatically launch the **'Add new hardware'** wizard.
4. Insert the Pulsar software disc into your CD-ROM drive. Click on **'Next'**.
5. The wizard will ask you how you wish to proceed. Select the option, **'Display a list of all the drivers in a specific location'**, so you can select the driver you want.
6. Select **'Sound, video and game controllers'** from the list of hardware types. Click on **'Next'**.
7. Use **'Browse'** to specify a location in which Windows should look for the driver. Select the root directory of the Pulsar software CD-ROM and click on **'Next'**.
8. Windows will tell you it has found **'Pulsar.inf'** and that it is the best driver to use for this device. Click on **'Next'**.
9. The hardware wizard confirms that you indeed wish to install this driver. Click on **'Next'**.
10. The drivers will be installed, and Windows may also decide to update its drivers database at this point (or it may not!).
11. A dialog appears informing you that the driver has been successfully installed. Click on **'Finish'**.
12. Windows must be restarted in order for the driver update to take effect, so answer **'Yes'** when the wizard asks you if you want to restart your computer.

* refer to the tips on page 16

When Windows resumes, go to the device manager (right-click on '**My computer**' and select '**Properties**', or go to '**Start->Settings->Control Panel ->System->Device Manager**') to check that the driver was installed correctly. Double click on '**Sound, video and game controllers**' and the Pulsar driver should be listed.

INFO

If it is listed, and does not appear with a **red 'X'** or **yellow exclamation mark**, then the installation is complete. If you doubleclick on the Pulsar driver, a dialog will appear saying '**The device is working properly**'.

Software Installation

The installation of the Pulsar program software is made quite simple by a custom Setup utility included on the CD. Just follow these simple steps to do the installation:

1. Insert the Pulsar software CD-ROM disc into your CD-ROM drive.
2. Close any programs that may be running.
3. In Windows Explorer, switch to the CD-ROM drive and doubleclick on '**setup.exe**' in the root directory.



You can also start the setup program by typing <CD-ROM drive letter>:**setup.exe** in the **Start menu's 'Run' utility** (i.e. D:\setup.exe).

4. Select the appropriate language to use.

INFO

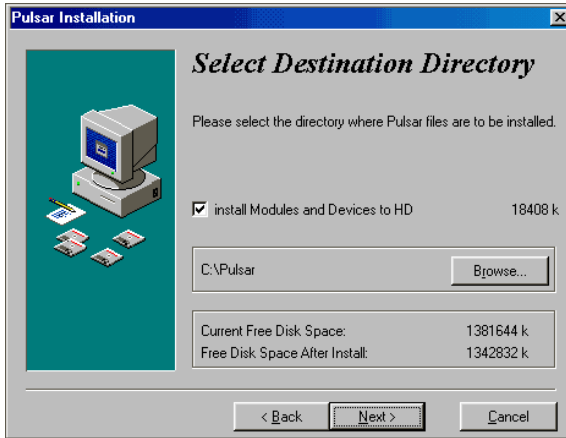
Note that both the **user interface** and the **manual** will be installed in the language you select here.

5. If Windows did not detect your Pulsar board, and therefore did not install the driver, you have the option now of running the hardware wizard to install the driver. Or, if you are upgrading to a newer version of the software, you should use this option to upgrade the Pulsar driver. If you choose to do so, follow the driver installation procedure described above.

6. In the '**Welcome**' window click on '**Next**'.

7. A window appears, in which the Creamware software license agreement is presented. Read this information carefully through, then click on '**Next**' to indicate your agreement with the terms of the license.

8. If you're installing Pulsar for the first time, you will be asked to enter the **software key**. You'll find this number at the beginning of the Installation Guide booklet. Enter the key carefully, then click on '**Next**' to continue.



9. Now you are asked to specify the directory in which you want to install the software. If you don't like the default directory, click on the '**Browse**' button to make your own target directory selection. Click on '**Next**'.



When installing a Pulsar update, you should always install the new version **over the same directory in which the existing version is located**. Each project which you have created with the older version includes a file path specification for each device included in the project. If your new Pulsar version is installed into a different directory than the previous version, and if the previous version is still present on your system, then loading of your projects under the new program version may nevertheless result in loading of devices from the previous version.

The option "**Install modules and devices to HD**" lets you specify whether you want to install the Pulsar modules and devices to your hard disk (**recommended**) or access them from the CD-ROM. Click on '**Next**'.

10. Confirm that you want the installation to continue by clicking on 'Next'.

11. All the required files will now be installed.

12. Finally you are informed that the installation was a success, and you are asked if you wish to start Pulsar immediately. This is up to you, but we know you'll want to!

*Notes:

1. Windows 95 software and driver installation procedures are essentially the same as the Windows 98 procedures, but may differ slightly.

2. If the Pulsar hardware is not recognized as 'new hardware' by your system (which can happen, depending on your software/hardware combination) just start the '**Add New Hardware**' wizard from the '**Control Panel**' instead to install the driver (as described on page 12, starting with step 3.).



In any case, it is absolutely essential that the driver is installed before you attempt to run the software.

3. If the driver did not '**take**' (Pulsar is not listed as a '**Sound, video and game controller**' after the driver was supposedly installed) power down the computer, reboot, and install the driver again as above. We have found that Windows/Plug 'n' Play can sometimes require a couple of attempts before the new driver is successfully registered!

INFO

Along with the software, Pulsar's manual is also copied to your hard disk during the installation. To view or print the manual, **Adobe's Acrobat Reader** (included) must also be installed on your computer.

To install the reader, change to the Acrobat Reader directory and run its **setup** program, following the instructions it gives you.

After installing the reader, you can access the Pulsar manual by following '**Start->Pulsar->Manual**'.

Pulsar and Windows - WINSTART.PRO

Before you begin, there's one thing we want to make sure you understand: Pulsar is not a "**sound card**" in any usual sense. With the quick and simple installation of Pulsar, you transform your computer into a **professional sound studio**.

To ensure maximum reliability, stability and functionality, we employ a few rather unusual approaches with Pulsar. However, the relevant features are easy to access and work with. You'll quickly get a handle on what's going on.

As soon as Windows starts, the inputs and outputs of the Pulsar card are available for unrestricted use. This "**activation**" of the I/Os occurs by way of the Pulsar project **WINSTART.PRO** (located in the folder `..\Pulsar\App\Application`), which is loaded automatically in the background during the Windows startup process! (see the picture on the following page).

All drivers required by Windows and especially by other programs for access to Pulsar card resources are present in this project. In the Pulsar context, we call these drivers "**modules**". The naming of the individual modules – in particular the use of the terms "**Source**" and "**Dest(ination)**" – has been done "*from the point of view of the Project window*", meaning the Pulsar window in which you create your own personal studio configurations. Additional information (on this topic) can be found in the Adobe Acrobat (PDF) document on the Pulsar CD.

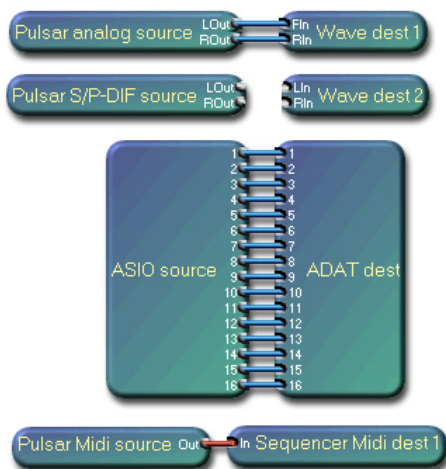
As a rule, modules which have names of the form "Pulsar xxx yy" always represent physical inputs or outputs on the Pulsar card!

In the project **WINSTART.PRO**, the physical analog inputs (**Pulsar analog source**) and digital S/P-DIF inputs (**Pulsar S/P-DIF source**) of the Pulsar card are connected directly to the modules (i.e., drivers) **Wave Dest 1** and **Wave Dest 2**. The Wave Dest modules, which show up in various audio applications as **Pulsar Rec 1** and **Pulsar Rec 2**, or with similar names, serve in these programs as signal sources providing audio input.

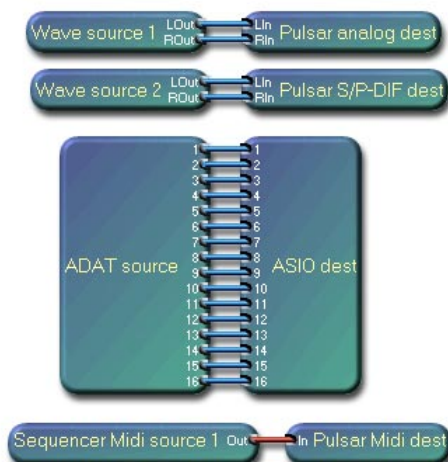
Pulsar default configuration following Windows startup:

(The modules themselves are not visible in the Winstart.pro project – however, the connections between them correspond to the diagram below.)

Pulsar Inputs



Pulsar Outputs



Wave Source 1 and **Wave Source 2** are the corresponding counterpart modules (drivers) for audio output from the same programs. Wave Source 1 is thus an **audio signal "source"** for Pulsar. In **WINSTART.PRO**, it is connected to the analog outputs of the card (**Pulsar Analog Dest**), while Wave Source 2 is connected to the card's S/P-DIF digital outputs (**Pulsar S/P-DIF Dest**). Wave Source 1 and Wave Source 2 generally appear in audio applications as **Pulsar Play 1** and **Pulsar Play 2**.

INFO

If you own a Pulsar Plus, then the modules Pulsar S/P-DIF Source and S/P-DIF Dest correspond to the AES/EBU input and output.

Programs such as Cubase VST, which utilize the **ASIO** driver model to achieve the fastest and most direct possible access to the available audio hardware, allow communication via the corresponding **ASIO Source** and **ASIO Dest** modules (drivers!). Among other things, ASIO drivers offer much lower latency (delay) times for transfers of audio and MIDI data in comparison to standard Wave drivers. Pulsar, via its own ASIO drivers, is able to make use of this advantage.

In **WINSTART.PRO**, the 16 physical ADAT inputs and outputs (ADAT Source and ADAT Dest) are connected to the **ASIO Dest** and **ASIO Source** modules. The result – for example, in Cubase VST – is that, without actually having to start the Pulsar program itself, you immediately have all ADAT inputs and outputs **"hooked up"** (to the Creamware A16 Audio Interface – for example!) and ready to use. Here, as elsewhere, the labeling of the modules is **"from the point of view of the Project window"**.

To permit the immediate use of the **physical MIDI interface** of the Pulsar card in sequencer programs, the MIDI inputs and outputs (**Pulsar MIDI Source / Pulsar MIDI Dest**) are, in **WINSTART.PRO**, directly connected to the **Sequencer MIDI Dest** and **Sequencer MIDI Source modules** (yeah, you know – drivers), which in turn generally appear in sequencer programs as **Pulsar MIDI In** and **Pulsar MIDI Out**.

Thus, **WINSTART.PRO** permits (after Windows start) the immediate use of all Pulsar hardware inputs and outputs. All you need to do is configure your MIDI and audio applications accordingly. To get a clear understanding of this procedure on the basis of examples involving three currently popular sequencer programs, refer to the following chapters. Detailed discussions can be found in the appropriate chapters of the manual on the CD.

INFO

Note: When you start the Pulsar application, Winstart.pro is deactivated and the Pulsar "default project" is loaded.

Via the Pulsar icon which appears in the Windows Task Bar (at bottom right on your screen), you can open the Pulsar **Sample Rate Settings** dialog, where you can make adjustments to the sample rate and wordclock settings for the background project. More information about this dialog can be found in the Pulsar User's Manual on your Pulsar CD.

Customizing the background project Winstart.pro

The background project makes all inputs and outputs accessible to other programs without the need for starting Pulsar (refer to the diagram on the preceding pages). To customize this project to suit your own needs, simply create the desired project in Pulsar and then save it using the **Save As Windows Standard** button in the **Pulsar Settings** dialog. Your new project overwrites the existing Winstart.pro and thus becomes the new background project.

INFO

If you save a complex project (e.g., one which includes the BigMixer and numerous other devices) as the background project, your Windows startup will be correspondingly prolonged, since all of the included devices must be loaded each time you start Windows. In general, but especially in this situation, you should take care to **avoid starting Pulsar before the background project has finished loading**. The appearance of the Pulsar icon in the Windows Task Bar is your signal that the loading process is complete.

Some Tips on Using Pulsar With Other Windows Applications

You have now successfully installed the Pulsar hardware and software. To get you started using Pulsar with your favorite software we will provide notes and examples using three popular programs - Cubase VST, Cakewalk, and Logic Audio. These examples describe the basic settings for these programs and offer some other hints as well. Note that the tips we provide for Cakewalk users apply also to most other audio/MIDI applications.

Steinberg's Cubase VST

Using Pulsar with Steinberg's Cubase VST is easy but you must follow a few rules. There are two important items to observe to achieve maximum compatibility:



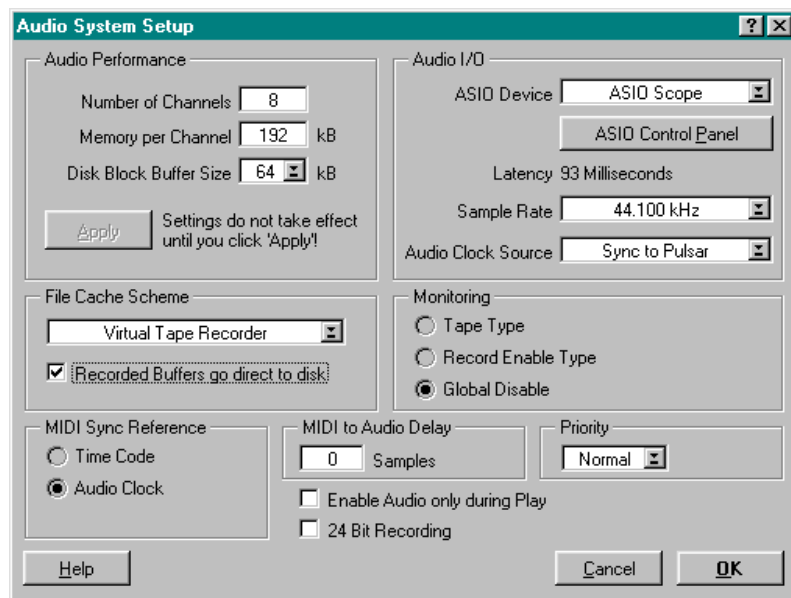
Ensure that the sampling frequencies are set identically in the two programs, and include the ASIO drivers in your project so VST can use them. (Also, make sure you are using at least version 3.55R3 of Cubase VST).

When Windows starts with the default **Winstart.pro** project, the **sample rate** is set to **44.1 kHz** (word clock master) and 8 stereo **ASIO** channels are supported through **16 ADAT I/Os** (see pages 18/19).

Before running VST, but after installing Pulsar, you should run Steinberg's 'Setup MME' program (Start->Programs->Steinberg Cubase VST...) to ensure that the MIDI inputs and outputs are enabled.

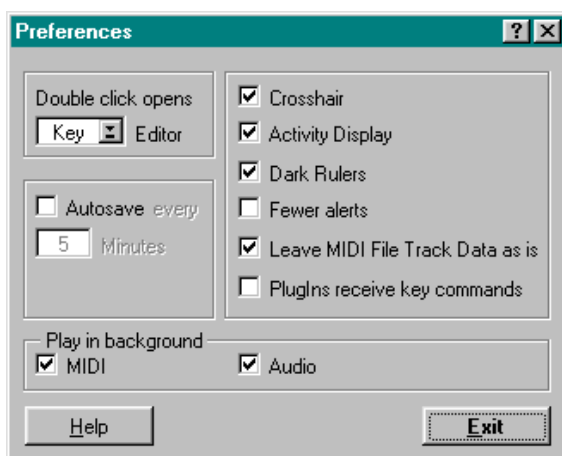
After starting VST check Audio-System-Setup to confirm that the Pulsar audio driver modules are available and properly integrated.

The following dialog appears:



Under **ASIO Device**, select **ASIO Scope**. The **Sample Rate** and **Audio Clock Source** items cannot be changed since VST adapts to Pulsar's settings for optimal adjustment. You can change the sample rate settings at any time either by clicking on the Pulsar icon in the taskbar (if the Pulsar software is not running) or by selecting **Samplerate Settings** from the **Window** menu in Pulsar. Cubase will inform you when you change the sample rate.

So you can always hear the audio and MIDI playback during the simultaneous use of Pulsar and VST, enable **Play in Background** in the **Preferences** dialog.



Pulsar MIDI source/dest A and B und Sequencer MIDI dest/source 1/2 are already integrated in the default project.

The following are two typical examples of possible MIDI connections:

1. MIDI data are routed through to the **Miniscope** device with MIDI Thru in the sequencer = ON.



2. MIDI data are routed simultaneously to the device and the sequencer with MIDI Thru in the sequencer = OFF.





Which method you choose to use depends on your personal preferences and your sequencer's MIDI thru characteristics.

Consult the Pulsar and Cubase manuals to familiarize yourself with the various operational procedures of both programs before calling either CreamWare or Steinberg technical support. You will find that in a very short time you will begin to appreciate the vast possibilities available in this environment!

Have fun sequencing with Pulsar and VST!

Cakewalk

INFO

The following example uses 16 audio tracks. Set Cakewalk and Pulsar for another number of tracks (2-32) in a similar manner.

Pulsar uses the Windows MME interface to deliver and receive audio to and from other programs. From the point of view of Pulsar, this interface appears as **WAVE source** and **dest** modules. Other programs will have **Pulsar Play** and **Pulsar Rec** 'devices' available to them.

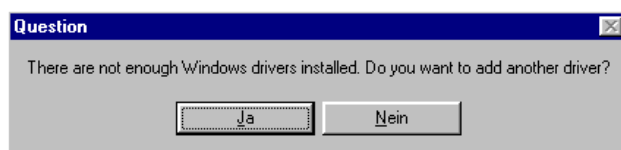
To use the MME interface follow these steps:

1. Make available the WAVE source and dest modules in Pulsar.

Pulsar will see as many audio tracks as you have made available through the number of **WAVE dest** modules you have included in the project. Each **WAVE dest** module allows for two tracks to be routed to a program. Therefore, if you want 16 channels of audio in Cakewalk, you must include **8 WAVE dest** modules.

Similarly you must include as many **WAVE source** modules as you require to receive audio playback from a given number of tracks.

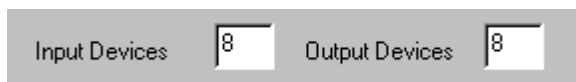
Sooner or later, when adding modules, you'll probably encounter this dialog:



Pulsar is letting you know that there are not enough reserved Windows drivers and asks you if you want to introduce another driver to Windows. Click on **Yes**, and Pulsar will tell you that Windows must be restarted for the new driver to be activated. Before you do so, load the required number of modules and save your project. Then restart Windows.

2. Load the Pulsar MME Drivers

Now Windows supplies other programs with MME drivers. You can check the number of drivers in the **Pulsar's driver setup** (Control Panel -> System -> Device manager -> Sound, video and game controllers -> Pulsar -> Properties -> Settings):

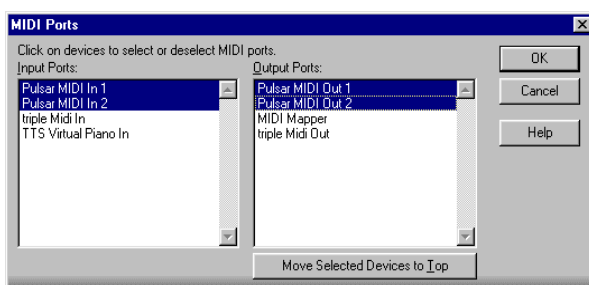


As an alternative to the above method you can load the drivers directly in the 'Pulsar Properties' dialog. Close all applications and enter the desired number of input and output devices remembering that each one is a stereo driver. Then restart Windows.

To use these drivers you must restart Pulsar and load the previously created project - with it the drivers are loaded, too.

3. MIDI Settings

In Cakewalk, open the **MIDI Ports** dialog (Tools -> MIDI Devices).



Enable the Pulsar MIDI Ports. The default is two MIDI ins and two MIDI outs. You can specify the number of Pulsar MIDI ports in the Pulsar driver setup dialog (in the Windows Device Manager).

Note that the number of MIDI ports here is related not to Pulsar's physical

MIDI I/O, but to the number of **Sequencer MIDI source** and **dest** modules loaded.

For connecting and using MIDI modules, see page 24.

For detailed information on using Pulsar and Cakewalk consult the program manuals.

Emagic Logic Audio (versions earlier than 4.0)

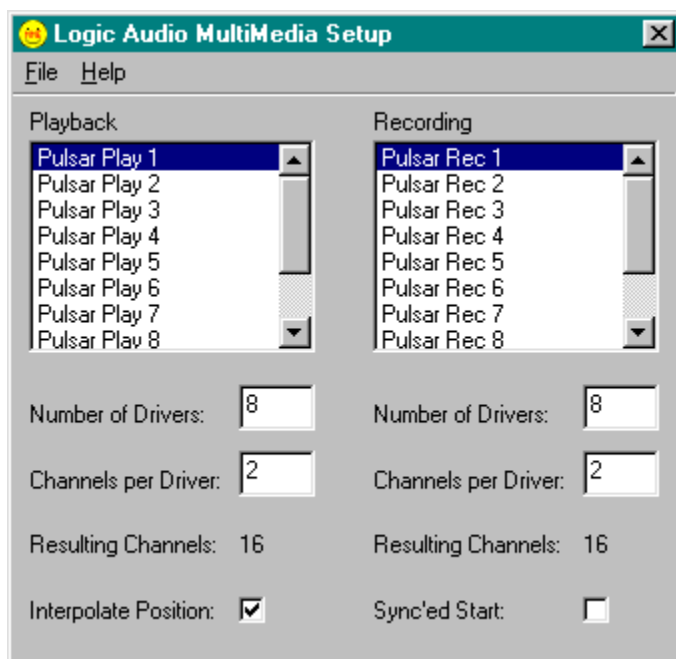


The following example uses 16 audio tracks. Set Logic and Pulsar to use another number of tracks (2-32) in a similar manner.

Follow procedures 1 and 2 in the preceding CakeWalk section.

3. Tell Logic to use the MME drivers

In your Logic directory you will find the program MMSetup.exe. Start it, and the following dialog will appear:



Click on Pulsar **Play 1** and under **Number of Drivers** the number of Pulsar playback drivers you have used so far is displayed - probably 2. Enter the number of drivers you want to use to play audio tracks from Logic into Pulsar - in our example 8. This results in $8 \times 2 = 16$ channels.

Now follow the same procedure for **Pulsar Rec 1**.

If you click on a different driver (2 - 8, as shown in the Recording list), the fields **Number of Drivers** and **Channels per Driver** should display the value **Auto**.



Note that the number of drivers you specify here must correspond **exactly** to the number of Wave Source/Dest modules previously loaded in the Pulsar project. If the numbers don't match correctly, you will obtain the following error message upon starting Logic:

PC AV Error:5
Failed to recover device from playback/recording

INFO

As an alternative to loading multiple stereo Wave modules, you can load the Multi-Interleaved Module, set it for the desired number of channels (e.g., 16) and connect it as appropriate. To use this module, you should enter the following settings for both playback and record in the Logic dialog described on the previous page:

Number of Drivers	= 1
Channels per Driver	= 16

For using and connecting MIDI modules, see page 24..

Now you're ready to mix 16 Logic channels in a Pulsar project, and bus 16 Big Mixer signals to Logic. For details see the manual on the CD-ROM and consult the Logic documentation.

Useful tips concerning Logic Audio Version 4.0

Emagic has completely revised their popular sequencer program with the release of Logic Audio version 4.0. Using Pulsar with this new version is, then, quite different from using it with previous versions. The following notes describe how to set up these two applications for trouble-free operation.

INFO

The same basic rule applies to Logic version 4.0 as applies to earlier Logic versions as well as to VST, Cakewalk and all other audio and MIDI applications:

The drivers (modules) you want (need) to use **must** be present in the Pulsar project, and the project must already be loaded and running in Pulsar, **before** the other application (e.g., Logic) is launched.

As far as this applies to MIDI, it means that you must make sure that the **Pulsar MIDI Source/Dest** and **Sequencer MIDI Source/Dest** modules are present in your Pulsar project and appropriately connected before starting Logic. (Refer to the diagrams on page 23 and the *Winstart.pro* section on page 17.) Integration of Pulsar audio I/O modules into Logic is described below.

There are now three different types of audio driver module provided with Pulsar which can be used with Logic Audio: the ASIO drivers (**ASIO (24 bit) Source/Dest**), the WAVE drivers (**(24 bit) Wave Source/Dest**) and the 16-bit "Multi-Interleaved" drivers (**16 Wave Interleaved Source/Dest**). The choice of drivers is entirely up to you. However, owing to certain advantages of the ASIO driver design (see the section *Winstart.pro*), we recommend using the ASIO drivers.

1. Recording and Playback using ASIO drivers

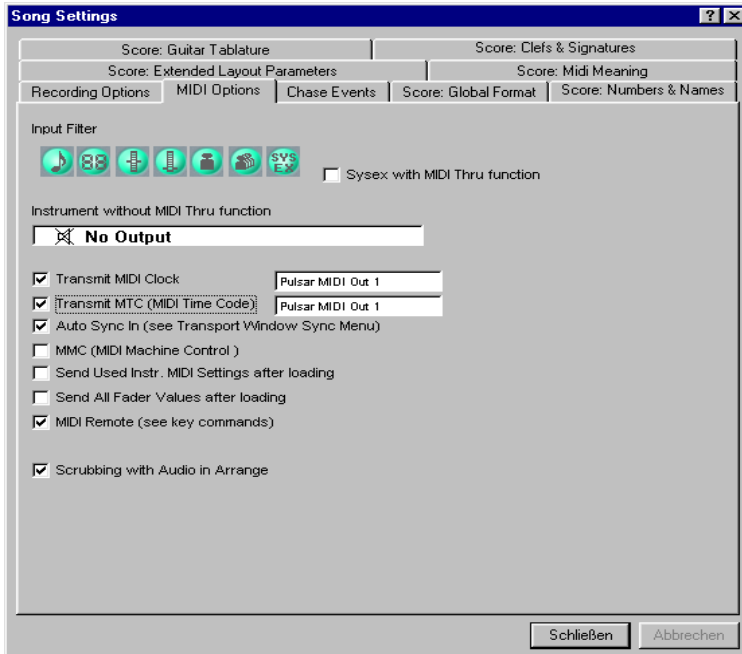
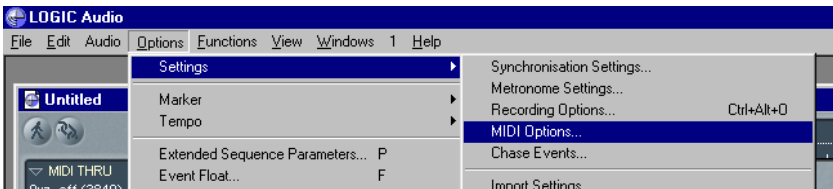
To use ASIO drivers for recording and playback, load either the **ASIO Source/Dest** or the **ASIO 24 bit Source /Dest** modules into your Pulsar project (use the latter to transfer your audio tracks in 24-bit format) if they do not happen to already be present (refer to the manual section *Default project*).



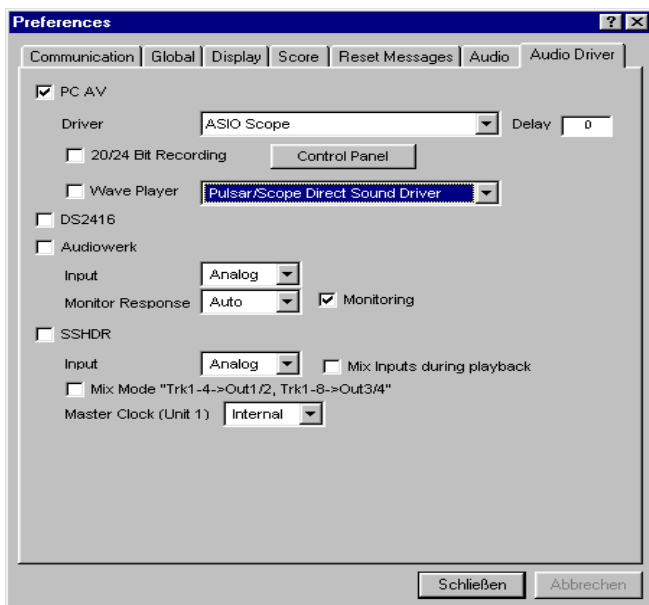
You should use **either** the 24-bit (**ASIO 24 Bit Source/Dest**) **or** the standard 16-bit (**ASIO Source/Dest**) drivers. The presence of both module types in the same project can cause problems, and in any case, Logic and Pulsar must agree on the wordlength to be used (refer to the diagram on page 32). **The same applies in general for the 16-bit and 24-bit WAVE drivers!**

After connecting the ASIO modules appropriately to your hardware inputs and output (e.g., **Pulsar ADAT Source/Dest** for recording/playback via the ADAT interface), you can start Logic Audio.

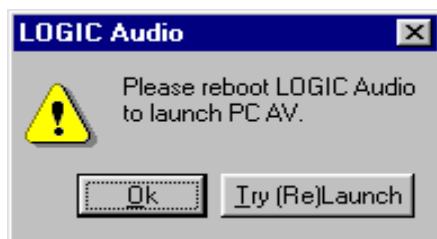
In the *MIDI Settings* dialog, select the desired MIDI outputs.



Select the menu item *Audio hardware and drivers ...* and, under *Drivers*, select **ASIO Scope**.



When the following message appears, click on *Try (Re)Launch*.



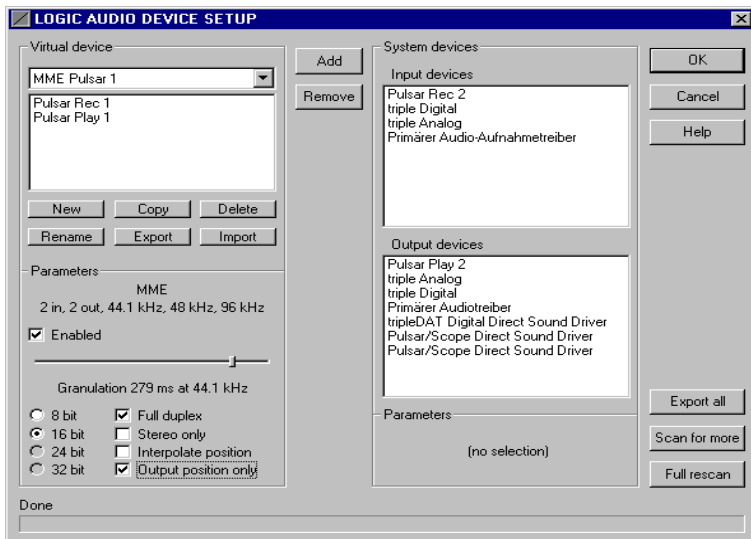
Now, the selected number of ASIO record/playback channels are ready for use in Logic Audio.

In this configuration, there is a variable amount of record/playback delay which cannot be compensated by Logic. To achieve delay-free playback, set the *Driver delay* parameter in the *Audio hardware and drivers* menu to -80 msec. Recorded cuts must be shifted manually to the correct position. In this configuration, the record delay is constant at approximately 150 msec, so shifting of recorded regions by -150 msec should align them correctly in time.

2. Recording and Playback using WAVE drivers

As an **alternative** to the ASIO drivers, you can also use the Pulsar WAVE drivers. Before starting Logic Audio, make sure that you have loaded the **type** (16/24-bit) and **number** of WAVE drivers you wish to use, per the description in parts 1 and 2 of the Cakewalk Tips section (pages 25-26), as the same applies to Logic.

In place of **MMSetup.exe** (see page 28), Logic Audio 4.0 has a program called **Logic Audio Device Setup**, referred to in the following as **LAD-Setup**, for setting up the MME drivers being used. Start **LAD-Setup** *before* you start Logic. It will conduct a scan to locate all drivers which are present. You may need to request a '**full rescan**' to have all drivers be recognized.





Under *Virtual Device*, select **MME Pulsar 1**, activate the **Output position only** option and *deactivate* the **Interpolate position** option. **Full Duplex** and **16-bit** should be activated. Confirm these settings by clicking *Ok* and then start Logic Audio. Select the menu item *Audio hardware and drivers* (page 32) and, under *Drivers*, select **MME Pulsar 1** (you may also need to click on **Try to activate**). Record and playback should function properly with the *Driver delay* parameter set to 0.

3. Recording and Playback using Multi-Interleaved drivers - LAD Remove

This is the third possible choice of Pulsar audio driver for use with Logic Audio.

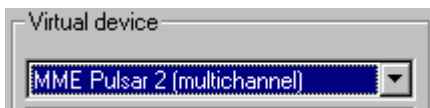
INFO

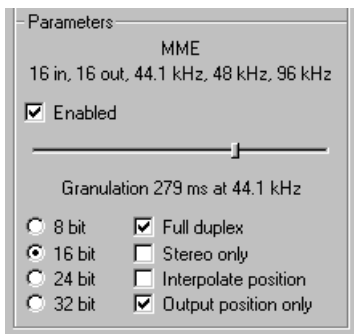
Whenever you switch to a different type of MME driver, it is necessary to clear the existing MME driver configuration. This is done using **LADS Remove** as follows: Create a Windows shortcut to **LAD Setup** and rename it to **LADS Remove**. Open its *Properties* dialog, and add the word "remove" (including quotation marks) to the command line in the *Target* field -- e.g.:

E:\Logic Audio Platinum4.0\Logic Audio Device Setup.exe "remove". Be sure to include a blank between the end of the existing command line and the word "remove". Confirm the change, then start **LADS Remove** via the new shortcut and wait a few seconds.

Next, add the modules **16 Wave Interleaved Source/Dest** to your Pulsar project before, finally, starting the *normal* **LAD Setup**. You may find it necessary to once again perform a "full rescan".

Now, under *Virtual Device*, select **MME Pulsar (multichannel)**.





Under *Parameters*, activate the **Output position only** option, deactivate **Interpolate position**, and select **16 bit**. After clicking *OK*, you can start Logic Audio.

Select the menu item *Audio hardware and drivers* (page 32). Select **MME Pulsar (multichannel)** and click on **Try to activate**. Now you're set up for record and playback using sixteen inputs and outputs. Unfortunately, in this configuration, there is a variable amount of record/playback delay which cannot be compensated by Logic. To achieve delay-free playback, set the *Driver delay* parameter in the *Audio hardware and drivers* menu to -66 msec. Recorded cuts must then be shifted manually to the correct position.

When using the Multi-Interleaved driver, you are somewhat more likely to encounter the "**PCI Master Overflow**" error message. For this reason, we do not unreservedly recommend the use of this driver type. Refer to the *Support* section of the *Installation Guide* for more information regarding this issue.

Note:

At the time of preparation of this manual, Logic Audio version 4.0 is the most current version available. Should future versions of Logic Audio call for additional or different settings than those recommended here, appropriate documentation updates will be published in the *Support* database on our Web site.

Important notes on using multiple S/ TDM-compatible boards (Pulsar / SCOPE / SRB): order of hardware detection

If you're already the owner of a Pulsar board, you will need a special cable for connecting cards via the S/TDM bus. This cable can be obtained free of charge from your dealer or directly from CreamWare (address on page 56).

Simply install the cable firmly onto the appropriate connectors on both boards according to the instructions on page 10, and as pictured here. The exact orientation of the cable is not important.



When a Pulsar SRB is used with a Pulsar or SCOPE system, the order in which the installed cards is detected may vary from one system (i.e., motherboard) to the next. In some cases, this order may not be as desired and you may wish to change it, in particular to maintain compatibility with existing projects. There are different ways to test and change this order.

With the Pulsar hardware you've purchased, the following possibilities exist:

1. Pulsar + Pulsar
2. SCOPE + Pulsar

1. Pulsar + Pulsar

A Pulsar board is already installed and a Pulsar or Pulsar SRB is added. Your external hardware devices (audio monitors, etc.) are connected to the first, previously installed Pulsar card. Following installation of Pulsar software version 1.2 (or at least version 1.12!), you discover that when the Pulsar application is launched, it no longer communicates with these devices. You can determine whether the Pulsar boards are being recognized in reverse order by dragging a second Pulsar Analog Dest (2) module into the Project window and sending an audio signal to it. If you now hear this signal via the devices connected to the first Pulsar card, this indicates that the boards are indeed being recognized in reverse order. To remedy this, you can either:

- physically exchange the slot positions of the two boards on the main board, i.e., install the new board in the slot where the old board currently is and vice versa,

or

- add two sections to the file **CSET.INI** in the directory **..\Pulsar\App\Bin**. Open the file with a text editor (Editor or Wordpad) and add the following two sections:

```
[board0]  
boardid=1
```

```
[board1]  
boardid=0
```

Save the file, then exit Windows and restart Windows.

This should restore the "correct" order. In this example, **[board0]** refers to the board which *we wish to have* as first board -- the original Pulsar or SCOPE board, to which **boardid=1** is assigned *during hardware detection by the main board*. **[board1]** refers to the newly-added board, which *we wish to have* as second board, but which is *detected first by the main board* and assigned **boardid=0**.

2. SCOPE + Pulsar

You are already using a SCOPE board and install an additional Pulsar card. Upon launching the SCOPE application, you discover that Pulsar hardware I/O modules are being loaded into the default project, but not the SCOPE I/O modules which you would prefer to maintain as your primary I/Os. This indicates that the main board detects the Pulsar board first, with the result that your SCOPE board is now regarded as the "second" board. Correspondingly, the Device Manager settings (Start -> Settings -> Control Panels -> System -> Device Manager -> Sound, video and game controllers) for the various driver options can no longer be opened for the SCOPE board, but only for the Pulsar board. To restore the "proper" order (SCOPE first and Pulsar second), you can either:

- physically exchange the slot positions of the two boards on the main board, i.e., install the Pulsar board in the slot where the SCOPE board currently is and vice versa,

or

- add two sections to the file **CSET.INI** in **..\Scope\App\Bin**). Open the file with a text editor (Editor or Wordpad) and add the following two sections:

```
[board0]  
boardid=1
```

```
[board1]  
boardid=0
```

Save the file, then exit Windows and restart Windows.

This should restore the "correct" order. In this example, **[board0]** refers to the board which *we wish to have* as first board -- in this case, the original SCOPE board, to which **boardid=1** is assigned *during hardware detection by the main board*. **[board1]** refers to the newly-added Pulsar board, which *we wish to have* as second board, but which is *detected first by the main board* and assigned **boardid=0**.

Rules of thumb (for SCOPE users)

If a **Pulsar board** is the **first board detected**, the "default project" **Winstart.pro** (in the ../Scope/App/Bin directory) will be loaded (see Installation Guide: Winstart.pro).

Hardware I/Os of the board that has been detected as board #2 are always labelled with the number 2 at the end of the module name -- for example:

If you add a **Pulsar ADAT Dest** module to a SCOPE project with SCOPE I/Os (SCOPE board as board #1), the **Pulsar ADAT dest** module will be labelled as '**ADAT dest 2**' (in a Pulsar project it will be labelled as "**Pulsar ADAT Dest 2**")

If you add a **SCOPE ADAT A Dest** module to a SCOPE project with Pulsar I/Os (Pulsar as board #1), the **SCOPE ADAT A Dest** module will be labelled as '**SCOPE ADAT A Dest 2**' (in a Pulsar project it will also have this label)



If you create a project while you have only one board installed and then install a second board, the hardware I/O modules in this project will not have the requisite "1" or "2" designation and therefore cannot be assigned to one board or the other. To correct this situation, you must delete the existing I/O modules and load the appropriate modules anew into your project, and then save the modified project.

Support

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Troubleshooting

Graphics Cards

Certain Matrox PCI graphics cards have been observed to cause severe problems in conjunction with Pulsar if the following entry is *not* included in the system configuration file system.ini (located in the Windows directory):

```
[mga.driv]
PCIChipset=1
```

If you're using a Matrox PCI graphics card, please add this entry to the file system.ini (*Start -> Run -> type "Sysedit<Enter>" -> select SYSTEM.INI, make the modification as shown above, SAVE the modified file!*)

In general, to avoid problems, the acceleration functions of the graphics card should be disabled via the card's driver setup utility. In particular, any option with the name "PCI bus retry" or similar should be disabled. Also, you should always try to use the newest drivers available. These can be downloaded free of charge from the Matrox website at <http://www.matrox.com/mgaweb>.

If your're using graphics card with an S3 chip, please add the parameter `busthrottle=1` under the topic `[display]` to the file system.ini.

```
[display]
busthrottle=1
```

AGP graphics cards are preferable, since they make no use of the PCI bus. See also the section regarding the "PCI Master Overflow" message.

Noise when switching the computer on or off

Keep in mind that Pulsar transforms your PC into the equivalent of a professional digital recording studio. In *no* such studio would you switch your monitoring system on and turn up the volume *before* switching everything else on! The same applies when switching things off – the monitor volume should be kept all the way down, or the monitoring system switched off altogether, while the rest of the studio is being switched on *or* off. Please do the same with your Pulsar system, to avoid possible damage to your monitoring system resulting from powerful transient signals which can occur when the computer is switched on or off!



Pulsar sample rate settings / S-P/DIF signal as source

When using several digital audio devices together, it is essential to be aware of the fact that only one wordclock master can exist in a digital system. Pulsar operates as wordclock master by default, with a sample rate of 44.1kHz. For example, if you want to use Cubase VST with CreamWare's A16 Audio Interface (without starting the Pulsar program), you must set the A16 to operate as a wordclock slave (optical), or you must appropriately modify the Wordclock settings via the Sample Rate Settings dialog, which is in this case accessed via the Pulsar icon on the Windows Task Bar.

The correct configuration of wordclock master and slave is extremely important when working with S/P-DIF devices, such as DAT recorders, connected to Pulsar's coaxial S/P-DIF I/O. If you want to record to DAT (e.g., during mastering) you must set the DAT recorder to 'Digital Input Coax' (slave), so that it will detect and synchronize to Pulsar's sample rate (Pulsar must be the master here!)

On the other hand, when using a DAT recorder as a signal source, for example, to send signals into the Pulsar mixer, you must set Pulsar as the wordclock slave, since in this case the DAT recorder will play at its own sample rate (as master) and Pulsar must synchronize itself to the DAT.

Whenever you make changes to the wordclock master/slave configuration, always be sure to define the new master device first, *before* changing the configuration!!! For example, set the DAT recorder to 'Pause/Play' mode *before* switching Pulsar into S/P-DIF slave mode.

An improper master/slave configuration can result in distorted audio playback, including clicks, pops and crackling. If you experience such symptoms, the first thing to check is your master/slave settings. See the manual ("Pulsar Card: Word Clock Settings") for instructions on how to do this, as well as for additional tips!

Windows installation fails

If, in addition to Pulsar and the "usual" assortment of cards (graphics adapter, SCSI controller), you have other cards in your computer – such as network cards or other sound cards – you may in rare cases experience computer freeze-ups during a new installation of Windows with a Pulsar card already in the computer.

Solution: Remove the Pulsar card from the computer before installing Windows. Once the Windows installation is complete, you can replace the Pulsar card in the computer and proceed to install it in the usual way, as described in the Installation Guide.

Installing additional audio hardware

If Pulsar is installed on your system and you install an additional (non-Pulsar) audio card, you may be confronted with a "blue screen error" when you attempt to install the drivers for the new card. If this occurs, first close the Pulsar application Runpep using the Windows Task Manager (press Ctrl + Alt + Del, highlight *runpep* and click on *End Task*). Once you've done this, you should be able to install the new drivers without problems.

After installing an update to the Pulsar software, a synth sounds different

Owing to modifications made to individual synths, it is possible that a particular synth could sound somewhat different with some presets following installation of a software update. As a precautionary measure, the update installer automatically creates a *Devices 1.0 Backup* folder in your Pulsar directory, into which it saves copies of the devices which are replaced during the update. If it becomes necessary, you can retrieve the old synth device from this folder and continue using it with the updated software.

DSP overload: way too many modules

Even though you, as a Pulsar owner, are in possession of one of the fastest DSP systems currently available (if not THE fastest), at some point you will reach the limits of performance of your system. Bear in mind that we place a high importance upon **audio quality**, which is why, in the case of synthesizers, for example, every individual sound is computed in CD quality (44.1 kHz, 16 bits). Modern audio/MIDI sequencers and especially hard disk recording systems such as **tripleDAT v3.x (!)** permit generated sounds to be recorded as audio files, in order to once again "make room" for further realtime sound computations in Pulsar. You should make use of this possibility if you find yourself "bumping up against the limits". It's also advisable to check the DSP loading (**DSP Load Window**) before saving a project, and if it turns out to be at or near maximum, to decrease the polyphony of the synthesizers in the project (by 1-3 voices each) as a precaution against possible appearance of the DSP overload message the next time the project is loaded.

Our experience has shown that with **careful, clever usage** of your applications, it is entirely possible to produce **complete, professional productions** with Pulsar!



Error messages

PCI bus frequency:

adr 0xxxx reads 0x... or data 0yyyy reads 0zzzz

Many computer users attempt to obtain extra performance from their computers by raising the CPU frequency beyond stated specifications. However, this often also results in an increase of the PCI bus frequency, to perhaps 37.5 MHz or 41.5 MHz. Unfortunately, this is well in excess of the PCI specifications, which call for a maximum bus frequency of 33 MHz. As a result, the bus in such computers is no longer a valid PCI bus!

If you run into problems starting Pulsar, or have trouble even when starting Windows, you should check the bus clock frequency and set it back to 33MHz if it is set to a higher frequency. See the manual of your motherboard for details of how to do this.

Pulsar *may* run with a higher PCI bus frequency. If it does, this is simply a matter of luck. We don't guarantee it. As the manufacturer of Pulsar we guarantee only compliance with PCI Rev. 2.1, which means smooth operation at 33MHz.

Error message: 'PCI-Master-Overflow'

Should this message appear, we recommend using a text editor to add a maxPCchannels entry under the [dsp] section in the file CSET.INI (located in the directory ..\Pulsar\App\Bin). The complete entry should appear as follows:

```
[dsp]
maxPCchannels=100
```

In a newly-installed copy of Pulsar, a higher value (256 or 512) is used. This is a program default value and does not appear explicitly in CSET.INI. The occurrence of this error message indicates that the effective PCI bus bandwidth is not sufficient to transfer the required number of channels via the PCI master interface. This situation can be caused by the graphics card or other PCI cards. It may also occur when "too many" RAM-intensive modules or devices are loaded (e.g., reverbs – more than four

or five at one time is not possible). Experiment with various values smaller than 256 until the computer works flawlessly. Good "acid tests" include opening and closing Pulsar program windows and bulk-copying files in the background while audio is playing.

In "Display .. Properties", selection of the "High Color (16 bit)" setting will minimize the likelihood of this error occurring.

In addition, any **graphics card driver acceleration functions** which may be active should be completely disabled.

A reduction of the value for Hardware Acceleration (Control Panels .. System .. Performance .. Graphics) – if necessary, down to "None" – is also recommended.

Some BIOS brands/revisions include a setting for a "PCI Latency Timer". Raising this setting to approx. 128 (or higher) can help relieve this problem.

Reducing the BIOS data throughput setting for the SCSI controller (for example, from 80 MB/sec down to 40 MB/sec or lower for U2W controllers) is sometimes also helpful.

In this connection, it is extremely important to make sure that you are using the newest drivers for all components of your system (graphics cards, SCSI controllers, etc.). Make a point of checking in periodically with your dealer or visiting manufacturers' Web sites to find out about possible driver updates!

Remove all ISA and PCI cards from your computer which are only seldom or not at all being used.

Additional tip: If at all possible, use an AGP graphics card!

Pulsar is already running

You may encounter this message upon trying to start Pulsar directly following Windows startup. During its startup, Windows automatically loads a Pulsar background project which activates the card inputs and outputs (for more information about this, refer to the WINSTART.PRO section in the Installation Guide). The Pulsar program cannot be started while this is going on. Simply wait a few moments until the Pulsar icon appears on the Windows Task Bar (next to the Windows clock, if you have it displayed), indicating that the background project has completely finished loading, and then start Pulsar. Bear in mind that the required startup time increases correspondingly with increasing complexity of your background project.

You can prevent loading of the background project using the Windows Registry Editor **regedit.exe** (Start .. Run .. regedit). Under the path:



HKEY_LOCAL_MACHINE \ Software \ Microsoft \ Windows \ CurrentVersion \ Run, mark the entry **InitPulsar** and delete it.

Can't lock sample, not enough physical memory

This message may appear when loading Akai programs/samples into one of the sample players. These samples are loaded into PC system memory. In some instances, the system simply does not make the required amount of memory available. The problem can sometimes be solved by simply repeating the load operation.

Should this fail to work, exit Pulsar, restart the computer, and then, as your first step following the reloading of your Pulsar project, load the Akai samples.

"Timeout - waiting for acknowledge from dsp xy"

In principle, the Pulsar card should work in any PCI slot. Should Windows 95/98 nevertheless exhibit difficulties in detecting the Pulsar card during the hardware recognition process, simply change the position of the card once. Note that the first PCI slot, particularly in older motherboards, is not necessarily bus-master capable. According to our experience, the "middle" slots – i.e., slots 2 and 3 – are the most problem-free positions. In addition, you should make sure that the ventilation inside your computer is adequate (the housing should be generously large). The addition of an extra cooling fan to a computer with lots of cards and components can sometimes work wonders.

"no more S/TDM connections from ... "

The links between multiple cascaded Pulsar/SCOPE/SRB cards have been disrupted. A quick rescue can often be achieved by changing the sample rate settings – for example, by switching from slave mode to master and then, after "Lock" occurs, back to slave mode (after making sure that a master clock signal is indeed present!). However, this represents merely a temporary solution, for example, to permit a project to be saved. The better approach over the long run is to do a new installation of the software (following complete deinstallation – refer to the *Deinstallation* section later in this chapter).

You can also try deleting the following entry in **CSET.INI** (**..\Pulsar\App\Bin**), after deactivating Pulsar (exit the program, right-click on the Pulsar icon on the Windows Task Bar, and select **Close Pulsar**):

```
[stdm-connections]
connect0=UV,UW
connect1=XY,XZ
```

Save the file, then restart Windows and Pulsar and see whether the error message reappears. This action causes the S/TDM links between the cascaded cards to be established anew. Repositioning of the cards can sometimes also be helpful.

In any case, verify that each of the cards is correctly and fully seated in its PCI slot and that the S/TDM Bus connector cable is properly attached to each of the cards!

**"Error: Hardware Revision -1 not supported" /
"Cannot start Pulsar without hardware and its
DLL.." / "Error: This program only runs with a
driver version xy" / cryptic error messages**

The Pulsar card is not being recognized by Windows, or there are driver incompatibilities. Confirm that the **card is correctly seated** in its PCI slot and that the driver is correctly configured (Control Panel .. System .. Device Manager .. Audio, video and game controllers .. Pulsar). If a yellow exclamation point appears in the Device Manager next to Pulsar, the cause is most likely an **interrupt (IRQ) conflict**, which must be eliminated (refer to page 52!).

It is also possible that the installed driver does not match the installed version of Pulsar. This can occur after the **installation of updates**, if they are **installed into the wrong directory**, such that the driver indeed gets updated, but the new software does not end up in the "right" Pulsar directory (this path must be carefully noted during installation of an update!). A typical error message associated with this circumstance is:

"Error: This program only runs with a driver version xy"

You may also see any number of other **cryptic error messages**, which may appear as soon as Windows starts (caused by Winstart.pro, which is unable to find the updated files). In this event, you should completely deinstall and newly reinstall Pulsar (see page 48), paying close attention to the program path!



Deinstalling Pulsar Program Software And Drivers

Before completely deinstalling Pulsar, you should copy all of the projects (*.PRO files) you've created into a completely separate directory (i.e., one which is not a subdirectory of your Pulsar directory - for example, C:\MyProjects), to ensure that you do not lose these files during the deinstall. The same goes for any preset lists (*.PRE files) and modified devices (*.DEV files).

If you have created a custom Windows startup project (via the option ☐ Save Project As Windows Standard" in the Pulsar Settings dialog) and wish to save it, copy the file WINSTART.PRO from the ..\Pulsar\App\Application directory into a separate (non-Pulsar) directory (e.g., C:\MyProjects).

If you have created a custom Pulsar startup/default project (via the option ☐ Save Project As Default" in the Pulsar Settings dialog) and wish to save it, copy the file NEWPROJECT.PRO from the ..\Pulsar\App\Application directory into a separate (non-Pulsar) directory (e.g., C:\MyProjects).

Following a new installation, you can copy the files you've saved back to the appropriate locations.

1. Deinstalling the program software

Click on START -> Programs -> Pulsar -> Uninstall.

To completely remove all files and all entries in the Windows Registry, select the option "Custom" and, whenever you are asked to select files, click on "Select All".

As a rule, however, the option "Automatic" is generally adequate for removing all relevant files from your hard disk.

2. Deinstalling the drivers

After deinstalling the program, open the Windows Device Manager by right-clicking on the "My Computer" icon on the Windows Desktop and selecting "Properties", and then clicking on the "Device Manager" tab.



Locate Pulsar under "Audio, Video and Game Controllers". Select the Pulsar entry and click on "Remove".

Next, open Windows Explorer and navigate into the **..\Windows\Inf** subdirectory. Here you will find the file **PULSAR.INF**, which should be deleted.

Then navigate into the **..\Windows\Inf\Other** subdirectory and delete the file **CreamWare GmbHPULSAR.INF**.

Finally, in the **..\Windows\System** subdirectory, you will find the files **SCOPE.DRV** and **VAXED.VXD**, which should likewise be deleted.

By following the above steps, you have removed all traces of the existing Pulsar installation from your computer. Thus, once you've restarted the computer, you can start "clean" with a new installation.

Optimization Tips

Virtual Memory

In general, the selection "Windows manages the settings for virtual memory" should be adequate in order to work effectively with Pulsar. When using this selection, make certain that you always have adequate free disk space available (at a minimum, an amount equal the amount of system RAM you have installed in your computer).

Insufficient swap space may be signalled by Pulsar via error messages during startup or while in operation ("runtime error").

An alternative is the use of a permanent swap file. The swap file must be larger than the amount of system RAM you have installed! We recommended setting the size of the swap file to twice the amount of installed RAM. You'll find this setting under *Start -> Settings -> Control Panels -> System -> Performance -> Virtual memory*.

The following settings are significant in connection with hard disk recording:

"Disable write-behind caching for all drives"

Check the "Disable write-behind caching for all drives" option. You can find this option under *Start -> Settings -> Control Panels -> System -> Performance -> File System -> Troubleshooting*. Write-behind caching must *not* be activated in a real time recording environment.

Read Ahead

If you experience audio problems during recording or playback, change "Read Ahead Cache" from its default value of 64 kB to a smaller value such as 16 kB or 8 kB, or turn it off completely. This setting is found under *Start -> Settings -> Control Panels -> System -> Performance -> File System*. If you have more than 24 MB of system RAM installed, you can also change the *Typical role of this machine* to "Network server". This setting improves overall performance under Windows 95/98.

VCACHE parameter

Particularly in connection with hard disk recording, having this entry in your SYSTEM.INI file will improve performance. To determine the best value for your computer, divide your installed RAM amount in MB by 4 and multiply the result by 1024. (Example: 128 MB RAM -> $128/4 = 32$ -> $32 \times 1024 = 32768$). Add this entry under the section [vcache] in SYSTEM.INI (Start -> Run -> type "Sysedit<Enter> -> select SYSTEM.INI, make the modification as shown below, SAVE the modified file!)

```
[vcache]
MinFileCache=32768
MaxFileCache=32768
```

Defragmentation

Use SCANDISK and DEFRAG regularly (Start -> Programs -> Accessories -> System Tools -> Disk Defragmentation).

BIOS Settings

Disable **Power management** in your computer's BIOS setup, along with all other time-activated options. If you aren't using any USB devices, disable **USB support** as well.

In the *Plug and Play/PCI Configuration Setup* (or similarly titled) menu, you will usually find the entry **P'n'P OS installed**. This should be set to **YES/Enabled**.

In addition, this menu often contains the item **PCI Latency Timer**. If you are experiencing "PCI Master Overflow" messages, set this parameter to **128 PCI Clocks** (or higher) (see *Error Messages*).

In the *Chipset Features* menu you will generally find the option **PCI 2.1 Support**, which should be set to **YES/Enabled**.



Hardware Conflicts

If a device is marked with a yellow exclamation point or a red X in the Device Manager (*Start -> Settings -> Control Panels -> System -> Device Manager*), there is an IRQ or address conflict or a driver incompatibility which needs to be resolved. Often, this can be handled by installing a so-called "chip-set patch". You may find this on the CD that came with your motherboard, or you may be able to download it via the Internet from the Web site of the motherboard manufacturer.

Only a system which is free of hardware conflicts can guarantee smooth operation of Pulsar!

You should also check whether the Pulsar card is sharing an IRQ with other PCI cards. This is generally permissible but should be avoided where possible in order to maximize the stability of the system. Ideally, the last PCI slot (4) should not be used for Pulsar, as this slot often uses the same IRQ as all other installed PCI cards.

The first PCI slot can also be problematic, since AGP graphics cards often share an IRQ with this slot.

Repositioning of the cards in the computer often works wonders! Furthermore, you should make sure that you obtain and use the newest available **drivers and BIOS versions** for your components.

If you are uncertain with regard to the issue of hardware conflicts, you should enlist the help of a local computer specialist.



The Hotline

As mentioned above, Pulsar works flawlessly with most computers if the issues in this document are properly attended to. In addition, via the support area of our website:

<http://www.creamware.com>

we will constantly publish solutions for new problems as they are discovered. If you have Internet access, please check the information which is posted there before contacting us directly. The latest information and trouble-shooting assistance will always appear there first.

If you have checked all of the information presented here and on the Web site and you are still unable to solve your problem, there are various ways to contact us directly for advice. Once again, however, we request that you recheck all of the information presented above *before* doing so! In any event, only *registered users* are entitled to direct technical support, so please register now!

If you write or email us, be sure to provide us with all required information about your system. You will find a form below to assist you with this. If you call us, please have this information ready to give to the technical support representative. It's best to first fill out the form completely and then either send it to us or have it ready at hand when you call us.

Be sure to provide us with *all* required information about your system ...

1. I have tried all suggestions given in this document: Yes

2. PC CONFIGURATION

Processor:

Main board (chip set!):

Hard drive(s):

Graphics card (which slot / IRQ / driver version?):

RAM:

CD writer:

SCSI controller (which slot / IRQ?):

CD-ROM:

Sound card (which slot / IRQ?):

other internal devices/cards (which slot / IRQ?):

How old is the power supply (!):

3. CreamWare products:

triple1-Board ROM serial number (which IRQ / Port?):
Your software keys?

triple2-Board ROM serial number (which IRQ / Port?):
Your software keys?

TDAT16 ROM serial number
(which slot / IRQ / driver version / program version?):
Your software keys?

A8 / A16:

Pulsar ROM serial number
(which slot / IRQ / driver version / program version?):

4. Connected Devices:

Mixers:
Synthesizers:
Synchronizers:
Samplers:
Recorders (DAT / ADAT etc.):
Other (Atari, MAC, MIDI patchbays etc.):

5. Installed Software

Operating system:
Sequencer software:
Audio applications:
Other:

6. Description of the problem

When and where does it appear?
Can it be made to recur via a specific series of actions? How?
Which parts of the program are involved (modules / devices)? *Which*
devices? *How* are they connected?



There are four ways to reach our support department:

In the USA and Canada:

email: support@creamware.com
Fax: (604) 435-9937
Phone: (604) 435-5158
Mail: CreamWare US Inc.
6879 Russel Avenue
Burnaby, B.C.
V5J 4R8
Canada

All other countries:

email: support@creamware.de
Fax: (++49) 22 41 - 59 58 57
Phone: (++49) 2241 - 59 58-12
Mail: CreamWare Datentechnik GmbH
Support
Wilhelm-Ostwald-Strasse 0/K1
53721 Siegburg, Germany

But for now – enough hints about possible problems. As an experienced computer user, you are no doubt well aware that neither software nor hardware which is one-hundred percent perfect exists. We at CreamWare strive continually to improve our products, and we welcome your criticism and suggestions.

Having said that – we hope (and expect) that you won't encounter problems with Pulsar, and we wish you all the best in working creatively with Pulsar!!!

Sincerely,
Your CreamWare team!

Before sending in your Pulsar card for warranty support, please call the Support office to obtain an RMA number for your card.

Testing and repair of hardware which is sent to us without making prior arrangements is given a lower priority and can take correspondingly longer.

Pulsar Technical Specifications

Samplerates	96 kHz / 48 kHz / 44.1 kHz / 32 kHz (as wordclock master) 30 kHz - 100 kHz (as AES/EBU, S/PDIF or wordclock slave) 38 kHz - 50 kHz (as ADAT slave)
Number of channels	20 inputs, 20 outputs: ADAT optical (2 in / 2 out) AES/EBU (in/out) (Plus) S/P-DIF (in / out) (Standard) analog (stereo in / stereo out)

Analog inputs

Pulsar Plus	Balanced XLR Input sensitivity Maximum input level Input impedance	+ 4 dBu (nominal) +20 dBu (0 dBFS) 20 k Ω
Pulsar Standard	Unbalanced RCA Input sensitivity Maximum input level Input impedance	- 10 dBV (nominal) + 2 dBV (0 dBFS) 10 k Ω

Analog outputs

Pulsar Plus	Balanced XLR Output level Maximum output level Output impedance	+ 4 dBu (nominal) + 20 dBu (0 dBFS) 600 Ω
Pulsar Standard	Unbalanced RCA Output level Maximum output level Output impedance	-10 dBV (nominal) +2 dBV (0 dBFS) 300 Ω

Digital inputs and outputs

ADAT*	EIAJ fiber-optic connectors: 2 in / 2 out each connector: 8 channels, 24 bits
AES/EBU	XLR balanced, 110 Ω (Pulsar Plus) 96 kHz capable
S/PDIF	RCA unbalanced, 75 Ω (Standard)
MIDI	5-pin DIN In / Out / Thru
S/TDM	SCOPE Bus Connector, 128 channels, 32 Bit
Syncplate (optional)	Wordclock In / Out ADAT sync (9-Pin)

Audio performance

Digital - Analog

Frequency response	< +/- 0.15 dB (20Hz - 20 kHz)
Dynamic range	> 102 dB
THD+N	> 99 dBA typ.
Channel separation	> 105 dB @ 997 Hz

Analog - Digital

Frequency response	< +/- 0.05 dB (20Hz - 20 kHz)
Dynamic range	> 98 dB
THD+N	> 95 dBA typ.
Channel separation	> 102dB @ 997 Hz

Analog - Analog

Frequency response	< +/- 0.2 dB (20Hz - 20 kHz)
Dynamic range	> 97 dB
THD+N	> 94 dBA typ.
Channel separation	> 102 dB @ 997 Hz

Audio converters

DAC	Digital-to-analog converter 24 Bit Multibit $\Sigma\Delta$ -modulator with "Perfect Differential Linearity Restoration" for reduced idle tones and noise floor
ADC	Analog-to-digital converter 20 Bit $\Sigma\Delta$, 64x oversampling

General specifications

PCI expansion card	Rev. 2.1 compliant 33 MHz (PCI bus-master capable)
Vendor-ID	14B5 hex, creamw@re
Power consumption	7.5 W
Dimensions	23.6 cm x 10.8 cm
Standard package	Pulsar card Pulsar cable assembly Pulsar CD Installation booklet Sampling CD (Akai Samples)
Pulsar CD includes	ReadMe.rtf (release notes, Rich Text Format) Installation utility Driver software Program software Installation Guide User's manual (Adobe Acrobat)

* "ADAT" is a registered trademark of Alesis Corporation.



Warranty and Disclaimer

CREAMWARE GmbH ("CREAMWARE") warrants this product to be free of defects in materials and workmanship for a period of one (1) year for parts and for a period of ninety (90) days for labor from the date of original retail purchase. This warranty is enforceable only by the original retail purchaser. To be protected by this warranty, the purchaser must complete and return the enclosed warranty card within fourteen (14) days of purchase.

During the warranty period CREAMWARE shall, at its sole and absolute option, either repair or replace free of charge any product that proves to be defective on inspection by CREAMWARE or an authorized service representative. In all cases disputes concerning the warranty shall be resolved as prescribed by law.

To obtain warranty service, the purchaser must first call or write CREAMWARE at the address and telephone number printed below to obtain a Return Authorization Number and instructions concerning where to return the unit for service. All inquiries must be accompanied by a description of the problem. All authorized returns must be sent to CREAMWARE or an authorized CREAMWARE repair facility postage prepaid, insured, and properly packaged. Proof of purchase must be provided in the form of a bill of sale, canceled cheque, or some other positive proof that the unit is within the warranty period. CREAMWARE reserves the right to update any unit returned for repair. CREAMWARE reserves the right to change or improve the design of the product at any time without prior notice. This warranty does not cover claims for damage due to abuse, neglect, alteration or attempted repair by unauthorized personnel, and is limited to failures arising during normal use that are due to defects in material or workmanship in the product.

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This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty only applies to products sold in the United States of America or Canada. The terms of this warranty and any obligations of CREAMWARE under this warranty shall apply only within the country of sale. Without limiting the foregoing, repairs under this warranty shall be made only by a duly authorized CREAMWARE service representative. For warranty information in other countries please refer to your local distributor.

Shipping Address:

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855-C Conklin St.
Farmingdale, NY 11735
USA

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CreamWare US Inc.
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