# Cakewalk® Pro Audio™ 9

**(for Windows 95/98/NT 4.0)**

README.RTF



This file contains supplemental information on Cakewalk® Pro Audio™, Version 9. It was prepared on October 22, 1999.

## Contents

# User's Guide Corrections & Clarifications

This section of the Readme.rtf file contains corrections and clarifications to the Pro Audio 9 *User's Guide*.

## Ordering Information

This is a trial version of Cakewalk Pro Audio 9. If you would like to order Cakewalk Pro Audio, please visit our web site at http://www.cakewalk.com, or call 888-CAKEWALK (888-225-3925) or (617) 441-7870 ( Monday - Friday 8 AM - 8 PM, Saturday 10 AM - 6 PM, U.S. EST).

## Sound Card Information

Please read the http://www.cakewalk.com/Support/SoundcardTips.html page for the latest information about sound cards and Pro Audio. If the sound card you are using is listed in that document, *please follow the instructions listed there* for configuring and using your sound card with Pro Audio. If you don't follow those instructions, Pro Audio may not work properly with your sound card.

## Dropouts and Other Audio Problems

After installing Pro Audio, if you experience dropouts, stutters, glitches or other unexpected interruptions while recording or playing back audio, please consult the online Help built into Pro Audio for assistance. Locate the Help topic entitled "Dropouts and Other Audio Problems".

**NOTE**: To locate an online Help topic, select **Help-HelpTopics** from the Cakewalk menu, click the "Index" tab, and enter the desired topic into the textbox provided.

## Reducing Mixing Latency

If audio playback is working properly, but you find that Cakewalk is slightly "sluggish" when responding to adjustments you make during playback (e.g., when changing volume levels, muting or soloing tracks, adjusting panning, etc.), you may be able to improve Cakewalk's responsiveness by consulting the online Help built into your Cakewalk software. Locate the Help topic entitled "Reducing Mixing Latency" for assistance.

**NOTE**: To locate an online Help topic, select **Help-HelpTopics** from the Cakewalk menu, click the "Index" tab, and enter the desired topic into the textbox provided.

When you first run your Cakewalk software, the Latency Slider control in the **Options—Audio…** dialog box will be set to a value that will provide a balance between reliable playback of an adequate number of audio tracks AND a reasonably low latency when moving a volume or pan knob in Pro Audio 9's Console View. As explained in the online Help topic, you may wish to experiment with the Latency Slider setting in order to further lower the mixing latency time. If you choose to manually configure the Latency Slider please note the following points:

- Moving the Latency Slider too far to the left (minimum value) may put Pro Audio 9 in a state where it can no longer playback audio or MIDI data. While in this state Pro Audio 9 may briefly attempt playback before dropping out, or the application may visually appear to be playing back but no audio will be heard. To resolve this problem, simply move the Latency Slider back to a higher value (i.e., move the slider control to the right).

## Video Adapter Issues

If you are using one of the following video adapters:

- Matrox Millenium
- Hercules Dynamite 128
- STB Velocity
- any video card based on the S3 chipset
- any video card based on the nVidia Riva TNT or Intel i740 chipset

or you experience audio problems during times of high graphics use, please visit the web page http://www.cakewalk.com/Support/VideocardTips.html for **important** information about how to configure your video adapter when working with Pro Audio. If not properly configured, these particular video cards can cause “bus contention,” disrupting normal audio recording and playback within Pro Audio.

Some users have reported errors in Cakewalk's StudioWare View when using certain types of video cards. Specifically, video cards based on the NVIDIA Riva TNT or Intel i740 chipsets are known to cause illegal operation errors when opening the StudioWare View. Cakewalk has found that this problem can be remedied by downloading the most recent reference drivers from NVIDIA and Intel directly.

To download reference drivers for Riva TNT-based video cards, please visit NVIDIA's website at:

http://www.nvidia.com/Products.nsf/htmlmedia/software_drivers.html

To download reference drivers for i740-based video cards, please visit Intel's website at:

http://developer.intel.com/design/graphics/drivers/

(Please note that NVIDIA and Intel provide these reference drivers "as is", and as such the drivers are not supported by the manufacturer of your specific video card.)

For the latest information on video adapter issues, please see http://www.cakewalk.com/Support/VideocardTips.html.

## Wave Profiler Issues

### Use the latest driver for your sound card

To properly configure Pro Audio for your sound card, the Wave Profiler depends on you using the latest driver for your sound card. Please contact your sound card manufacturer to ensure that you are using the latest driver.

### Wave Profiler Does Not Query Audio Devices to Find Out if they Support 48kHz

Be aware that there is no error message when trying to record 48K audio on a card that doesn't support 48kHz sampling rate.

Some sound cards will crash if they are queried for >44.1kHz sample rates, so the Wave Profiler determines the correct settings at three sample rates: 11kHz, 22kHz, and 44.1kHz. It assumes that the

same settings should be used for 48kHz and 96kHz sample rates. Because of this, it is possible to load a 48kHz project and use a sound card that doesn't support 48kHz. This scenario does not present an error message, so Pro Audio may appear to record audio while no audio is actually recorded.

### Wave Profiler doesn't open drivers at 24-bit settings

The Wave Profiler doesn't open drivers at 24 bit settings. If you see DMA buffer size values reported that aren't **exact multiples of 3**, then you may have problems with playback. Symptom would most likely be random dropouts, ie, the audio stops even though CPU and Disk meters aren't red-lining. You can safely multiple these values manually in **Options-Audio-Device Profiles**.

For more information on how to configure Pro Audio for proper 24-bit operation, please see http://www.cakewalk.com/Support/24BitTips.html.

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## MP3 Encoder in the Pro Audio 9 Demo is a 10-use "Trial Version"

The Pro Audio 9 demo comes with a limited-use Trial Version of the Cakewalk MP3 Encoder. This Encoder allows you to export a Pro Audio 9 audio project into an MP3 file, which you can play using any MP3 Player, or place on an Internet site so that others can download and play the MP3 file. Once installed on your system, the Trial Version can be used **only 10 times**, after which it will automatically expire. Reinstalling the Pro Audio 9 demo will **not** provide a repeated Trial. The full version of Pro Audio 9 includes an unlimited-use version of the Encoder.

When you choose **Tools--Mixdown Audio--Export to File(s)**, and specify a file-type of MP3, the MP3 Encoder Trial Version will present a "splash screen". At the bottom of the screen, you'll see a count of the number of trial uses remaining (counting down from 10...). If not expired, you can start the Encoder by clicking "Run". If you'd like information on how to upgrade to the unlimited-use version, click "Information". If you don't want to proceed, or if the Encoder Trial Version has already expired, click "Quit" to return to Home Studio 9.

**WARNING:** If you click "Run" on the MP3 Encoder splash screen, but then later decide to cancel the encoding, this will **still count as a use** of the Encoder, and will count against your 10 free trial uses. Therefore, do not click "Run" on the MP3 Encoder's splash screen unless you really want to proceed with the MP3 encoding.

**WARNING:** The MP3 Encoder Trial Version will only work properly from within the directory in which it is initially installed. If you reinstall the Pro Audio 9 demo to a different directory, or try to copy the software to another directory on your hard disk, the MP3 Encoder Trial Version will not operate correctly.

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## Explanation of DirectShow Audio Options

Information on several new audio options in the 'DirectShow Audio' dialog (**Options-Audio)** was left out of the User's Guide and online Help. Below is an explanation of each new option.

**[General tab]**

*(Default) File Bit Depth:* Determines the number of bits per sample used for storing recorded (or imported) audio data to disk. The choices here are 16 or 24. Note that other values such as 18 or 20 aren't permitted, because they are technically not legal wave format values as defined by the Microsoft's multimedia specifications. Also, you don't need to have 24-bit capable audio hardware to use this setting, but be forewarned that 24-bit files require 50% more overhead for streaming.

*Audio Driver Bit Depth:* Determines the number of bits per sample used for communicating with the audio hardware for playback or recording. Your audio hardware must be capable of supporting the setting you supply here. In most cases, even if your hardware is "advertised" as being 18 or 20 bit, you will want to set this value to 24 for optimum performance.

*Buffers in Playback Queue, Buffer Size slider:* These values determine the buffer characteristics for transfers to and from the audio drivers. Lowering either of both of these values will improve audio latency, though making them too low will make your system more susceptible to stuttering or dropouts.

**[Advanced tab]**

*I/O Buffer Size:* This values determines the buffer characteristics for transfers to and from the disk. Changing this value will not affect audio latency, but will affect the disk throughput for audio tracks. On some disk controllers, you may get better performance by increasing the default I/O Buffer Size to 128k.

*Stop On Driver Underrun:* A driver underrun results when your computer cannot fill the audio buffers in the amount of time allotted. You can choose whether Cakewalk stops playback or keeps playing when this occurs.

*WavePipe™ Acceleration:* Enable this option if you use a mixing latency setting under 100 milliseconds.

*Clip Audio Mix Upon Overflow:* When this option is enabled, Cakewalk will “clip” every mixed output sample instead of letting it “wrap,” or overflow. This often reduces the audible results of mixing too hot, and creates a warmer, more pleasing type of distortion when you overdrive tracks. You may find it especially useful on guitar-heavy mixes.

Enabling this option adds more overhead to the mix engine, so you may notice a reduction in the maximum number of playable tracks.

*Apply Dither:* Controls whether a dither signal is added to the final (floating point) audio mix, before conversion to integers. Disabling this option may provide a slight increase in real-time effects performance.

*Unpack > 16 bit audio:* Checking this option can improve performance on specific 24-bit audio hardware systems (for example, the Sonorus STUDI/O card and the Yamaha DSP Factory). By choosing this option, you are instructing Pro Audio to skip its expensive 24-bit data packing operation, and allowing the audio hardware to do this work instead. Please contact your hardware manufacturer to determine if their drives support this "24-bit unpacked" data format.

*Left-justify unpacked data:* When the "Unpack > 16 bit audio" option is enabled, you may select whether you want this data aligned to the least significant bit ("right justified") or to the most significant bit ("left justified"). Many sound cards, including the Yamaha DSP Factory, expect their data to be left justified. Enabling this option ensures that >16 bit audio will work properly on these sound cards.

## Configuring Pro Audio for Proper 24-bit Operation

If your sound card is capable of recording/playing at greater than 16-bits per sample (e.g., if it is advertised as having 18-, 20-, or 24-bit capability) and you wish to take advantage of this capability, you should try to configure Pro Audio for 24-bit operation. Do this by selecting **Options-Audio**, clicking on the **General** tab, and choosing 24 in the **File Bit Depth** list and the **Audio Driver Bit Depth** list **before** you start recording any audio. Always try these 24-bit settings unless your sound card driver "complains" in some way; only then should you adjust the "Audio Driver Bit Depth" field down to 20, or 18, as needed to satisfy your sound card driver (for normal 16-bit operation, both lists should be set to 16, which is the default when first installed). For additional information about configuring Pro Audio for proper 24-bit operation, please visit the web page http://www.cakewalk.com/Support/24BitTips.html.

## Adding Effects "Tails" to Mixed Down Audio Data

The **Tools-Mixdown Audio-Export Audio to File(s)** and **Tools-Mixdown Audio-Bounce to Track(s)** commands mixdown **only** the current selection. If a project is using any effects that add a "tail" to the end of the audio (such as reverb), then you should make sure that you select extra silence (duration needed to hear the tail) at the end of the current selection before using the **Tools-Mixdown Audio-Export Audio to File(s)** and **Tools-Mixdown Audio-Bounce to Track(s)** command. This will ensure that the "tail" is included in the audio mixdown.

## Changes to the Piano Roll View Note Names Pane

You can right-click in the note names pane of the Piano Roll view to pick a different note name list. This feature has changed in version 9, due to the new multi-track capability of the Piano Roll view.

[1] By default, the note names pane shows you the note name list from the instrument definition associated with the port and channel of the *active track*. Remember, the active track is the one selected in the new track list pane of the Piano Roll view. If you right-click in the note names pane and pick a list, this change will remain in effect until you change the active track. At that point, the default names for the new active track are displayed, and your override is no longer remembered.

[2] The old checkbox, Drum Mode, is gone. Instead, the notes for each track are always drawn in whatever mode is appropriate for the instrument definition associated with the track's port and channel. You cannot override this.

## Notes in Piano Roll view that are set to Selection Mask or Hidden can be edited

When making a selection in the Piano Roll view time ruler, it is possible to edit note events from masked tracks. Only Piano Roll tools are "blocked" from editing the masked notes; other edit commands are still operational, by design.

## Chromatic Tuner Compatibility Issues

The Chromatic Tuner will only work with audio hardware that supports 16-bit audio and 44.1 sample rate.

## Video Issues

**Problems Importing QuickTime video files**

If your system has a basic Windows installation with DirectShow installed, you may not be able to insert QuickTime video files. You may need to install the latest video Codecs from Microsoft's web site in order to import different video formats.

The problem can be solved going to Microsoft's web site (http://www.microsoft.com) and downloading and installing the latest version of Windows Media Player (version 6.4 is the latest as of 9/21/99).

Also, please note that, at this time, Pro Audio does not support QuickTime 3 or greater.

**Compatibility Issues**

MPEG files captured on Miro and Shark video capture cards won't load in Pro Audio. To load these files into Pro Audio, you should use a video program to convert them to AVIs in a "generic" codec like the Radius Cinepak codec or Intel Indeo codec.

**Keyboard Support to Advance by a Frame or a Frame Increment:**

If the Video view is the active window, you can now use keyboard shortcuts to advance by a frame or a frame increment. The +/-, and left/right arrow keys move forward/backwards by a single frame. If the control key is pressed, then the frame increment value is used (default = 5 frames) Alternatively you can use the [ and ] keys to seek by the frame increment.

You can change the frame increment that is used when pressing the control or [ and ] keys. To do so, add the following line to the [Video View] section in CAKEWALK.INI:

```
[Video View]
FrameSkipDelta=5
```

The default value is 5, which means that Pro Audio will advance by 5 frame increment while seeking using the [ ] or Control key combinations.

On seeking by frames in the video view, the now time is changed to the nearest tick value corresponding to the frame displayed.

**Optimizing Editing With Video:**

- If you intend on doing a lot of seeking around or looping and editing with a video file loaded, make sure that your video file has sufficient keyframes. Since each frame has to be computed from the last keyframe encountered, if you have very few keyframes in the video, performance may be slow. To change the number of keyframes, you may recompress the file using **Tools-Export Video to AVI** (disabled in the demo version) and specify more frequent keyframes. Choose a suitable video compressor such as "Indeo Video 5.04" and change the KeyFrame Rate parameter to a number between 1-5. A value of 1 makes every frame a keyframe, and higher numbers insert a keyframe after that many frames.
- Another optimization tip is to put video on a separate drive from your audio. You can change the path from **Options-Global-Folders**.

- Changing the video properties such as Trim and Start time, imposes some degree of overhead. You can apply any changes made here by using **Tools-Export Video to AVI** (disabled in the demo version).

**MPEG and QuickTime video files**

Please note that the Start Time, Trim-in time, and Trim-out time can only be set for AVI video files. If you need to adjust these settings for an MPEG or QuickTime files, use the **Tools-Export Video to AVI** command (disabled in the demo version) to save the video file as an AVI file. You can then insert the new AVI file, and adjust the Start Time, Trim-in time, and Trim-out time from the Video Properties dialog.

**Start, Trim In and Trim Out Times clarification**

The Start Time of a video file is an "*absolute*" position (from the start of the project), while the Trim In and Trim Out times are "*relative*" to wherever the video begins.

## Using the Arm Button in the Audio View

Pro Audio 9 let's you arm a track from within the Audio view. If no source is assigned to a track, Pro Audio may automatically assign an inappropriate source when arming a track in the Audio view. So, to achieve reliable results, you should assign the source to record from in the Track view before arming tracks in the Audio view.

## Prepare Using N Millisecond Buffers

This option on the **MIDI** page of the **Options-Global** property sheet lets you specify how far in advance Pro Audio 9 prepares MIDI data during playback. The default is 500 milliseconds.

If playback stops prematurely, you may try *larger* values (although you should also check the buffer options in **Options-Audio-Advanced**).

If you are using MIDI effects, you may want to try *smaller* values -- for example, 100 milliseconds. Doing so means that, if you change a property for a MIDI effect, there will be less delay before you hear the new value take effect.

## Audio Pan Envelopes

In the Audio view, pan envelopes are represented as left on top, and right on the bottom by default. This is consistent with stereo audio tracks, where the left track is on top, and the right track is on the bottom. This is also consistent with most horizontal audio meters. However, some people may prefer to have left values displayed on the bottom, and right on top. This will be more consistent with controller 10 (pan) values in the Piano Roll view, where small values (0-63; left) are on the bottom, and large values (65-127; right) are on top. You can flip the pan envelopes so left is on the bottom, and right is on top. To do so, add the following line to the [Audio View] section in CAKEWALK.INI:

```
[Audio View]
PanEnvelopeRightOnTop=1
```

The default value is 0 (zero), which means that pan envelopes will operate with left on top.

## Panic (Reset) Strength

The **Reset** command (Realtime-Reset and Transport toolbar) stops playback and turns off any "stuck notes". There are two ways a MIDI note can be turned off: By a note-off message or by MIDI controller number 123 ("all notes off"). By default, Reset uses controller 123 only.

This may be insufficient for some older synthesizers. If so, set PanicStrength=1 in the [WINCAKE] section of **CAKEWALK.INI**. To do so, you may use **Options-Initialization File**. Reset will send a note-off message for every note on every channel of every port. This makes Reset much slower but will resolve the problem.

The following describes in detail which events Pro Audio transmits for both Reset options:

**PanicStrength=0**

Pro Audio sends:

| **Event:** | **Value:** | **Channel:** | **Port:** |
|---|---|---|---|
| Pitch Wheel | 0 | 1-16 | All |
| Controller 1 | 0 | 1-16 | All |
| Controller 7 | 127 | 1-16 | All |
| Controller 10 | 64 | 1-16 | All |
| Controller 64 | 0 | 1-16 | All |
| Controller 66 | 0 | 1-16 | All |
| Controller 67 | 0 | 1-16 | All |
| Controller 121 | 0 | 1-16 | All |
| Controller 123 | 0 | 1-16 | All |

**PanicStrength=1** (this method takes longer, as it send a Note Off message for every pitch on every channel on all ports; the first method only sends a single "All notes off" message (controller 123), which some older equipment don't respond to properly)

Pro Audio sends:

| **Event:** | **Value:** | **Channel:** | **Port:** |
|---|---|---|---|
| Note Off | C#5-G9 | 1-16 | All |
| Pitch Wheel | 0 | 1-16 | All |
| Controller 1 | 0 | 1-16 | All |
| Controller 7 | 127 | 1-16 | All |
| Controller 10 | 64 | 1-16 | All |
| Controller 64 | 0 | 1-16 | All |
| Controller 66 | 0 | 1-16 | All |
| Controller 67 | 0 | 1-16 | All |
| Controller 121 | 0 | 1-16 | All |
| Controller 123 | 0 | 1-16 | All |

## Audio Data “Queue” Buffers

Some DirectXplug-ins maintain a "queue" of audio data buffers while they are processing, and do not produce any audio output buffers until several input buffers have been received. For Pro Audio to handle this situation properly, we need to create extra buffers to make up for the ones being queued by the plug-in. This CW9AUDDX.INI variable controls how many extra buffers we create:

**[Wave]**
**ExtraStreamBufs=<n, default=4>**

## Exporting a 24-bit Project to MP3

Only 16-bit projects can be exported to MP3. If you are working on a 24-bit project, you can either:

1) create a backup copy of the project, then use the **Tools-Change Audio Format** command to convert the project to 16-bit, or
2) save the 24-bit project, then temporarily convert the project to 16-bit with the Tools-Change Audio Format without re-saving the file. To continue working on the 24-bit project, close the project and reopen it.

## Some MP3 Players Don't Display ID 3 Info For MP3 Files Created in Pro Audio

The latest versions of Windows Media Player and Real Player do not display the ID 3 Info when playing back MP3 files created in Cakewalk. However, certain other MP3 players, such as WinAmp, do display the ID 3 info properly.

## Reject Loop take command does not work with audio

At present, the **Realtime-Reject Loop Take** command only works when recording MIDI data.

## Step Record Always Uses 'Sound on Sound' Record Mode

The Step Record feature always uses the Sound on Sound (blend) record mode, regardless of a project's current record mode. This is by design. In order to undo and cancel step record, it is important to put step record data in a new separate data stream.

## "Virtual Piano" Application is Installed Separately

In Pro Audio 9, the Virtual Piano application is no longer automatically installed as part of the Pro Audio 9 installation. Rather, the Virtual Piano application is installed separately, using its own installation program. You can find this installer in a folder named "Virtual Piano", located in the root directory of the Pro Audio 9 CD. Simply double-click on the installer's icon to initiate the installation process.

# Audio

## Important Info Concerning Mixdown Operations with Projects Utilizing Multiple Audio Output Ports

The Audio Mixdown dialog boxes (**Tools-Mixdown Audio-Bounce to Tracks** and **Tools-Mixdown Audio-Export to File(s)**) contain a number of user-settable options for configuring the mixdown process. One of these is a multi-selection listbox labeled "Source Busses" which lists each Audio Output Port (the "sources" for the mix) actively used in the project at mixdown time.
Pro Audio 9's audio mixdown feature includes the ability to select which output ports should be included in the mix. These audio outputs are referred to in the mixdown dialogs as the "Source Busses", as these outputs are the "source" of the audio data which is actually exported or bounced.

By default, all of these ports are selected. There is also a checkbox labeled "Each Source to Separate Mix", which is checked by default. In this default configuration, the mixdown will create separate bounced tracks, or output files, for each of these ports. That is, the result of the mixdown will be exactly the same as playback which "plays" the audio data to each master output separately.

However, the user may choose to deselect some of the output ports and/or uncheck the "Each Source to Separate Mix" box. In some circumstances, the results of doing so may seem non-intuitive unless the user understands the following information.

### Multiple Output Port "Sources" Going to a Single Mix

When the user unchecks the "Each Source to Separate Mix" box, he or she is asking that the project be mixed *as if there were only one output port in the system*, i.e., only one master output. Cakewalk achieves this by (temporarily) setting the output port of all tracks to be included in the mix *to the first selected output port in the Mixdown dialog's listbox*. Therefore the master settings and master effects for *this* output port, as set in the Console View, will be applied to the entire mix. If the user doesn't want this single output port's master effects applied to all audio tracks, s/he can uncheck the "Include Master Effects" box, so that no master effects are applied at all. (Note that this single output port's master fader setting will still adjust the mix level, however.)

### Creating a Single Mix Which Includes Each Output Port's Master Effects

If, however, the user wishes to create a single mix that includes each output port's master effects (and levels) applied only to the appropriate tracks assigned to each respective output port, the way to achieve this in Cakewalk is to perform the mixdown in two "passes", as follows:

- First do a "Bounce to Tracks" with the "Each Source to Separate Mix" checked. This will create new "mixed" tracks for each of your output ports (incorporating master settings and master effects on each respective output port).

- Second, Solo the "mixed" tracks created in the previous step, and then mixdown these solo'ed tracks. This second mixdown pass should be performed with the "Each Source to Separate Mix" option unchecked and the "Include Master Effects" option also unchecked. The user should remember here that the level of this second-pass mixdown will be controlled by the level of the master output fader for the first (topmost) output port/"Source" selected in the Mixdown dialog's listbox.

### Mixing Down Aux-Buses Using a Different Output Port than the Port Used By Tracks Which Send to That Aux-Bus

If you have a project in which an Aux-Bus is assigned to an output port which is not the same as the output port used by the audio tracks which are *sending* to that Aux-Bus, you should be aware of a limitation in Pro Audio 9's audio mixdown feature, and a workaround for this problem.

When one of the Source Busses is *deselected* in the mixdown dialog, this effectively removes from the mix any tracks that are currently assigned to that output port. If any such tracks have an *enabled aux-send to an aux-bus which is assigned to an output port/Source Bus that is* ***still included*** *in the mix,* the mixdown will fail because the aux-bus is not able to receive audio data from all of the tracks that are connected to it.

For example: Let's say that you have Aux-1 assigned to output Port #2, but all of your tracks are currently assigned to Port #1. As noted above, you cannot get a mixdown of just your Aux send data if you select **only** Port #2 as the Source for the mixdown, because then the tracks which feed Aux-1 would not be included in the mix (because they're assigned to Port #1 which was excluded as a mixdown Source).

An easy workaround for the above problem is as follows: As an alternative to deselecting Source Busses that you don't want mixed, one can leave all Source Busses selected, but make sure that the "Each Source To Separate Mix" option in the Mixdown dialog is checked (enabled). This will create independent tracks (or files) for the audio data routed to Port #1 (the tracks you don't want) and the audio data going to Port #2 (the Aux-Bus which you do want). You may not be interested in the resulting Port #1 mix (just delete it), but this procedure ensures that all your tracks are included in the resulting Port #2 mix (which you'll keep).

### Stereo Reverb Plug-in doesn’t support mono audio at 11kHz sampling rate

The FX Reverb (Stereo) audio plug-in does not work on mono audio data if the sampling rate of the project is 11kHz. Applying this effect to mono audio in a 11kHz project can cause the computer to lock up. The FX Reverb (Stereo) effect will work properly on stereo audio, and mono/strereo audio with 22kHz, 44.1kHz, 48kHz, and 96kHz sampling rates.

## MIDI

### Irregular Playback Timing of First Few Notes in Song With Dense MIDI Data at Beginning

If you playback a MIDI file which contains dense MIDI data (e.g., SYSX messages, note data, etc.) at the very beginning of the song, the first few notes of the song may play back with irregular timing. For example, the first few notes may sound “fast”, or speeded up. This could also happen if you are playing many MIDI tracks through a multi-timbral sound module, and each individual track is sending its own bank/patch change message at the start of the song. In Cakewalk software, a bank/patch change message is sent out for each track when playback begins at the start of the song. (The bank/patch value is specified in the Track View, in the “Bank” and “Patch” columns.)

Certain keyboards and sound modules may exhibit this behavior more than others, as keybaords and sound modules react differently to MIDI data sent at the beginning of a sequence. Some synths can tolerate large amounts of bank/patch change messages, SYSX messages, and note data “at the same time”, others cannot.

To avoid the irregular timing and ensure proper playback on all synthesizers, we recommend inserting a blank measure at the beginning of your MIDI project. This blank measure provides a “window of time”

in which the beginning-of-song bank/patch change messages can be received and processed by the synthesizer/sound module without disturbing the playback of MIDI notes (which would begin in the second measure). If your MIDI project includes dense SYSX messages at the very start of the song, you could move those into the initial "set-up" measure also, so that they don't get sent at the same time as the MIDI notes (which would begin in the second measure). By ensuring that initial bank/patch change and SYSX messages are sent during the initial "set-up" measure, you will ensure proper playback timing of MIDI notes in subsequent measures.

## "Always Use Sysx Bank Instead of Sysx Data" for MIDI Files

If you check this option, Pro Audio puts any Sysx data contained in imported MIDI files into Sysx banks instead of a stream of Sysx Data events (except for auto-send data, which is sent before playback starts). These banks show up in the Event list as Bank events. If you don't check this option, imported Sysx data remains as Sysx Data events if the length of the Sys-ex data block is 255 bytes or less; if the Sys-ex data is 256 bytes or more in length, it is still placed into a SYSX bank.

## Unexpected Controller Changes When Starting Playback

If you experience unexpected changes in MIDI controller values when stopping or starting playback in Cakewalk (e.g., certain MIDI notes' volumes are much louder or softer, or panned differently than expected, when playback begins), ensure that the "Zero Controllers When Play Stops" checkbox on the "MIDI Out" tab of the **Options—Project…** dialog is checked. (This setting is enabled by default after a new installation.) When this setting is enabled, Cakewalk automatically zeroes the pitch wheel, the sustain pedal controller, and the modulation wheel controller on all 16 MIDI channels when playback is stopped. It also sends a "zero all continuous controllers" MIDI message which turns off other continuous controllers on newer synthesizers. If this setting is disabled, Cakewalk may occasionally set certain MIDI controller values to improper initial values when playback is subsequently resumed.

## Quantize, Chord Analyzer, and MIDI Event Filter MIDI plug-ins stops MIDI input from being heard

MFX MIDI plug-ins support real-time MIDI input. For example, you can add the Delay/Echo MIDI plug-in as a track insert effect, play your MIDI controller, and listen to the results of the plug-in. However, if you add the Quantize, Chord Analyzer, or MIDI Event Filter to a track insert, you will not hear the results of the effect(s).

## Chord Analyzer

When using the *Chord Analyzer* MIDI effect, during playback it will display the names of chords it sees based on Note events in the track.

However, you will see it display the chord names for notes that are slightly in the future -- before you actually hear them. The reason is that MIDI effects work slightly ahead of time, to ensure that playback is solid. This is partly based on the amount of time you have specified in **Options-Global-MIDI-Prepare Using N Millisecond Buffers**. In other words, if you decrease this value, Chord Analyzer will be "less psychic". However if you decrease it too much, playback may stop unexpectedly.

When the *Chord Analyzer* is processing your live MIDI playback (because the current track has the *Chord Analyzer* attached to it) then you will not see this behavior. In that case, obviously it cannot analyze what

you play until you actually play it. In addition, this behavior is not present when auditioning the *Chord Analyzer* as an offline command.

## Dump Request Macros

When you press the Receive button in the Sysx window, you may pick from a list of Dump Request Macros. These are short System Exclusive messages sent to a synthesizer to make it dump (send back) System Exclusive data. DRMs are defined in your CAKEWALK.INI file in the [Dump Request Macros] section. You may add your own DRMs or modify the ones that we have provided. Use the Windows Notepad to edit the file.

Please note that many DRMs have been donated by customers who are using the particular equipment. In some cases we have not been able to test those DRMs because we do not have access to that equipment. We are redistributing such DRMs on an as-is basis.

## Configuring Pro Audio to transmit MIDI Machine Control (MMC)

On page 15-14 in the Pro Audio 9 User's Guide, the "To Configure MIDI Machine Control…" section should read:

**To Configure MIDI Machine Control…**

1. Choose **Options-Project**, and click the Clock tab.
2. Select 'SMPTE/MTC' as the clock source.
3. Click the MIDI Out tab.
4. Check the Transmit MMC box.
5. Enter the ID of the master timing device in the Time Code Master's Unit ID box.
6. Click OK.

MMC is now enabled.

**To Disable MIDI Machine Control…**

1. Choose **Options-Project**, and click the MIDI Out tab.
2. Make sure the Transmit MMC box is not checked, and click OK.

MMC is disabled.

## Full MMC Auto Punch

Auto Punch works for all MMC devices that support on-the-fly recording. (In past versions of Pro Audio, Auto Punch was restricted to only those devices that supported the MMC Event command.)

If all MMC features work *except* for Auto Punch record mode, your equipment probably doesn't support the MMC Event command. (Consult with the manufacturer if you aren't sure.) You can overcome this limitation by adding the following line to the Options section of your **TTSSEQ.INI** file, which can be found in your Cakewalk Pro Audio directory:

```
[Options]
MMCUseEvent=0
```

Make sure you restart Pro Audio for the new setting to take effect. This mode causes Pro Audio to send MMC commands to perform automated punches during recording. This method is less precise than use of pre-programmed events, so only use this setting if necessary.

# General

## Heavy Scrolling of Dense MIDI Data Can Cause Playback To Slow Down

Heavy scrolling of dense MIDI data can cause playback to slow down dramatically when using certain video drivers and graphics “Hardware Acceleration” set to FULL in Windows. This can happen if, for example, a maximized Event List view for a very dense MIDI track (many Note events and pitch wheel events, etc.) is scrolling during playback.

The root of the problem is that some video hardware manufacturers intentionally hog the PCI bus to achieve better video performance, but real-time applications like Pro Audio get bitten by this. When you're working in an application like Pro Audio, timing is more important than screen updates.

To address this, click the **Start** button in Windows and go to **Settings-Control Panel-System-Performance-Graphics,** and lower or disable “Hardware acceleration”.

## Problems Operating on Windows NT SMP Machines

Pro Audio 9 may exhibit an occasional dropout during playback on multi-processor (SMP) machines (running Windows NT). Typically, the dropout occurs only upon the first playback attempt. If you subsequently rewind or start playback again, playback works properly as long as the project is open.

## Voxware Compression Toolkit ACM Codec Causes Problems Under Windows NT

If the the Voxware Compression Toolkit ACM (VCT3216.ACM) codec is installed in Windows NT, a system lock-up may occur when starting Pro Audio. A design flaw in this codec casues the lock-up when Pro Audio is enumerating the list of installed DirectX filters.

In order to start Pro Audio properly, you must disable or remove the Voxware Compression Toolkit ACM codec. Follow these steps to disable the codec:

1. Click the **Start** button on the Windows status bar, and go **to Settings-Control Panel-Multimedia-Devices**.
2. Expand the “Audio Compression Codecs” device tab.
3. Click on the entry named "Voxware Compression Toolkit"
4. Press **Properties...**
5. Select the radio button which says "Do not use this audio codec"
6. Press **OK** to close the Properties dialog
7. Press **OK** to close Multimedia

## Inserting Time/Pitch Stretch plug-in into Aux or Master bus Causes Stutter

Inserting the Time/Pitch Stretch audio plug-in into either the aux or master buses can cause projects to playback irregularly, stutter, skip, et al.

This is to be expected since time cannot be stretched in real-time. If you wish to only change the pitch in real-time, the Pitch Shifter plug-in is more efficient during playback.

## Problems Loading the Virtual Piano

If for some reason you are experiencing problems with loading the Virtual Piano, you will receive an error message stating that you need to change a line in the SYSTEM.INI file, which is located in the C:\Windows\System directory. The error message tells you to enter the following line:

Midi=Vpiano.drv

However, there may already be a Midi= entry (for example, Midi=mmsystems.drv), in which case you must enter Midi1=Vpiano.drv. If there is also an existing Midi1= entry, then you must choose the next available number (Midi2=Vpiano.drv, Midi3=Vpiano.drv, etc.).

## Problems with Yamaha SXG Soft Synth

If you experience problems with the Yamaha SGX soft synth driver when launching Pro Audio (one symptom is that Pro Audio will freeze on the startup splash screen), you should either 1) disable the driver, or 2) end Pro Audio by following these steps:

1. Press Ctrl-Alt-Delete
2. Select “Cakewalk Pro Audio”
3. Click “End Task”
4. Restart Pro Audio

Pro Audio should then start properly.

## Pro Audio Deluxe Tutorial Corrections

The TECHnique tutorials that are included on Musician’s Toolbox III were created in Pro Audio 8, and some menu commands have changed for Pro Audio 9. The following table shows you the correct commands to use in Pro Audio 9:

| **Musician’s Toolbox III Reference** | **Pro Audio 9 Equivalent** |
|---|---|
| Tools-MIDI Devices | Options-MIDI Devices |
| Tools-Audio Options | Options-Audio |
| Tools-Project Options | Options-Project |
| Tools-Global Options | Options-Global |
| Tools-Export Audio | Tools-Mixdown Audio-Export to File(s) |
| Tools-Colors | Options-Colors |
| Tools-Run CAL | Edit-Run CAL |
| Tools-Instruments | Options-Instruments |

| Tools-Key Bindings | Options-Key Bindings |
|---|---|

The basic tutorial content, however, still applies to Pro Audio 9.

## Cakewalk Audio Finder Tool Update

Previous versions of Pro Audio stored audio with a .WA~ extension. Pro Audio 9 uses the ,WAV extension. The Cakewalk Audio Finder Tool that is included on the Musician's Toolbox III can only work with .WA~ files. An updated version of Cakewalk Audio Finder Tool that works with .WAV files can be downloaded from ftp://ftp.cakewalk.com/pub/Patches/Cakewalk/cwaf.exe.

## Pasting Large Number of Repetitions May Give Unexpected Result

When an entire measure is selected, and you choose more than one repetition, it defaults to one extra tick offset in the alignment (the Interval field below Align to Measures). You need to change that to a zero offset to prevent the extra tick offset.

## Pasting Large Number of Repetitions May Take a While

Pasting large amounts of repetitions (for example, 999 repetitions) may take a long time. The computer may appear to be locked up, but be patient and wait a few seconds until the computer is finished with processing the data.

## Pan settings are not automatically set after recording Left Mono, Right Mono, or Stereo audio

In previous versions, Pro Audio would automatically pan tracks to "0" (hard left) and "127" (hard right) when tracks were assigned to record Left Mono and Right Mono respectively. Since Pro Audio 9 can record stereo on a single track, it no longer pans tracks automatically. All tracks will remain at the default setting of "---".

It is no longer desirable to automatically pan tracks, since you may, for example, wish to record guitar on the left channel and bass on the right channel. If you wish to record a single stereo source, simply make sure the track's Source setting is "Stereo…" instead of "Left…" or "Right…".

## MMC is only available when Pro Audio's clock is set to SMPTE/MTC

In the **Options-Project-MIDI Out** dialog it is possible to enable/disable MMC options regardless of the projct's clock setting. However, be aware that MMC is only available when Pro Audio's clock is set to SMPTE/MTC.

## Using SMPTE/MTC in Cakewalk Pro Audio

On page 15-9 of the Pro Audio *User's Guide*, the following statement is found:

"Pro Audio supports five timecode frame rates, which are normally used for the following applications:"

---

24 frames per second Film

| | |
|---|---|
| 25 frames per second | European video |
| 29.97 frames per second (drop) | NTSC color video |
| 30 frames per second (non-drop) | NTSC black & white video and most music-only applications |
| 30 frames per second (drop) | Rarely used |

The timecode choices found under the SMPTE/MTC section of **Options-Project-Clock** are the following:

24 frame
25 frame
30 drop-frame
30 non drop-frame

The following table should clear up any confusion regarding which Pro Audio setting to use with each possible type of external timecode.

| **External timecode type** | **Possible Applications** | **Recommended Pro Audio Setting** | **Notes** |
|---|---|---|---|
| 24 fps | Theatrical film worldwide, most other film | 24 Frame | Any film in North America or Japan will use this setting. |
| 25 fps<br>(also called EBU timecode) | PAL/SECAM video, video and some film in countries that use 50 Hz wall electricity | 25 Frame | This is the setting to use when synchronizing to any European video format. |
| 29.97 fps non drop-frame | NTSC non-broadcast and short length video in North America and Japan, some music projects | 30 Frame Non-drop | This setting will allow Pro Audio to synchronize perfectly to the external timecode, but the sequencer position displayed in the Now time and Big Time displays will gradually drift and become incorrect over long periods of time. The audio and MIDI synchronization to the external device will not be affected by this discrepancy. |
| 29.97 drop-frame | NTSC broadcast and long format video in North America and Japan | 30 Drop-frame | This setting will allow Pro Audio to synchronize perfectly to the external timecode, but the sequencer position displayed in the Now time and Big Time displays will gradually drift and become incorrect over long periods of time. The audio and MIDI synchronization to the external device will not be affected by this discrepancy. |
| 30 fps non drop-frame | Most music projects, some Film | 30 Frame Non-Drop | This is the best choice for any |

| | | | |
|---|---|---|---|
| | in North America | | music project and should be used unless the situation dictates otherwise. |
| 30 fps drop-frame | Not a Standard type of timecode, used rarely for speed correction and transfer problems in tape based systems | 30 Drop-Frame | |

Fps = frames per second
NTSC = National Television Standards Committee (USA)

## Layout of Aux Sends in Console View

The Console view supports a special CAKEWALK.INI setting:

**[Console View]**
**TileConsoleAuxSends=<1 or 0, default=1>**

When set to 0, the send sliders and enable buttons for an audio module are lined up top to bottom and do not wrap. Tiling occurs when you have more than 4 aux sends configured). This option is useful if you prefer to use more vertical space in the console than horizontal.

## Real-time Effects and Processor Speed

To properly use real-time effects in the Console view, you need a computer with a Pentium 200 MHz or faster processor. Even with such a powerful CPU, there is a limit on the number of effects you can use simultaneously. Furthermore, different types of effects are "more expensive" in terms of how much CPU they consume. For example, Reverb is relatively expensive, whereas the 2-band EQ effect is relatively inexpensive.

A good strategy is to use an expensive effect like Reverb in an Effects Loop (Aux section in the Console view)). That way, you can have several audio tracks share one effect. You can then individually adjust each track's send and return levels.

Finally, no matter how slow your CPU is, you can always use any effect by applying it to the audio as an off-line edit command. See the "Editing Audio" chapter in the *User's Guide* for more information on these commands.

## Managing Chord Libraries

The Chord Properties dialog box has in **Import** button that allows an existing chord library to be merged into your current chord library. This is especially useful when you install a new version of Pro Audio, but you've added chords of your own to the chord library that you don't want to lose.

The Pro Audio installation process will never overwrite the existing chord library, which is in file **CHORDS.LIW**; it will copy the new chord library to **CHORDNEW.LIW** if **CHORDS.LIW** already exists. You can then use the Chord dialog Import button to import the new chords from **CHORDNEW.LIW** without losing your own chords. The Import function checks each chord carefully to avoid creating duplicates.

Due to the large number of chords in the standard chord library, the Import function may take a long time to complete. If you are sure that you never added chords of your own to the library, then you can simply copy **CHORDNEW.LIW** to **CHORDS.LIW** to get the new library.

## Special Keys Reserved In Lyrics View and Effects Property Sheets

The shortcut keys for starting and stopping playback (SPACEBAR, P), recording (R), and rewinding (W), do not work in the Lyrics view, CAL view, or Effects property sheets, since these keys are used instead to enter text. When the Lyrics view, CAL view or an effects property sheet is the active window, use the buttons in the Transport toolbar to start, stop, record, and rewind.

## Sample StudioWare™ Panels

Cakewalk Pro Audio comes with sample StudioWare™ panels. Some of these are available by choosing **File-Open**, selecting *StudioWare* in the *Files of Type* list, then double-clicking on the desired StudioWare™ icon. Others are included within template (.TPL) files. Cakewalk Pro Audio 9 ships with these StudioWare™ panels (not available in the demo version, but can be downloaded from www.cakewalk.com):

| **Panel:** | **Format:** |
|---|---|
| AWE | .CakewalkStudioWare |
| EMU Orbit | .CakewalkStudioWare |
| General MIDI | .CakewalkStudioWare |
| Line 6 POD | .CakewalkStudioWare |
| Mackie OTTO 1604 | .CakewalkStudioWare and .TPL |
| MMC (A generic Panel for products that support MIDI Machine Control) | .CakewalkStudioWare |
| Novation BassStation BS-1 | .CakewalkStudioWare |
| Novation BassStation Rack BSR-1 | .CakewalkStudioWare |
| Novation DrumStationRack DRM-1 | .CakewalkStudioWare |
| Novation SuperBassStation SBR-1 | .CakewalkStudioWare |
| Roland GR-30 | .CakewalkStudioWare |
| Roland GS | .CakewalkStudioWare |
| Roland JV-2080 Effect | .CakewalkStudioWare |
| Roland JV-2080 EFX #1-#25 | .CakewalkStudioWare |
| Roland JV-2080 EFX #26-#40 | .CakewalkStudioWare |
| Roland JV-2080 Patch | .CakewalkStudioWare and .TPL |
| Roland SC-88Pro EFX #1-#34 | .CakewalkStudioWare and .TPL |
| Roland SC-88Pro EFX #35-#64 | .CakewalkStudioWare and .TPL |
| Roland UA-100 Compact Effects #1-#34 | .CakewalkStudioWare and .TPL |
| Roland UA-100 Compact Effects #35-#64 | .CakewalkStudioWare and .TPL |
| Roland UA-100 Full Effects | .CakewalkStudioWare and .TPL |
| Roland UA-100 Mixer | .CakewalkStudioWare |
| Roland UA-100 Utility Split Events | .CakewalkStudioWare |
| Roland UA-100 VT-X | .CakewalkStudioWare and .TPL |
| Roland VS-880 | .CakewalkStudioWare |
| Session 8 Input/Return section | .TPL (*Session 8 Internal Mix)* |
| Tascam RC-808 | .CakewalkStudioWare |
| Yamaha 01v | .CakewalkStudioWare |

| | |
|---|---|
| Yamaha 03D | .CakewalkStudioWare and .TPL |
| Yamaha ProMix 01 | .CakewalkStudioWare and .TPL |
| Yamaha SW1000MIXER | .CakewalkStudioWare |
| Yamaha SW1000EDIT | .CakewalkStudioWare |

# Supplemental StudioMix™ Information

This section contains additional information regarding the use of the StudioMix™ hardware surface.

## 200 ms Delay When Shifting Control Focus

When using the StudioMix™ hardware surface with Pro Audio, you will notice a 200ms delay in shifting focus from one control to another. For example, when you move a fader on the hardware surface, then go to move another one, the control focus (which determines the control whose value is reflected in the Console's Value field) will not change for 200ms. This is perfectly normal and is a byproduct of the accuracy mechanism that the faders employ to ensure they are at the correct position. If you wish to see the control's value in the Console's Value field, you will have to pause slightly (about 200ms) between manipulating controls.

## Enabling the StudioMix™ disables MIDI Thru on Channel 16

When the StudioMix™ hardware surface is enabled (in **Options-Global**), the MIDI Thru on MIDI channel 16 will be disabled in the sequencer engine for whichever port is specified in the StudioMix™ Configuration view. This prevents a feedback loop of control data between the software and the hardware surface

If you experience faders jittering or randomly generating data at any point during use, follow this procedure:
In **Options-Global**, disable the "*Enable StudioMix hardware*" option.
Turn the StudioMix™ Hardware off.
Wait one minute
Turn the StudioMix™ hardware on.
In **Options-Global**, enable the "*Enable StudioMix hardware*" option.

## View-Console Button Binding Disabled

You will notice that the **View-Console** button binding is disabled in the selections for the five programmable keys on the StudioMix™. This is because the Console view **must** be open in order to use the StudioMix™ hardware, and thus the command can cause the surface to no longer respond. If you wish to trigger this, you will need to do it from the computer keyboard or a MIDI message via a key binding located in the Tools menu.

## MIDI Channel 16 Must be Enabled

If the Console view does not respond to fader movements from the StudioMix™, go to **Options-Project-MIDI Input**, and make sure that channel 16 is enabled/checked.

## “RoughMix.cal” CAL routine assigned to 3rd Key Binding Button

By default, the “RoughMic.cal” CAL routine is assigned to the 3rd (from top) StudioMix™ Key Binding button. This CAL routine resets the volume and pan parameters for each track.

# Hardware Notes

## Removal of Audio Extensions Support for Certain Devices

Pro Audio 9 no longer includes extended “hardware-specific” support for the Session8, Audiomedia III, SSHDR-1, and DAL V-8 devices.

Going forward, Cakewalk software products will communicate, configure, and control the proprietary on-board hardware of advanced audio devices by using **AudioX**. AudioX is a newly emerging industry standard, introduced by Cakewalk in 1999, which enables audio applications (like Pro Audio 9) to directly access an audio device’s advanced onboard hardware through a standardized mechanism, rather than requiring special custom programming for each device. Over time, Cakewalk expects an increasing number of advanced audio devices to offer AudioX Support, which will allow their advanced onboard hardware features to be controlled directly from within Pro Audio 9. The first device to offer such AudioX Support is the Yamaha DSPFactory sound card (an AudioX driver for this device is included on the Pro Audio 9 CD).

## Yamaha DSP Factory Information

### Additional Documentation

For information on how to use the DSP Factory with Pro Audio, please read the **Yamaha DSP Factory.pdf** file that is located in the OnlineDoc directory on the Pro Audio CD.

### Using the Yamaha DSP Factory at higher bit rates

In order to use the Yamaha DSP Factory's higher bit rate support (i.e. 24-bit audio) you will need to make sure that the “Unpack > 16 bit audio " and “Left-justify unpacked data” options, found under **Options-Audio-Advanced** tab, are selected. This will allow Pro Audio to open the DSP Factory's wave drivers in the correct manner for > 16-bit support.

## Frontier Design WaveCenter Issue

When using the Frontier Design WaveCenter card, you may experience the following error messages:

> “CAKEWALK caused an invalid page fault in module CW9AUDDX.DLL…”

-and/or-

> “CAKEWALK caused an invalid page fault in module KERNEL32.DLL…”

This problem is related to the WaveCenter driver, and does not indicate a problem with Cakewalk. This problem will only occur when all WaveCenter drivers (ADAT+SPDIF) are enabled. The WaveCenter does

not allow you to open both ADAT and SPDIF channels at once, and this problem occurs when Pro Audio is trying to open all drivers for input monitor. To address this problem, disable either the ADAT or SPDIF driver.

## Changing the sampling rate within Pro Audio does not change the rate of the Soundscape Mixtreme card

Please note that changing the sampling rate within Pro Audio does not change the actual sampling rate on the Soundscape Mixtreme sound card. If you change the default 44.1kHz sampling rate in Pro Audio, you must also change the rate in the Soundscape Mixtreme mixer software.

## Limitations of Early Sound Blaster Cards

Certain early models of the Sound Blaster cannot do both MIDI input and wave output at the same time. Thus, if you've selected ″Creative Labs″ as a MIDI In device in Pro Audio 's **Tools-MIDI Devices** dialog, wave audio won't work.

Note that MIDI output will work fine along with wave audio: you can select ″Creative Labs″ from the list of MIDI Out devices. The problem occurs only when you've selected the ″Creative Labs″ MIDI In device.

## AWE Wave Synth and Audio Output

You cannot use the AWE as an audio device if you use the WaveSynth as a MIDI output device. Audio playback and the WaveSynth won't work at the same time, because the WaveSynth ties up the AWE audio device. In order to use the AWE as an audio device, go to **Tools-MIDI Devices**, and make sure the WaveSynth is not selected as an output device.

This is a limitation of the AWE/WaveSynth driver, not Pro Audio.

## MIDI Time Piece tips and tricks

Below are comments to help you use the MIDI Time Piece (MTP) made by Mark of the Unicorn (MOTU.)

### MIDI output port restriction

A problem with the initial release of Windows 95 restricts the number of MIDI output ports to 11. There is no known work-around for this problem. This means that you can't access all 16 ports when using a pair of MTPs.

### System Exclusive tips

″FAST 1X″ mode of the MTP may exhibit strange behavior with System Exclusive send. This is a result of the MTP's ″middle-man″ processing techniques. The MTP Windows driver won't send System Exclusive through the MTP byte by byte; instead, the MTP stores System Exclusive in a buffer to be sent out in larger, faster packets. This causes checksum errors on a Sound Canvas, for example.

We are able to send System Exclusive to the Sound Canvas in FAST 1X mode by lowering the **TTSSEQ.INI**'s `SysxSendPacketSize` parameter to 344. However, note that if you want to try this yourself, you'll need to find a number that works on your computer system. In short, use FAST 1X mode with System Exclusive ″at your own risk.″

### MOTU starting template

MOTU provides a starting template for their setup software called **WINDOWS.MTP**. Make sure that this is loaded before using the MTP as an interface in Cakewalk Pro Audio. The MTP driver will access the MTP's current state as configured by **WINDOWS.MTP** rather than reinitializing it. This will let you customize the provided template using MOTU's MTP software, and then access this setup in the Windows driver.

### Connecting two MTPs

When connecting two MTPs together for 16 input/output ports, put the unit assigned to ports 1-8 first in the chain. Then connect the network cable from the back of the first unit to the network input on the second unit (ports 9-16.)

### Using the sync input port

Since the MTP has a 17th port for sync input, you will see this in the Cakewalk Pro Audio **MIDI Devices** list as a separate input port. Cakewalk Pro Audio supports a maximum of 16 input ports. If you have two MTPs using all 16 input ports and are using SMPTE sync, deactivate one input port in **MIDI Devices** so that you can use the 16th available input port as your sync port. Also, sync audio input should be read on the first MTP. This configuration is based on the routings of the provided WINDOWS.MTP template.

## Gravis UltraSound

Cakewalk Pro Audio supports sound cards that use ″patch caching,″ such as the Gravis UltraSound. These cards load sounds from your hard drive as needed. If you are using this kind of sound card, the **Update Patch Cache** command on the **Realtime** menu will be enabled. When you choose this command, Pro Audio examines your song to see which patch numbers you have used. It gives this list to the sound card, which loads the required sounds. This process can take some time, so Pro Audio lets you decide when to use **Update Patch Cache** to ″recalculate″ the patches used. (Pro Audio also performs the ″recalculation″ when you use **File-Open** or **File-New** to open or clear a song file, and when you switch between multiple open files.)

If you are using the Play List view, please be aware that there may be a delay between songs, because the sounds required for the next song need to be loaded. This doesn’t mean that there is a problem with Pro Audio. This is just the way such a sound card must work.

# Instrument Definitions

Instrument definitions help Pro Audio understand the way a particular synthesizer works. This enables Pro Audio to adjust some of its features, making them easier for you to use.
If a definition doesn't exist for your particular synthesizer, that doesn't mean that it's incompatible with Pro Audio. Certain features (like choosing patches) won't be quite as easy or automatic, but they won't be impossible. Remember too that you can create your own instrument definitions for use with your MIDI gear.

For a full explanation of instrument definitions, please see the sections on the **Tools-Instruments** command in the *User’s Guide*.

## Upgrading from an earlier version

Pro Audio SETUP does *not* overwrite your existing **MASTER.INS** file. That file contains the instrument definitions that Pro Audio loads every time it starts. SETUP installs new **.INS** files for each supported manufacturer. These files contain the latest complete set of available instrument definitions.

To learn how to import any of these .INS files, see *"Importing Instrument Definitions"* on page 10-3 in the *User's Guide.*

## Roland SR-JV80 series expansion boards

Cakewalk Pro Audio 9 includes instrument definitions for many of the Roland SR-JV80 Series expansion boards. In order to use these patch lists properly, you must add banks to existing Roland JV/XP instrument definitions.

Note: The Roland JV/XP instrument definitions that are included with Pro Audio 9 have been updated to include all of the expansion banks for the corresponding instrument. This makes it easier to assign a specific SR-JV80 bank to a JV/XP instrument definition. If you are using a JV/XP instrument definition from a previous version of Pro Audio, you might want to import the updated version that is included with Pro Audio 8.0.

This section will show you how to add banks from these expansion boards.

1. Open Pro Audio, and go to **Options-Instruments.** Click on the Define button to open the **Define Instruments and Names** dialog box.
2. Click the Import button.
3. Select ROLAND.INS, then click Open.
4. Select one of the "Roland SR-JV80…" instrument definitions, then click OK.

   The selected *Roland SR-JV80* patch names have now been imported, but this instrument definition will not work by itself. It is just a placeholder for the individual expansion board patch names. You can safely delete the imported *Roland SR-JV80* instrument definition if you wish, since the individual Patch Name lists will remain. To use the expansion board Patch Names, you must add the patch name lists to an existing Roland JV/XP instrument definition (e.g., Roland JV-1080, XP-50, or XP-80.)

   The expansion board slot bank numbers are:

| Bank #: | Expansion Board Slot: |
|---|---|
| 10752 | A1 (patches 1-128) |
| 10753 | A2 (patches 129-255) |
| 10754 | B1 (patches 1-128) |
| 10755 | B2 (patches 129-255) |
| 10756 | C1 (patches 1-128) |
| 10757 | C2 (patches 129-255) |
| 10758 | D1 (patches 1-128) |
| 10759 | D2 (patches 129-255) |
| 10760 | E1 (patches 1-128) |
| 10761 | E2 (patches 129-255) |
| 10762 | F1 (patches 1-128) |
| 10763 | F2 (patches 129-255) |
| 10764 | G1 (patches 1-128) |

| | |
|---|---|
| 10765 | G2 (patches 129-255) |
| 10766 | H1 (patches 1-128) |
| 10767 | H2 (patches 129-255) |

The steps below show you how to add one of the expansion board Patch Name lists to an existing instrument definition. For example, if you have the Roland XP-50 with the SR-JV80-04 Vintage Synth expansion board installed in slot A, do the following:

1. Import the Roland XP-50 and Roland SR-JV80 Expansion Boards instrument definitions (if you haven't already done so.)
2. Expand the Roland XP-50 branch until you can see the *Patch Names for Banks* branch.
3. Expand the *Names* tree so you can see all the individual *Patch Name* branches.
4. Drag the *SR-JV80-04 Vintage Synth 1-128* list from the *Names* tree to the *10752 = XP-A1* branch in the *Patch Names for Banks* folder. Release the mouse button. The proper bank number is already displayed (10752), so click OK.

   Note: If you're using an older JV/XP instrument definition that doesn't already include the expansion banks, drag the *SR-JV80-04 Vintage Synth 1-128* list from the *Names* tree to the *Patch Names for Banks* folder (or over an existing bank.) Release the mouse button, and enter the proper bank number. According to the list above, we know that patches 1-128 in expansion slot A uses bank # 10752, so enter that number.

5. Drag the *SR-JV80-04 Vintage Synth 129-255* list from the *Names* tree to the *10753 = XP-A2* branch in the *Patch Names for Banks* folder. Release the mouse button. The proper bank number is already displayed (10753), so click OK.

You can repeat this process for any other expansion boards that you have.