

Cakewalk Pro Audio™ 4.01

README.WRI

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I. General Information

Press F1 for Context-Sensitive Help

Remember that you may press the **F1** function key at any time to get help related to what you're doing in Cakewalk Pro Audio.

CompuServe

An excellent alternative to technical support via phone or mail is to use CompuServe. Type "GO MIDI AVEN" and switch to our section (number 3). Messages are usually answered within 24 hours during weekdays by Cakewalk Music Software staff and experienced users. A variety of files are available for download. Type "GO MIDI" for questions and discussion about MIDI topics and products not related to Cakewalk.

Also available in our Library 3 of the MIDI AVEN forum are a number of customer-contributed files. These include instrument definitions, dump request macros, and more.

Fax Back Hotline

The Cakewalk Music Software Fax Back Hotline provides you with the latest technical and descriptive information about Cakewalk Music Software products. When you call the Fax Back Hotline using a touch tone phone, you use a menu system to request documents that will be faxed to you promptly.

Pressing **1** at the main menu lets you order an index of available documents. Follow the prompts to request one of two indexes: the index of marketing and sales documents (999) or the index of technical support documents (998). Both indexes describe the available documents in their categories and identify each by a three-digit code.

In the United States, the phone number of the Fax Back Hotline is (800) 370-6912. International callers must use the US phone number (617) 431-9412.

Driver Included with Cakewalk Pro Audio

Most drivers you will use are either included with Windows 3.1 or provided by the manufacturer of the MIDI interface or sound card. However, we have included one driver on the Cakewalk Pro Audio diskette.

IMPORTANT! If you have a SCSI hard drive controller be sure to read thoroughly the section below titled, "WARNING: SCSI Hard Drives"!

Roland MPU-401 and compatibles

Windows 3.1 includes a driver for MPU-401 compatible MIDI interfaces. You may want to use our driver instead. It can be opened for output by more than one program at the same time, so that you don't have to quit one MIDI program before starting another.

Important: Be sure to **Remove** the Microsoft driver before you **Add** ours. If both drivers are installed, you will experience problems.

Please see the Cakewalk Pro Audio *Installation Guide* for instructions on adding or removing drivers using the Drivers icon of the Windows Control Panel. Insert the Cakewalk Pro Audio diskette in the drive when prompted.

II. What's new in Cakewalk Pro Audio 4.01.

CAL

CAL (Cakewalk Application Language) is now updated to handle the new selection methods available in CWP. Our primary goal with CAL is to be compatible with all Cakewalk Professional 3.0 CAL files.

Because of changes in the way selection works in CWP 4.0, some additional CAL functions have been added, and the behavior of some existing CAL functions has changed. Please refer to the "CAL function reference" in the online help for more details.

Auto Shuttle

In Cakewalk Pro Audio, changing the selection does *not* immediately update the Auto Shuttle times as was the case in CPW 3.0. This is intentional: Doing so would have undesirable results in CWP 4.0 because "the selection" is more flexible. For example, let's say you are looping all of measure 1. In the Piano Roll, you want to drag and drop some notes while still playing and looping. You lasso select notes on beats 2 and 3. The selection has changed -- should Auto Shuttle immediately "collapse" down to looping just beats 2 and 3? No. That would be annoying. This is why Auto Shuttle was "disconnected" from selection changes in CWP 4.0.

However, in 4.00 this meant that the only way you could change the Auto Shuttle times was to type in new values. That's not very convenient.

To address both issues, CWP 4.01 lets you quickly reload Auto Shuttle with the selection times. To do so, simply turn on Auto Shuttle by clicking the loop button. (When Auto Shuttle is already on, simply click the button off and on again quickly.)

Synchronization of digital audio to SMPTE

CWP 4.01 can play and record digital audio while in **SMPTE sync** mode, as well in internal sync mode. If the external clock drifts or changes rate, CWP will "stretch" or "shrink" the digital audio in order to stay in sync. Note that this stretching or shrinking of the audio may introduce slight pitch changes, but these pitch changes will be negligible if the external clock is reasonably reliable.

Also, if the external clock is particularly fast or slow, you may notice more drastic pitch changes and CWP races to "catch up" with the external clock. These pitch changes should quiet down once CWP "locks in" to the external clock's exact position.

When a song contains Audio events, using SMPTE or Internal sync places an additional burden on the computer's CPU during playback. For best digital audio performance, use Audio sync whenever possible.

If your sequence contains MIDI data only (no digital audio), then we recommend that you do not use the Audio sync mode. In the absence of audio, Internal sync mode is the most efficient playback method. Also, please note that playing audio under Internal sync mode is recommended only in circumstances where CWP has difficulties detecting your audio hardware.

Note: CWPA 4.01 will not properly support audio playback under **MIDI sync**. The audio will play, but will freewheel at its own rate.

Full volume and pan for audio tracks

Audio tracks are now pannable to any position in the stereo field, and will respond to controller 10 to change the panning in real-time. The values of controller 10 are assigned discrete increments with 8 steps in either direction.

Individual audio track volume is now supported via the track Volume parameter and controller 7. If you assign a channel to an audio track, its volume and pan controllers will become available in the faders view.

Realtime changes to volume and pan take effect only after a slight delay. To minimize this delay, you may reduce the number of Mix Buffers in Settings | Audio... This is recommended only for faster machines.

As each audio event is prepared for mixdown, its velocity is added with the track VelPlus, and then track Volume is used to scale the result, producing a final event volume. This volume is computed as follows:

If Velocity+VelPlus is greater than zero, $\text{Volume} = \text{TrackVolume} * ((\text{Velocity} + \text{VelPlus}) / 127)$
Otherwise, Volume = 0

Previously in CWPA 4.0, the volume and pan of the analog stereo output from your sound card was controlled by the track volume and pan parameters. Since these parameters are now being used in much more flexible way, CWPA 4.01 will no longer attempt to control the sound card's analog output. To do this, please use the mixer applet that came bundled with your sound card.

Recording modes for audio

Previously, CWPA 4.0 forced all audio recording to be done "sound-on-sound" mode. This restriction has been lifted in CWPA 4.01, and the full complement of replace, auto-punch and loop-recording modes is now available.

Full MMC auto-punch

Auto-punch is now possible for all MMC devices that support on-the-fly recording. In the past, MMC auto-punch was restricted to only those devices which supported the MMC Event command.

If all MMC features work *except* for Auto-Punch record mode, your equipment probably doesn't support the 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 Cakewalk for the new setting to take effect. This mode causes Cakewalk to send MMC commands on-the-fly to perform automated punches during record. This method is less precise than use of pre-programmed events, so only use this setting if necessary.

Chord dialog Import button

This allows an existing chord library to be merged into your current chord library. This is especially useful when you install a new version of Cakewalk and you've added chords of your own to the chord library that you don't want to lose.

Cakewalk installation 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 never added chords of your own to the library, then you can simply copy **CHORDNEW.LIW** to **CHORDS.LIW** to get the new library.

Note: The chord library in 4.01 is identical to the one in 4.0 -- no new chords were added. So the above information is more for future reference.

Panic Strength

The **Panic** button 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, Panic uses controller 123 only.

This may be insufficient for some older synthesizers. If so, set PanicStrength=1. To do so, choose Settings | Initialization Files or add to the [WINCAKE] section of **WINCAKE.INI**.

Panic will send a note-off message for every note on every channel of every port. This makes Panic much slower but will resolve the problem.

Improved performance while recording audio in Windows 95

CWPA 4.01 has some additional mechanisms that should help to relieve some of the problems relating the Windows 95 disk cache during recording.

Miscellaneous

- * More robust when encountering unusable audio drivers. Playback-only drivers (such as the PC speaker driver) are ignored, as are 8-bit drivers (such as SBPro). Furthermore, having both a "bad" and "good" driver installed at the same time (such as SBPro and MediaVision on Win95) should no longer cause any problems.
- * Shift+Click will extend/shrink time selections in Audio view.
- * Clip take numbers are reset after each File Load or File New.
- * Track up/down buttons in Piano Roll and Controllers View
- * Faders view Import button
- * "Delete hole" for cut and delete commands option is available when using time-selection mode in the Track view.

III. Operating Digidesign Session 8 with CWSA 4.01.

If you are using Digidesign Session 8 with Cakewalk Pro Audio, please read the following sections carefully. New Session 8 features for CWSA 4.01 are:

- * The Session 8 882 I/O interface is now fully supported.
- * Now fully compatible with the latest **SCSI_DSP.DLL** (version 2.03). We recommend that users obtain this latest driver from Digidesign.
- * Now has built-in support for Session 8 routing, mixing and equalization.

Setting up CWSA 4.01 with Session 8

Do not use Wave Profiler

Do not run the Wave Profiler utility if you're using Session 8. Instead, modify **WINCAKE.INI** as described below.

TTSAUDS8.DLL

Make sure Cakewalk Pro Audio is not running. Run Notepad, and open **WINCAKE.INI**. Locate the following line:

```
[Wincake]
AudExtDLL=C:\CAKEAUD\TTSAUDMM.DLL
```

Change the line by replacing **TTSAUDMM.DLL** with **TTSAUDS8.DLL**. Note that your path for **TTSAUDS8.DLL** may be something other than **C:\CAKEAUD**.

```
[Wincake]
AudExtDLL=C:\CAKEAUD\TTSAUDS8.DLL
```

SCSI_DSP.DLL

Cakewalk Pro Audio 4.01 requires **SCSI_DSP.DLL**, which comes included with the Session 8 software. This file must be copied into your Cakewalk Pro Audio directory. If you're using Windows 95, you must use version 2.03 which is included in Digidesign's update for Windows 95.

Running SESSION8.EXE concurrently with Cakewalk Pro Audio

If you need to run **SESSION8.EXE** at the same time as Cakewalk Pro Audio, you must do so in the following way. It is important to do these steps in exactly the order listed:

- 1) Start Cakewalk Pro Audio.
- 2) Start **SESSION8.EXE**.
- 3) Press the **Play** button in **SESSION8.EXE**. Playback should start for a moment, then immediately stop.
- 4) Press ALT+TAB to get back into Cakewalk Pro Audio.

IMPORTANT: When running these programs in tandem, you *must* start the two programs in this order *and* press **Play** in Session 8.

Built-in support for Session 8 routing, mixing and equalization

Cakewalk Pro Audio 4.01 now has support for Session 8 routing, level controls and equalization. Most Session 8 users should find that there is no longer a need to run **SESSION8.EXE** in tandem with Cakewalk Pro Audio.

If you decide to run **SESSION8.EXE** in tandem with Cakewalk Pro Audio, please avoid "mixing and matching" the two programs when setting audio routing or mixing.

If you must run both programs simultaneously, we recommend that you do all of your mixing and routing from Session 8 instead of CWPA.

IMPORTANT: If for some reason you absolutely must run **SESSION8.EXE**, do not attempt to record or playback from within it while Cakewalk Pro Audio is running.

Settings | Audio ... | Routing

Pressing this button will open a routing window that is nearly identical in function to the Session 8 routing page. One minor difference is the procedure for assigning inserts.

To assign an insert to an input, click on the button next to the input you'd like to assign. Repeated clicks on the button will cycle thru all available inserts.

Settings made in this routing window are retained between Cakewalk sessions, and are saved in **T TSAUDS8.INI**.

Settings | Audio ... | EQ

Pressing this button will open a window that allows you to configure the Session 8's realtime equalizers.

To assign an EQ to a track, enter the desired track number in that equalizer's row. Entering a zero, or leaving the field blank, will deassign the equalizer. EQ's may be "stacked" by assigning each of them to the same track.

Settings made in this window are retained between Cakewalk sessions, and are saved in **T TSAUDS8.INI**.

Session 8 audio controllers

CWPA 4.01 comes with template file and instrument definition that will make the full set of Session 8 volume controls available directly within Cakewalk.

The controller names for the "Session8 Audio" instrument may be found in **SRC.INS**. To use these controller names, please do the following:

1. Choose Settings | Assign Instruments..., and then press Define Instruments....
2. Press Import... and choose **SRC.INS** from the list of files, then press OK.
3. Choose Session8 Audio from the list of instruments, and press OK.
4. Press Define Names... and choose the Controller Names radio-button.
5. Set List: to Standard, and Based on List: to Session8 Audio, and press Close.
6. Close Define Names, Close Define Instruments, and press OK.

The following controller names are defined by "Session8 Audio":

Controller #	Controller Name	Description
---------------------	------------------------	--------------------

7	Volume	audio track playback volume
10	Pan	audio track playback pan
16	Main/L	left main stereo volume
17	Main/R	right main stereo volume
18	Cue/L	left master cue volume
19	Cue/R	right master cue volume
20	Cue	audio track cue level
21	SEND 1 (input)	effects send 1 level, from input/return
22	SEND 2 (input)	effects send 2 level, from input/return
23	SEND 3 (input)	effects send 3 level, from input/return
24	SEND 4 (input)	effects send 4 level, from input/return
25	Volume (input)	input/return volume
26	Pan (input)	input/return pan
27	SEND 1 (output)	effects send 1 level, from playback
28	SEND 2 (output)	effects send 2 level, from playback
29	SEND 3 (output)	effects send 3 level, from playback
30	SEND 4 (output)	effects send 4 level, from playback
80	Send 1 Master	master volume for effects send 1
81	Send 2 Master	master volume for effects send 2
82	Send 3 Master	master volume for effects send 3
83	Send 4 Master	master volume for effects send 4

IV. Hardware-Specific Information

WARNING: SCSI Hard Drives

The installation of most Windows MIDI drivers also installs a virtual device driver ("VxD"). For example, this file is **VMPUD.386** for our **MPU.DRV** driver (MPU-401). This VxD file is only used by Windows in 386 Enhanced Mode.

The purpose of the VxD

The Twelve Tone Systems VxD reads the card's base address from **SYSTEM.INI** (which you set using Control Panel Driver Setup) and traps accesses from that address to that address plus 10h (10 hex or 16 decimal). The goal of this VxD is simply to prevent DOS programs from accessing the card and interfering with the Windows driver's handling of the card while Windows is running. If an access is detected, the VxD displays an error message and simulates a dead card to the "offending" DOS program. The Twelve Tone Systems VxD is based on the original Microsoft VxD sample code and works the same way over the same address range.

Why are addresses trapped from the base address to the base address plus 10h, when supposedly the MPU-compatible cards only use addresses from the base address to the base address plus 1? Many MPU-compatible cards, such as the original Roland MPU-401 and Music Quest cards, actually respond to other addresses within that 10h range. When set at base address 330h, the Music Quest PC MIDI card has been reported to respond to 332h-337h as well, and the MPU-401 has been reported to respond to 338h-339h. Apparently, these cards do not decode all the address lines. Thus the safest, most-complete approach when dealing with MPU-compatible cards is for the VxD trap the whole range of 10h addresses.

The potential problem with SCSI cards

Unfortunately, it has also been reported that if the access comes from a SCSI card trying to access a SCSI hard drive within DOS, the error message never appears and DOS hangs. **Hard drive data loss is a possibility. SCSI card owners should beware of setting their SCSI card address anywhere within this range.** If it doesn't conflict with the card directly, then it will conflict with the VxD like this in enhanced mode if it's installed. If you're sure it doesn't conflict with your card, you can decide to forego the VxD protection by removing the VxD.

Removing a VxD .386 file

If you decide it's safe to remove the VxD, here's how to do it. Although Control Panel's driver installation knows how to install the VxD file associated with a driver, its driver removal does not know how to remove it. Therefore, an installed VxD will remain forever installed, unless you remove it manually. To do this, edit **SYSTEM.INI** with a text editor like the Windows Notepad. Find the line DEVICE=VMPUD.386 or DEVICE=VMQXD.386 under the section **[386Enh]** and delete it. Save the file and restart Windows. If you ever re-install the driver using Control Panel, you'll have to do this again.

Audio Events and MIDI Input Using Sound Blaster

Certain older models of the Sound Blaster cannot do both MIDI input and wave output at the same time. (However, the latest Sound Blaster cards, such as the Sound Blaster 16, are fully capable of performing MIDI input and wave output simultaneously.) Thus, if you've selected "Creative Labs" as a MIDI In device in Cakewalk's **Settings/MIDI Devices** dialog, wave audio

won't work. This includes Cakewalk's special Wave and MCIcmd events as well as wave audio attempted by any other Windows application running while the "Creative Labs" MIDI In device is open. This is not a limitation of Cakewalk: while *any* program is using the older "Creative Labs" MIDI In device, wave audio will not 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.

Striping a Tape with "Smart FSK" or CLS

If you are striping a tape with a form of "Smart FSK" you need to check that an option in **Settings | MIDI Out** is turned on while you are striping the tape. This option is **Transmit Start/Continue/Stop/Clock**, which is off by default. If this option isn't checked, striping won't be successful. Why? These forms of sync basically encode MIDI Sync information in a special code on tape. Therefore to create the code you must have Cakewalk emit MIDI Sync by checking the **Transmit Start/Continue/Stop/Clock** option. Once you stripe the tape, remember that in order to have Cakewalk play in sync to Smart FSK, you need to choose **Settings | Clock** and pick **MIDI Sync** (or press the control bar clock button until it reads **MIDI**).

MIDI Time Piece Tips and Tricks

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

In Windows, input ports are separate. This means that the System Exclusive receive buffers that Cakewalk uses are distributed among all the input ports. Using Cakewalk's **MIDI Devices** command (on the **Settings** menu), you may need to de-select all input ports except for the one receiving the System Exclusive. This ensures that there are enough buffers for the desired port. After the System Exclusive dump, you can return to **MIDI Devices** to switch the input port back to receive your MIDI controller's data.

"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 is not allowed to send System Exclusive through the MTP byte by byte. 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 `SendSysxPacketSize` parameter to 344. This number will differ for individual computer systems. Use FAST 1X mode with System Exclusive "at your own risk."

MOTU's MTP setup software is a DOS program and doesn't currently run together with the Windows driver in Windows 386 Enhanced or Standard modes. To use the MOTU setup program, exit Windows altogether.

MOTU provides a starting template for their setup software called **WINDOWS.MTP**. This should be loaded (hint: see item 3) 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 allow you to customize the provided template using MOTU's MTP software, and then access this setup in the Windows driver.

When connecting two MTP's 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 this unit to the network input on the second unit (ports 9-16).

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 option. Cakewalk Pro Audio supports a maximum of 16 input ports. If you have two MTP's using all 16 input ports and are using SMPTE sync, one input port should be deactivated in **MIDI Devices** in favor of using that 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.

Patch Names

Cakewalk Pro Audio lets you refer to patches using names instead of numbers. Names are provided for the factory preset patches of various kinds of synthesizers. With some synthesizers, you may need to configure the synthesizer in a certain way before the patches corresponding to the names are available. You'll find some tips to get you started below.

CT-470 Upper Tone Bank

These are the default patches, numbers 0..109.

CT-470 Lower Tone Bank

You must press the SELECT button on the CT-470 to change it to the lower position before the patches with these names will be available on the CT-470.

CT-470 Beat Bank

The CT-470's Channel 4 button must be assigned to the Beat Bank and its sync mode set to external clock. Please see the Casio manual for more information about the Beat Bank. In Cakewalk, choose the **MIDI Out** command from the **Settings** menu and check the option, **Use Start, Never Continue**.

D110 Preset Tones

Uses the default Timbre Bank.

VFX 2.1 ROM Programs

Be sure to select the ROM bank on the VFX or VFX-SD.

MIDIVERB III

These names are for the preset effects 0..99. Customized internal effects will respond to program changes 100..127. (If you have internal effects with MIDIVERB III program numbers 128 and higher, you can use its mapping feature to bring those down into the 0..127 range, perhaps substituting presets that you don't use.)

Hewlett-Packard LaserJet 4

Printing from within the Staff view may lead to General Protection Faults in the LaserJet 4 Windows driver. Obtaining the latest version of the driver may solve this problem.

As this is written, the latest version of the driver is 31.V1.26. (To see the version number of the driver from within Cakewalk, choose **Print Setup**, select the LaserJet 4, press the **Options** button, and then press the **About** button.)

To obtain the latest version of the driver, please call HP Driver Distribution at 303-353-7650.

Gravis UltraSound

Cakewalk Pro Audio supports sound cards that use "patch caching," like 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, Cakewalk 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 Cakewalk lets you control when to "recalculate" the patches used, by you issuing the **Update Patch Cache** command. (Cakewalk also performs the "recalculation" when you use **Open** or **New** to open or clear a song file.)

If you are using the Play List view, please be aware that you may experience a delay between songs due to the need to load the sounds required for the next song. This does not reflect any potential problem with Cakewalk. It is simply the way such a sound card must work.

Yamaha TG-500

The following tips will help you use the Yamaha TG-500 with Cakewalk. Please refer to the TG-500 manual for more specific information.

Global channel

Make sure the TG-500 is set to receive on global MIDI channel 1.

Instrument definition

In Cakewalk's **Settings | Instruments** command, assign the "TG-500" definition to the correct Port/Channel. Since the TG-500 is a 16 channel multitimbral instrument, this will be all 16 MIDI channels for whatever Port you've connected the TG-500 to.

The instrument definition includes banks of patches for all three TG-500 modes (explained in the next section). If you are working in Multi mode, you should disregard the banks that begin with either "Yamaha TG-500 VCE..." or "Yamaha TG-500 PFM...". These only apply if you're working in either Voice or Performance mode, respectively. The banks that do apply for Multi mode are the ones numbered 32-37, 39, 40, 42, 43, 80-82, and 84-86.

TG-500 modes

The TG-500 has three modes of operation: **Voice**, **Performance**, and **Multi**. With a sequencer you typically want to work in **Multi** mode. To choose Multi mode, send the following Controller messages to the unit on this global channel (MIDI channel 1):

<u>time</u>	<u>message</u>	<u>value</u>
1:02:000	Ctrl 0	0
1:02:001	Ctrl 32	16
1:02:002	Patch	0..15

The Controller 0 and 32 bank select messages will put the unit in Multi mode and the Patch change message will call up the corresponding Multi. Use the Event List view to insert these in a track. Also, make sure they start at a time later than 1:01:000, otherwise when you save the Cakewalk file they'll be sucked into the track Bank and Patch parameters. Yamaha suggests that these Controller and Patch change messages all happen within the first measure of each song, and the actual song starts on measure 2.

The TG-500 instantly memorizes any changes made to a Multi on its front panel. You may, however, wish to store the initial patch changes in your Cakewalk tracks - just in case. For example,

To select a VOICE within a MULTI from the INTERNAL 1 bank:

<u>time</u>	<u>message</u>	<u>value</u>
1:03:000	Ctrl 0	0
1:03:001	Ctrl 32	32
1:03:002	Patch	0..63

To select a PERFORMANCE within a MULTI from the PRESET 2 bank:

<u>time</u>	<u>message</u>	<u>value</u>
1:03:000	Ctrl 0	0
1:03:001	Ctrl 32	85
1:03:002	Patch	0..63

Roland SC-88

The following information will help you use the Roland SC-88 with Cakewalk. Please refer to the SC-88 manual for more specific information.

Understanding SC-88 Bank Selection

The instrument definitions for the SC-88 make it easy for you to select patches in the upper sound banks. Patch and note names lists are provided. Bank numbers have been calculated and associated to patch and note names lists in the SC-88 instrument definitions. In short, the SC-88's two synthesizer modes are fully supported and all you need to do is select banks and patches.

The Roland SC-88 Super Sound Canvas is a very flexible sound module. There are three basic methods of using the SC-88's bank selection in Cakewalk.

The original Roland GS bank selection is done by using only Controller 0 events to select banks. This lets you simply type the number of the Controller 0 value directly into the Bank column for each track.

The SC-88's bank selection is different. It needs to be done using both Controller 0 *and* Controller 32 events. (Cakewalk calls this the Normal bank selection method and it is used by many synthesizers.) Bank selection using both Controller 0 and 32 messages will require that the bank numbers be different than the original GS values. The following formula is used to calculate the Normal bank selection value in the SC-88 instrument definitions:

$$(Controller0 * 128) + Controller32 = Normal\ bank\ number$$

Use of the Normal bank selection method is required because the SC-88 contains two independent synthesizer modules. One is the SC-55 mkII emulation map (an earlier incarnation of Roland GS) and the other is the new SC-88 which contains higher resolution samples and many more variation sounds in its upper banks. The two modules can be selected individually per channel by use of the Control 32 event (with a value of 1 to choose the SC-55 mkII and a value of 2 to choose the SC-88). The SC-88's bank selection scheme boils down to this:

$$(BankNumber * 128) + <1 \text{ or } 2> = \text{Normal bank number}$$

Examples:

To select Bank 8 on the SC-88, the bank number is 1026:

$$(8 * 128) + 2 = 1026$$

To select Bank 8 on the SC-55 mkII map, the bank number is 1025:

$$(8 * 128) + 1 = 1025$$

Using Cakewalk's SC-88 Instrument Definitions

Method 1

Use this method if you want full control over all bank selection capabilities of the SC-88 and are not afraid of getting your hands dirty.

Using the **Settings | Instruments** command, associate your non-drum channels to the Roland GS SC-88 Modes 1&2 definition. Next, associate channel 10 to the SC-88 GS Drumsets definition. If you are not familiar with the use of this dialog box, you can press F1 while in the box for instructions.

To change the bank for a track, double-click on the Bank parameter. The Track Parameters dialog will appear. Use the drop down list box for the Bank item to choose the bank. The banks have numbers that may seem bizarre at first, but remember that you're using the Normal bank selection method. You may ignore the numbers and simply choose the banks based on their names.

The Track Parameters dialog box is the easiest place to select a bank by its name. The bank number value will be automatically entered into the Track pane's Bank column. (You can memorize these hideous numbers and enter them manually in the Bank cell of a track, but selecting them from a list is much easier.)

Methods 2 and 3

You might find it more straightforward to select banks if they are separated by synthesizer emulation modes. Use Methods 2 or 3 if you would like to easily choose from either the SC-88 or SC-55 mkII modes without having to sift through all combined banks in the pull down Track Parameters dialog box list.

Use method 2 if you have only one MIDI output port and can access only the first input port on the SC-88. Use method 3 if you can access both input ports on the SC-88.

Method 2. This method makes use of one port where the SC-88, SC-55 and SC-88 drum sets share the available 16 MIDI channels. If you only have one MIDI interface, you will use this method.

Use **Settings | Instruments** to associate Port 1/Channels 1..9 to the Roland GS SC-88 Mode 2 (SC-88) definition. Associate Port 1/Channel 10 to Roland GS SC-88 Drumsets and Port 1/Channels 11..16 to Roland GS SC-88 mkII Mode 1 (SC-55 mkII).

In this case, you will need to keep in mind those hard-wired channel assignments when working on your song. The SC-88 will always be on channels 1-9 and the SC-55 will always be on channels 11-16. Drumsets for both modes will be on channel 10.

Method 3. Use this method if you are going to use both MIDI ports on the SC-88.

The SC-88 is capable of using two 16 channel MIDI ports for a total of 32 independent MIDI channels. To hook up both MIDI ports of the SC-88, please refer to the Roland user's guide.

Use **Settings | Instruments** to associate the Roland GS SC-88 Mode 2 (SC-88) definition to all channels of the first port and the Roland GS SC-88 mkII Mode 1 (SC-55) to the second port. Remember that channel 10 should be associated to the Roland GS SC-88 Drumsets for each port.

In this case, all channels on port 1 will be the SC-88, and all channels on port 2 will be the SC-55.

Additional Notes on the SC-88 and Cakewalk

1. Any files created using the new Roland GS SC-88 bank selection methods will be downward compatible with the original GS specifications when creating .MID files.

2. Cakewalk *.WRK files created using Cakewalk's SC-88 instrument definitions will not produce files which are compatible with the original Roland GS and Roland GS mkII instrument definitions in Cakewalk.

Earlier GS synthesizers don't use Controller 32 because there aren't any synthesizer modes to switch between.

The bank numbers for the original GS instrument definitions use the Controller 0 Only method of bank selection. The numbers which appear in the Bank cell of a track are the actual Controller 0 values specified in the Roland manual.

3. Some of the SC-88 piano and string sounds are much thinner than the SC-55 counterparts. You can compare them to see which ones fit best in your music.

4. Check out the drum set bank selection in the Roland GS SC-88 Drumsets definition. You can use the SC-88 drums (most SC-88 drums are way better - you can do snare rolls without note cutoff problems) or the SC-55 drums (the mkII Power drum set has a snare drum that is bigger sounding).

5. You'll know that you're in the SC-55 emulation mode if you manually advance to the active Part/Channel on the SC-88's front panel and the SC-55 Map light is on. You can also tell by the double-quote mark which appears just before the sound's name on the SC-88 display.

Note: You must switch to the part manually using the front panel Part button to see its parameters.

6. The SC-88 can be used as a Windows MIDI interface which connects to your PC's serial port. Check the Roland user's guide for more information on Windows device drivers and cabling instructions. Be aware that this interface is only active on the MIDI A (first MIDI port) portion of

the SC-88. MIDI B (second MIDI port) must be accessed via MIDI cables.

V. Sample Files

The following sample files are installed automatically by Cakewalk Pro Audio SETUP.

DNA Grooves (.grv)

A sample groove file, **DNA_DFCW.GRV**, is included. This contains approximately a dozen groove patterns for use with the Groove Quantize command. Please see the **WC.TXT** file for more information.

Work Files (.wrk)

Various Cakewalk song files for your learning and entertainment pleasure!

Template Files (.tpl)

Example of custom template configurations used to create other similar .WRK files.

Bundle File (.bun)

RIFFUNK.BUN is an example file of digital audio integrated with a .WRK file. This file demonstrates playback of audio and MIDI tracks in total synchronization!

CAL Files (.cal)

Examples of various program files for the Cakewalk Application Language.

VI. Upgrading from version 2.0

Using your old PATCHES.INI file

This section matters only if you created your own patch name lists for version 2.0. This section tells you how to move those lists into version 4.0.

Version 4.0 has a more sophisticated feature. The **Settings | Patch Names** command has been replaced with **Settings | Instruments**. Instrument definitions include a set of patch names, plus other information like controller names and note names (see the *User's Guide* for a full explanation).

To move your custom patch name lists into version 4.0:

Overview: **MASTER.INS** is a new file used by version 4.0 that contains all patch names, controller names, note names, and bank select information. In other words, **MASTER.INS** contains complete instrument definitions.

When converting custom patch name lists from your **PATCHES.INI** file to be included in **MASTER.INS**, you will need to use a text editor.

Following are the steps you need to take:

1. Copy your **PATCHES.INI** to a file with an **.INS** extension. For example, **OLD.INS**.
2. Open the file in a text editor to perform the remaining steps.
3. Delete everything from the file except the patch names you created. In other words, delete all the patch name lists that were supplied with version 2.0, leaving behind only the patch name lists that you added. This will save time in the following steps.

Note: You may also wish to check whether version 4.0 supplies patch names that you needed to create for version 2.0. A number of new ones have been added.

4. Add this line to the very start of the file -- before all of your patch name lists:

.Patch Names

It is important that you include the period ('.') at the start of the phrase, and place this line at the very start of your file.

5. Add this line to the very end of your file -- after all of your patch name lists:

.Instrument Definitions

It is important that you include the period ('.') at the start of the phrase, and place this line at the end of the file.

6. Below the **.Instrument Definitions** line, you must add a small instrument definition

for each patch name list. For example, if you have a patch name list titled "Whizbang 100", add the following instrument definition:

```
[Whizbang 100]  
Patch[*]=Whizbang 100
```

The character between the brackets [] is an asterisk: *.

Now, you have created an instrument definition that uses your patch name list. You may use the same title ("Whizbang 100") both for the patch name list and for the instrument definition.

Repeat this step for each patch name list represented in the **.Patch Names** section.

7. Once you have completed step 6, start Cakewalk Pro Audio 4.0 and import the file:

- (a) Choose **Settings | Instruments**.
- (b) In the **Assign Instruments** dialog, press the **Define Instruments** button.
- (c) In the **Define Instruments** dialog, press the Import button.
- (d) Supply the name of your file. In our example, this is **OLD.INS**.
- (e) Press **OK**.
- (f) If the titles of any of your own instrument definition or patch name lists have the same name as those supplied with version 4.0, you will be asked if you want to replace the existing definition. You may wish to answer **No**. Version 4.0 supplies instrument definitions that are more complete than simply a set of patch names.
- (g) When the import completes, press **OK** to return to the **Assign Instruments** dialog. Assign your new instrument definition(s) to whatever Port/Channels you wish. Press **OK**.

VII. Instrument definitions

For a full explanation of instrument definitions, please see the documentation for the **Settings | Instruments** command. Briefly, instrument definitions help Cakewalk understand the way a particular synthesizer works. This enables Cakewalk to adjust some of its features, to make them easier for you to use.

If a definition doesn't exist for your particular synthesizer, that doesn't mean it's completely incompatible with Cakewalk. You can use it with Cakewalk. Certain features (like choosing patches) won't be quite as easy or automatic, but they won't be impossible.

Upgrading from version 3.0x to 4.0

SETUP does not overwrite your existing **MASTER.INS** file. That file contains the instrument definitions that Cakewalk loads every time it starts. SETUP installs a new file, called **SRC.INS**, which contains the latest complete set of available instrument definitions.

To import any of these, see "Importing Instrument Definitions", next.

Importing instrument definitions

Cakewalk Pro Audio allows you to import individual instruments from a ***.INS** file containing many definitions. After you supply the name of the ***.INS** file, you pick from a list of all the instruments defined in that file.

To import instrument definitions, take the following steps:

1. Choose the **Instruments** command from the **Settings** menu.
2. In the Assign Instruments dialog, press the **Define Instruments** button.
3. In the Define Instruments dialog, press the **Import** button.
4. Pick the name of the file containing the instrument definitions you wish to import. For example, pick **SRC.INS**. Press **OK**.
5. Pick one or more instrument definitions from the list. Click on each name to select it. Click again to un-select it. Press **OK**.
6. Each definition you selected will be imported, one by one. If a definition of the same name already exists, you will be asked if you wish to replace the existing one with the new one. Generally, you should answer **Yes**. Answer **No** only if you customized the existing definition in some way and do not want it to be replaced by the imported definition.
7. Press **OK** to exit the Define Instruments dialog.
8. Press **OK** to exit the Assign Instruments dialog.

VIII. Other notes

Virtual Piano

Cakewalk Pro Audio includes Virtual Piano™, an on-screen musical keyboard. Virtual Piano turns your computer keyboard and mouse into a simple MIDI instrument for playing notes. You may use it with any Windows program, including Cakewalk Pro Audio, as a substitute for an external MIDI keyboard.

Cakewalk Pro Audio SETUP automatically installs the Virtual Piano application and its companion MIDI driver.

Important: You must perform an additional step to make sure Cakewalk will accept input from the Virtual Piano MIDI driver. Choose **Settings | MIDI Devices**, and select the Virtual Piano driver in the list of input ports. This input port is how the Virtual Piano sends notes to Cakewalk.

You can start Virtual Piano from Cakewalk by choosing the **Virtual Piano** command from the **Realtime** menu. The shortcut key for this command is CONTROL+K. Virtual Piano uses the same key to switch back to Cakewalk. As a result, you can move between the two programs quickly by typing CONTROL+K.

For more information about Virtual Piano, choose **Contents** from the Virtual Piano **Help** menu and you will see a list of available topics.

Lyrics view, Cal view, and special keys

The shortcut keys for starting and stopping playback (SPACEBAR, P), recording (R), and rewinding (W), do not work in some circumstances. If the Lyrics view or Cal view are active, then you use these keys to type spaces and characters. For example, you need to be able to type spaces in your lyrics, so the SPACEBAR let you do that instead of starting and stopping playback!

Note that if the Lyrics view or Cal view is minimized (an icon) and you click on the icon, that becomes the active view. The title beneath the icon is highlighted. Even though you are not displaying the window at its normal size, it is still the active window. Thus the shortcut keys for playback, recording, and rewinding do not work. Make another window active (for example by clicking on it) to regain the use of these keys as shortcuts.

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 WINCAKE.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. Additional user-supplied DRMs may be available on BBSs like CompuServe.

Mail Support

Cakewalk Pro Audio allows sending files via Microsoft Mail or any other mail system that offers the MAPI Simple Mail Interface. If you have installed such a mail system, Cakewalk Pro Audio will automatically add a **Send** command to its **File** menu. Choosing **Send** will call up the standard MAPI dialog box with the current Cakewalk Pro Audio song file attached to the message.

IX. Acknowledgments

We would like to thank the following customers who have contributed instrument definitions or System Exclusive dump request macros:

Dump request macros

360 Systems 8x8 Midi Patcher - Bob Camp
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Alesis Quadraverb - Sergio Blostein and Chris Connell
Alesis QuadraSynth - Robert Rampley
Alesis Quadraverb GT - Robert Rampley
Casio CZ-1000 - Steve Quinlan
Digital Music MX-8 - Jim Kometani
Digitech GSP-21 - Legend Russell C. Cole
E-Mu Proteus - Bob Camp
E-Mu Proteus FX - Andrew Fiddian-Green
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Ensoniq TS-10/12 - David UZ Hahn
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Korg DDD-1 - Sergio Blostein
Korg M3R - Sergio Blostein
Korg T1 - Sergio Blostein
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Roland JD-800 - Stephen Tapp
Roland JD-990 - G. W. Greene
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Yamaha DX-21 - Christopher Moreno
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Yamaha RX5 - Sergio Blostein
Yamaha RX-11 - Sergio Blostein
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Korg 03R/W - Chinh Nguyen Do
Korg 05R/W - Art Slater
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Korg T3 - Paul Spencer
Korg Wavestation SR - CIS 76075,1726

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Korg X5DR - Michael Oski
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Roland JV-1080: Rhythm - Mark Bridges
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Yamaha SY-99 - Jean-Philippe Poibeau
Yamaha TG-33 - Deb Rogowski
Yamaha TG-500 - Paul Fuller & William H. McCloskey
Yamaha XG - Morten Saether

There is no additional information at this time for README.WRI.