

# Soft SampleCell Guide

**Version 3.0 for Macintosh**

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# contents

<b>Chapter 1. Getting Started With Soft SampleCell</b> . . . . .	1
System Requirements . . . . .	1
Conventions Used in This Guide . . . . .	2
Installing Soft SampleCell . . . . .	3
Authorizing Soft SampleCell . . . . .	3
Deauthorizing Soft SampleCell . . . . .	4
Configuring OMS . . . . .	4
Configuring Soft SampleCell . . . . .	5
Testing Playback . . . . .	7
Enabling Background MIDI Playback and Input Devices . . . . .	8
<b>Chapter 2. Using Banks and Instruments</b> . . . . .	9
SampleCell File Types . . . . .	9
CD-ROM File Structure . . . . .	10
Opening a Bank . . . . .	10
Working with Banks . . . . .	12
Multiple Banks . . . . .	14
Alternate Data Entry Methods . . . . .	15
Setting MIDI Channel . . . . .	16
Assigning Audio Outputs . . . . .	17
Instrument Panning . . . . .	17
Instrument Tuning . . . . .	19
Saving a Bank . . . . .	21
Saving an Instrument . . . . .	22

<b>Chapter 3. Creating and Modifying Instruments</b> . . . . .	23
Instrument Basics . . . . .	23
Creating New Instruments . . . . .	24
Sample Maps . . . . .	25
Adding/Importing Samples . . . . .	27
Key Group Editing . . . . .	28
Editing Sample-Specific Parameters . . . . .	31
Loop Window . . . . .	32
Sample Parameters Window . . . . .	33
Misc Parameters Window . . . . .	35
Envelopes . . . . .	40
Matrix Modulation . . . . .	43
Modulators . . . . .	45
Trackers . . . . .	47
<b>Chapter 4. Sample Editing and Looping</b> . . . . .	49
Loop Types . . . . .	49
The Loop Window . . . . .	50
Creating Loops . . . . .	55
Trimming Audio . . . . .	59
Selecting Loop Window Colors . . . . .	59
Selecting a Different Sample Editor . . . . .	59
<b>Chapter 5. Advanced Techniques</b> . . . . .	61
Templates . . . . .	61
Using Trackers . . . . .	63
Filters . . . . .	67
Ensemble Instrument Performance Ideas . . . . .	68
Other Effects and Tricks . . . . .	70

<b>Chapter 6. Soft SampleCell Menus</b> .....	73
File Menu .....	73
Edit Menu .....	74
Instrument Menu .....	75
SampleCell Menu .....	78
Preferences .....	80
Windows Menu .....	82
<b>Appendix A. Using Soft SampleCell with Pro Tools</b> .....	83
Configuring Pro Tools for MIDI .....	84
Using DirectConnect .....	85
<b>Appendix B. Recording Samples</b> .....	89
Sampling with Pro Tools .....	89
Using Sound Libraries .....	89
<b>Appendix C. MIDI Controller Numbers</b> .....	91
<b>Index</b> .....	95



## chapter 1

# Getting Started With Soft SampleCell

Thank you for purchasing Soft SampleCell. Soft SampleCell adds powerful sample editing and playback capabilities to your computer.

You can use sounds from CD-ROM sample libraries or import your own digitally-recorded sounds and edit them to meet your needs. You can then control sample playback from any MIDI device or MIDI software.

When used with Pro Tools, Soft SampleCell becomes a fully-integrated, dedicated sampler within the Pro Tools 24-bit recording, editing and mixing environment.

### **Soft SampleCell features include:**

- Up to 64 voices
- Sample RAM limited only by computer RAM (up to 1 gigabyte)
- 16- and 24-bit mono and stereo audio playback
- 44.1 and 48 kHz audio playback
- 4-pole, 24 dB per octave, resonant lowpass filter
- 3 envelopes, 2 LFOs and 1 filter per voice
- Unique modulation matrix
- Integrated loop editor
- Tracking generator
- Total setup recall when used with DirectConnect

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## **System Requirements**

To use Soft SampleCell you'll need:

- ◆ A Digidesign-qualified Power Macintosh computer with:
  - At least 32 MB RAM; 128 MB RAM recommended
  - Additional RAM is highly recommended if you plan to use other audio or MIDI applications concurrently with Soft SampleCell; virtual memory is not supported
- ◆ Apple System software version 9.0.4 or later
- ◆ OMS (Open Music System) software version 2.3.8 or later (included with Soft SampleCell)
- ◆ A 17-inch or larger color monitor; black and white monitors are not supported
- ◆ A Digidesign-qualified floppy drive, along with the appropriate driver software (included on the Soft SampleCell Installer CD-ROM); required to authorize Soft SampleCell

## MIDI Requirements

You must install and configure OMS (Open Music System) software version 2.3.8 or later to use Soft SampleCell with MIDI devices. See “Configuring OMS” on page 4.

Both USB and serial MIDI interfaces work effectively with Soft SampleCell. Serial MIDI interfaces offer the best possible MIDI timing.

◆ Serial MIDI interfaces require either a Mac serial port or a qualified modem-to-serial port adapter (thereby not using a PCI slot). Refer to Digidesign's Web site for supported adapters.

## Additional Equipment

Depending on your needs, the following items may also be required:

- An audio monitoring system such as a mixer, power amplifier, and speakers
- MIDI controller keyboard (or other MIDI controller device) and MIDI cables to trigger playback of Soft SampleCell using MIDI
- MIDI sequencing software compatible with OMS

**▲** *If you are using Soft SampleCell with Mark of the Unicorn's Digital Performer or other software that is compatible with FreeMIDI™, you must set Free MIDI to OMS compatibility mode. For details, refer to the FreeMIDI documentation.*

## Compatibility Information

For the latest compatibility information, visit Digidesign's Web site:

[www.digidesign.com/compato/](http://www.digidesign.com/compato/)

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## Conventions Used in This Guide

Digidesign guides use the following conventions to indicate menu choices and key commands:

Convention	Action
File > Save Session	Choose Save Session from the File menu
Control+N	While pressing the Control key, press the N key
Option-click	While pressing the Option key, click the mouse button

The following symbols are used to highlight important information:

 *User Tips are helpful hints for getting the most from your system.*

 *Important Notices include information that could affect your data or the performance of your system.*

 *Cross References point to related sections in Digidesign guides.*

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## Installing Soft SampleCell

To install Soft SampleCell, use the Installer CD-ROM. There are two install options:

◆ *Soft SampleCell* Select this option to install Soft SampleCell.

*Digi System Files.* Select this option only if you need to update an older, pre-Pro Tools 5.1 version DAE and other Digidesign System files.

### To install Soft SampleCell:

- 1 Insert the Installer CD-ROM in your CD-ROM drive and double-click the Installer.
- 2 Select the desired install option.
- 3 Click Install.
- 4 When installation is complete, click Quit.

## Register and Receive a Backup Authorizer Diskette

When you send in the Registration Card, Digidesign will mail you an additional authorization disk for Soft SampleCell. If you are an international customer, refer to the list of international distributors included with your registration package.

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## Authorizing Soft SampleCell

When you launch Soft SampleCell Editor for the first time after installing, you will be prompted to authorize Soft SampleCell.

The Authorizer diskette authorizes a single system to use Soft SampleCell. This diskette also allows you to reclaim the authorization if necessary.

 *Do not lose the Authorizer diskette. You will not be able to complete an installation without it. Keep the disk in a safe place.*

### To authorize Soft SampleCell:

- 1 Launch the Soft SampleCell Editor application.
- 2 Insert the Authorizer diskette when prompted.
- 3 When authorization is complete, click Done.

 *You can use the Authorizer diskette as a backup authorization key when you have used all available authorizations. Launch Soft SampleCell Editor and insert the diskette when prompted for authorization.*

---

## Deauthorizing Soft SampleCell

If you want to authorize a different hard drive to use Soft SampleCell, you must reclaim the original Soft SampleCell authorization key since authorization is limited to a single drive.

Similarly, if you plan to low-level reformat a hard drive containing an authorization key, you must first reclaim the authorization or it may be lost.

### To deauthorize Soft SampleCell:

- 1 Insert the Authorizer diskette into the diskette drive.
- 2 Double-click the DeAuthorizer application.
- 3 Click Setup. From the Authorization pop-up menu, select Remove, then select the appropriate hard drive. (The drive with the authorization key is indicated by a “key” icon.)
- 4 Click Remove.
- 5 When deauthorization is complete, click Done, then Quit to return to the Finder.

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## Configuring OMS

To use Soft SampleCell with OMS-compatible MIDI applications, or to use the MIDI services in the Soft SampleCell Editor, you’ll need to install and configure the Open Music System (OMS).

OMS keeps track of how your MIDI studio is connected and configured and stores this information in Studio Setup documents, which are edited in the OMS Setup application. OMS also routes MIDI between Soft SampleCell, OMS-compatible sequencers, and MIDI interfaces.

### Before you begin:

- If not yet installed, install the OMS software included with your Soft SampleCell package.
- If OMS is already installed and configured, you’ll need to update your current Studio Setup to recognize Soft SampleCell.

### To update your current OMS Studio Setup:

- 1 Connect your MIDI interface, keyboard controllers, and other MIDI devices. Refer to their documentation if necessary.
- 2 Turn on the MIDI devices and start your computer.
- 3 Launch the OMS Setup application.
- 4 Choose Studio > MIDI Cards and Interfaces.

OMS searches for and locates your MIDI devices and the Soft SampleCell driver and displays them in your Studio Setup document.

- 5 Double-click the Soft SampleCell icon to configure its MIDI Device Info dialog.

Check that it is set it to receive on all channels (1–16), unless you only want it to receive MIDI on certain channels, then click OK.

- 6 Choose File > Save and Make Current, then Quit.

### To create a new OMS Studio Setup:

- 1 Connect your MIDI interface, keyboard controllers, and other MIDI devices. Refer to their documentation if necessary.
- 2 Turn on the MIDI devices and start your computer.
- 3 Launch the OMS Setup application.

#### 4 Choose File > New Studio Setup.

OMS searches for and locates your MIDI devices and the Soft SampleCell driver and displays them in your Studio Setup document.

#### 5 Double-click the Soft SampleCell icon to configure its MIDI Device Info dialog.

Check that it is set to receive on all channels (1–16), unless you only want it to receive MIDI on certain channels, then click OK.

#### 6 Choose File > Save and Make Current, then Quit.

### In Soft SampleCell:

#### 1 Launch Soft SampleCell Editor.

#### 2 Choose SampleCell > OMS Input Devices.

#### 3 Select the MIDI controller and other devices that you will use to play Soft SampleCell.

#### 4 To improve MIDI performance, disable any devices that you will not use for MIDI control of Soft SampleCell.

## Using Free MIDI

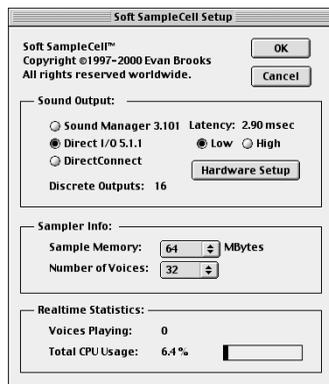
If you are using Soft SampleCell with software that is compatible with Mark of the Unicorn's FreeMIDI™, you must set Free MIDI to OMS compatibility mode. For details on configuration, refer to the FreeMIDI documentation.

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## Configuring Soft SampleCell

Before you can use Soft SampleCell, you must configure several parameters such as voice polyphony, sample memory and sound output using the Soft SampleCell Setup dialog.

Following are descriptions of these parameters and instructions for configuring them.



*Soft SampleCell Setup dialog*

## Sound Output

There are three sound output options:

**DirectConnect** Choose this option if you have Digidesign audio hardware and want to use Soft SampleCell within Pro Tools or another DAE-compatible digital audio application such as Logic Audio or Digital Performer. In this case, you will use your Digidesign audio interface for audio connections. DirectConnect allows up to 32 independent Soft SampleCell outputs to be routed within DAE-compatible applications.

**Direct I/O** Choose this option if you have Digidesign audio hardware but wish to run Soft SampleCell as a stand-alone application. You will still use your Digidesign audio interface for audio connections. Direct I/O allows up to 16 analog or digital outputs for Soft SampleCell using Digidesign hardware.

**Sound Manager** Choose this option if you do not have Digidesign audio hardware. In this case, you will use the sound output jack of your Macintosh for audio connections. The Macintosh Sound Manager allows a maximum of 2 Soft SampleCell outputs.

⚠ *Soft SampleCell defaults to Sound Manager output when first installed. Use the Soft SampleCell Setup dialog to change to a different sound output option if desired.*

## Audio Latency

Because Soft SampleCell uses the processor in your computer for audio tasks, a small amount of audio delay, or *latency*, will occur depending on the sound output option you choose. The lower the latency setting the higher the load on your CPU.

You can set the latency to Low or High. Selecting Low latency reduces the amount of audio delay, but may also reduce Soft SampleCell voice polyphony. Selecting High latency increases the amount of audio delay, but allows maximum Soft SampleCell voice polyphony.

⚠ *When DirectConnect is chosen as the sound output option, you cannot manually set audio latency. DirectConnect manages audio latency automatically. See the Pro Tools Reference Guide for more information.*

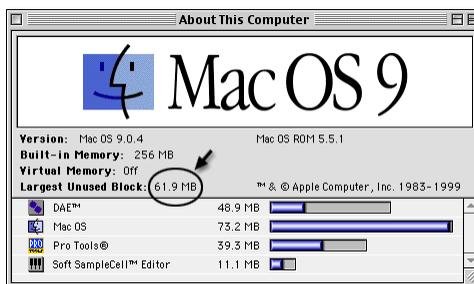
## Sample Memory

The amount of RAM available for sample playback is limited only by the amount of RAM in your computer. You can set a memory allocation limit using the Sample Memory pop-up. Avoid setting this limit too high or other applications (including Mac OS) may not have enough memory to function properly.

⚠ *Setting Sample Memory to “All” allocates all memory in your computer to sample playback, leaving none for other applications. This may result in system performance problems. It is recommended that you leave a least 10% of total system RAM free for other applications.*

### To check available RAM:

- 1 Open Soft SampleCell Editor and all other audio applications you’ll be using simultaneously.
- 2 Go to the Finder and choose About This Computer from the Apple menu. The amount of available RAM is shown as “Largest Unused Block.” For reliable system performance, set Soft SampleCell’s Sample Memory allocation limit well below this amount.



### Checking available RAM

## Voice Polyphony

Soft Sample provides a maximum of 64 voices of sample playback. However, maximum polyphony depends on the speed of your computer. Slower CPUs may provide fewer than 64 voices. For optimum system performance, allocate only as many voices as you need.

### To configure Soft SampleCell:

- 1 Launch Soft SampleCell Editor.
- 2 Choose SampleCell > Soft SampleCell Setup.
- 3 Choose the appropriate Sound Output option.

If you choose Direct I/O, click Hardware Setup and configure output options for your particular Digidesign card and interface, then click Done.

If you choose Direct I/O or Sound Manager, select either High or Low latency depending on your performance needs.

- 4 Using the Sample Memory pop-up, set the desired memory allocation limit for sample playback.
- 5 Using the Number of Voices pop-up, set the desired number of voices.
- 6 Click OK.

**⚠** *Allocating more voices than your CPU can power may result in pops and clicks during playback. Choose SampleCell > Soft SampleCell Setup and if Soft SampleCell is using more than 50% of the CPU, use the Soft SampleCell Setup dialog to reduce voice polyphony.*

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## Testing Playback

You can use the *Soundcheck* demo Bank included with Soft SampleCell to do a quick check of your audio and MIDI connections.

**⚠** *If you have chosen DirectConnect as your sound output option, set it to Direct I/O or Sound Manager for this test. After the test, you can reset it to DirectConnect.*

### To test your audio and MIDI connections:

- 1 In the Soft SampleCell Editor application, choose File > Open.
- 2 Select the *Soundcheck* demo Bank and click Open.
- 3 Double-click the *Basic Left* Instrument to open the Sample Map window.
- 4 In the Sample Map window, click on the keyboard to hear sample playback.
- 5 Play your MIDI keyboard controller and confirm MIDI communication.
- 6 Make sure the right and left channels of your audio outputs are correctly connected by clicking the Solo button and playing the *Basic Left* Instrument. Repeat for the *Basic Right* Instrument.

---

## Enabling Background MIDI Playback and Input Devices

Soft SampleCell Editor routes MIDI (via OMS) from your keyboard controller to any Instruments assigned to the channel sent by your keyboard.

You can also trigger Soft SampleCell Instruments from a MIDI keyboard when Soft SampleCell Editor is *not* the current application by enabling background MIDI operation in OMS MIDI Setup. This option also allows an OMS-compatible sequencer to continue MIDI playback when *it* is no longer the current application—thereby allowing you to audition changes in Soft SampleCell Editor while the sequencer continues playing.

Keep in mind that when Run MIDI in Background is enabled, and both the Soft SampleCell Editor and your sequencer are echoing MIDI thru to the same Instrument, double-notes will occur.

To avoid this problem, make sure the Pass MIDI Thru in Background option is deselected in the Soft SampleCell Preferences dialog if you have enabled MIDI in Background in OMS MIDI Setup.

### To enable background MIDI:

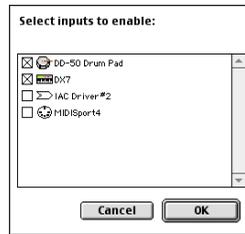
- 1 In Soft SampleCell Editor, choose SampleCell > Preferences.
- 2 Choose SampleCell > MIDI Setup.
- 3 In the OMS MIDI Setup dialog, select Run MIDI in Background.
- 4 Click OK.

## Enabling OMS Input Devices

If you are using Soft SampleCell as a stand-alone application, you will need to enable your MIDI controller and other MIDI input devices so that you can use them with Soft SampleCell.

### To enable MIDI input devices:

- 1 In the Soft SampleCell Editor application, choose SampleCell > OMS Input Devices.



### Enabling OMS input devices

- 2 Select the devices that you want to use and click OK.

## chapter 2

# Using Banks and Instruments

This chapter covers the fundamentals of using Banks and Instruments in Soft SampleCell Editor.

For information on creating Instruments and Banks from scratch, using your own samples, refer to Chapter 3, “Creating and Modifying Instruments.”

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## SampleCell File Types

### Samples

A *sample* is the raw waveform data of a sampled sound.



**Sample file**

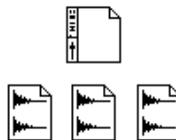
SampleCell has no direct provision for recording digital waveforms, or samples. A great number of samples are available from third party sound developers.

 *Samples can also be recorded with Pro Tools. See Appendix B, “Recording Samples.”*

Samples cannot be directly played with Soft SampleCell—they must be loaded into an Instrument.

### Instruments

An *Instrument* consists of one or more samples that are assigned to different ranges of keys and velocities.

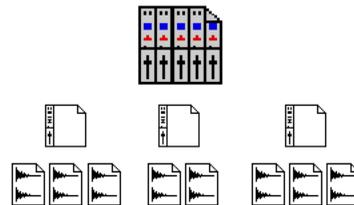


**Instrument (top) and sample files**

Many modulation options such as envelopes and LFOs can be employed at the Instrument level.

### Banks

Instruments are combined into performance groups called *Banks*.



**Bank (top), Instrument and sample files**

Banks are where various Instruments are assigned to outputs, panned, and attenuated. Each Instrument in a Bank can be assigned to respond to a different MIDI channel and range of notes for use as a multi-timbral sound module with a sequencer (or other device capable of transmitting multiple MIDI channels).

Instruments cannot be opened into multiple Banks, open at the same time, but can be copied and pasted.

Banks are good for organizing all the Instruments needed by a song or MIDI sequence into a single document, or for putting all the elements of a submix (different stems or music/effects instruments) together on one screen view.

**⚠** *To avoid stuck notes, stop your sequencer when opening Bank or Instrument files, or while opening the Edit Loops window.*

## CD-ROM File Structure

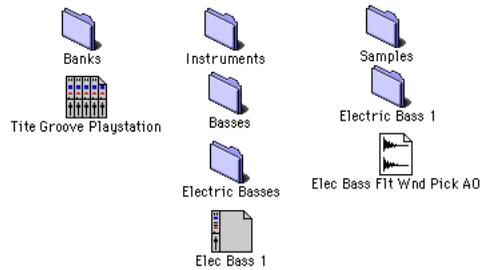
The file structure on many third-party sample library CD-ROMs reflects the hierarchy outlined in the previous section. Samples, Instruments, and Banks are all kept in folders that bear those respective titles.

A Banks folder typically contains Bank files, each of which generally contains one or more Instruments.

An Instruments folder typically contains Instrument files, each of which is linked to its associated samples.

These nested folders make it easier to keep track of the Instruments stored on the CD-ROM by category, such as Guitars, Synths, or Woodwinds.

A Samples folder typically contains only raw samples, organized according to their Instruments.



### File hierarchy

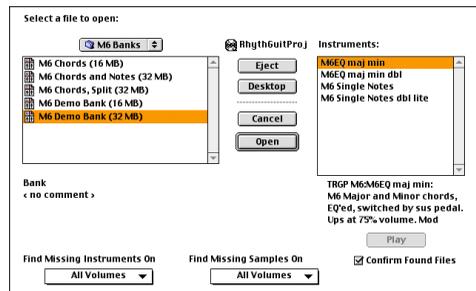
When you work with your own samples, it is a good idea to create folders for Banks, Instruments, and Samples in the same manner, to keep everything organized.

## Opening a Bank

To open an existing Bank, follow the instructions.

### To load an existing Bank:

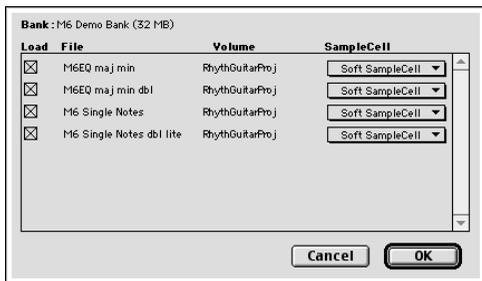
- 1 Choose File > Open.



### Opening a Bank

2 Select the Bank and click Open.

All selected instruments will be loaded. To skip specific instruments, deselect them.



Select Instrument dialog



*If you are using Soft SampleCell in addition to a Digidesign SampleCell II card, you can use the SampleCell pop-up menu in the dialog to choose where you want the Instrument loaded.*

3 Click OK.

## Insufficient RAM

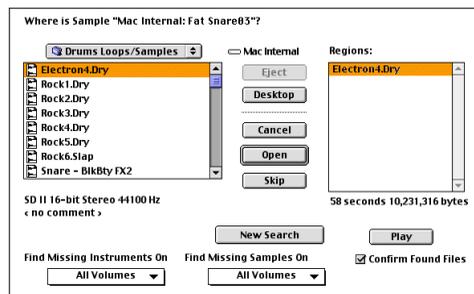
If there is not enough RAM available to load all samples for one or more Instruments in a Bank, Instruments will be loaded without sample data. You can check for unloaded samples by opening the Sample Map window for a specific Instrument. (See "Sample Maps" on page 25.) Unloaded samples are indicated by italics.

## Finding Files

If Soft SampleCell cannot locate an Instrument or sample needed to load a Bank or Instrument, the Find File dialog appears.

### To locate missing files:

- Choose the search destination in the pop-up menus at the bottom of this dialog and click New Search.



Find File dialog

If the "Preview Using Sound Manager" preference is selected in the SampleCell Preferences dialog, you can audition samples in the Find File dialog by selecting a sample file's name and clicking Play. Click the button a second time to stop playback.

## Sample Loading Priority

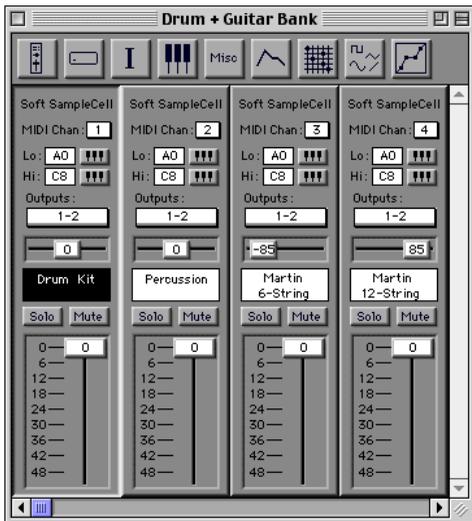
Once a Bank of Instruments is open, you can control the order in which their samples are loaded in the future by rearranging the Instrument order of the Banks. Instruments (and their samples) are loaded in left-to-right priority when in full height view and in top-to-bottom priority when in small height view. (See "Bank Views" on page 12.)

## Working with Banks

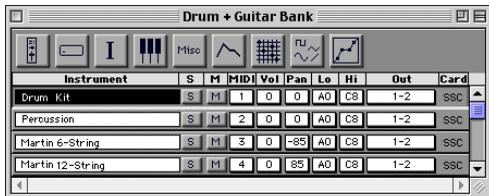
When a Bank opens, the Bank window appears. you will use this window to set Instrument levels, panning, outputs and other parameters.

### Bank Views

SampleCell offers two Bank views, large Bank view and small Bank view. Large Bank view displays a full height channel strip for all Instruments in the Bank. Small Bank view displays all Instruments in a compact, row-style view.



Large Bank view



Small Bank view

### To change Bank view:

- Choose Windows > Switch Bank Size or press Command+B.

By default, Soft SampleCell displays Banks in large Bank view. To conserve screen space, you can change this default to small Bank view.

### To set the default Bank View to Small Bank View:

- 1 Choose SampleCell > Preferences.
- 2 Select Default to Small Bank View and click OK.

## Creating a New Bank

You can create your own Banks to group frequently-used Instruments or together.

When working with Instruments and samples from multiple sources (multiple CD-ROMs, for example) you may want to organize the files from each volume into their own Bank. This can greatly simplify things when you save a Bank that contains Instruments and/or samples from multiple CD-ROMs.

### To create a new Bank:

- 1 Choose File > New.



Select Document Type dialog

2 Select Bank, and click OK.

You can now add existing Instruments to the Bank or create your own new Instruments from scratch. (See Chapter 3, “Creating and Modifying Instruments.”)

Choose File > Save Bank As. This lets you batch-save samples and Instruments to new locations, such as when saving from CD-ROM to hard disk.

## Loading Instruments into a Bank

You can add Instruments to a new, empty Bank or add additional Instruments to an existing Bank, RAM permitting.

### To load Instruments into an open Bank:

- 1 Choose File > Open.
- 2 Select an Instrument and click Open.
- 3 Repeat for any additional Instruments.

 You can also open instruments by dragging and dropping their icon on the Soft SampleCell Editor in the Finder.

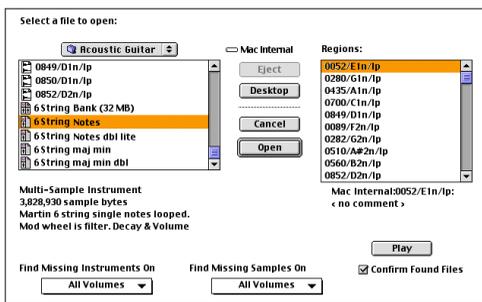
 To avoid stuck notes, avoid opening Banks, Instruments, or SampleCell Editor's Loop window during sequencer playback.

Samples can also be selected and loaded using this dialog box. The selected sample will be loaded into a new, single-sample Instrument in the current Bank, or into a new Bank if there are no open Banks

If any of the samples used by an Instrument are already in memory, they will not be reloaded.



Instrument as it appears in a Bank



Opening an Instrument

---

## Multiple Banks

Multiple Banks can be open and active at the same time. For example, different Banks could contain Instruments for different songs or sets. Or, one Bank might contain a rock drum set, while another contains a jazz set. You will probably find that this modular approach makes configuring Banks and Instruments easier across a variety of songs and sources.

Unless you have copied the samples to your hard drive, avoid putting files from more than one CD-ROM into the same Bank or you may have to repeatedly swap discs to load all of the files.

### Using More Than One Copy of an Instrument in a Bank

A common production technique entails using two identical Instruments slightly detuned from each another to fatten their sound. To implement this type of effect, you'll need to create two identical Instruments in a Bank.

However, since Soft SampleCell will not allow you to load the same Instrument into a Bank twice, you'll need to copy and paste the instrument to duplicate it.

#### To duplicate an Instrument in a Bank:

- 1 Select the Instrument to be copied by clicking its Name.
- 2 Choose Edit > Copy Instrument.
- 3 Choose Edit > Paste.

### Controlling Samples Used in Multiple Instruments

When you copy and paste to duplicate an Instrument, some Sample Parameters such as Panning can be edited independently for each Instrument.

Other Sample Parameters, including Sample Start Coarse/Medium and Loop Detune are global adjustments and will affect all Instruments that use that sample. This is because copied Instruments reference the same samples. This allows Soft SampleCell to conserve RAM.

### Deleting Instruments From a Bank

Instruments can be removed from Banks.

#### To delete an Instrument from a Bank:

- 1 Select the Instrument by clicking its Name in the Bank window.
- 2 Choose Edit > Clear Instrument or press the Delete key.

---

## Alternate Data Entry Methods

Most Soft SampleCell Instrument and Bank parameters are controlled by on-screen sliders and buttons. You can also use your MIDI keyboard controller or computer keyboard to enter parameter values.

### Using MIDI Continuous Controllers

You can adjust an on-screen control using a MIDI continuous controller such as a mod wheel, joy stick, or MIDI data slider.

#### To adjust a control using a MIDI controller:

- 1 Control-click the control you want to adjust. A MIDI icon appears.



#### *Mapping a Pan control to an external MIDI controller*

- 2 Move the MIDI continuous controller. The parameter value is adjusted accordingly.

#### To unmap the MIDI controller:

- Click anywhere on screen.

#### To reset an on-screen control to its default value:

- Option-click the control.

### Using MIDI Note Numbers

Some parameters use MIDI Note Numbers for their values. For these parameters, you can enter a value by playing the corresponding note on your MIDI controller.

#### To enter a MIDI note number using a MIDI device:

- 1 Control-click the parameter's text box. A small MIDI icon appears.

- 2 Play the desired note on your MIDI keyboard controller.

### Using a Computer Keyboard

You can also use your computer keyboard for quick entry of parameter values.

#### To adjust a value with a computer keyboard:

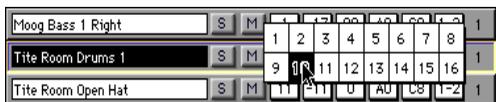
- 1 Control-click the parameter's text box. A MIDI icon appears.
- 2 Press the up arrow, right arrow, or plus (+) key on your computer to increase the value.
- 3 Press the down arrow, left arrow, or minus (-) key on your computer to decrease the value.
- 4 To exit keyboard-entry mode, click anywhere on screen.

## Setting MIDI Channel

The MIDI channel of existing Instruments can be set with the MIDI channel pop-up menu on the Instrument strip.

### To set an Instrument's MIDI channel:

- 1 Click the number above the MIDI Chan indicator. A pop-up menu will appear.



### Setting the MIDI Channel (Small Bank View shown)

- 2 Drag until the desired channel number is highlighted.



*When creating new Instruments, Soft SampleCell can assign a unique MIDI channel automatically to each new Instrument. For details, see “Instruments Preferences” on page 81.*

## Setting MIDI Zones

When an Instrument is first loaded into a Bank, it responds to the entire range of MIDI notes. This response range can be changed for each Instrument. For example, to create a split keyboard you might want a bass sound to respond only to notes below C2 and an organ to respond to notes C2 and above. The Hi/Lo Note pop-up keyboards provide quick ways to define split points by setting the lo and hi note range for the Instrument.

### To change the lowest MIDI note an Instrument will respond to:

- 1 Click the small keyboard icon to the right of Lo. A pop-up keyboard will appear.



### Setting the Lo MIDI Note

- 2 Drag along the keyboard until the desired note is highlighted. The Instrument will no longer respond to notes below the one you have selected.

### To change the highest MIDI note an Instrument will respond to:

- 1 Click the small keyboard icon to the right of Hi. A pop-up keyboard will appear.
- 2 Drag along the keyboard until the desired note is highlighted. The Instrument will no longer respond to notes above the one you have selected.

You can also Control-click the Hi/Lo value and enter a new value by playing a note on your MIDI keyboard.



*MIDI Channel and MIDI Zones can be saved as Instrument defaults. For information on the Set Instrument Default command, refer to Chapter 6, “Soft SampleCell Menus.”.*

---

## Assigning Audio Outputs

It's no coincidence that the Instrument control panels bear a strong resemblance to a mixing console. The functions are almost identical, with each Instrument acting much like a channel on a traditional console.

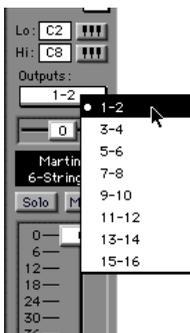
Each Instrument can be routed to any one of the Soft SampleCell audio output pairs. The number of outputs depends on the sound output option chosen on the Soft SampleCell Setup dialog. See "Sound Output" on page 5.

Just as you might have piano, bass, and drums receiving on separate MIDI channels, their respective audio outputs could be routed to three different stereo outputs. These could, in turn, be routed to three separate stereo pairs on a mixing console for submixing.

Similarly, each output pair in a film or video post session might be dedicated to a different stem (such as music and effects, Foley, atmospherics).

### To assign an Instrument to an audio output pair:

- Click the Output button associated with the desired output pair. The Instrument's audio will appear only on the corresponding outputs.



Setting the Output Channels

Only one output pair can be selected for any Instrument at one time.

If you are using Soft SampleCell with Pro Tools and DirectConnect, changing these analog output assignment controls also changes signal routing.



*Audio Output can be saved as an Instrument default. For information on the Set Instrument Default command, see "Set Instrument Defaults" on page 77.*

---

## Instrument Panning

Panning determines the balance of the Instrument within the selected stereo output pair. For example, if Output 1-2 is selected, panning all the way to the left sends a Mono Instrument only to Output 1; panning all the way to the right would send the Instrument to Output 2 only.

Stereo Instruments output odd numbered channels to hard left, even numbered channels hard right.

The Instrument Pan slider shifts the center of the Instrument's stereo image. Negative values weight the sound toward the left output, positive values weight the sound toward the right output.

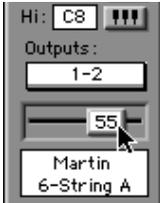
To change the panning of individual samples within the Instrument's stereo image, see "Key Group Panning" on page 34.



*Key group panning mainly works as an offset for an Instrument's main Pan control. You cannot use it to pan one sample hard left and another one hard right in the same instrument.*

### To pan an Instrument within the selected output pair:

- Drag the Pan control in the desired direction. The number inside the slider indicates the exact amount of panning.



#### Instrument Pan control

For information about modulating panning with LFOs or other modulation sources, see “Matrix Modulation” on page 43.

 *Instrument Panning can be saved as an Instrument default. For information on the Set Instrument Default command, see “Set Instrument Defaults” on page 77.*

## Muting and Soloing an Instrument

Like a mixing console, muting silences the associated Instrument, while soloing ensures that only the selected Instruments are heard.

More than one Instrument can be muted or soloed at the same time. Soloing an Instrument mutes all other Instruments in all open Banks.



#### Solo and Mute buttons

### To mute an Instrument:

- Click the Instrument’s Mute button.

To return to normal operation, click Mute again. Option-click to unmute all Instruments.

### To solo an Instrument:

- Click the Instrument’s Solo button.

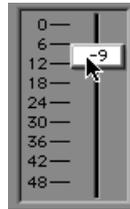
To return to normal operation, click Solo again. Option-click to unsolo all Instruments.

## Instrument Volume

An Instrument’s master volume is attenuated with its Volume Fader.

### To change the volume of an Instrument:

- Drag the Instrument’s Volume Fader to the desired level. A numeric readout is provided for exact measurement.



#### Instrument's Volume Fader

*Control-click the Volume Fader to temporarily map a MIDI controller (mod wheel, etc.) to Instrument volume.*

 *Instrument Volume can be saved as an Instrument default. For information on the Set Instrument Default command, refer to Chapter 6, “Soft SampleCell Menus.”*

## Comments for Instruments and Banks

SampleCell lets you enter comments about Instruments and Banks. Comments are displayed in the Open File dialog when you select a particular Bank or Instrument.

### To enter or edit comments for a Bank:

- 1 With a Bank file open and no Instruments selected, choose File > Get Bank Info.
- 2 Enter or edit comments as desired.
- 3 When you close the window, your comments will be stored in the current Bank file.

### To enter or edit comments for an Instrument:

- 4 Select an Instrument within a Bank and choose File > Get Instrument Info or click the Info button.



*info button*

- 5 Enter or edit comments as desired.
- 6 When you close the window, your comments will be stored in the current Bank file.

Comments associated with Instruments are also entered in this window. These comments remain associated with these Instruments when they are used in other Banks as well.

## Instrument Tuning

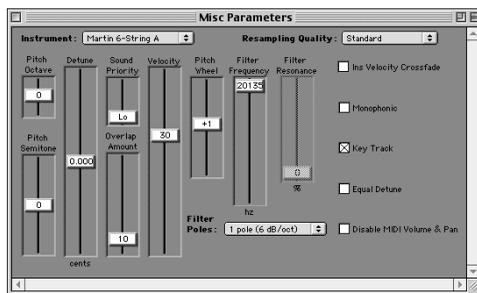
SampleCell has no global Bank tuning controls. Instead, each Instrument has its own individual tuning parameters. These controls are found in the Misc window of each Instrument.

### To access the tuning controls for an Instrument:

- 1 Select the Instrument in the Bank window.
- 2 Choose Windows > Misc Parameters or click the Misc button in the Bank toolbar.



*Misc button*



*Misc Window*

### To transpose the Instrument's octave:

- Drag the Pitch Octave slider to the appropriate position. The range can be adjusted up three octaves and down four octaves from the original pitch.

### To transpose an Instrument in half-steps:

- Drag the Pitch Semitone slider to the appropriate position. The range can be adjusted  $\pm 12$  semitones from the original pitch.

Fine-tuning is extremely valuable when a chorused or detuned effect is desired between two identical copies of an Instrument.



*If you use extreme transposition, you may begin to hear adjacent samples in the Sample Map. For better control over the pitch range for a single sample, create a new instrument for the sample and use the Hi/Low key controls to specify the desired pitch range within which the sample can be played.*

#### **To fine-tune or detune an Instrument:**

■ Drag the Detune slider to the appropriate position. The range can be adjusted  $\pm 1/4$  tone from the original pitch.



*Each sample can be individually tuned from within the Sample Parameters window. See “Sample Parameters Window” on page 33 for details.*

### **Equal Detune**

The Detune controls respond differently in different ranges of an Instrument, depending on the Equal Detune setting in the Misc window.

**Equal Detune Off** When Equal Detune is off, Soft SampleCell playback is based on equal-tempered (exponential) tuning and the Detune slider changes the tuning of all notes by the selected number of cents (a cent = 1/100th of a semitone). In other words, a minus 5 cents detuning will have the same perceived effect throughout the entire range of an Instrument. A1 will sound “as flat” as A6, or D7. This is because the offset in cents is logarithmic.

**Equal Detune On** When Equal Detune is on, the frequency is detuned by a constant Hz value across the whole scale. If you have two samples, and one is very slightly detuned from the other

in Equal Detune mode, the two samples will “beat” against each other at the same rate across the entire range of the keyboard. The amount of pitch shift varies with frequency:

- ◆ If a sample is played at its MIDI Root Note, the Detune slider has a range of plus or minus one semitone (half step).
- ◆ If a sample is played one octave below its MIDI Root Note, the Detune slider has a detune range of plus or minus one whole step (two semitones).
- ◆ If a sample is played one octave above its MIDI Root Note, the Detune slider has a detune range of plus or minus a quarter tone.

Experiment with the Equal Detune option on non-western Instruments or early Instruments. Or, use it when trying to match loops to other beats. It could provide the subtle change in speed (playback speed/pitch) you need to lock down a groove.

---

## Saving a Bank

Once you have configured a Bank with Instruments and their basic settings, you'll want to save the Bank so that it can be retrieved for future use.

You can save all Instruments and samples associated with a Bank by using the Save Bank As command.

**⚠** *Soft SampleCell doesn't automatically distinguish between samples, Instruments and Banks, making it possible to overwrite a sample if you accidentally save an identically named Instrument to the same location. For safety's sake, create separate folders for Banks, Instruments, and samples.*

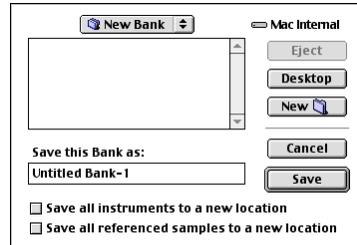
### To save the current Bank with its original name and destination:

- Choose File > Save Bank.

**⚠** *If the Save Bank command doesn't appear in the File menu, it is because an Instrument is currently selected on screen in the Bank window. Deselect the Instrument by clicking an empty area in the Bank window before saving a Bank.*

### To save a Bank with a new name or destination:

- 1 Choose File > Save Bank As.
- 2 Enter a name and choose the destination for the Bank.
- 3 Select "Save all instruments to a new location" if you want to save new copies of the Instruments associated with the Bank.



### Saving a Bank and Instruments

- 4 Select "Save all referenced samples to a new location" if you want to save new copies of the samples associated with each Instrument.

### To save all changed Instruments and Banks:

- Choose File > Save All Changed.

## Closing a Bank

### To close an open Bank:

- Click the Bank window's Close Box or choose File > Close.

 *For more information on closing Soft SampleCell Banks, see "Automatically delete unused samples" on page 80.*

---

## Saving an Instrument

Most parameters discussed in this chapter are saved as part of a Bank, as well as with the Instrument. If you change the Instrument Comment or any parameter associated with an Instrument, however, the Instrument must be saved in order to preserve those changes.

While you will be automatically prompted to save these Instrument changes if you close a Bank, you can also save an Instrument manually.

### To save an Instrument with its original name and destination:

- Choose File > Save Instrument.

 *If the Save Instrument command doesn't appear in the File menu, it is because the Instrument is not currently selected on screen in the Bank window. Select the Instrument by clicking it before saving.*

### To save an Instrument with a new name or destination:

- 1 Choose File > Save Instrument As.
- 2 Enter a name and choose the destination for the Instrument.
- 3 Select "Save all referenced sample to a new location" if you want to save new copies of the samples associated with the Instrument.

### To save all changed Instruments and Banks:

- Choose File > Save All Changed.

# Creating and Modifying Instruments

This chapter explains the Instrument editing features of Soft SampleCell.

Soft SampleCell controls for Instrument Volume, Pan, Audio Output, MIDI Channel and Range are associated with Banks. Banks group these controls together with performance parameters. For more information on Banks, see Chapter 2, “Using Banks and Instruments.”

---

## Instrument Basics

An *Instrument* is a group of samples mapped to specific keys so that it can be played using a MIDI controller or sequencer. Instruments can be loaded from CD-ROM and edited, or new Instruments can be created and configured with custom samples, key maps, and modulation settings.

Each Instrument has its own customizable parameters that are accessible by clicking the following buttons on the Edit toolbar:

### *Sample Map Window*



The *Sample Map window* has controls for mapping samples to various ranges of MIDI notes and velocities.

### *Misc Parameters window*



The *Misc Parameters window* has controls for tuning, priority, overlap, velocity response, pitch wheel, and filter amount. In addition, there are checkboxes for Instrument Crossfade, Monophonic, Key Track, Equal Detune and Disable MIDI Volume/Pan.

### *Envelope Window*



The *Envelope window* provides 3 four-point envelopes with additional controls for Key Track, Envelope Amount and Gate Time.

## Matrix Modulation Window



The *Matrix Modulation window* is a modulation-mapping tool that lets you create a mapping between a large number of modulation control sources to destination parameters.

## Modulators Window



The *Modulators window* provides 2 LFOs with variable speed, amplitude, shape and trigger mode. In addition, a Ramp Generator and 2 variable MIDI Controllers are provided.

## Trackers Window



The *Trackers* provide a nine-break point graph for plotting custom response curves for any parameter.

---

## Creating New Instruments

There are two basic instrument types: single-sample Instruments and multi-sample Instruments. Instruments can be either mono or stereo.

### Single-Sample Instruments

Single-sample Instruments have a single Key Group, a single Velocity Zone, and no modulation paths (sound effects and loops are often single-sample Instruments). Because of this, Envelope, Matrix, Modulators or Trackers are not available for single-sample Instruments.

### Multi-Sample Instruments

Multi-sample Instruments can have multiple Key Groups, multiple Velocity Zones, and many modulation paths. Multi-sample Instruments can also be edited using any of the Instrument editing windows. Soft SampleCell can open a maximum of 60 mono or 30 stereo instruments.

### Mono or Stereo Instruments

Instruments can be mono or stereo. The mono/stereo characteristic of the samples you plan to use in the Instrument will determine how you should define the new Instrument itself. Soft SampleCell can open a maximum of 60 mono or 30 stereo instruments.



*When mono samples are loaded into stereo Instruments, the mono sample will use up 2 voices.*

### To create a new Instrument:

1 With a Bank already open, choose File > New or click the Create New Instrument button in the Edit toolbar.



Create New button

2 Select the type of Instrument you want to create, then click OK.



Create New Instrument dialog

## Auto-Creating Instruments

If you drag sample files onto the Soft SampleCell Editor in the Finder, Soft SampleCell will automatically create new Instruments from them.

When the “Make One Instrument when Multiple Sound Files are Dragged Onto the Editor” option is selected in the Preferences dialog Soft SampleCell will create a single Instrument from all dragged samples.

When this option is deselected, a separate Instrument will be created for each sample.

**⚠** You cannot auto-create Velocity Zones. Velocity zones must be added individually.

### To automatically create one or more new Instruments:

■ In the Finder, drag any number of samples onto Soft SampleCell Editor.

---

## Sample Maps

At its most fundamental level, an Instrument consists of samples that are mapped to various ranges of MIDI notes (Key Groups) and velocities (Velocity Zones). This mapping can be viewed, edited, and altered in the Sample Map window.

### To open the Sample Map window:

■ Click the Instrument’s Sample Map icon in the Bank window, or double-click an Instrument name.



Sample Map icon

## Key Mapping Basics

Key mapping is the arrangement of multiple samples across the playable range of a multi-sample Instrument.

Multiple samples are usually necessary to realistically reproduce the timbre and range of many musical instruments. By recording multiple samples that capture different frequency and dynamic ranges, and mapping them to Key Groups and Velocity Zones, it is possible to emulate the original source very realistically.

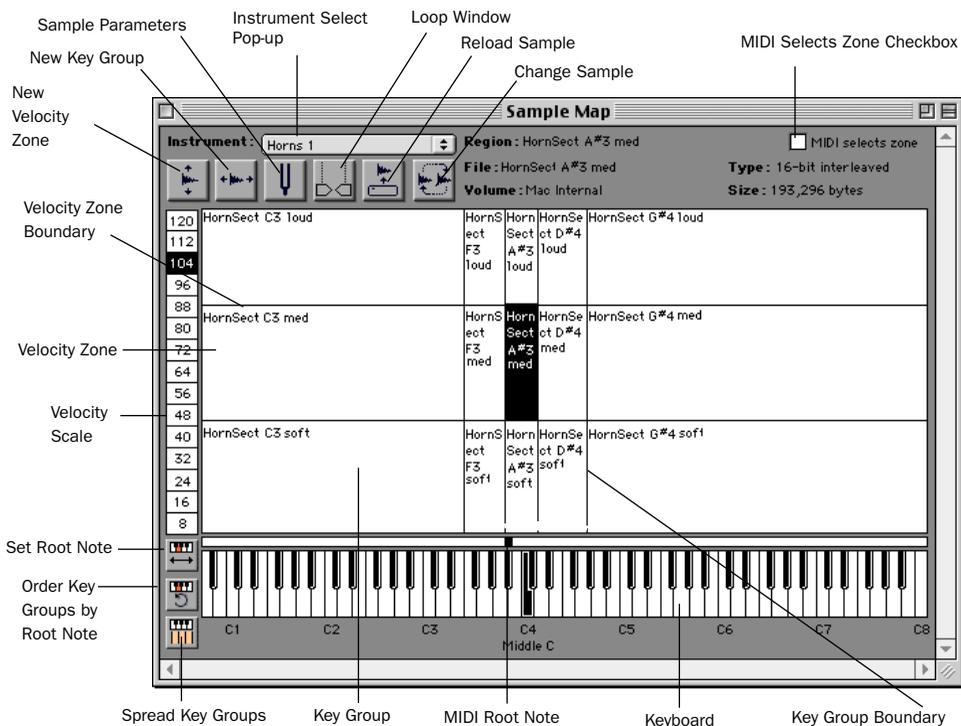


Figure 1. Sample Map window

## Key Groups

Samples are mapped along the horizontal axis to various note ranges called Key Groups. The number of Key Groups can be anywhere from a single Key Group spanning the entire keyboard, up to 60 different Key Groups (memory permitting).

## Velocity Zones

Each Key Group contains Velocity Zones. Most acoustic instruments and sounds in nature have different timbres depending on their volume. For this reason, velocity mapping is also em-

ployed (in addition to pitch mapping) so that different samples that have been recorded at varying intensities can be assigned to corresponding velocity ranges.

Soft SampleCell can have up to 6 samples/Velocity Zones per Key Group. The sample in the Velocity Zone that matches the incoming MIDI Velocity will be triggered.

The Sample Map window shown in Figure 1 illustrates an Instrument with 3 Velocity Zones and 5 Key Groups.

Therefore, this Instrument is actually comprised of 15 samples. The sample names bear a suffix such as *soft*, *med*, or *loud* to indicate their intended Velocity Zone.

Velocity Zones can also be used to switch between completely different sounds. A classic example of this would be a bass guitar with a fingered bass in the lower Velocity Zone, and a slap sample in the upper Zone. Notes played louder would trigger the pop samples, while softer MIDI velocities trigger regular finger plucked bass.

## Adding/Importing Samples

Once you have created a new single- or multi-sample Instrument, you're ready to add samples. You can add samples individually or in groups.

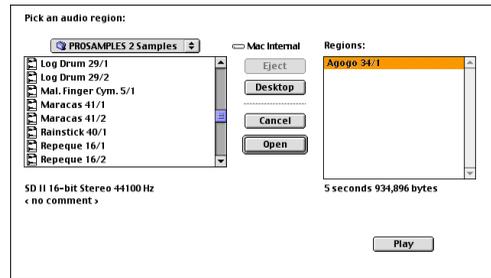
### To add a single new sample:

- 1 Choose Windows > Sample Map or click the Sample Map icon.
- 2 Choose Instruments > New Key Group, or click the New Key Group button in the Sample Map window:



New Key Group button

- 3 Select a sample to import. You can select entire sound files or regions within sound files



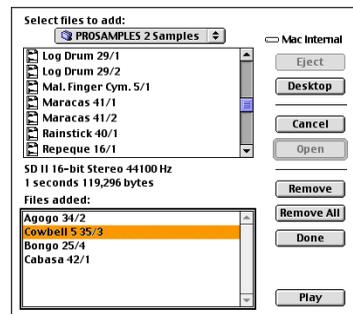
### New Key Group dialog

- 4 Click Play to audition the sample.
- 5 Click Open to load the selected sample. The new Key Group is placed at C8.
- 6 Repeat to load additional samples.

When additional samples are added, the Key Group to the immediate left is shrunk to accommodate the new samples. Any single-note Key Groups are shuffled to the left by one note.

### To add multiple samples:

- 1 Choose Instruments > Add Multiple Key Groups.



Add Multiple Key Groups dialog (Macintosh)

- 2 Select samples in the Select Files to Add list and click Add.
- Click Add All to add the entire contents of the current folder.
- To remove a sample from the Files Added list, select it and click Remove.
- 3 Click Done when finished.

All new Key Groups will be evenly spread across the range of the Instrument in the Sample Map window.

#### To add a sample to a new Velocity Zone:

- 1 In the Sample Map window, select a sample in the Key Group to which you want to add a new Velocity Zone.
- 2 Choose Instruments > New Velocity Zone or click the New Velocity Zone button:



*New Velocity Zone button*

- 3 Select the sample and click Open.

The new sample is placed in the highest velocity range for the selected Key Group.

- 4 Drag the sample to the desired Velocity Zone in the selected Key Group. If necessary, adjust the Velocity Zone boundaries to set the range of velocities that will trigger the sample.

---

## Key Group Editing

Once samples are loaded into an Instrument's Sample Map, their location and Key Group width can be edited in several ways. In addition, several Key Group parameters such as Zone Start (where in the sample playback will begin) can be edited from the Sample Parameters window.

When you move a Key Group, all the Velocity Zones in that group are moved together, and the Key Group will retain its width (the key range) after being moved.

## Selecting Samples in the Sample Map

Before a Key Group or Velocity Zone's Sample Parameters can be edited, the appropriate sample must be selected in the Sample Map window.

#### To select a sample manually:

- Click the desired Key Group/Velocity Zone in the Sample Map window.
- or –
- Click on the on-screen keyboard to select a Key Group, then click the Velocity Scale to select a zone within that Key Group.

#### To select a sample using the computer keyboard:

- ◆ With any zone already selected, press the Right arrow (or the Tab key) to select Key Groups to the right. Press the Left arrow (or Shift-Tab) to select Key Groups to the left. Press the Up/Down arrows to select a higher/lower Velocity Zone, respectively.

#### To select a sample using a MIDI controller:

- ◆ Select the MIDI Selects Zone option, located near the upper-right corner of the Sample Map window.

With this option selected, playing a note on your MIDI controller selects the sample at the appropriate MIDI note range and velocity. The ability to select Key Groups/Zones via MIDI remains in effect while editing in the Sample Parameters window.

## Moving, Editing, Replacing and Deleting Samples

There are many ways to rearrange the samples that make up an Instrument's Sample Map.

You can reorder Key Groups by dragging them to new locations, and you can adjust their key range by dragging their boundaries. In addition, you can use several special function buttons to reorder Key Groups.

### To drag a Key Group to a new location:

- Drag the bottom-most sample in the Key Group to a new location. All the Velocity Zones in that Key Group will be moved and will retain their ranges.

The Reorder Key Groups By Root Note command remaps Key Groups according to root note, lowest to highest. If you have just loaded multiple samples, this provides a quick way to arrange them by root note in the Sample Map.



### Reorder Key Groups By Root Note button

If there is more than one Velocity Zone in the Key Group, they will move with their Key Group. In other words, all zones will be remapped according to the root note of the lowest Velocity Zone in their Key Group. (See “Setting the MIDI Root Note” on page 31 for details.)

### To sort Key Group location by root note:

- Click the Reorder Key Groups By Root Note button, or choose Instruments > Reorder Key Groups By Root Note.

All Key Groups in the Instrument will be reordered according to their MIDI Root Note.

## Resizing Key Groups

You can resize Key Groups manually or automatically.

### To change the range of a Key Group:

- Drag the boundary line of the Key Group to the desired position. The adjacent Key Group will shrink or expand to accommodate the resizing operation.

You can resize selected Key Groups so that they are spread evenly across the keyboard. The widths of all Key Groups to the right of the currently selected Key Group (or all if none is selected) will become uniform.



### Spread Key Groups button

Figure 2 shows an Instrument's Sample Map before using the Spread Key Groups command.

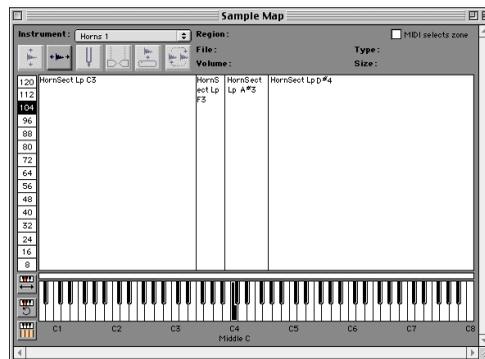


Figure 2. Sample Map before using Spread Key Groups

After clicking the Spread Key Groups button the Instrument's Sample Map becomes uniform, as shown in Figure 3.

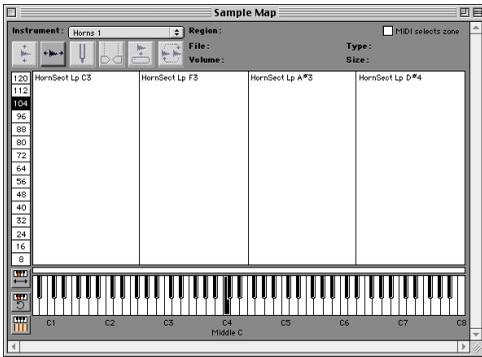


Figure 3. Sample Map after using Spread Key Groups

### To spread all Key Groups evenly across the range of the Instrument:

- Click the Spread Key Groups button in the Sample Map window. All Key Groups to the right of and including the selected Key Group will be spread evenly across the keyboard.

## Resizing Velocity Zones

Each Key Group in the Sample Map can contain up to 6 Velocity Zones. You can rearrange the samples in these zones by dragging or by adjusting their Velocity Zone boundaries.

### To move a sample to a new Velocity Zone within the same Key Group:

- Drag the sample to the desired Velocity Zone within the Key Group.

### To adjust the range of a Velocity Zone:

- Drag the boundary line of the Velocity Zone to the desired position.



*You can edit all range of all Velocity Zones simultaneously by Option- dragging the boundary of any Velocity Zone. All zones will then have the same boundary setting.*

## Replacing and Deleting Samples

You can replace or delete Samples within the Sample Map window. This makes it possible to create pre-mapped Instrument templates to quickly build Instruments.

### To delete a Key Group or Velocity Zone:

- 1 Select the sample to be deleted.
- 2 Choose Edit > Clear or press the Delete key.

This removes the Key Group or Velocity Zone from the Sample Map.

You can quickly replace one sample with another using the Change Sample button.

### To replace a sample:

- 1 Select the sample to be changed by clicking the appropriate Key Group or Velocity Zone.
- 2 Click the Change Sample button or choose Instruments > Change Sample.



Change Sample button

- 3 Select a new sample to replace the original.
- 4 Click Open to load the selected sample.

The new sample appears in the Sample Map window in the same Key Group and Velocity Zone as the one it replaced.

### To unload a selected sample:

- 1 Select the sample to be deleted.
- 2 Choose Instruments > Unload Sample.

The selected sample is unloaded from RAM, and the Instrument will retain the sample's Key Group and Velocity Zone boundaries. Unloaded samples appear in italics in the Sample Map.

### To reload a sample that has been unloaded:

1. Select the sample's Key Group/Velocity Zone.

Click the Reload Sample button, or choose Instruments > Load Sample.



Load Sample button

Samples normally remain in memory after you close a Bank or delete an Instrument. You can set Soft SampleCell to automatically unload all samples when closing Banks or deleting Instruments.

### To automatically unload samples when closing Banks or deleting instruments:

1. Choose SampleCell > Preferences.
2. Select Automatically Delete Unused Samples.

---

## Editing Sample-Specific Parameters

Using the tools in the Sample Map and other windows, you can modify a variety of sample-specific parameters, including MIDI Root Note, sample loop, sample start offset, and more.

### Setting the MIDI Root Note

When a sample is assigned to the Sample Map, the original sample must be assigned to a note, referred to as the MIDI Root Note. When played, the sample is then transposed up or down in relation to its MIDI Root Note.

In general, the MIDI Root Note should match the original pitch of the sample. However, you can alter sounds by setting the root note to a different pitch. For example, if you load a C3 trumpet sample and set the root note to C4, the trumpet will sound an octave lower, transforming it into an acceptable substitute for a tuba.

Soft SampleCell can play a sample up to three octaves higher than the original pitch.

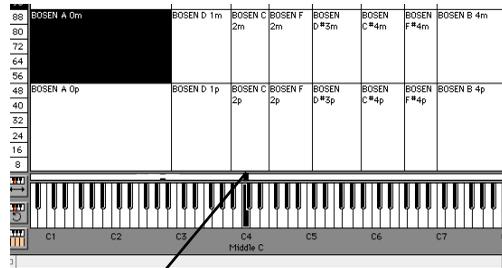
You can open the Sample Parameters window for a Key Group and set individual Root Notes manually, or drag the Root Note marker to an appropriate location along the Sample Map's on-screen keyboard.

### To assign a sample's MIDI Root Note:

1. In the Sample map, click the sample whose MIDI Root Note you want to set.

A black square appears above the keyboard, indicating the current Root Note of the sample.

2. Drag the square to the desired Root Note.



MIDI Root Note set to C4

### Assigning the MIDI Root Note

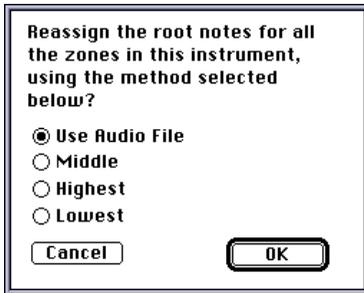
## To set the root note for all Key Groups in an Instrument:

1 Click the Set Root Note button, or choose Instruments > Set Root Notes.



Set Root Note button

2 Choose one of the following:



MIDI Root Note dialog

- ◆ Lowest: places the root note at the lowest note in the Key Group.
  - ◆ Middle: places the root note in the middle of a Key Group.
  - ◆ Highest: places the root note at the upper note in the Key Group.
  - ◆ Use Audio File: places root note according to one of the following.
    - If the sample is an AIFF file, it uses the root note stored with the file.
    - If the sample is an Sound Designer II (SDII) file, it defaults to C4 (Middle C).
- 3 Click OK to change the Root Note.

## Loop Window

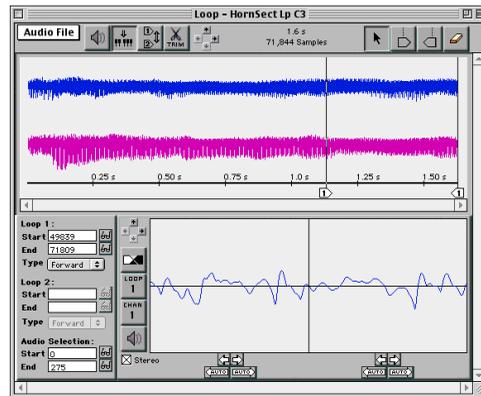
Many samples contain playback loops that allow them to be sustained as long as a note is held. In the Sample Loop window you can create and edit loops for a specific sample.

### To open the Loop window:

- 1 Select a sample in the Sample Map window.
- 2 Click the Loop button.



Loop button



Loop window

Here you can adjust loop start points, loop type, and other loop parameters. Looping is covered in depth in Chapter 4, "Sample Editing and Looping" along with other sample editing techniques.

## Sample Parameters Window

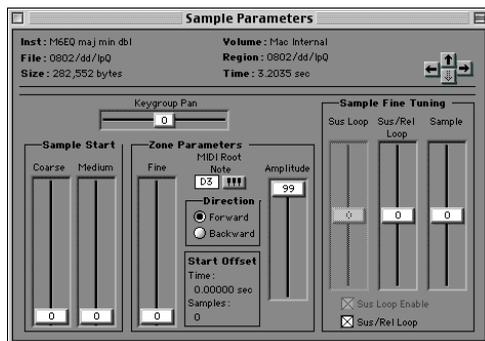
The Sample Parameters window provides controls for sample amplitude, sample playback direction, start point offset, and loop tuning.

### To open the Sample Parameters window:

- 1 Select a sample in the Sample Map window.
- 2 Click the Sample Parameters button, or double-click the desired sample in the Sample Map.



Sample Parameters button



Sample Parameters window

## Using the Sample Select Arrows

You can select different samples for editing within an Instrument by using the Sample Select Arrows (or the arrow keys of your computer keyboard), as follows:



Sample Select Arrows

- Up arrow (or Page Up key) selects the next highest Velocity Zone in the current Key Group.

- Right arrow (or Tab key) selects the lowest zone in the next highest Key Group.
- Down arrow (or Page Down key) selects the next lowest Velocity Zone in the current Key Group.
- Left arrow (or Shift-Tab) selects the lowest zone in the next lowest Key Group.
- Home key selects the lowest, left Velocity Zone.

You can also select samples in their Key Groups and zones via MIDI if the MIDI Selects Zone option is selected.

## Setting the Sample Start

You can change the point at which playback begins within a sample's waveform. This is useful for fine-tuning the attack of a sample to change its character or remove unwanted characteristics such as pick noise from a guitar sample.

Sample Start can be adjusted using 3 different sliders: Coarse, Medium and Fine. The Fine slider adjusts the sample start point in the smallest increments.

### To adjust a sample's start point:

- 1 In the Sample Map window, select the desired sample and click the Sample Parameters button (or double-click the sample).



Sample Parameters button

- 2 Adjust the Fine slider.

Each increment represents 256 samples for a total possible offset of 32,512 samples. The current sample offset is displayed in the Zone Parameter's Start Offset.

## Key Group Panning

Each Key Group within the Sample Map can be panned individually. You can use this feature to create effects such as a stereo piano, where the lower samples are panned more to the left and higher ones panned more to the right.

 *An Instrument's overall stereo image is controlled by its Pan slider in the Bank window.*

### To change the panning of a Key Group:

- In the Sample Map window, select the desired sample and drag the Key Group Pan slider (while playing the sample from a MIDI controller if desired).

The sample's entire Key Group will now be panned within the Instrument's stereo image.

 *You can simulate a stereo effect without editing the Key Group panning for every sample. Use the Matrix window to map MIDI Note Numbers to control Instrument Panning. See "Matrix Modulation" on page 43 for details.*

## MIDI Root Note

When played, a sample is transposed up or down in relation to its MIDI Root Note. The default MIDI Root Note for samples is C4. See "Setting the MIDI Root Note" on page 31 for more information.

## Sample Playback Direction

A sample can be played forward (beginning to end) or backward (end to beginning). Backward sample playback is useful for creating special effects such as reverse snare drums. When the sample playback direction is set to backward, any loops in the sample are ignored.

### To change the playback direction of a sample:

- ◆ In the Sample Map window, select the desired sample and select Forward or Backward.

## Sample Amplitude

An individual sample's volume can be attenuated using the Amplitude slider. If you are using an Instrument with samples recorded at different volume levels, you can use this control to even out the levels between the samples.

### To attenuate the volume of a sample:

- ◆ In the Sample Map window, select the desired sample and adjust the Amplitude slider.

Each increment represents 0.5 dB for a total range of 50 dB.

## Sample Tuning

Samples and their loops can be individually tuned. In some cases, the overall tuning of a sample may need to be adjusted to make its pitch compatible with other samples in an Instrument.

### To tune a sample:

- 1 In the Sample Map window, select the desired sample and adjust the Sample slider (in the Sample Fine Tuning section) to raise or lower the pitch of sample.

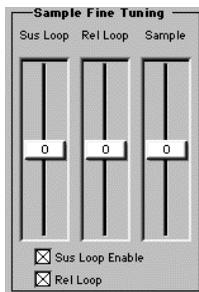
You can adjust the slider while playing the sample using a MIDI controller.

The slider range is  $\pm 1/4$  tone. If a sample in memory is used by more than one Instrument, Key Group, or Velocity Zone, changing tuning in this manner will affect all Instruments with that sample.

## Sample Loop Tuning

In certain cases, the looped portion of a sample may need to be tuned to match the pitch of the attack portion of a sample.

If a sample has a single loop, it functions as both a sustain and a release loop. If the sample has two loops, the first is the sustain loop and the second is the release loop.



Loop tuning controls

### To tune a sample loop:

- ◆ In the Sample Map window, select the desired sample, then do one of the following:
- If the sample has a single loop, adjust the Sus/Rel Loop slider to tune the pitch of the looped portion of the sample.
- If the sample has two loops, use the Sus Loop slider to adjust pitch of the sustain loop. Use the Sus/Rel Loop slider to adjust the pitch of the release loop.

The slider range is  $\pm 1/4$  tone. You can adjust the slider while playing the sample using a MIDI controller.

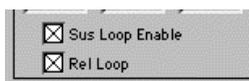
### Turning Off a Sample Loop

Sustain and release loops can be turned on or off individually.

### To turn an existing loop on or off:

**1** In the Sample Map window, select the desired sample, then do one of the following:

- If the sample has a single loop, select Sus/Rel Loop to turn on the loop. Deselect Sus/Rel Loop to turn off the loop.
- If the sample has two loops, select Sus Loop Enable to turn on the sustain loop; deselect Sus Loop Enable to turn it off. Select Rel Loop to turn on the release loop; deselect Rel Loop to turn it off.



Loop enables

## Loop Tuning and Loop Switching

For spoken word, sound bite and other speech samples, experimenting with the two loops can lead to very interesting results. Use the Matrix Modulation and Envelope windows to control the balance between the first loop and second loop, then trigger and control the timing with one key on your MIDI controller.

---

## Misc Parameters Window

The Misc Parameters window has controls for pitch, filter frequency, crossfade, key track, pitch tracking, intonation, MIDI filtering, voice overlap and priority, and velocity sensitivity.

These parameters apply to Instruments as a whole. Adjusting the Filter Frequency, for example, adjusts it for all samples within the Instrument.

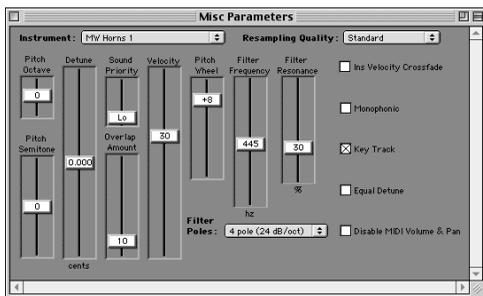
### To open the Misc Parameters window:

- Select Windows > Misc, or click the Misc Parameters button.



#### Misc Parameters button

The name of the currently selected Instrument appears in the Instrument pop-up. Use this pop-up to choose any Instrument in the currently active Bank and edit its parameters.



#### Misc Parameters window

## Disabling Key Tracking

There are times when it is desirable for samples to always be played back at their original pitches, regardless of which MIDI note is being played. Sound effects and drum kits are two common examples.

By default, key tracking is enabled. Playing MIDI notes will change the pitch of the samples in the Instrument accordingly.

With key tracking is disabled, playing MIDI notes will *not* change the pitch of the samples. They will play at their original pitch, as assigned by their MIDI Root Note.

### To disable key tracking in an Instrument:

- 1 In an open Bank, select the desired Instrument.
- 2 In the Misc Parameters window, deselect Key Track.

SampleCell can be configured so that Key Track defaults to being disabled when new Instruments are created. This is useful when creating Instruments comprised of non-pitched sounds such as drums or sound effects.

### To disable key tracking as a default:

- 1 Choose SampleCell > Preferences.
- 2 Select the option “Default New Instruments to Key Track Off” and close the Preferences window.

For more information on Soft SampleCell Preferences, see “Preferences” on page 80.

## MIDI Velocity Response

MIDI velocity controls how the volume of an Instrument responds when you play harder or softer on a MIDI controller. The Velocity slider in the Misc Parameters window lets you adjust the MIDI Velocity response of each Instrument individually.

The MIDI Velocity control can be set to a positive or a negative value. With positive values, Instrument volume increases with as MIDI Velocity, increases. With negative values, Instrument volume decreases as MIDI Velocity increases. With MIDI Velocity set to 0, there is no response to MIDI velocity.

### Using Negative MIDI Velocities

Negative velocity settings are useful when cross-fading between two Instruments according to how hard you play your MIDI controller.

Imagine that you have two Instruments, Strings and Brass, assigned to the same MIDI channel. You want only Strings to play when you play softly. You want only Brass to play when you play hard. And you want both Instruments to play when you play at medium velocities.

You can accomplish this by setting the MIDI Velocity of the Strings to a negative value and the MIDI Velocity of the Brass to a positive value.

#### **To change an Instrument's MIDI velocity response:**

- 1 In an open Bank, select the desired Instrument.
- 2 In the Misc Parameters window, set the Velocity slider to the desired level.

 *If all Instruments in a Bank do not respond to changes in MIDI velocity when you play your MIDI controller, check the velocity curve settings on the controller. Setting an appropriate velocity curve on the controller ensures that Instruments respond properly to MIDI Velocity.*

## **Instrument Velocity Crossfade**

The Misc Parameters window provides another means of performing velocity-controlled crossfading between two Instruments: the Instrument Velocity Crossfade option. With this option enabled, an Instrument will only respond significantly to low MIDI velocities.

By assigning two Instruments to the same MIDI channel and enabling the Instrument Velocity Crossfade option on only one of them, velocity-controlled crossfading between the two can be achieved.

#### **To perform velocity-controlled crossfading between two Instruments:**

- 1 In the Bank window, assign two Instruments to the same MIDI channel.
- 2 Select the Instrument you want to respond to soft velocities, and click the Misc Parameters button.
- 3 In the Misc Parameters window, select Ins Vel Crossfade.
- 4 Play your MIDI controller.

Playing softly should trigger the first Instrument. Playing hard should trigger the second Instrument.

 *Instrument Crossfading uses two voices for every note played. Playing four notes with a crossfaded Instrument pair, for example, will use eight voices.*

## **Voice Priority, Overlap, and Polyphony**

By default, Instruments are polyphonic. However, you can set Instruments to respond monophonically if desired. When monophonic playback is selected, an Instrument will respond to the note most recently played.

#### **To select monophonic playback:**

- 1 In an open Bank, select the desired Instrument.
- 2 In the Misc Parameters window, select Monophonic.

## Voice Priority

If you play many Instruments simultaneously, it is possible to run out of voices. When you attempt to play more voices than are available, Soft SampleCell will “steal” voices from some Instruments and allocate them to other Instruments as needed.

You can prioritize Instruments so that their voices are more likely or less likely to be stolen when necessary. Typically, lead Instruments should be given high priority while background or pad-type Instruments are given low priority.

### To adjust an Instrument’s voice allocation priority:

- 1 In an open Bank, select the desired Instrument.
- 2 In the Misc Parameters window, set the Sound Priority slider to the desired value.

## Voice Overlap

Soft SampleCell provides a Voice Overlap feature that improves the realism of Instruments whose samples are typically retriggered in rapid succession.

When Voice Overlap is selected, a sample that is retriggered before it completely dies out will continue to sound, while successive samples overlap it as they are triggered. This prevents sounds such as ride or crash cymbal from being artificially choked off when played repeatedly.

A setting of 0 specifies no overlap—each new note chokes, or mutes previous notes. A value of 99 allows samples to sound for the full duration of their release envelope.

### To specify how retriggered notes overlap:

- 1 In an open Bank, select the desired Instrument.

- 1 In the Misc Parameters window, adjust the Overlap Amount slider.

Try adjusting the Overlap Amount while repeatedly playing the same note on your MIDI controller.

 *Excessive use of the Overlap feature may steal voices from other Instruments.*

## Filter

Soft SampleCell features a resonant low-pass filter. This type of filter is used to remove or emphasize certain frequencies or *harmonics* in a sampled waveform.

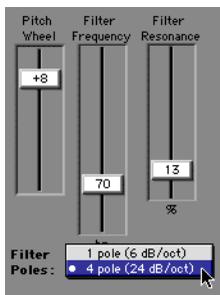
You can use the Filter to change the harmonic content and character of instruments in the same way that you would with the filters of an analog synthesizer. Wah-wah effects and synthesizer-like filter sweeps are only two of the many effects you can create.

The Filter Frequency control specifies the *cutoff frequency*—the frequency below which harmonics in a sampled waveform are removed. The higher the cutoff frequency, the brighter the sound. The lower the cutoff frequency, the duller the sound.

The Filter Resonance control determines how much frequencies near the cutoff are emphasized, and how much those that are farther away are suppressed. High resonance settings add a nasal, ringing quality to sounds.

The Filter can operate in either 1-pole, 6 dB/octave mode or 4-pole, 24 dB/octave mode. The 4-pole filter is better suited to creating synthesizer-type resonant filtering effects.

 *Filter Resonance controls are not available when the Filter is set to 1-pole mode.*



**Filter controls**

**To adjust the filter:**

- 1 In the Bank window, select the desired Instrument.
- 2 Click the Misc Parameters button to open the Misc Parameters window.
- 3 Adjust the Filter Frequency and Filter Resonance controls for the effect you want.

**Controlling the Filter with an Envelope**

The Filter is generally used in conjunction with the Envelope Generator. This allows an envelope to control how the filter responds each time you play a note. Soft SampleCell provides 3 separate Envelopes. Of these, Envelope 1 is assigned to Filter Frequency by default.

 *For information on using the Envelope Generator, see “Envelopes” on page 40.*

**To control the filter with an envelope:**

- 1 In the Bank window, select the desired Instrument.
- 2 Open the Misc Parameters window by clicking the Misc Parameters button or choosing Windows > Misc Parameters.
- 3 From the Filter Poles pop-up, choose 4 pole.
- 4 Set Filter Frequency to its midway point.

5 Set Filter Resonance to its midway point.

6 Open the Matrix Modulation window by clicking the Matrix Modulation button or choosing Windows > Matrix Modulation.

7 Set the Amount slider for the Envelope 1-to-Filter Frequency modulation path to 30.

8 Open the Envelope window by clicking the Envelope button or choosing Windows > Envelopes.

9 Repeatedly play a note on your MIDI controller while adjusting the Attack, Decay, Sustain, Sustain Decay and Release controls of Envelope 1.

10 Experiment with various Envelope, Envelope Amount, Filter Frequency, and Resonance settings to achieve the effect you want.

**Resampling Quality**

If an Instrument has a small number of Instrument samples that are mapped over a relatively wide range, you may hear audio artifacts in the samples as they are played 7 semitones or more above their MIDI Root Note.

The Resampling Quality pop-up menu allows you to minimize these artifacts by selecting Soft SampleCell’s pitch interpolation and resampling quality. Choices are:

**No Resampling** turns off resampling and will result in audio artifacts as samples are played above their MIDI Root Note. This can be used to produce interesting effects.

**Standard** Selects standard resampling quality. Audio artifacts may occur if samples are played 7 semitones or more above their MIDI Root Note.

**High** Selects the highest quality resampling. This will minimize audio artifacts but requires more CPU processing power. This will reduce the total number of Soft SampleCell voices available.



*Resampling Quality pop-up menu*

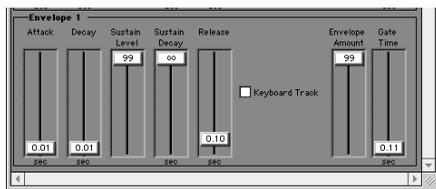
**To select the resampling quality:**

- 1 In the Bank window, select the desired Instrument.
- 2 Open the Misc Parameters window by clicking the Misc Parameters button or choosing Windows > Misc Parameters.
- 3 From the Resampling Quality pop-up, choose the type of resampling that you want to use.

## Envelopes

Envelope generators give shape to the volume, filter cutoff, and other parameters of a Instrument each time a note is played.

Soft SampleCell provides 3 separate Envelopes with controls for attack, decay, sustain, release, and other parameters.



**Envelope controls**

**Attack** Controls how long it takes for the Envelope to reach its maximum level when a note is first played. Higher Attack values produce softer, slower attacks.

**Decay** Controls how long it takes for the Envelope to fall from its peak level to the Sustain level.

**Sustain** Controls the level at which the Envelope remains after its Decay phase. higher Sustain values produce long it takes for the Envelope to reach its maximum level when a note is first played. Higher Attack values produce softer, slower attacks.

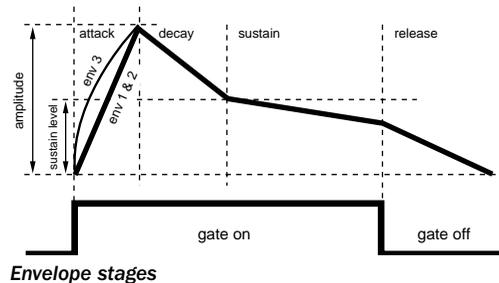
**Sustain Decay** Adds a secondary sustain level to which the envelope falls during the Sustain phase.

**Release** Controls the rate at which the volume decreases after a note is released. The higher the Release value, the longer it takes for volume to fall from the Sustain level to zero.

**Envelope Amount** Controls how much the Envelope affects Instrument volume, filter frequency, or any other parameter to which it is routed. The higher the Envelope Amount, the greater the envelope's effect.

**Gate Time** Controls how long the envelope is held open, even if a note is released.

 *Adding Gate Time to an envelope is useful with single-shot, drum-type instruments since it helps preserve ambience at the end of samples that might otherwise be lost if a note is instantly released after being struck.*



## Using Envelopes

Envelopes are primarily used to control the volume and harmonic content of a sound. For this reason, Envelope 3 is permanently assigned to amplitude and Envelope 1 is assigned to Filter Frequency by default.

Using the Modulation Matrix you can use any of the 3 Envelopes control parameters such as pitch, panning, LFO speed, and so on.

For information on using the Modulation Matrix to route Envelopes and other modulation sources, see “Matrix Modulation” on page 43.

### To open the Envelope window:

- 1 In the Bank window, click the Envelope button or choose Windows > Envelope.



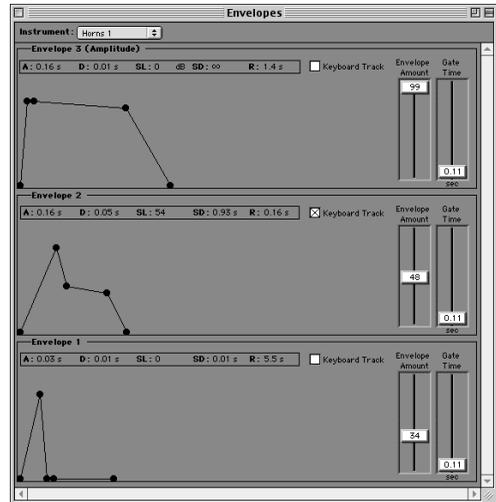
Envelope button

### Envelope Display Format

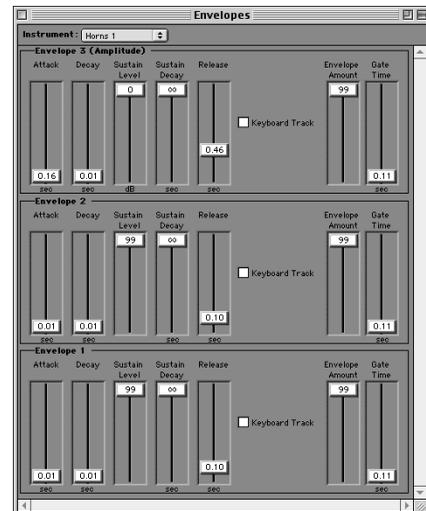
Envelope controls can be displayed as line segments or sliders. Use the SampleCell Preferences dialog to choose the display format you prefer.

### To select how Envelope parameters are displayed:

- 1 Select SampleCell > Preferences.
- 2 To display Envelope controls as line segments, select Display Line Segment Envelopes.
  - or –
- 3 To display Envelope controls as sliders, deselect Display Line Segment Envelopes.
- 4 Close and reopen the Envelope window for changes to take effect.
- 5 To edit Envelope parameters, drag the slider or line segment breakpoint.



Envelope controls in line-segment format



Envelope controls in slider format

## Envelope Parameter Values

Envelope and other parameter values can be displayed in milliseconds, decibels and other meaningful units or in Soft SampleCell units. Use the SampleCell Preferences dialog to choose the format you prefer.

### To select how parameter values are displayed:

**1** Choose SampleCell > Preferences and select Display Controls in Real Units to use milliseconds, decibels and other real-world units.

– or –

**2** Deselect Display Controls in Real Units to use Soft SampleCell units.

**3** Close and reopen the Envelope window for changes to take effect.

## Envelope Key Tracking

Envelopes can track the keyboard so that envelope times are progressively shortened as MIDI notes get higher, and lengthened as they get lower. This is useful for simulating acoustic instruments such as brass, where higher-register instruments such as trumpets have much faster attacks than low-register instruments such as tubas.

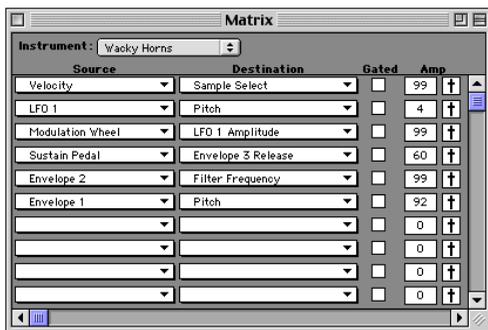
### To enable envelope key tracking:

- In the Envelope window, select Keyboard Track.

## Matrix Modulation

Matrix modulation lets you route a variety of modulation sources to a variety of modulation destinations. Typical modulation routings include:

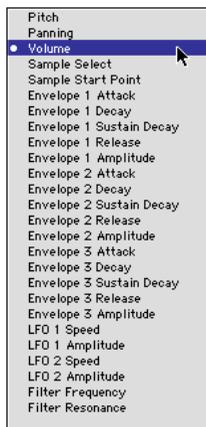
- Controlling filter cutoff frequency with the mod wheel of a MIDI controller
- Controlling Instrument volume with an LFO for tremolo effects.
- Controlling filter cutoff frequency with an LFO for auto-wah wah effects
- Controlling sample pitch with the Random Generator for sample & hold effects.



Matrix Modulation window



Modulation sources



Modulation destinations

All new Instruments have five pre-defined modulation paths:

- Velocity to Sample Select (MIDI velocity triggers samples in the appropriate Velocity Zones)
- LFO 1 to Pitch (vibrato)
- Modulation Wheel to LFO 1 Amplitude (mod wheel controls vibrato amount)
- Sustain Pedal to Envelope 3 Release (standard sustain pedal operation)
- Envelope 1 to Filter Frequency

These default modulation routings can be removed if desired by setting the Source and Destination pop-ups to none (the blank space at the bottom of the menu).



Matrix Modulation routings can be saved as new Instrument defaults by choosing Instruments > Set Instrument Defaults.

## Modulation Parameters

There are a total of 20 user-definable modulation paths. Each path consists of a Source, Destination, Gate enable, and Modulation Amount parameter.

**Source** Selects the modulation source.

**Destination** Selects the modulation destination.

**Amount** Controls the modulation intensity. Higher values apply greater modulation. Negative values invert the modulation effect. To set this parameter, click the pop-up slider next to its text box.

**Gated** When selected, modulation is only applied while a MIDI note is held. When the note is released, modulation stops.

### To use Matrix Modulation:

- 1 In the Bank window, select the desired Instrument.
- 2 Open the Matrix Modulation window by clicking the Misc Parameters button or choosing Windows > Matrix Modulation.



*Matrix Modulation button*

- 3 From the Source pop-up, choose a modulation source.
- 4 From the Destination pop-up, choose a modulation destination.
- 5 Set the Amount slider to the desired modulation amount.



*To intensify modulation beyond its normal range, create a second (or even third) modulation path with the identical source and destination.*

## Key Shortcuts

There are several key shortcuts for setting Modulation Matrix parameters.

### To set an amplitude value to maximum (+99):

- Option-Shift-click the amplitude value (not the slider).

### To set an amplitude value to minimum (-99):

- Option-Control-click the amplitude value.

### To reset an amplitude value to 0:

- Option-click the amplitude value.

### To clear a Source or Destination:

- Option-click the Source or Destination pop-up.

## Modulation Sources with Their Own Amount Controls

Some modulation sources such as Envelopes, LFOs, and MIDI controllers have their own Amplitude control. This takes precedence over the Amount control in the Modulation Matrix and determines the overall amount of modulation available.

If the Amplitude control of one of these modulation sources is set to 0, no modulation can be applied. Make sure that any modulation sources you use have their own Amplitude control set to an appropriate amount before using them for Matrix Modulation.

## Modulating Panning of Stereo Instruments

On stereo Instruments, if you want to create a stereo panning effect by routing an LFO to Panning, you must create *two* modulation paths with the same LFO-to-Panning routing for Soft SampleCell to pan both channels. For monophonic Instruments, you need only create a single LFO-to-Panning modulation path.

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## Modulators

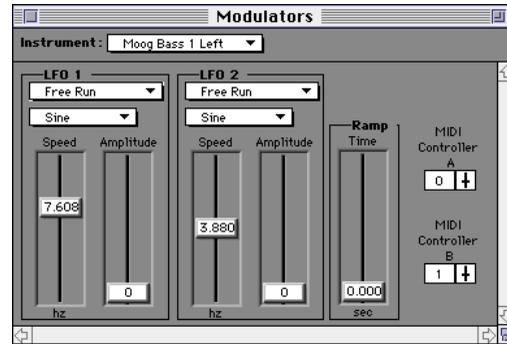
The Modulators window contains parameters for 5 different modulators: LFO 1, LFO 2, Ramp Generator, MIDI Controller A and MIDI Controller B. These can be used as both modulation sources and destinations in the Matrix Modulation window.

### To open the Modulators window:

- 1 In the Bank window, select the desired Instrument.
- 2 Click the Misc Parameters button or choose Windows > Modulators.



Modulator button



Modulators window

## LFO 1 & 2

LFO 1 and LFO 2 each produce periodic waveforms with the following parameters:

**Waveform** Selects Sine, Triangle, Upward Sawtooth, Downward Sawtooth, Square, Random, or Noise waveforms. Sine and Triangle waves are typically used to modulate pitch for vibrato effects. Square waves are typically used to modulate pitch or amplitude for trills or tremolo effects.

**Trigger Mode** Selects how and when the waveform is generated:

- Free Run generates the waveform freely, without LFO phase synchronization or retriggering. As a result, can be virtually anywhere within its own cycle when modulation is engaged. This adds a somewhat random element to the LFO modulation.
- Sync synchronizes the phase of all LFO waveforms in all Soft SampleCell voices to simulate uniform modulation by a single LFO.

- Trig restarts the LFO waveform each time a MIDI note is played. This is useful for trills and other effects that require modulation consistency among all notes.
- Sync & Trig combines the Trig and Sync attributes.

**Speed** Sets the frequency of the LFO. Higher speeds produce more rapid modulation.

**Amplitude** Determines the overall amount of modulation available when used in the Modulation Matrix. Larger Amplitudes allow more intense modulation.

#### To set an LFO's waveform:

- 1 Choose a waveform from the Waveform pop-up menu.



LFO waveforms

## Ramp Generator

The Ramp Generator produces a stepped or *ramped* control signal. The signal starts at its normal level then rises at a defined speed to another level. Positive modulation Amplitude values cause the ramp to slope upward. Negative modulation Amplitude values cause it to slope downward.

The Ramp Time slider controls the rate at the ramp signal ascends or descends.

Routing the Ramp Generator to Pitch, for example, will produce a sliding pitch effect. Setting a modulation Amplitude value of +50 causes the pitch to slide up an octave. Setting a value of -50 causes the pitch to slide down an octave.

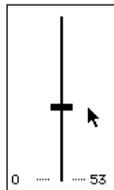
## MIDI Controller A & B

Soft SampleCell allows you to select two MIDI Controllers (from a total list of 120) as modulation sources. This enables you to use, for example, a Breath Controller (MIDI Controller #2) to modulate Volume or a foot pedal (MIDI Controller #4) to modulate LFO Amplitude.

 For a list of MIDI Controller numbers, see Appendix C, "MIDI Controller Numbers."

#### To assign MIDI Controller A or B:

- Click the MIDI Controller pop-up and choose the desired MIDI Controller number.



Selecting a MIDI Controller number

 You can directly assign a MIDI Controller by Control-clicking the MIDI Controller text box, then moving the desired controller (a mod wheel for example) on your MIDI keyboard controller.

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## Trackers

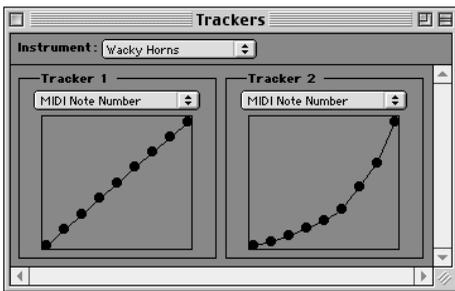
The Tracking Generator allows you to modify a modulation signal according to an editable curve of nine breakpoints.

### To open the Trackers window:

- 1 In the Bank window, select the desired Instrument.
- 2 Click the Trackers button or choose Windows > Trackers.



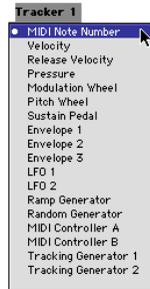
Trackers button



Trackers window

By default the Tracking Generator's modulation curve is linear. Moving a breakpoint will vary the modulation signal according to the shape of the curve.

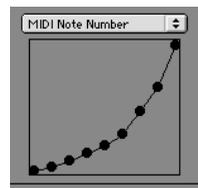
A pop-up menu above each Tracking Generator selects the modulation source affected by the Tracker. When that Tracking Generator is then used in the Modulation Matrix, its normal behavior will be modified by the curve you have created.



### Modulation targets for the Tracking Generator

Some applications for the Tracking Generator include:

- Modifying pitch wheel response with an exponential tracking curve that produces a much wider bend at end of the bend range.
- Modifying mod wheel response with an exponential tracking curve that produces much more intense modulation at end of the mod wheel range.
- Modifying MIDI note number response to produce microtonal scales.



Exponential curve

 For additional examples, refer to "Using Trackers" on page 63.

### To use the Tracking Generator:

- 1** In the Bank window, select the desired Instrument.
- 2** Click the Trackers button or choose Windows > Trackers.
- 3** From the pop-up menu, choose the modulation source you want to modify.
- 4** Drag breakpoints on the Tracker to create the tracking curve you want.



*To reset a breakpoint to its default position, Option-click it.*

- 5** Open the Matrix Modulation window and route the modulation source to the desired destination.
- 6** Drag the Amount slider to the desired level. Negative values will invert the modulation's effect.

# Sample Editing and Looping

Soft SampleCell Editor includes its own Loop window for adding, editing, and deleting loop points in samples. It provides all the tools necessary to turn samples into quality loops.

The Loop window also provides audio trim capabilities, which let you trim unwanted pre- and post-loop audio.

Use the Loop window to:

- ◆ Create up to 2 loops in any sound file
- ◆ Trim audio (deletes all unselected audio)
- ◆ Perform crossfades, forward/backward loops, and more
- ◆ Save files directly from the Loop window
- ◆ Open audio files from disk or from within Soft SampleCell Instruments
- ◆ View loop data info, audition and edit/move loops while continuously monitoring and triggering the sample from external MIDI controllers

---

## Loop Types

Soft SampleCell supports a maximum of two loops within an audio file.

### Single-Loop Samples

If an audio file has a single loop, Soft SampleCell will play the sample up to the loop's beginning and then continue to play the looped portion of the sample while the note is held. When the note is released, Soft SampleCell will continue to play the loop while the sound fades according to its current envelope.

If a sound file contains a single loop, it is referred to as a *Sustain/Release loop* since it is used in both the sustained portion and the released portion of a note.

### Two-Loop Samples

If an audio file has two loops, Soft SampleCell plays the first loop (the *sustain* loop) as long as a note is held. When the note is released, it plays the second loop (the *release* loop) as the note fades out.

There are 2 requirements for loops:

- The two loops must not overlap (loop 1 must end before loop 2 starts)
- Each loop's length must be at least one complete waveform cycle in length, or 5 sample-frames of the sample

---

## The Loop Window

Loop window lets you work non-destructively on a sample until you are ready to resave it with your modifications.

You can open a sample that is currently in use in an Instrument, or load an audio file from disk.

**⚠** *To avoid stuck notes, always stop sequencer playback before opening the Loop window.*

### To open a sample currently in use in an Instrument:

- 1 In the Bank window, select the desired Instrument and click the Sample Map button.
- 2 In the Sample Map window, select the sample that you want to edit and click the Loop button or choose Instruments > Edit (sample name).



Loop button

### To open a sample on disk (not in a Instrument):

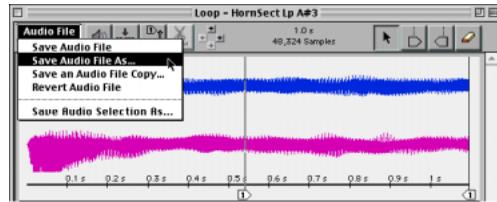
- 1 Choose Instruments > Edit Loops.

## Loop Window Tools

This window provides tools for defining, editing, and auditioning loops, and selecting and trimming audio.

### Loop Menu

This is a pop-up menu for saving an audio file after you have modified it.



### Loop menu and Loop Tools

**Save Audio File** Saves the edited sample. If it is used in the current Instrument, the sample is updated within the Instrument as well.

**Save Audio File As** Saves the edited sample under a new name or location. This command also automatically creates a new Instrument containing the sample as its only Key Group.

**Save As Audio File Copy** Saves a copy of the edited sample to disk without updating or creating an Instrument.

**Save Audio Selection As** Saves the currently selected audio segment as a new file on disk.

**Revert Audio File** Reverts the current sample to its original, previously saved state.

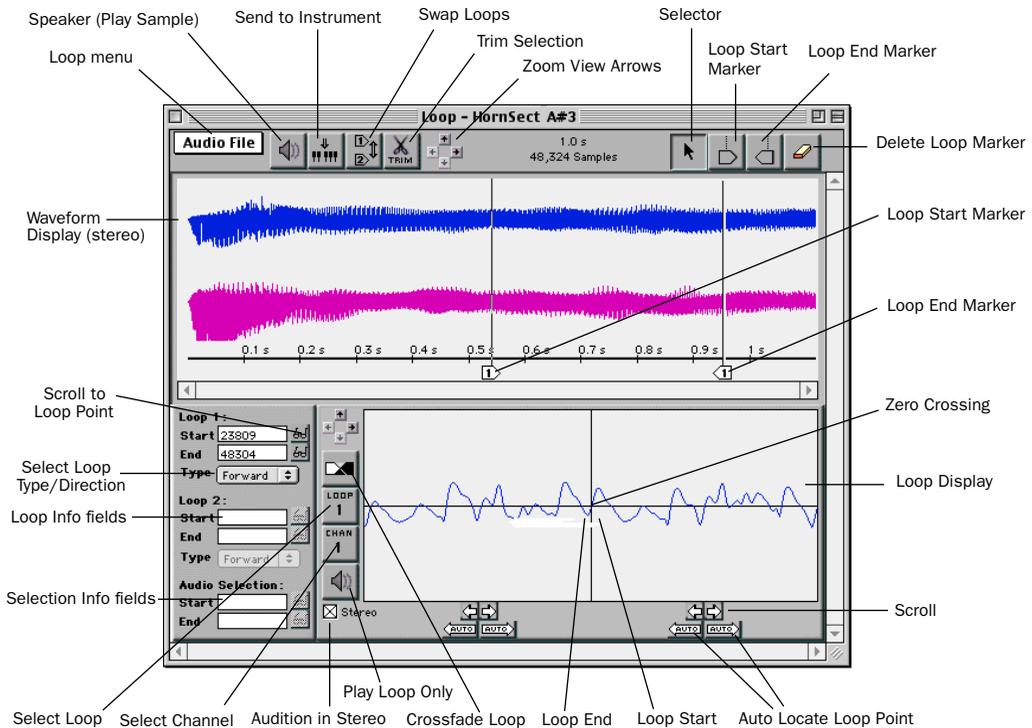
### Speaker Button

The Speaker button plays the current sample (using the Macintosh Sound Manager) through the computer's sound output, at the currently set volume level.

**💡** *To bypass Sound Manager and play a sample using Soft SampleCell's audio setup, click the Send to Instrument button and trigger the sample by playing notes on your MIDI controller.*



Speaker button



### Loop window

### Send to Instrument Button

Clicking this button sends the contents of the Loop window to Soft SampleCell for playback. If the sample is not currently in use in an Instrument, a new single-sample Instrument is automatically created for the sample. If the sample is currently in use in an Instrument, the Instrument is updated to use the edited sample. You can play the sample by triggering it from your MIDI controller.



Send to Instrument button

### Swap Loops Button

If a sample contains a single loop (Loop 1), clicking this button changes it to Loop 2. This transforms it from a Sustain/Release loop to a Release-only loop. You can then create a new Sustain Loop prior to it.

This is convenient when you've located a good Sustain/Release loop point then decide you'd like to use it as a Release-only loop instead (allowing you to find and create a new sustain loop location).



Swap Loops button

## Trim Tool

The Trim Tool deletes audio before and after a selection, leaving only the selection itself. Select audio with the Selector tool then click the Trim Tool to perform the trim operation.

**⚠** *Do not trim too much audio near loop points or you may not be able to create a crossfade loop. Crossfade loops use audio bordering loop points.*



Trim Tool button

## Zoom Arrows

These arrows zoom in on audio waveform in the Loop window. Up/Down arrows increase/decrease the height of the waveform, while Right/Left arrows zoom in/out along the time line. Option-click a Zoom arrow to zoom in or out to maximum resolution.

**💡** *You can also use the Arrow keys on your computer keyboard to zoom in or out.*



Zoom Arrows

## Selector

Use the Selector to move Loop Markers or select audio in the Loop window. To select audio, drag the Selector in the waveform. To move a Loop Marker, drag the Marker.



Selector

## Loop Start and End Markers

Drag a Loop Start or Loop End Marker onto a waveform to define loop start or end points. The first markers dragged onto a waveform are automatically defined as Loop 1 markers (Sustain/Release). Drag a second pair to define Loop 2 (Release only).

See “Creating Loops” on page 55 for more information on adding Loop Markers.



Loop Start and End Markers

## Delete Loop Marker

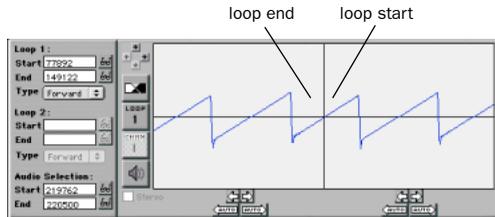
Select this tool and click on a Loop Marker to delete it.



Delete Loop Marker

## Loop Display

This window shows a close-up of the looped portion of a sample. The left pane shows the loop end. The right pane shows the loop start.



### Loop Display Tools

## Scroll Arrows

Clicking on these arrows moves a Loop Marker earlier (left arrow) or later (right arrow) in the sound file. The Scroll Arrows are best suited to making incremental adjustments in loop points. For larger adjustments, drag one of the Loop Markers in the upper waveform display.

 *Command-click the Scroll Arrows to scroll more slowly.*



Scroll Arrows

## Auto-Locate Loop Point

Clicking on the Auto-Locate Loop Point arrow automatically locates a suitable loop point in a sample based the value and the slope of the corresponding Loop Marker.

For example, if you are adjusting the Loop End, clicking the right Auto-Locate Loop arrow will move the Loop End to the next wave cycle that matches the slope and amplitude of the Loop Start.



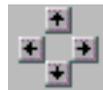
Auto Locate Loop Start/End

Clicking the left Auto-Locate Loop arrow would move the same marker earlier in the audio file to find a matching location.

Bear in mind that though these tools will match one marker's location to the other's slope and amplitude, this in itself does not guarantee a perfect loop. You will most likely need to use your ears and the Crossfade Loop tool to fine-tune most loops.

## Loop Zoom Arrows

These arrows adjust the zoom level. Up/Down arrows increase/decrease the height of waveforms. Right/Left arrows increase/decrease horizontal zoom.



Loop Zoom Arrows

## Stereo Checkbox

This checkbox lets you audition individual channels of a stereo loop. When selected, both channels of a stereo sample are auditioned. When deselected, the channel selected using the Channel Select button is auditioned.

## Crossfade Loop Button

Clicking this button opens the Crossfade Loop dialog box where you can select the type and length of a crossfade. You can choose a Linear or Equal Power crossfade and a Forward or Backward loop.

 See “Creating Crossfades” on page 57 for details.



Crossfade Loop button

## Loop Select Button

Clicking this button selects which loop (if there are two in the sample) is displayed for editing in the Loop Display.



Loop Select button

## Channel Select Button

Clicking this button will display either the left or right channel loop of a stereo sample.



Channel Select button

## Speaker Button

The Speaker button plays the selected loop through the computer's sound outputs using the Macintosh Sound Manager. If the Send to Instrument button is selected, you can listen to the loop as you change it by retriggering it on your MIDI controller.



Speaker button

## Loop Info

The Loop Info Area provides editable text fields for loop and audio selection start and end points. Clicking the Eyeglass icon scrolls the display to the selected loop point. A pop-up menu selects loop type.

### To set loop or selection points numerically:

- 1 Click the text field.
- 2 Type a numerical value and press Return.



Loop Info

---

## Creating Loops

In this section, you'll learn to create loops. The first step is to open the sample in the Loop window.

### To open a sample currently in use in an Instrument:

- 1 In the Bank window, select the desired Instrument and click the Sample Map button.
- 2 In the Sample Map window, select the sample that you want to edit and click the Loop button or choose Instruments > Edit (sample name).



Loop button

### To open a sample on disk (not in an Instrument):

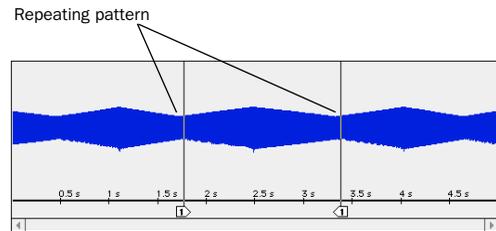
- 1 Choose Instruments > Edit Loops.

## Locating Good Loop Points

To create a good instrument loop you have to locate an area in a waveform where the audio material at the loop start and loop end points is as closely matched as possible in timbre, volume, and waveshape.

This helps prevent bumps, clicks, and other obvious audio artifacts from occurring at the *splice point*—the point where the loop start and end meet. The best potential loop points generally occur in an area of the waveform that is fairly stable and repetitive.

Use the waveform display to look for a repeating pattern in the waveform if possible. Then drag Loop Markers to approximate start and end points for the loop.



Good loop location

### To create a loop:

- 1 Click the Loop Start Marker then click at the desired point in the waveform display.



Loop Start and End Markers

- 2 Next, click the Loop End Marker, then click at the desired point in the waveform display.
- 3 Click the Speaker button in the Loop display to hear the loop. Loops are always auditioned through the Macintosh Sound Manager.

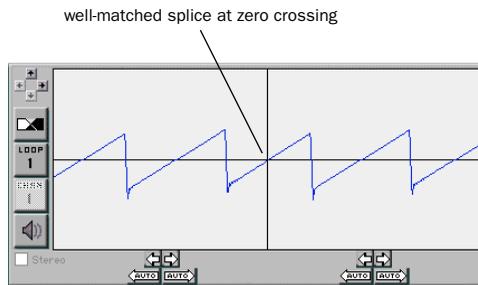
 See "Auditioning Loops" on page 56 for other ways to audition the loop or the entire sample.

## Fine Tuning a Loop

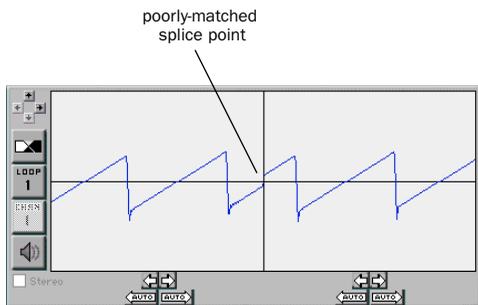
At this point, it is doubtful that the loop is perfect. Use the Loop Display to view and fine tune the splice point.

### To fine tune a loop:

- 1 Click the scroll arrows to move the Loop Start or End. Markers. Command-click to scroll more slowly.
- 2 Match the waveform's upward and downward slopes at the *zero crossing*—the point where the cross hairs meet in the Loop Display.



Good splice



Bad splice

- 3 If you can't find a good splice point, try clicking one of the Auto-Locate Loop Point buttons.

 Click on the waveform in the right or left pane of the Loop display and the corresponding Loop Marker will move to that location.

## Auditioning Loops

You can audition a loop in various ways. The Speaker button in the Loop display auditions only the loop itself. You can audition the rest of the sample through the Macintosh Sound Manager or through a Soft SampleCell Instrument and your current Soft SampleCell audio setup.

### Using Sound Manager

#### To play a sample in the Loop window:

- Click the Speaker button. The sample plays from its beginning through the looped audio, which is repeated.

#### To play the entire sample, ignoring loops and selections:

- Option-click the Speaker button.

#### To play only the loop:

- Click the Speaker button in the Loop Display area.

#### To play selected audio only:

- 1 With the Selector, make a selection in the waveform.
- 2 Click the Speaker button.

 You can also press the Spacebar to start playback.

### Using Soft SampleCell

To audition a sample through Soft SampleCell audio setup, you will use the Send to Instrument button. This also allows you to trigger the sample using a MIDI controller.

Clicking the Send to Instrument button sends the contents of the Loop window to Soft SampleCell for playback. If the sample is not currently in use in an Instrument, a new single-

sample Instrument is automatically created for the sample. If the sample is currently in use in an Instrument, the Instrument is updated to use the edited sample.



Send to Instrument button

### To play a sample through a Soft SampleCell Instrument:

- 1 Click the Send to Instrument button. The button stays selected until you click it again.
- 2 Play your MIDI controller.

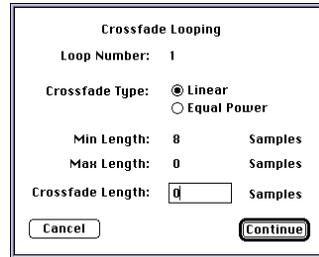
**▲** *With the Send to Instrument button selected, each time you edit a sample in the Loop window, the sample is updated in the Instrument in which it resides. Changes are temporary, however, until you resave the sample or the Instrument.*

## Creating Crossfades

To create a good loop, it is often necessary to crossfade across the transition between loop start and end points to smooth over audio artifacts.

Before creating a crossfade loop it is important that you locate a good loop point and try to match the splice point as well as possible first. Even a crossfade can't fix a really bad splice.

To ensure that loop transitions play smoothly, crossfades are centered over the loop start and end points. For this reason it is essential that there is ample audio material in the sample before and after the loop points. This will be used as part of the crossfade.



Crossfade Loop dialog

## Crossfade Parameters

**Crossfade Type** Offers either a *linear* or an *equal power* crossfade. A Linear crossfade uses a flat (linear) crossfade curve and is better for most applications. An Equal Power crossfade uses a non-linear fade curve. This type of crossfade is useful if the center of your crossfade seems to drop in volume.

**Crossfade Length** Determines how much waveform on either side of the loop points will be included in the crossfade. For this reason, the Crossfade Length must be shorter than the total length of the loop; shorter than the length of waveform between the very beginning of the sound file and loop start; and shorter than the length of waveform between the loop end and the end of the sound file.

### To create a crossfade loop:

- 1 With the sample open in the Loop window and loop points set, click the Crossfade button.



Crossfade button

- 2 Select the crossfade type and length that you want and click OK.

## Adding a Second Loop

Soft SampleCell can recognize two separate loops in an audio file. When only one loop exists that loop will be played during both the sustain and release portions of the sound file.

When a second loop is added to a file it becomes a Release loop, while the first loop becomes a Sustain loop.

### To create a Release loop:

**1** Click the Loop Start Marker then click at the desired point in the waveform display.



*Loop Start and End Markers*

**2** Next, click the Loop End Marker, then click at the desired point in the waveform display.

**3** Click the Loop select button to select Loop 2 for viewing, auditioning, and editing in the Loop display.



*Loop Select button*

**4** Click the Speaker button in the Loop display to hear the loop.

## Swapping Loops

If, after defining a single Sustain/Release loop you decide that you want to use it as a Release loop instead, you can do so by using the Swap Loops button. You will need to create a new Sustain loop for the file later.



*Swap Loops button*

### To swap loops:

**1** Using the Loop Markers, define Loop 1 in the sample.

**2** Click the Loop Switch button. The Loop 1 Markers change to Loop 2 Markers and the loop becomes a Release loop.

**3** Using the Loop Markers, define a new Sustain Loop (Loop 1).

## Deleting Loops

To delete one or more Loop Markers, use the Delete Loop Marker tool.



*Delete Loop Marker*

### To delete a loop:

**1** Click the Eraser icon. The cursor changes to an Eraser.

**2** Click the Loop Start and Loop End markers you want to delete.

---

## Trimming Audio

You can quickly trim audio before and after a selection in a waveform with the Trim button.

### To trim unwanted data from a sound file:

- 1 Select the area of the sound file that you want to keep.
- 2 Click the Trim button.



*Trim button*

All data but the selected area is removed. This can be undone by choosing Edit > Undo.

- 3 Choose Save Selection As from the Loop menu to save the trimmed sample.

Be sure to give the trimmed sample a new name so it doesn't overwrite the original audio file. You should also close the original sample, without saving changes to it, to leave it unchanged.

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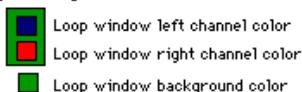
## Selecting Loop Window Colors

You can customize the colors used to display each audio channel and the background in the Loop window.

### To choose custom colors for the Loop window:

- 1 Choose SampleCell > Preferences.

#### Loop Editing



*Selecting custom colors for the Loop window*

- 2 Click one of the three color options and choose the desired color.
- 3 Repeat for the other channel or background options.

---

## Selecting a Different Sample Editor

If you'd rather use a different application for sample editing, Soft SampleCell allows you to do so. Use the Select Sample Editor command to select a compatible audio editing application.

### To choose a different sample editor:

- 1 Choose Instrument > Select Sample Editor.
- 2 Locate the application and click Open.
- 3 Soft SampleCell will remember the application you choose and open it whenever you use the Launch Sample Editor command.

### To launch the selected sample editor:

- 1 In the Sample map window, select the sample you want to edit.
- 2 Choose Instrument > Launch Sample Editor.

The sample is opened by the sample editor you selected.



## chapter 5

# Advanced Techniques

This chapter suggests some techniques for adding variety and realism to Instruments and samples. Use these examples as the starting point for your own experimentation.

## Templates

The basic function of an Instrument template is to store Key Group mapping and Instrument parameter settings. A template can be used as a starting point for new Instruments.

Soft SampleCell templates contain Sample Map, Matrix Modulation, Envelope, Tracker and other Instrument parameters.

### Automatically Load Samples

When the Automatically Load Samples option (in the Preferences window) is selected, Soft SampleCell will load all samples required by the Banks and Instruments currently being opened. When this option is deselected, the Instrument opens with blank samples and the Sample Map displays sample names in italics.

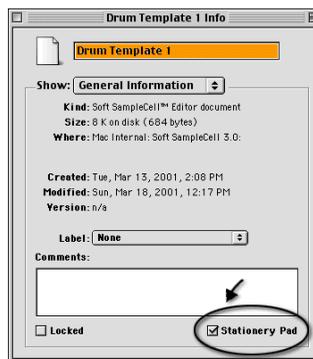
Individual key Groups or Velocity Zones can be selected and their samples replaced, or the original sample can be loaded by selecting its zone and choosing the Load Sample command.

Templates can be loaded with placeholder samples containing little or no audio information. This makes the template load quickly, and you can then replace the samples with real sound files.

Templates are convenient for setting up complex Instruments. For example, drum kit Instruments typically have a large number of individual samples, many Key Groups/Velocity Zones, and many individual parameter settings.

Once you set up a drum kit Instrument with the desired MIDI mapping, velocity, envelopes, filtering, panning, and so on, you can use the Save Instrument As command to save a new copy of that Instrument and use it as a template.

If you want to reuse an Instrument template many times, you can save it as a Stationery Pad using the Get Info command in the Finder.



*Saving an Instrument as a Stationery Pad*

### To create an Instrument template:

- 1 Open or create an Instrument and configure its Instrument parameters as desired.
- 2 Configure the Sample Map window and edit the Misc, Envelope, Matrix Modulation, Modulators, Trackers and Sample Parameters windows as appropriate.
- 3 Choose File > Save Instrument As and save the file, giving it a new name that identifies it as a template.
- 4 Open the template in one of the following ways:
  - ◆ To open the template quickly without loading any samples, open the Preference window and deselect the Automatically Load Samples option.
    - or –
  - ◆ To open the template and load all of its samples, make sure the Automatically Load Samples option is selected in the Preferences window, then open the template file.
- 5 Choose Save Instrument As to save the new Instrument under a new name, or choose Save Instrument to save a new version of the template.
- 6 When the template file opens, replace or load samples as necessary.

### Using Blank Samples

Instrument templates can use blank samples to conserve disk space and speed initial loading of the template. A blank sample is a very short audio file. Once the Instrument is open you can begin loading samples into the Sample Map to replace the blank ones.

## Instrument Defaults and Templates

Many Soft SampleCell parameters can be saved as Instrument defaults. It is important to understand how these defaults differ from the Instrument templates discussed earlier.

**Instrument Defaults** Are applied to all new Instruments. Any single- or multi-sample, mono or stereo Instrument will be configured according to the current Instrument Defaults.

Instrument Default settings are created whenever you choose Instrument > Set Instrument Defaults. This stores the current Instrument and Bank parameters (but not Key Group sample maps).

When a new Instrument is then created, the previously set Bank and Instrument default settings are applied. Instrument-specific parameters (Envelope, Matrix Modulation, Modulators, Trackers, and Misc Parameters) will be configured according to the Instrument file opened.

**▲** *If you are using both a SampleCell II card and Soft SampleCell, choosing Set Instrument Defaults only sets the default values for the SampleCell device the selected instrument is assigned to. If there is a set of defaults you want for both the SampleCell card and Soft SampleCell, choose Set Instrument Defaults once for each.*

**Instrument Templates** Provide a way for you to save different sets of Instrument Defaults with the added advantage of storing Key Group sample maps (since sample maps are not stored with Instrument Defaults).

---

## Using Trackers

Tracking Generators have many uses, including designing custom response curves, increasing the resolution of Matrix Modulation settings, adding an element of pitch randomization, and enhancing the effect of vibrato and other performance parameters.

### Custom Response Curves

Custom response curves are used to increase or decrease one parameter based on the input of another parameter. The Trackers enable you to draw a custom response curve, making it easy to increase the resolution of virtually any Matrix Modulation routing to achieve enhanced vibrato, and other effects.

Following are examples of how to use custom response curves in many different situations.

### Increasing the Resolution of Matrix Modulation

The Tracking Generators can be used to increase the resolution of Matrix Modulation. This is useful when a Matrix amplitude value of 2 isn't enough, but 3 is too much, for example.

This dilemma can arise when mapping velocity to pitch to simulate natural variations in drums and other percussion instruments. In such cases, too high a modulation setting can make the samples change pitch too much (tom toms start to sound like timpani, for example), while too low a setting might yield too subtle results.

In addition, you might not want a kick drum or cowbell to fluctuate in pitch as much as other components in the kit.

The following example illustrates how to use the Tracking Generator to subtly modulate a controlling modulator—in this case, velocity—to achieve enhanced resolution from a Matrix Modulation routing.

Try using an Instruments such as a Drum kit. Use the Tracking Generator to animate drum sounds while leaving the pitch of cymbals unaffected.

#### To use the Tracking Generator:

- 1 Open the Trackers window and choose the desired Instrument from the Instrument pop-up.
- 2 Choose Velocity from the Tracker 1 pop-up.
- 3 Edit the tracking curve so that it deviates slightly from its default linear shape. Try raising or lowering breakpoints slightly from center. Experiment with different settings to achieve the desired result.
- 4 In the Bank window, select the desired Instrument.
- 5 Open the Matrix Modulation window and create a modulation routing with Tracking Generator 1 as the Source and Pitch as the Destination.
- 6 Set the modulation Amplitude to 5 and play the Instrument.

If further adjustment is necessary, increase or decrease the Matrix Modulation amplitude of the Tracker to Pitch routing, or return to the Tracking Generator and edit the response curve. Experiment with these two parameters until your Instrument has just the right amount of response.

## Pitch Randomization

The Tracking Generator can be used to add pitch variation and randomization in Instruments to increase their realism and animation. This is particularly useful for emulating instruments such as dulcimers, koras, and non-western stringed instruments.

### Non-Semitone Pitch Variation

The following example demonstrates non-semitone pitch variation using the Tracking Generator.

#### To randomize pitch in non-semitone increments:

- 1 In the Bank window, select the desired Instrument
- 2 Open the Misc Parameters window and deselect Key Track.
- 3 Open the Trackers window and select MIDI Note # from the pop-up. Set the Tracker to its default linear curve if it's not already. Option-click on the breakpoints to reset them if necessary.
- 4 Open the Matrix Modulation window and create a modulation routing with Tracking Generator from the Source pop-up and Pitch from the Destination pop-up.
- 5 Set the amplitude to 99.

This should produce non-semitone tone increments. Experiment with the Matrix Modulation amplitude and the Tracker curve until the desired intonation is achieved.

### Subtle Detuning with Pitch Randomization

The following example demonstrates subtle pitch variation using the Tracking Generator.

#### To randomize pitch in subtle increments:

- 1 Open the Trackers window and choose the desired Instrument from the Instrument pop-up.
- 2 Choose Random Generator from the Tracker 1 pop-up.
- 3 Edit the tracking curve so that it deviates from its default linear shape. Areas where you raise the curve will apply more of the Random Generator.

This curve will be the basis of the randomization of the Instrument, visually representing the ranges in which the Instrument's tuning will be sharp or flat.

- 4 Open the Matrix Modulation window and create a modulation routing with Tracking Generator 1 as the Source and Pitch as the Destination.
- 5 Set the modulation Amplitude to 10 and play the Instrument.

This will take the Instrument slightly out of tune while maintaining a sense of pitch center.

#### For greater pitch variation in the response of the Instrument:

- 1 Return to the Matrix Modulation window and create a modulation routing with Random Generator as the Source and Pitch as the Destination
- 2 Set the modulation Amplitude to 12.
- 3 Repeatedly play a note on your MIDI controller., listening to the pitch variation produced by the Random Generator.

The Random Generator is generally a subtle modulation source. It can add a very natural destabilization to the tonality of the Instrument.

## Dynamic Vibrato

The Tracking Generator can also be used for dynamic vibrato. Soft SampleCell provides a type of default vibrato by mapping LFO 1 to Pitch. Using the Tracking Generator, you can apply a response curve that varies the width of the vibrato varies depending on the relative pitch of the note.

For this example, consider how vibrato sounds on violins and other bowed stringed instruments. Vibrato is commonly wider in upper registers than it is in lower registers. The reason for this becomes clear if you look at the neck of a guitar, where frets are closer together higher up the neck. The higher the frequency, the less distance there is between pitches.

The same vibrato technique may vary the pitch  $\pm$  a quarter step when applied to the lowest note, but significantly more (a half or more) an octave higher on the same string.

You can use the Tracking Generator to set up a curve that, when mapped to the vibrato-generating LFO 1 Amplitude, can increase the width of the vibrato in the upper registers to more closely match this effect. While it is very simple to achieve this by simply mapping MIDI Note # to LFO 1 Amplitude in the Matrix Modulation window, the resolution of the Matrix Modulation Amplitude may be insufficient to achieve the desired result

The Trackers can provide a more subtle degree of vibrato variation, especially when an Instrument's range is limited.

### To add dynamic vibrato:

- 1 Open the Trackers window and choose the desired Instrument from the Instrument pop-up.
- 2 Choose MIDI Note # from the Tracker 1 pop-up.

- 3 Edit the tracking curve by raising the upper breakpoints slightly and lowering the bottom breakpoints slightly.

- 4 In the Bank window, select the desired Instrument.

- 5 Open the Matrix Modulation window and create a modulation routing with Tracking Generator 1 as the Source and LFO 1 as the Destination.

- 6 Create a second modulation routing with LFO 1 as the Source and Pitch as the Destination. (If this routing already exists, skip this step.)

- 7 Set the modulation Amplitude to 15 and play the Instrument.

- 8 Adjust the modulation Amplitude until the desired effect is achieved.

## Delayed Vibrato

Delayed vibrato is another expressive effect. Many singers and instrumentalists don't apply vibrato immediately. Rather, a long note will be held steady for a variable amount of time, then gradually colored by increasing amounts of vibrato.

In Soft SampleCell, this can be accomplished by mapping your MIDI controller's mod wheel to LFO amplitude, or by using the Ramp Generator to delay vibrato by a constant amount, or by using an Envelope to delay vibrato by a variable amount.

**Mod Wheel** Using the mod wheel to control LFO amplitude is the easiest way to achieve delayed vibrato. This method is ideal when you have a hand free, but is of no use if both hands are busy and you don't have a foot pedal controller.

**Ramp Generator** Using the Ramp Generator is another simple way to set up a delayed vibrato effect. The only drawback to this technique is that the speed of the Ramp Generator itself cannot be modulated by any other parameter (such as a Mod Wheel, MIDI Note #, Pressure, and so on).

**Envelope** Using an Envelope to control the delay time of Vibrato offers greater flexibility, and it only takes a few steps to achieve.

#### **To use the Ramp Generator to delay vibrato:**

- 1** In the Bank window, select the desired Instrument
- 2** Open the Modulators window and set the Ramp Time fairly high. (You can readjust it later.)
- 3** Open the Matrix Modulation window and create a modulation routing with Ramp Generator as the Source and LFO 1 as the Destination.
- 4** Set the modulation Amplitude to 30.
- 5** If necessary, adjust the Ramp Time control in the Modulators window or the modulation Amplitude in the Modulation Matrix window until the desired effect is achieved.

#### **Dynamic Vibrato Delay**

Though the preceding example yields useful results, the rate of the delay remains the same regardless of the pitch. To produce a less linear application of vibrato, you can utilize a Tracking Generator to add a response curve to the rate of delay.

#### **To use a Tracking Generator to delay vibrato:**

- 1** In the Bank window, select the desired Instrument.
- 2** Open the Trackers window and choose MIDI Note # from the Tracker 1 pop-up.

**3** Edit the tracking curve. To have vibrato appear quicker in the higher registers, raise the upper breakpoints slightly. To have vibrato appear slower on lower register notes, lower the bottom breakpoints slightly.

**4** Open the Envelopes window and set a slow Attack for Envelope 2.

**5** Open the Matrix Modulation window and create a modulation routing with Tracking Generator 1 as the Source and Envelope 2 Attack as the Destination.

**6** Set the modulation Amplitude to -11. This makes higher notes reduce the Envelope Attack time.

**7** Create a second modulation routing with Envelope 1 Attack as the Source and LFO 1 as the Destination.

**8** Set the modulation Amplitude to 30.

**9** Play notes in the lower, middle and upper registers of your MIDI controller, and listen to the rate at which vibrato begins to appear.

If necessary, return to the Tracking Generator and Matrix Modulation windows to adjust the vibrato delay until the desired effect is achieved.

---

## Filters

An Instrument's filter can be used for many creative effects. Two possible uses are to brighten drum and percussion Instruments and to reduce noise on samples with slow attacks.

### Using the Filter to Dynamically Control Percussion Brightness

A simple but effective way to brighten drum and percussion sequences is to use Soft SampleCell filters.

#### To use the filter to enhance percussion:

- 1 In the Bank window, select the desired Instrument.
- 2 Open the Misc Parameters window by clicking the Misc Parameters button or choosing Windows > Misc Parameters.
- 3 From the Filter Poles pop-up, choose 1 pole.
- 4 Open the Matrix Modulation window and create a modulation routing with Velocity as the Source and Filter Frequency as the Destination.
- 5 Set the modulation Amplitude to  $\pm 30$ . Don't set the Amplitude much higher or the filter may close completely on quiet notes.

This modulation routing mimics the way real drums can sometimes sound brighter when hit harder, and duller when hit softer.

- 6 Open the Misc Parameters window and set the Filter Cutoff somewhere below maximum.
- 7 Set the Overlap Amount to 75.

This prevents successive notes from cutting off previous ones as the filter responds to new velocity amounts.

The only limitation of this technique is that no drummer's dynamics are as consistent as the 0-127 unit resolution of MIDI velocity. For situations where you want variation that exceeds the simple Velocity-to-Filter example, you can add the Random Generator into the mix to further modulate the filter in subtle, or not-so-subtle, ways.

#### To use the Random Generator to enhance filtering:

- 1 Set up the Velocity to Filter Matrix path as described in the previous example, using the 1-pole filter.
- 2 Open the Matrix Modulation window and create an additional modulation routing with Random Generator as the Source and Filter Frequency as the Destination.

You now should have two different filter modulation sources: Velocity and the Random Generator.

- 3 Set the modulation Amplitude of the Random Generator-to-Filter path relatively high, then experiment until you find a good balance between controlling the Filter Frequency with Velocity versus the Random Generator.

Keep in mind that the Random Generator is a subtle modulation source, so you may find that you need to create multiple routings of Random Generator to Filter Frequency to achieve more obvious results.

## Filtering Out Noise

If you have a noisy sample you may find that the signal-to-noise ratio in the lower dynamic range is undesirable. This is usually most apparent during the decay stage of the sample, where you may notice ambient noise as the sample fades out.

To reduce the effect of such noise, try routing Envelope 3 to the Filter Frequency in the Modulation Matrix. Use a moderate modulation Amplitude so that the filter opens as the sound builds and closes as the sound decays.

## Filtering Sound Effects for Film/Video

You can use your external MIDI controller and Soft SampleCell's filters to gain control over the frequency spectrum of sound effect. This effect works especially well with sounds that have a lot of high frequency content.

Here is an example of when this might be useful. Imagine that were doing sound effects for a scene in a film in which a jet passes overhead. If the scene took place in the middle of an open field, the raw sample from your sound effects library would probably sound realistic.

But what if the scene took place on a city street, surrounded by skyscrapers? In such a situation, the sound of the engines would be muted, then grow in loudness until the jet was directly overhead.

When the jet disappeared again, its sound would once again diminish, then drone away into the distance.

By creating a Matrix Modulation routing with your MIDI controller's mod wheel controlling Filter Frequency, you can perform filter changes in real time while watching a reference video.

This would allow you to match the timing of the oncoming jet (the filter slowly opening), the jet overhead (the filter full open), and the receding jet noise (the filter closing again gradually).

---

## Ensemble Instrument Performance Ideas

This section provides examples of how to use Matrix Modulation routings to enhance ensemble instruments such as horn or string sections.

### Using a Mod Wheel

Pitch bend or LFO pitch modulation are great for synth sounds or even some solo acoustic instruments like guitar or trumpet. However, ensemble acoustic instruments rarely sound authentic when all of them are modulating at the exact same rate, and as a result the mod wheel (or pitch wheel too) usually goes unused with such Instruments. This makes the pitch and/or mod wheel available for real-time control of other parameters—ones that you can put to use in very powerful and expressive ways.

### Increasing Expression with Sample Select

This technique requires an ensemble Instrument with several Velocity Zones per Key Group—the more the better. The main component of this effect is controlling Sample Select with a mod wheel control wheel.

When the Instrument's Velocity Zones contain multiple dynamic variations of the sound, the result is additional expressiveness throughout the dynamic range of the Instrument. When the different Velocity Zones contain different riffs or stylistic inflections, the mod wheel allows you to perform parts with much greater nuance!

**To use a mod wheel to select samples in real time:**

- 1 In the Bank window, select the desired Instrument.

- 2 Open the Matrix Modulation window and create a modulation routing with Mod Wheel as the Source and Sample Select as the Destination.

For now, you might want to turn off any other mod wheel mappings (such as LFO or other standard mod wheel assignments).

- 3 Experiment with the mod wheel while playing at different dynamic levels.

The mod wheel can cause the upper Velocity Zones to be triggered, yet the volume will still be controlled by Velocity.

You can also use this technique to simulate the real-time effect of a Hammond organ's percussion drawbar being pushed in and out. If you load highly percussive samples into the upper Velocity Zones, the mod wheel will trigger sounds with a bright attack, even at low velocities.

**Here's an additional trick:**

- 1 In the Bank window, select the desired Instrument.

- 2 Open the Matrix Modulation window and create a modulation routing with Mod Wheel as the Source and Envelope 3 Amplitude as the Destination.

- 3 Set the modulation Amplitude to -99.

This effectively makes it a volume control for performing fade outs.

- 4 Open the Trackers window and choose Mod Wheel from the Tracker 1 pop-up.

- 5 Edit the tracking curve by lowering the middle breakpoints and creating a crescent shape.

The combination of these two Matrix Modulation routings all you to use the mod wheel for a much greater range of dynamic expression.

**Enhanced Strings**

Bowed stringed instruments do not have uniform attacks at different dynamic levels. When bowed to produce a loud note, a cello, for example, will respond instantaneously and be immediately audible. When bowed slowly, however, the attack is slightly delayed due to the slower draw of the bow over the string.

If you don't have the luxury of using multi-sampled strings, you can simulate this effect by mapping Envelope 1 or 2 to the amplitude-controlling Envelope 3.

**To improve string ensemble realism:**

- 1 In the Bank window, select the desired Instrument.

- 2 Open the Envelopes window.

- 3 Edit Envelope 2 by increasing its Attack time so that it is greater (slower) than the Envelope 3 Attack.

The greater the difference between these two parameters, the more exaggerated the effect.

- 4 Open the Matrix Modulation window and create a modulation routing with Velocity as the Source and Envelope 3 Amplitude as the Destination. Set the modulation Amplitude to 90.

- 5 Create a second modulation routing with Envelope 2 as the Source and Envelope 3 Attack as the Destination. Set the modulation Amplitude to 30.

Envelope 2 will respond to softly played notes, while Envelope 3 will respond to a high velocity

 *For additional realism, map Envelope 2 to the Filter with a modulation Amplitude of 99.*

## Chorusing

Chorusing is useful for thickening Instruments. You can achieve good chorusing effects with the following example.

### To use chorusing:

- 1** In the Bank window, copy and paste the Instrument so that you have 2 of the same Instruments in the Bank.
- 2** In the Bank window, select the copied Instrument.
- 3** Open the Misc Parameters window and detune the Instrument slightly with the Detune slider.

 *For more chorusing effects, try mapping a Modulator to the Pitch of the second Instrument. Experiment with different LFO Sync and Waveform settings.*

---

## Other Effects and Tricks

Following are additional techniques for adding realism to sampled instruments.

### Controlling Sample Start with Velocity

When adding footsteps or similar sound effects to a project, simply increasing the volume of the effect as a character approaches is often unsatisfactory. Instead, you can modify the footsteps so the sound's attack becomes more pronounced as they get closer.

This can be achieved by mapping Velocity to Sample Start Point in the Matrix Modulation window.

#### To control Sample Start with Velocity:

- 1** In the Bank window, select the desired Instrument.
- 2** Open the Sample Map window and double click the sample to open the Sample Parameters window.
- 3** Adjust the Zone Start to the lowest velocity you will be triggering.
- 4** Open the Matrix Modulation window and create a modulation routing with Velocity as the Source and Sample Start Point as the Destination.
- 5** Set the modulation Amplitude to a negative value. This will make the sample start earlier with higher velocities.

## Enhancing Drums

Sample randomizing allows you to randomly play different samples with the same MIDI note. This is especially helpful in making sampled drums sound less repetitive. To use this technique, you must use an Instrument with at least 2 Velocity Zones in its samples.

### To randomize sample selection:

- 1** In the Bank window, select the desired Instrument.
- 2** Open the Matrix Modulation window and create 3 identical modulation routings with Random Generator as the Source and Sample Select as the Destination.
- 3** Set the modulation Amplitude to 99.

Since the Random Generator selects Left/Right independently, this example only works with mono samples. It might, for example, play the left channel of sample 1 and the right channel of sample 2.

If you are working with stereo samples, try using an LFO to modulate Sample Select instead of the Random Generator.



## chapter 6

# Soft SampleCell Menus

## File Menu

File	
New	⌘N
Open...	⌘O
Close	⌘W
Close All	⌘⇧W
Save All Changed	⌘⇧S
Save Bank	⌘S
Save Bank As...	
Revert Bank	
Get Bank Info	⌘I
Page Setup...	
Print...	⌘P
Quit	⌘Q

*File menu*

### New

Creates a new Bank or a new Instrument. The four Instrument types are:

**Multi-Sample Instrument** An Instrument using one or more mono samples with modulation options.

**Stereo Multi-Sample Instrument** An Instrument using one or more stereo samples with modulation options.

**Single-Sample Instrument** An Instrument using one mono sample in a single Key Group without modulation options.

**Stereo Single-Sample Instrument** An Instrument using one or more stereo samples in a single Key Group without modulation options.

### Open

Opens an existing Bank, Instrument or sample.

### Close

Closes the active window.

### Close All

Closes all currently open windows.

### Save All Changed

Saves all modifications made to any open Banks and all of the Instruments they contain.

### Save Bank

Saves the current Bank to the drive and directory from which it was loaded.

## Save Bank As

Saves the current Bank to a specified drive and directory. This command also allows you to save Instruments and samples to a new directory.

## Revert Bank

Reverts to the last saved version of the current Bank.

## Save Instrument

Saves the currently selected Instrument to the drive and directory from which it was loaded.

## Save Instrument As

Saves the current Instrument to a specified drive and directory. Also allows you to save all samples associated with the Instrument to a new directory.

## Revert Instrument

Reverts to the previously saved version of the Instrument.

## Get Bank Info

Displays comments about the current Bank. Bank Info comments are displayed in the Open and Where Is dialogs.

## Quit

Quits Soft SampleCell.

---

## Edit Menu



*Edit menu*

## Undo

Undoes the last command or edit (not all commands/edits can be undone).

## Cut Instrument

Removes the currently selected Instrument from a Bank and places a copy on the Clipboard. Cannot be Undone.

## Copy Instrument

Places a copy of the currently selected item onto the Clipboard, without removing it from the Bank. Cannot be Undone.

## Paste Instrument

Pastes an Instrument from the Clipboard into the current Bank. A copy of the Instrument remains on the Clipboard as well. Cannot be Undone.

## Clear Instrument

Removes the currently selected Instrument from a Bank without placing a copy on the Clipboard. Cannot be Undone.

## Show Clipboard

Shows the current contents of the Clipboard.

---

## Instrument Menu

Instrument	
New Velocity Zone...	⌘J
New Key Group...	⌘K
Add Multiple Key Groups...	⌘T
Reload Sample	
Unload Sample	
Change Sample...	
Sample Parameters...	
Launch Sample Editor	
Select Sample Editor...	
Edit Loops...	
Edit "HornSect Lp C3"	⌘E
Convert Instrument To Mono	
Set Instrument Defaults	
Map All Instruments	⌘M
Set Root Notes...	
Reorder Key Groups By Root Note	
Spread Key Groups	

*Instrument menu*

## New Velocity Zone

Creates a new Velocity Zone within the currently selected Key Group and loads a selected sample into that Velocity Zone. You can create a maximum of 6 Velocity Zones per Key Group. If a stereo sample is selected for a mono Instrument, you have the choice of selecting channel 1 (left) or 2 (right) as the channel to load.

## New Key Group

Creates a new Key Group for a selected sample and loads the sample into the Key Group. Each Instrument can have a maximum of 60 Key Groups. The new Key Group is placed at the right end of the Sample Map, with a default range of one note.

## Add Multiple Key Groups

Lets you select multiple samples and load them into an Instrument. This command is useful for quickly building multi-sample Instruments.

## Load Sample

Loads a sample into the currently selected Key Group or Velocity Zone.

## Unload Sample

Unloads the currently selected sample from an Instrument while retaining its Key Group/Velocity Zone mapping and file referencing.

## Reload Sample

Reloads a sample or region that has been unloaded or modified and resaved.

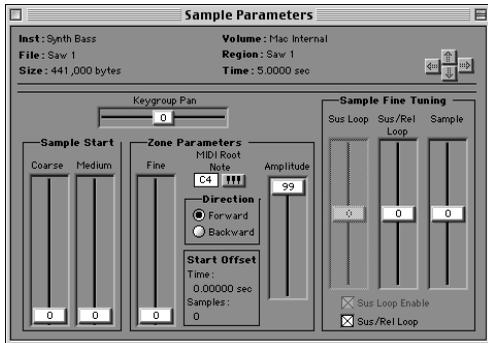
## Change Sample

Loads a new sample into the currently selected Key Group or Velocity Zone. Any parameters you have set for this sample (such as Start Point, Tuning, and so on) will be applied.

## Sample Parameters

Opens the Sample Parameters window for the currently selected sample in the Sample Map window.

 *The Sample Parameters window can also be opened by double-clicking a sample in the Sample Map window.*



Sample parameters window

## Sample Parameters

The following information is displayed in the Sample Parameters window:

**Instrument** Shows the name of the Soft SampleCell Instrument that contains the currently selected sample file.

**File** Shows the name of the currently selected sample file.

**Size** Shows the file size of the currently selected region/file.

**Volume** Shows the location of the currently selected sample file.

**Region** Shows the name of the currently selected region.

**Time** Shows the length of the file/region (in seconds).

## Global Parameters

The following parameters are global sample parameters. Their effect is heard in all currently open Instruments that use the selected sample:

**Sample Start Coarse** Adjusts the sample start point over the entire sample length.

**Sample Start Medium** Provides fine-tuning adjustments for the Sample Start Coarse setting.

**Sus Loop Fine Tune** Sets the fine tuning of the sample's pitch during the sustain loop. This slider is only available if the sample has two loops.

**Sus/Rel Loop Fine Tune** Tunes the pitch of a sample's sustain/release or release loop. This control is not available if a sample has no loops. If a sample has one loop only, the Sus/Rel control fine tunes the audio played during both sustain and release loops. If a sample has two loops, this control tunes the audio played during the release loop.

**Sample Fine Tune** Sets the overall fine tuning of the sample's pitch.

**Sus Loop Enable** Activates the sustain loop when checked. Click to toggle on/off. This control is only available if a sample has two loops.

**Sus/Rel Loop Enable** When enabled, activates the sustain/release or release loop. Click to toggle on/off.

## Instrument-Specific Parameters

The following parameters are Instrument-specific parameters. Their effect is heard only in the current Instrument:

**Key Group Pan** Controls panning of the selected sample within the Instrument's overall stereo field. A setting of zero pans the sample in the center of the stereo field

**Sample Amplitude** Sets the volume of the selected sample.

**Fine (Zone Start)** Sets the playback start point of the sample in smaller increments than the sample start coarse/medium. This parameter only affects the currently selected sample (not copies of the sample used in other open Instruments). This control is useful for eliminating unwanted silence or transients at the beginning of a sample.

**MIDI Root Note** Specifies the MIDI note that will play the sample at its original pitch. To set the MIDI Root Note, click the pop-up keyboard and select a note value.

**Direction** Determines whether the sample will be played forward or backward. Loops are ignored when Backward is selected.

## Launch Sample Editor

Selects and opens a different sample editing application and opens the currently selected sample. After editing, you will need to use the Reload Sample command if you edited the sample destructively, or use the Change Sample command to load a new version of the sample.

## Select Sample Editor

Selects the sample editing application that will launch when you click the Edit Sample button.

## Edit Loops

Selects an audio file to load into the Loop window.

## Edit “sample name”

Loads the sample currently selected in the Sample Map window into the Loop window.

## Convert Instrument to Stereo/Mono

Converts the currently selected Instrument to stereo if it is mono, and vice-versa. The new Instrument will have “mono” or “stereo” appended to its name.

## Get Instrument Info

Displays comments about the currently selected Instrument. Comments are useful for making comments about an Instrument such as “Pitch Wheel controls pitch, Mod wheel controls panning,” and so on.

## Set Instrument Defaults

Saves the parameters (Modulators, Envelopes, and so on) for the currently selected Instrument as defaults for use when creating new Instruments or adding Instruments to a Bank. If you create a new Instrument, the saved settings are applied to the entire Instrument. If you open an Instrument into a Bank, only the saved Bank-specific parameters (Panning, MIDI channel, Instrument Volume) are applied since the Instrument-specific parameters are taken from the Instrument file itself.

## Map All Instruments

Remaps all Instruments in the current Bank and adjusts the Hi/Lo Note range of each Instrument so that it has a unique note range. For example, if two Instruments are added to a Bank and both of their note ranges are from A0 to C8, the Map All Instruments command will remap the first (left-most) Instrument’s Lo/Hi note range to A0 to F4, and the second Instrument to F#4 to C8.

## Set Root Notes

Sets the MIDI Root Note for a selected sample automatically, based on the lowest, highest or middle note of the sample's Key Group.

 *If the files is an AIFF file, you can also set the MIDI root note using the root note definition stored in the file.*

## Reorder Key Groups By Root Note

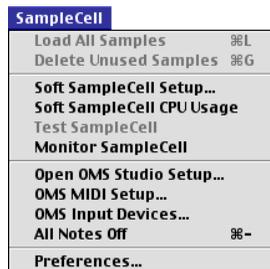
Rearranges Key Groups selected in the Sample Map window (including all Key Groups to the right of the selected Key Group), sorting them by root note in ascending order across the Instrument.

## Spread Key Groups

Moves and resizes the selected Key Groups (including all Key Groups to the right of the selected Key Group) so that they are of equal width and range.

---

## SampleCell Menu



SampleCell menu

### Load All Samples

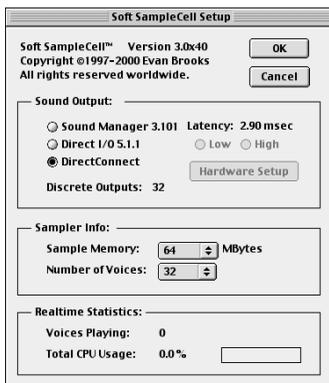
Loads all samples needed for the currently open Bank and Instruments.

## Delete Unused Samples

Removes any samples from memory that are not being used by the current Instrument.

## Soft SampleCell Setup

Use this dialog to configure Soft SampleCell voice polyphony, sample memory and sound output options. See “Configuring Soft SampleCell” on page 5 for details on using this command.



Monitor SampleCell window

## Soft SampleCell CPU Usage

Displays the percentage of available processing currently used by Soft SampleCell.

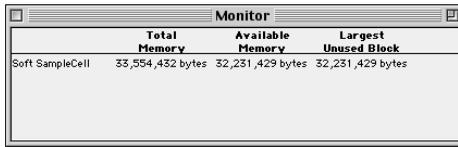
 *For best performance do not exceed a system load of 50%. To reduce CPU usage, use the Soft SampleCell Setup dialog to reduce the number of SampleCell voices.*

## Test SampleCell

If you are using a SampleCell card, this command tests its various RAM and ROM components. Without a SampleCell card, this command is unavailable. For more details about this feature, see the SampleCell II User's Guide.

## Monitor SampleCell

Displays the amount of RAM currently available and currently in use by Soft SampleCell.



	Total Memory	Available Memory	Largest Unused Block
Soft SampleCell	33,554,432 bytes	32,231,429 bytes	32,231,429 bytes

Monitor SampleCell window

**Total Memory** Shows the total amount of RAM allocated for Soft SampleCell sample playback.

**Available Memory** Displays the amount of memory left for additional samples.

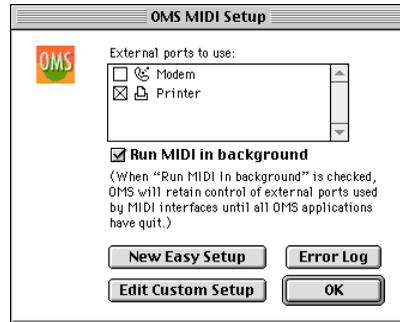
**Largest Unused Block** Displays the size of the largest block of contiguous, unused RAM. Soft SampleCell cannot load samples larger than the largest unused block because it must store samples in a contiguous block of memory.

## Open OMS Studio Setup

Launches the OMS Setup application and opens the current Studio Setup document. For details on configuring your OMS Studio Setup, see “Configuring OMS” on page 4.

## OMS MIDI Setup

Opens the OMS MIDI Setup dialog, where you can enable and disable ports for MIDI communication. For details on configuring your OMS MIDI setup, see “Configuring OMS” on page 4



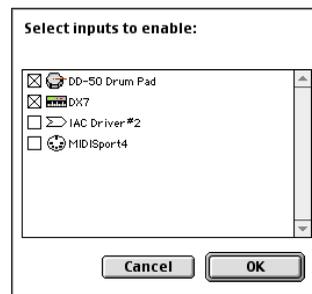
OMS MIDI Setup dialog

For more information, refer to the *OMS Manual*.

## OMS MIDI Input Devices

Opens the OMS MIDI Input dialog, where you can enable MIDI controllers and other devices for playing Soft SampleCell. For details on configuring your OMS MIDI setup, see “Configuring OMS” on page 4.

**⚠** Do not enable any OMS Input Devices here if you plan to use Soft SampleCell with a sequencer. Doing so will result in doubled notes as MIDI data is sent twice—directly from the MIDI device, and also from a MIDI track in the sequencer.



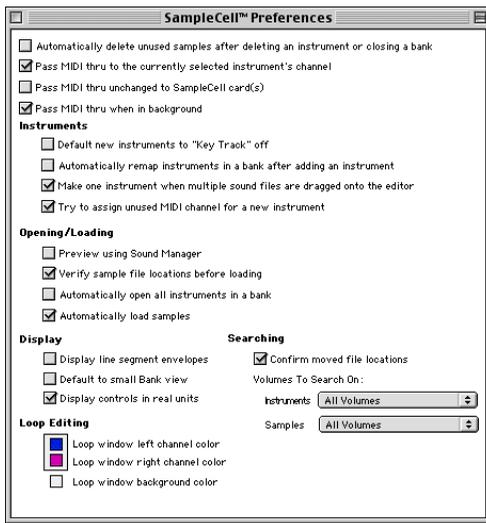
OMS MIDI input devices

## All Notes Off

This command turns off all notes playing on all Instruments in all Banks. Use it if MIDI notes become stuck.

## Preferences

The options in the Preferences window allow you to customize several Soft SampleCell operating parameters.



Preferences window

## General Preferences

**Automatically delete unused samples** When a Bank is closed or an Instrument deleted, this ensures that the associated samples are removed from memory. This is recommended for efficient memory management.

## Pass MIDI Thru to selected instrument's channel

Allows you to switch back and forth to adjust Soft SampleCell parameters without having to set the correct MIDI channel to trigger the selected Instrument. Incoming MIDI data will be sent to all currently selected Instruments, regardless of MIDI channel assignment. Deselecting this option avoids the possibility of double-triggering of notes, a situation that can occur when the sequencer and the Instrument are already set to the same channel.

If you have several Instruments assigned to the same MIDI channel, MIDI Thru will play through all of them, not just the one currently selected.

**Pass MIDI Thru unchanged** Allows you to trigger Soft SampleCell playback from a MIDI sequencer or from a MIDI application on a different computer. With this option selected, notes are triggered according to the channel sent by your MIDI controller, regardless of which instrument is selected.

If you are using SampleCell II cards in addition to Soft SampleCell, MIDI notes will be sent to Instruments set to the corresponding channel on all SampleCell devices.

If you want MIDI thruing to occur in the background, also select the Pass MIDI Thru When in Background option.

**Pass MIDI thru when in background** Allows external MIDI devices to continue triggering playback of Soft SampleCell, even if Soft SampleCell Editor is not the current application. Also select Pass MIDI Thru Unchanged in the SampleCell Preferences dialog for this to work properly.

## Instruments Preferences

**Default new Instruments to “Key Track” off** Specifies that the pitch of any new Instruments are not affected by MIDI notes. This feature is useful when creating a Bank of non-pitched Instruments such as sound effect.

**Automatically Remap Instruments** This command spreads all existing Instruments in the current Bank whenever a new Instrument is added. Instrument range is spread over a 5 octave range and the center note of each Key Group is assigned to the MIDI Root Note. For example, if you have 5 Instruments open, the left-most Instrument is mapped from C0 to B2 with its root note set to F#2. Moving to the right, the next Instrument is mapped from C3 to B3 with a root note of F#3, and so on. This is an easy way to build sound effects or drum kit Banks on the fly.

**Make One Instrument** When this option is selected, all sample files are loaded into one new Instrument when dragged onto the Soft SampleCell Editor. If they are AIFF files, their Key Group mapping is taken from the parameters in the AIFF file.

When this option is not selected, a new Instrument is created for each sample file, and Instrument Hi & Lo note mapping will observe the AIFF parameters (if they exist). If they are not AIFF files they will be sorted and loaded in alphabetical order by sample name.

**Try to Assign Unused MIDI Channel** This option supersedes the Instrument defaults and automatically assigns the first unused MIDI channel available for each new Instrument.

If no MIDI channels are in use, or none are available, the Instrument will be set to its default MIDI channel, which can result in duplicate MIDI channel assignments.

This Preference only looks for unused channels in the current Bank. If you have more than one Bank open, it is possible that this Preference will assign a MIDI channel that is already in use by another open Bank.

## Opening/Loading Preferences

**Preview using Sound Manager** This option lets you use the Macintosh Sound Manager to audition samples in file dialogs for Open, New Key Group and Add Multiple Key Groups. If this option is deselected, audio previewing is through Soft SampleCell’s audio setup. Preview “Stop” is not available when monitoring through Soft SampleCell.

If you are using SampleCell II cards in addition to Soft SampleCell, previewing will take place through whichever SampleCell device was most recently selected.

**Verify sample file locations** Specifies whether Soft SampleCell verifies file locations before loading or during loading. By verifying before loading, you may find out sooner that Soft SampleCell Editor is looking for a file on a CD you don’t have anymore. By verifying during loading, you may do less disc swapping if the Bank uses samples from more than one CD-ROM.

### **Automatically open all Instruments in a Bank**

This option skips the Select Instrument dialog that appears when opening Banks. The Select Instrument dialog lets you choose which individual Instruments in a Bank you want to load.

**Automatically load samples** Loads each associated sample when an Instrument or Bank is opened. When this option is off Banks and Instruments are opened without the associated sample files loaded into RAM.

## Display Preferences

**Display line segment envelopes** Displays envelope controls in the Envelope window as line segments than can be dragged for editing. When deselected, displays envelope controls as sliders.

**Default to Small Bank View** Sets the default Bank view. When selected, newly created or opened Banks are displayed in small height view. When deselected, banks are displayed in full-height view.

**Display controls in real units** Displays Instrument parameters in real unit values (ms, Hz, and so on) or Soft SampleCell values (0-127 and other control ranges).

## Loop Editing Preferences

Lets you set channel and background colors for the Loop window. Refer to “Selecting Loop Window Colors” on page 59 for details.

## File Searching Preferences

Lets you specify the locations on which to search for Soft SampleCell Instruments and samples.

---

## Windows Menu

Windows	
Sample Map	⌘1
Misc Parameters	⌘2
Envelopes	⌘3
Matrix	⌘4
Modulators	⌘5
Trackers	⌘6
Switch Bank Size	⌘B
Drum Bank	
✓ Keyboard Bank	⌘0

*Windows menu*

## Sample Map

Opens the Sample Map window.

## Misc Parameters

Opens the Misc Parameters window.

## Envelopes

Opens the Envelopes window.

## Matrix

Opens the Matrix Modulation window.

## Modulators

Opens the Modulators window.

## Trackers

Opens the Trackers window.

## Switch Bank Size

Switches the Bank Size View for the current Bank from full-size view to small-size view, and vice versa.

## Current Bank

At the bottom of the Windows menu, all currently open Banks are listed. Selecting a Bank makes it the active Bank window.

## appendix a

# Using Soft SampleCell with Pro Tools

By using DirectConnect to integrate Soft SampleCell within a Pro Tools session, you can take advantage of the many MIDI recording and editing, digital mixing, and DSP processing capabilities of Pro Tools.

DirectConnect is a Macintosh-only plug-in that allows up to 32 separate audio channel outputs from Soft SampleCell to be independently routed, recorded, processed, and mixed within the Pro Tools environment.

Once Soft SampleCell outputs are routed to Pro Tools, you can:

- Assign them to auxiliary inputs for plug-in processing
- Automate volume, pan, and plug-in parameters
- Bounce to disk
- Take advantage of the audio outputs of your Digidesign audio interfaces

### **DirectConnect and Track Count on Pro Tools TDM Systems**

Each channel of audio transmitted through DirectConnect uses the same amount of PCI bus bandwidth as a single audio track on Pro Tools TDM systems. For example, if you are playing 48 disk tracks on a Pro Tools MIX System, that will leave 16 channels of audio (16 mono, or 8 stereo) that can be used with DirectConnect.

If you attempt to use more channels than are available with DirectConnect, you may encounter a DAE error -6042 (PCI bus too busy).

### **DirectConnect and Track Count on Pro Tools LE Systems**

On Pro Tools LE-based systems, performance is determined by several factors, including host CPU speed, available memory, and buffer settings. Digidesign cannot guarantee 32 simultaneous audio channel outputs with DirectConnect on all computer configurations.

For the latest information on recommended CPUs and system configurations, please check the Digidesign Web site.

## DirectConnect and DSP Resources (TDM Systems Only)

Similar to some plug-ins, DirectConnect requires a specific type of DSP chip (SRAM) to function; there are three of these particular DSP chips on a MIX Core card.

When DirectConnect is in use, it takes up one of these DSPs and makes it unavailable for any other plug-ins.

 You can use the Show System Usage window (Windows > Show System Usage) to see how much DSP is available on your system and how it is currently being used. For details, see the Pro Tools Reference Guide.

---

## Configuring Pro Tools for MIDI

Before you can use Soft SampleCell with Pro Tools, you must first configure your Pro Tools MIDI setup.

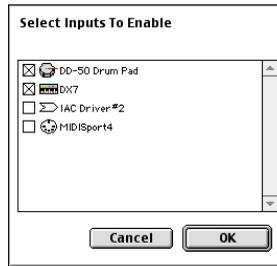
### Enabling Input Devices

To play Soft SampleCell or record MIDI tracks from a MIDI keyboard controller, the controller must be enabled in the Input Devices dialog.

#### To enable input devices:

- 1 Turn on the MIDI devices and launch Pro Tools.
- 2 Choose MIDI > Input Devices.

- 3 In the Input Devices dialog, select the MIDI devices you will use to play Soft SampleCell and record MIDI.



#### Enabling MIDI input devices

 To improve MIDI performance, deselect any unused MIDI devices.

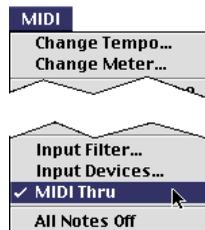
- 4 Click OK.

### MIDI Thru

To monitor Soft SampleCell and other MIDI devices while recording, enable MIDI Thru. When enabled, Pro Tools routes MIDI from your controller to the MIDI device and channel assigned to the MIDI track currently record-enabled.

#### To enable MIDI Thru:

- Select MIDI > MIDI Thru.



*MIDI Thru enabled*

When using MIDI Thru, disable Local Control on your MIDI keyboard controller. Otherwise, your keyboard may receive double MIDI notes, which can lead to stuck notes. If unsure how to disable Local Control for your instrument, refer to the manufacturer's documentation.

**⚠** *When MIDI Thru is enabled, System Exclusive events are echoed to the MIDI device assigned to the record-enabled track—but only if the sysex events are smaller than 256 bytes.*

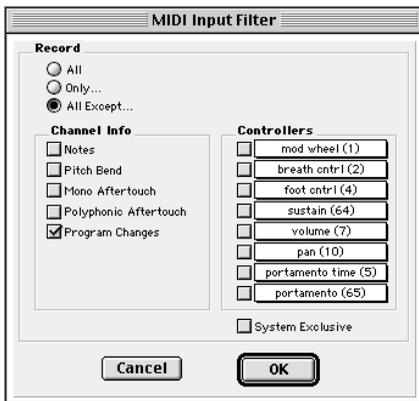
## MIDI Input Filter

You can use the MIDI Input Filter to filter out certain MIDI messages. The Input Filter can be set to record “all” messages, “only” the specified messages, or “all except” the specified messages.

When using the Only option, only the MIDI messages that are selected will be recorded. Conversely, when using the All Except option, the selected messages will not be recorded.

### For instance, to filter out program changes:

- 1 Choose MIDI > Input Filter.
- 2 Select the All Except option.



*MIDI Input Filter*

- 3 Select the option for Program Changes. Leave all other messages deselected.

- 4 Click OK.

---

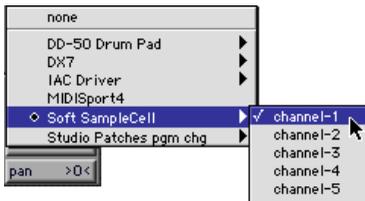
## Using DirectConnect

To play Soft SampleCell within Pro Tools, you'll use DirectConnect.

### To configure DirectConnect:

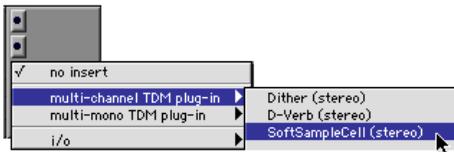
- 1 Launch Soft SampleCell Editor.
- 2 Choose SampleCell > Soft SampleCell Setup and under Sound Output options, select DirectConnect. Click OK.
- 3 Open any Soft SampleCell Banks you want to use in the Pro Tools session.
- 4 Assign Instruments in the Banks to appropriate MIDI channels.
- 5 Assign the outputs of Instruments to the desired outputs.
- 6 Launch Pro Tools and create a new session.
- 7 Choose File > New Track and specify one Auxiliary Input (stereo) track, then click Create.
- 8 Choose File > New Track and specify one MIDI Track, then click Create.
- 9 In the Mix window, click on the new MIDI track's Output Device/Channel Selector and select Soft SampleCell and the desired MIDI channel.

Soft SampleCell Instruments set to the same MIDI channel in Soft SampleCell Editor will be triggered by the MIDI track.



### Selecting Soft SampleCell as a MIDI device

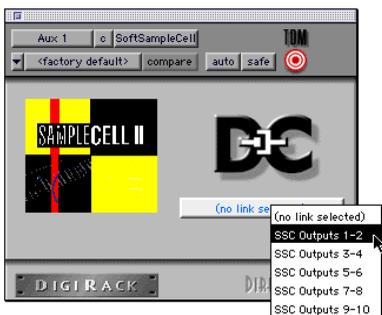
**10** In the Mix window, assign the Soft SampleCell DirectConnect plug-in to the Auxiliary Input track.



### Inserting Soft SampleCell on an auxiliary input

**11** In the DirectConnect plug-in window, set the Direct Connect input to the desired Soft SampleCell output.

**⚠** *The DirectConnect input channel assignment must match the output channel assignment of the desired Instrument in Soft SampleCell Editor.*



### Selecting Soft SampleCell in DirectConnect

**12** Select MIDI > MIDI Thru and record-enable the MIDI track. Play some notes on your MIDI controller to trigger Soft SampleCell.

**⚠** *You must record-enable a MIDI track to monitor the assigned instrument.*

You can now record and play MIDI performance data for the Soft SampleCell Instrument as you would with any MIDI device in Pro Tools.

 *For more information on MIDI recording, editing, and playback refer to your Pro Tools reference Guide.*

### To add additional Soft SampleCell instruments:

- 1** Create a MIDI track for each Soft SampleCell Instrument you want to add.
- 2** Click the MIDI track's Output Device/Channel Selector, then select Soft SampleCell and the desired MIDI channel.
- 3** Choose File > New Track and create a new Auxiliary Input (stereo) for each Soft SampleCell Instrument you want to add.
- 4** In the Mix window, assign the Soft SampleCell DirectConnect plug-in to each new Auxiliary Input track.
- 5** In the DirectConnect plug-in window, set the Direct Connect input on each new Auxiliary Input to the desired Soft SampleCell output.

## Total Session Recall

Once you save and re-open a session that uses Soft SampleCell with DirectConnect, Pro Tools will automatically recall all settings, launch Soft SampleCell Editor, and open the appropriate Banks and Instruments for you. This provides convenient total recall of your Pro Tools and Soft SampleCell setups.

To use session recall, save your session in the order below:

### To use total session recall:

- 1 Create the Pro Tools/Soft SampleCell session according to the instructions given in “Using DirectConnect” on page 85.
- 2 In Soft SampleCell Editor, choose File > Save All Changed to save the Banks and Instruments. If you want to copy instruments and samples to new locations, select the appropriate checkboxes in the Save dialog.
- 3 In Pro Tools, choose File > Save Session to save the session.
- 4 Close the Pro Tools session.

The next time you open the session, Pro Tools will launch Soft SampleCell Editor and open the associated Banks and Instruments.

 *Do not close Soft SampleCell Banks before saving the Pro Tools session or Pro Tools will not recall them. In addition, all Soft SampleCell Banks must have been saved—Pro Tools will not recall unsaved, untitled Banks.*

## Digi001 Users

If you use the MIDI capabilities of Digi001, you must launch Pro Tools before launching Soft SampleCell Editor (or any other OMS application), or Pro Tools will not open.

In addition, you must quit the other applications before quitting Pro Tools, or MIDI will be inactive on the Digi001 until all OMS applications have quit.

If you don't use the MIDI capabilities of Digi001, remove the Digi001 OMS driver from your OMS folder to avoid the above restrictions.



## appendix b

# Recording Samples

While Soft SampleCell itself cannot directly sample audio by itself, there are a variety of ways to accomplish this using Digidesign's Pro Tools or other digital audio recording applications.

---

### Sampling with Pro Tools

Digidesign's Pro Tools system can be used to record audio samples for use with Soft SampleCell.

#### To create samples using Pro Tools:

- 1 Use Pro Tools to record the desired sounds to hard disk. (See the Pro Tools Reference Guide.) Soft SampleCell can play samples recorded at 16- or 24-bit fidelity and either 44.1 or 48 kHz.

**▲** *When using Soft SampleCell with Direct-Connect, samples are played at the Pro Tools session's sample rate. When using Direct I/O, samples are played at the sample rate selected on the audio interface.*

- 2 Use Pro Tools editing tools to edit the samples if desired, then save the audio file in SDI, SDII, AIFF, or WAV format.

- 3 Launch Soft SampleCell and load the samples into an Instrument. See "Adding/Importing Samples" on page 27.

---

### Using Sound Libraries

There are many sample libraries available for Soft SampleCell from Digidesign's Development Partners. The Soft SampleCell *Demo Sounds* CD-ROM included with Soft SampleCell provides a small overview of what's available.

Contact Digidesign or your local dealer for more information about other sound libraries available for Soft SampleCell.

### Using Sound Libraries for Other Samplers

Since most sound libraries for other samplers are in audio file formats supported by Soft SampleCell, you can import the samples and create your own Soft SampleCell Instruments.

You can also utilize any of the many file translation applications available for transferring sound libraries from one format to another.

Contact Digidesign or your local dealer for information about these and other applications from Digidesign's Development Partners.



## appendix c

# MIDI Controller Numbers

Soft SampleCell allows you to select two MIDI controller numbers from a total list of 120 as modulation sources. This enables you to use, for example, a breath controller (MIDI Controller #2) to modulate Volume or a foot pedal (MIDI Controller #4) to modulate LFO Amplitude.

*Table 1. MIDI controller numbers*

Controller Number	Controller Type
0	Bank Select
1	Modulation Wheel
2	Breath Control
3	Undefined 6
4	Foot Controller
5	Portamento Time
6	Data Entry
7	Channel Volume
8	Balance
9	Undefined
10	Pan
11	Expression Controller
12	Effect Control 1

*Table 1. MIDI controller numbers*

Controller Number	Controller Type
13	Effect Control 1
14 - 15	Undefined
16	General Purpose Controller #1
17	General Purpose Controller #2
18	General Purpose Controller #3
19	General Purpose Controller #4
20 - 31	Undefined
32	Bank Select
33	Modulation Wheel
34	Breath Control
35	Undefined
36	Foot Controller
37	Portamento Time
38	Data Entry
39	Channel Volume
40	Balance

**Table 1. MIDI controller numbers**

Controller Number	Controller Type
41	Undefined
42	Pan
43	Expression Controller
44	Effect Control 1
45	Effect Control 2
46 - 47	Undefined
48	General Purpose Controller #1
49	General Purpose Controller #2
50	General Purpose Controller #3
51	General Purpose Controller #4
52 - 63	Undefined
64	Damper Pedal on/off (Sustain)
65	Portamento on/off
66	Sostenuto on/off
67	Soft pedal on/off
68	Legato Footswitch
69	Hold 2
70	Sound Cont. 1 (Sound Variation)
71	Sound Cont. 2 (Timbre/Harmonic Intensity)
72	Sound Cont. 3 (Release Time)
73	Sound Cont. 4 (Attack Time)
74	Sound Cont. 5 (Brightness)

**Table 1. MIDI controller numbers**

Controller Number	Controller Type
75	Sound Cont. 6 (Decay Time)
76	Sound Cont. 7 (Vibrato Rate)
77	Sound Cont. 8 (Vibrato Depth)
78	Sound Cont. 9 (Vibrato Delay)
79	Sound Cont. 10
80	General Purpose Controller #5
81	General Purpose Controller #6
82	General Purpose Controller #7
83	General Purpose Controller #8
84	Portamento Control
85 - 90	Undefined
91	Reverb Send Level
92	Effects 2 Depth (Tremolo Depth)
93	Chorus Send Level
94	Effects 4 Depth (Celeste/Detune Depth)
95	Effects 5 Depth (Phaser Depth)
96	Data entry +1
97	Data entry -1
98	Non-Registered Parameter Number
99	Non-Registered Parameter Number
100	Registered Parameter Number

**Table 1. MIDI controller numbers**

<b>Controller Number</b>	<b>Controller Type</b>
101	Registered Parameter Number
102 - 119	Undefined



# index

## Numerics

- 1-pole filter 38
- 4-pole filter 38

## A

- adding samples into instruments 27
- adding velocity zones 28
- advanced techniques 61
- amplitude value 44
- assigning audio outputs 17
- audio outputs
  - assigning 17
- Authorizer diskette
  - obtaining a backup 3
  - using as a key 3
- authorizing Soft SampleCell 3
- Auto Locate Loop buttons 53
- auto-creating Instruments 25

## B

- Banks 9
  - closing 21
  - comments 19
  - creating 12
  - deleting instruments from 14
  - loading 10
  - loading Instruments into 13
  - multiple 14
  - opening 10
  - saving 21
  - setting default view 12
  - views 12
- breakpoints 48

## C

- Channel Select button 54
- chorusing 70

- closing Banks 21
- comments, adding and viewing 19
- creating Banks 12
- creating Instruments 24
- Crossfade Loop button 54
- crossfade loops 54

## D

- DAE error -6042 83
- data entry
  - using a computer keyboard 15
  - using a MIDI controller 15
  - using MIDI Note Numbers 15
- deauthorizing Soft SampleCell 4
- defaults for Instruments 62
- Delete Loop Marker button 52
- deleting
  - key groups and velocity zones 30
- deleting instruments from Banks 14
- Detune control 20
- detuning an Instrument 20
- Digi001 and Soft SampleCell 87
- DirectConnect
  - and DSP resources 84
  - DSP resources 84
  - total setup recall 87
  - track count 83
  - using with Soft SampleCell 83
- disabling key tracking 36
- Display Controls in Real Units option 42
- duplicating Instruments 14
- dynamic vibrato 65

## E

- Edit Menu 74
- Edit menu commands
  - Clear Instrument 74
  - Copy Instrument 74
  - Cut Instrument 74
  - Paste Instrument 74
  - Show Clipboard 75
  - Undo 74
- editing key groups 28
- editing samples 49
- enabling MIDI controllers 5
- enabling MIDI input devices 84
- ensemble instruments 68
- envelope
  - creating vibrato 66
- Envelope Amount control 40
- envelope generator 40
  - controlling filter with 39
  - display options 41, 42
  - envelope stages 40
  - key tracking 42
- envelope key tracking 42
- Envelope window 23, 41
- Equal Detune option 20
  - Equal Detune Off 20
  - Equal Detune On 20

## F

- File menu 73
- File menu commands
  - Close 73
  - Close All 73
  - Get Bank Info 74
  - New 73
  - Open 73
  - Quit 74
  - Revert Bank 74
  - Revert Instrument 74
  - Save All Changed 73
  - Save Bank 73
  - Save Bank As 74
  - Save Instrument 74
  - Save Instrument As 74
- Filter 38
  - 1-pole 38
  - advanced techniques 67

- controlling brightness 67
- controlling with an envelope 39
- Filter Frequency control 38
- Filter Resonance control 38

## filter

- 4-pole 38
- Find File dialog 11
- finding files 11

## G

- Gate Time control 40

## H

- Hi/Lo Note pop-up menu 16

## I

- Input Devices command 84
- Input Filter command 85
  - MIDI Input Filter dialog 85
- Installer CD-ROM 3
- installing Soft SampleCell 3
- Instrument files 9
- Instrument Menu 75
- Instrument menu commands
  - Add Multiple Key Groups 75
  - Change Sample 75
  - Convert Instrument to Stereo/Mono 77
  - Edit Loops 77
  - Get Instrument Info 77
  - Launch Sample Editor 77
  - Load Sample 75
  - Map All Instruments 77
  - New Key Group 75
  - New Velocity Zone 75
  - Reload Sample 75
  - Reorder Key Groups By Root Note 78
  - Sample Parameters 76
  - Select Sample Editor 77
  - Set Instrument Defaults 77
  - Set Root Notes 78
  - Spread Key Groups 78
  - Unload Sample 75
- Instrument templates
  - creating 62

## Instruments

- adding samples into 27
- auto-creating 25
- basic concepts 23
- changing MIDI velocity response 37
- chorusing 70
- comments 19
- creating 24
- creating and modifying 23
- defaults 62
- deleting from Banks 14
- detuning 20
- duplicating 14
- editing 23
- ensemble 68
- loading into Banks 13
- modulating panning in stereo 45
- mono and stereo 24
- multi-sample 24
- muting and soloing 18
- panning 17
- saving 22
- setting MIDI channel of 16
- single-sample 24
- templates 62
- transposing 19
- tuning 19
- using copies of 14
- velocity crossfade 37
- voice priority 38
- volume 18

## K

### key groups

- deleting 30
- editing 28
- key group panning 17, 34
- moving to new location 29
- resizing 29
- sorting location 29
- Spread 29

### key mapping 25

### key tracking 36, 42

## L

### large Bank view 12

### loading Instruments into Banks 13

### Local Control 85

### Loop button 32

### Loop Display 53

### Loop menu 50

### Loop Select 54

### Loop Select button 54

### Loop Start and End markers 52

### loop tuning 35

### Loop tuning controls 35

### Loop window 32, 50

### Loop Zoom arrows 53

### Looping 49

### loops

#### auditioning 56

#### deleting 58

#### Info area 54

#### switching 35

#### tuning 35

#### turning on or off 35

#### Zoom arrows 52

## M

### mapping a MIDI controller 15

### Matrix Modulation

#### increasing resolution 63

#### modulation destinations 43

#### modulation sources 43

#### parameters 44

### Matrix Modulation button 24

### Matrix Modulation window 43

### MIDI

#### changing velocity response 37

#### configuring for Pro Tools 84

#### enabling input devices 84

#### improving performance 84

#### input filter 85

#### input filter with Pro Tools 85

#### requirements 2

#### selecting samples using 28

#### setting MIDI channel 16

#### setting MIDI zones 16

#### specifying note number from a MIDI device 15

### MIDI controller

#### Local Control 85

#### mapping to a control 15

#### MIDI Controller number

##### assigning to modulator 46

#### modulators 46

#### using for data entry 15

- MIDI Controller A & B 46
- MIDI menu
  - Input Devices command 84
  - Input Filter command 85
  - MIDI Thru option 84
- MIDI Note Numbers 15
  - data entry 15
- MIDI root note 34
  - setting 31
- MIDI Thru option 84
- MIDI velocity
  - adjusting 36
  - negative 36
- Misc Parameters button 23, 36
- Misc Parameters window 35
- Mod wheel
  - creating vibrato 65
- modulation parameters 44
- Modulators
  - LFO 1 & 2 45
  - MIDI Controller A & B 46
  - Ramp Generator 46
- Modulators button 24
- Modulators window 45
- monophonic polyphony 37
- multiple Banks 14
- Multi-Sample Instrument command 73
- multi-sample Instruments 24
- muting and soloing Instruments 18

## O

- OMS Input Devices 5
- opening Banks 10
- output channels, setting 17

## P

- panning Instruments 17
- panning instruments 18
- panning key groups 17, 34
- pitch randomization 64
- polyphony 37
- Preferences
  - display preferences 82
  - file searching preferences 82
  - general preferences 80
  - Instrument Preferences 81

- loop editing preferences 82
- open/loading preferences 81
- Preferences window 80
- Pro Tools
  - configuring MIDI 84
  - using with Soft SampleCell 83

## R

- RAM
  - allocating 6
  - insufficient 11
- Ramp Generator 46
  - creating vibrato with 66
- registering Soft SampleCell 3
- Resampling Quality menu 39
- resizing velocity zones 30
- Revert Audio File command 50

## S

- sample amplitude 34
- sample files 9
- sample loading priority 11
- sample loops
  - turning on or off 35
- Sample Map window 23, 26
  - entering 25
  - parameters 31
- Sample Parameters button 33
- Sample Parameters window 33
- sample playback direction 34
- sample select 68
- Sample Select arrows 33
- sample start point 33
- SampleCell Menu 78
- SampleCell menu commands
  - All Notes Off 80
  - Delete Unused Samples 78
  - Load All Samples 78
  - Monitor SampleCell 79
  - OMS MIDI Input Devices 79
  - OMS MIDI Setup 79
  - Open OMS Studio Setup 79
  - Preferences 80
  - Soft SampleCell CPU Usage 78
  - Soft SampleCell Setup 78
  - Test SampleCell 78

- samples
    - adding into instruments 27
    - changing 30
    - deleting 29
    - loading unloaded samples 31
    - moving 29
    - moving to new velocity zone 30
    - replacing 29
    - replacing and deleting 30
    - selecting in Sample Map window 28
    - selecting manually 28
    - selecting using keyboard 28
    - selecting using MIDI controller 28
    - sizing 29
  - Save All Changed command 22
  - Save As Audio File Copy command 50
  - Save Audio Selection As command 50
  - saving Banks 21
  - saving Instruments 22
  - Scroll arrows 53
  - Select Instrument dialog 11
  - Selector tool 52
  - Send to Instrument button 51
  - Set Instrument Default command 18
  - Set Root Note button 32
  - setting
    - MIDI channels 16
  - setting Instrument volume 18
  - setting MIDI root note 31
  - setting MIDI zones 16
  - setting output channels 17
  - setting the Hi/Lo MIDI Note 16
  - Single-Sample Instrument command 73
  - Small Bank View 12
  - small Bank view 12
  - Soft SampleCell
    - authorizing 3
    - deauthorizing 4
    - features 1
    - file types 9
      - banks 9
      - instruments 9
      - samples 9
    - installing 3
    - using with DirectConnect 83
    - using with Pro Tools 83
    - with Digi001 87
  - sound output options 7
  - Speaker button 50, 54
  - Spread Key Groups button 29
  - start point of samples 33
  - Stereo Multi-Sample Instrument command 73
  - Sustain Decay control 40
  - Swap Loops button 51
  - Switch Bank Size 12
  - System Exclusive data 85
  - system requirements 1, 2
- T**
- templates, instrument 61
  - total setup recall 87
  - Trackers button 24
  - Tracking Generator 47, 63
    - advanced techniques 63
    - and Matrix Maps 63
    - breakpoints 48
  - transposing Instruments 19
  - Trigger Mode 45
  - Trim tool 52
  - trimming audio 59
  - tuning
    - Instruments 19
    - sample loops 35
- V**
- velocity crossfade 37
  - velocity zones 26
    - adding 28
    - deleting 30
    - resizing 30
  - vibrato
    - delayed 65
    - dynamic 65
  - voice allocation priority 38
  - voice overlap 37, 38
  - voice polyphony 37
  - voice priority 37, 38
  - voice stealing 38

## **W**

Windows Menu 82

Windows menu commands

Current Bank 82

Envelopes 82

Matrix 82

Misc Parameters 82

Modulators 82

Sample Map 82

Switch Bank Size 82

Trackers 82

## **Z**

Zone Start 34

Zoom arrows 52