

ENGLISH | DEUTSCH | FRANÇAIS | ESPAÑOL

# OPERATION MANUAL



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## Welcome to Kontakt.

There are many software samplers, but KONTAKT brings together Native Instruments' experience in software synthesis, sampling, and signal processing, then adds a creative attitude that turns lines of code into not just a computer program, but a musical instrument.

KONTAKT can import the formats BATTERY™, AKAI™ S-1000/S-3000, SF2™, Gigasampler™ (RAM import), SDII, AIFF and WAV from 8 to 32 bits directly into the program. But KONTAKT is far more than a way to use a variety of sample formats in your favorite VSTi or DXi-compatible host.

You haven't seen anything quite like KONTAKT, which uses the concept of a virtual rack that lets you construct your own sampling environment. Open editors, add a variety of processors, create complex modulations from internal and external modulation sources - even apply granular synthesis techniques to your samples, and stretch time and pitch in ways that are truly mind-boggling.

For the most creative sound design possibilities, KONTAKT combines the best elements of synthesizers (filters, different types of envelopes, extensive modulation, etc.) with the best elements of samplers (loop editing with multiple loops, easy sample mapping, velocity and key crossfading, modulateable loop start and end, etc.). But KONTAKT goes further: you can fine-tune the tuning of each of the 8 loops, observe the structure that makes up your instrument, ask KONTAKT to help find you good loop points...you get the idea.

It even looks cool, with an interface that is both aesthetically pleasing and straightforward. Extensive use of graphics help make applying modulation sources easy, and the intuitive interface doesn't get in the way of making music.

One last comment: read any Read Me files. The mad scientists at Native Instruments were adding features even as this manual was going off to the translators. (We're not sure they were able to get the Anti-Gravity module done in time, but check the Read Me and find out for yourself.)

We hope you enjoy KONTAKT as much as we do - and if you make some cool music with KONTAKT, we'd love to hear it. Now go boot up your computer, and have a great time!

- Your Native Instruments Team

## How to Use This Manual

It's been said that the definition of "power user" is someone who reads the manual. It's also been said that musicians don't read manuals. So if you want to get a creative edge on your fellow musicians, read the manual! Besides, it took us a lot of time and effort to write it, and we'd hate to think all that work was for nothing.

This manual has been written so that you can pretty much sit down with KONTAKT and try the various functions as they are described. You can get through the entire manual, checking out sounds as you go, in a day or two - which will be time well-spent if you want to get the most out of KONTAKT.

However, remember that the purpose of this manual is to teach you about KONTAKT, not be a complete course on everything there is to know about electronic music, synthesis, and sampling. If you're familiar with these topics, then the manual should make sense. If not, there are many excellent books available. These can help you get up to speed.

Finally, remember that learning KONTAKT is like learning any musical instrument: practice makes perfect. Of course, you can just load in presets, hit the keys, and make some great sounds. But for the adventurous, KONTAKT is full of cool surprises and interesting options. Take the time to get to know it, and you will be rewarded with original, creative sounds that can help take your music to the next level.

# Windows Installation

## Registration

Please fill in the product's registration card and send it to Native Instruments. Alternatively you can register your product on the Native Instruments homepage. As a registered customer you can make use of the following services:

- free technical support
- free software updates
- upgrades/crossgrades
- free info service (online registration only)
- password for the web user area (online registration only)

## System Requirements and Recommendations

To use the KONTAKT software you need a computer with at least the following specifications:

### Hardware

- Intel Pentium II processor (300 MHz clock rate or higher). Processors with lower floating-point performance, e.g. the Cyrix 6x86 or AMD K6 are explicitly not recommended.
- 128 MB RAM
- 60 MB free space on the hard disk for the installation
- Soundcard compatible with Windows 98/ME/2000/XP
- MIDI interface for connecting a MIDI keyboard or other controller or an external sequencer. It is possible to use the interface that is part of many common soundcards.

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The KONTAKT audio engine is designed to make full use of all the processing power in your computer's CPU. The complex computations involved in KONTAKT synthesis work best on modern CPUs with their powerful FPU. Native Instruments recommends that you use KONTAKT on a modern processor like Pentium III 800MHz+, Pentium 4, Celeron 800MHz+, Athlon, Athlon XP or Duron 1GHz+. Additionally we recommend plenty of fast RAM (256MB+) suiting best to your processors architecture.

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## Software

- Windows 98/ME/2000/XP


## Software Installation

- Insert the Installation CD into the CD drive.
- Use Windows Explorer to open the CD.
- Start the setup program by double-clicking on **Setup.exe**.
- The setup program will guide you through the installation procedure. The setup program will suggest **C:\Program Files\Native Instruments\Kontakt\** as the path for the destination folder. Unless you choose another folder, this one will be created.

## Installed Folders, Files and Shortcuts

The setup program creates the following sub-folders in the installation folder:

**Kontakt\** contains the files needed for running the program.

The entry **KONTAKT** for starting the program is generated in the  **Start** menu under **Programs** ⇨ **Native Instruments**, unless you have chosen a different program group. There are also shortcuts to the **ReadMe** text.

The setup program installs the stand-alone version and all available plug-ins (VST and DXi plug-ins). If you want some components not to be installed, choose **Custom Setup** and untick unwanted components.

## Copy Protection with the Installation CD

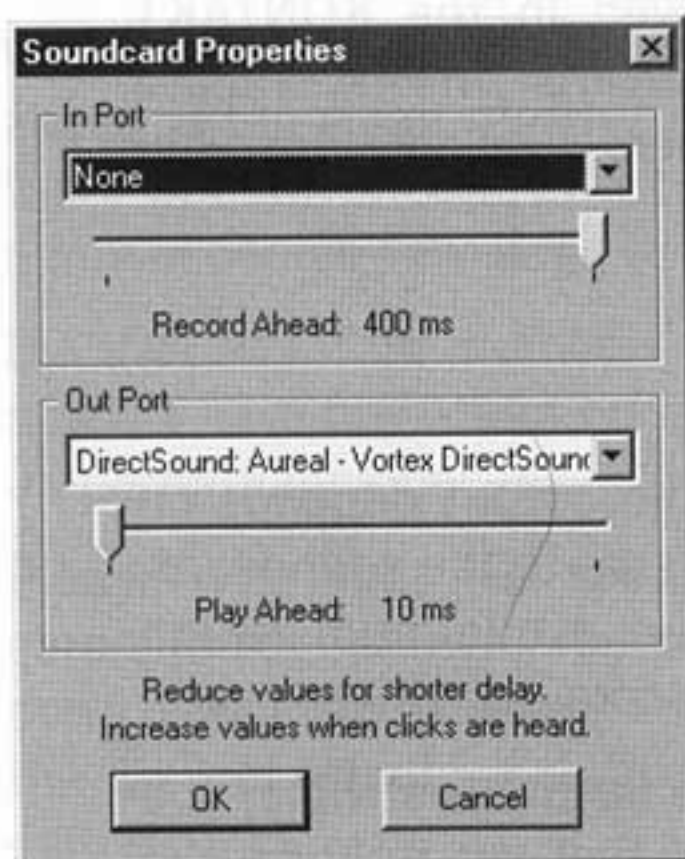
The Installation CD will be requested when starting the program the first time. The authorisation will end whenever you do a modification of your computer's hardware setup or update your operating system. To use the software again, you have to re-authorize it. Therefore the serial number and the installation CD is required.

## Soundcard Settings

The KONTAKT software needs a soundcard for playing the sounds it produces. No extra drivers are needed when using a standard sound card as the software's audio interface. The KONTAKT software makes use of the standard MME, DirectX or ASIO drivers installed with the cards.

## DirectSound and MME

Some adjustment of the KONTAKT software's parameters is necessary to tune it to the hardware and achieve optimum performance. Choose **Soundcard** in the **System** ⇒ **Audio Port** menu and open the appropriate settings dialog window by selecting **System** ⇒ **Audio Settings....**



*Audio Settings dialog window for standard Windows soundcards*

If you have an ASIO driver for your audio card you should try these out since ASIO drivers mostly allow lower latency settings than MME or DirectSound drivers. Many ASIO drivers can have latencies of 10 ms and less (See “Using KONTAKT with ASIO” on page 19.).

## Devices

If more than one soundcard (or driver port) is installed, the selection box **Out Port** chooses which soundcard (or which driver port) will be used by the KONTAKT software.

In the list of available ports for **Out Port**, the available devices are marked **MME:** or **DirectSound:**. The latest DirectSound drivers for your soundcard are probably better optimized with regard to latency (delay) in the audio output than the earlier MME (WaveOut) drivers and normally perform better. We recommend that you try out all the available drivers, and use the one that gives the most responsive, delay-free performance.

Do not use emulated DirectSound drivers (which are usually marked "emulated") because these are actually MME drivers made to look like DirectSound and will perform poorly.

A precondition for using DirectSound is that the Windows extension DirectX 5.0 (or later) is installed on your PC.

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**Note:** The **low latency** technology employed in the KONTAKT software makes high demands on **soundcard drivers**. Please make sure you have the very **latest drivers** available for your soundcard.

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## Latency

The delay (latency) that occurs during audio output depends on the size of the audio buffer the software passes to the soundcard. For smooth operation this buffer must have a minimum length which depends mainly on the type of soundcard and driver used.

If you are installing the KONTAKT software for the first time, you can skip the settings described below and first get to know the system. Return here later to optimize the latency for the best possible performance.

With the Out Port's **Play ahead** slider you can adjust the audio buffer size. The smaller the buffer, the faster the KONTAKT response. However, if the buffer is set too small, clicks will appear in the audio output (MME) or extreme latency will result (DirectSound).

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**Important:** To get good **performance** from the KONTAKT software you must optimize the **Play ahead** by hand every time you change your soundcard or update the soundcard driver.

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To optimize the buffer length for your system, select any preset and play it while at the same time moving the slider for **Play ahead** in the **Soundcard Properties** dialog window. Move the slider to the left to reduce **Play ahead** until you start to hear clicks in the sound output. Now move it back to the right a bit to find the point where the clicks disappear. This is the optimum output buffer size for your card.

When using MME drivers, the sound will break up when **Play ahead** is too small. With DirectSound drivers on the other hand, there will only be one glitch after which the effective latency suddenly becomes very large (about 1 second).

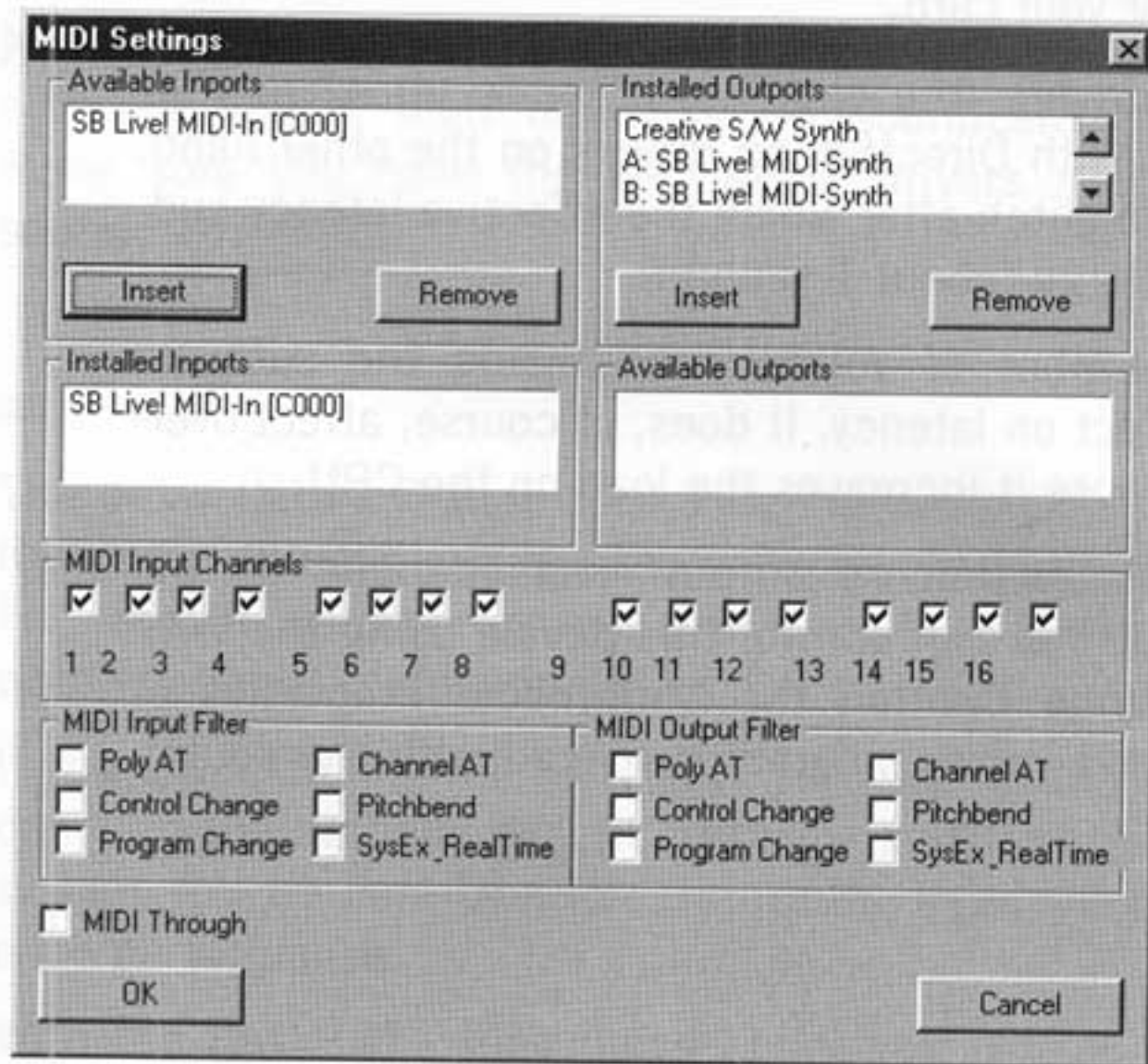
By the way, the number of voices used inside the software doesn't have any affect on latency. It does, of course, affect overall performance because it increases the load on the CPU.

Please note that the soundcard output levels depend on the card's mixer settings. You can control this device using the Windows accessory **Volume Control**, the **Multimedia Properties** of the **Control Panel**, or a mixer program delivered with the soundcard.

## MIDI Interfaces

The MIDI Ports through which the KONTAKT software communicates with the rest of the world are selected in the **MIDI Port** dialog window, which is opened via the menu entry **System** ⇨ **MIDI Settings....** All the existing MIDI ports in your PC that are installed under Windows appear here, and can be chosen for use with KONTAKT.

If a MIDI input port has already been opened by another program, the software will not be able to use it and it will not appear under **Available Inports**. In this case free up the port in the other program or make sure that the KONTAKT software starts up first. Conversely, an inport has to be removed from the list of **Installed Inports** before another program has access to it.



*MIDI Port dialog window*

## MIDI Input Channels

You can select MIDI channels for FM7. The program receives MIDI only on channels you have activated here. MIDI data received on other channels will be ignored.

## MIDI Input and Output Filters


You can set MIDI filters for the MIDI input and output separately. If you want the FM7 to ignore specific MIDI controllers, select the appropriate checkboxes.

## MIDI Thru

Activate this checkbox if you want FM7 to pass incoming MIDI data directly to the MIDI output. MIDI thru is useful if you want to set your MIDI interface as MIDI input for KONTAKT, but also record the MIDI data in another program. If you control FM7 from a sequencer, do not activate MIDI thru for FM7, since in certain configurations you might get a MIDI loop.

## Uninstalling the Software

To uninstall KONTAKT from your computer, do the following:

- Open  **Start** ⇒ **Settings** ⇒ **Control Panel** ⇒ **Add/Remove Programs**
- On the page **Install/Uninstall** choose KONTAKT from the list of installed programs.
- Click on **Add/Remove** and confirm deletion by clicking on **Yes**.

# MacOS Installation

## Registration

Please fill in the product's registration card and send it to Native Instruments. Alternatively you can register your product on the Native Instruments homepage. As a registered customer you can make use of the following services:

- free technical support
- free software updates
- upgrades/crossgrades
- free info service
- password for the web user area

## System Requirements and Recommendations

In order to use all of KONTAKT's realtime audio capabilities you need a computer with at least the following specifications::

### Hardware

- Processor: Apple Mac G3 300 MHz or faster
- 128 MB RAM
- Sound Manager-compatible audio interface
- OMS- or FreeMIDI-compatible MIDI-Interface for connecting a MIDI controller or external MIDI sequencer
- 60 MB free hard drive space for the installation

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The KONTAKT audio engine is designed to make full use of all the processing power in your computer's CPU. The complex computations involved in realtime synthesis work best on modern CPUs with their parallel processing extensions and powerful FPU. KONTAKT uses these processor features extensively to provide optimum performance. Native Instruments recommends that you use KONTAKT on a processor with AltiVec, like the G4. Older computers like G3, which lack these enhancements, will give you significantly lower performance with KONTAKT. Additionally we recommend to use 256 MB RAM at least.

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## Software

- MacOS 8.6 or higher
- Opcode OMS or MOTU FreeMIDI for the use of the standalone version.

## Software Installation

### Installing the KONTAKT Software


- Insert the Installation CD into the CD drive.
- Double-click on the CD icon.
- Start the setup program called **Kontakt Installer** by double-clicking on it.
- The installer first brings up a picture. Click on **Continue**; a dialog opens up that allows you to select the setup type and destination folder.
- The setup program will suggest a path for the destination folder. Unless you choose another folder, a folder labeled **KONTAKT** will be created on the first hard disk. You can choose between **Easy install**, which allow the installation of the standalone and all plug-inversions and **Custom install**, in which you can select the versions you want to install.

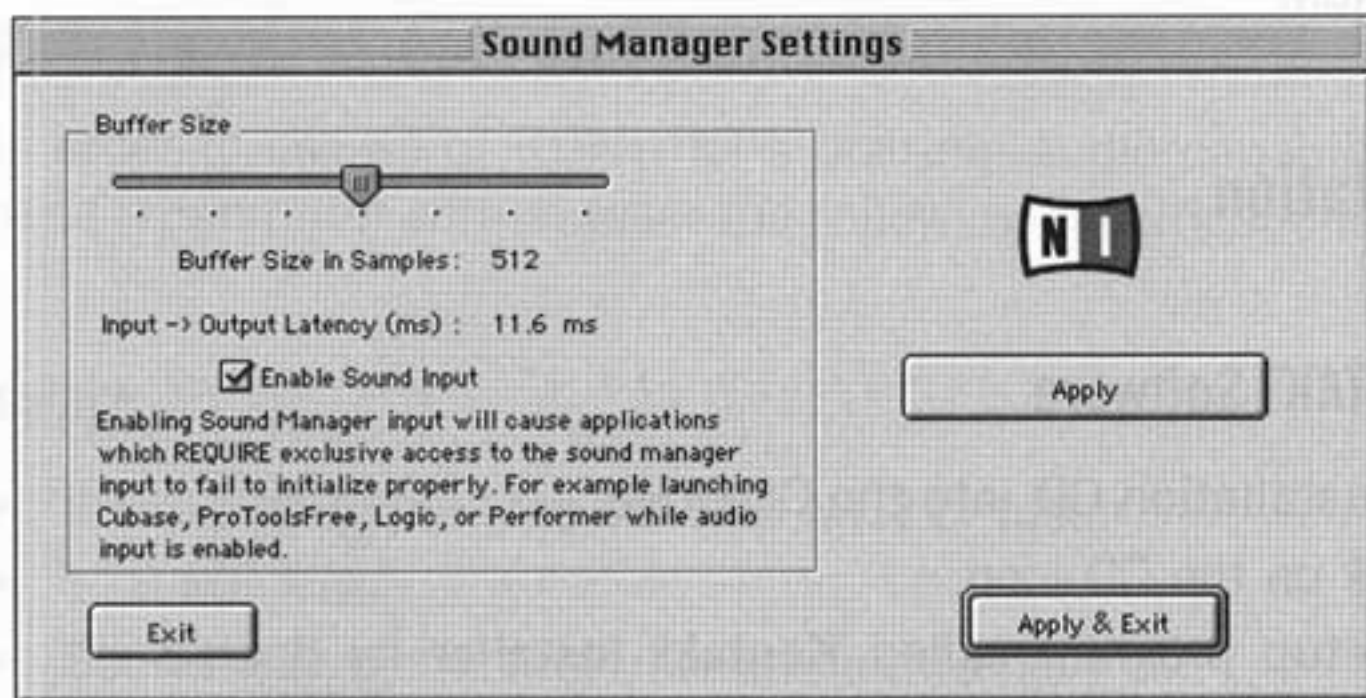
## Copy Protection with the Installation CD

The Installation CD will be requested when starting the program the first time. The authorisation will end whenever you do a modification of your computer's hardware setup or if the start volume has changed since the last authorisation. To use the software again, you have to re-authorize it. Therefore the serial number and the installation CD is required.

## Audio Interface Settings

### Audio Output

To access the settings for the Sound Manager open  ⇒ **Control Panel** ⇒ **Monitors & Sound** and click on **Sound**.



### Latency

The delay (latency) that appears between a MIDI event and the audio signal that it triggers should be short (under 20 ms) for proper performance.

**Important:** OMS (Open MIDI System) introduces some amount of delay in the MIDI data stream when MacOS is using virtual memory. Therefore it is strongly recommended to turn off virtual memory by choosing **Apple** ⇒ **Control Panel** ⇒ **Memory** and setting **Virtual Memory** to **Off**.

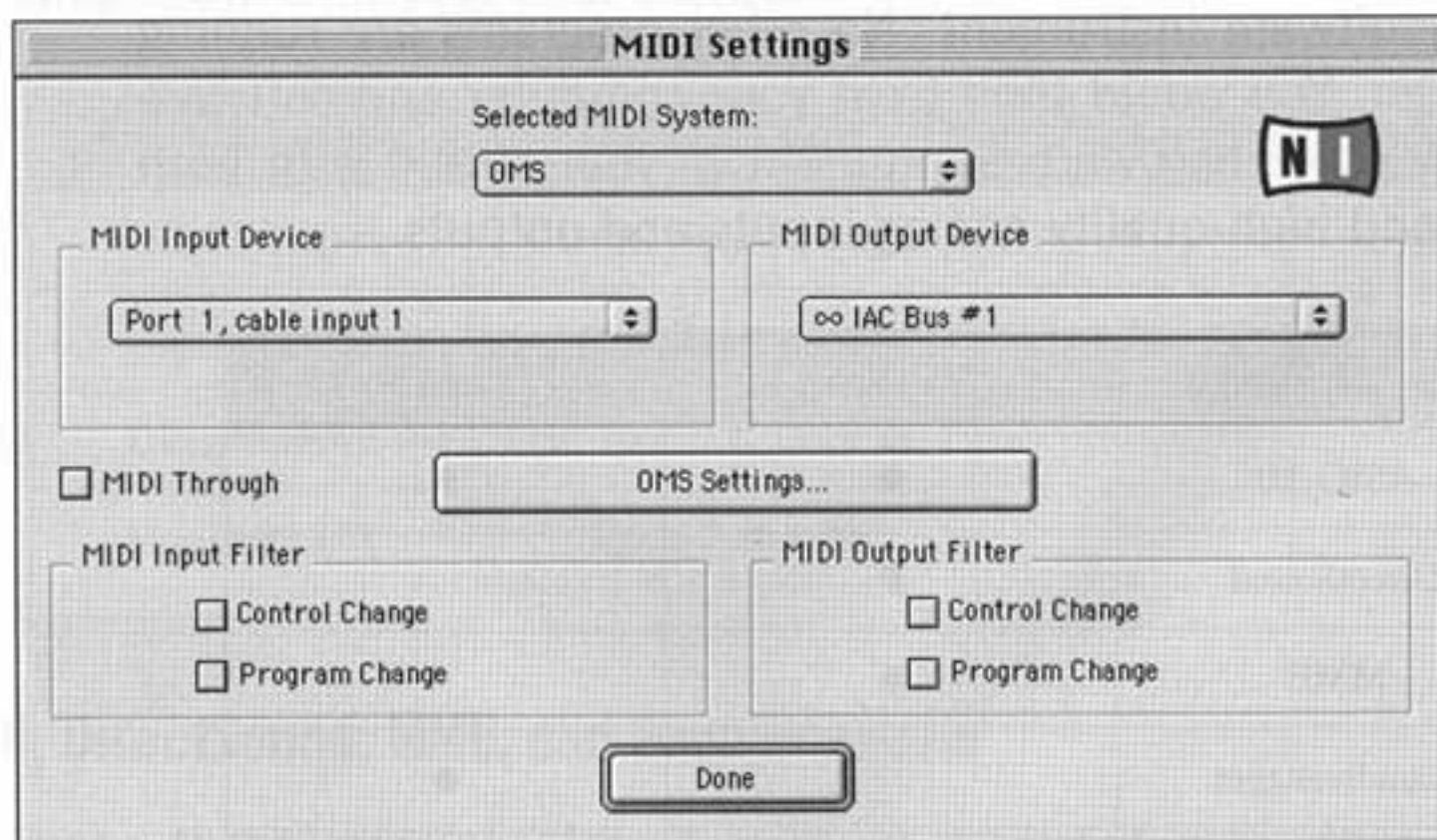
## MIDI Input

The KONTAKT software uses OMS (Open MIDI System) to receive MIDI control signals from the rest of the world. If you don't already have OMS installed on your Macintosh, download the software for free from <http://www.opcode.com>.

Select the MIDI Port to be used in the OMS Settings dialog window. To open it, go **System** ⇒ **MIDI Settings....**

If your MIDI interface comes with a FreeMIDI driver you can use this as well. In this case choose **FreeMIDI** as **MIDI System** in the **MIDI settings** of KONTAKT.

You can then utilize the MIDI input by opening the window **MIDI Settings**, in the **System** ⇒ **MIDI Settings...** menu.



*MIDI Settings dialog*

# Interfaces

Interfaces are various ways for your computer to communicate and work with KONTAKT. This chapter will outline in detail the steps for setting up and configuring each interface. It will also help you understand what each interface has to offer and which one is best for your specific needs.

## Which Interface do I use?

There are two basic common methods for using KONTAKT. The first method is commonly known as "standalone" mode. The second method is known as "plug-in" mode. Below you will find a brief description on both methods and which interfaces work with each method.

### Standalone

This method will allow you to use the software instrument as a dedicated instrument using MME, DirectSound, Soundmanager, or ASIO drivers. Your entire system will be dedicated to running this virtual software instrument. No other programs are running on the system. You would then treat your computer and software just like any other hardware instrument in your studio with both MIDI ports and high-quality analog inputs and outputs.

Interface Format	Windows	MacOS
ASIO 2.0	●	●
DirectSound	●	
MME	●	
Soundmanager		●

## Plug-in

This method is for use with any of the various sequencer applications available on the market today. This allows you to seamlessly integrate the virtual instrument within whatever sequencer you currently use. It also offers several extra features unique to using a plug-in instrument:

- Full MIDI sequencing and audio mixdown of the instrument plug-in on the same computer.
- Full parameter automation within your sequencer.
- Ability to process the instruments audio with other VST or DirectX plug-ins
- Sample accurate timing (when using a VST 2.0 supported host application)
- Total parameter recall when re-launching your host project file.
- Ease and "convenience" of using a true virtual studio environment.

Simply determine which host application you already use or plan to use, and simply choose the appropriate plug-in format that is compatible with your host software.

Interface Format	Supported Host	Windows	Mac
VST 2.0 Plug-in	Cubase, Nuendo, Logic	●	●
Cakewalk DXi	Sonar	●	
DirectConnect	Pro Tools 5.x, LE, Free		●
Mas/FreeMIDI	Digital Performer		●

## ASIO, DirectSound, MME, and Soundmanager

These three interface terms refer to different ways that KONTAKT can communicate directly to your computer soundcard. Which interfaces you have to choose from depends on which soundcard you have and which platform you use (Windows or MacOS)

**ASIO** ("Audio Streaming Input Output") is a multi-channel, low latency audio card driver architecture developed by Steinberg. ASIO is available for both Windows and MacOS, and proves to be the most powerful and performance optimized drivers for use with real-time software synthesis. We highly recommend using ASIO drivers whenever possible.

**DirectSound** is a driver format developed by Microsoft. It is provided with any installation of DirectX 5.0 or higher for 98/ME/2000/XP. Whether DirectSound works well or not is entirely based on the soundcard you use. Generally DirectSound can cause "glitches" or "pops" in audio when attempting to use lower buffers settings.

**MME** is the standard "Wave" driver provided by the Windows operating system. Most audio cards provide MME drivers under Windows and can generally produce decent to good results. But it too is like DirectSound, and is not really optimized for true performance with software synthesizers.

**Soundmanager** is the standard audio driver for the built-in audio interface found on every Apple Computer. Using Soundmanager has usually proven to be very good with an average result of 5ms of latency when used with real-time software synthesizers. Soundmanager provides a very good means of quick and easy use of KONTAKT without the need for a more higher-priced audio card. However, we do not recommend Soundmanager when performance and super low latencies are required.

## ASIO Buffer Size

The buffer size of your selected driver directly reflects how fast the system will respond when playing KONTAKT in real-time and also within a host sequencer. The lower the buffer, the faster the system will respond. However, not all drivers are optimal enough to achieve very low latencies. This will result in glitches, distortion, pops, and other audio artefacts. So we highly suggest taking caution when using lower buffer settings. The general idea is to find a meeting ground between fast latency response and maintaining perfect signal quality.

## ASIO Audio Routing

KONTAKT also allows you to determine where its main outputs are routed to. This can prove useful when using a multi-port audio interface. This allows you to set the stereo output and input of KONTAKT to use any of the available outputs on your audio interface. This can be found in the **System** ⇒ **Audio Routing** menu option.

## Using KONTAKT with ASIO

- Go to the **System** menu option, click on **Audio Port** (if this option is greyed-out, then this indicates you have no ASIO drivers installed).
- Go back to **System** and choose the **Audio Settings** option. This will open up the control panel for ASIO Settings
- Choose the ASIO driver for your soundcard from the list of available drivers in the first drop-down field.
- Choose the clock rate for your card.
- Make sure that the buffer slider matches that of the "recommended buffers size". Some cards do not work if the buffer sizes are mismatched. This is why we highly recommend to always leave this setting alone. If you want to change the buffer of your sound card, then do so either by accessing the card control panel by clicking on **control panel**. Or you can access your soundcard properties using its own control panel utility. This is usually installed in the Windows control panel or via an icon in the system tray. Please refer to your soundcard user's manual for more information on changing its buffer sizes.
- Click **OK** once you have set everything up..

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NOTE: To use ASIO on MacOS, you must make sure to copy your soundcards ASIO driver into the KONTAKT **ASIO driver** folder. This is located in the same folder where you installed KONTAKT. Please refer to the owner's manual of your soundcard for more information on obtaining a copy of the ASIO drivers.

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## Using KONTAKT with MME / DirectSound

- Go to the **System** menu option and click on **Audio Port**
- Choose the **Soundcard** option from the list
- Go back to **System** and choose the **Audio Settings** option.
- This will open up the control panel for MME / DirectSound
- Choose the appropriate MME or DirectSound driver for both your input and output. (Only set the input if you are going to use it. If not, then leave it unassigned.)
- Find a buffer size (displayed in ms) that matches your cards performance. The goal is to achieve low latencies while maintaining a clean audio signal.
- Click **OK** once you have set everything up.

---

NOTE: Do not select to use the "DirectSound (Emulated)" drivers. These are non-accelerated versions of the DirectSound drivers and generally cause large amounts of latency when triggering KONTAKT in real-time.

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## VST 2.0 Plug-in Setup

In addition to the standalone software, the KONTAKT system includes a VST Plug-in. By taking advantage of the capabilities of Steinberg's VST 2.0 format, Native Instruments is able to provide an incredible plug-in based sampler.

For more information on the VST 2.0 plug-in format, please refer to your VST host application.

## System Requirements

Please refer to the system requirements of your VST host software.

## Windows VST Plug-in Installation

- Insert the Installation CD into the CD drive.

- Use the Windows Explorer to open the CD and start the setup program by double clicking on **Setup.exe** and choose **Custom install** and click **next**.
- Choose only the **VST plug-in** in the selection of install options.
- You now have the option to have the installer automatically detect your current VST plug-in directory, or manually choose your own VST plug-in directory. Please choose which option best suites your particular situation.

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NOTE: If you have more than one VST host applications installed on the same machine, simply copy the "KONTAKT.dll" file into the VST directory for these other applications. If the VST plug-ins do not appear in the explorer you have to activate the Windows Explorer option **Show all files**. You can find this option in the Explorer menu **Tools** ⇒ **Folder Options...** on the **View** tab under **Hidden files**. Alternatively you can change the VST plug-in directory of your applications to all share a central VST plug-in directory on your hard-drive. This is usually a more efficient way of handling several VST applications on the machine at the same time.

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## MacOS VST Plug-in Installation

- Insert the Installation CD into the CD drive and double-click on the CD icon.
- Click on **KONTAKT install** found inside the CD folder and chose a **Custom** installation.
- Choose only the **VST plug-in** in the selection of install options and continue.
- A locator window will appear giving you the option to choose which VST plug-in folder you would like the installer to install the KONTAKT plug-in into. Please choose the appropriate plug-in folder for the host application you wish to use with KONTAKT.

NOTE: By default, the installer will place the plug-in in the first directory named "VstPlugins". This is the directory where a standard Cubase (or other VST compatible software) installation will expect to find its plug-ins. If you have other VST host applications installed on the same machine, simply copy the KONTAKT VST file into the VST directory for these other applications. Or you can repeat the installation steps, and simply choose another VST plug-in folder during the installation.

## Using the KONTAKT Plug-in in Cubase VST 5

- Launch Cubase, go to the **Panels** menu option and select the **VST Instruments** menu option.
- A window showing the instrument rack appears. Click where it says **No VST Instrument** and choose KONTAKT from the available list of instrument plug-ins.



- The plug-in will now appear in your list and automatically be turned on. It will also create a set of audio channels in your VST mixer that will be used for mixdown within your project. This will allow you to mix, pan, and process KONTAKT's output just like any other existing audio track in your Cubase song.
- Click on the **Edit** button to call up the KONTAKT instrument interface. Here you can control and edit all the features and functions that KONTAKT has to offer.
- Now go to the "Arrangement" page and create a MIDI track (if you do not have one already created).
- Go to the **Output** parameter section for this MIDI Track and click on the field. This will create a list of available MIDI out ports to assign to this MIDI track. Choose **KONTAKT (v1)** from the list.



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NOTE: If KONTAKT does not appear in the list of available VST instruments inside your VST 2 host application, then it is not installed correctly. Please refer to the previous section on installing the plug-in for both Windows and Mac platforms for more assistance on setting this up.

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Now you should be able to trigger KONTAKT via MIDI using a keyboard controller. KONTAKT's sound will generate through the VST mixer and directly to your sound card. If the plug-in does not receive MIDI or generate audio, then make sure to check the following two areas:

- Make sure "MIDI thru" is enabled in Cubase.
- Make sure that you have properly configured your sound card for use with Cubase.

(please refer to your Cubase manual for more information)

### Using the KONTAKT Plug-in in Nuendo 1.5

- Launch an empty or current project in Nuendo.
- Click on the **Devices** menu and choose **VST instruments** from the menu options (or press F11 on your keyboard).
- A window showing the instrument rack appears. Click where it says **No VST Instrument** and choose the "KONTAKT" from the available list of installed plug-ins.



- The plug-in will now appear in your list and automatically be turned on. It will also create a set of audio channels in your VST mixer that will be used for mixdown within your project. This will allow you to mix, pan, and process the KONTAKT's output just like any other existing audio track in your Nuendo project.

- Click on the **Edit** button to call up the KONTAKT instrument interface. Here you can control and edit all the features and functions that KONTAKT has to offer.
- Now go to the "Project Editor" page and create a MIDI track (if you do not have one already created).
- Go to the **Output** parameter section for this MIDI Track and click on the field. This will create a list of available MIDI out ports to assign to this MIDI track. Choose **KONTAKT (v1)** from the list. Also make sure you assign the MIDI input port to correspond to whatever MIDI controller your are using.



- Record enable the MIDI track.

---

NOTE: If KONTAKT does not appear in the list of available VST instruments inside your VST 2 host application, then it is not installed correctly. Please refer to the previous section on installing the plug-in for both Windows and Mac platforms for more assistance on setting this up.

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Now you should be able to trigger KONTAKT via MIDI using a keyboard controller. KONTAKT's sound will generate through the VST mixer and directly to your sound card. If the plug-in does not receive MIDI or generate audio, then make sure to check the following two areas:

- Make sure "MIDI thru" is enabled in Nuendo.
- Make sure that you have properly configured your sound card for use with Nuendo

(please refer to your Nuendo manual for more information).

## Using the KONTAKT Plug-in in Logic 5

- Launch Logic and create an audio instrument track or set an existing audio or MIDI track to an audio instrument track by clicking on it, holding down the mouse button and choose **Audio** ⇒ **Audio Instrument** ⇒ **AudiInst 1**.



- Double click the audio instrument track to open the environment window. Logic scrolls automatically to the first instrument bus in the Logic mixer.
- Choose the KONTAKT VST plug-in in the first insert slot of the instrument mixer bus. Therefore click onto the insert slot at the top, hold down the mouse button and choose **Stereo** ⇒ **VST** ⇒ **KONTAKT**.



- The plug-in now appears in the instrument slot and is ready to use. The instrument mixer channel will allow you to mix, pan, and process KONTAKT's output just like any other existing audio track in Logic.
- Double click on the mixer's KONTAKT slot to call up the KONTAKT instrument interface. Here you can control and edit all the features and functions that KONTAKT has to offer.

---

**NOTE:** If KONTAKT does not appear in the list of available VST instruments inside your VST 2 host application, then it is not installed correctly. Please refer to the previous section on installing the plug-in for both Windows and Mac platforms for more assistance on setting this up.

---

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- Make sure "MIDI thru" is enabled in Logic.
- Make sure that you have properly configured your sound card for use with Logic.

(please refer to your Logic manual for more information).

## **DXi Plug-in Setup**

DXi is a plug-in interface for software synthesizers and instruments based on Microsoft's DirectX technology. As of writing, the first application supporting DXi is SONAR by Cakewalk. The DXi interface provides the following features within SONAR:

- Quickly patch DXi-compatible soft synths on SONAR tracks.
- Route MIDI tracks to DXi software synthesizers.
- Control and play synths in real-time using their internal interface or external MIDI devices like keyboards, guitar synths, or wind controllers.
- Patch audio effects to synth outputs.
- Route synth output through auxiliary sends.
- Record synth output to audio tracks.
- Save synth settings within SONAR projects.

## **DXi Plug-in Installation**

- Insert the Installation CD into the CD drive.

- Use the Windows Explorer to open the CD and start the setup program by double clicking on **Setup.exe** and choose **Custom install** and click next.
- Choose only the **DXi Plug-in** in the selection of install options.

The setup program will copy the plug-in to your hard drive and register it in Windows for the use in DXi compatible host programs. After the installation it will automatically appear in those programs as an available plug-in.

### Using the KONTAKT DXi plug-in in Sonar

- Launch Sonar
- In an audio track choose KONTAKT as DXi plug-in in the **FX** field by right clicking on it and selecting „KONTAKT“.



#### *Loading the KONTAKT DXi plug-in in an audio track*

- Route a MIDI track to the DXi-Plug-in by selecting „KONTAKT“ in the Out drop down list.



#### *Assign a MIDI track to the KONTAKT-DXi-Plug-in*

## DirectConnect Setup

DirectConnect provides an easy way for applications to stream audio directly into Pro Tools or other Digidesign DAE hosts. DirectConnect allows up to 32 separate audio channel outputs from any host-based application, such as software-based synthesizers or samplers, to be independently routed, recorded, processed and mixed within the Pro Tools TDM mixing environment.

DirectConnect works with Pro Tools 5.01 LE and later, 5.01 FREE, and TDM Mix systems running 5.01 or later. Check the Digidesign support pages at [www.digidesign.com](http://www.digidesign.com) to check for the latest DirectConnect compatibility information.

No matter what your Pro Tools session bit depth is, KONTAKT DirectConnect will always send 32 bit floating point audio. With Pro Tools TDM, this will be truncated to 24 bit.

## Using DirectConnect with KONTAKT

In order to run KONTAKT in DirectConnect mode, you will need the KONTAKT DirectConnect Plug-In to be installed under **System folder** ⇒ **DAE folder** ⇒ **Plug-Ins**. If you want to install the Plug-in at a later date run the installation program again to install the KONTAKT DirectConnect Plug-In.

- Launch KONTAKT. In the **System** ⇒ **Audio Port** menu, choose **DAE/TDM DirectConnect**.



- Launch Pro Tools and either open or create a new session.
- Add a new Aux Input in Pro Tools.
- Insert the KONTAKT Plug-In in the Aux channel.

- Establish a link with KONTAKT in the KONTAKT Plug-In in Pro Tools.



- Set the volume of the Aux Input.
- You can now play KONTAKT while the signal is routed through the Pro Tools mixer.

It is possible to enable up to 8 stereo or 16 mono outputs from KONTAKT to the Pro Tools Mixer. You can record, mix and tweak the streams with plug-in effects within Pro Tools.

## Recording KONTAKT in Pro Tools

Since recording any plug-ins in Pro Tools is only possible via busses, a Session able to record the KONTAKT signal is a bit more complex. The idea is to route KONTAKT into AUX channels and send the AUX's outputs to busses. Audio tracks should get these busses as source input. Monitoring the bus input (instead of monitoring the audio files/tracks in the Pro Tools Arrange window) is only possible when setting the audio track to record ("r").

---

**Important:** If you encounter crackles and pops in the audio signal, please choose a larger hardware buffer size in Pro Tools under **Setup** ⇨ **Audio Playback Engine** (Pro Tools 5.3) or **Setup** ⇨ **Hardware Setup** (older versions).

---

## MAS and FreeMIDI Setup

The use of FreeMIDI and MAS allows you to sequence MIDI tracks for KONTAKT in Digital Performer and route the audio output of KONTAKT directly back into Digital Performer's virtual mixing environment, just like a real hardware synthesizer would be connected to a hardware mixer.

You can mix the audio output of KONTAKT in real time, together with hard disk and MIDI tracks in Digital Performer's virtual on-screen mixer. You are even able to apply plug-ins to the incoming KONTAKT audio stream in Digital Performer. So you can use effects to process the incoming signal in realtime. You can use up to 8 stereo input or 16 mono inputs for KONTAKT in Digital Performer.

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Note: MAS and FreeMIDI are independent from each other, you can use one of them without using the other.

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### Requirements

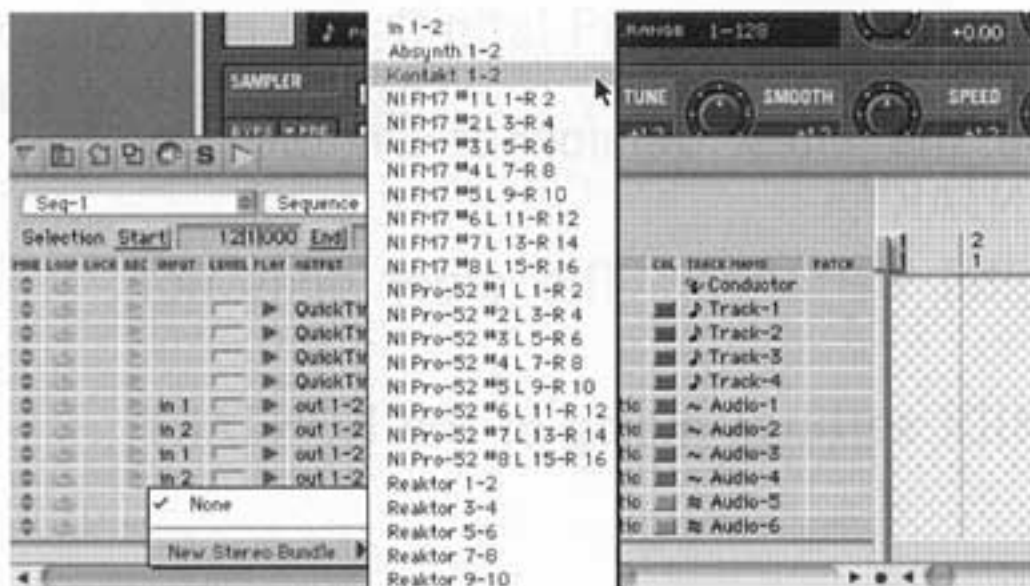
- MOTU Digital Performer 2.7 or 3.0
- MAS Extension 2.1
- FreeMIDI 1.44
- 256 MB RAM recommended

### MAS

The NI MAS support allows you to stream digital audio signals directly into Digital Performer. This means you can route the audio outputs of KONTAKT directly to any Digital Performer audio track so that the audio signal can stay in the digital domain all the time without leaving the computer. The audio channels for KONTAKT appear in Digital Performer's audio track input menus, when you activate the MAS audio port in the system menu of the KONTAKT software. You don't need to restart any of the applications neither.

## Setting up MAS

- Make sure that you have the latest version of Digital Performer, MAS Extension and KONTAKT.
- Make sure that the Native Instruments MAS Plug-in ("KONTAKT MAS Plug") is located in the **System extensions/MOTU/Plug-ins** folder of your Digital Performer installation. The NI Installer will ask you to do this for you automatically. If a file is missing, you can run the installer again, choose **Custom install - MOTU MAS support packet**. The extension **NI\_MOTU/MAS\_dll** is used for all MAS-compatible NI applications and should be located in the **System Extensions / Native Instruments** folder.
- Start the KONTAKT application.
- Choose **Digital Performer** ⇨ **MAS** as Audio-Port from the **System** Menu.
- Restart the KONTAKT application when a dialog message appears asking for a restart.
- Now start Digital Performer. The order in which you launch both applications usually does not matter.
- In Digital Performer, choose KONTAKT's audioport (e.g. "KONTAKT 1-2") as input source in the input column of your Digital Performer audio or aux track. Depending on working on a stereo or mono track, you can choose a pair of audio channels or a single audio channel. Now you have a direct audio connection between KONTAKT and Digital Performer. If you are using a voice track and not an AUX track, you have to arm the track in order to hear the output of KONTAKT.



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Make sure that you have enabled **Audio Patch Thru** and in the **Basics** menu of Digital Performer. Also look for the option Monitor Thru Effects under **Basics** ⇨ **Configure Audio System** ⇨ **Input Monitor Mode**. If you find this option here you have to activate it in order to hear the MAS plug-ins input. Also enable **Active in Background** in the Digital Performer **Preferences** so that its audio and MIDI engine will not be deactivated when the KONTAKT window is moving to the foreground.

---

## FreeMIDI

With the NI FreeMIDI support you are able to use FreeMIDI compatible MIDI interfaces as well as the KONTAKT application as MIDI destination in Digital Performer, which is achieved by using FreeMIDI's **Inter-application MIDI**.

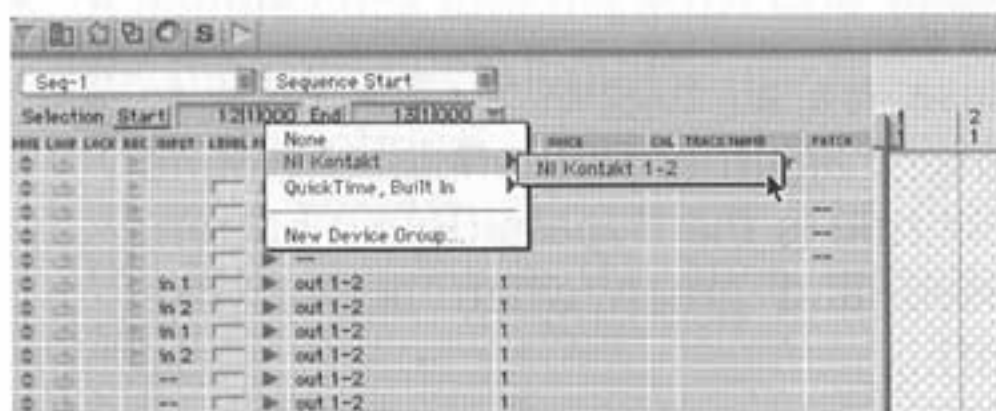
When running KONTAKT and Digital Performer at the same time and KONTAKT is using the **FreeMIDI System (System** ⇨ **Midi Settings)**, the KONTAKT MIDI channels automatically appear in Digital Performer's MIDI track output menus. Therefore you don't have to restart any of the two applications.

All Native Instruments products support realtime parameter automation via standard MIDI controllers, which can be recorded, programmed or inserted as points or curves by the user in a standard fashion using Digital Performer's wide range of MIDI controller handling features.

## Setting up Free MIDI

- Make sure that you have the latest version of Digital Performer, FreeMIDI and KONTAKT.
- Start KONTAKT and Digital Performer. The order does not matter.
- Select **FreeMIDI** in the MIDI settings dialog of the KONTAKT application.

At this opportunity you should check your FreeMIDI setup. Launch the FreeMIDI Setup, e.g. from the MIDI Settings dialog of the KONTAKT application. Make sure that in **File menu** ⇒ **FreeMIDI Preferences...**, you have activated **Inter-application MIDI**. We also recommend to activate the **FreeMIDI applications only** entry. This allows you to run Digital Performer Midi engine in background, so you can switch the KONTAKT application while Digital Performer is running without stopping the playback. So you have to activate options in both, the FreeMIDI setup and Digital Performer, to make sure that the audio and MIDI processing stay active when switching to the KONTAKT window.




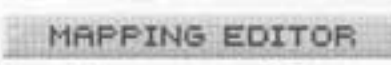
- Now you can receive MIDI signals from Digital Performer via Free-MIDI **Inter-application MIDI**. You should not set any FreeMIDI input device in the KONTAKT application when you use MIDI thru in Digital Performer. Otherwise, you may get double MIDI signals or accidentally you set up a MIDI loop.

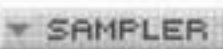
At this time, you cannot transmit any midi data from NI products via Inter-application MIDI. The Midi output can be sent only to "physical" FreeMIDI devices yet. If you want to record the Midi output of a NI application, you have to use an external cable connection into Digital Performer. Be careful to avoid midi loop-backs in this case.

# Basic User Interface Protocols


There are five main elements in KONTAKT that let you interact with the program.

**Knobs** : To change a knob value, click on it and drag up to move the knob clockwise, or drag down to move it counter-clockwise. Some knobs can be fine-tuned if you hold down your computer keyboard's Shift key as you move the knob. Ctrl + Click (Mac: Cmd + Click) resets a knob to its default value. Some parameters allow changing the type of units displayed; click on the unit, and choose another type from the drop-down list that appears.

**Buttons** : These are all toggles - click once to turn on (background turns orange), again to turn off (background turns tan). One exception to this rule is the Bypass (Byps) button. It indicates red when bypassed and green when active (like "stop" and "go" with a stop light).

**Drop-down menus** : These look like buttons, but have small arrows that point down. Click on this type of button, and a menu of options drops down. Click on the desired option; KONTAKT takes whatever action you've requested, then closes the menu. Some drop-down menus stay open after clicking on an entry to allow multiple selections. Click outside the menu to close it.

**Scroll bars:** These work like scroll bars in any computer program. If a scroll bar has + and - symbols at one end, click on + to zoom in, and - to zoom out.

**Numericals** : These are fields with numbers in them. Usually there are three ways to change the parameter values.

- Click on the number, and an up and down arrow appear. Click on the up arrow to increment one value at a time, and on the down arrow to decrement one value at a time. This is the most precise way to change values.
- Click on the numerical and drag the mouse up to increase the value, and drag down to decrease the value. This is the fastest way to change values.

- Double-click on the numerical, and type in the desired value.

## MIDI Remote

Knobs can be remotely controlled by MIDI control changes. To assign a MIDI controller to a knob right-click (Mac: Ctrl-click) on the knob and choose **MIDI Remote**. A dialog box opens with the following options:

- Moving a control of your MIDI device will cause KONTAKT to learn its controller number. After the controller number has been transmitted the dialog box will close automatically.
- A double click into the **MIDI CC#** field allows a numerical entry for the controller number.
- The **Smoothing** parameter smoothes the incoming MIDI data, to avoid zipping noise. The higher the Smoothing value the less responsive the knob becomes, when controlled over MIDI.
- **Soft Takeover** ensures that not unintended value jumps occur, when using external MIDI controllers. When **Soft Takeover** is activated the external control has to catch the knob in the software.

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Note: Several knobs can be assigned to the same controller.

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Note: The modulation wheel usually has the control number 1.

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# Sampler Architecture: Sample, Zone, Group, Instrument, Multi-Instrument

The most basic element is the **Sample**. This is a piece of raw digital audio that is loaded into RAM. KONTAKT can import samples directly into the program.

Dropping a sample in the Mapping editor creates a **Zone**, which represents the position and stretching of the sample across the keyboard. One Zone can not contain more than one sample. A Zone consists of:

- Keyboard mapping
- Zone volume
- Zone pan
- Zone tune

One or more Zones can be associated as a **Group**. Editing a Group will affect all Zones within that Group. Most sound processing and organization is associated with a Group.

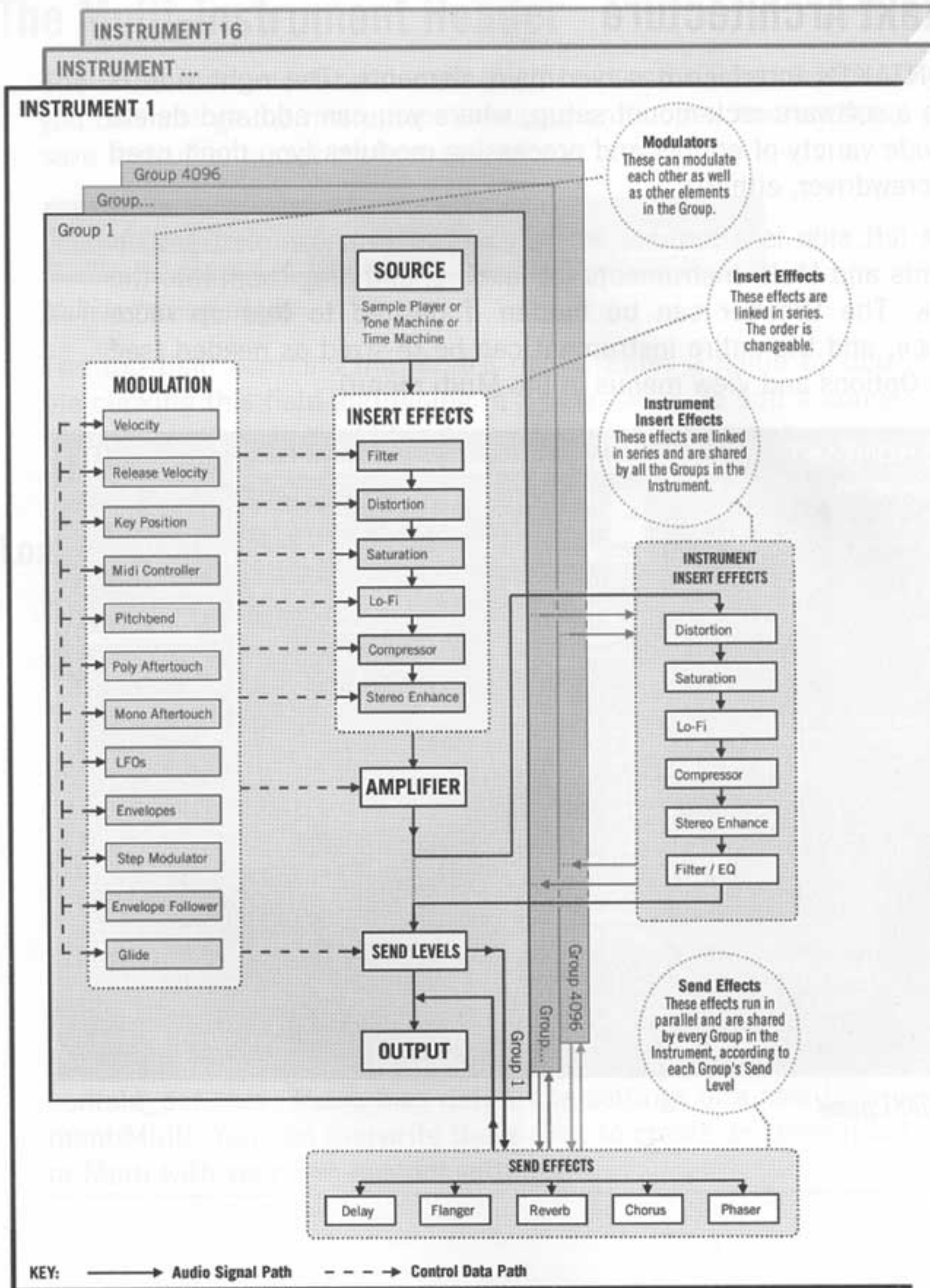
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Examples: Suppose you have several tom Zones and want to apply the same type of processing, such as delay, to them. By grouping them, applying delay to the Group affects all Zones within that Group. Or, perhaps you've sampled a bass with two samples per note - one at soft volume, and one much louder. You would probably want to Group the soft volume Zones together, and create a separate Group for the loud samples, so that changes made to one Zone affect other Zones of that Group.

---

Zones cover a particular key range, and may be layered with each other. Samples placed as Zones and arranged in Groups form an **Instrument**.

Finally, up to 16 Instruments can be assigned to different MIDI channels to form a **Multi-Instrument**. Example: A Multi-Instrument might place a bass sound in channel 1, piano in channel 2, strange synth lead in channel 3, and so on.



Schematic view of the KONTAKT architecture

# Kontakt Architecture

KONTAKT's interface has two main elements. The right side is like a software rack-mount setup, where you can add and delete a wide variety of editors and processing modules (you don't need a screwdriver, either!).

The left side is a browser where you can view samples, Instruments and Multi-Instruments for loading, and drag them into the rack. The Browser can be hidden if desired to free up more space, and the entire instrument can be re-sized as needed (see the Options and View menus in the Multi menu).



*KONTAKT panel*

## The Multi-Instrument Header

The Multi-Instrument header (or Multi header for short) is where you do most global instrument management - open Instruments, save Instruments, set preferences, etc.



### *Multi Instrument Header*

The top field contains the Multi's name. Enter a name by double-clicking this field and typing in a new name. To edit a name, drag across the section to be changed, and type in the changes.

## Load/Save Menu

**New Instrument:** Creates a new, blank Instrument in the rack.

**Load:** Performs one of three functions.

- Loads an Instrument file into an existing Instrument location (indicated by "Replace" after the Instrument name)
- Creates a new Instrument in the rack and loads the file into that
- Loads a Multi-Instrument file, where several instruments load into the rack.

---

Instrument files have a .nki file extension, Multi files have a .nkm file extension. There are two default patches in the Default folder in your KONTAKT installation folder: kontakt\_def.nki and kontakt\_def.nkm. These files define the settings of a new Instrument/Multi. You can overwrite these files to create an Instrument or Multi with your own custom settings.

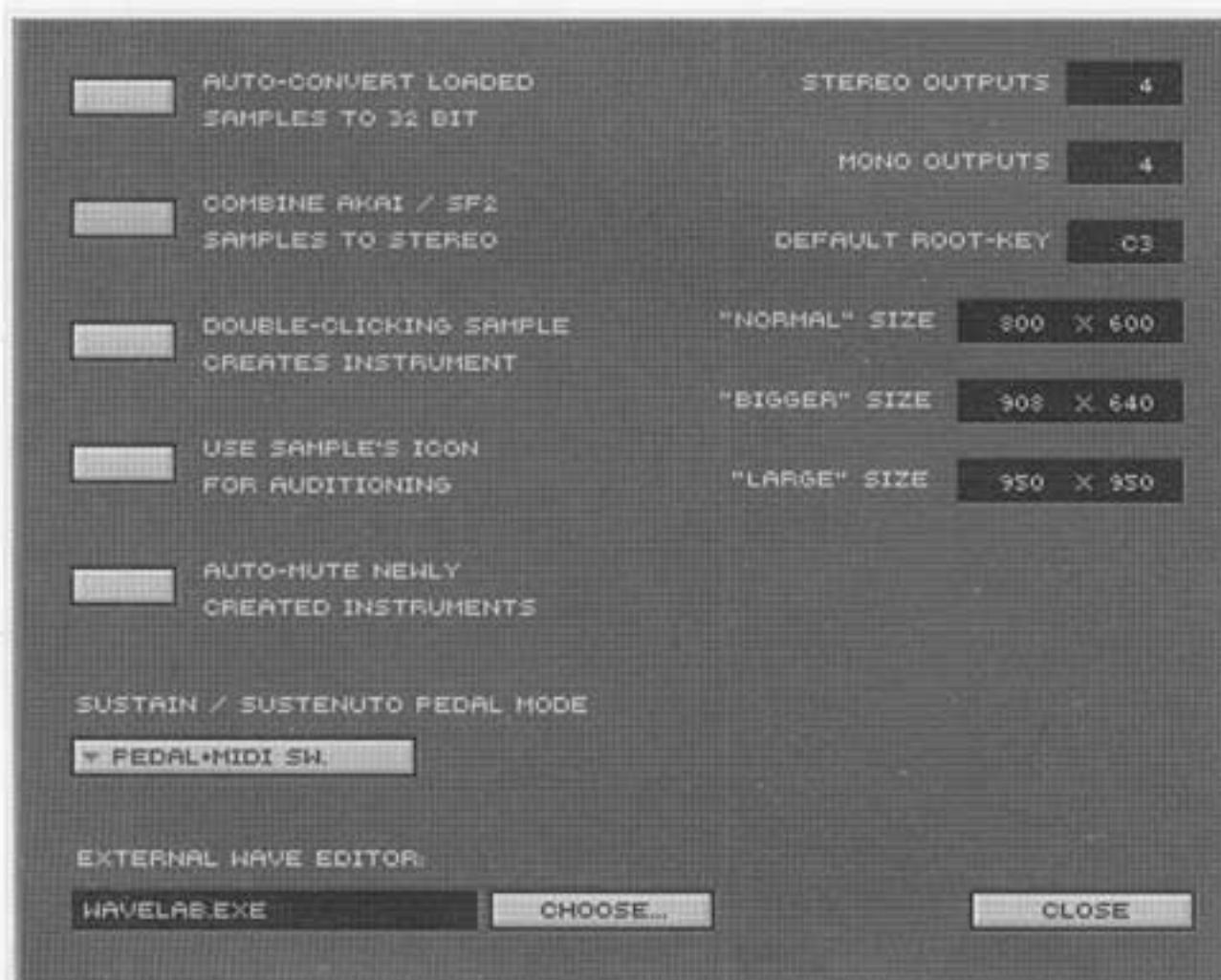
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**Save:** Saves the selected Instrument or Multi. When saving an Instrument, you have the option of saving the Patch only, or saving the Patch and accompanying Samples. When saving Samples too, you can specify a sample sub-directory to save the Samples, or use the default directory. Files that save Samples take up more storage space than patches that just "point" to samples already on disk.

**Remove:** Removes the selected Instrument from the rack. You will need to confirm that you want it removed.

**Reset:** Initializes an Instrument or Multi. You will need to confirm that you want it reset.

## Options Menu



### *Options window*

The Options menu is where you determine overall KONTAKT preferences.

**Auto-Convert Loaded Samples to 32-Bit:** Enable this to convert all loaded samples to 32-bit format.

**Combine Akai/SF2 Samples to Stereo:** Enable this to convert dual mono samples to stereo.

**Double-Clicking Sample Creates Instrument:** If enabled, double-clicking on a Sample in the Browser creates a new Instrument, with the sample spanning the entire keyboard range. If you Shift-Click multiple samples and double-click on the group of Samples, this creates a new Instrument and auto-maps the Samples equally across the keyboard.

**Use Sample's Icon for Auditioning:** When enabled, you can click on the Sample icon in the Browser to hear the sample rather than click on the audition button below the Browser.

**Auto-Mute Newly Created Instrument:** Enabling this prevents a newly-created instrument from sounding until you unmute it.

**Sustain/Sostenuto Pedal Mode:** Chooses the function for a footpedal connected to KONTAKT via MIDI.

**External Wave Editor:** Use this to specify the waveform editor that will edit samples used in KONTAKT (the editor is invoked by the command **Open Sample in External Editor** in the Loop Editor). To choose the editor, click on **Choose**, navigate to the editing program's executable file, then click on **Open**.

---

The following parameters are set by clicking in the parameter's numerical field.

---

**Stereo Outputs:** Chooses the overall maximum number of stereo outputs. The maximum available depends on your sound card and the audio drivers used in your computer, as well as how many mono outputs you've selected (see next).

**Mono Outputs:** Chooses the overall maximum number of mono outputs. The maximum available depends on your sound card, its audio drivers, and the host program used in your computer, as well as how many stereo outputs you've selected (see previous).

---

If you see the following message when modifying the number of outputs: "The host was not able to change to the new output configuration. Please close and re-open the plugin for the new settings to become effective," close and re-open the plug-in to obtain the desired output channels.

---

---

The number of channels is saved with a Multi. To set an initial output configuration, create a Multi file with the desired output setup, then overwrite the default Multi file kontakt\_def.nkm in the "Default" folder (located in your KONTAKT installation folder).

---

If you load a Multi with different output settings (e.g., when loading a Multi from other KONTAKT users), you probably will see the following message: "The outputs configured in the loaded Multi differ from the current output configuration! Do you want to adapt the new settings?" Click **Yes** to adopt the new Output configuration. The next time you create a new Multi, it will use your default settings.

---

**Default Root Key:** Samples that have no root key information will default to this as their root key.

**Size:** There are three size options for the KONTAKT instrument - normal, bigger, and large. The width and height have separate, variable fields.

**Close:** Closes the Options window.

## View Menu

Choose the viewing size: **Normal**, **Bigger**, or **Large**. The size is set in the **Options** window.

## Browser

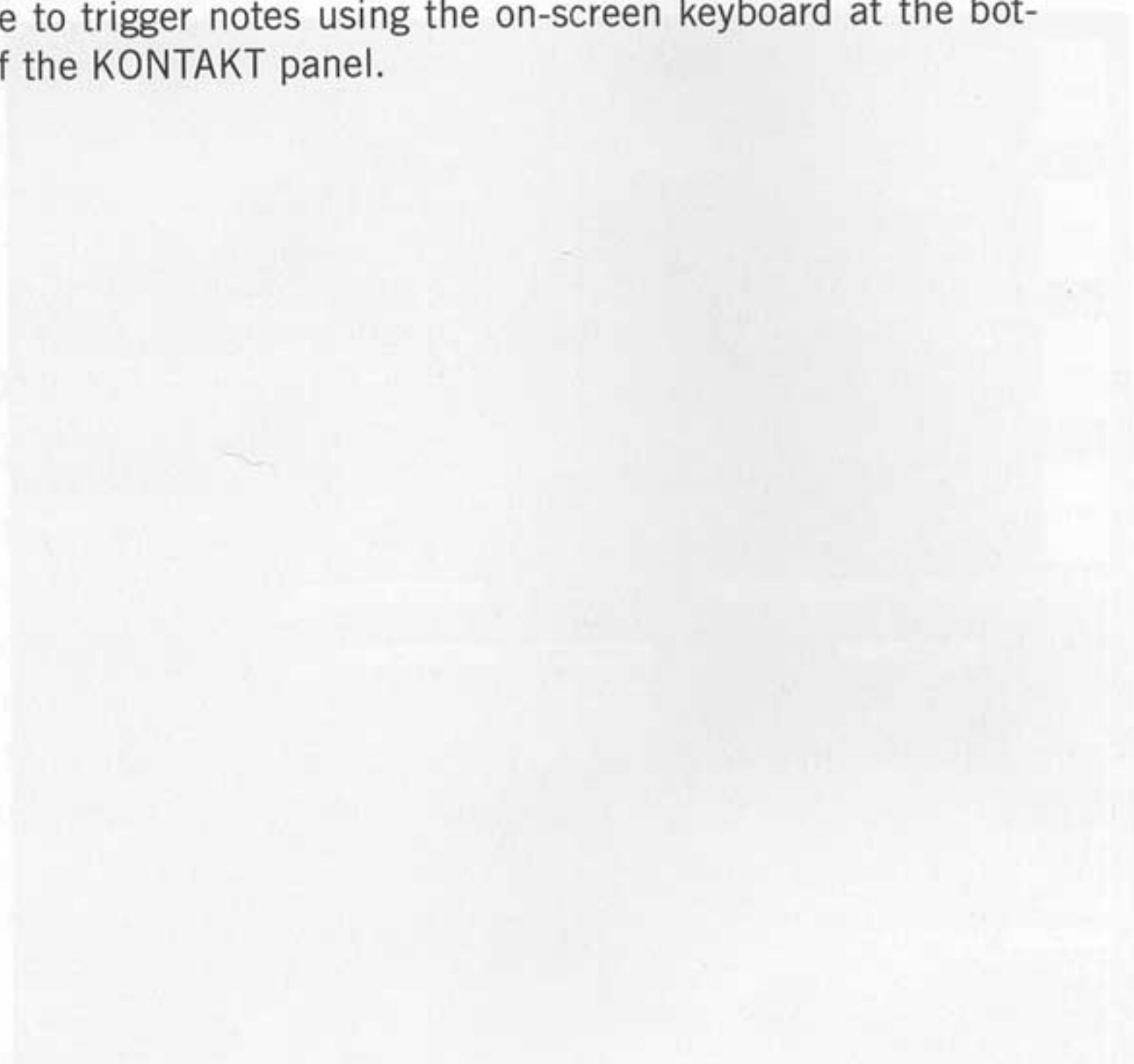
Enable to view the Browser. For a more compact KONTAKT window, disable to close the Browser.

## Rack

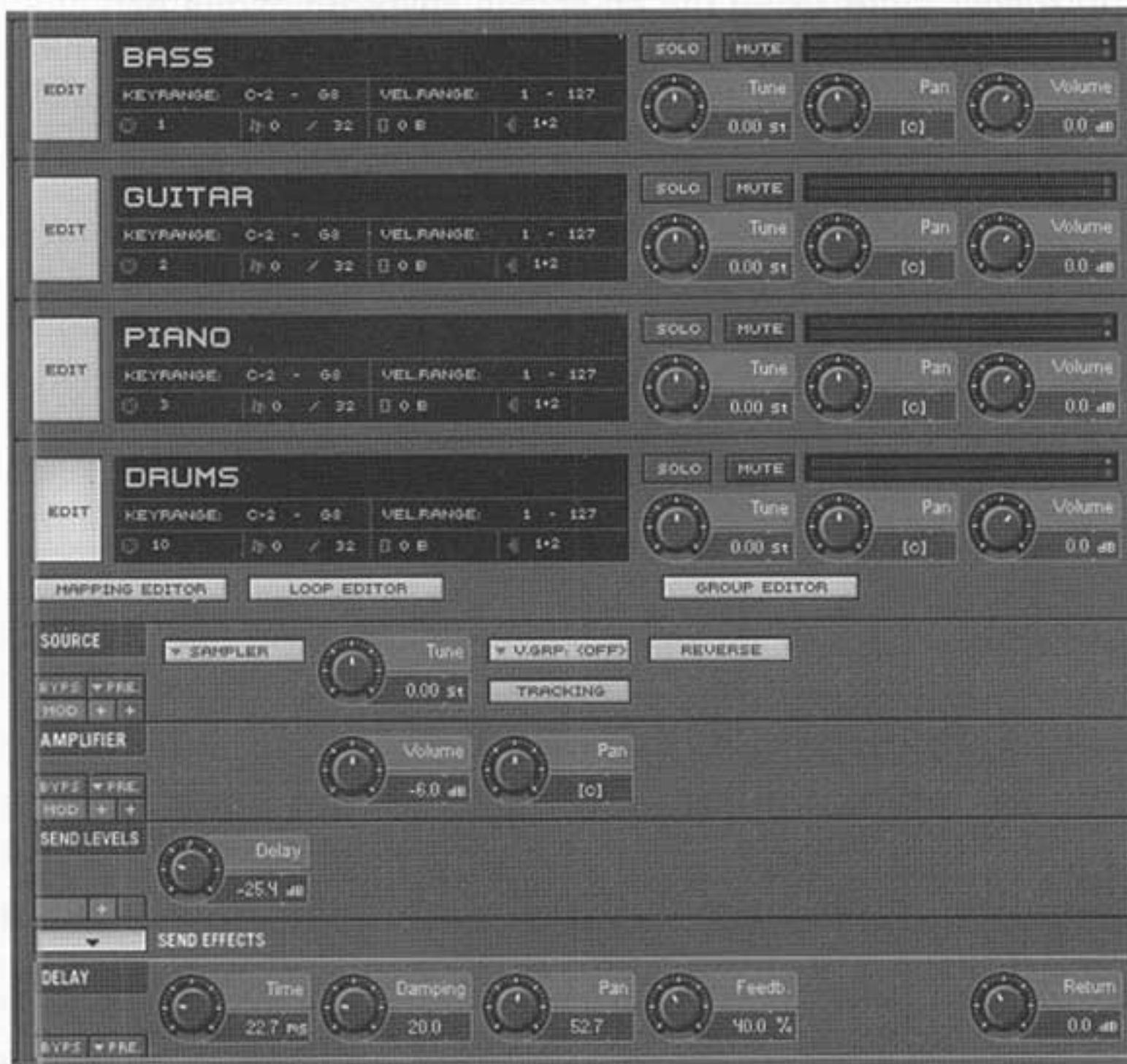
Enable to view the Rack. If you disable it you get a very compact view of KONTAKT, only showing the Mult Instrument header.

## Keyboard

Enable to trigger notes using the on-screen keyboard at the bottom of the KONTAKT panel.



# The Kontakt Rack



*KONTAKT rack with four instruments*

The rack, KONTAKT's main area, is where you construct up to 16 sampling instruments. Each Instrument receives on an individual MIDI channel, and contains a fixed Sampler module, Amplifier module, Mapping editor and Loop editor. You can add effect and modulation modules for the whole Instrument, or just for certain Groups within this Instrument.

Note the following rules for the order in which modules appear in the rack:

- Each Instrument you insert has an associated header module that goes in the rack.
- Group Insert effects appear under the Sampler module and above the Amplifier module.

- Send effects and Instrument Insert effects appear under the Amplifier module.
- Modulation Routers appear directly under the module of the parameter controlled by the modulation module. Modulation source modules appear at the bottom of the Instrument in the modulation section. You can hide all modulation routers by clicking on the parent module's Mod button.

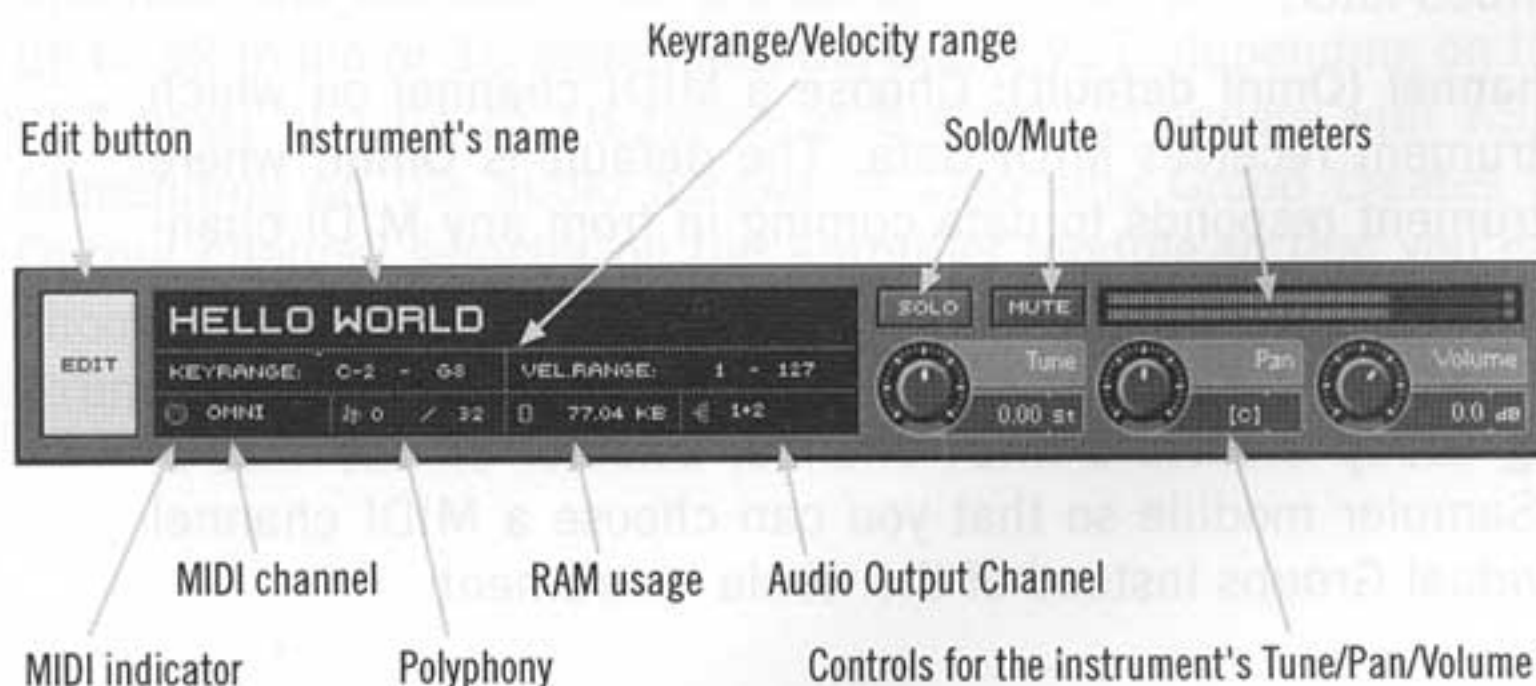
## Rack modules (Overview)

The following types of modules are available in KONTAKT:

- Instrument Header (up to 16 per instance of KONTAKT)
- Sampler (one per Group)
- Amplifier (one per Group)
- Group Insert Effect (up to six per Group)
- Instrument Insert Effect (up to six per Instrument)
- Send Effect (up to five per Instrument)
- Modulation Source (available for every modulateable parameter per Group)

## Instrument Header

When you first start KONTAKT, a blank Instrument appears. This is the strip across the top with the large Edit button into which you will load samples and creates Groups and Zones. There are several adjustable Instrument parameters.



**Edit:** This important button, when pressed, reveals the modules that make up the Instrument as well as the **Mapping Editor**, **Loop Editor**, and **Group Editor** buttons (described later). When off, the Instrument "folds in" to take up less screen space.

**Name:** To rename, double-click in the name field so that the entire name is highlighted and type the new name. Alternatively drag across the entire name to highlight it, then type the new name.

**Keyrange:** This sets the keyboard range covered by the Instrument. Placing your mouse over the lower or upper limit causes a double arrow to appear. Drag up to raise the limit's note pitch, or drag down to lower. The range cannot go below C-2, or above G8. Use this with multiple Instruments to create keyboard splits - for example, bass could cover the lower two octaves of your keyboard, and piano the rest. Double click the value for keyboard entry.

**Vel. Range:** This restricts the velocity range to which an Instrument will respond. Placing your mouse over the lower or upper limit causes a double arrow to appear. Drag up to raise the velocity limit, or drag down to lower. The range cannot go below 1, or above 127. Double click the value for keyboard entry.

As an example of how to use this, one Instrument could be acoustic guitar that responds to velocities 1-110, while another Instrument could be an electric guitar that responds to velocities 111-127. Velocities of 111 or above would bring in the electric guitar sound.

Velocity ranges can also be crossfaded for smoother transitions, as described later.

**MIDI channel (Omni default):** Choose a MIDI channel on which the Instrument receives MIDI data. The default is **Omni**, where the Instrument responds to data coming in from any MIDI channel. To accept data from only one channel, click on this field and select a channel from the drop-down menu.

Choosing **Group** creates a MIDI channel selector on the Instrument's Sampler module so that you can choose a MIDI channel for individual Groups instead of the whole Instrument.

- To layer Instruments, set the same MIDI channel in the Instrument Headers of two or more Instruments.
- To hear a different sound on each MIDI channel, set different MIDI channels in the Instrument Headers

When the Instrument receives MIDI data, the small MIDI jack glows red.

**Polyphony (note symbols):** The left digit indicates the number of notes being played at any given time. This digit is not editable. Click on the right field and drag up to increase the maximum number of notes the Instrument can play, and drag down to decrease.

---

Do not use more notes than is needed, as each note requires a certain amount of CPU power. For example, with bass, you seldom need to assign more than 2 or 3 notes. However, with an instrument like piano with a long release time, several notes may sound simultaneously as they decay. For this, you would need to assign more notes to avoid "voice stealing," where newer notes have to steal a voice from notes still sounding (see also "Voice Groups").

---

**RAM usage:** Displays the size of all samples loaded into RAM for the current Instrument. This is not an editable parameter.

**Instrument Output channel:** KONTAKT offers multiple outputs with flexible routing possibilities. The Output selector chooses an output for the Instrument. The number of outputs you can choose depends on the audio settings in the Options menu as well as the interface and hardware you are using; for example, you can have up to 32 mono or 16 stereo outputs under VST (depending on the VST host) and up to 16 mono or 8 stereo channels with ASIO (depending on the audio hardware). Choosing **Group** creates an Output channel selector on the Amplifier module so that you can choose the output for individual Groups instead of the whole Instrument.

---

The option to route each Instrument or each different Group of an Instrument to a different output is useful with a mixer (software or hardware), as different mixer channels can have different processing and levels for the different Instruments/Groups assigned to them.

---

**Solo:** Enabling Solo mutes all other Instruments so that only the soloed Instrument plays.

**Mute:** Enabling Mute mutes the Instrument, but allows other Instruments to play.

**Meters:** These show the Instrument's signal output level. If the red clipping indicators toward the right light up, reduce the overall level to prevent distortion.

---

As with any synthesizer or sampler, KONTAKT adds together the voices at the output. If you play a lot of voices, this may result in clipping distortion, particularly if they are set to high levels. If distortion occurs, lower the Instrument's overall level.

---

**Tune:** This changes the Instrument's master tuning in semitones, up to +/-12 semitones (one octave). To fine tune the control in cents (1/100th of a semitone), hold down the Shift key while dragging the mouse.

**Pan:** Master stereo placement control for the Instrument. If a stereo output is selected, this control determines the Instrument's location in the stereo field. For fine adjustments, hold down the shift key while dragging the mouse.

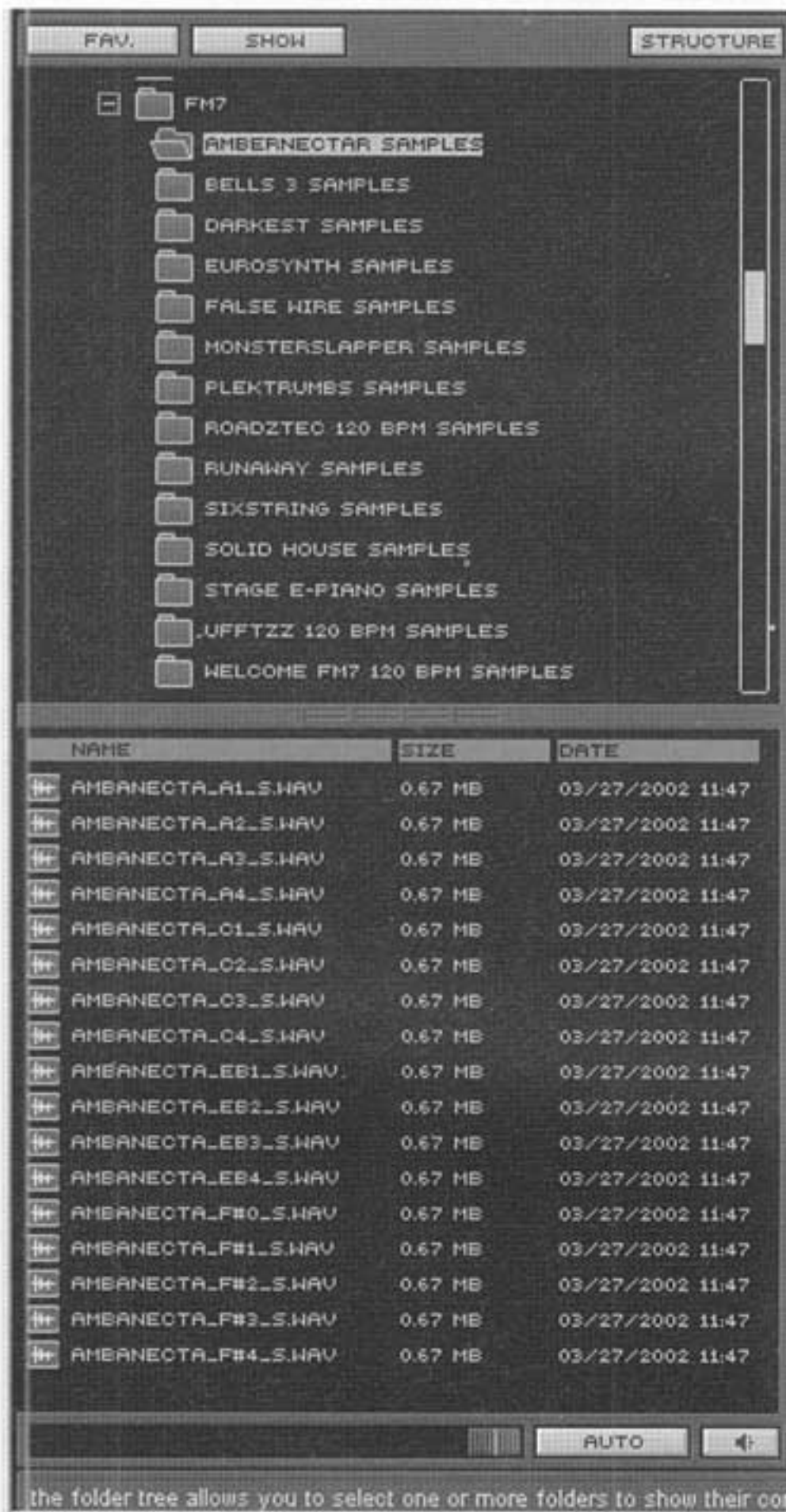
**Volume:** The Instrument's master level control. Again, holding shift while dragging provides fine adjustments.

## Instrument Shortcuts

- To create an Instrument, drag a Sample or Instrument from the Browser into a blank space on the rack.

- You can also create an Instrument by double-clicking on a sample, if "Double-Clicking Sample Creates Instrument" is enabled in the Options menu.
- To delete an Instrument, click on an empty space in the Instrument header (i.e., no buttons or displays). An orange line appears around the Instrument to show it's selected. Hit your computer keyboard's Del button to delete, then click OK if you really want to remove the Instrument from the rack. You can also right-click (Mac: Ctrl + click) and select "delete" from the context menu.

# The Browser



*Browser with upper pane (folders) and lower pane (files)*

The Browser is where you locate Samples to drag into the Mapping Editor, and Instruments or Multis to drag into the KONTAKT rack.

The upper Browser pane is a directory of your computer, including all hard drives, CD-ROM drives, etc. To find files on, for example, hard drive C, click on the (+) sign next to the C: icon. A list of all folders on this drive shows up below it.

If these folders contain sub-folders, then the folders also have (+) signs. Click on these to open the folders. Once opened, the (+) sign changes to a (-). Click on this to close the folder; the sub-folders will disappear.

When you click on a folder itself (rather than a + or - sign), any files that KONTAKT recognizes will show up in the lower pane. Note that you can specify what file types you want to see with the Show menu (described later) just above the browser.

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To place samples from multiple folders into the lower pane, Shift-click on the folders, and all samples contained in these folders appear in the lower pane.

---

To drag multiple samples from the lower pane into an Instrument, you have two choices:

- Shift-click to select non-contiguous samples
- Click-drag a rectangle around multiple samples.

## Auditioning Samples from the Browser

The control strip at the bottom of the Browser lets you audition samples prior to loading.



- To control the Sample playback level, use the left volume control slider.
- To automatically play a Sample as soon as you click on it, enable the Auto button.
- To replay a Sample in Auto mode, or play a selected Sample when not in Auto mode, click on the Speaker icon.

## Configuring the Favorites List

To configure the various Browser functions, use the three buttons at the top of the Browser.



KONTAKT defaults to creating three folders that hold references to favorite files: Samples, Instruments, and Multis. However, you can create your own folders (for example, for a particular song or project).

---

The Favorites option does not store the files themselves, but references to the file locations. If you move the files or they are on removeable media that's not inserted in to the computer, the reference will still exist, but the Browser will not be able to find the files and bring them into KONTAKT.

---

### To add a new folder for favorites:

- Click on the **Fav** button.
- Choose **Configure Favorites**.
- Click on **Add**.
- Type in the **name** for your New Favorite.
- Click on **Close**.



### To rename or delete a favorites folder:

- Click on the **Fav** button.
- Choose **Configure Favorites**.
- Click on the folder name to rename or delete.
- Click on **Rename** (then type in a new name) or **Delete**, as appropriate.
- Click on **Close**.

## Using the "Instant Access" Favorites List

The Favorites drop-down list has three sections. The upper has options to manage the list, the middle shows folders from which you can load favorite Samples/Instruments/Multis, and the bottom shows a list of samples and folders that allow instant access - just click on the Fav button, drag toward the bottom of the list, and select to have the selected sample (or samples contained with the selected folder) show up in the file pane.

To add a file or folder to the instant access list:

- Click on the desired folder in the upper pane, or select multiple folders that contain the desired samples or Instruments.
- Click on the **Fav** button.
- Select **Add to Favorites**.

The next time you click on the **Fav** button, the sample or folder you just added will appear at the bottom of the list. Click on it to transfer the sample, or samples within the folder, to the lower Browser pane.

## Assigning A Folder of Samples to a Favorites Folder

Like the Instant Access list, folders can be referenced by a Favorites folder.

- Right-Click (Mac: Ctrl-Click) on the desired folder in the upper browser pane.
- Mouse over **Add to Favorites**. If you click on the entry **Insert Here** at the bottom of the context menu, the folder will be placed at the lower, Instant Access section of the Favorites drop-down list. If you click on the entry **Insert Here** in one of the submenus (the default submenus are **Samples**, **Instruments**, **Multis**, but these can change if you edit the Favorites Folder structure in **Configure Favorites** from the **Fav.** menu), then you can access the folder via the corresponding submenu in the Favorites list.

## Recalling Files from a Favorites Folder

- Click on the **Fav** button.
- Drag down to the appropriate folder that contains the files you want to retrieve (Samples, Instruments, Multis, or a custom folder you created previously).
- Mouse over to the menu that appears and choose the desired file or folder.

---

If you chose a folder that contains only other folders, the samples will not show up in the Browser's lower pane, but the folder will be highlighted in the upper pane. If you chose a folder containing Samples, the Samples will appear in the lower pane. If you chose an individual Sample, it will appear in the lower pane.

---

## Viewing Selected File Types in the Browser

If you have a large sample collection, sometimes it's convenient to restrict the Browser to showing only certain file types. To do this:

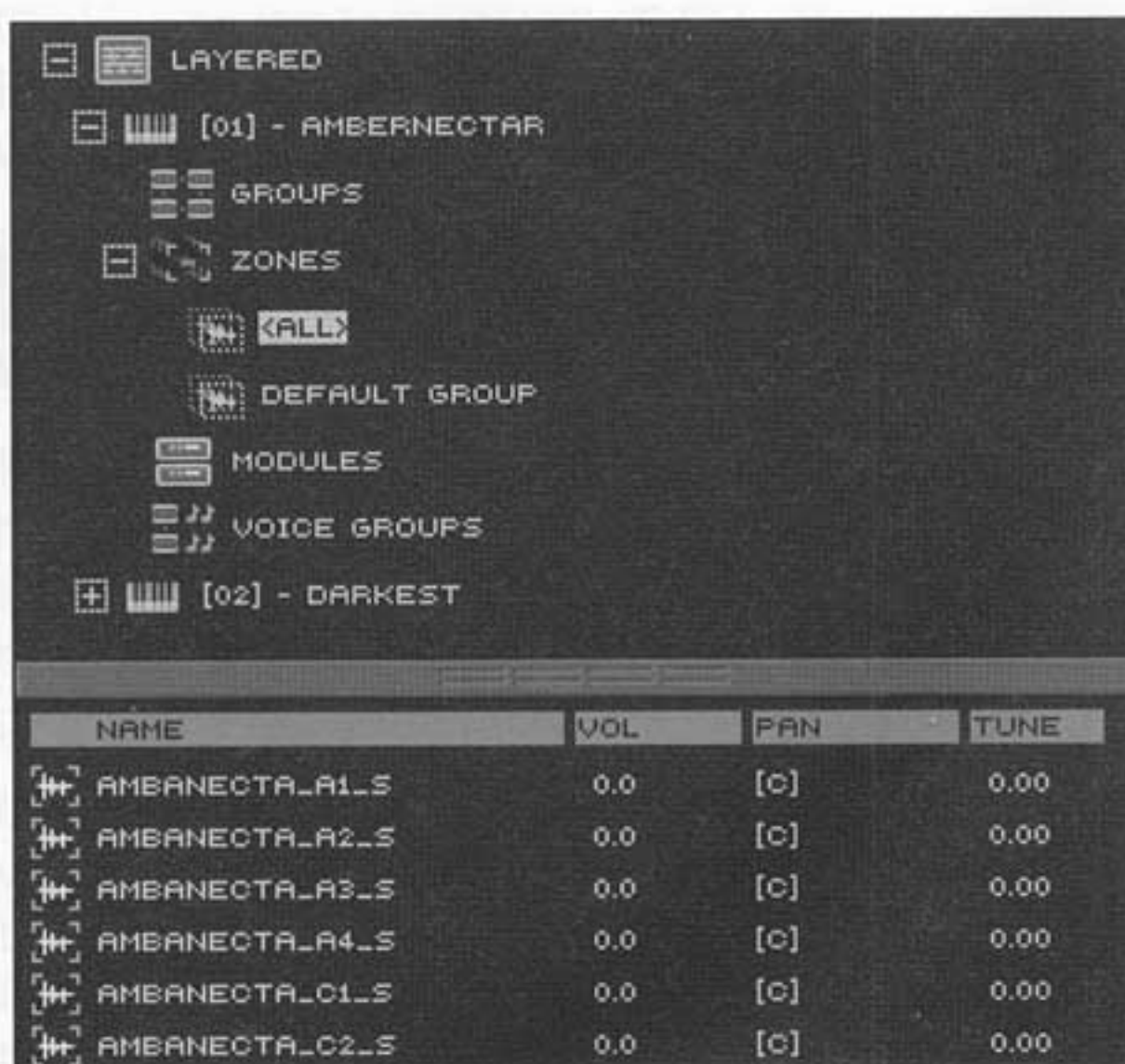
- Click on the **Show** button.
- If a diamond is to the left of the file type name, it will be displayed. If there's a blank space, it will be hidden. Clicking on the diamond or blank space toggles between the two options. Choose from WAV, AIFF, SND, NKI, etc.

## Refreshing the Browser

If you have deleted, moved, or added samples and/or folders in the file browser of your OS after opening KONTAKT, you will need to refresh the Browser to reflect these changes. You also need to refresh when inserting Akai CDs. To do this:

- Click on **Show**.
- Click on **Refresh**.

# The Structure



*Structure informs about all elements included in an instrument*

This shows the elements and modules that make up the various Instruments loaded into KONTAKT. Click on the **Structure** button, and the upper Browser pane shows each Instrument with a small keyboard icon. Here are the Structure section basics:

- Click on the Keyboard icon to expand the list into Groups, Zones, Modules, and Voice Groups.
- Click on **Group** icon. The name of each Group and its number of Zones shows up in the lower pane.
- Click on the (+) symbol next to the **Zones in...** icon to display the Groups used in the Instrument.
- Click on a Group name. The lower pane shows all Zones used in the Group.
- Click on **Modules** to see all Modules used in the Instrument, as listed in the lower pane. If you click on one of the Module names, it selects that Module in the Instrument (indicated by an orange outline). Double-clicking the Mapping Editor, Loop Editor, or Group Editor entries will open these editors in the Rack.

- Click on Voice Groups to see the status of the various Voice Groups, described later.



### Viewing Selected File

- Click on the keyboard icon to expand the list into groups, Zones, Modules, and Voice Groups.
- Click on Group icon. The name of each Group and its number of Zones shows up in the lower pane.
- Click on the (+) symbol next to the Zones in the lower pane. The Groups used in the instrument are listed in the lower pane. The lower pane shows the Zones used in the Group.
- Click on Module to see all modules used in the instrument as listed in the lower pane. It will click on one of the Modules names. It selects that Module in the instrument. Clicked by an orange outline. Double-clicking the Mainpage Editor, Loop Editor or Group Editor entries will open these editors in the Rack.

## Editing an Instrument: Overview

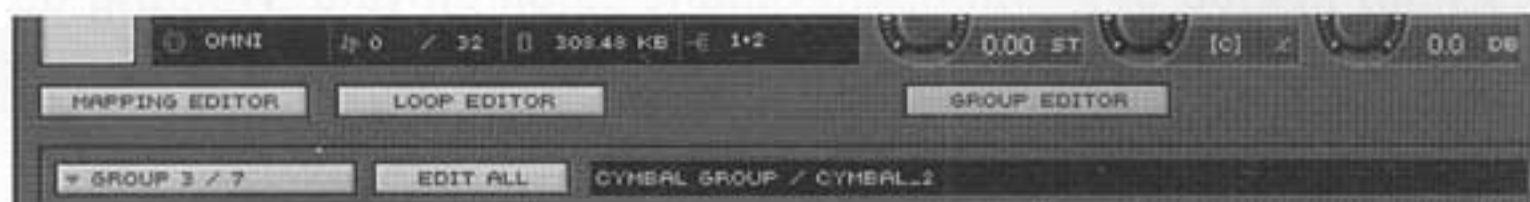
Clicking on the Instrument's **Edit** button opens up the Instrument. From here, you can map samples to keys, edit samples, and add various processors and effects.



**Mapping Editor:** This button opens and closes the Instrument's Mapping Editor. This editor is where you map samples to keyboard keys. If the Instrument contains any samples, you will see one or more Zones that represent the layering of the samples in the Mapping Editor.

**Loop Editor:** This button opens and closes the Loop Editor, where you can manipulate the sample's loops (start time, end time, sample start, sample end, etc.). If a Zone is selected in the Mapping editor, the corresponding sample will appear in the editor. If no Zone is selected, the editor stays empty.

**Group Selector:** This adds a line just below the Editor buttons that provides three functions.



- The **Group X/Y** button (left) selects a Group for editing ("X" shows the position of the Group in a series of Groups, while "Y" shows the total number of Groups)
- The **Edit All** button (middle) selects all Groups for editing.

---

Important: Be *very* careful with the **Edit All** button, as any edits will overwrite the parameter value being edited for *all* individual Groups. However, this can be a real time-saving feature if you need to change a parameter for all Groups to the same value.

---

- The **Name** field (right) shows the name of the group selected with the Group X/Y button. To rename, click in the name field and type the new name. To type in a new name quickly, drag across the entire name or double-click on it, then type the new name. The Structure Browser displays the new name immediately.



Mapping Editor: This button opens and closes the Mapping Editor. The editor is where you can define the mapping between the keyboard and the application. You will see one or more zones that represent the layout of the keyboard in the Mapping Editor.

Group Editor: This button opens and closes the Group Editor. When you can manipulate the sample's layout later, to the sample that you are editing. If a zone is selected in the Mapping Editor, the corresponding sample will appear in the editor. If no zone is selected, the editor stays empty.

Group Selector: This adds a line below the Editor buttons that provides zone functions.



The Group X/Y button (left) selects a Group in output (X) shows the position of the Group in a series of Groups, while "Y" shows the total number of Groups.

The Edit All button (middle) selects all Groups for editing.

important: Be very careful with the Edit All button, as any edits will overwrite the parameter values being edited for all individual Groups. However, this can be a real time-saving feature if you need to change a parameter for all Groups to the same value.

## The Mapping Editor



This is where you place samples on the keyboard, layer them in Zones, assign them to specific velocity ranges, do velocity- or pitch-based crossfading among overlapping samples, and more. To access it, click on the Mapping Editor button.

You'll see a keyboard along the bottom and a blank space above it, called the Zone Field. Assuming your MIDI keyboard is hooked up properly, playing notes should place little red dots in the field. The height of the dot corresponds to velocity. You may also trigger notes by playing on the "virtual keyboard" below the Instruments. Clicking closer to the bottom of the key produces higher velocities. Clicking closer to the Zone Field lowers the velocity.

### Mapping samples

- After locating a sample, enable the Mapping Editor button. Then drag the sample into the Mapping Editor to create a Zone. You can also Shift-click on multiple samples, or click-drag a rectangle around contiguous samples, and drag them all into the editor.

---

Dragging the sample toward the top of the Zone Field widens its keyrange, while dragging toward the bottom of the Zone field narrows it. If you drag over multiple samples, they will occupy consecutive keyranges, whose width depends again on whether they are dragged toward the top or bottom of the editor. Dragging multiple samples to the very bottom places them one on top of each other, with the first sample in the list appearing at the bottom - very handy when building velocity-switched or velocity-crossfaded presets.

---

- Click on the Zone. One of the keyboard keys will turn orange; this indicates the sample's root key, which determines the sample's playback pitch. Click on the root key and drag to change it. Example: If the sample plays note G#2, then the root key should be dragged to G#2 to play back at that pitch. However, you can also drag to other keys for special effects. Example: Setting the root key to G#3 will cause the sample to play an octave lower, while setting it to G#1 will cause it to play an octave higher.

Samples can be stretched (pitch-shifted) to cover a wider keyrange. Example: Suppose you're mapping a guitar's low E note to a keyboard, but want it to extend down to C. To stretch a note down, click on one of the dots in the left corners and move it to the left. To stretch a note up, click on one of the dots in the right corners and move it to the right.

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The Sampler module's Tracking button *must* be enabled to allow stretching.

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- Using the corner dots to change pitch may unintentionally change the velocity response setting unless you move the mouse very precisely. Thus, an alternative way to set keyrange is to move the mouse over the right or left edge of the sample until a double-arrow appears. Now click, then drag to cover the desired range. With either method, a readout appears that shows the current key; when stretching via dots, the readout also shows the dot's current velocity level.

- The orange dot that appears in each of the sample's corners can also adjust the velocity range to which a note will respond. As many instruments are sampled at soft, medium, and loud volumes (or sometimes more), mapping them to low, mid, and high-velocity notes respectively gives a more realistic sound. To restrict the upper range so that it is triggered only by velocities below a certain value, click on the upper border and drag down. To restrict the lower velocity range, click on the lower border and drag up.
- A third way to set keyrange and velocity uses two buttons located above the Zone Field.



- Select the Zone whose keyrange you want to adjust. Click on the button with horizontal arrows. The next two MIDI notes KONTAKT receives set the Zone's keyrange.
- To set velocity, select the Zone whose velocity you want to adjust. Click on the button with the vertical arrows. The next two velocity values KONTAKT receives set the Zone's velocity range. It doesn't matter whether you do the softer or harder velocity first.
- Continue mapping samples until you've covered as many notes as desired.

## Working with Groups and Zones

The Mapping Editor has several edit options involving Groups and Zones.

### Selecting Zones

- To select a Zone, click on it.
- To select several Zones at the same time, Shift-click on them. Or, click outside a Zone, and drag the mouse over the Zones you want to select. Even if a Zone hides another Zone by being on top of it, both will be selected if you drag over them.

## The Show Groups Button

Clicking on this causes a drop-down menu to appear. The bottom two entries, **Show All** (selecting this shows all samples) and **Show None** (selecting this hides all samples), are always available.

Above that is a list of all Groups. To the left of the Group name will be a diamond (Group is showing) or a blank space (Group is hidden). Clicking in a Group name's line toggles between these two options (e.g., if you click on a line with the diamond, the diamond will disappear and the track will be hidden). These are useful because you might want to, for example, hide a sample that's layered on top of another sample you need to access for editing.

Even with the drop-down menu closed, the Show button indicates many Groups are currently being shown (or **All** if all are showing).

There is a **Purge** function if you end up with Groups that have no Zones; see the next section.

## The Edit Button

Click on this button presents a drop-down menu with ways to edit Groups. Select a Group to edit by clicking on it, or Shift-click on several groups to edit all of them simultaneously. Here are the editing options:

**Cut Zone(s):** Removes the selected Zone(s) and places the Zone data on the clipboard.

**Copy Zone(s):** Copies the Zone and places this data on the clipboard.

**Paste Zone(s):** Takes the clipboard data and adds the zone(s) to the Mapping Editor. Zones are pasted in the same place they came from - in other words, if a Zone that was cut covered a particular range, the pasted version will cover the same range.

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It is even possible to copy and paste Zones from one instance of KONTAKT to another one.

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**Delete Zone(s):** Removes the selected Zone(s), but does not place data in the clipboard. Use this when you want to remove a Zone, but not replace the existing clipboard contents. The computer keyboard's Del key performs the same function.

**Show Sample Name:** Shows the sample's name on the sample itself. You can also see the sample name in the Name field (just above the Zone Field, to the right) when you click on the sample. Note that you cannot edit the sample name.

**Auto-Select Group <-> Zones:** When selected, if you change the Group within the Group editor, the Zones belonging to that Group are automatically selected. Also, if you select a Zone, the Group editor (and thus the whole sound structure) reflects that selection. This is useful if you're doing an Instrument like a drum kit that has lots of different Groups for different sounds. It can be very convenient to select a certain Zone, and have the whole sound environment change into what belongs to that Zone.

**Each Zone -> 1 Group:** This command creates a new Group for each selected Zone (i.e., there will be as many Groups as the number of selected Zones. The Group names appear in the Show Groups drop-down list.

**Move to New Group:** Moves the selected Zone(s) to a new Group. You can Shift-click several Zones and invoke this to create a new Group that includes all the selected Zones.

**Move to Existing Group:** Clicking on this produces a menu that shows all existing Groups. To move the selected Zones to a particular Group, select it from the menu.

**Purge Empty Groups:** This removes all Groups that have no Zones in them.

**DC Removal:** Removes artifacts that can interfere later on with the mixing process.

---

DC Removal is a destructive operation that will overwrite the sample data on disk.

---

**Set Crossfade (Velocity):** If two samples have velocity ranges that overlap, you can set a crossfade so that one sample "morphs" smoothly into the other as you play with increasing or decreasing velocity. First select the Zones to be velocity-crossfaded (e.g., Shift-click) on them, then select **Set Crossfade (Velocity)**. The overlapping area will show the crossfade curves if Show Crossfades is enabled in the Edit menu. The crossfading process is described in more detail later.

**Set Crossfade (Key):** If two samples have pitch ranges that overlap, you can set a crossfade so that one sample "morphs" smoothly into the other as you play from one end of the pitch range to the other. First select the Zones to be key-crossfaded (e.g., Shift-click) on them, then select **Set Crossfade (Key)**. The overlapping area will show the crossfade curves if Show Crossfades is enabled in the Edit menu. The crossfading process is described in more detail later.

**Remove Crossfade (Velocity):** Removes the velocity crossfade curve from a selected Zone. If multiple Zones are selected, velocity crossfade curves will be removed from all of them.

**Remove Crossfade (Key):** Removes the key crossfade curve from a selected Zone. If multiple Zones are selected, key crossfade curves will be removed from all of them.

**Show Crossfades:** When enabled (as indicated by a diamond to the left of the menu option), crossfade curves are shown within Zones. When disabled (blank to the left of the menu option), the crossfade curves disappear.

**Move Root Key to Lower Border:** Moves the Root Key for a selected Zone to the Zone's lowest note. If multiple Zones are selected, the Root Key is moved for all Zones.

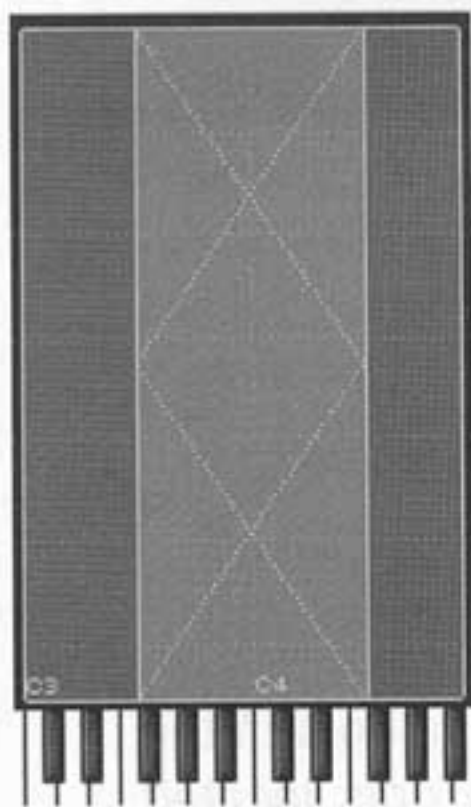
**Move Root Key to Upper Border:** Moves the Root Key for a selected Zone to the Zone's highest note. If multiple Zones are selected, the Root Key is moved for all Zones.

**Auto-Move Root Key:** When enabled (as indicated by a diamond to the left of the menu option), moving a Zone moves the Root Key along with it so that the Zone pitch remains the same.

## About Crossfades

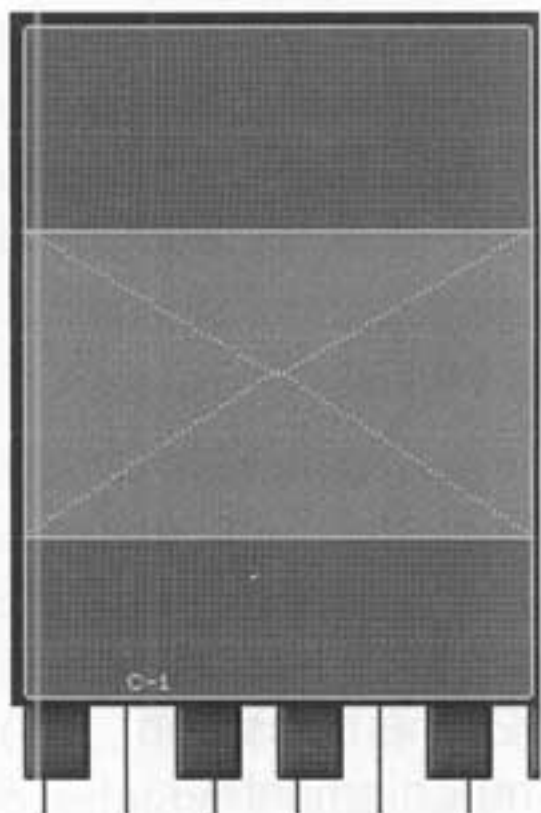
With some instruments, especially if computer storage is limited, it is not practical to record a sample for every note. Therefore, samples are taken every fifth, octave, or some other interval, and stretched to cover the appropriate keyrange.

However, stretching can alter a sample's timbre. To make this change less obvious, samples are overlapped and crossfaded. Example: Sample "A" might extend from C2 to G#2, and Sample "B" from F2 to C3, so they overlap in the range of F2 to G#2. If you fade out Sample A starting at F2 and ending at G#2, and fade in Sample B starting at F2 and ending at G#2, the transition between samples during the overlap area will be much smoother.



*Key-Crossfade between two Zones*

Crossfading can also be done with velocity. Set high and low velocity samples so that they overlap, and crossfade between the two. As you play with greater velocity, the lower-velocity sample will "morph" into the higher-velocity sample over the velocity range where they overlap.



*Velocity-Crossfade between two Zones*

KONTAKT can do automatic crossfades for key or velocity, as described in the section on the Edit menu. However, you can also create crossfades manually, which is particularly useful when you need to use unconventional crossfade curves, such as one sample fading out faster than the other fades in, or simply want to fade a sample rather than crossfade it.

## Creating Manual Key or Velocity Crossfades/Fades

1. Click on a Zone. Note that in addition to the orange dots in the corners for setting keyrange and velocity, there are dots located in the middle of each border line. Here is what they indicate:

- The left dot fades in a sample as pitch increases.
- The right dot fades out a sample as pitch increases.
- The top dot fades out a sample with higher velocities.
- The lower dot fades in a sample with higher velocities.

2. To adjust these dots, position your mouse over the desired dot in the selected Zone. The cursor turns into a small crosshair.

3. Drag the dot toward the Zone's center to create a fade. Example: Drag the left-most dot toward the Zone's center. The fade in will begin at the Zone's lower boundary, and reach full volume at the key directly below the dot.

4. For key crossfades, as you drag the dot, a small label will indicate the range of the fade in semitones. Example: If you drag the left-most dot toward the center and the label says LKEY FADE:10, then the fade covers the Zone's bottom 10 semitones. With velocity crossfades, the label shows velocity values. Example: Suppose a Zone extends over the velocity range of 1 to 127. If you drag the top-most dot toward the center and the label says HVEL FADE:30, then the fade begins at a velocity of 97 (127, the maximum velocity, minus 30) and fades out completely at the maximum velocity of 127.

---

If you Shift-click on multiple Zones to select them, moving one dot moves the same dot on the other selected Zones. If the dot on one Zone is offset, this offset is preserved. Example: Suppose HVEL for one Zone is set to 50 and for another Zone is set to 0. If you Shift-click them and move the second Zone's dot down so HVEL FADE:30, then the first Zone's dot will be at 80 (50+30).

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# The Loop Editor



The Loop Editor allows for setting sample start and end points, as well as defining up to 8 loops.

To work with the Loop Editor, click on the Zone you want to edit, then click on the Instrument Header's Loop Editor. Or, open the Loop Editor, then click on a Zone.

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Double clicking on a Zone jumps to the Loop Editor with the Zone's sample loaded.

---

If multiple Zones are selected, the Zone selected last will appear in the Loop Editor when invoked.

The Loop Editor is calibrated along the top in seconds. The right scroll bar changes the magnification of the waveform amplitude; scrolling up increases the magnification. The bottom scroll bar views different portions of the Sample; the (+) and (-) buttons zoom in and out, respectively.

## What Is Looping?

Looping has multiple meanings, so it's not surprising that sometimes the terminology is confusing. As applied to samples, looping repeats a portion of the sample (or the entire sample).

Looping originated when computer memory was very expensive, so samplers had very limited capacities. Consider a sound like a woodwind. After an initial attack, it settles into a sustained section. Rather than sample the entire sustained section, to save space you could loop the sustained section so it would play as long as the key was held down.

Looping is still used to conserve memory, but has creative applications as well. For example, you could loop the portion of a sample that corresponds to a quarter note at a tune's tempo, and have a sound that repeats rhythmically. Extremely short loops can also create unusual waveforms.

## Setting Sample Start and End Points

**S. Start:** Sets how far into the sample that playback begins. For example, starting later can bypass a sound's attack. The value shown is in samples.

**S. End:** Sets where sample playback ends.

## Sample Info Parameters

These parameters cannot be edited.

**Bits:** Shows the Sample's bit resolution.

**Hz:** Shows the Sample's sampling rate.

**T:** Shows the Sample's total time, in seconds.

## View Menu

When editing a sample, it's convenient to be able to jump to different portions of the waveform. This menu provides several options.

**Go to Loop Start:** Centers the loop start point in the center of the viewing area.

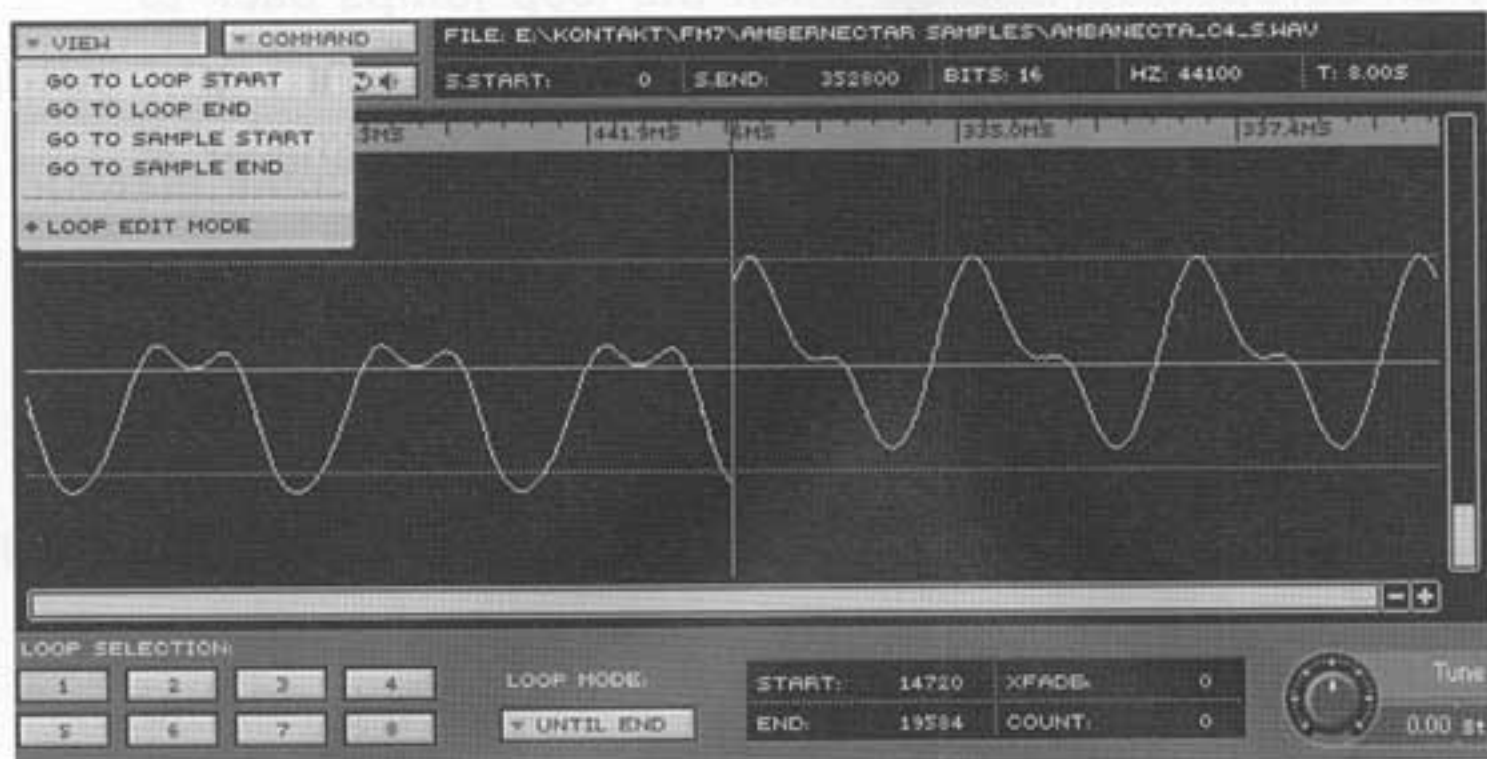
**Go to Loop End:** Centers the loop end point in the center of the viewing area.

**Go to Sample Start:** The sample start point appears at the left-most side of the viewing area.

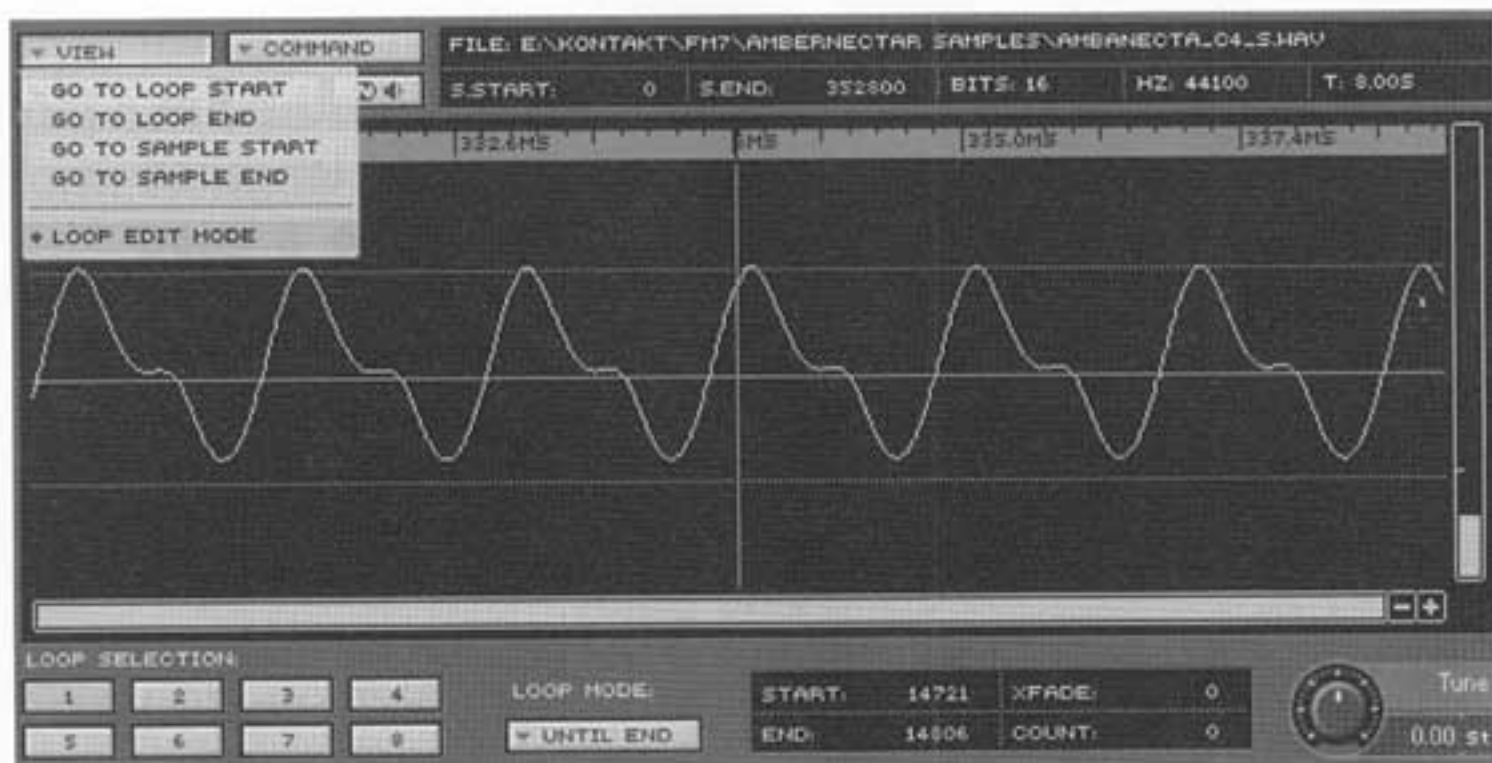
**Go to Sample End:** The sample end point appears at the right-most side of the viewing area.

**Show Both Channels:** When enabled (as indicated by a diamond to the left of the menu option), both channels of a stereo file are displayed. When disabled (as indicated by a blank space to the left of the menu option), both channels are summed together in mono.

**Loop Edit Mode:** This splits the screen in two parts. The left part shows the end of the selected loop. The right part shows the start of the selected loop. This allows judging how well the two match up, as the transition should be as seamless as possible; you can change the loop start and end parameters to adjust the loop, while seeing the results in real-time.



*Loop Edit Mode shows a loop with a not optimal transition between the loop's end and start point*



*Loop Edit mode shows a seamless transition between the loop end and start point*

## Snap Menu

The Snap menu chooses whether Loop Start and End points will "snap" to places where the signal amplitude is zero. This is a recommended way to set loop points, as having the Loop Start and End points equal to zero prevents any clicks or pops caused by an abrupt level change when the loop jumps back to the beginning.

**Zero-X:** Snaps the Loop Start or Loop End point (whichever is being adjusted) to the nearest zero crossing.

**Value:** Snaps the Loop Start to the amplitude value of the Loop End point or vice versa?

## Command Menu

**Restore Sample Loops:** Undoes the effect of any loop editing you have done, and reverts to the original loop settings when you opened the sample.

**Find Loop End -> (Long):** If a loop is selected and you're not happy with the looping, this function searches through the waveform, seeks out a possible candidate for a good Loop End point, and changes the loop end accordingly. If needed, it can lengthen the loop considerably if it thinks the end result will be a good Loop End point.

**Find Loop End -> (Short):** This is also an automated loop-finding function, but assumes you want to keep the loop length close to its existing length, and therefore searches out possible Loop End points close to the existing Loop End point.

**DC Removal:** Removes artifacts that can interfere later on with the mixing process.

---

DC Removal is a destructive operation that overwrites the sample data on disk.

---

**Open Sample in External Editor:** Use this to specify the waveform editor that will edit samples used in KONTAKT. To choose the editor used for this purpose, click on **Choose** in the Options menu, navigate to the editing program's executable file, then click on **Open**.

## Auditioning the Sample or Loop

**Speaker icon:** Click on this to hear the entire Sample.

**Speaker icon with loop:** Click on this to hear the selected loop only.

## Loop Selection and Editing Options

**Loop Selection buttons:** Choose one of the 8 loops for editing. The button for a loop being edited glows orange. Buttons for any other loops that are turned on are blue. Note that these buttons do not turn loops on and off, but only select them for programming.

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You can also select a loop for editing by clicking on it in the waveform view. Its corresponding button will glow orange.

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**Loop Mode:** There are five looping modes.

- **Off** turns off the loop. The waveform view will no longer show the loop.
- **Until End** plays the loop until the note ends. If the loop extends to the end and there is a release time on the amplitude envelope, the loop will continue during the release phase.
- **Until End <->** is similar to Until End, but the loop plays forward, then backward, then forward, etc.
- **Until Release** plays the loop as long as the note is held down. Upon releasing the note, the loop stops and the rest of the sample after the loop plays through.
- **Until Release <->** is similar to Until Release, but the loop plays forward, then backward, then forward, etc.

---

If there are several loops in a Sample, Until End and Until Release affect only the last in the series of loops. The behavior of prior loops depends on the Count control.

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- **One Shot:** Plays the sample one time, from sample start to sample end, and ignores note off events.

**Start:** Sets the start point (in samples) for the selected loop. If the loop is turned on and selected, these changes will be reflected in the waveform view.

**End:** Adjusts the end point (in samples) for the selected loop. If the loop is turned on and selected, these changes will be reflected in the waveform view.

---

Once a loop is turned on and defined, you can set the start point by holding your mouse over the left edge (the cursor turns into a double arrow) and dragging to the left, and set the end by holding your mouse over the right edge (the cursor turns into a double arrow) and dragging to the right. It is also possible to move the entire loop by clicking in the middle and dragging left or right. This is useful for when you've found what seems to be a good loop point, but perhaps could be improved by shifting its position within the sample.

---

**Tune:** Each loop can be tuned independently. For fine tuning, hold Shift while moving this knob.

**Xfade:** Sets how much of the loop end will be crossfaded with the loop beginning. Crossfading can produce more seamless loops than simply jumping back from the loop end to the beginning.

**Count:** Determines how many times the loop will repeat before moving on to the next loop or the sample end. 0 gives continuous looping.

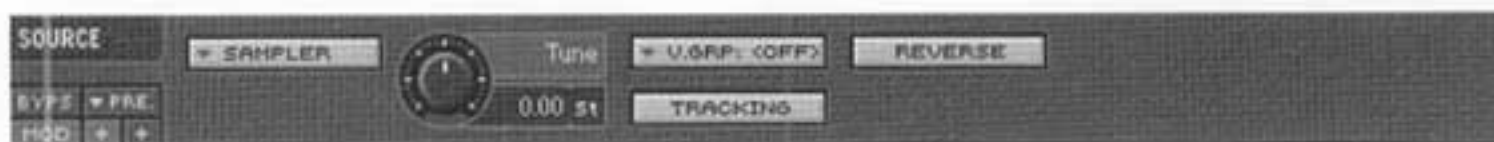


# Sampler module

The **Sampler** module is always present in an Instrument. You can neither delete it nor have more than one **Sampler** module. The **Sampler** module offers three kinds of sample synthesis algorithms, selectable from the drop-down menu left of the Tune knob:

- Sampler
- Tone Machine
- Time Machine

## Sampler



This is a "standard" representation of a digital sampler. The module streams the (properly converted) sample data from system memory, and does any needed pitch changes by resampling the audio data. This module also loops samples, although editing these requires opening up the Loop Editor window. The Sampler module is very efficient and places a comparatively low load on the host CPU.

Most of the module's properties can be targets within the modulation system. How these targets behave depends on the parameter being modulated. For example, Sample Start is set by a modulator only once, when a note-on occurs; Pitch or Loop Start are continuously variable.

---

Remember when editing that you can choose whether to edit all Groups simultaneously by selecting **Edit All** in the Group Editor. Otherwise, adjustments affect only the selected Group.

---

**Tune:** Changes the pitch for the selected Group in semitone steps. For finer adjustments, hold the Shift key while dragging the knob.

**Reverse:** Reverses playback for all Samples contained in the selected Group.

**Tracking:** When enabled, a Zone's pitch changes as you play different keys on the keyboard. This is important for pitched sounds. Disable to have the Zone always play at its original pitch, without transposition. This is useful for layering a drum sound across several keys so you can trigger it with several fingers (e.g., to play rolls or to play it polyphonically) without affecting the pitch.

**MIDI Channel:** This allows selecting a MIDI channel for the currently selected Group. This drop-down menu appears only if you choose **Group** (instead of Omni or a particular Channel) in the Instrument Header's MIDI Channel drop-down menu.

**Output:** This drop-down menu selects an audio output for the currently selected Group. It is visible only if you choose **Group** in the Instrument Header's Output drop-down menu.

**V.Grp (Voice Group):** A Voice Group can play a defined number of notes; more notes "steal" notes that are playing, according to one of several user-defined algorithms. This option lets you assign the currently selected Group to a Voice Group. For more information, see the next section.

## About Voice Groups

Voice Groups are part of an Instrument. They are an advanced feature that provides control over how voices are allocated among Groups in the Instrument, and how the Group will respond if more voices are played than are available. Think of this feature as Mute Groups on steroids.

A Voice Group has three properties:

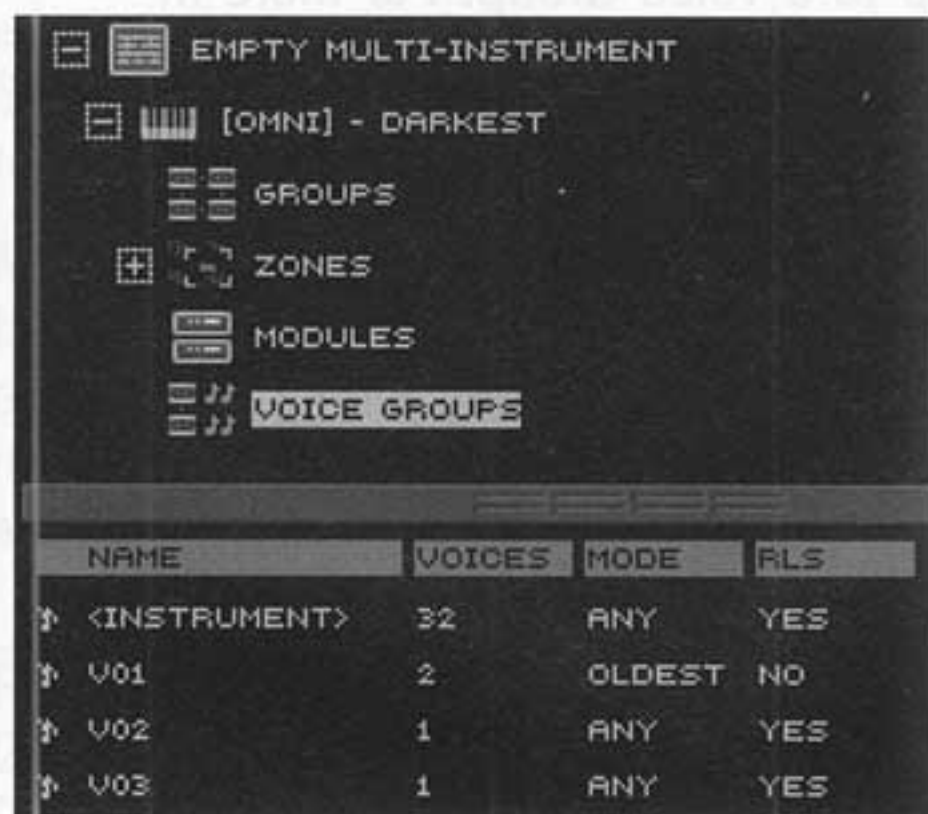
- The maximum number of Voices in the Group
- Name (to differentiate among Voice Groups)
- How to respond if the Group is called upon to play more Voices than are allocated to it

Instruments have a fixed number of Voice Groups, which can be seen in the Structure view. Here's an example of how to use them.

Suppose you have 3 groups for 3 different hi-hat samples (open, closed, and semi-closed). If you assign these to the same Voice Group and set the number of Voices to 3, then if four notes are played simultaneously, another voice has to be stolen. Which Voice gets stolen depends on the selected Voice Group mode: the oldest note played, the newest note played, the highest keyboard note, the lowest keyboard note, or any (whichever one the algorithm thinks is best to steal).

It is also possible to choose if voices that haven't been released should be allowed to play as long as possible. Example: If you play melodies with the right hand and hold a chord or note with the left hand, you would want the chords to be held as long as possible, and the notes played with the right hand to steal notes from among themselves.

## Defining Voice Group Properties



### *Setting up voice groups in the Structure view*

This is done from within the Structure function, accessed by clicking on the Structure button in the Browser's upper right corner.

- Click on Voice Group for the desired Instrument. The lower Browser pane shows a list of Voice Groups and their characteristics.
- To change the name, click on the default name (e.g., VO1, VO2, etc.) then click again. Type in a new name and hit Return.
- To assign the Voice Group's number of Voices, click on the Voices parameter. Click on the double arrows to increase (up arrow) or decrease (down arrow) the number of voices.
- To choose the voice-stealing characteristics, click on the Mode field. A drop-down list appears with your options: Any, Oldest, Newest, Lowest, and Highest. Select the desired option.
- To set whether released notes should play as long as possible, click on the RIs field (scroll the lower pane to the left to see this), and select Yes if you want notes to play as long as possible, and no if you don't.

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Note: The default is 1 voice per group, mode "Any," and RIs set to Yes.

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The instrument polyphony itself is also a Voice Group (the first Voice Group in the list, called <instrument>) and can be configured as described.

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## Tone Machine



Tone Machine is a granular synthesizer, which can impress tonal information on any sample material. Although more processing-intensive than the sampler module, it has tremendous potential for creative sound creation. As tone information is being created artificially, it does not depend on the playback

speed of the sample itself. Thus, pitch and playback speed can be set individually, without affecting each other. Furthermore, formant information can be changed independently from tone information.

The module also recognizes sample loops and sample start, albeit not as precisely as the sampler module - being a granular synthesizer, tone machine works on grains (not samples) as its smallest playback unit.

---

Note: When you switch a Sampler module to Tone or Time Machine, all samples contained in the Instrument will be analyzed. The analyzing may take a long time, depending on the size of the samples loaded for the Instrument and the CPU power. A progress bar shows the processing status.

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Remember when editing that you can choose whether to edit all Groups simultaneously by selecting **Edit All** in the Group Editor. Otherwise, adjustments affect only the selected Group.

---

---

For finer adjustment of any knob in this module, hold the Shift key while dragging the knob.

---

**Tune:** Changes the selected Group's pitch in semitone steps.

**Smooth:** Adjusts the amount of granular micro-envelopes to reduce unwanted artifacts, thus altering the sonic character of the resynthesis process. Small values generally cause a buzzy sound.

**Speed:** Changes the playback rate independently of pitch. The Speed values are expressed as percentage: for example, 100% plays back the sound at the original speed, 200% doubles the speed, 50% halves the speed, etc. A value of 0 means stop.

---

This parameter can be synchronized by an external MIDI clock or the internal clock of your host software, if this sends song tempo information to the plug-in. Therefore click on the parameter's unit display and choose a note length value from the drop-down list. For example, if you choose **Whole** from the list, the length of the sample will be time stretched to fit exactly into one bar of your song.

---

**Formant:** Transposes the formant position in fractions of a semitone, independent of pitch.

**DC Filter:** Corrects waveform asymmetries which can be produced by the Tone Machine algorithm.

**Legato:** This feature preserves the sample playback position while switching between samples. If you hold a key while pressing another key with the Legato option enabled, the new sample will not be triggered from the beginning, but will proceed from the current sample position associated with the first key.

**Tracking:** Switch this button on to have a sound's pitch track changes as you play different keys on the keyboard. This is used for pitched sounds. Switch it off if you want the sample to always play at its original pitch, without transposition.

**MIDI Channel:** This allows selecting a MIDI channel for the currently selected Group. This drop-down menu appears only if you choose **Group** (instead of Omni or a particular Channel) in the Instrument Header's MIDI channel drop-down menu.

**Output:** This drop-down menu selects an audio output for the currently selected Group. It is visible only if you choose **Group** in the Instrument Header's "Output" drop-down menu.

**V.Grp (Voice Group):** A Voice Group can play a defined number of notes; more notes "steal" notes that are playing, according to one of several user-defined algorithms. This option lets you assign the currently selected Group to a Voice Group. For more information, see About Voice Groups in the Sampler section.

## Time Machine



Like Tone Machine, Time Machine is a granular synthesizer. It's designed to alter sample speed while preserving the original pitch information.

As with the Tone Machine, the module has a Smooth parameter to reduce granular artifacts.

---

When you switch a Sampler module to Tone or Time Machine, all samples contained in the Instrument will be analyzed. The analyzing may take a long time, depending on the size of the samples loaded for the Instrument and the CPU power. A progress bar shows the processing status.

---

---

Remember when editing that you can choose whether to edit all Groups simultaneously by selecting **Edit All** in the Group Editor. Otherwise, adjustments affect only the selected Group.

---

---

For finer adjustment of any knob in this module, hold the Shift key while dragging the knob.

---

**Tune:** Changes the selected Group's pitch in semitone steps.

**Smooth:** Adjusts the sonic character of the resynthesis process. Small values generally cause a buzzy sound.

**Speed:** Changes the playback rate independently of pitch. The Speed values are expressed as percentage: for example, 100% plays back the sound at the original speed, 200% doubles the speed, 50% halves the speed, etc. A value of 0 means stop.

---

This parameter can be synchronized by an external MIDI clock or the internal clock of your host software, if this sends song tempo information to the plug-in. Therefore click on the parameter's unit display and choose a note length value from the drop-down list. For example, if you choose **Whole** from the list, the length of the sample will be time stretched to fit exactly into one bar of your song.

---

**Grain:** This parameter determines the size of the sound particles used for resynthesis. Changing the grain size has little effect in high-quality mode, but can make dramatic changes when high-quality mode is disabled.

**Tracking:** Switch this button on to have a sound's pitch track changes as you play different keys on the keyboard. This is used for pitched sounds. Switch it off if you want the sample to always play at its original pitch, without transposition.

**V.Grp (Voice Group):** A Voice Group can play a defined number of notes; more notes "steal" notes that are playing, according to one of several user-defined algorithms. This option lets you assign the currently selected Group to a Voice Group. For more information, see About Voice Groups in the Sampler section.

**Hi-Quality:** When enabled, the Time Machine operates on pre-analyzed sample data; when disabled, it works without knowing the sample data's characteristics. High-quality preserves the sample's signal properties at very slow playback speeds, whereas low-quality does not (although the artifacts it produces at low speeds can serve as a creative sound-shaping tool).

**Legato:** This feature preserves the sample playback position while switching between samples. If you hold a key while pressing another key with the Legato option enabled, the new sample will not be triggered from the beginning, but will proceed from the current sample position associated with the first key.

**MIDI Channel:** This allows selecting a MIDI channel for the currently selected Group. This drop-down menu appears only if you choose **Group** (instead of Omni or a particular Channel) in the Instrument Header's MIDI channel drop-down menu.

**Output:** This drop-down menu selects an audio output for the currently selected Group. It is visible only if you choose **Group** in the Instrument Header's "Output" drop-down menu.

Both Tone Machine and Time Machine differ from the sampler mode because they allow "syncing" of voices: where sampler mode effectively alters playback speed to achieve pitch changes, the two granular synthesizers do not. This allows synchronizing the play position between several voices, which allows for a real legato mode (samples start exactly where the already-held notes are).

## Amplifier



This standard module is always present in an Instrument. You can neither delete the module, nor have more than one Amplifier module per Instrument.

For finer adjustment of either knob, hold the Shift key while dragging the knob.

**Volume:** Sets the selected Group's overall level.

**Pan:** If a stereo output is selected, this control determines the selected Group's location in the stereo field.

The Volume and Pan controls in the Instrument Header are master controls that trim all individual Group settings.

To add a standard ADSR envelope for your Instrument, right-click (Mac: Ctrl+click) on the Volume knob and choose Envelopes ⇒ AHDSR. An AHDSR envelope module appears under the Amplifier module (if you do not see it, click the Amplifier module's Mod button). Set the H parameter to 0, and switch on the Retrigger mode (this triggers the envelope with every note you play).

### Deleting an Effect

Click on the effect's name in the Amplifier module's Mod menu to delete it.



### Bypassing an Effect

Click on the effect's name in the Amplifier module's Mod menu to bypass it. The effect's name is dimmed, and the effect is bypassed.



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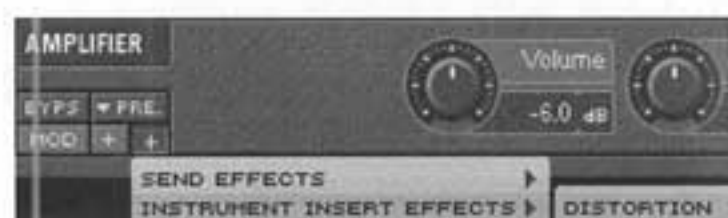
# Kontakt Effects

KONTAKT has a very sophisticated, and flexible, effects structure. The diagram in the section on sampler architecture shows how effects patch into a KONTAKT instrument.

**Group Insert Effects.** These are added at the Source module by clicking on the right-most (+) symbol in the lower left-hand corner (the left + symbol selects modulation options). All Insert effects connect in series.



**Instrument Insert Effects.** These are added at the Amplifier module by clicking on the right-most (+) symbol in the lower left-hand corner (the left + symbol selects modulation options). All Insert effects connect in series.



**Send Effects.** These are added at the Amplifier module by clicking on the right-most (+) symbol in the lower left-hand corner (the left + symbol selects modulation options).



Note that different Groups can have different effects, or you can use the Group Editor's **Edit All** command to process all Groups as you add effects. When different Groups have different effects, clicking on the Group shows only those effects used by that Group.

## Setting Effects Order

When you add an effect, it appears in the rack. The Insert effect's position within the rack determines the effects order: the signal passes through the highest effect first, and the lowest effect last.

To change an effect's placement, click on it (it becomes outlined in orange). Click again, and drag to the desired position.

## Deleting an Effect

Click on the effect (it becomes outlined in orange), then press the computer keyboard's **Delete** key.

## Bypassing an Effect

Click on the **BYP** button, which turns red to show that the effect has been stopped.

## Group Insert Effects

Insert effects are polyphonic (i.e, the effect is computed separately for each voice you play). This allows applying voice-dependent modulations to an effect parameter. For example, velocity could control the Distortion effect's Drive parameter, or Key Position could determine the filter cutoff.

Most Insert effect parameters can be modulated by a modulation source. Right-click (Mac: Ctrl-click) on a knob to choose a modulation source, or first choose a modulation source using the drop-down menu in a module's left lower corner, then select a target after inserting the modulation module.

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Use Group Insert effects only if you really need polyphonic processing. If a monophonic effect suffices, use an Instrument Insert effect or a Send effect. These effects modify the entire signal as a single entity rather than a number of notes, which is much more CPU efficient.

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Only one instance per effect type is allowed in a Group. There are 6 effects types available in KONTAKT's initial release: Filter/EQ, Distortion, Saturation, Lofi, Compressor, and Stereo Enhancer. So, 6 Insert effects per Group is the current limit. For example, even though there are several types of filters, if you used a Lowpass filter with a Group, then you cannot also insert a Notch filter or EQ in the same Group. Use a Send or Global Insert effect instead.

---

## Filters

A filter changes the frequency response of signals that pass through it. KONTAKT has four basic filter types: Lowpass, Bandpass, Highpass, and Notch.

*Lowpass* filters reduce high-frequency harmonics (while letting low frequency signals pass through).

*Highpass* filters leave the selected high frequency range intact, but attenuate the lower frequencies.

A *Bandpass* filter amplifies a specific range of frequencies, and attenuates frequencies above and below the bandpass range.

The *Notch* filter attenuates a narrow range of the frequency spectrum without affecting frequencies above or below the notch.

Filter-based insert effects have a unique selection characteristic. When you select a filter, a button appears on the filter with the name of the effect. From this button, you can "jump" to any other desired filter effect - it is not necessary to delete the effect, then re-assign a new filter effect.

### 1 Pole Lowpass (6 dB)



**Cutoff:** Sets the frequency above which signals are attenuated, at a rate of 6 dB/octave. This fairly gentle rolloff is typical of guitar tone controls.

### 1 Pole Highpass (6 dB)



**Cutoff:** Sets the frequency below which signals are attenuated, at a rate of 6 dB/octave.

### 1 +1 Pole Bandpass (6 + 6 dB)



**Cutoff:** Sets the bandpass range's center frequency. Frequencies above and below the bandpass range are reduced at a rate of 6 dB/octave.

## 2 Pole Lowpass (12 dB)



**Cutoff:** Sets the frequency above which signals are attenuated, at a rate of 12 dB/octave. This somewhat steep rolloff is associated with the sound of older Oberheim synthesizers.

**Resonance:** Emphasizes the frequencies just below the cutoff. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## 2 Pole Highpass (12 dB)



**Cutoff:** Sets the frequency below which signals are attenuated, at a rate of 12 dB/octave.

**Resonance:** Emphasizes the frequencies just above the cutoff. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## 2 + 2 Pole Bandpass (12 + 12 dB)



**Cutoff:** Sets the bandpass range's center frequency. Frequencies above and below the bandpass range are reduced at a rate of 12 dB/octave.

**Resonance:** Emphasizes the frequencies just below and just above the cutoff frequency (as well as the cutoff frequency, of course). The parameter determines the degree of the emphasis in percent. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## 2 + 2 Pole Notch (12 + 12 dB)



**Cutoff:** Controls the frequency of the filter band to be attenuated.

**Resonance:** Emphasizes the frequencies around the rejected filter band. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## 4 Pole Lowpass (24 dB)



**Cutoff:** Controls the frequency above which signals will be attenuated, at a rate of 24 dB/octave. The steep cutoff produces filter sounds typical of the Minimoog.

**Resonance:** Emphasizes the frequencies just below the cutoff frequency. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## 4 Pole Highpass (24 dB)



**Cutoff:** Controls the frequency above which signals will be attenuated, at a rate of 24 dB/octave.

**Resonance:** Emphasizes the frequencies just above the Cutoff frequency. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## 6 Pole Lowpass (36 dB)



**Cutoff:** Controls the frequency above which signals will be attenuated, at a rate of 36 dB/octave. A cutoff this steep is not common, and is one of KONTAKT's many special features.

**Resonance:** Emphasizes the frequencies just below the cutoff frequency. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## 3x2 Multimode Filter



The 3x2 Multimode filter contains three separate filters (each a 2-pole 12dB/oct multimode filter), which can be combined in almost any imaginable configuration. High Resonance settings cause filter self-oscillation (i.e., filters so resonant that they oscillate). Due to the complex blending options, you can use the filters either in series or parallel. It can also replace the KONTAKT 3-band EQ with three bandpass filters or a bandpass, a low shelf and a high shelf filter.

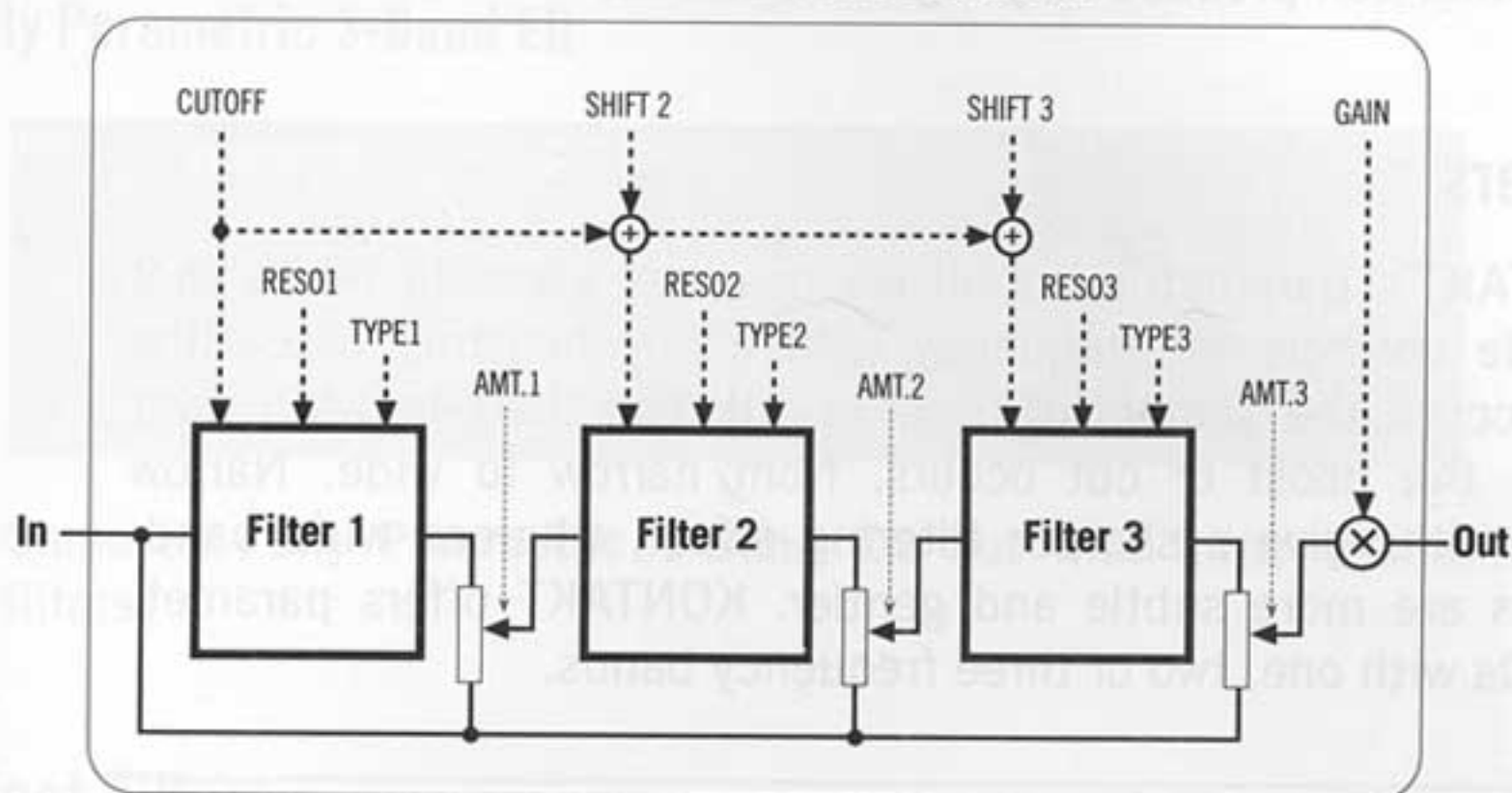
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The 3x2 Multimode filter requires more CPU power than other KONTAKT filters and EQs. Use this filter only when its level of sophistication is required, or if you need self-oscillating filters. Otherwise, the other KONTAKT filters and EQs will do a similar job and leave much more CPU power in reserve.

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The following diagram shows the sub-modules that make up the filter.

### 3 x 2 POLE MULTI-MODE FILTER



**Cutoff:** controls the initial cutoff frequency of all filters.

**Shift 2:** Offsets Filter 2's cutoff frequency compared to Filter 1 (the lowest filter). A value of 0 sets identical cutoffs for both filters. Increasing the value increases Filter 2's cutoff compared to Filter 1. The maximum cutoff shift is 80 semitones.

**Shift 3:** Offsets Filter 3's cutoff frequency compared to Filter 2. A value of 0 sets identical cutoffs for both filters. Increasing the value increases Filter 3's cutoff compared to Filter 2. The maximum cutoff shift is 80 semitones (160 semitones compared to Filter 1).

**Reso. (1-3):** Sets the resonance (boost at the cutoff frequency) for each filter. A setting of 98% or higher will cause a filter to oscillate.

**Type (1-3):** "Morphs" between three filter types: 0=Lowpass, 0.5=Bandpass, 1=Highpass.

**Amt. (1-3):** The Amount knobs control the mix of the three filters. A value of 100 adds a filter's full output to the mix, while a value of 0 bypasses the filter completely with the unprocessed signal.

**Gain:** With higher resonance settings, the overall volume will be decreased automatically to avoid overly loud signals. You can increase the filter's output level by increasing the Gain, but careful - the filter can produce very high levels.

## Equalizers

KONTAKT's parametric equalizers use very versatile filters that provide controls for frequency (where any boosting or cutting will occur), the amount of boost or cut, and the bandwidth over which the boost or cut occurs, from narrow to wide. Narrow bandwidths give a sharper filtering effect, whereas wide bandwidths are more subtle and gentler. KONTAKT offers parametric EQs with one, two or three frequency bands.

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The more bands, the greater the amount of CPU power required.

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### Fully Parametric 1-Band EQ



**Frequency:** Chooses the frequency at which boosting or cutting will occur.

**BW (Bandwidth):** Sets the width of the frequency band (in octaves) to be boosted or cut.

**Gain:** Controls the amount of boost (positive values) or cut (negative values).

### Fully Parametric 2-Band EQ



Same as **Fully Parametric 1-Band EQ** but with two identical filters.

## Fully Parametric 3-Band EQ



Same as **Fully Parametric 1-Band EQ** but with three identical filters.

## Effect Filters

### Phaser



This module splits the audio input, applies an Allpass filter (very much like a Notch filter) to one split, then sums the two splits back together. This introduces frequency response notches and peaks (vary the Cutoff control to hear how these affect different frequencies).

**Cutoff:** Sets the Allpass filter frequency.

**Reso.:** Determines the amount of Allpass filter resonance, hence the effect's "sharpness."

To re-create the sound of a traditional phase shifter, right-click (Mac: Ctrl-click) the Phaser's Cutoff parameter, and assign a sine or triangle wave LFO as a modulation source.

## Vowel A



This is a special type of filter, called a Formant filter, which morphs between the resonant vowel frequencies of the human voice.

**Cutoff:** This frequency determines the kind of vowel.

**Reso.:** Emphasizes the frequencies around the Cutoff to create a sharper sound. Values range from 0% (no emphasis) to 100% (maximum emphasis).

## Vowel B



Same as **Vowel A**, with a slightly different filter character.

## Non-Filter Insert Effects

### Distortion



**Distortion** creates an overload condition that adds harmonics to a signal. The sound is similar to what you would obtain by overloading an amplifier.

**Mode Button (Tube / Transistor):** Toggles between two distortion algorithms. Tube creates a smoother saturation, while Transistor creates harsh clipping.

**Drive:** Determines the amount of distortion.

**Damping:** Increasing damping lowers the distortion unit's integral Lowpass filter to reduce some of the harmonic content caused by distortion.

**Output:** Sets the effect's output level. As distortion boosts the gain considerably, some attenuation is often required.

## Saturation



This module provides expansion/compression/distortion effects for the current Group. Unlike a standard audio compressor/expander, **Saturation** works on individual sample bits - not the overall sound. Therefore, it can greatly alter the sound of even the shortest samples.

**Shape:** A negative setting expands the sound - quiet sounds are quieter, loud sounds become louder. Positive settings provide a compression-like effect, where loud sounds are made quieter, and quiet sounds are made louder. Distortion increases with greater positive or negative values compared to 0.

**Output:** Sets the module's output level.

## Lo-Fi



This module messes up your pristine digital audio in a variety of rude ways. It's perfect for the "hardcore technopunk" element in all of us.

**Bits:** Chooses the sound's bit resolution. Fractional bit levels (such as 12.4 bits) are possible, which adds considerable "grit" to the sampled sound. 16-bit is CD quality, 8-bit is the resolution used by old samplers and drum machines, and 4-bit is the audio quality in many kid's toys and games. Lower bit resolutions screw up the sound even more.

**S.Rate (Sample rate):** This parameter reduces the sample rate. If you set the control to anything other than **Off**, you will get less than CD quality. The sample rate goes all the way down to 50 Hz, which will not leave much of the original signal. Come to think of it, playing too many sounds at that sample rate may not leave you with much of an audience, either!

**Noise:** Adds hiss to the audio signal.

**N.Color:** This control determines the noise's tonality, and works like a Lowpass filter. Higher values reduce the high frequency noise.

**Output:** Adjusts the module's output level.

## Compressor



Compression processes dynamics by reducing the difference in amplitude between soft and loud signals. Because peaks are lower, the overall signal can be turned up higher without exceeding the available headroom, which also brings up lower-level signals more. Compression can give sounds more presence and punch. However, there is a point of diminishing returns; too much compression can give a squeezed, smaller sound.

**Thresh:** Sets a level above which the compressor starts reducing peaks. Only signals above the Threshold are affected by the compression ratio; signals below the Threshold are unaffected.

**Ratio:** Determines the amount of compression. A ratio of 1:1 means no compression at all, while a ratio of 2:1 means that a 2 dB increase at the input will raise the output by only 1 dB. With a 4:1 ratio, a 4 dB input level increase raises the output by 1 dB. This is how waveform levels are reduced. Ranges of 2:1 to 4:1 are common for most instruments.

**Attack:** Sets how long it takes for compression to kick in after an input signal exceeds the threshold level. 5 ms is a good starting point. Too short an attack can kill all sense of dynamics.

**Release:** Determines how long it takes for the compression action to stop after the input signal falls below the threshold level. Typical values range from 50 to 250 ms.

**St.Link (Stereo link):** When enabled, this causes the left and right channels to be analyzed as one signal to preserve stereo imaging. If the button is released, the compressor becomes a dual mono device, and both channels will be processed independently.

**Makeup:** Increases the level of the compressed audio signal level. This is necessary because reducing the peaks gives up several dB of headroom. Increasing the signal level brings up the quieter portions and makes use of the full available headroom.

**Output:** Determines the module's output level.

## Stereo Enhancer



This effect requires a stereo input signal.

**Spread:** Sets the width of the stereo field. Negative values close it in, while positive values spread it outward.

**Output:** Sets the module's overall output level.

## Send Effects

Send effects process different signal sources through a single effect module (see the diagram in the KONTAKT Architecture section). They "pick off" a portion of the signal to be processed, as set by a Send Level control. Higher settings send more signal through the effect, thus giving a more effected sound. Reverb is the "classic" send effect, as you determine the amount of reverb applied to a sound by how much signal you send to the reverb effect.

The Send effects output returns back into the Instrument through a Return control, where the processed sound is blended with the Group output signals.

Unlike Instrument Insert effects, Send effects do not process every single Voice, but affect entire Groups and therefore require little processor power.

To add Send effects, click the right-most (+) symbol in the Amplifier module's lower left corner. A Send Levels panel appears below the amp, and right below it, the Send effect you chose. If you add more Send effects, additional Send controls for the additional effects appear in the Send Levels panel, and the effects themselves appear below existing Send effects. When you add a Send effect, it and the Send Levels panel become part of the Instrument and are always visible, regardless of which Group or Groups you select.

A Group's Send Levels are saved with the Group. If you set two different Send Levels in two different Group and select each Group consecutively, you'll see the send level jump when changing between settings.

### Show/Hide Send Effects

Between the Send Levels and Send Effects panels there is a Send Effects button to show/hide the effects.

## Deleting a Send Effect

Click on the effect (it becomes outlined in orange), then press the computer keyboard's **Delete** key.

## Panning Delay



The available delay range is 5 - 2900 ms. Delay times lower than 20 ms produce comb filter and resonator-like effects. Higher settings produce a noticeable echo compared to the dry signal. A Pan control places consecutive echoes alternately in the left and right channels of the stereo field.

**Time:** The interval in milliseconds between hearing the straight signal and the first delay of the delayed signal.

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This parameter can be synchronized by an external MIDI clock or the internal clock of your host software, if this sends song tempo information to the plug-in. Therefore click on the parameter's unit display and choose a note length value from the drop-down list. For example, if you choose **Whole** from the list, the delay time will be exactly as long as one bar of your song. When choosing **Sixteenth**, you can also define the number of 16th notes by moving the Time knob.

---

**Damping:** Reduces (damps) high frequencies in the delayed signal. Higher values reduce the highs further. With feedback applied (described below), each successive echo has progressively lower high-frequency response.

**Pan:** Setting a value higher than 0 results in a panning effect where each consecutive echo alternates between the left and right channel. The higher the value, the greater the stereo spread; at 100, signals alternate between the far left and far right channels.

**Feedback:** This sends a portion of the output back into the input of the delay line, which creates repeating echoes. A value of 0 produces only one echo; higher values give multiple echoes.

**Return:** Mixes the effect signal in with the Group(s) output. Higher values mix in more processed sound.

## Stereo Chorus



This effect "thickens" the audio signal by doubling the signal and detuning the copy compared to the original signal. Separate LFOs detune each channel of a stereo pair independently. Although they each run at the same speed, the phase difference between them is adjustable.

**Depth:** The amount of LFO modulation. Higher values give a more pronounced chorusing effect.

**Speed (0.10 to 5 Hz):** Sets the LFO speed.

---

This parameter can be synchronized by an external MIDI clock or the internal clock of your host software, if this sends song tempo information to the plug-in. Therefore click on the parameter's unit display and choose a note length value from the drop-down list. For example, if you choose **Whole** from the list, the speed of the internal LFO will be set to the length of one bar of your song. When choosing **Sixteenth**, you can also define the number of 16th notes by moving the Time knob.

---

**Phase (0 to 90 degrees):** Adjusts the phase difference between the two LFOs used for the left and right stereo channels.

**Return:** Mixes the effect signal in with the Group(s) output. Higher values mix in more processed sound.

## Stereo Flanger



The flanging effect doubles the audio signal and delays the copy compared to the original signal. Unlike chorusing, flanging uses shorter delays to produce a "whooshing," jet airplane-type sound. The delay time is modulated separately per stereo channel by two internal LFOs. Separate LFOs detune each channel of the stereo pair independently; although they each run at the same speed, the phase difference between them is adjustable.

**Depth:** The amount of LFO modulation. Higher values cause the flanging effect to sweep over a wider range.

**Speed** (0.10 to 5 Hz): Sets the LFO speed.

---

This parameter can be synchronized by an external MIDI clock or the internal clock of your host software, if this sends song tempo information to the plug-in. Therefore click on the parameter's unit display and choose a note length value from the drop-down list. For example, if you choose **Whole** from the list, the speed of the internal LFO will be set to the length of one bar of your song. When choosing **Sixteenth**, you can also define the number of 16th notes by moving the Time knob.

---

**Phase** (0 to 90 degrees): Adjusts the phase difference between the two LFOs used for the left and right stereo channels.

**Colour:** Adjusts the range of the flanging effect. Lower values sweep the flanging effect toward the higher end of the flanging range, while higher values sweep the flanging effect toward the lower end of the flanging range.

**Feedback:** Routes the delayed signal back to the module's input. Higher values create a sharper, more intense effect.

**Return:** Mixes the effect signal in with the Group(s) output. Higher values mix in more processed sound.

## Stereo Phaser



This effect splits the audio input, applies an Allpass filter to one split, then sums the two splits back together. This introduces frequency response notches and peaks. The resulting sound is similar to a flanger, but has a subtler, dreamier effect. The filter response is modulated separately per stereo channel by two internal LFOs. They each run at the same speed, but the phase difference between them is adjustable.

**Depth:** The amount of LFO modulation. Higher values cause the phasing effect to sweep higher and lower.

**Speed** (0.10 to 5 Hz): Sets the LFO speed.

---

This parameter can be synchronized by an external MIDI clock or the internal clock of your host software, if this sends song tempo information to the plug-in. Therefore click on the parameter's unit display and choose a note length value from the drop-down list. For example, if you choose **Whole** from the list, the speed will be set to the length of one bar of your song. When choosing **Sixteenth**, you can also define the number of 16th notes by moving the Time knob.

---

**Phase** (0 to 90 degrees): Adjusts the phase difference between the two LFOs used for the left and right stereo channels.

**Feedback:** Routes the delayed signal back to the module's input. Higher values intensify the effect.

**Return:** Mixes the effect signal in with the Group(s) output. Higher values mix in more processed sound.

## Reverb



Reverb synthesizes the myriad reflections that occur when sounds play in an acoustic space, thus adding spaciousness to the sound.

**Pre-D** (0 - 180 ms): Introduces a short pre-delay before the reverb takes effect. This simulates the reverb response in large rooms, where a short time elapses between the time a signal occurs and when it bounces off of a room surface.

**Size:** Sets the room size, which affects how long the reverberation lasts. Higher values equate to larger rooms.

**Colour:** Determines the type of material used to construct the room. Lower values are softer surfaces (e.g., wood), higher values are harder surfaces (e.g., concrete).

**Damping:** Sets the amount of absorption in the room from drapes, people, acoustic treatment, etc. Higher values simulate more absorption.

**Stereo:** Higher values increase the stereo effect. Use lower values to simulate sitting closer to the stage, and higher values for sitting further back in the hall.

**Return:** Mixes the effect signal in with the Group(s) output. Higher values mix in more processed sound..

## Instrument Insert Effects

To add Global Insert effects, click the right (+) icon in the Amplifier Module's lower left corner. The Global Insert effect appears in the rack, under the Amplifier.

An Instrument Insert effect processes the entire Instrument output (not just specific Groups, but every Group in the Instrument). The diagram in the section on KONTAKT Architecture shows how effects patch into a KONTAKT instrument.

Like Send effects, Global Insert effects do not process each voice individually, but process the Instrument as a whole. They therefore place little load on the CPU.

---

As with Insert Effects, each effect type can be used only once per Instrument, yielding a maximum of six Instrument Insert effects.

---

The Global Insert Effects' parameter settings are not saved with a Group, but are saved with the Instrument itself.

The effects available in the Instrument Insert Effects drop-down menu are the same as in the Insert Effect drop-down list. The only difference is how they patch into KONTAKT, and that these effects process the entire Instrument rather than individual voices. See the section on Insert Effects for more information about the parameters associated with these effects, and how to apply them.

## Modulation Sources

Most rack module parameters can be modulated. To add a Modulation Source (like an LFO or a MIDI Continuous Controller), click on the left (+) sign of the module containing the parameter to be controlled, then choose a Source. Available sources are:

- External Sources (velocity, aftertouch, pitch bend, etc.)
- LFOs (with six waveforms)
- Envelopes (three different types)
- Others (step modulator, envelope follower, and glide)

---

While MIDI controllers (External Sources) are limited to MIDI's 128 steps of resolution, the internal modulators like LFOs and Envelopes have much higher resolution, allowing for very smooth modulation.

---

For any choice other than External Sources, the Modulation Source module (such as LFO, envelope, etc.) appears at the bottom of the rack. Additionally, a Modulation Router module appears under the module, from which you chose the Modulation Source. This indicates that the Modulation Router controls a module parameter (note that External Sources need only an associated Modulation Router, as the only variable parameters they have are part of the Modulation Router).

---

To assign a Modulation Source to a control, it's even easier just to right-click (Mac: Ctrl + click) on a control, and select a Modulation Source from the resulting drop-down menu (if none appears, the control can't be modulated).

---

### Show/Hide Modulation Routers and Sources

A module's Mod button shows/hides the Modulation Routers that control the module's parameters.

A strip above the Modulation Sources has a Modulation button that shows/hides the Modulation Sources that sit at the bottom of the rack.

## Using Modulation Routers

Select the Modulation Source from the left drop-down menu, and the Modulation Target (destination) from the right drop-down menu. All Modulation Sources that exist in the rack are available as Sources, and all modulatable controls of the parent module are available as Targets.

The fader in the middle sets the degree and polarity of modulation. When centered, no modulation is applied. Moving the slider to the right creates positive modulation - for example, an increasing modulation signal increases the Modulation Target's value. Moving the slider to the left creates negative modulation, where an increasing modulation signal would decrease the Modulation Target's value.

You can use the same Modulation Source for several targets - just select the same Source in two or more modulation modules.

If you want to add an existing Modulation Source to a different module than the one to which it was originally assigned, no problem. Click on the left (+) symbol as if you were about to add a new Modulation Source, but choose an existing Modulation Source from the Dynamic option.

## Deleting Modulation Sources or Routers

Click on the Modulation Source or Router (it becomes outlined in orange), then press the computer keyboard's **Delete** key.


## External Sources



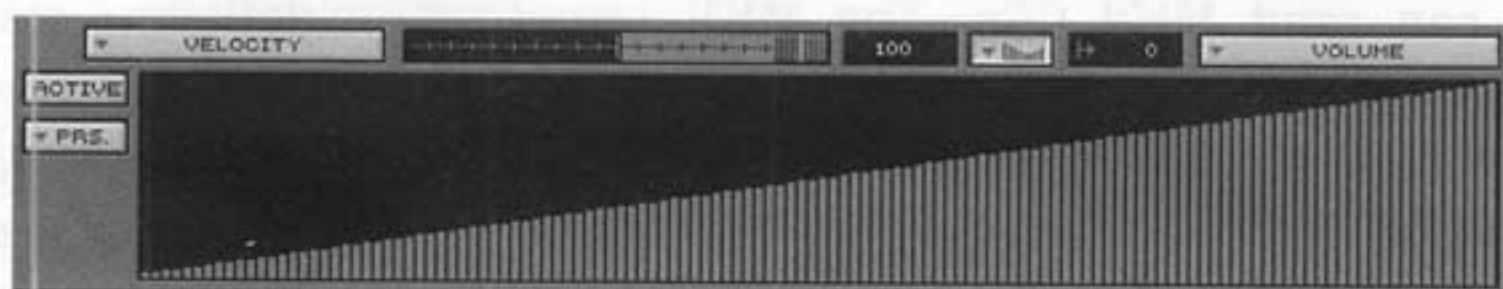
KONTAKT recognizes the following MIDI controllers:

- **Velocity:** This represents the dynamics of your playing, as expressed by how fast a key goes from full up to all the way down.
- **RLS.Velocity:** Release Velocity is available in very few MIDI keyboards. It represents how fast a key goes from all the way down to being completely released.
- **Key Position:** A key's note number serves as a controller value (this is also called "keyboard tracking").
- **MIDI-CC:** The MIDI specification offers 128 Continuous Controllers (0-127) for general use. Nearly all MIDI controller devices can send MIDI CCs. The MIDI specification defines some standard assignments (Controller 0 = Bank Select, Controller 1 = Modulation, etc.), but for KONTAKT only the CC number matters, as you can assign CCs freely to any parameter. To select the desired CC number (0-121), click on the digit next to the Modulation Source drop-down menu, and drag up or down while holding down the mouse button.
- **Pitchbend:** Allows using a pitch bend device (typically wheel or lever) as a modulation source. Unlike all other MIDI controllers, Pitchbend uses 14 bit resolution (16,384 steps). KONTAKT can use the full resolution for parameter control, provided that the parameter's resolution is sufficiently high, and the controller generates all 14 bits of resolution.
- **Poly Aftertouch:** Polyphonic Aftertouch (also called Key Pressure) is available in very few MIDI keyboards. It generates individual pressure data for every key that's held down.
- **Mono Aftertouch:** Mono aftertouch (also called Channel Pressure) is used in many MIDI keyboards. It represents a single average pressure value for all keys that are held down and being pressed into the keyboard bed.

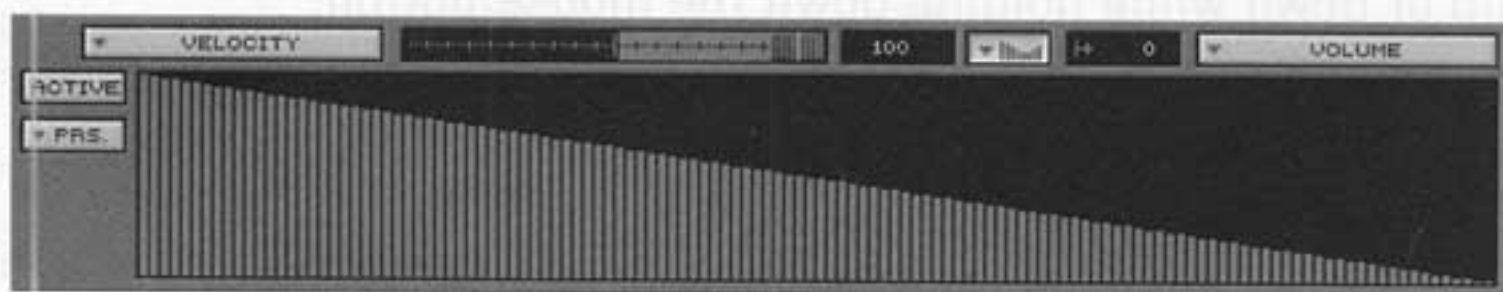
## Rescaling Controllers

The External Source routers have a Rescaling feature that's not found in the internal Modulation Sources. Pressing  opens the Rescaler, which allows re-defining your controller's curve by re-mapping incoming controller values to new values. For example, you can invert the values of a controller (e.g., playing harder makes a sound softer) or change a linear curve into an exponential one. Press the **Active** Button to enable the Rescaler.

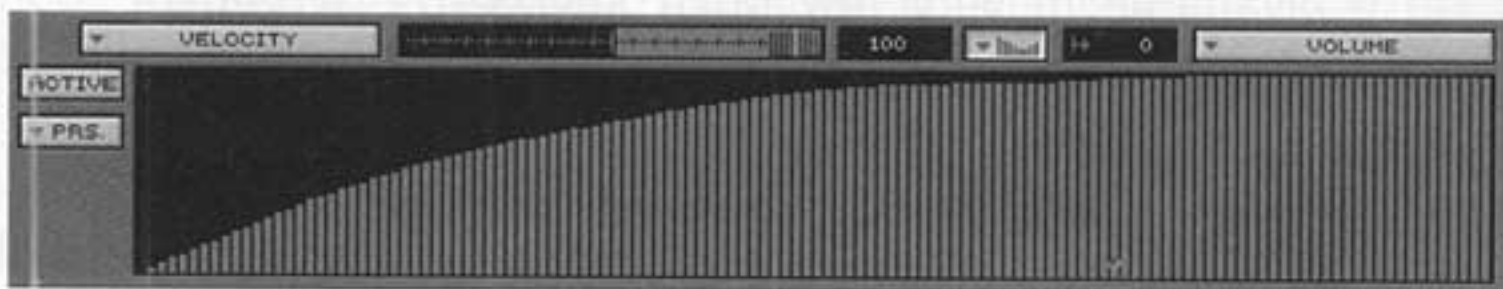
Here are some examples how how to use the Rescaler.



*This shows a standard linear curve. The output values tracks the input value exactly.*



*This curve inverts the incoming controller data. For example, with velocity, playing softly would produce high velocity values, and playing loud would produce low velocity values.*



*This curve converts the incoming linear controller data to an exponential curve.*

To draw a Rescaler curve simply click into the black window and draw the desired curve with your mouse. Use the right mouse button (Mac: Ctrl + Mouse button) to draw a straight line.

## LFOs

An LFO (Low Frequency Oscillator) creates sub-audio signals that are used for control. Vibrato is an example of a sub-audio control signal that adds a periodic pitch change. KONTAKT offers the following LFO waveforms; selecting one shows a graphic toward the right of the LFO that shows the waveform shape.

- Sine



- Triangle



- Rectangle



- Sawtooth (negative slope)



- Random



- Multi (mixture of all other waveforms)



## Sine, Triangle, Rectangle, Sawtooth, Random Waveforms

**Retrigger:** Enable to re-trigger the LFO every time it receives a note (i.e., the LFO starts from the same point each time it's triggered). If disabled, any key you hit while another key is down will not retrigger the LFO.

**Freq:** Determines the LFO frequency (number of waveform cycles per second) in Hz. Values range from 0.02 Hz (50 seconds are needed to finish a full cycle) to 210 Hz (210 cycles per second).

**Delay:** Adds a fade in before the LFO takes effect.

**PW** (Rectangle waveform only): The pulse width determines the ratio of time spent at the rectangle waveform's high point versus the amount of time spent at the waveform's low point.

## Multi

This offers a mix of all the individual LFO waveforms mentioned above. With Multi selected, a level control appears for each waveform. The graphic display shows the resulting waveform.

## Envelopes

Envelopes create a repeatable modulation curve for parameter control. KONTAKT offers three envelope types.

**AHDSR:** The most common envelope type is the ADSR (attack, decay, sustain, release envelope). KONTAKT's advanced ADSR envelope has an additional Hold phase, creating an AHDSR envelope. A slight amount of hold time (20-30 ms) coupled with a fast attack is the secret of "punchy" synthesizer sounds.

**DBD:** This is a simple, dual-section envelope with a center breakpoint. It's well-suited to pitch manipulation, and is the basis for many classic electronic drum sounds.

**32-Stage Level/Time:** This unique envelope is a very advanced envelope model that can create extremely complex controller curves - even over several minutes if necessary.

## DBD



The DBD envelope is available only for the Sampler modules.

**Retrigger:** Enable to re-trigger the envelope every time it receives a note (i.e., the envelope starts from the same point each time it's triggered). If disabled, any key you hit while another key is down will not retrigger the envelope.

**Decay Time 1 (D1):** Sets the amount of time for the pitch to bend from 0 to the Breakpoint. If the Breakpoint is negative, the pitch will fall to the breakpoint. If the Breakpoint is positive, the pitch will rise to the breakpoint.

**Breakpoint (B):** determines the level of the mid-point break between the two decay settings. The parameter is measured in halftone steps because you can use the DBD envelope only for controlling the Sampler module's pitch parameter.

**Decay Time 2 (D2):** Sets the amount of time required to bend from the breakpoint to the original 0 pitch change setting.

## AHDSR



**Retrigger:** Enable to re-trigger the envelope every time it receives a note (i.e., the envelope starts from the same point each time it's triggered). If disabled, any key you hit while another key is down will not retrigger the envelope.

**Attack:** The time required for the envelope to go from 0 to its maximum level.

**Hold:** The amount of time that the envelope stays at its maximum level.

**Decay:** The time required for the envelope to descend from the maximum level (after any Hold time is completed) to the Sustain level (described next).

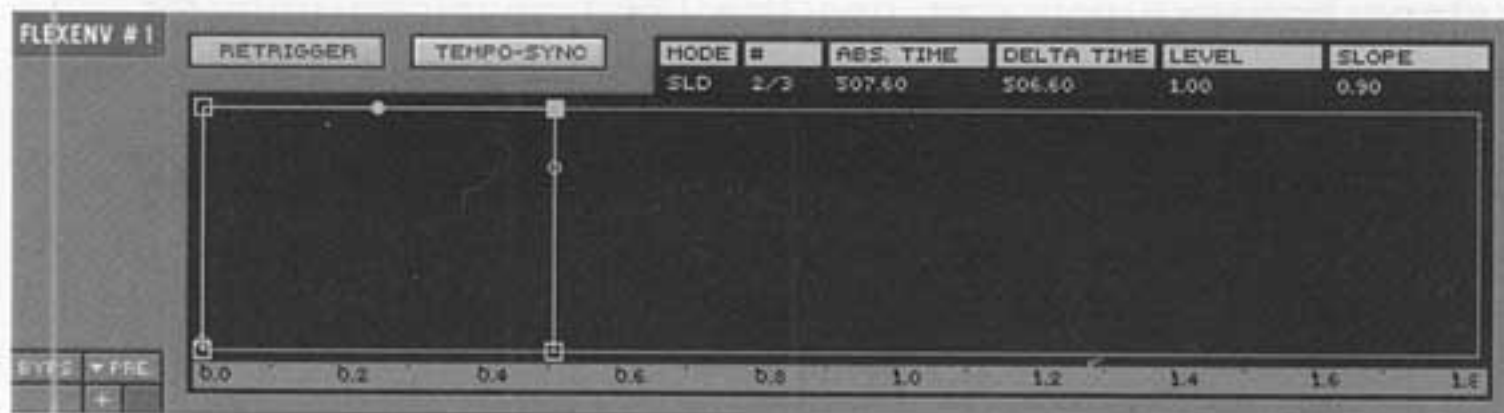
**Sustain:** The level that will be maintained as long as the MIDI note triggering the envelope is held.

**Release:** Upon releasing the MIDI note, this parameter determines the time for the envelope to decay down to 0 from the sustain level.

## Flexible Envelope

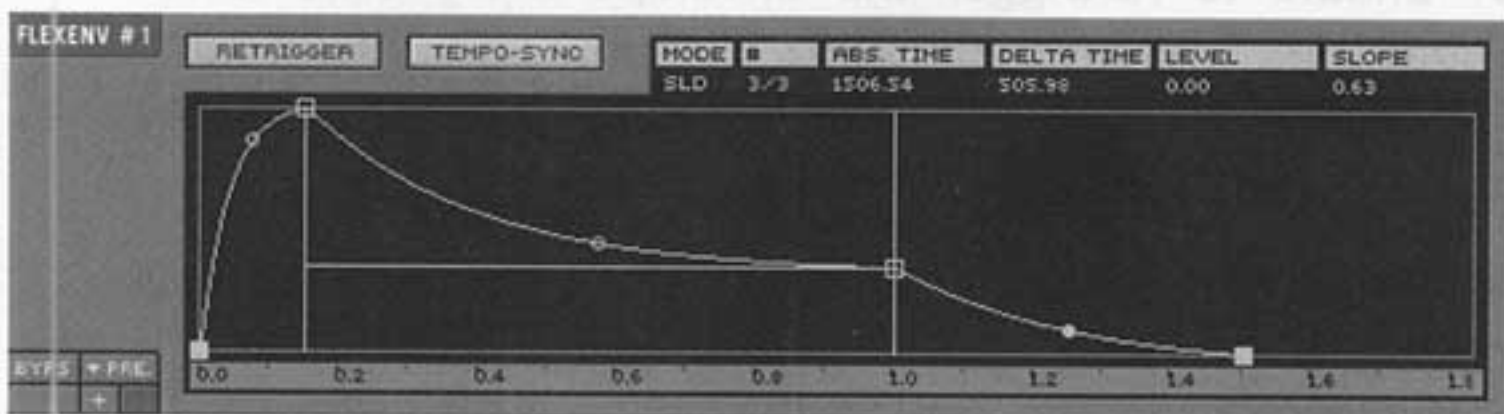
The 32-stage envelopes are time/level types, where you specify levels, and the times that it takes to get from one level to the next. Levels are specified by inserting *breakpoints* along a line, then moving the breakpoints up or down to change levels, and left or right to change times.

Here is the initialized 32-stage envelope:



Right-click (Mac: ctrl-click) wherever you want a breakpoint. The first and last breakpoints move up and down together, because the envelope starts from where it ended.

The following diagram shows an envelope with multiple breakpoints.



The left-most breakpoint is where the envelope starts. The next two breakpoints fall on two vertical orange lines. These indicate the segment where the envelope reaches the "sustain" level, marked by the horizontal orange line. The envelope remains at this level as long as the key is held down.

If you insert one or more breakpoints between the orange markers, the "sustain" segment becomes a "loop," and will repeat as long as the note sustains. You can create novel vibrato effects by changing the positions of these breakpoints.

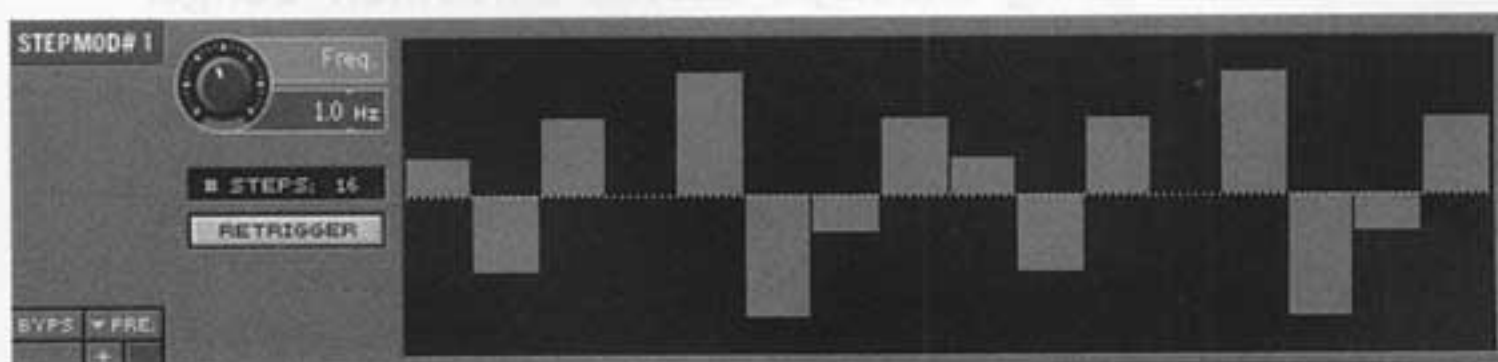
If there are more than 3 breakpoints, the sustain or loop segment can be shifted by moving the vertical orange lines with the mouse. They snap to the next breakpoint (except the start and the end points).

Upon releasing the key, the envelope continues with the segment after the second orange marker. In our example there are two more breakpoints after the sustain, one below and one above the center line, and then the final end point.

Dragging the small circle between breakpoints can change the line's shape between the breakpoints from concave, to straight, to convex.

## Others

### 32- Step Modulator



The Step Modulator allows "painting" complex controller curves. It works very similarly to a standard step sequencer, but cannot trigger new notes, only modify held ones.

**Set Step Amplitudes:** Click in the graphic field, then drag and draw a curve. The amplitudes will change to fit underneath the curve you draw.

**Freq:** Sets the Step Controller rate.

**# Steps:** Click on this field, then drag up or down while holding the mouse button to change the number of steps produced by the Step Controller.

**Retrigger:** Enable this option if you want the Step Controller to start at the first step every time it receives a note. If disabled, any key you hit while another key is down will not retrigger the Step Controller.

## Envelope Follower



The Envelope Follower translates the currently played sample's amplitude into a control signal. For example, a plucked guitar string would generate an envelope with an instantaneous attack, followed by a decay that tracks the string's decay.

The Envelope Follower will attempt to track any change in amplitude, down to individual cycles. Rapid fluctuations like this sometimes show up as distortion, but can be tamed using the Attack and Decay controls.

**Attack:** Makes positive-going envelope curves smoother. Longer attack times create the same effect as if you were using an envelope with an attack time.

**Decay:** Makes negative-going envelope curves smoother, providing a more even decay characteristic.

**Gain:** Determines the Envelope Follower's sensitivity to the input signal.

**Adapt:** Sets a baseline transient response time for the Envelope Follower.

## Glide



Glide (also called "portamento") adds a sliding pitch transition between notes that are played consecutively.

**Time / Speed:** This drop-down list chooses between two different glide modes. **Time** sets a constant glide time regardless of the interval between two keys. **Speed** lengthens the glide time as the pitch interval between the keys increases.

**Glide:** Glide time.

---

This parameter can be synchronized by an external MIDI clock or the internal clock of your host software, if this sends song tempo information to the plug-in. Therefore click on the parameter's unit display and choose a note length value from the drop-down list. For example, if you choose **Whole** from the list, the Glide time will be set to the length of one bar of your song. When choosing **Sixteenth**, you can also define the number of 16th notes by moving the Speed knob.

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