SampleRobot 4
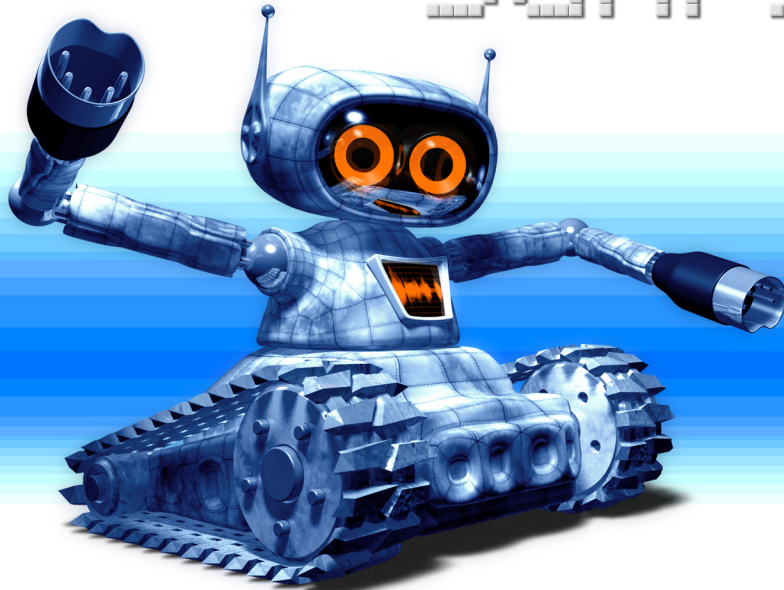
OPERATION
MANUAL

Foreword

Thank you for purchasing the SampleRobot software. You now own an extraordinary product that offers fully automatic sampling of real instruments in definable detail. With SampleRobot you can recreate your favorite instruments and sounds via software samplers.

Why should you read this manual?

Even if you are a professional musician you should read this manual front to back at least once. The basic concept of SampleRobot is totally new and will need some explanation.

Feel free to put this manual back into the package, but in our opinion this is a bad choice.

If you do decide to read the manual we promise you a lot of fun while reading about and working with SampleRobot.

The SKYLIFE Team

Hint

SKYLIFE is not liable for any erroneous information contained in this manual. The contents of this manual may be updated at any time without prior notice. We have made every effort to ensure the information herein is accurate and that the manual contains no contradictory information. SKYLIFE extends no liabilities in regard to this manual other than those required by local law.

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We would like to thank:

Content

Introduction

What can SampleRobot do?

With SampleRobot you can create your own virtual musical instruments as well as sound and loop libraries very easily. SampleRobot offers cutting-edge sampling technology. Building high quality instruments was never easier. SampleRobot also contains WaveRobot, the professional loop editing audioware.

Your complete sound studio in your computer – SampleRobot gives you total mobility!

SampleRobot is the missing link between sound source and software sampler. It has never been easier to record audio and create Multi-Samples in one go. The program is designed to work practically completely on its own while the user keeps full control of all parameters manually. And, SampleRobot's sampling engine is non destructive.

Just a few mouse clicks and a fully detailed sampled sound source, e.g. a synthesizer with all internal sound programs is on your hard drive ready to be played with any available software sampler. All procedures like sending MIDI note on and off, program change, audio recording, naming, editing, crossfade calculation, loop creation, Multi-Sample mapping, and export are executed fully automatically.

You can sample your favorite sounds and instruments very easily and play them instantly within your preferred software sampler environment. If you like you can forget about your entire hardware equipment and realize your compositions with the same sounds on a 100% software base. Unique in user friendliness, SampleRobot is speed and quality: not only for sampling MIDI instruments but for acoustic instruments just as well.

Totally new sounds evolve if you combine SampleRobot's powerful Multi-Sample layer copying and controller mapping features. Create sounds that can be controlled and manipulated through a software sampler in new ways of articulation.

SampleRobot also includes the new WaveRobot software. WaveRobot is a fully integrated fullscreen sample and loop editor with a lot of professional auto-loop features.

Here are some examples:

- Feed your compositions with inspiring samples from the world outside your studio.

- Create digital copies of your favorite instruments and sounds.

- Borrow instruments and keep a virtual copy (abiding by relevant copyright laws and license agreements of course).

- Build and sell/share your own sample libraries.

- Have all your sound hardware on your hard disk and travel with your laptop.

- Buy used gear and resell it after automatic sampling.

- Use all your software instruments cross-platform.

- Work in other studios or on stage without carrying additional sound expanders.

- Play monophonic instruments polyphonically.

- Total recall for every session.

- DJs

- Laptop performance artists

Who needs SampleRobot?

- All musicians that use software samplers

- All sound designers

- All sound library developers

- Film composers

Overview

Below you see an overview of the basic SampleRobot modules.
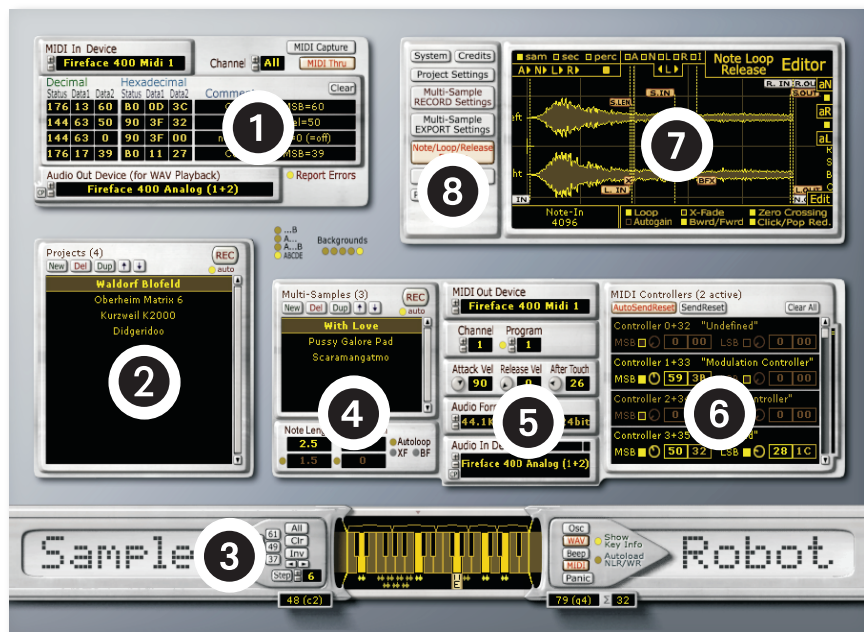
1   MIDI Monitor (on page 141)

2   Project Window (on page 143)

3   Virtual Keyboard with Sample Range Selectors (on page 149)

4   Multi-Sample Administration Section (on page 144)

5   MIDI and Audio Settings of the Multi-Sample Section (on page 146)

6   MIDI Controllers List in the Multi-Sample Section (on page 148)

7   Multi-purpose Window (on page 136 and 154f)

8   Multi-purpose Settings (on page 136)

Connections

On the right you find a short overview how SampleRobot can/ should be integrated in your music system:

Sound Generator   **Computer**

Audio-/ MIDI Interface

Microphone

MIDI Masterkeyboard

Acoustic Instruments
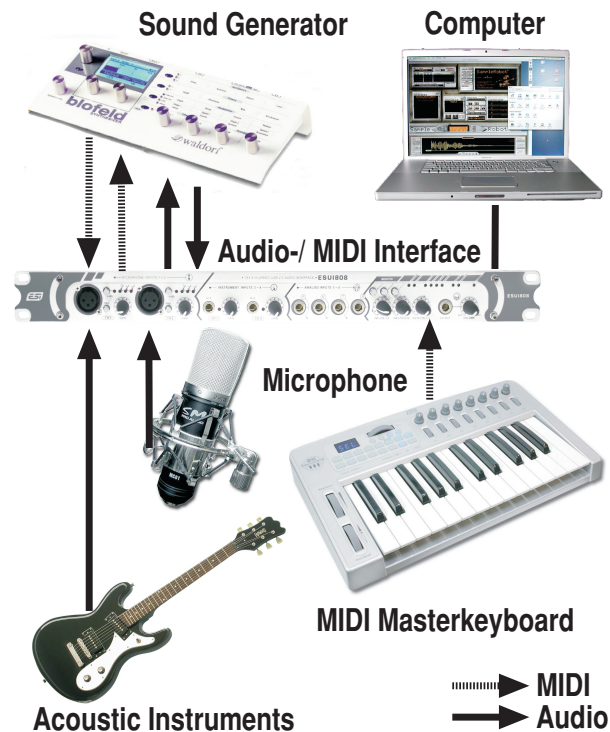
MIDI
Audio

Installation

System requirements SampleRobot/ WaveRobot

- Compatible with Apple Mac OS X

- Compatible with Windows XP, Vista, 7

- Supports all Windows and Apple Mac Intel plug & play MIDI and audio devices

- Minimum computer configuration PC: Pentium 3 or comparable AMD, 667 MHz, 200 MB free hard disk space, Windows XP SP2, Vista, 7 (32+64 bit)

- Minimum computer configuration Mac: Mac Intel 1.8 GHz, 400 MB free hard disk space, OS 10.6.4 or higher. SampleRobot Mac OS X installation is based on Wine framework.

Installation of SampleRobot for Mac OS X

Due to the Wine framework that is used for the OS X versions of SampleRobot and WaveRobot and since both applications have special graphical user interfaces and

menu structures some of the operations might be unfamiliar to you.

The most important aspect is that you have 2 menu bars. One is directly included in the application window and the other one is the standard Mac menu bar located at the top of the screen. The first one (not the Mac menu bar) contains all features of the application so make sure that you use this menu for all your operations.

Furthermore there are customized message boxes and file dialogues that are different from the ones normally shown under OS X. Your Mac harddrive is assigned to the letter (Z:). When opening and saving files you can browse Z: for data exchange.

IMPORTANT: When opening SampleRobot/WaveRobot for the first time it can take a few minutes to start up because background services are installed as well. Even if you do not see the startup window please be patient! It will show up soon.

Here is a short description how to install SampleRobot/ WaveRobot:

IMPORTANT: If you would like to install SampleRobot/WaveRobot under OS 10.8. (Mountain Lion) you have to install XQuartz V2.7.2 or higher FIRST before

opening the SampleRobot/WaveRobot dmg! It can be downloaded free of charge.

The latest version of XQuartz can be found here:

http://xquartz.macosforge.org/trac/wiki

The XQuartz project is an open-source effort to develop a version of the X.Org X Window System that runs on OS X. Together with supporting libraries and applications, it forms the X11.app that Apple has shipped with OS X since version 10.5. But it is not contained in OS 10.8. any more so you have to install it.

1. Please unzip the package and open the dmg file.

2. Just drag the icon to the applications folder as shown in the appearing window. Data will be extracted to your harddrive.

3. Start the application. This can take a few minutes.

4. A window pops up informing about initialization of the application.

5. After this window is closed please be patient. The application is launched in the background automatically. This will take some time before showing the startup dialogue.

6. Now the Activation window appears (see below: The Challenge Response Copy Protection).

Hint: To uninstall SampleRobot under OS X you need to remove

/Applications/SampleRobot

and

~/Library/Application Support/SampleRobot

manually from your hard drive. Under OS 10.8 those directories are hidden. You can unhide them by using the following command in the terminal window.

defaults write com.apple.Finder AppleShowAllFiles YES

After that you need to relaunch Finder by holding "Alt" and clicking on the Finder icon.

Installation of SampleRobot for Windows

1. Please unzip the package.

2. Double click on the msi file to open the installer and follow the on-screen instructions.

3. Start the application. This can take a few minutes.

4. Now the Activation window appears (see below: The Challenge-Response Copy Protection)

Included Premium Multi-Samples

SampleRobot comes with even more than one Gigabyte of Multi-Samples in Soundfont 2 format sampled from classic synthesizers. You can load and play them with most software samplers. The Multi-Samples are available via download for registered users. The dedicated weblinks and access data can be found in the Help Menu "SampleRobot Premium Instruments". To use the Multi-Samples copy the data onto your hard disk and load the desired SF2-Files into a software sampler.

The Challenge-Response copy protection

SampleRobot uses a Challenge-Response copy protection system.
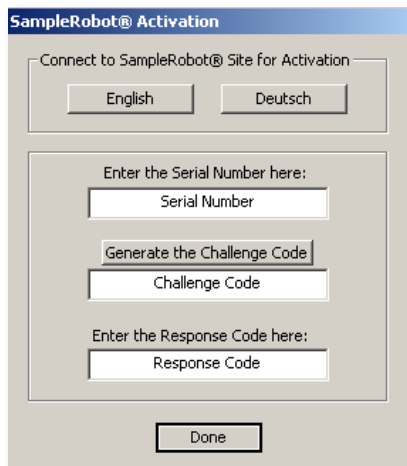
After the first program launch you have to enter your serial number. Press the "Generate the challenge code" button to generate a challenge code. Then select "English" in the upper left corner or open the following weblink directly:

https://www.samplerobot.com/support_login_b.php

Please register with your serial number. After that you can request the necessary response code.

Follow the online instructions and enter your challenge code. You will receive the response code after a very short period by email. Enter the response code and confirm it. SampleRobot is now activated without restrictions.

Hint: Please keep in mind that you don´t mistake the number 0 (zero) with the letter O and vice versa. If you are not sure, use the copy & paste function of the clipboard.

Hint: The computer on which SampleRobot is installed doesn´t need to be connected to the internet. You can perform the challenge-response procedure on every computer with internet access.

Hint: After successful activation the SampleRobot main screen occurs. You can switch the size of the SampleRobot window with the Tab key to fit it best to your screen resolution.

Ultra Quick Start

For the impatient user we have prepared an "ultra quick start tutorial" which guides you step by step through your first SampleRobot project. Nevertheless we recommend reading the complete manual to learn more about all functions of SampleRobot.

Start the Software

A double click on the SampleRobot program icon starts the software.

Project Wizard Settings

The Project Wizards opens automatically after launching the program. It is designed for creating sampling projects easily step by step. In SampleRobot a Project is a kind of container for all the keyboard settings, samples, Multi-Samples, loop information and additional parameters. You can set up blank projects for automatic recordings (for sampling of MIDI instruments) and semi automatic recordings (for sampling of non-MIDI sound sourdes, manually key by key). Please connect all instruments and sound sources in the way it is described on page 8 (connections).

The Project Wizard helps you to set up individual sampling projects for your needs. Click on the button "Next" to start.

In the following example we will record a string-pad sound from a connected Waldorf Blofeld hardware synthesizer. If you should not own a Waldorf Blofeld you can use any other MIDI synthesizer instead.

- **Project's Name**: Name your Project first, e.g. "Blofeld Pad".

- **Project's Datapath**: Choose a data path for audio recordings and Project data by clicking the button "Browse". For example you can create a folder named "SampleRobot data" on your hard disk.

- **Audio In Devices:** Choose the corresponding audio input of your audio device. Use this input for connecting the Waldorf Blofeld.

- **Sampling Frequency and Bit Depth**: Select the desired sampling frequency and the Bit depth (for example 44.1 kHz, Stereo, 16bit).

- **Recording**: Choose between Automatic Recording (for sampling acoustic and other non-MIDI instruments) and Semi-automatic Recording. If your instrument is

controlable via MIDI (as in our case) you should select "Automatic Recording".

- **MIDI Out Device** (only for Automatic Recording): Select the MIDI output of your MIDI interface. Connect this output with the MIDI input of your sound generator. So we use the Blofeld's MIDI In.

- **MIDI-Settings** (only for Automatic Recording): Choose the desired MIDI transmit channel and the corresponding MIDI program change to remote-select the desired sound program in your synthesizer. We would like to record sound program no. 9 which receives MIDI data on channel 1. Therefore we select MIDI channel 1 and Program Change 9.

- **Sampling Range**: Select the keyboard range for the recording, e.g. 61 keys. Later on the exported virtual instrument can be played in that range on the keyboard.

- **Velocity Layer** and **Key-Step**: Choose the number of velocity layers and the step between the recorded keys. Please note that the higher the values for Velocity Layer and the lower the Key-Step the more detailed the virtual copy gets, but on the other hand it takes longer to record the instrument and more disk space and more software sampler performance is

required. So it is wise to choose a compromise between quality and quantity. We would like to record every 3rd key, so we choose Key-Step 3. The string-pad sounds softer when played with reduced velocity. To capture this specific velocity response, we need to create 2 layers: layer 1 sends medium velocity (64) and layer 2 maximum velocity (127).

- **Note Length** and **Release Length:** Choose the length for the notes to be recorded and the length for the release notes (recording time after a note off). It our examples the values are: 6 seconds for note length and 2 seconds for release length.

- **Auto-Loop**: Activate the automatic loop function, if desired. This is useful when you would like to sample sustained sounds. It also safes sampling space. Our pad is a sustaining sound, so we select Auto-Loop ON.

- **Auto-Loop Settings 1**: Select the complexity of the recorded sound. This is necessary to automatically calculate optimum loop points in the sample. "Intermediate" is appropriate for our sound program.

- **Auto-Loop Settings 2**: Select a percentual position in the sample for the loop start. If you would like to record sounds that need some time to reach the sustain phase choose higher percentages. In our

example we choose "Loop starts at 50% of the Sample's Length".

Click on the button "Finish" to end the Project Wizard. SampleRobot now generates a Project with your settings and calculates the recording duration and the disk space required.

The Recording

The recording window comes up automatically after finishing the Project Wizard. Start the recording process by clicking on button "Start Recording". Small sample-icons underneath the virtual keyboard show you the progress during recording. If you have set up a Project in semi-automatic recording mode you have to start and stop the recording manually for each key selected. Keep the recording with „Keep recorded Key-Sample and RECORD NEXT" or discard it with „Discard recorded Key-Sample and RE-RECORD IT". There are also options to name the sample, view it in WaveRobot and to listen to various sections of the sample.

Audio Export as Dimension Preset

Use the following procedure to save your recorded instrument and to automatically transfer it as a virtual instrument preset to Cakewalk's Dimension LE or Dimension Pro software sampler for instant playability. In the menu Import/Export choose „Export selected Project as..." -> Cakewalk Dimension Preset or use the key command CTRL + F2. Please keep in mind that Cakewalk Dimension LE or Dimension Pro must be installed on your computer.

An export settings window comes up. In most cases you can click directly on the Continue button. Choose a name for the exported instrument and click on the Export button.

Open the exported instrument in Dimension LE

Open Dimension LE in your host application (e.g. Cubase). Click in the Program Browser of Dimension LE's user interface to load a sound program. In the list you will find the entry "SampleRobot". Inside this folder there is your exported project. Click on the program's name to load the sound into Dimension LE. Play the instrument on your MIDI keyboard. If you have recorded more than one velocity layer the velocity response of your sampled instrument in Dimension LE will be similar to the original instrument. In Dimension LE you can shape and polish your instrument's sound with filters and effects.

Tip: If you need an overview of all SampleRobot key commands you should use the Quick Help function in the Help/Info menu.

Quick Start

On the following pages you will find instructions for a quick entrance to SampleRobot explaining the most important basic functions to you step by step. All control elements of the software will be described in detail in the later chapters.

Connecting audio of MIDI sound sources

To record a MIDI sound source (e.g. synthesizer, tone generator), you have to connect its audio output to the audio input of your sound card or audio interface.

Connection and set up of MIDI interfaces

To send MIDI data to the corresponding MIDI sound source you have to connect its MIDI input to the MIDI output of your computer's MIDI interface.

Connection of other sound sources

If you want to record a music instrument without MIDI connections (e.g. guitar, e-piano etc.) you have to connect this instrument´s output or a microphone to your sound card.

Start the software

A double click on the SampleRobot program icon starts the software.

The Project Wizards opens automatically after launching the program. It is designed for creating sampling projects step by step. We recommend using the Project Wizard everytime when creating a new project. It combines several steps to one workflow that is easy to follow. You can start the Project Wizard also via the menu File. If you want to learn more about the Project Wizard please take a look at our Ultra Quick Start tutorial starting on page 129.

Basic settings of SampleRobot

Choose your audio interface and the desired input under **Audio In Device** in the Multi-Sample section.

Choose your MIDI interface and the desired MIDI channel (**Channel**) in the Multi-Sample section under **MIDI Out Device**.

Choose the record data path

Click on the **Project Settings** button to open the Multi-purpose window for the data path settings. Right-click on the displayed data path to change it or use the browse

button. You can choose a separate data path for every Project. Additionally you should set a path for temporary data in the menu Options/Extras -> Preferences.

Creating and naming a new Project

Create a new Project by clicking the "**new**" button in the Project window. Label it by right-clicking on the Project name. A Project consists of one or more Multi-Samples.

Hint: You should use the **Preset Manager** in the **File** menu, which contains more than 80 basic sampling presets (Projects) for different sample recording situations (read more on this on page 180).

Creating and naming Multi-Samples

Create a new Multi-Sample by clicking the "**new**" button in the Multi-Sample section. Label it by right-clicking on the Multi-Sample name. Choose the desired note length (by right-clicking on the note length value) and optionally Autoloop activation (click on the Autoloop button). Set the attack velocity, the release velocity and (if desired) an aftertouch value. You can also select a specific sample rate (consider that only sample rates are possible that will be provided by your sound card).

Selecting the Sample range

By clicking and moving the **Sample Range Selectors** left and right besides the Virtual Keyboard you can select the sample range.

You can choose, if all notes (**all**) or only the adjusted steps (**step**) will be recorded.

Selected keys will be highlighted. Click + CTRL on a virtual key or CTRL + playing a midi note selects or deselects a virtual key.

Set up of MIDI controller data

The MIDI controller list of the Multi-Sample section can be used to specify one or more MIDI controllers and the amount how deeply the sound that is to be recorded is influenced by this controller. Activate the desired MIDI controller by clicking the square button and choose the value by turning the knob clockwise.

Testing the audio and MIDI outputs

Activate the MIDI button on the right Sample Range Selector to play the sound of your connected MIDI sound generator via the Virtual Keyboard or a connected MIDI master keyboard (MIDI Thru in the MIDI Monitor section must be activated). Click on the monitor switch near the Audio In Device or press the Peak Meter button in the

Multi-purpose settings to check the audio signal input of your sound generator.

Recording samples

Click on the REC button in the Project window to arm the recording process. The record window appears and you can start the recording procedure.

Based on the number and the length of notes the recording process may take a while. After that you will see a small waveform under each selected key on the Virtual Keyboard.

Switch off the **auto** function to start the semi-automatic recording (e.g. for non-MIDI instruments).

Editing samples

After finishing the recording process you can edit your samples in the Multi-purpose window. Right-click the desired key on the Virtual Keyboard to load it into the Note/Loop/Release Editor. The sample will be displayed in the editor window. Only physical samples (keys that contain a Key-Sample) can be opened. The letter **E** below the key marks the actual loaded sample.

In the graphical editor you can change the note start and end as well as you can work with different automatic loop functions. You find more on that on page 154f.

You can also click on the WaveRobot button in the Multi-purpose Settings (or shortcut: **W** on your computer keyboard) to open the integrated loop editing software WaveRobot as a scalable window with additional editing functions. Read more on this on page 162.

Playing samples

To playback recorded samples you first have to choose your audio hardware in **Audio Out Device** (in the MIDI Monitor section).

Clicking on a key of the virtual keyboard that contains a recorded Key-Sample playbacks the sample. Additionally you can play the corresponding MIDI note on a connected MIDI master keyboard.

In the Note/Loop/Release Editor and in WaveRobot you can also playback samples. For more information on this please read the pages 158 and 170.

Exporting samples

You can export your samples in different sample formats for usage in a software sampler (e.g. Steinberg Halion).

Choose the Project you want to export, open the Import/Export menu and select the desired export format from the drop-down menu.

The exported sampled sounds can be loaded in your software sampler and can be played directly without any mapping or adjustments.

Tip: SampleRobot offers a sophisticated export module for the Cakewalk Dimension LE software sampler, which is included in your SampleRobot package. If you select the export option "Cakewalk Dimension Preset", the exported data will directly show up in the program browser list of Dimension LE. Just a single click on the name and you can play the sampled instrument instantly via your MIDI keyboard. Different Multi-Sample layers and release samples are also supported. During export SampleRobot does the sample management, mapping and transfer to Dimension LE automatically in the background.

Single Key-Samples can be exported as rendered wave files by ALT-clicking the corresponding key on the Virtual Keyboard in SampleRobot.

Additional tips

Once you have made all your settings in the SampleRobot main window you can use the function **Set current settings as default** from the Options/Extras menu to store them permanently as default. In the Preference window, which can also be found in the Options/Extras menu, you can additionally set up all necessary settings for basic operation. These settings will be stored automatically when you quit the application.

Right-click on a data value to open a pop-up window for entering values directly.

The Control Elements in Detail

Multi-purpose settings

This section contains buttons for basic operation, Project settings and Multi-Sample settings. The Multi-purpose window shows details of these settings which can be changed by right-clicking on the corresponding parameter.

System
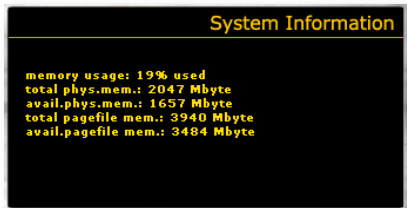
Click this button to open a window, which gives you an overall information of your RAM memory. No parameters can be changed here.

Credits

Click this button to open a window with program information about SampleRobot.

Project Settings
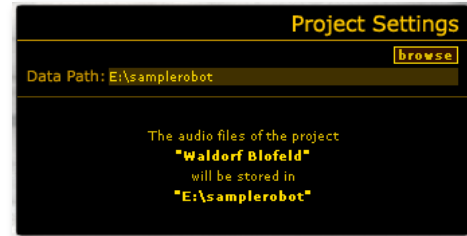
Click this button to open a window for changing the recording data path for the selected Project. You can set the data path manually by right-clicking on the data path line or by clicking on the **browse** button. We recommend creating a basic folder on your hard disk, which contains all your recordings in subfolders. The current Project data path will be displayed below the settings. If you change

the existing data path SampleRobot asks you if existing sample data should be moved to the new folder.
Keep in mind that you can set up a separate data path for each single Project.

Multi-Sample Record & Autoloop Settings

Click this button to open a window for Multi-Sample Record & Autoloop settings. The following settings can also be saved in the Preferences window (in the Options menu).

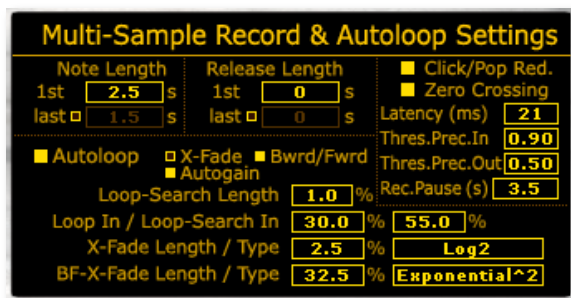- **Note Length** is a field for entering the length of the single note/sample in seconds. With **last,** which is activated by clicking the small square button, you can add an additional sample length. SampleRobot will

use the **1st** length for the first sample recording and last for the last sample recording. The sample length between these values will be scaled. This is useful for lower notes that need to be sampled mostly longer than higher notes.

- **Release Length** is a field for entering the length of an additional sample release time in seconds. The Release-Sample is a separate sample recording that starts playback after the regular sample ends playback. It can be triggered automatically after a note off message. A Release-Sample can "catch" the release phase of a note. Similar to Note Length you can set the **1st** and **last** parameters. Use **Release Length** for sounds with a release phase or a release effect like reverb, delay etc.

- **Click/Pop Red. (Click and Pop Reduction)** can be activated to suppress typical clicks and pops during the attack and release phase of a sample. The default setting is "On". When activated SampleRobot will render "micro-fades" at the beginnings and ends into exported samples. The length of the fades can be adjusted in the Preferences dialog from the Options/Extras menu.

- **Zero Crossing** should normally be activated. All loop, size and markers operations will be executed at

zero crossings (positions in the audio where the amplitude is zero) then. This helps you to avoid pops and clicks.

• **Latency** compensates the latency of your audio interface or sound card. The latency is important during Note Out recognition. In most cases you can work with the predefined setting of 21 ms.

• With **Thres.Prec.In (Threshold Precision In)** you can predefine a value for the precision of the Note-In recognition. A precision value between 0.01 (less precise) and 1.0 (more precise) is possible (default setting: 0.90). Smaller values are recommended when using onboard or non-professional soundcards or when recording sounds with background noise. Higher values are recommended when using professional audio cards.

• With **Thres.Prec.Out (Threshold Precision Out)** you can predefine a value for the precision of the Note-Out recognition. A precision value between 0.01 (less precise) and 1.0 (more precise) is possible (default setting: 0.50).

• With **Rec. Pause (Record Pause)** you can define a time out in seconds between two sampling processes. This function is perfect for letting the release tail fade

to zero in between two recordings. It is also designed to avoid clipping problems caused by program change messages. Use Rec. Pause for older sound modules that need some time for program changing.

• **Autoloop** activates the automatic loop search and loop set function of SampleRobot. Only with active **Autoloop** you have access to the loop parameters.

• **X-Fade** activates the automatic crossfade loop, which calculates fades in the sample. This creates overlaps for smooth loop transitions. See also page 159.

• **Bwrd/Fwrd (Backward/ Forward)** activates the automatic backward/ forward loop. The loop area will be played forward and backward alternately. BF-X crossfade optimizes the area where the sample changes the loop playback direction from forward to backward. See also page 160.

• **Autogain** compensates phase problems in the crossfade area automatically. Activate this function if you notice a change in volume during crossfade. Autogain is available for all X-Fade loop types only. BF-X-Fades do not support the Autogain option.

• **Loop-Search-Length** defines a search pattern length that is used for the Autoloop search process. This search pattern is defined by the Loop-In marker to the

left side and the Loop-Search-Length marker to the right side. SampleRobot searches a similar area in the rest of the waveform (from Loop-Search-In marker to Loop-Search-Out marker) for a smooth loop transition. The Loop-Search-Length value can be entered as a percentage of the loop length. Higher values give a better result but cause also a longer loop search time. This parameter is identical to the Loop-Search-Length marker. The value ranges from 0.1 to 10% (default: 0.2).

• **Loop-In/ Loop-Search-In** define percentage values for the automatic loop search function. **Loop-In** defines the position (in % of the sample length) where the Loop-In marker shall be placed (default 30.0 %), **Loop-Search-In** defines the starting position (in % of the sample length) for the Autoloop search and sets the Loop-Search-In marker (default 55.0 %) accordingly. The parameter Loop-Search-In is identical to the Loop-Search-In marker (default: 55.0 %). The Note/Loop/Release editor and also WaveRobot offer a Loop-Search-Out marker to limit the area for loop search to the right side of the sample.

• **X-Fade Length/ Type** for smoother loop transitions define the crossfade area as a percentage value of the corresponding loop length. You can also select the crossfade curve characteristic (Linear, Sinus, a couple of exponential and logarithmic functions).

• **BF-X-Fade Length/ Type** for smoother loop transitions define the crossfade area as a percentage value of the corresponding loop lenght by using the backward/ forward crossfade loop. You can also select the crossfade curve characteristic (Linear, Sinus, a couple of exponential and logarithmic functions).

Multi-Sample Export Settings
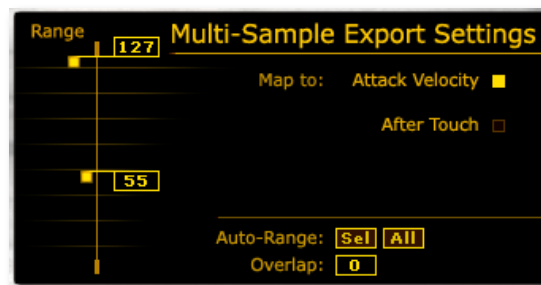
Click this button to open a window for the Multi-Sample export settings. Keep in mind that you can set up separate export settings for each single Multi-Sample. The Multi-Sample export settings are necessary for sample mapping

when using a software sampler to create dynamically playable and authentic sounding instruments.

Range defines the velocity mapping of the selected Multi-Sample (between 0 and 127). This is very useful when importing the exported Project into a software sampler. All sampled will be mapped automatically according to the dedicated range. It es very easy to create multi-velocity layer sounds because every Multi-Sample can have its own ranges. It is possible to set Multi-Sample ranges for **Attack Velocity** or **After Touch**. The automatic range (**Auto-Range)** can be used to adjust the ranges for the selected (**sel**) or for all (**all**) Multi-Samples automatically. An additional **Overlap** parameter for adjustable overlappings of sample layers is also available. Tip: If you have recorded some Multi-Samples with different velocity layers, you can click on the **Auto-Range All** button to map all velocity layers automatically. This mapping information is also included in all Multi-Sample files exported from SampleRobot. Then the information will be used in software samplers for dynamic response of the Multi-Sample layers.

Note/Loop/Release Editor
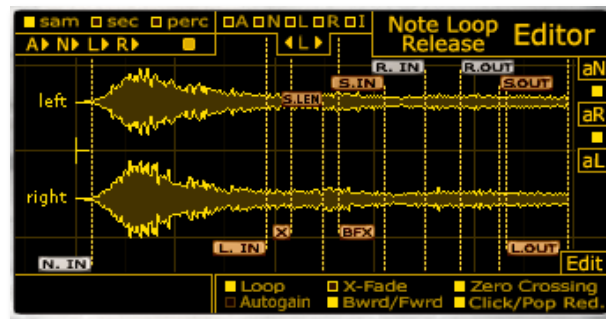
Click this button to open the Note/Loop/Release Editor for extensive loop and marker editing of the selected sample. For more information please refer to the chapter "The Note/Loop/Release Editor" on page 154 of this manual.

WaveRobot

Click on this button to open WaveRobot as a separate window. WaveRobot is designed for professional Autoloop searching and marker editing. For more information please refer to the chapter "WaveRobot" on page 162.
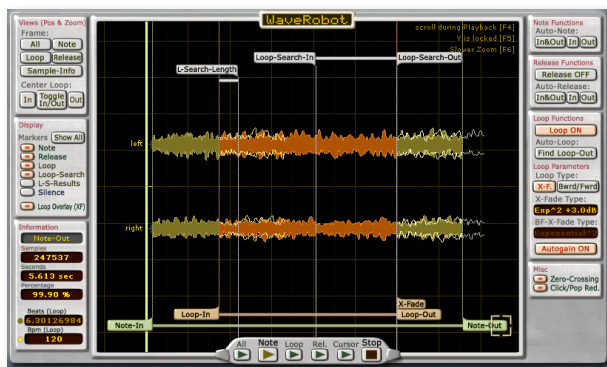
Peak Meter
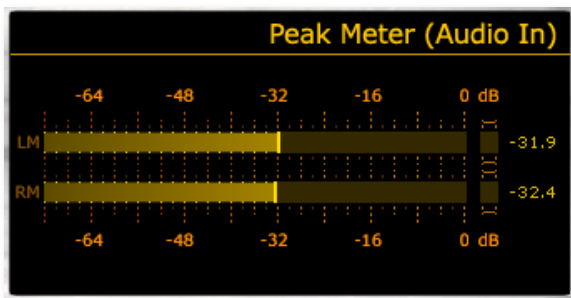
The Peak Meter gives you a graphical overview of the incoming audio signal. The incoming level is shown in dB with an overload control. Use the Peak Meter to set and control the audio input level.

Please note that the activation/ deactivation of the Peak Meter also affect the Audio Input Monitor in the Multi-Sample Section and vice versa.

The MIDI Monitor
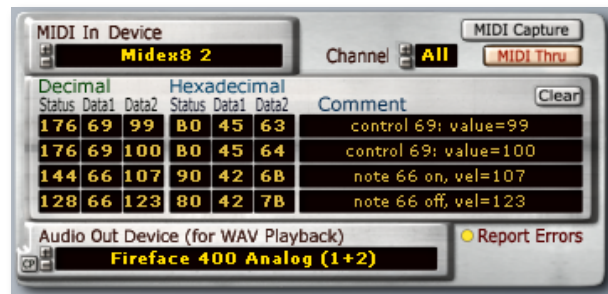
The MIDI Monitor is useful for analyzing all incoming MIDI data and also for setting up the MIDI Input and audio output.

MIDI In Device

The **MIDI In Device** list contains all available MIDI interfaces with their MIDI inputs. Choose the desired interface port by clicking the plus/ minus buttons. You can also open a selection list by right-clicking. Be sure to use an input with a connected MIDI master keyboard.

Then if you play MIDI notes the monitor is showing the incoming MIDI data. You also see circlets on the virtual keys as a visual feedback.

With the **Channel** function you can select a dedicated MIDI channel (from 1 to 16, all) for the MIDI receive process. The **MIDI Thru** button activates the MIDI Thru function so that incoming MIDI data is automatically routed to the selected **MIDI Out Device** in the Multi-Sample section. This is useful to play a connected sound module directly via your MIDI master keyboard.

With the **MIDI Capture** function activated (click on the corresponding button or press **C** on your computer keyboard) various MIDI data, like all played note velocities and all incoming MIDI controller information, will be captured automatically in the Multi-Sample section allowing perfect MIDI remote control of all sound sources.

SampleRobot can capture the following MIDI data by using the **MIDI Capture** function: Program Change (only when **Program** is active in the MIDI- and Audio settings of the Multi-Sample section), Attack Velocity, Release Velocity, After Touch and all MIDI controller data.

Monitor Display

The MIDI Monitor display shows all incoming MIDI data in decimal and hexadecimal numbers. Next to the status byte also first and second data values are shown. The comment row gives you more information about the MIDI data type. The last four entries are displayed permanently until you push the **Clear** button. Use the MIDI Monitor to analyze your incoming MIDI data, for example to specify a MIDI controller or to recognize a program or bank change message.

Audio Out Device

In this section you define a monitor audio output for listening to your recorded samples. The Audio Out Device list contains all available ports of the audio interfaces of your computer system. Choose the desired interface port by clicking the plus/ minus buttons. You can also open a selection list by right-clicking.

CP-Button (Control Panel)

Click on this button located next to the **Audio Out Device** display to open the control panel of your ASIO audio hardware. Keep in mind that your ASIO driver must be

activated and that it must have a control panel. Otherwise the CP button won´t work. You also find this button in the MIDI and audio settings in the Multi-Sample section.

Report Errors

This button should be always activated. It reports errors during audio playback, for example, when 8 bit audio data is played back with an incompatible audio card.

Selection of the Name Display

Click on one of the four buttons to change the way names will be displayed in SampleRobot. "....B" displays all long names with dots in the beginning (only valid for the displays), while "A..." will set dots at the end of the names. "A....B" shortens the names in the middle while "ABCDE" shows the whole names in smaller letters.

Backgrounds
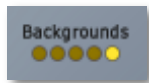
Clicking on one of the five background buttons changes the color and texture of the SampleRobot user interface. Select your favorite surface.

The Project Window
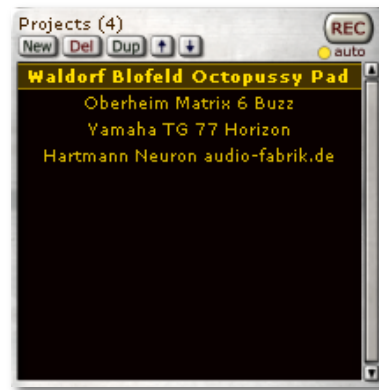
Mostly a Project is identical to a single sound program of a synthesizer or sound module. The Project window handles all Projects. A Project can contain one or more Multi-Samples. You should name a Project with the name of the corresponding instrument and the sound name (e.g. Waldorf Blofeld – Octopussy Pad). Right-click on the desired Project and enter the name in the pop-up window. If you rename existing Projects the audio data (Key-Samples) will be renamed automatically to avoid name conflicts.

Click on the **new** button to create a new Project. The settings will be taken from the Preferences. Of course you can also load Projects or Presets in the File menu. **del (Delete)** deletes the selected Project while **dup (Duplicate)** will create a copy of the selected Project. With the arrow buttons it is possible to move selected Projects in the Project list up and down. The **REC** button starts the recording process for a selected Project.

Important: When you deselect the **auto** button underneath REC, you switch to semi-automatic recording (e.g. for recording non-MIDI instruments). This button is identical to the **auto** button in the Multi-Sample section. Read more in the chapter "Recording" on page 201.

The Multi-Sample Section

The Multi-Sample section is divided into three areas, which are explained in the following chapters.

In the Multi-Sample section all settings for sample recording can be made. You can set up each Multi-Sample by selecting a lot of parameters like sample length, program changes and MIDI controller settings.

Every single Multi-Sample contains its own record and Autoloop settings.

The Multi-Sample Administration Section

This section is similar to the Project window.

The Multi-Sample window is part of a project and there you can handle all settings regarding Multi-Samples. Mostly a Multi-Sample is identical to a special articulation (e.g. velocity layer) of a sound program. You should name a Multi-Sample with the characteristic of the corresponding sound layer, for example "Velocity 64"or "After Touch 127". Right-click on the desired Multi-Sample and enter the name in the pop-up window. If you rename an existing Multi-Sample, the audio data (Key-Samples) will be renamed automatically to avoid name conflicts.

Click on the **new** button to create a new Multi-Sample. The settings will be taken from the Preferences. **del (Delete)** deletes the selected Multi-Sample while **dup (Duplicate)** will create a copy of the selected Multi-Sample. With the arrow buttons it is possible to move selected Multi-Samples in the Multi-Sample list up and down. The **REC** button starts the recording process for a selected Multi-Sample.

Important: When you deselect the **auto** button underneath REC, you switch to semi-automatic recording (e.g. for recording non-MIDI instruments). This button is identical to the **auto** button in the Project window. Read more in the chapter "Recording" on page 201.

Some basic recording parameters (e.g. Note Length) from the **Multi-Sample Record Settings** can also be found in the Multi-Sample section. The values are identical and will be updated when changed in one area.

- **Note Length** offers a field for entering the lenght of the single note/ sample in seconds. With **last,** which can be activated by clicking the small square button, you can add an additional sample length. SampleRobot will use the **1st** length for the first sample recording and last for the last sample recording. The sample length between these values will be scaled. This is useful for lower notes that need to be sampled mostly longer than higher notes.

- **Release Length** offers a field for entering the length of an additional sample release time in seconds. The Release-Sample is a separate sample recording that starts playback after the regular sample ends playback. It can be triggered automatically after a note off message. A Release-Sample can "catch" the release phase of a note. Similar to Note Length you can set the **1st** and **last** parameters. Use **Release Length** for sounds with a release phase or a release effect like reverb, delay etc.

- **Autoloop** activates the automatic loop search and loop set function of SampleRobot. Only with active

Autoloop you have access to the loop parameters (see page 159).

- **XF (Crossfade)** activates the automatic crossfade loop, which calculates fades in the sample. This creates overlaps for smooth loop transitions (see page 159).

- **BF (Backward/ Forward)** activates the automatic backward/ forward loop. The loop area will be played forward and backward alternately containing two crossfades (see page 160).

The MIDI and Audio Settings of the Multi-Sample Section

In this area you can specify detailed settings regarding the selected Multi-Sample. Every Multi-Sample can have its own settings for the used MIDI and audio interface ports, the MIDI channel, the corresponding sound program, velocities and after touch and the audio data format.

MIDI Out Device
Here you can choose a connected MIDI interface port for each Multi-Sample. The MIDI Out Device list contains all

available MIDI interfaces with their dedicated MIDI output ports. Choose the desired interface port by clicking the plus/ minus buttons. You can also open a selection list by right-clicking.

With the **Channel** function you can select a dedicated MIDI channel (from 1 to 16, all) for the MIDI receive process. If **MIDI Thru** in the MIDI Monitor section is activated you can play a connected sound module by using a MIDI master keyboard.

Keep in mind that each Multi-Sample can have its own MIDI output port. This enables you to record more than one sound module in one Project.

Channel (1-16)

Here you can choose a MIDI channel for each Multi-Sample that will be used for sending MIDI data.

Program (1-128)

If you have activated **Program** by clicking the small button next to the plus/ minus buttons, you can select a MIDI program change for the corresponding sound program. Keep in mind that the connected sound source must recognize MIDI program changes (refer to the manual of your MIDI sound source).

By using this function you can sample different sound programs in one go (please see also **Create Projects from Soundnames** on page 182). To send MIDI bank changes you have to use the MIDI controller 0 (MSB) and 32 (LSB) in the MIDI controller list. There are different interpretations of bank change messages by different manufacturers.

Attack Vel. (Attack Velocity)

Here you can choose the attack velocity value for each Multi-Sample (from 0 to 127).

Release Vel. (Release Velocity)

Here you can choose the release velocity value for each Multi-Sample (from 0 to 127).

After Touch

Here you can choose the after touch value for each Multi-Sample (from 0 to 127).

Audio Format

Here you can select the corresponding sample rate and bit depth for the recording process of the selected Multi-Sample. Keep in mind that you can only select sample rates and bit depths that are provided by your audio interface and the dedicated drivers. If you select a non-valid recording format the name is greyed out. Some drivers do not support 16 bit or 24 bit. In this case choose another driver or another bit depth. Choose the desired settings by clicking the plus/ minus buttons. You can also open a selection list by right-clicking.

Audio In Device

Here you can choose an audio interface port or a sound card port to record your connected sound module. It is possible to select different audio inputs for each Multi-Sample. The **Audio In Device** list contains all available audio interfaces with their dedicated audio input ports. Choose the desired interface by clicking the plus/ minus buttons. You can also open a selection list by right-clicking.

CP-Button (Control Panel)

Click on this button located next to the **Audio In Device** display to open the control panel of your ASIO audio hardware. Keep in mind that your ASIO driver must be activated and that it must have a control panel. Otherwise the CP button won´t work. You also find this button besides the **Audio Out Device** in the MIDI monitor section.

Audio Input Monitor

Click on the small button to activate the **Audio Input Monitor**. You can see the incoming signal in the small meter display with overload control. Use this monitor for checking the level of the audio input. The **Peak Meter** will give you a more detailed input level overview in dB.

The activation/ deactivation of the Audio Input Monitor button is directly linked to the **Peak Meter**.

The MIDI Controllers List
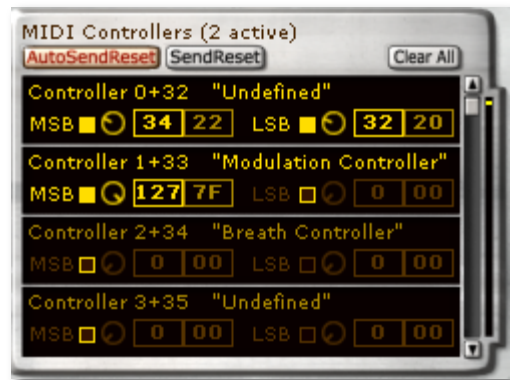
In the **MIDI Controllers List** you can select the MIDI controllers that will be sent automatically with the note data. You can set up different MIDI controllers for each Multi-Sample.

This enables you to record very living sound programs with different modulation wheel settings, filter cutoff

settings or envelope phases. An example can be found on page 210f.

Auto Send Reset

Activate this button for resetting all MIDI controllers after each sampling process. We recommend not changing the default setting. If you should experience recording problems like MIDI hang-ups or delayed MIDI playback you should deactivate **Auto Send Reset**.

Send Reset

Push this button to reset all MIDI controllers manually. Keep in mind that some MIDI instruments don´t support this reset request.

Clear All

Push this button to reset all entries and settings in the MIDI controllers list.

MIDI Controllers Input Section

In this list you have access to all usable MIDI controllers. Use the arrows on the right side of the list window to scroll through all 120 MIDI controllers input fields. You can see four input fields at a time. The values and settings are almost the same for each controller.

The standard MIDI controllers are numbered from 0 to 120. The corresponding name is also displayed (e.g. controller 0 "Undefined" or controller 1 "Modulation").

Left-most you can find an activation button for the selected controller. Next to that are the input value knobs for the MSB (Most Significant Byte) and LSB (Last Significant Byte) located. The values are shown in decimal and hexadecimal numbers. You can also enter values with a right-click on the value display. The current MIDI controller activation state is displayed as a small red point (when active) on the right side of the list window so that you have an overview, which controllers are in use. Read more information about MIDI controllers and about the practical usage on page 211f.

The MIDI Capture function in the MIDI Monitor Section allows you to copy MIDI controller values directly to the Multi-Sample's MIDI controller section. Read more on page 142.

The Virtual Keyboard with Sample Range Selectors
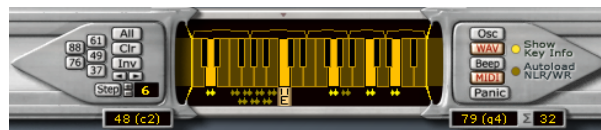
In the lower area of SampleRobot you see the Virtual Keyboard for selecting the sample range. All settings can be made separately for each Multi-Sample.

Control Elements of the Selection Area

Click and hold one of the two Sample Range Selectors and move it to the left or right. The small grey stripe above the Virtual Keyboard enables you to move the complete selection range at once.

Click on the corresponding preset buttons on the left Sample Range Selector to choose a standard sample range (**88**, **76**, **61**, **49** or **37** keys).

The small value field under the selectors shows you the lowest and highest key as MIDI numbers and note values.

Next to the right value field you also see the number of available keys ($\sum$) in the sample range.

Important hint: You can play your connected MIDI sound generator via the Virtual Keyboard or via a MIDI master keyboard (**MIDI Thru** has to be active) when the **MIDI** button on the right Sample Range Selector is active. The MIDI Out device must be defined as described under "**MIDI Out Device**" on page 146.

Selection of Key-Samples

Key-Samples are defined by the selected notes on the Virtual Keyboard. Those Key-Samples will be recorded by SampleRobot. Key-Samples can be empty (before recording) or filled by a recorded sample. There is more than one possibility to select Key-Samples:

- If you want to record all keys between the Sample Range Selectors simply press the **all** button. All keys will be selected.

- CTRL + click on a Virtual Key to select or deselect it.

- Hold CTRL and hit a key on your MIDI master keyboard to select or to deselct the corresponding key in SampleRobot. Be sure to choose the adequate **MIDI In Device** before.

- Press the **Step** button to select keys according to a fix step width. For example: if the left Sample Range Selector is set to the note c1 and the step value is 3, every third key from c1 on will be selected: c1, d#1, f#1, a1, c2, d#2 and so on. You can set step values from 1 to 64.

Another selection type can be activated by pushing the **Inv** button: Click it to inverse the current selection of Key-Samples. The **Clr** button deselects all selected keys.

The arrow buttons underneath the **Inv** button enable you to move all selected keys one semitone up or down.

The key range display (little brackets) above the Virtual Keys shows the corresponding range of a Key-Sample. After exporting, every Key-Sample will be automatically

transposed within this key range when playing it in a software sampler.

Settings for the Key-Sample Range

The Key-Sample range determines in which area the dedicated sample will be transposed later when playing it in a software sampler. Smaller Key-Sample ranges provide more natural playback in a software sampler. The Key-Sample range is affected by the Key Step parameter when creating new Projects.

Above the Virtual Keyboard the Key-Sample range is displayed with the help of little brackets. Drag and drop in the middle area between two brackets to move the complete area. This operation can only be performed when no other Key-Samples lie directly next to the brackets. Clicking and dragging the left part of the range bracket moves the beginning of the range only. Clicking and dragging the right part of the bracket moves the end. Keep in mind that the borders can only be moved until they touch the next Key-Sample.

Use this function for individual mapping of your samples.

Basic Playback Options

The buttons on the right Sample Range Selector control the audio and MIDI playback options:

Click on the **OSC** button to activate the Tuning Oscillator. The oscillator can be played via the Virtual Keyboard or by a MIDI master keyboard. Use the Tuning Oscillator to tune an instrument (e.g. a guitar). When the **MIDI** button is also activated you can play a connected MIDI sound generator simultaneously. This is perfect to tune vintage synthesizers.

Right-click the **OSC** button to open the parameter window for the Tuning Oscillator. On the left side you can select an oscillator waveform (Sine, Pulse or Sawtooth). On the right side you can control the volume of the oscillator by clicking the plus/ minus buttons.

Keep in mind that you have to set up an **Audio Out Device** to listen to the Tuning Oscillator.

Click on the **WAV** button to activate the playback of sampled sounds via the Virtual Keyboard or via a

connected MIDI master keyboard. Only recorded samples can be played.

Please note that SampleRobot can only playback one Key-Sample at a time. Wave playback button and Tuning Oscillator button can not be activated at the same time.

Click on the **Beep** button to activate the playback of a test tone when you play the Virtual Keyboard. The sound is played by your computer's loudspeaker and can be used to test the pitch of a key.

Click on the **MIDI** button to activate the MIDI playback for the Virtual Keyboard and also for MIDI Thru events. MIDI notes are sent to the MIDI interface output that is selected in **MIDI Out Devices**. You can see a visual feedback on the Virtual Keyboard when playing MIDI notes via an external MIDI keyboard.

Click on the **Panic** button to send an All-notes Off command. Use this button if you should experience a MIDI note hang-up. Check your MIDI settings when MIDI note hang-ups occur all too often. In this case it might be useful to deactivate the **Auto Send Reset** function in the MIDI controllers list.

If you want to listen to recorded samples only, you should deactivate the MIDI button and the Beep button. It is possible to playback more than one signal. Therefore you have to decide which button should be activated or deactivated. Don´t forget to activate the MIDI button when you want to play your MIDI sound source via the Virtual Keyboard.

Virtual Keyboard after Sampling Process

After a successful sampling process you can see small waveforms underneath all selected Virtual Keys. The Key-Samples are now recorded. When the **WAV** button is activated you can playback a Key-Sample by triggering the corresponding Virtual Key or the dedicated key on your MIDI keyboard. If you do not hear the playback please check the selected audio output under **Audio Out device** and check also system level and connections.

Hold down the ALT key and click on a Virtual Key to export the corresponding Key-Sample with all loop and markers settings as rendered audio wave data to your hard disk. Normally it makes more sense to export all samples of a Project at the same time. Therefore use the **Export selected Project as…** function from the Import/Export menu.

Activate the **Show Key Info** button on the right Sample Range Selector to show a

translucent information window above a key when rolling the mouse pointer over it. This window gives you information about the corresponding key, the note value, the MIDI note number and the Key-Sample itself (Key name, sample rate, bit depth, size, length and loop/release information).

Activate the **Autoload NLR/WR** button on the right Sample Range Selector to show the current Key-Sample's waveform temporarily in the Note/Loop/Release Editor or in WaveRobot (if open) when moving the mouse pointer over the Key-Samples on the Virtual Keyboard. Use this function to quickly browse and identify recorded or imported samples by waveform.

You can right-click on a Key-Sample to deactive the **Autoload NLR/WR** function. The current Key-Sample remains loaded in the NLR editor/WaveRobot.

SHIFT+right-click on a Key-Sample will open a naming dialog for the dedicated Key-Sample. When exporting Key-Samples, this name can be used for the file's name as an option.

Tip: When importing a wave file via Drag & Drop the corresponding file name can be adopted as the Key-Sample name. The semi-automatic recording process allows entering a key name directly after each recording.

You can right-click on the Virtual Key to open the sample in the **Note/Loop/Release Editor**. The letter **E** underneath the corresponding key indicates that this sample is opened in the editor. Click on the WaveRobot button (or shortcut: **W**) to open a Key-Sample in WaveRobot for comfortable fullscreen editing. It is not possible to display the Key-Sample simultaneously in the Note/Loop/Release Editor and in WaveRobot. Please see page 162 to read more about WaveRobot.

If you hold down **L** on your computer keyboard and click on the small waveform underneath a selected Virtual Key you can lock the sample to avoid unwanted deleting and replacement caused by a new recording session. After locking a Key-Sample the small waveform then turns into the letter "L" for "Locked".

Hold the backspace key on your computer keyboard and click on a Key-Sample to delete it permanently from your hard disk. Be careful, this operation can not be undone.

It is possible to move, copy or swap Key-Samples on the Virtual Keyboard. Just hold down the SHIFT-key on your computer keyboard while dragging a Key-Sample to the desired key on the Virtual Keyboard. After releasing the mouse button there appears a new dialog window where you can specify the desired operation.

The Note/Loop/Release Editor
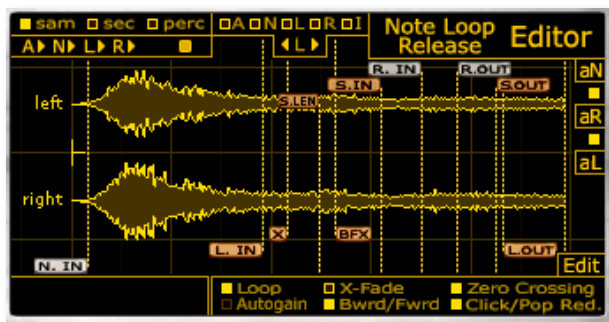
SampleRobot offers a lot of features to edit audio samples. The graphical overview enables you to easily set and move markers and loop points.

To load a sample in the editor, please do the following:

• Right-click on the desired Virtual Key containing a recorded sample.

• Or: Hold down the "**E**" key on your computer keyboard and click on the desired Virtual Key.

• The editor will open automatically. The letter **E** underneath the corresponding key indicates that this sample is opened in the editor.

• Activate the **Autoload NLR/WR** function to show the current Key-Sample's waveform temporarily in the Note/Loop/Release Editor or in WaveRobot (if open) when moving the mouse pointer over the Key-Samples on the Virtual Keyboard. Right-click on a Key-Sample to deactivate this function so that you can edit the last loaded Key-Sample.

The editor is divided into two main parts. The upper and lower bars contain all controls for scaling and editing the sample. In the central area the sample is shown as a waveform with all available markers.

WaveRobot offers another comfortable loop and markers editing window for all SampleRobot users. For more information please refer to page 162.

Tip: If you want to get a fast overview over the editor functions, choose the "Quick Help: Note/Loop/Release-Editor" entry in the Help/Info menu.

Basic Operations in the Note/Loop/Release Editor

The sample waveform can be scaled and moved for comfortable editing:

- Click and hold in the waveform and move the mouse to the left, right, up or down to move the sample waveform. If you move the sample to the leftmost position you see a display with additional sample information.

- Right-click in the sample waveform to display a centered zoom point. Hold the right mouse button and move the mouse to zoom the waveform vertically or horizontally.

- When you zoom a waveform, the right and left side of a stere sample can drift away. Press and hold the SHIFT key, click and hold the mouse button in the waveform and move the mouse up or down to graphically move both sample channels closer together. You can also create a graphical overlap of both channels to see differences and common zero-crossings in the sample channels.

- Click and hold SHIFT, press the right mouse button and move the mouse up or down to zoom the waveform only vertically.

With the operations above you can easily optimize the waveform display for your own needs. If you have lost the overview during editing press the small button next to the letter **A** (Show All) in the upper display area to switch to the general waveform overview.

The Markers

A marker is a special label for an exact time position within a sample. All markers can be edited in the same way:

- Click and hold the marker flag and move the mouse left or right to move the marker accordingly.

- Another way for positioning markers is to enter a direct value (as specified in samples, seconds or as a percentage). Right-click on the marker flag to open an input pop-up field.

- Press **N** (Note markers), **L** (Loop markers) or **R** (Release markers) on your computer keyboard and click in the waveform for positioning the corresponding markers directly.
  L + click sets the **Loop-In** marker, **L** + right-click sets the **Loop-Out** marker. **N** + click sets the **Note-In** marker, **N** + right-click sets the **Note-Out** marker. **R** + click sets the **Release-In** marker, **R** + right-click sets the **Release-Out** marker. Impossible markers positions (like Loop-In before Note-In) will be ignored automatically.

- A complete loop can be moved with all crossfade markers (Loop-In, crossfade markers, Loop-Out) when you hold SHIFT while clicking and moving the Loop-In or Loop-Out marker.

Under certain circumstances some markers can not be moved freely. A crossfade area for example can have at most the same length as the length from sample start to Loop-In.

Special function: SHIFT + right-click on the **X** or **BF-X** marker will open a pop-up window where you can select the crossfade characteristic (Linear, Sine, a couple of exponential or logarithmic curves).

The next articles describe the marker types in detail:

- **Note-In** (**N.IN**) and **Note-Out** (**N.OUT**) markers define the sample start and end. The Auto-Note (attack and release) recognition (**aN**) sets the note markers automatically during recording. You can also move the markers manually to adjust note start and end points.

- **Release-In** (**R.IN**) and **Release-Out** (**R.OUT**) markers define the release phase of a sample. The Auto-Release recognition (**aR**) sets the release markers automatically during recording. You can also move the markers manually to adjust release start and end points. Release markers are only available when the release function is activated.

- **Loop-In** (**L.IN**) and **Loop-Out** (**L.OUT**) markers define the loop area of a sample. The Autoloop recognition (**aL**) sets the loop markers automatically during recording. You can also move the markers manually to find the perfect loop start and end points. Loop markers are only available when the loop function is activated. For comfortable loop and marker editing you should use WaveRobot (see page 162).

- **X** (**Crossfade-Loop**) and **BFX** (**Crossfade Backward/ Forward**) markers define the loop transitions of a sample. The X-Fade area can be adjusted in the waveform region before the Loop-Out point. BFX

defines two crossfade areas: the area around the alternation point and the X-Fade area. These special loop markers are only available when the corresponding loop function (**X-Fade** or **Bwrd/ Fwrd**) is activated. Please refer to page 159 for more details about the loop types.

• **S.IN (Loop-Search-In)** and **S.OUT (Loop-Search-Out)** and the **S.LEN** (**Loop**-**Search-Length**) markers are used for the automatic loop recognition. The Loop-Out marker is set on base of the search markers. So all search markers influence the length and position of the resulting loop area during an Autoloop process. In general SampleRobot finds the optimal loop position and also good alternative **Loop-Search-Results**. Use different search markers settings to experiment with the Autoloop function. The search markers can also be adjusted before the recording process in the **Multi-Sample Record & Autoloop Settings** (see page 139).

Display Symbols in the Editor

A lot of display symbols and functions are available for a better sample analysis and for editing markers and loops. In the lower left corner of the editor window you can choose the displayed unit of markers positions. The unit is

displayed when you click a marker or when you move it. Three display options are available:

• **sam** (sample): Click on the small button to display all values as unit samples.

• **sec** (seconds): Click on the small button to display all values as unit seconds.

• **perc** (percentage): Click on the small button to display all values as unit percentage based on the total sample length. Hint: Crossfade values are based on the length of the loop.

There are six buttons for direct scaling of waveforms. Keep in mind that you only change the waveform display and not the sample itself or any markers positions.

• **A** (All): Click on the small button to show the complete sample in an optimized window overview.

• **N** (Note In): Click on the small button to display the complete note area from the Note-In marker to the Note-Out marker.

• **L** (Loop): Click on the small button to display the complete loop area. The arrow buttons under the loop

button are used to flip the display between the Loop-In and the Loop-Out marker.

- **R** (Release): Click on the small button to display the complete release area of the sample.

- **I** (Information): Click on the small button to display the sample information in the editor.

- ◀ **L** ▶ (centered loop markers display): Click on the left or right arrow to flip the display between the Loop-In and the Loop-Out marker. With this function you can optically control the loop points.

There are different playback buttons to start a dedicated pre-listening of

the Key-Sample. Keep in mind that you have to choose an audio interface port in **Audio Out Device**:

- **A** (Play All): Click on the small play button to playback the complete Key-Sample.

- **N** (Play from Note-In): Click on the small play button to playback the sample from the Note-In marker. When the loop function is active, the sample will be played continously. To stop the playback click on the stop button. Alternatively you can hit the space bar on

your computer keyboard. After stopping the note playback the release area (if active) will be played.

- **L** (Play Loop): Click on the small play button to playback the loop area between the loop markers. The playback stops when you click on the stop button.

- **R** (Play Release): Click on the play button to playback the release area of the sample (if active).

- **Stop**: Click on the stop button to stop the playback. When a release phase is defined, it will be played automatically after pressing the stop button. Press stop again to end the playback of the release area.

The Automatic Functions in the Editor

SampleRobot uses optimized automatic functions for editing Key-Samples:

- **aN** (Automatic Note-In): Click on this button to activate the automatic Note-In/ Note-Out markers positioning. SampleRobot places the Note-In marker to the "audible" start and the Note-Out marker to the end of the sample. If the automatic process causes strange results you can try to change the **Threshold Precision** and the **Latency** parameter in the **Multi-Sample Record & Autoloop Settings** (see page 138).

Check also the sampling level with the Peak Meter for optimal results.

- **aR** (Automatic Release): Click on this button to activate the automatic release markers positioning. The small button above the **aR** button allows you to switch the release function on and off.

- **aL** (Autoloop): Click on this button to activate the automatic loop finding function. Depending on the sample content and on the Loop-Search markers this process may take some time. A progression monitor is displaying the current state. You can cancel this process with the Escape key on your computer keyboard. The small button above **aL** allows you to switch the visibility of the Loop-Search markers on and off.

If you move any marker you can set it back to its default position by clicking on the corresponding auto-button, exceptions are the Loop-In and search markers.

The Loop Functions of the Editor

SampleRobot uses optimized functions for sample loop playback:

- **Loop**: Click on the small button to activate the loop function. Only when activated the loop markers are displayed.

- **Autogain** compensates phase problems in the crossfade area automatically. Activate this function if you notice a change in volume during crossfade. Autogain is available for all X-Fade loop types only. BF-X-Fades do not support the Autogain option.

- **X-Fade** activates the automatic crossfade loop. The function copies the sample area before the Loop-In marker and fades it gradually and in real time into the area before the Loop-Out marker. Before the Loop-Out marker there is the crossfade area where those two parts melt together. The X-Fade function creates an overlap for a smoother loop transition. The X-Fade marker (drag to the left) marks the crossover area. The graphic below shows the crossfade loop with highlighted crossfade areas. The loop runs as follows: Loop-In -> X-Fade marker -> begin of crossover with the copied sample area before Loop-In -> Loop-Out -> Loop-In and so on. Only when activated the additional crossfade marker is displayed. Please use the playback cursor in WaveRobot (see page 165) to get an impression how the X-Fade works.
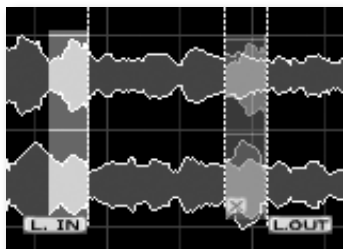
Crossfade loop with crossover area

- **Bwrd/ Fwrd (Backward/ Forward)** activates the automatic backward/ forward loop. The loop area plays forward and backward alternately. Only when activated the additional crossfade marker (X) and the BF crossfade marker (BFX) are displayed. The graphic below shows the loop process. The X-Fade marker has changed its position in contrast to the X-Fade loop. The Loop-Out marker now defines the point of loop playback turnaround. The area between BF-X and Loop-Out marker is used as a crossfade area for a smoother transition at the turnaround position. The X-Fade marker now defines the normal crossfade area (between X-Fade marker and Loop-In marker) at the end of the first cycle of the backward/ forward loop (as described under **X-Fade**). With this function you can create very interesting loops and it can also be used if

the X-Fade loop gives bad results (e.g. decaying sounds). See the following graphics for further details:
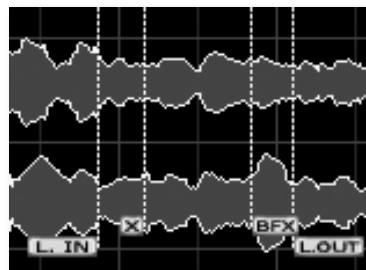
BF-X-Loop settings

Overview: Loop flow for BF-X

- The loop runs as follows: Loop-In forwards -> BF-X-Fade (with smoothening in the area of loop playback turnaround) -> backwards to X-Fade

marker -> X-Fade crossover (copied area before Loop-In fades in) backwards to Loop-In -> again forwards and so on. Hint: If you move the BF-X marker to the left, the rendered loop will be shorter because normal and reversed waveforms will overlap in the crossfade area. Please use the playback cursor in WaveRobot (see page 165) to get an impression how the BF-X-Fade works.
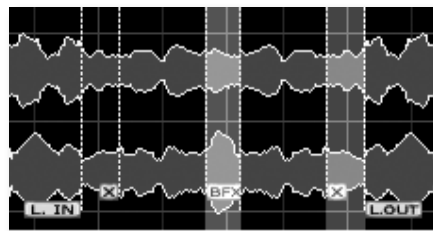
• **Zero Crossing** should be activated when you like that markers snap to waveform zero crossings (positions in the audio where the amplitude is zero) while dragging. This helps you to avoid pops and clicks. Especially when editing loops this function should always be active. If activated, the Autoloop process will work a lot faster.

• **Click/Pop Red. (Click and Pop Reduction)** can be activated to suppress typical clicks and pops during the attack and release phase of a sample. The default setting is "On".

The automatic loop functions can be set up in the **Multi-Sample Record & Autoloop Settings** before the recording. They are valid for all sample recordings in the active Multi-Sample. So you can specify all loop characteristics even before audio gets recorded.

Working with an External Sample Editor

SampleRobot offers the possibility to edit a sample in an external sample editor (e.g. Steinberg Wavelab or Cool Edit). The data path to the external application has to be specified in the SampleRobot **Options/Extras** menu -> **Preferences** -> **Misc**.

A click on the Edit button in the editor will open the external sample editor application with the corresponding sample. Here are some hints for editing samples:

• Cut, truncate and trim functions should not be used because it disturbs the Note-In and Note-Out recognition of SampleRobot.

• Normalizing and audio restoration can be done without problems. A very comfortable **Normalize** function can also be found in the Edit menu of SampleRobot. If your sample contains a loop then the automatic loop recognition of SampleRobot should be used after all external processes.

• After you have stored a sample with an external sample editor you have to refresh it in SampleRobot by right-clicking the corresponding Key-Sample on the Virtual Keyboard.

WaveRobot

SKYLIFE WaveRobot is a stand-alone application for professional loop editing of audio files. It is directly integrated in SampleRobot.

WaveRobot can automatically recognize optimum loop points and alternatives within a wave file. Due to the fact that WaveRobot´s graphics engine is based on videogame technology all editing procedures can be done extremly fast. WaveRobot offers a lot of directly accessible screen views and stepless waveform zoom levels. In conjunction with SampleRobot WaveRobot is capable to do amazing and helpful things like finding perfect loops for a couple of wave files simultaneously.

WaveRobot's functionality is partly similar to the Note/Loop/Release Editor. It offers even more powerful features for working with samples. All features and functions of WaveRobot will be described in detail on the following pages.
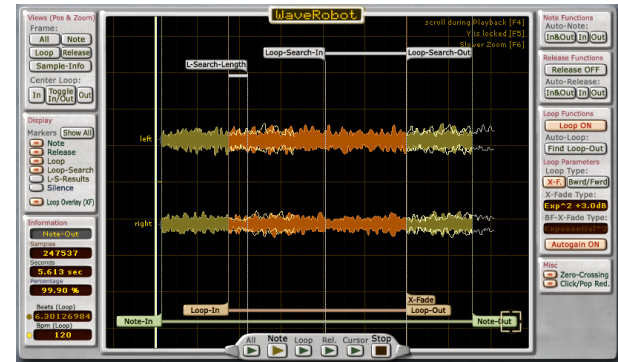
To open a sample in WaveRobot, please do the following:

• Right-click on the desired Virtual Key containing a recorded sample or hold down the key **E** on your computer keyboard and click on the desired Virtual Key to load a sample into the Note/Loop/Release Editor.

• Open WaveRobot by clicking on the **WaveRobot** button in the Multi-purpose Settings or by pressing the key **W** on your computer keyboard.

• The WaveRobot window will open with the dedicated Key-Sample loaded.

- Click on the windows-close symbol of the WaveRobot window or press the key **W** on your computer keyboard again to close WaveRobot. All settings will be automatically stored in the Note/Loop/Release Editor in SampleRobot. **Important hint: Both editors refer to the same files and settings**. All changes done in the Note/Loop/Release Editor will also affect the settings in Waverobot and vice versa. It is not possible to display the Key-Sample simultaneously in the Note/Loop/Release Editor and in WaveRobot.

WaveRobot is divided in two main parts. The left and right sections contain all controls for scaling and for markers and loop editing. In the central area the sample is displayed as a waveform containing all available markers (depending on the view options).

You can scale the WaveRobot window ro your needs:

- Click on the right, left, upper or lower window side and drag it to enlarge the window along x-axis or along y-axis.

- Click on one of the four window edges and drag it to enlarge the window along x-axis and along y-axis.

- Press the function key **F11** on your computer keyboard to toogle thru different WaveRobot window sizes.

Basic Operations in WaveRobot

The sample waveform in WaveRobot can be scaled and moved for comfortable editing:

- Click in the waveform and drag it to the left, right, up or down if you would like to move the whole waveform. If you move the sample to the leftmost position you see a display with additional sample information. With the function **Lock Key-Sample to middle of window (F5)** in WaveRobot's View/Display menu you can prevent vertical drifting of the waveform while editing.

- Right-click in the sample waveform to display a centered zoom point. Hold the right mouse button and move the mouse to zoom the waveform vertically or horizontally.

- When you zoom a waveform, the right and left side of a stereo sample can drift away. Press and hold the SHIFT key, click and move the mouse up or down to graphically move both sample channels closer together. You can also create a graphical overlap of both channels to see differences and common zero-crossings in the sample channels.

- Click and hold SHIFT, press the right mouse button and move the mouse up or down to zoom the waveform only vertically.

With the operations above you can easily optimize the waveform display for your own needs. If you have lost the overview during editing press the button **All** in the **Views (Pos & Zoom)** section or press **[ALT+A]** to reset the view and to display the whole waveform.

The Markers in WaveRobot

A marker is a special label for an exact time position within a sample. All markers can be edited the same way:

- As soon as you move the mouse pointer next to a marker flag or next to the play cursor the mouse pointer will be surrounded by cross wires and you can see time information about the dedicated marker in the **Information** display on the left side of the WaveRobot window.

- Click and hold a marker flag and move the mouse left or right to move the marker accordingly.

- Another way to set markers is entering a direct value (as desired in samples, seconds or as a percentage). Right-click on the marker flag to open an input pop-up field.

- Press **N** (Note markers), **L** (Loop markers) or **R** (Release markers) on your computer keyboard and click in the waveform for positioning the corresponding markers directly. **N** + click sets the **Note-In** marker, **N** + right-click sets the **Note-Out** marker. **L** + click sets the **Loop-In** marker, **L** + right-click sets the **Loop-Out** marker. **R** + click sets the **Release-In** marker, **R** + right-click sets the **Release-Out** marker. Impossible markers positions (like Loop-In before Note-In) will be ignored automatically.

- A complete loop can be moved with all crossfade markers (Loop-In, crossfade markers, Loop-Out) when you hold SHIFT while clicking and moving the Loop-In or Loop-Out marker.

Under certain circumstances some markers can not be moved freely. A crossfade area for example can have at most the same length as the length from sample start to Loop-In.

Special function: SHIFT + right-click on the **X** or **BF-X** marker will open a pop-up window where you can select the crossfade characteristic (Linear, Sine, a couple of exponential or logarithmic curves).

The next points describe the marker types in detail:

- The **Cursor** marks a position within the sample. Its position can be freely defined by moving the cursor to the left or to the rigth. The cursor is used as a start point for audio playback.

- **Note-In** and **Note-Out** markers define the sample start and end. The Auto-Note (attack and release) recognition (**Auto-Note** and **Auto-Release**) sets the note markers automatically during recording. You can also move the markers manually to adjust note start and end points.

- **Release-In** and **Release-Out** markers define the release area of a sample. The **Auto-Release** recognition sets these markers automatically during recording. You can also move the markers manually to adjust release start and end points. The release markers are only available when **Release ON** is activated.

- **Loop-In** and **Loop-Out** markers define the loop area of a sample. The **Autoloop** recognition of WaveRobot sets the markers automatically during recording. You can also move the markers manually to find the perfect loop start and end points. Loop markers are only available when the **Loop ON** function is activated.

- **X-Fade** (**Crossfade-Loop**) and **BF-X-Fade** (**Crossfade Backward-Forward**) markers define the loop transitions of a sample. The X-Fade area can be adjusted in the waveform region before the Loop-Out point. BFX defines two crossfade areas: the area around the alternation point and the X-Fade area. These special loop markers are only available when the corresponding loop function (**X-F.** or **Bwrd/Fwrd**) is activated. Tip: To understand the complex loop functions of WaveRobot it is important to use the Play cursor from time to time. It visualizes the audio playback position and furthermore it gives a visual feedback in all crossfade areas since the cursor can fade the color intensity during playback. Try different loop types and crossfades. The cursor always informs you what area is played at that moment.

- **Loop-Search-In** and **Loop-Search-Out** and the **Loop-Search-Length** (**L-Search-Length**) markers are used for the automatic loop recognition and have influence on the length and positions of the loop area. WaveRobot finds the optimal loop position and duration. This search function can be controlled by moving the search markers. **Loop-Search-In** defines the starting position for the Autoloop search and **Loop-Search-Out** defines the end position for the search process. **Loop-Search-Length** defines a search pattern length that is

used for the Autoloop search process. This search pattern is defined by the Loop-In marker to the left side and the Loop-Search-Length marker to the right side. WaveRobot searches a similar area in the rest of the waveform (from Loop-Search-In marker to Loop-Search-Out marker) for a smooth loop transition. The Loop-Search-Length value can be entered as a percentage of the loop length. Higher values give a better result but cause also a longer loop search time. This parameter is identical to the Loop-Search-Length marker. In general WaveRobot finds the optimal loop position and also good alternative **Loop-Search-Results**. Use different search markers settings to experiment with the Autoloop function. Together with SampleRobot the Loop-Search-In and Loop-Search-Out marker are identical to the values in the **Multi-Sample Record & Autoloop Settings**. Please read also the corresponding chapter on page 137. More tips and tricks for loop search can be found on page 212.

• **Loop-Search-Results** markers can´t be moved. They mark alternative positions for the Loop-Out marker after an Autoloop process. Loop-Search-Results are displayed as double arrows that mark the exact alternative loop position in the waveform. With the function **Move Loop-Out to next Loop-Search-Result (CTRL+L)** in the WaveRobot Edit menu you can set the

Loop-Out marker directly to the next Loop-Search-Result. By pressing CTRL+L several times you can toggle between all alternatives. Try this function if the standard result of the Autoloop process does not meet your requirements.
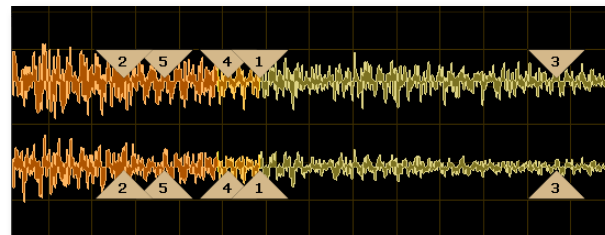
• **Silence** markers define an area within the sample where only silence or background noise is located. **Auto-Note-In** uses this area for its attack-transition search to specify where the usable sample material starts. The **Silence** markers are located at the beginning of a sample. The Note-In search starts at the **Silence-Out** marker. Since WaveRobot does an automatic silence markers adjustment, under normal circumstances it is recommended not to move silence markers. If you have recorded a sample that contains some background noise and/or clicks it might make sense to move the silence markers manually to let

WaveRobot know where the silence is and how loud the silence is. Then try the **Auto-Note** or **Auto-Note for all** (see page 175) function to adjust Note-In accordingly.

Display Symbols in WaveRobot

A lot of display symbols and functions are available in the left area of the WaveRobot window for a better sample analysis and for editing markers and loops.

The **Views (Pos & Zoom)** section offers buttons for scaling and centering the waveform or parts of it to the current window size. The sample data and markers positions won´t be affected since this function is only a display option.

- **All**: Click on this button to display the complete sample in an optimized window overview.

- **Note**: Click on this button to display the complete note area from the Note-In marker to the Note-Out marker.

- **Loop**: Click on this button to display the complete loop area. The **In** and **Out** buttons (in the **Center Loop**
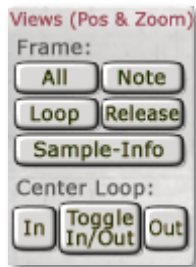
area) are used to flip the display between the Loop-In and the Loop-Out marker. When using this function you can specify if you want to see the waveform automatically horizontally scaled or not (see function **Set x-Zoom when toggling** on page 178).

- **Release**: Click on this button to display the complet release area of the sample.

- **Sample-Info**: Click on this button to display the sample information in the WaveRobot's main window.

- **Center Loop** (centered loop marker display): Click on the **In** or **Out** button to flip the display between the Loop-In and the Loop-Out marker. This function offers an optical c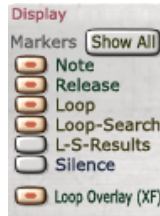ontrol of the loop points. Click on the **Toggle In/Out** button to flip the views alternately between the Loop-In and the Loop-Out marker. When using this function you can specify if you want to see the waveform automatically horizontally scaled or not (see function **Set x-Zoom when toggling** on page 178).

The **Display** section offers several buttons to show or hide markers. The sample data, markers positions and the activation status won´t affected since this function is only a display option.

- **Show All**: Click on this button to show all available markers. If you would like to **Hide All** markers please press F2 on the computer keyboard.

- **Note**: Click on this button to show (button is red) or hide (button is grey) the note markers.

- **Release**: Click on this button to show (button is red) or hide (button is grey) the release markers.

- **Loop**: Click on this button to show (button is red) or hide (button is grey) the loop markers. These markers will be displayed only when **Loop On** is activated.

- **Loop-Search**: Click on this button to show (button is red) or hide (button is grey) the loop search markers. These markers will be displayed only when **Loop On** is activated.

- **L-S-Results (Loop-Search-Results)**: Click on this button to show (button is red) or hide (button is grey) the results of the automatic loop. These markers will be displayed only when **Loop On** is activated.

- **Silence**: Click on this button to show (button is red) or hide (button is grey) the Silence markers.

- **Loop Overlay (XF)**: Click on this button to activate (button is red) or deactivate (button is grey) the Loop Overlay function. Wouldn't it be great to see how the regions around the loop points in a sample match each other when moving loop markers? WaveRobot 3 can overlay the dedicated regions in all zoom settings. If you do not trust SampleRobot's automatic loop search (☺) or if you prefer to do loop editing manually, this function is perfect for you. If you move the loop markers you will recognize that the overlay area also moves. If the original waveform matches the overlayed waveform while moving loop points, the loop result could be perfect. You can use the Loop Overlay function within all zoom settings and even during playback. Keep in mind: Loop Overlay is only available when using the crossfade loop type (X-F.).

The **Information** section displays information about markers positions. If you move the mouse pointer over a marker flag (cross wires will appear), the corresponding information will be displayed. The values in the information displays are changed as soon as you move a marker or as soon as you point to another marker. Keep in mind that you can´t edit data in the Information display except the fields Beats and Bpm.

• **Information** displays the type of the corresponding marker.

• **Samples** displays all values as the total number of samples.

• **Seconds** displays all values in seconds.

• **Percentage** displays all values in percent based on the total sample length. Hint: Crossfade percentages are based on the length of the loop.

• **Beats (Loop)** shows the number of beats to a given tempo (see **Bpm** below) when Loop ON is active. To find out the tempo of a loop you have to enter the number of the beats manually. Activate the Beats display by clicking on the yellow button left to it. After entering a value you can see the exact tempo in the Bpm display. If you now activate and lock **Bpm** (click on the yellow button next to Bpm), in the Beats display you can read off the number of beats between the Loop-In and Loop-Out markers even when moving the markers. This lets you easily create loops with different beat lengths.

• **Bpm (Loop)** shows the tempo of a loop in Bpm (Beats per Minute). To get the exact tempo information of a loop you have to enter the beats of a loop manually (see above). When you want to work with a defined beat number, for example 4, you have to enter the corresponding value in the Beats display. After that activate the **Bpm** button again to lock the value for Beats. Now, if you move a loop marker you will see that the tempo information is changing according to the beat settings and the Loop-In and Loop-Out markers.

Hint: The tempo and beat values are based on the sample positions of your loop markers. This function is helpful when working with rhythmic audio files. WaveRobot

offers no time-stretching function as found in audio sequencer like Cubase or Ableton Live.

In the lower area underneath the waveform display you find different playback buttons to start pre-listening to different regions of the Key-Sample. Keep in mind that you have to define an audio interface in the **Preferences** window, which can be found in the Options/Extra menu.


- **All**: Click on the All play button to playback the complete Key-Sample. All markers will be ignored.

- **Note**: Click on the Note play button to playback the sample from the Note-In marker. When the loop function is active, the playback of the loop area will be repeated until you push **Stop**. A faster alternative to stop/ start the playback is to hit the space bar on your computer keyboard. After stopping the playback of the release area (if used) will start.

- **Loop**: Click on the Loop play button to playback the loop area between the loop markers. The playback of the loop area will be repeated until you push the **Stop** button.

- **Rel. (Release)**: Click on the Release button to playback only the release phase of the sample.

- **Cursor**: Click on the Cursor button to playback the sample from the current cursor position.

- **Stop**: Click on the stop button to stop the playback. When **Release ON** is active (see page 171) the release phase will start playing automatically after pressing the **Stop** button. Press **Stop** again to end the playback of the release area.

Automatic Functions of WaveRobot

WaveRobot offers automatic functions for editing markers in Key-Samples. These functions can be accessed via the right section of the WaveRobot window. Normally SampleRobot uses this functions automatically but you can also execute them manually in WaveRobot.

The **Note Functions** section offers different functions regarding the note markers:
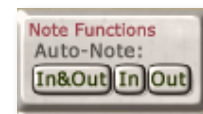
- **Auto-Note In & Out**: Click on this button to activate the automatic Note-In/ Note-Out markers positioning. WaveRobot places the Note-In/ Note-Out markers to the "audible" start/ end of the sample. If the automatic process causes unwanted

results you can try to change the **Threshold Precision In** and the **Threshold Precision Out** parameter in the **Preferences**. The Note markers allow you to cut unwanted silence at the beginning and at the end of your audio file (Silence Truncate). For more information about the Threshold parameters please read also page 138.

• **Auto-Note In**: Click on this button to set only the Note-In marker automatically to the "audible" start of the sample.

• **Auto-Note Out**: Click on this button to set only the Note-Out marker automatically to the "audible" end of the sample.

When **Click/Pop-Reduction** is active, SampleRobot will render "micro-fades" at the beginnings and ends into all exported samples.

Tip: You can use the "**Auto-Note/ Auto-Loop for all**" function (Edit menu) to start the automatical Note-In and Note-Out recognition for all Key-Samples of a Project or Multi-Sample. Please read also page 175.

The **Release Functions** section offers different functions regarding the release markers:
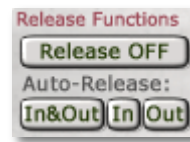
• **Release ON/OFF**: Click on this button to activate or deactivate the Release-Sample functionality (used for release trigger in a software sampler). As an alternative you can activate the release function by clicking one of the **Auto-Release** buttons.

• **Auto-Release In & Out**: Click on this button to set the Release-In und Release-Out markers automatically to the best position.

• **Auto-Release In**: Click on this button to set only the Release-In marker.

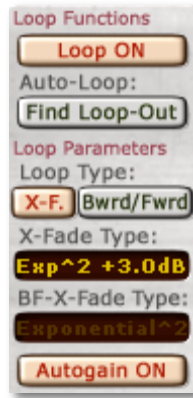• **Auto-Release Out**: Click on this button to set only the Release-Out marker.

When **Click/Pop-Reduction** is active, SampleRobot will render "micro-fades" at the beginnings and ends into all exported Release-Samples.

Loop Functions of WaveRobot

WaveRobot uses optimized functions for editing and finding loop points in a Key-Sample.

The **Loop Functions** section offers different functions regarding loop editing:

- **Loop ON/OFF**: Click on this button to activate the loop function (button is red). Only when activated, the loop markers and the crossfade markers are displayed.

- **Auto-Loop: Find Loop-Out** helps you to find ideal loop points in a sample. Click on this button to set the Loop-Out marker automatically to a good loop position. Please note that the loop search algorithm uses the following markers to calculate the results: **Loop-In**, **Loop-Search-In**, **Loop-Search-Out** and **Loop-Search-Length**. Changing the position of one or more of these markers probably causes different results for the Autoloop process. Try this if the result of the Autoloop function does not meet your needs. Check also the **L-S-Results** for alternative loop points. The Autoloop function can take some time to find an ideal Loop-Out point, e.g. higher values for **Loop-Search-Length** cause longer calculation times. A progress bar informs you about that. Click on the **Escape** key of your computer keyboard to interrupt the Autoloop process. For more tips and tricks about loop editing please read page 212.

- **Loop Type X-F. (Crossfade)** activates the automatic crossfade loop. The function copies the sample area before the Loop-In marker and fades it gradually and in real time into the area before the Loop-Out marker. Before the Loop-Out marker there is the crossfade area where those two parts melt together. The X-Fade function creates an overlap for a smoother loop transition. The X-Fade marker (drag to the left) marks the crossover area before the Loop-Out. The graphic below shows the crossfade loop with highlighted crossfade areas. The loop runs as follows: Loop-In -> X-Fade marker -> begin of crossover with the copied Crossfade loop with crossover areasample area before Loop-In -> Loop-Out -> Loop-In and so on. Only when activated the additional crossfade marker is displayed. Please use the playback cursor (see page 165) to get an impression how the X-Fade works. The cursor visualizes the audio playback position and furthermore it gives a visual feedback in all crossfade

areas since the cursor can fade the color intensity during playback.
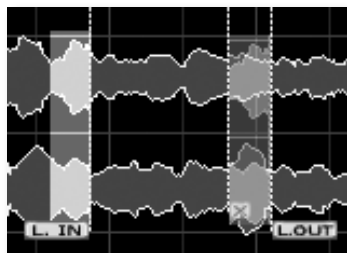
Crossfade loop with crossover area

- **Loop Type Bwrd/Fwrd (Backward/ Forward)** activates the automatic backward/forward loop. The loop area between Loop-In and Loop-Out plays forward and backward alternately. Only with activated Bwrd/Fwrd function the additional crossfade marker (X-Fade) and the BF crossfade marker (BF-X-Fade) are displayed. The graphics below show the loop process. The X-Fade marker has changed its position in contrast to the X-Fade loop. The Loop-Outmarker now defines the point of loop playback turnaround. The area between BF-X-Fade and Loop-Out marker is used as a crossfade area for a smoother transition at the turnaround position. The X-Fade marker now defines the normal crossfade area (between X-Fade marker and Loop-In marker) at the end of the first cycle of the backward/forward loop (as described under X-Fade). With this function you can create very interesting loops and it can also be used if the X-Fade loop gives bad results (e.g. decaying sounds). This loop type is completely unique and it is important that you understand how it works. Please use the playback cursor (see page 165) to get an impression how the BF-X-Fade works. The cursor visualizes the audio playback position and furthermore itgives a visual feedback in all crossfade areas since the cursor can fade the color intensity during playback.
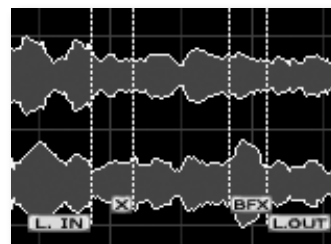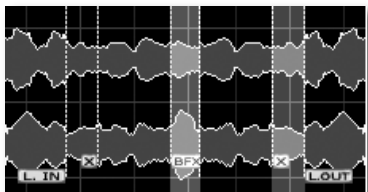

BF-X-Loop settings

Overview: Loop flow for BF-X

The loop runs as follows: Loop-In forwards -> BF-X-Fade (with smoothening in the area of loop playback turnaround) -> backwards to X-Fade marker -> X-Fade crossover (copied area before Loop-In fades in) backwards to Loop-In -> again forwards and so on. Hint: If you move the BF-X-Fade marker to the left, the rendered loop will be shorter because normal and reversed waveforms will overlap in the crossfade area.

- **X-Fade Type**: Click on the display to select the crossfade curve characteristic for the X-Fade loop (Linear, Sinus, a couple of exponential or logarithmic curves).

- **BF-X-Fade Type**: Click on the display to select the crossfade curve characteristic for the BF-X-Fade loop (Linear, Sinus, a couple of exponential or logarithmic curves).

- **Autogain ON/OFF**: Click on this button to activate the automatic gain adaption for all crossfade characteristics (only X-Fade function). Autogain is a unique function that offers an automatic volume equilibration in the crossfade area (e.g. necessary if phase eliminations in the crossfade area occur) to get smoother transitions without audible volume changes.

Tip: If you want to execute an automatic Loop-In and Loop-Out recognition for a couple of Key-Samples in a Project or a Multi-Sample at the same time please use the **Auto-Note/Auto-Loop for all** function which can be found in the WaveRobot Edit menu. Please read also page 175. Under certain circumstances the results of the automatic functions can be inappropriate. In this case you should set the markers manually

The **Misc** section contains two activation buttons that affect the way WaveRobot handles marker positions.
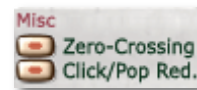
- **Zero Crossing** should be activated when you like that markers snap to waveform zero crossings (positions in the audio where the amplitude is zero) while dragging. This helps you to avoid pops and clicks. Especially when editing loops this function should always be

active. If activated the Autoloop process will work a lot faster.

- **Click/Pop Red. (Click and Pop Reduction)** can be activated to suppress typical clicks and pops during the attack and release phase of a sample. The default setting is "On".

The Menus of WaveRobot

Tip: Keep in mind that all important menu functions can also be accessed via keyboard shortcuts. The corresponding shortcut is displayed next to the menu function´s entry. Take use of the shortcuts to work more efficiently with WaveRobot.

File

- **Render Key-Sample to Disk [Ctrl+R]** saves the current Key-Sample with all loop information as a rendered WAV file on your hard disk. Crossfade and Backward/Forward loops will be rendered into the audio file to make it compatible with popular audio software. If you are using WaveRobot in conjunction with SampleRobot you normally want to export all samples of a Project at once.

- **Render Key-Sample to Disk (loop only) [Ctrl+Shift+R]** saves only the loop area including the crossfade(s) and

including the loop points of the current Key-Sample as rendered WAV file to your hard disk. This function is useful if you would like to use the file in a loop-based application like Ableton's Live.

- **Close WaveRobot** (shortcut: **W**) closes the WaveRobot application. All changes will automatically reloaded in the Note/Loop/Release Editor of SampleRobot.

Edit

- **Auto-Note** offers the same functions as the buttons in the **Note Functions** section (see page 171).

- **Auto-Loop** offers the same function as the button **Find Loop-Out** in the **Loop Functions** section (see page 172).

- **Auto-Release** offers the same functions as the buttons in the **Release Functions** section (see page 171).

- With **Auto-Note/Auto-Loop for all** you can apply loop marker settings and/ or note marker settings from one Key-Sample to all other selected Key-Samples in a Multi-Sample or in a Project. This is a very powerful function e.g. to apply similar loops to a bunch of Key-Samples at the same time. After choosing this function, a dialogue box opens:

- **Auto-Note (using the Multi-Sample Record Settings)** moves the Note-In markers for all Key-Samples exept the loaded one based on the adjustments in the Multi-Sample Record Settings.

- **Set all Silence Markers equal the loaded Key-Sample's Silence Markers** moves all silence markers in all Key-Samples to the same absolute sample positions as the loaded Key-Sample's silence markers. Use this function when the automatic transient recognition (Note-In, Note-Out) does not work precisely for determining the attack-transient of a sample. This could happen if there are background noises or some other volume peaks recorded before the beginning of the sample. With this function you can exemplarily define an area in a Key-Sample that contains the background noise or other volume peaks. SampleRobot will treat the area between the silence markers as "silence". If you execute the function "**Auto-Note for all**" after that, SampleRobot will then search again all Key-Samples for transients that have got higher volumes than the maximal volume found between the silence markers. In other words you can specify a threshold with the silence markers. The maximum peak between the silence markers is the

maximum background noise level. The first peak found in the sample that is higher than that maximum silence level will be chosen by SampleRobot as the Note-In position. Please read also page 166.

- **Make all Note Lengths equal the loaded Key-Sample´s Note Length** sets all Note-Out markers of all Key-Samples so that each note length is equal the current Key-Sample. E.g. this function is useful if you have generated different sample lengths during the semi-automatic recording process and would like to shorten several samples at the same time. Please note that only markers are affected by this operation, no sample data.

- With the **Auto-Loop** check-box you can choose, whether the Loop-Search-Markers of the current Key-Sample (**use the loaded Key-Samples´s Loop-Search-Markers**) will be used for the **Auto-Loop for all** operation or if WaveRobot should use the settings made in the Multi-Sample Record Settings (**use Multi-Sample Record Settings**). If you did manual loop editing in WaveRobot for the current Key-Sample, including working with the loop-search markers and you would like to apply your manually found loop to all other Key-Samples,

than this function is the ideal tool. In this case you should select the option **use the loaded Key-Samples´s Loop-Search-Markers**.

- **Turn Release off** sets the release Function to Release OFF for all Key-Samples in one go. In this case no Release-Samples will be genereated during export.

- **Process selected Key-Samples in:** With this checkbox you can decide, if you want to apply the settings to all Key-Samples of the current Project (**Selected Project**) or to all Key-Samples of the selected Multi-Samples (**Selected Multi-Sample**).

Press the Start button to initiate the process.

Please note that you can abort this function during processing at any time by pressing "ESC" on your computer keyboard. This does not affect the currently loaded Key-Sample in WaveRobot.

- **Move Loop-Out to next Loop-Search-Result** moves the Loop-Out marker to the next Loop-Search-Result. Please refer also on page 166.

- **Edit with external Sample Editor** offers the possibility to edit a sample in an external sample editor (e.g. Steinberg Wavelab or Cool Edit). You can define this

sample editor in the SampleRobot Preferences. For more information please refer to page 199.

Play

- **All (ignore Markers)** starts the playback of the complete Key-Sample while ignoring loop and other markers.

- **Note [Space]** starts the playback of the Key-Sample from the Note-In marker position.

- **Loop [Shift+Space]** starts the playback of the loop area between the loop markers.

- **Release** starts the playback of the release of the Key-Sample.

- **From Cursor [Enter]** starts the playback of the Key-Sample from the current cursor position.

- **From Cursor (ignore Markers)** starts the playback of the Key-Sample from the current cursor position while ignoring all marker settings.

- **Stop Playback [Space/Enter]** stops the playback of the Key-Sample. When a release phase is defined, it will start playing automatically after selecting the stop functions. Press the Stop button or select this function again to end the playback of the release phase.

Tip: All zooming and scaling functions and also marker editing can be used during sample playback.

View / Display

With the functions in this menu you can change the window size, zooming, scaling, markers visibility and the general appearance of WaveRobot.

- **WaveRobot´s Window** allows you to change the window size of WaveRobot. You can choose between **Default [Shift+F11]**, **Panorama [Ctrl+F11]** and **Toggle Default/Panorama/User [F11 or Tab]**. With the F11 key ort he Tab key on your computer keyboard you can toggle between these different views.

- **Frame Area** allows you to change the waveform view. This function is comparable to the functions in the **Views (Pos & Zoom)** section (see page 167). You can choose between the complete overview of the sample (**All [Alt+A]**), the area between the note markers (**Note [Alt+N]**), the loop area (**Loop [Alt+L]**), the release phase (**Release [Alt+R]**) and the sample information (**Sample-Info [Alt+I]**).

- **Center Marker** is a function to flip the waveform display between the **Loop-In** and the **Loop-Out** marker. This function offers an optical control of the loop points. Select **Toggle In/Out ([Alt+T])** to flip the

views alternately between the Loop-In and the Loop-Out marker. The waveform overview will be aligned exactly so that the dedicated loop marker is displayed at the center of the window. This is perfect for an optical comparision between Loop-In and Loop-Out regions. When using this function you can specify if you want to see the waveform automatically horizontally scaled or not. This can be achieved with the option **Set x-Zoom when toggling**. When activated an automatic zoom setting will be used for the horizontal scale. Deactivate this option if you want to display loop regions with customized zoom settings while toggling Loop-In and Loop-Out.

- **Show Markers** shows/ hides all available marker groups in the waveform display. **All** shows all available markers, **None [F2]** hides all markers. Please note that the **Show Markers** functions depend on the activation status for **Loop ON/OFF** (see page 172) and for **Release ON/OFF** (see page 171). Only markers for active functions will be displayed. The additional menu entries under Show Markers enable you to show/hide certain markers. These functions are comparable to the buttons in the **Display** section. Please read also page 168.

- **Draw Grid** shows or hides the background grid. We recommend activating this function because it helps you to keep the orientation while zooming waveforms.

- **Draw Connection between Markers** connects/disconnects a pair of associated markers (e.g. Loop-In and Loop-Out) graphically.

- **Colorize Note/Loop/Release Areas** is an option to colorize the areas betweenassociated markers (e.g. Note-In and Note-Out) for a better overview.

- **Autoscroll during Playback [F4]** scrolls the waveform during audio playback, so that the plackback cursor is always visible in the waveform window. When editing a waveform we recommend deactivating this function. Therefore you can use the shortcut F4 on your computer keyboard.

- With the function **Lock Key-Sample to middle of window [F5]** you can preventvertical drifting of the waveform while editing and zooming.

- **Slower Zoom [F6]** decreases the zoom factor allowing you to zoom more precisely.

Options/Extras

Here you can specify additional program settings

- **Preferences [ALT+P]** opens a window with a couple of basic settings. These settings will be saved automatically when you quit WaveRobot. If you are using WaveRobot in conjuction with SampleRobot you will also find all preference parameters in SampleRobot's **Preferences**. Please refer to page 198. You can specify individual precision thresholds in WaveRobot for the note recognition process (deactivate **Use the Values of SampleRobot's Record Settings of the selected Multi-Sample**). All other settings are identical to the **Preferences**' settings in SampleRobot. If you make changes in WaveRobot the preferences in SampleRobot will be updated and vice versa.
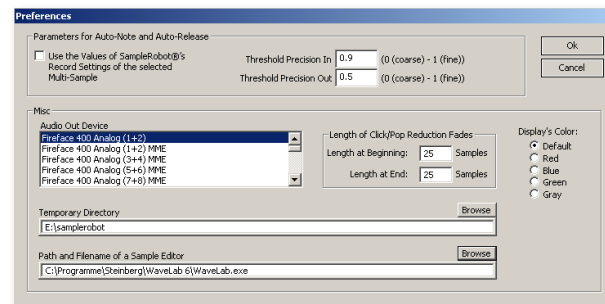
Help

Here you find additional information about WaveRobot.

• **About WaveRobot** opens a window with information about the WaveRobot application.

• **Quick Help: Key Commands** opens a window with a list of all key commands in WaveRobot. Additional key commands are shown in the menus right next to the corresponding functions.

• **Internet Links** can be used to connect you to websites and additional content regarding WaveRobot. You need an internet connection on your computer for accessing the links.

Program Menus in SampleRobot

Tip: Keep in mind that all important menu functions can also be accessed via keyboard shortcuts. The corresponding shortcut is displayed next to the menu function's entry. Take use of the shortcuts to work more efficiently with SampleRobot.

File

The file menu contains all menu entries regarding storing and opening SampleRobot data:

• **Open Project [Ctrl+O]** opens a window for loading SampleRobot Projects.

• **Save selected Project [Ctrl+S]** opens a window for saving the selected Project.

• **Save selected Project as [Shift+Ctrl+S]** opens a window for saving the selected Project with another name or to another location.

• **Save all Projects [Ctrl+Alt+S]** opens a window for saving all Projects simultaneously as single Projects.

• **Preset Manager [Ctrl+P]** contains and manages over 80 basic presets for different sampling situations and different instruments. This helps to start quickly without having to know SampleRobot in detail. You can create your own Presets by saving Projects to the Presets folder. A description of the selected preset can be found in the field **Description**. Select your desired MIDI settings (**MIDI Out Device**, **Channel** and **Program**) and audio settings (**Audio In Device** und **Audio Format**), before you click on the **Load selected Project** button. You can delete unwanted presets with the **Delete selected Preset** button. Be careful: deleted presets can not be restored. All presets are located in the folder "Presets" on your SampleRobot installation hard disk.

Hint: (Not only) beginners should work frequently with the **Preset Manager** to find out how SampleRobot works. You should also create your own presets.
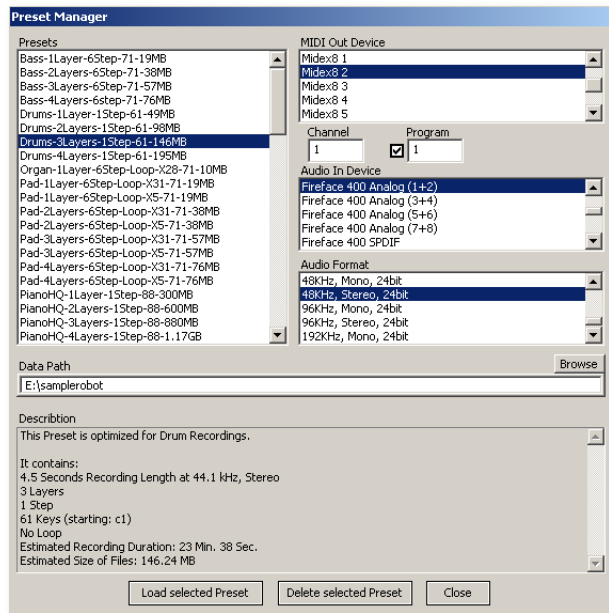
- The **Project Wizard [Strg+W]** allows you to create new Projects easily. It guides you step by step through all relevant parameters. Use the **Next** and **Back** buttons to navigate between the different pages for the sampling settings. **Cancel** closes the Project Wizard. You can activate/deactivate the Project Wizard at startup in the Preferences dialogue (see page 199).
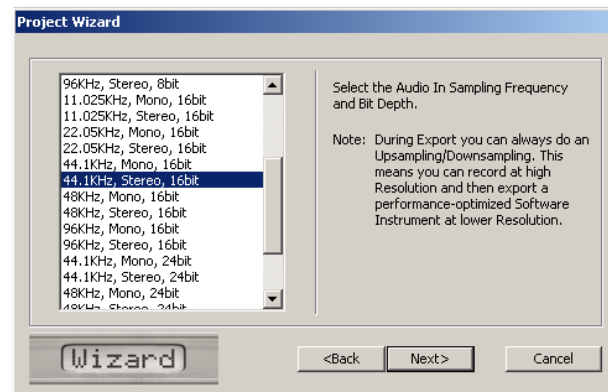
Overview of the Project Wizard's pages:

- Project's Name
- Project's Datapath

- Available Audio In Device

- Sampling Frequency and Bit Depth

- Recording (Automatic or Semi-automatic)

- Available MIDI Out Devices

- MIDI Channel and MIDI Program

- Sampling Range

- Velocity Layers and Key-Step

- Note Length and Release Length

- Auto-Loop On or OFF

- Auto-Loop Settings 1 (Simple, Intermediate, Complex)

- Auto-Loop Settings 2 (Starting Point of Loop)

- Finish

- Information window

- Start Recording

For more information about the different pages of the Project Wizard please refer to our Ultra Quick Start on page 129.

- **Save selected Project as Preset** saves the selected Project as a preset. You can name the preset in the dialog box. **Get Name from project** will rename the Preset to the Project's name. **Default Description** will add information in the description field about how many layers are involved and about the time and size estimation. Additionally you can enter information about the preset manually.

- **Create Projects from Soundnames** opens a window to import a text tfile with sound names. This function is useful if you like to sample a whole sound bank from your external sound source. You can let your Projects be named automatically based on the sound names in a text file. Therefore the currently selected Project will be used as a copy template to create the desired new Projects with the right sound names and the corresponding MIDI program change messages. Use this function as follows:

  - Create a standard text file with the sound program names of your sound module that should be recorded. Most manufacturers offer text files with all factory preset names on their websites. Alternatively you can copy the names from a sound data administration application or write them manually into a file.

- Click on the File meu -> Create Projects from Soundnames
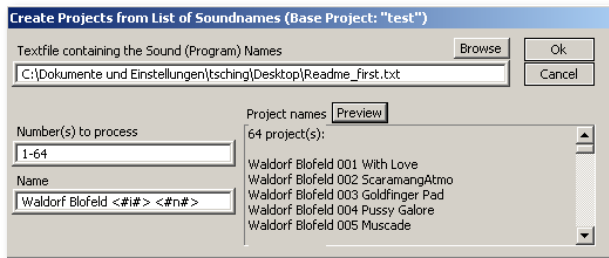
- Choose the corresponding data path of the text file by clicking on the **Browse** button.

- The **Preview** button generates a preview of the Project names based on the selected text file.

- In the field **Number(s) to process** you can enter the program change numbers for the Projects you want create. Pay attention on the correct spelling, e.g. 1-64. The default setting is 1-128. You can also enter a row of numbers, divided by commas, like this: 1-13, 18-21, 47. Keep in mind that the text file must contain all sound names.

- In the **Name** field you can specify the notation and the numbering of the Project names. The default is

"NonamePrj <#i#> <#n#>". The name "NonamePrj" is a prefix and will be used for every imported text file name. Here you should enter the name of your sound generator. <#i#> indicates the corresponding sound number from 1 to 128 (based on the values in the field **Number(s) to process**). <#n#> is the name in the textfile.

- An Example: Import a text file containing three soundnames like *With Love*, *ScaramangAtmo* and *Goldfinger Pad* and enter "1-3" in the **Number(s) to process** field. In the **Name** field enter the following text string "Waldorf Blofeld <#i#> <#n#>. The preview creates the following list:

3 Project(s)
Waldorf Blofeld 001 With Love
Waldorf Blofeld 002 ScaramagAtmo
Waldorf Blofeld 003 Goldfinger Pad

- When you finally click the **OK** button, SampleRobot creates the corresponding named Projects automatically. The dedicated MIDI program change messages are also included in each Project.

- **Recent Projects [Shift+Ctrl+O]** shows the latest loaded projects. The shortcut directly loads the last used Project.

- **Quit** closes the SampleRobot application. SampleRobot doesn´t like this command. ☺

Edit

Here you find the edit functions for recorded samples.

- **Copy Selected Multi-Sample (except Key-Samples) [Ctrl+C]** copies the selected Multi-Sample without the Key-Samples to the clipboard.

- **Copy Selected Multi-Sample [Shift+Ctrl+C]** copies the selected Multi-Sample including all Key-Samples to the clipboard.

- **Paste from copied Multi-Sample** pastes the clip-board data into the selected Multi-Sample. It is possible to select different parameter groups for the paste process (like **Only the Record Settings** or **Only the MIDI and Audio Settings**). The following options are available: **All (except Key-Samples) [Ctrl+V]** pastes all settings except the Key-Samples into the selected Multi-Sample. **All [Shift+Ctrl+V]** pastes all data into the selected Multi-Sample. **Only the Record Settings** pastes only the Record settings into the

selected Multi-Sample. Further optional paste functions are **Export Settings, MIDI and Audio Settings, Controllers, Keyboard (except Key-Samples)** and **Keyboard**. Use the Multi-Sample copy functions to create interesting layer and combination sounds. These operations can also save a lot of time when you need to adjust the same settings in several Multi-Sample layers or in several Projects.

- **Normalize** rises the level of one or more samples to maximum (0 dB) without causing distortion. You can also enter a specific maximum level like normalize to -3 dB. This function automatically searches the maximum peak level in a sample and raises this level to the selected value. All the rest of the sample will be adjusted accordingly. In general this results in a higher overall volume of the sample.
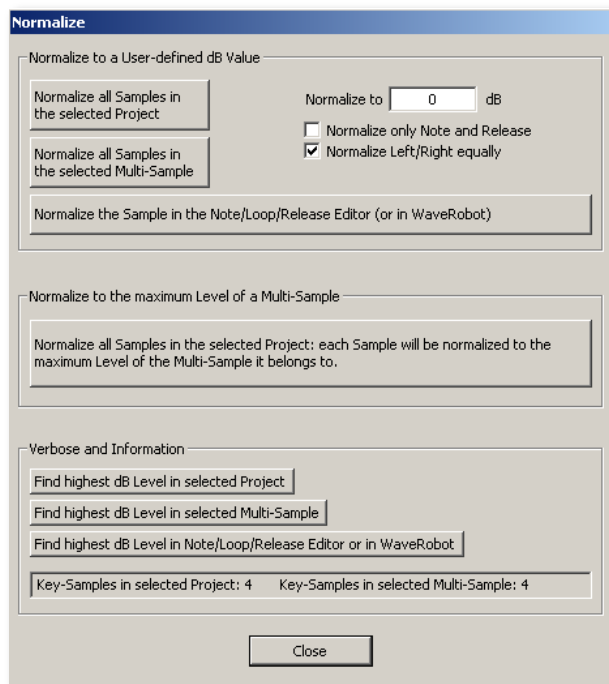
- **Normalize all Samples in the selected Project** normalizes all Key-Samples of the selected Project (Batch processing).

- **Normalize all Samples in the selected Multi-Sample** normalizes all Key-Samples of the selected Multi-Sample (Batch processing).

- **Normalize Sample in the Note/Loop/Release Editor (or in WaveRobot)** normalizes the Key-Sample in the Note/Loop/Release Editor or in WaveRobot.

- **Normalize to** allows to set the normalize level. This value should be set to 0 dB or below 0 dB to avoid distortion (for example –2 dB).

- **Normalize only Note and Release** is an option to normalize the area between the note markers and the area between the release markers only.

- **Normalize Left/ Right equally** is an option to normalize both channels simultaneously if you have recorded samples in stereo. When deactivating this function, both channels of a stereo sample will be normalized independently.

- **Normalize all Samples in the Project: each Sample will be normalized to the maximum Level**

of the Multi-Sample it belongs to normalizes all Multi-Samples of a Project. Therefore each Key-Sample will be normalized to the absolute peak level which was found in the associated Multi-Sample. Every Multi-Sample layer will be analyzed separately resulting in a perfect Multi-Sample normalization. In other words: For each Multi-Sample all dedicated Key-Samples will be normalized to the corresponding peak level of that Multi-Sample.

• **Find highest dB Level in selected Project** is an automatic function to find the absolute peak level in the selected Project. Therefore all Key-Samples of the dedicated Project will be analyzed.

• **Find highest dB Level in selected Multi-Sample** is an automatic function to find the absolute peak level in the selected Multi-Sample. Therefore all Key-Samples of the dedicated Multi-Sample will be analyzed.

• **Find highest dB Level in the Note/Loop/Release Editor or in WaveRobot** is an automatic function to find the absolute peak level of the current loaded Key-Sample in the Note/Loop/Release Editor or in WaveRobot.

• **Key-Samples in selected Project/ Multi-Sample** shows the number of all available Key-Samples in the selected Project and the Multi-Sample.

• **Close** closes the normalize window.

• **Change Gain** works similar to the normalize function except that the adjustments of the samples' levels can be defined by a relative value. Use this function to change the level of all samples equally (e.g. gain all samples + 3dB). With this function you can boost or lower the level of Multi-Samples and Projects without loosing the individual level nuances between different Key-Samples. Tip: Use **Gain Change** instead of **Normalize** if you want to keep these level nuances.
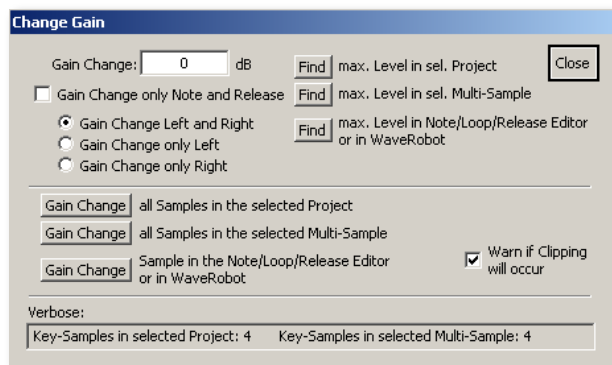
- **Gain Change** allows setting a volume change value in dB. It is possible to enter positive and negative values.

- **Gain Change only Note and Release** changes the volume for the area between the note markers and the release markers only.

- **Gain Change Left and Right** changes the volume for both channels of a stereo sample.

- **Gain Change only Left** changes the volume only for the left channel of a stereo sample.

- **Gain Change only Right** changes the volume for only the right channel of a stereo sample.

- **Find max. Level in sel. Project** is an automatic function to find the absolute peak level in the selected Project.

- **Find max. Level in sel. Multi-Sample** is an automatic function to find the absolute peak level in the selected Multi-Sample.

- **Find max. Level in Note/Loop/Release Editor or in WaveRobot** is an automatic function to find the absolute peak level of the loaded Key-Sample in the Note/Loop/Release Editor or in WaveRobot.

- **Gain Change all Samples in the selected Project** changes the volume for all Key-Samples of the selected Project (batch processing).

- **Gain Change all Samples in the selected Multi-Sample** changes the volume for all Key-Samples of the selected Multi-Sample (batch processing).

- **Gain Change Sample in the Note/Loop/Release Editor or in WaveRobot** changes the volume for the Key-Samples in the Note/Loop/Release Editor or in WaveRobot.

- **Warn if Clipping will occur** displays a warning message if the gain change process would cause a digital clipping. If clipping would occur you have the option to cancel the operation or to continue. It is strongly recommended not to continue since this operation can not be undone. Continue would cause digital distortion in your orginal samples. As long as you click **Cancel** no Key-Sample will be affected.

- **Key-Samples in selected Project/ Multi-Sample** displays the number of all available Key-Samples in the selected Project and in the Multi-Sample.

- **Close** closes the Gain Change window.

Please keep in mind that the **Normalize** and **Gain Change** functions are working destructively at the moment. The original samples on your hard disk will be altered by these functions. So use the gain and normalize functions carefully to avoid loosing sample dynamics and to debar unwanted distortions.

- With **Auto-Note/Auto-Loop for all** you can apply loop marker settings and/ or note marker settings from one Key-Sample to all other selected Key-Samples in a Multi-Sample or in a Project. This is a very powerful function e.g. to apply similar loops to a bunch of Key-

Samples at the same time. After choosing this function, a dialogue box opens:

- **Auto-Note (using the Multi-Sample Record Settings)** moves the Note-In markers for all Key-Samples exept the loaded one based on the adjustments in the Multi-Sample Record Settings.

- **Set all Silence Markers equal the loaded Key-Sample's Silence Markers** moves all silence markers in all Key-Samples to the same absolute sample positions as the loaded Key-Sample's silence markers. Use this function when the automatic transient recognition (Note-In, Note-Out) does not work precisely for determining the attack-transient of a sample. This could happen if there are background noises or some other volume peaks recorded before the beginning of the sample. With this function you can exemplarily define an area in a Key-Sample that contains the background noise or other volume peaks. SampleRobot will treat the area between the silence markers as "silence". If you execute the function "Auto-Note for all" after that, SampleRobot will then search again all Key-Samples for transients that have got higher volumes than the maximal volume found between

the silence markers. In other words you can specify a threshold with the silence markers. The maximum peak between the silence markers is the maximum background noise level. The first peak found in the sample that is higher than that maximum silence level will be chosen by SampleRobot as the Note-In position.

• **Make all Note Lengths equal the loaded Key-Sample´s Note Length** sets all Note-Out markers of all Key-Samples so that each note length is equal the current Key-Sample. E.g. this function is useful if you have generated different sample lengths during the semi-automatic recording process and would like to shorten several samples at the same time. Please note that only markers are affected by this operation, no sample data.

• With the **Auto-Loop** check-box you can choose, whether the Loop-Search-Markers of the current Key-Sample (**use the loaded Key-Samples´s Loop-Search-Markers**) will be used for the **Auto-Loop for all** operation or if WaveRobot should use the settings made in the Multi-Sample Record Settings (**use Multi-Sample Record Settings**). If you did manual loop editing in WaveRobot for the current Key-Sample, including working with the loop-

search markers and you would like to apply your manually found loop to all other Key-Samples, than this function is the ideal tool. In this case you should select the option **use the loaded Key-Samples´s Loop-Search-Markers**.

• **Turn Release off** sets the release Function to Release OFF for all Key-Samples in one go. In this case no Release-Samples will be genereated during export

• **Process selected Key-Samples in:** With this check-box you can decide, if you want to apply the settings to all Key-Samples of the current Project (**Selected Project**) or to all Key-Samples of the selected Multi-Samples (**Selected Multi-Sample**).

Press the Start button to initiate the process.

Please note that you can abort this function during processing at any time by pressing "ESC" on your computer keyboard. This does not affect the momentary loaded Key-Sample in the Note/Loop/Release Editor.

• **Project** offers the same functions as the buttons in the Project window (**New, Delete, Duplicate**). See also page 144. **Clean** erases all unused Key-Samples of the selected Project from hard disk (Key-Samples from

unselected keys and Key-Samples that are not inside the range of the Keyboard Range Selectors). Please keep in mind that **Clean** deletes all corresponding samples from your hard disk. Use this function with care.

• **Multi-Sample** offers the same parameters as the buttons in the Multi-Sample section (**New**, **Delete**, **Duplicate**). See also page 145. **Clean** erases all unused Key-Samples of the selected Multi-Sample (Key-Samples from unselected keys and Key-Samples that are not inside the range of the Keyboard Range Selectors). If you select **Auto-Set Sample Range/Auto-Select Keys**, the following will result: All keys in the dedicated Multi-Sample that contain a Key-Sample will be selected. All other keys will be deselected. The lower Sample Range Selector will be set to the lowest selected key minus 5 semitones. The upper Sample Range Selector will be set to the highest selected key plus 5 semitones.

Import/ Export

Here you can handle the import and export of audio files. Here you can export SampleRobot Projects as various software sampler formats. To use your created Projects for music production you have to load them into a software sampler. Therefor the audio samples will be rendered during export on base of all markers and loop settings. Sample information before the Note-In marker will not be exported. Crossfades will also be rendered to the file to save CPU power when using a software sampler. The original recordings (the Key-Samples in SampleRobot) will not be changed or deleted during this process. Of course SampleRobot will render all loops (also the complex forward/backward combinations) to the export files so that they are compatible with all available software samplers.

• **Import WAV-Files**Simply drag and drop one or more wave files to SampleRobot's Virtual Keyboard. The samples will be imported and mapped automatically. SampleRobot can read the Root-Key information from the wave file as well as from the file's name. If desired, existing loop points can also be imported (Function: **Use File's Loop**) or ignored (Function: **No Loop**). **Copy to Key xy** allows you choosing the current key where the imported sample was dropped to. You can also use the original Root-Key of the sample (**Copy to File's Root Key**) if this information is included in the file. **Set Key´s Name to Filename** allows you to use the file name as the Key-Sample's name. If you import more than one WAV file simultaneously, a dialog with serveral additional option comes up: **Copy to File's Root-Key**, **Copy to Filname's Root-Key**, **Copy to File's Root-Key (if available) elso to Filename's Root-Key**,

Copy starting at Key xy in no special order. Just select the desired option to map your imported samples. In both dialogues existing Key-Samples can be kept (**Keep existing Key-Samples**) or overwritten (**Overwrite existing Keys-Samples**) during import. Please note that there is no Undo function when existing Key-Samples were overwritten after import.
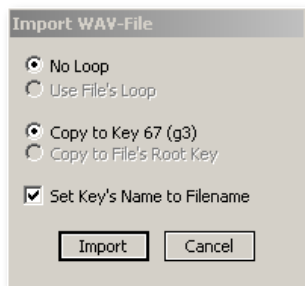
- **Import Single-Sample-Soundlibrary [Ctrl+I]** enables you to import audio data with automatic truncation and keyboard mapping fuctions. An example: On a sampling CD you find an audio file, which contains 25 bass drums in one track. Normally it would be necessary to truncate and save each bass drum manually in a wave editor. SampleRobot is

doing this process automatically. Here is the step by step description:
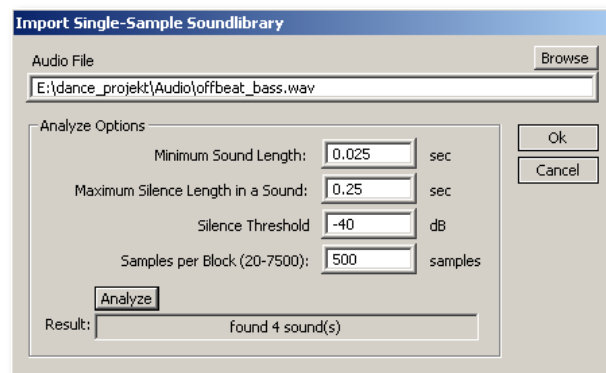
- Create a new Project and select the corresponding number of keys on the Virtual Keyboard where the new samples should be mapped after import.

- Click on the **Import Single-Sample-Soundlibrary** in the Import/Export menu.

- In the input window choose the data path for the desired audio file by clicking on the **Browse** button.

- With **Analyze Options** you can adjust the **Minimum Sound Lenght**, the **Maximum Silence Length in a sound** between the single samples, the **Silence Threshold** (in dB) for the silence and the sample block size for the slicing and mapping process. Like all other parameters the sample block size affects the result of the analyze function. The higher the value the more are small clicks or noise peaks within the audio file ingnored to prevent unwanted slicing. Normally the standard setting **500 samples per block** is perfect for most cases.

- Click on the **Analyze** button to analyze the audio file based on the settings in the **Analyze Options**. The **Result** (number of samples found in the file) will be displayed at the bottom of this dialog. If the number of sounds found does not match the real number you have to adjust the values in **Analyze Options**.

- Click the OK button to start the automatic importing, slicing and mapping process.

- SampleRobot imports the whole sample containing all sounds, chops all single samples and maps them to the selected keys automatically.

- Although the standard settings will normally work fine it might be necessary to change the settings in the **Analyze Options** if the splitting of individual samples is not precise enough.

- You can edit the new samples and markers just as you like and export them for further usage to a software sampler.

- **Export selected Project as…** enables you to export the selected Project in the format of popular software samplers. If you select this function, a dropdown menu will open. Each export file contains all single samples (sometimes in one big file like the sf2-format) with the dedicated Root-Key and, if available, also with mapping information. Keep in mind: Export doesn´t affect your original recorded samples.

The following export formats are supported:

- **WAV-Files [Strg+F1]** (single files)

- **WAV-Files (Loop only) [Strg+Alt+F1]** (only loop area and including the loop markers)

- **Cakewalk Dimension Preset (*.prog) [Strg+F2]**

- **Cakewalk Dimenision (*.sfz) [Strg+Alt+F2]**

- **SoundFont2 (*.sf2) [Strg+F3]**

- **Steinberg HALion (*.xml) [Strg+F4]**

- **Apple Logic Pro EXS 24 (*.sf2) [Strg+F5]**

- **Tascam Gigastudio (*.wav) [Strg+F6]**

- **Propellerhead Software Reason NN-XT (*.sxt) [Strg+F7]**

- **Emu Emulator X (*.wav) [Strg+F8]**

- **Wusik.com WusikStation (*.SND) [Shift+Strg+F1]**

- **Yello Tools Independance (*.sf2) [Shift+Strg+F2]**

- **MOTU Machfive [Shift+Strg+F3]**

- **rgc:audio (*.sfz) [Shift+Strg+F4]**

- **Maz Sound Tools VSampler (*.sf2) [Shift+Strg+F5]**

- **NI Kontakt (*.sf2) [Shift+Strg+F6]**

Use this function as follows:

- Select the desired Project in SampleRobot.

- Select **Export selected Project as...** from the Import/Export menu.

- Choose your desired sample format from the drop down menu.
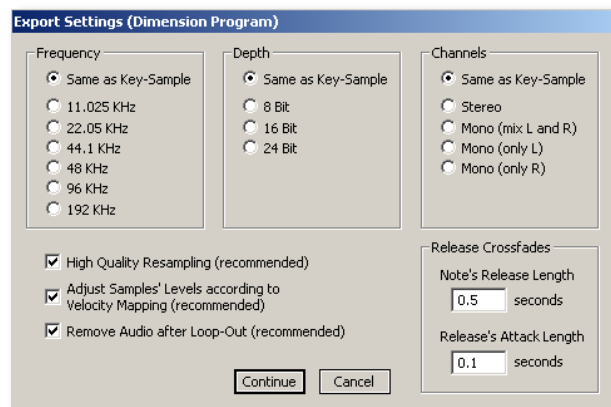
- A new dialog window opens: **Export Settings**. Here you can change sampling rate (**Frequency**), bit depth (**Depth**) and stereo settings (**Channels**) for the export process. Unavailable options are greyed out. The functions are useful to change the exported instruments' sample quality for different reasons like economize CPU power when loading the instrument into your software sampler. The option **High Quality Resampling** (recommended) should always be turned on for best sound quality. **Adjust Samples' Levels according to Velocity Mapping** increases the volume of samples in lower

velocity layers automatically. This function is useful because most software samplers reduce the volume of samples at lower velocities automatically. So this function prevents from an unwanted double loss of volume in lower velocity ranges by gaining low velocity samples during export. We recommend to leave this function activated, otherwise all samples will be exported with the originally recorded volume. If the option **Remove Audio after Loop-Out** is activated SampleRobot exports all samples without rendering the area between Loop-Out and Note-Out to reduce the file size of exported data. This part of the sample will not be played anyway in most cases. The export option "Cakewalk Dimension Preset" and all "*.sfz" export formats offer additional settings and direct mapping of Release-Samples. Those samples are mapped automatically for natural instrument's behaviour in the software sampler. Often the transitions between note area and release phase sound unnatural because of different volumes. Therefore SampleRobot can include crossfade information to the exported instrument. The parameters **Note's Release Length** and **Release's Attack Length** define a small crossfade in seconds, which is calculated in realtime later in the software sampler´s

envelopes during play. The result is a smoother transition between note and Release-Sample. Keep in mind that all export functions do not alter the originally recorded samples at all.

- Click on the **Continue** button to continue with the export operation. **Cancel** aborts the export process operation and returns to main window.

- In the following window you can enter the name and select a data path for the files to be exported. **Preview** shows you a list of all files in advance without exporting data, so you can correct namings if desired.

- Click on **Export** to finalize the export operation.

- Open your software sampler and load the stored sample data.

Most software samplers support the SF2 format. So do not worry if your specific software sampler is not showing up in the export menu of SampleRobot. Just go for SoundFont2 export. An SF2 file contains all Multi-Samples of a Project and the dedicated mappings. Therefore the file size is mostly very large.

If you have chosen **Export selected Project as WAV-Files** a new dialog shows up allowing you to define a naming convention for the exported files.
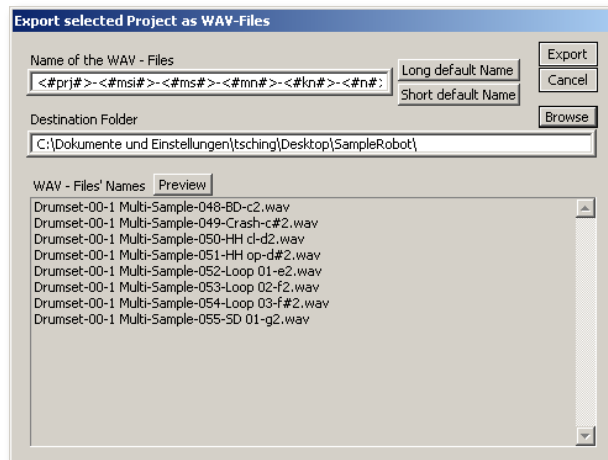
In the field **Name of the WAV-Files** you can enter letters and special place holders:

- <#prj#> Name of the current Project

- <#msi#> upcounting Multi-Sample layer index that starts with "00" for the first Multi-Sample in the

project, "01" for the second Multi-Sample and so on.

- <#ms#> Name of the Multi-Sample

- <#mn#> MIDI note number (000-127)

- <#kn#> Name of the Key-Samples

- <#n#> current MIDI note.

The option **Short Default Name** is a naming alternative to keep file names short. Please note that not all place holders must be entered but to avoid naming conflicts during export some of them are essential. With the button **Browse** you can specify your Destination Folder.

Preview creates a list of all file names before the export so that you can check the correct naming.

Tip: If you want to name your samples according to the Key-Sample's names (e.g. that you entered manually during semi-automatic recording or that were taken from files that were dragged to the Virtual Keyboard), use the input box "Name of WAV-Files" to enter the place holder <#kn#> only.

Please keep in mind that SampleRobot overwrites equal file names during the export process automatically. If an existing project contains equal sample names, you should

include all necessary placeholders. You should always double check with the Preview function.

Think about which placeholder is necessary for a unique naming. You can generate different export files even though the Key-Samples have equal names. In this case inclusion of the placeholder for the MIDI notes makes sense.

Recording

Here you can start your recordings. Some fuctions of this menu are identical to the **REC** buttons in the Project window and in the Multi-Sample window.

- **Estimated Time and Size [Ctrl+E]** gives you an overview of the recording duration and the required memory space on your hard disk that will be used for recording Projects and Multi-Samples. This function is perfect for planning recording procedures and for your next coffee break while SampleRobot is working. **Show Estimations for** is an option to calculate the forecast for the selected Multi-Sample (**Selected Multi-Sample**), for the selected Project (**Selected Project**) or for all Projects (**All Projects**). If you have already made partial recordings for Projects or Multi-Samples you can use the **Keep locked Key-Samples** option to improve the estimation. In this case all locked Key-

Samples (that are already recorded) will be excluded from the calculation. **Record only empty Key-Samples** offers an option to correct the estimation for recording time and hard disk space so that already recorded Key-Samples are excluded from the calculation causing better estimations.
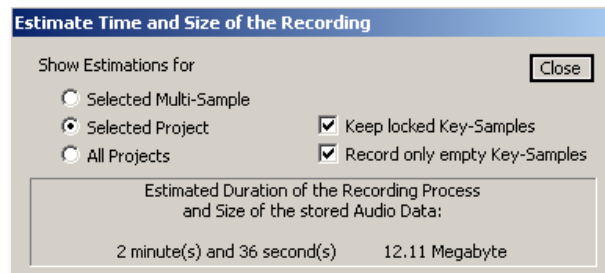
- **Record selected Multi-Sample [Ctrl+R]** starts the automatic recording procedure for the selected Multi-Sample. It is designed for fully automated recording of MIDI sound sources. This function is identical to the **REC** button in the Multi-Sample section when the auto button is activated. Keep in mind that the status of the auto button is irrelevant when you start recording by selecting this menu entry. The status is also irrelevant for all other selections in the Recording menu.

- **Record selected Project [Alt+R]** starts the automatic recording procedure for the selected Project. It is designed for fully automated recording of MIDI sound sources. This function is identical to the **REC** button in the Project window.

- **Record all Projects [Ctrl+Alt+R]** starts the automatic recording procedure for all Projects. It is designed for fully automatic recording of MIDI sound sources.

- **Semi-automatic Record selected Multi-Sample [Shift+Ctrl+R]** starts the semi-automatic recording procedure for the selected Multi-Sample. It is designed to record non-MIDI sound sources key by key. This function is identical to the **REC** button in the Multi-Sample section when **auto** is deactivated.

- **Semi-automatic Record selected Project [Shift+Alt+R]** starts the semi-automatic recording procedure for the selected Project. It is designed to record non-MIDI sound sources key by key. This function is identical to the **REC** button in the Project window when **auto** is deactivated.

- **Semi-automatic Record all Projects [Shift+Ctrl+Alt+R]** starts the semi-automatic recording procedure for all Projects. It is designed to record non-MIDI sound sources key by key.

You will find more information in the chapter "Recording" on page 201.

View

This menu allows you to change the size and the look of the SampleRobot window.

- **Main Window** is an option to change the window size of SampleRobot to half size (**Half Size / Normal Size [Shift+F11]**) or double size (**Normal / Big [F11 or Tab]**) via a dedicated drop-down menu. Depending on your screen resolution the SampleRobot main window can be scaled up to four different window sizes.

- **Panels** are masks for different sections of the graphical user interface giving you a better overview. **Hide / Show MIDI In Data [Shift+H]** masks or shows the MIDI Monitor. **Hide / Show MIDI Controllers [Shift+J]** masks or shows the MIDI Controller section.

Options/ Extras

Here you can make additional program settings. These settings will be saved automatically when you quit the SampleRobot application.

- **WaveRobot [W]** opens WaveRobot for loop editing and marker adjusting. WaveRobot offers a full screen

waveform display, smooth zooming and professional loop editing tools. Please read page 162 for more details.

• **ZoomRobot [Z]** opens an additional window which shows the area around the mouse pointer in a higher resolution. You can place this zoom window wherever you want.

• **ChessRobot [Shift+W]** will start in one of the future SampeRobot releases the integrated chess program to shorten your waiting time when working with larger sampling projects that will take some time to record. ChessRobot will offer several skill levels. Enjoy!

• **Preferences [Alt+P]** opens a window with a couple of basic settings. These settings will be saved automatically when you quit the SampleRobot application. The preferences will be used as default settings (e.g. when you create a new Multi-Sample).
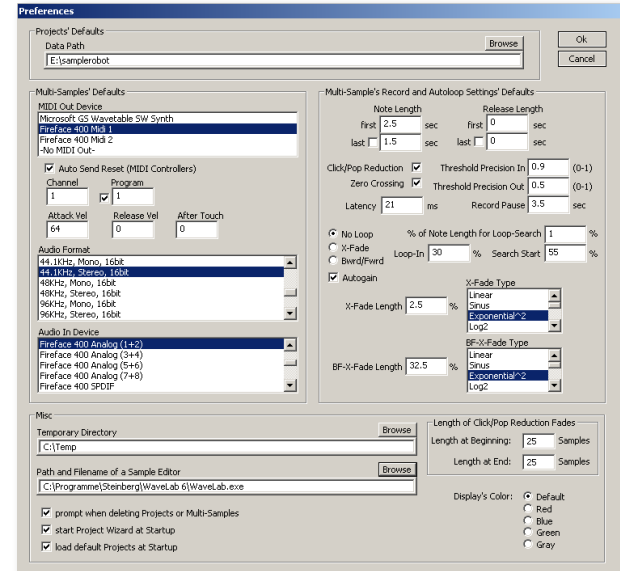
• **Data Path** s a field to enter a default data path for all SampleRobot recordings. You can also use the **Browse** button on the right to specify the path.

• **Multi-Samples´ Defaults** allows you to set up all default parameters regarding the Multi-Sample Record

section. Please read also page 144 for more information. These settings will be used as dafault settings when creating new Multi-Samples.

- **Multi-Samples´ Record and Autoloop Settings Defaults** allows you to set up all parameters regarding the **Multi-Sample Record & Autoloop Settings**. Please read also page 137 for more information. These settings will be used as default settings when creating new Multi-Samples

- In the **Misc** section you can select a data path (**Path and Filename of a Sample Editor**) to an external sample editor (e.g. Steinberg Wavelab) which opens automatically if you click on the **Edit** button in the Note/Loop/Release Editor or if you select the option **Edit with external Sample Editor** in WaveRobot. You should also define a **Temporary Directory** which will be used for internal copy processes. **Prompt when deleting Projects or Multi-Samples** activates/ deactivates the safety dialog when deleting Projects or Multi-Samples. Beginners should leave this option active. **Start Project Wizard at Startup** is an option to automatically open the Project Wizard when the SampleRobot application is started. You can also **load default Projects at Startup** as an option.

- **Length of Click/Pop Reduction Fades** allows you setting fade values (in samples) for the automatic reduction of clicks at the beginnings and ends of samples during export. The value **Length at Beginning** is used for the fade-in rendering ("Micro fade") regarding the samples' and Release-Samples' start point (Note-In, Release-In). The value **Length at End** is used during the export for the fade-out rendering (Note-Out, Release-Out). Please keep in mind that the Click/Pop Reduction function must be activated before exporting the audio files. It only affects exported samples.

- **Display's Color** offers five different color modes for the SampleRobot user interface.

- **Set current Settings as Default** copies the current settings from the SampleRobot main window automatically to the **Preferences**. So you do not have to adjust settings twice.

Help

Here you find additional SampleRobot information. Take use of the help functions – they are worth it!

- **About SampleRobot** opens a window with information about the SampleRobot application.

- **Internet Links** let you access websites regarding SampleRobot and WaveRobot. You need an internet connection on your computer for this function.

- **Show Quick Info/ Tool Tips [F1]** gives you short function descriptions and some hints when working with SampleRobot. When moving the mouse pointer over displays and buttons this information is shown int the lower left window border. We recommend to leave this option activated.

- **Quick Help: Key Commands** opens a window with a list of common key commands in SampleRobot. All other key commands are displayed next to the function name in the dedicated menu entry. Most of the key commands for the Note/Loop/Release Editor will also work when using WaveRobot.

- **Quick Help: Note/Loop/Release Editor** opens a window with operation instructions and explanations for the Note/Loop/Release Editor.

- **Activation** opens a window with your serial number, the challenge code and the dedicated response code of SampleRobot.
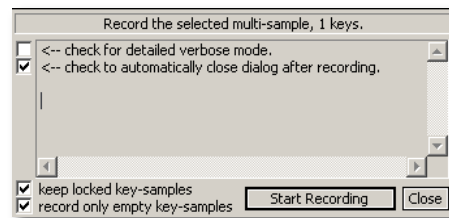
Recording

The automatic Recording Process

The automatic recording process is designed for fully automated recording of MIDI sound sources. Below you find a complete description of the automatic recording process:

- Set up one or more Projects with corresponding Multi-Samples. Check all MIDI and audio connections by using the **MIDI Monitor** (see page 141) and the audio **Peak Meter** (see page 141). Select the desired data path in the **Project Settings** (see page 136). Keep in mind that every Project can have its separate data path.

- The **auto** button underneath **REC** must be activated for automatic recording.

- Click on the **REC** button in the Multi-Sample section if you want to record one Multi-Sample. Click on the **REC** button in the Project window if you want to record one Project. In addition you can start recording by using the recording function in the **Recording** menu. There you will also find a function to record all Projects. Please read page 196 for more information.

- The record window appears in the **MIDI Monitor** section.

- Click on **Start Recording** to start the recording process directly. **Close** discontinues the procedure. After the record dialog is closed SampleRobot will be ready for editing again. During the recording process the **Start Recording** button is replaced by **Pause Recording**. Click on this button if you would like to interrupt the recording process temporarily. You can continue the recording process at any time by clicking on **Continue Recording.**

- By activating **Check for detailed verbose Mode** you can monitor all recording actions in detail during the recording process. **Check to automatically close Dialog after Recording** is an option to close the record window automatically after the last recording.

- **Keep locked Key-Samples** is an option to protect locked Key-Samples against overwriting by a new recording. Please read also page 153 for more information on how to lock samples.

- **Record only empty Key-Samples** is an option to record only selected keys which which do not contain a recorded Key-Sample. All previous recordings are preserved.

During the recording procedure you can monitor important actions in the record window.

The semi-automatic Recording Process

The semi-automatic recording process is designed to record non-MIDI sound sources key by key. Below you find a description of the complete semi-automatic recording process.

- Set up one or more Projects with corresponding Multi-Samples. For recording of acoustic instruments use an appropriate microphone with pre-amp. Check all audio conncetions by using the **Audio Input Monitor** and the audio **Peak Meter** (see page 141). Choose the desired data path in the **Project Settings**. Keep in mind that each Project can have its own data path.

- Deactivate the **auto** button underneath the **REC** button in the Project window or the Multi-Sample section to switch to semi-automatic recording.

- Click on the **REC** button in the Multi-Sample section if you want to record the selected Multi-Sample. Click on the **REC** button in the Project window if you want to record the selected Project. In addition you can start recording by using the semi-automatic recording functions in the **Recording** menu. There you will also find a function to record all Projects. Please read page 196 for more information-

- The record window appears in the **MIDI Monitor** section.
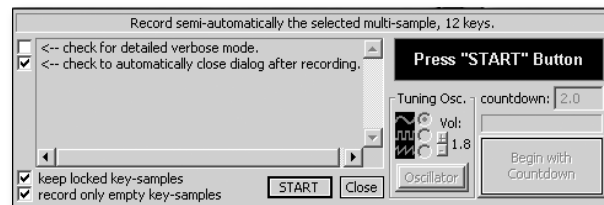
- The left part of the window is similar to the window for the automatic recording. Please read page 201 for more information about the check-boxes.

- On the right part of the window you find an information display, the **Tuning Oscillator** (see also page 151) and the **Countdown** function. Click on the **START** button to begin the semi-automatic recording process.

- The recording process is similar for each note:

    - The information display shows the first selected note that will be recorded. Click on the **Oscillator** button to start a permanent test tone for checking the tuning/ pitch of your instrument. If necessary, tune your instrument accordingly. Click the button again to stop the test tone. You can change the test tone´s colour (click one of the check-boxes fort he waveforms sine, square or sawtooth). Zo dajust the volume of the test tone use the +/- buttons directly below **Vol.** The audio device that is selected in the **Audio Out Device** display is used fort he oscillator´s playback.

    - In the **Countdown** field you can enter a countdown for the delayed recording start. This is heldpful if you need a little time to get to your instrument. The default setting is 2.0 seconds.

- Click on **Begin with Countdown**. SampleRobot counts backwards to zero and starts the recording for the first note.

- Keep in mind that the **Note Length** settings in the Multi-Sample section (see page 145) do not have any effect when recording in semi-automatic mode. The duration of the recording is defined by pressing the **Stop** button.

- To stop the recording you have to click on the **Stop** button. The following window **(Check recorded Key-Sample)** appears:
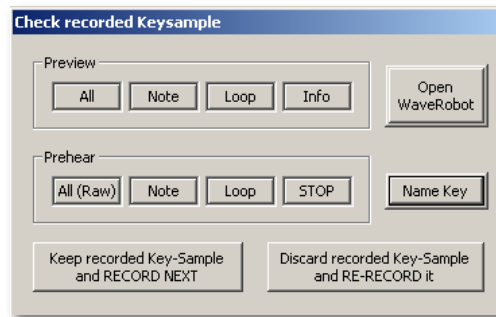
- With the help of the options in this window you can check your recording: Click on the **All** button

in the **Preview** section to display the complete waveform of the current recording in the **Note/Loop/Release Editor** (see page 154). **Note** displays the waveform between the note markers, **Loop** displays the automatically established loop area (when active) while **Info** displays detailed information about the recorded sample (like data path, sample length etc.). The buttons in the **Prehear** section are designed for prelistening to the recorded sample. Click on **All (Raw)** to playback the complete sample, **Note** plays the area between the note markers, while **Loop** only plays the loop area. **Stop** ends the playback.

- With the option **Open WaveRobot** you are able to directly open WaveRobot after recording for fullscreen marker and loop editing. To close WaveRobot use the window close symbol in the upper right corner. Read more about WaveRobot on page 162.

- Click on **Keep recorded Key-Sample and RECORD NEXT** to save the recorded sample and to continue with the next note recording.

- If you dislike what you have recorded you can select **Discard recorded Key-Sample and RE-RECORD it** to delete the last recorded sample and

to repeat the note recording. You can re-record the Key-Sample as many times as you like.

- You can also name a recorded take with the **Name Key** button. The name that you enter is the Key-Sample's name. The name can be used during export (see page 153).

- After the last successful recording process SampleRobot will close the recording dialog to allow editing in the main window. Please notice the little wavefomr underneath the keys in the Virtual Keyboard section identifying the recorded Key-Sample.

Recording virtual Instruments

Below you find a description on how to sample virtual instruments that are installed on the same computer as SampleRobot. Of course you can record your virtual instruments as well via two separate computers, one running SampleRobot and the other one running your virtual instrument. But then you will need external wiring. Here is a way to record virtual instruments via "internal wiring" on the same computer:

- If you own an **ESI** soundcard with **Direct Wire** functionality, sampling of virtual instruments is pretty easy. Read more on this at the end of this chapter.

- To sample virtual instruments you have to establish a MIDI and an audio connection between SampleRobot and the virtual instrument.

- Please install a virtual MIDI cable on your computer system. If you do not have one you can find it easily on the internet, e.g. the Maple Virtual MIDI cable.

- You will notice that after installation there are new MIDI input and output ports available on your computer. Those ports are virtual MIDI ports that allow MIDI communication between different MIDI applications like SampleRobot and your software instrument.

- First start SampleRobot. This is important because another application like your host sequencer blocks all the MIDI ports.

- Set **MIDI Out Device** in SampleRobot (Multi-Sample section) to "Maple MIDI Out Port 1" and **Audio In Device** and **Audio Out Device** to the Channels 1&2 (MME) of your soundcard.

- Then start your virtual instrument or your host application. In general you should prefer a standalone virtual instrument because sometimes there are problems with other hosts. Make sure that sound playback is allowed in the background.

- Select "Maple MIDI In Port 1" as a MIDI input for your virtual instrument/ instrument host.

- When switching between your virtual instrument/host and SampleRobot it might be possible that you get error messages telling you that MIDI ports could not be accessed. Do not worry! This is normal and will not affect the virtual MIDI port since it is already allocated by SampleRobot.

- If you do not have an ESI card with DirectWire, do the following:

  - Set your virtual instrument to your soundcard's output (use MME or DX, no ASIO) Then go to the "Sounds and Audio Devices Properties" in the **Windows Control Panel**.

  - Choose the **Audio** tab and select your soundcard.

  - Then select the **Volume** tab and click on **Advanced**.

  - In the **Volume Control** window go to **Options** and select **Properties**.

  - Select your soundcard as the **Mixer** device and click on **Adjust Volume for Recording** and select

Wave Out Mix as a recording input (just select it, you do not have to adjust volumes).

- Then go to SampleRobot and select your soundcard as an input (do not use ASIO). Activate the **Peak Meter** and see if you get a signal.

- If not, please repeat the whole procedure with your internal PC soundcard, this should work anyway.

- If you have an **ESI** soundcard with **DirectWire** capabilities it is very easy to establish an audio connection to SampleRobot. In this case just open the **DirectWire Control Panel** and drag two virtual cables (stereo) from the MME, WDM, ASIO or GSIF out ports (the dedicated port must defined as an audio out port in your virtual instrument) to the inputs 1&2. Then go to the SampleRobot **Audio In Device** in the Multi-Sample section and select the inputs 1&2 of your soundcard. It is a good choice to use the ASIO to MME functionally of DirectWire to record the ASIO stream via SampleRobot's MME input. Please note that you cannot use two ASIO drivers at the same time.

- Now select the **Peak Meter** in the SampleRobot window and play something via the Virtual Keyboard (make sure the MIDI button on the right **Keyboard Range Selector** is activated). You should hear your virtual instrument played by SampleRobot and you should see the incoming signal. If not, please check your connections again.

- If your MIDI and audio connections between SampleRobot and your virtual instrument are established you can use the automatic recording functions of SampleRobot as usual. Read more about this on page 201.

It is possible that some system configurations do not allow internal recording of virtual instruments. In this case we recommend the usage of ESI audio interfaces with "DirectWire". Or simply use two computers with MIDI and audio connections, one running SampleRobot and the other one running your virtual instrument.

Appendix

Tips & Tricks for the daily work with SampleRobot

Below you find practical hints and how-to-do examples.

Please follow this link for the support website of SampleRobot:

http://www.samplerobot.com/support.php

Here you will find additional tutorials and FAQ lists helping you to get started quickly with SampleRobot and WaveRobot and also giving you loads of advanced tips and tricks.

Selection of appropriate Audio drivers

Important: Keep in mind that there are mostly more than one audio driver for your audio hardware installed on your computer (for example ASIO and MME). Some recording formats might be greyed out in SampleRobot's **Audio In Device** display giving you the information that this format is not supported either by your audio interface or by SampleRobot. If you want to sample in 24 bit resolution you should prefer an ASIO driver. Some ASIO drivers support only 24 bit recording mode. If you want to record in 16 bit format you can use the MME driver.

Another possibility is using 24 bit recording and then changing the bit rate fort he sample export (see page 193).

Testing the MIDI Ports and Audio Inputs

To make sure that your MIDI setup is fully operational and prepared for SampleRobot you should perform the following test:

- Select in display **MIDI In Device** in the **MIDI Monitor** section the physical MIDI interface input, to which a MIDI master keyboard is connected.

- Switch on the **MIDI Thru** function in the **MIDI Monitor** section.

- Select in display **MIDI Out Device** in the Multi-Sample section the physical output of your MIDI interface, to which your sound source/synthesizer is connected. Make sure that the audio outputs of your sound source are connected to the inputs of your audio interface (directly or via a mixer) so that SampleRobot can receive an audio input signal.

- Select in display **Audio In Device** in the Multi-Sample section the physical input of your audio interface, to which your sound source is connected.

- Make sure that the **MIDI Channel** in SampleRobot's Multi-Sample section is the same as the MIDI receive channel of your sound source.

- Make also sure that the **MIDI button** on the right **Sample Range Selector** is activated.

- Play a few notes on your master keyboard. You should see the MIDI notes in SampleRobot´s **MIDI Monitor** and you should also see little circles on the dedicated virtual keys. The sound source should receive the MIDI notes from SampleRobot. Monitor the sound via an audio mixer or directly via headphones.

- If you activate **Audio Input Monitor** or **Peak Meter**, you should see the audio input signal in SampleRobot. Monitor the overall input volume so that the clipping display doesn not flash.

- Now SampleRobot is ready to roll...

Hint: all MIDI and audio devices that are used by SampleRobot will be released if the SampleRobot application is not in the foreground window. This enables you to use another audio application simultaneously.

Tip: Some audio interfaces from ESI support "Direct Wire Technology" to route audio signals from one application to another on the same machine. This is perfect for recording virtual instruments with SampleRobot without having to use two computers. For more information about sampling of virtual instruments please refer to page 204.

Working with Projects and Multi-Samples

We recommend working with SampleRobot as follows:

- Use the **Preset Manager** and select your desired Project template. For more information about the Preset Manager please read page 180.

- If you would like to start from scratch: Create a new Project for each sound programm of your sound module and name it accordingly to the sound program name. Alternatively you can use the function **Create Projects from Soundnames** for sampling whole sound banks and for automatically importing sound names. This function uses the currently selected Project as a copy-template for the Projects that shall be created from the text file. Please refer to page 182.

- Create a new Multi-Sample for each layer (velocity range) of your sound program. Below you find some practical examples

Example 1: Project with three different velocity layers:

- Multi-Sample 1: Sound with attack velocity 30

- For appropriate velocity mappings you should set up the velocity export range in the **Multi-Sample Export Settings** (see page 139). Click on the **sel** button to apply the settings automatically:
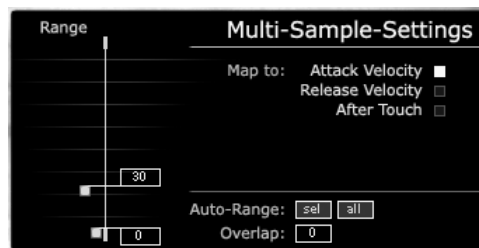
- Multi-Sample 2: Sound with attack velocity 90
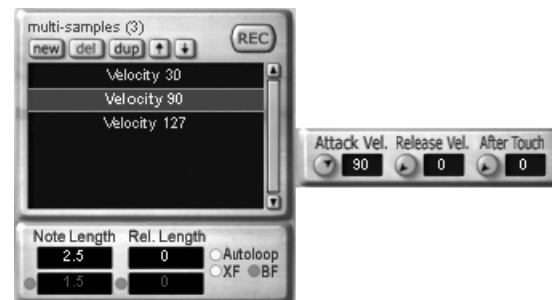
- Do not forget to adjust the export range settings:
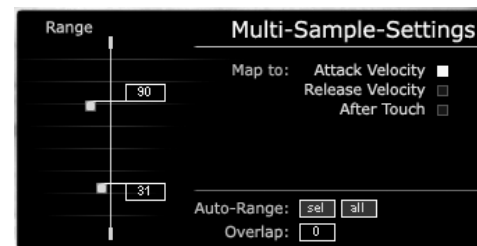
- Multi-Sample 3: Sound with attack velocity 127
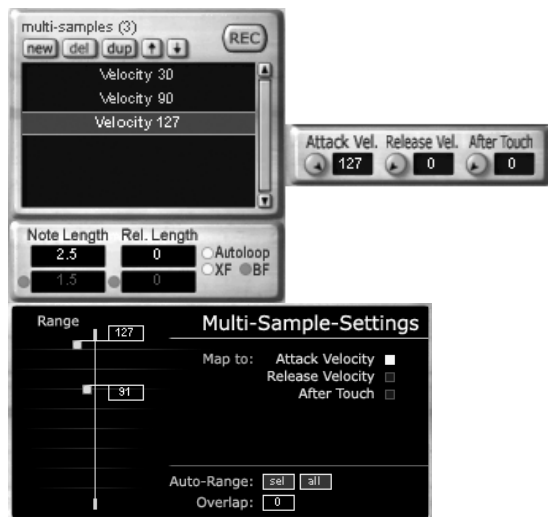
Please note that you do not have to make adjustments in the Multi-Sample Export Setting for each layer. As an alternative you can select **Auto-Range: all** to adjust the velocity range mappings for all Multi-Samples at the same time. After recording this Project this technique enanbles you to reproduce the velocity sensivity of the original sound in a software sampler. SampleRobot will automatically set the right velocity mappings in the dedicated software sampler format (e.g. HALion format). In other words with this multi-layer technique it is very easy to create dynamically playable instruments.

Example 2: Project with three different velocity layers and with an additional after touch layer:

- Multi-Sample 4: Sound with attack velocity 127 and maximum after touch (value 127)
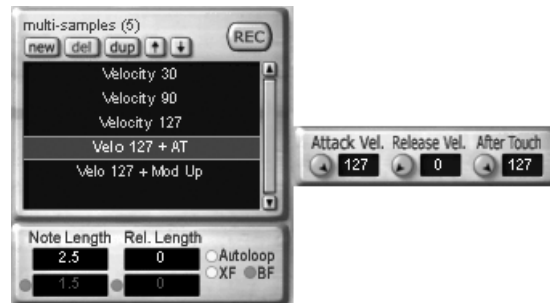
Example 3: Project with three different velocity layers, an additional after touch layer and one layer with modulation wheel set to maximum (MIDI Controller 1 set to 127):

- You can also add an **Overlap** in the **Multi-Sample Export Settings** to create velocity overlaps.

- In our example the after touch layer's range is set to maximum velocity (from 127 to 127) so that a velocity of 127 will trigger the aftertouch layer. Like this it is possible to set up any MIDI controller for additional Multi-Sample layers. As shown in these examples the multi layer concept of SampleRobot is designed to capture all sound articulations in different Multi-Sample layers allowing you to play the sampled sounds dynamically in every software sampler.

- Keep in mind that every MIDI sound generator reacts differently to incoming MIDI controllers and that the same MIDI controller can cause different sound changes on different sound programs. For example the mod wheel can change the sound in many ways on different machines.

- When working with several Multi-Samples in one Project you should use the **Duplicate** function (see page 145) to create identical layers. So you only have to make a few parameter changes for each layer, all other settings are copied.

- If a Project fits your demands you should save it as a Preset.

Working with MIDI Controllers

To get a more realistic and a more versatile acoustic duplicate of your MIDI sound source on a sample base you should record several Mulit-Sample layers of a sound program with different sound settings. The **MIDI Controllers List** is designed for remote control of your MIDI gear to get exciting sampling results:

- Keep in mind that every sound source reacts differently to incoming MIDI controllers and that the same MIDI controller can cause different sound changes on different sound programs. The corresponding user manual of your MIDI gear will give you an overview over all MIDI controllers and the dedicated sound changes.

- If your sound generator is equipped with knobs, faders or switches that can send out MIDI controllers you can

use the **MIDI Monitor** in SampleRobot to identify the desired controller.

- With the **MIDI Capture** function activated (click on the corresponding button or press C on your computer keyboard) various MIDI data, like all played note velocities and all incoming MIDI controllers information, will be captured automatically in the Multi-Sample section allowing perfect MIDI remote control of all sound sources. Read more on page 142. Meet your needs, e.g. when looping decaying sounds.

Tips for Looping Samples

The loop functions of SampleRobot and WaveRobot are designed to help you creating smooth sample loops as fast and as easy as possible.

- If you do a lot of loop editing you should use **WaveRobot**. It can be a vast help in this terrain. WaveRobot and SampleRobot are directly linked for optimum performance and for seamless data exchange. Read more on page 162.

- If you want to loop a recorded sample you should try the **Autoloop** function to find a smooth loop and some alternatives automatically. The results' quality depends on the Loop-Search markers (see page 165).

- Use **Crossfade Loop** as default when recording sustained sounds.

- The **Backward/Forward Crossfade Loop** should be used when the normal crossfade loop does not meet your needs, e.g. when looping decaying sounds. Read more about this on page 173.

- Of course you can use all loop functions not for sustaining sounds but also for creative sound design. Especially the unique **Backward/Forward Crossfade Loop** will give interestingly new results. Try it on drum loops, FX sounds or drums.

- The **Loop-Search** markers can be used to tell SampleRobot and WaveRobot how they should search for the best loop result. For example when you know the area where the **Loop-Out** should be, you can define the search area with **Loop-Search-In** and **Loop-Search-Out** markers. The Loop-Out marker is set on base of the search markers. So all search markers influence the length and position of the resulting loop area during an Autoloop process. In general SampleRobot and WaveRobot find the optimal loop position and also good alternative **Loop-Search-Results**. Use different search marker settings to experiment with the Autoloop function. The search markers can also be

adjusted before the recording process in the **Multi-Sample Record & Autoloop Settings** (see page 137). For more information about the search markers please read page 165. **Loop-Search-Length** defines a search pattern length that is used for the Autoloop search process. This search pattern is defined by the Loop-In marker to the leftside and the Loop-Search-Length marker to the right side. SampleRobot and WaveRobot search for a similar area in the rest of the waveform (from Loop-Search-In marker to Loop-Search-Out marker) for a smooth loop transition. The Loop-Search-Length value can be entered as a percentage of the loop length. For example: To find loop points in drum loops you should use higher values for **Loop-Search-Length**. Higher values give a better result but cause also a longer loop search time.

- With **Autoloop for all** it is possible to apply loop markers' settings from one Key-Sample to all other selected Key-Samples in a Multi-Sample or in a Project. This is a very powerful function e.g. to apply similar loops to a bunch of Key-Samples at the same time. An example for **Autoloop for all**: Once you have found optimum loop points in one Key-Sample you can apply those settings to all

other recorded Key-Samples in the Project or Multi-Sample. This is done very cleverly. SampleRobot and WaveRobot do not transfer simple absolute marker values but they do an automatic loop-search for each Key-Sample.

Tips for editing Markers

Since editing sample lengths and loops is non-destructive in SampleRobot and WaveRobot, markers are designedto help you shaping your sounds easily for export. You can show or hide markers, change the positions and prelisten to the results directly. Editing markers is even more comfortable if you are using **WaveRobot**.

- **Auto-Note for all** is useful e.g. if you have dragged WAV-files (that contain silence at the beginnings and at the ends) to SampleRobot's Virtual Keyboard. With this option you can correct all sample-starts (**Note-In** markers) and sample-ends (**Note-Out** markers) at the same time.

- f you are using Release-Samples in your Project and you would like to switch off the Release-Sample functionality for all Key-Samples of the selected Project/Multi-Sample at the same time you can use the option **Turn Release off** found in the **Auto-Note/Auto-Loop** for all dialog.

SampleRobot Updates

On the SampleRobot website there will be new program updates available from time to time. The fastest way to get the latest update installer is by downloading it from our web site:

http://www.samplerobot.com/support.php

For more information about the new features please read the included "version History" text file and follow the instructions in the installer.

Keyboard Shortcuts and edit Commands

Below you find a list containing all keyboard shortcuts and edit commands of SampleRobot and of WaveRobot.

Right-click on a parameter or a marker flag	Open an input window for direct value entering
F11	Increases the window sizes of SampleRobot WaveRobot: Toggle between different window sizes
SHIFT + F11	Decrease the window sizes

	of SampleRobot
SHIFT + H	Show or hide the MIDI Monitor section in SampleRobot
SHIFT + J	Show or hide the MIDI-Controller section in SampleRobot
CTRL + click on a Virtual Key or CTRL + sending a MIDI note	Select or deselect a virtual key
Right-click on a Virtual Key containing a Key-Sample	Open the Key-Sample in the Note/Loop/Release Editor
Z	Open or close the ZoomRobot window
W	Open or close the integrated WaveRobot application and load the current Key-Sample from Note/Loop/Release Editor
ALT + click on a virtual key containing a Key-Sample	Export the Key-Sample as rendered WAV-file
Backspace + click on a	Delete the sample from the

virtual key containing a Key-Sample	hard disk
L + click on the little waveform symbol underneath a recorded virtual key	Lock/ unlock the dedicated Key-Sample
E + click on a virtual key containing a Key-Sample	Open the Key-Sample in the Note/Loop/Release Editor
Space-bar	Playback or stop of the note area of a Key-Sample in the editor or in WaveRobot
SHIFT + Space-bar (WaveRobot)	Playback of the sample region between both loop markers
Enter key (WaveRobot)	Sample playback from the current cursor position
SHIFT + Enter key (WaveRobot)	Sample playback from the current cursor position (ignoring all markers)
Spacebar + Enter key	Stop playback in WaveRobot
Click and drag the waveform in the editor or in WaveRobot	Move the displayed waveform area waveform area

Right-click and drag the waveform in the editor or in WaveRobot	Zoom the displayed waveform with a centered zoom point
SHIFT + click and drag the waveform up or down in the editor or in WaveRobot	Move and overlap the left and right waveforms of a stereo sample
SHIFT + right-click and drag the waveform up or down in the editor or in WaveRobot	Zoom the displayed waveform area vertically
SHIFT + click and drag a loop marker flag to the left or to the right in the editor or in WaveRobot	Move both loop markers simultaneoulsy
SHIFT + right-click on the X/ BFX marker flag in the editor or in WaveRobot	Open an input window for changing crossfade characteristics
L + click on the waveform in the editor or in WaveRobot	Set the Loop-In marker
L + right-click on the waveform in the editor or in WaveRobot	Set the Loop-Out marker
N + click on the waveform	Set the Note-In marker

in the editor or in WaveRobot		ALT + R (WaveRobot)	Scale the waveform between the release markers to the window´s size
N + right-click on the waveform in the editor or in WaveRobot	Set the Note-Out marker	ALT + I (WaveRobot)	Show sample informationen
R + click on the waveform in the editor or in WaveRobot	Set the Release-In marker	ALT + T (WaveRobot)	Toggle between centered loop markers
R + right-click on the waveform in the editor	Set the Release-Out marker	F2 (WaveRobot)	Hide all markers
X + click on the waveform in editor or in WaveRobot	Set the crossfade marker	F4 (WaveRobot)	Turn automatic waveform scrolling during playback on or off
B + click on the waveform in the editor or in WaveRobot	Set the backward/ forward crossfade marker	F5 (WaveRobot)	Lock or unlock waveform on the x-axis (to prevent vertical drift)
ALT + A (WaveRobot)	Scale the complete waveform to the window´s size	F6 (WaveRobot)	Slow down/normalize the zoom factor
ALT + N (WaveRobot)	Scale the waveform between the note markers to the window´s size	Right-click on the OSC button in SampleRobot	Open a window containing oscillator´s parameters
		C (SampleRobot)	Activate/ Deactivate MIDI Capture
ALT + L (WaveRobot)	Scale the waveform between the loop markers to the window´s size	CTRL + O (SampleRobot)	Open a Project
		SHIFT + CTRL + O (SampleRobot)	Open the last saved Project

CTRL + S (SampleRobot)	Save the selected Project
SHIFT + CTRL + S (SampleRobot)	Save the selected Project with another name or to another location
CTRL + ALT + S (SampleRobot)	Save all Projects
CTRL + P (SampleRobot)	Open the Preset Manager
CTRL + Q (SampleRobot)	Quit application
CTRL + C (SampleRobot)	Copy the selected Multi-Sample (except Key-Samples)
SHIFT + CTRL +C (SampleRobot)	Copy the selected Multi-Sample (include Key-Samples
CTRL + V (SampleRobot)	Paste Multi-Sample (except Key-Samples) from clipboard
SHIFT + CTRL + V (SampleRobot)	Paste Multi-Sample (with Key-Samples) from clipboard
ALT + N (SampleRobot)	Create a new Project
ALT + Delete key (SampleRobot)	Delete the selected Project

ALT + D (SampleRobot)	Duplicate the selected Project (except Key-Samples)
ALT + SHIFT + D (SampleRobot)	Duplicate the selected Project (including Key-Samples)
CTRL + N (SampleRobot)	Create a new Multi-Sample
CTRL + Delete (SampleRobot)	Delete the selected Multi-Sample
CTRL + D (SampleRobot)	Duplicate the selected Multi-Sample (except Key-Samples)
CTRL + SHIFT + D (SampleRobot)	Duplicate the selected Multi-Sample (including Key-Samples)
CTRL + I (SampleRobot)	Import Single-Sample-Soundlibrary
CTRL + F1 (SampleRobot)	Export selected Project as WAV files
CTRL + ALT + F1 (SampleRobot)	Export only the Key-Samples´ loop area of the selected Project as Wav file
CTRL + F2 (SampleRobot)	Export selected Project as

	Dimension preset
CTRL + ALT + F2 (SampleRobot)	Export selected Project in Dimension *.sfz format
CTRL + F3 (SampleRobot)	Export selected Project in SoundFont2 format
CTRL + F4 (SampleRobot)	Export selected Project in HALion format
CTRL + F5 (SampleRobot)	Export selected Project in SoundFont2 format for EXS 24
CTRL + F6 (SampleRobot)	Export selected Project in WAV format for Gigastudio
CTRL + F7 (SampleRobot)	Export selected Project in NN-XT format
CTRL + F8 (SampleRobot)	Export selected Project in WAV format for EmulatorX
SHIFT + CTRL + F1 (SampleRobot)	Export selected Project in WusikStation format
SHIFT + CTRL + F2 (SampleRobot)	Export selected Project in SoundFont2 format for Independence
SHIFT + CTRL + F3 (SampleRobot)	Export selected Project in SoundFont2 format for

	MachFive
SHIFT + CTRL + F4 (SampleRobot)	Export selected Project in SoundFont2 format for rgc:audio
SHIFT + CTRL + F5 (SampleRobot)	Export selected Project in SoundFont2 format for VSampler
SHIFT + CTRL + F6 (SampleRobot)	Export selected Project in SoundFont2 format for Kontakt
CTRL + E (SampleRobot)	Open dialog Estimate Time and Size
CTRL + R (SampleRobot)	Start automatic recording for the selected Multi-Sample
ALT + R (SampleRobot)	Start automatic recording for the selected Project
CTRL + ALT + R (SampleRobot)	Start automatic recording for all Projects
SHIFT + CTRL + R	Start semi-automatic recording for the selected Multi-Sample
SHIFT + ALT + R	Start semi-automatic recording for the selected

	Project
SHIFT + CTRL + ALT +R	Start semi-automatic recording for all Projects
ALT + P	Open Preferences window in SampleRobot or in WaveRobot
SHIFT + W	Open ChessRobot
F1	Activate/deactivate Quick Info/ Tool Tips
F10 + cursor arrow keys	Choose menus with cursor keys (arrows)
SHIFT + F1	Open Quick Help window for Note/Loop/Release Editor

Some of the key commands can be displayed by opening the key commands window: **Help** -> **Quick Help: Key Commands**. All important program menu functions can also be accessed via computer keyboard shortcuts. The corresponding shortcut is displayed next to the function name in the menu entry.

Errors Messages and Troubleshooting

- The error message **The Notes Length is equal 0** appears, when you try to play a Key-Sample (by clicking on the key or via MIDI note) that has an invalid sample length. This is caused by the Note-In and the Note-Out markers that have the same position so that the current note length is 0. For this reason you should change the note marker positions or use the **Auto-Note** function (see page 175) or **Auto-Note for all** function (see page 175). This message will also be displayed when you play a note after a recording process with very low input signal or no input at all. Check your connections and volumes in this case. If you do not save your Project when you exit the program, SampleRobot has stored the recorded samples but it has not stored marker settings so that this error message can occur the next time you try to play a previously recorded sample. In this case use the Auto-Note functions and save your Project.

- The warning dialogs **You cannot have 0 Multi-Samples** and **You cannot have 0 Projects** appear when you try to delete the last Multi-Sample or the

last Project in SampleRobot. There has to be at least one Project and one Multi-Sample in the lists.

- If your audio or MIDI connections do not work in combination with SampleRobot please check the following points:

  - Have you established all MIDI and audio connections the right way (cables, connectors)? Is your instrument switched on?

  - Have you selected **MIDI In Device**, **MIDI Out Device**, **Audio In Device** and **Audio Out Device** properly?

  - The audio input of some audio interfaces must be activated additionally in a dedicated audio interface control panel to enable audio recording. Please read the manufacturer's user manual (keyword: input monitoring).

  - Is **MIDI Thru** in the **MIDI Monitor** section activated? MIDI Thru activation is necessary if you want to play a MIDI sound generator with your MIDI master keyboard thru SampleRobot?

  - Is the **MIDI** button located on the right Keyboard Range Selector activated? Activation

is necessary to use the Virtual Keyboard for playing external MIDI sound sources.

  - Is the volume of the external sound source turned up? Maybe MIDI controller 7 (for MIDIvolume) is set to 0. In this case set controller number 7 to 127 and/or turn up the volume of your sound generator.

  - Make sure that your velocity setting in the Multi-Sample section is unequal 0.

  - Is MIDI send-channel of SampleRobot and MIDI receive-channel of your MIDI sound source identical?

- If you cannot establish MIDI or audio playback despite correct MIDI and audio connections it is possible that another audio or MIDI application is blocking your MIDI or audio interface. In this case quit the other application to work with SampleRobot.

- If you work with MIDI controllers in SampleRobot you might experience unwanted results. Please read the following article to avoid errors. If you have created two Multi-Samples in a Project, one using a MIDI controller and the other one not using the same MIDI controller, you should set the

MIDI controller in the second Multi-Sample to value zero. Some MIDI sound generators do not reset the controllers if they receive a "Reset All Controllers" message because they simply do not support this command. To avoid sample recording while unwanted controllers are active please make.

- If you should experience recording problems like MIDI hang-ups or delayed MIDI playback you should deactivate **Auto Send Reset** in the **MIDI Controllers** section and also Program Change in the **Multi-Sample** section. Some older synthesizers and MIDI sound generators need some time to process these commands causing timing errors and MIDI hang-ups.

- **Error copying the File** is a message that warns you when an unvalid or write-protected data path is choosen in the Preferences. Please change the data path and start SampleRobot again.

- **Errors during file import** can occur when the file is provided in an unsupported data format. SampleRobot supports WAV files up to 24 bit and up to 192 kHz. If necessary, convert the data format with another audio application before importing.

Useful Weblinks

- Official international SampleRobot website: http://www.samplerobot.com

- Official German SampleRobot website: http://www.samplerobot.de

- Official international WaveRobot website: http://www.waverobot.com

- Official German WaveRobot website: http://www.waverobot.de

- Official international website of SampleRobot manufacturer SKYLIFE: http://www.skylife.de

- International website of the music accessories manufacturer ESI: http://www.esi-pro.com

- International website of the music software company Cakewalk (Sonar, Project 5, Dimension): http://www.cakewalk.com

- International website of the music software company Steinberg (Cubase, HALion software sampler): http://www.steinberg.net

- International soundfont website: http://www.soundfont.com/

- International website for audio software and plug-ins: http://www.kvraudio.com

- International web portal for music hardware and software:
  http://www.harmony-central.com

- International web portal for music hardware and software:
  http://www.sonicstate.com

Glossary

After Touch

The majority of contemporary keyboards are capable of generating after touch messages. When you press harder on an after touch capable keyboard's key that you are already holding down, a MIDI after touch message is generated. This feature enables you to play the musical performance even more expressively (e.g. after touch adds vibrato). SampleRobot supports after touch messages. You can use different Multi-Samples to capture the sound changes caused by an after touch message.

Aliasing

Aliasing is an audible side effect occuring in digital systems as soon as a signal contains harmonics higher than half of the sampling frequency.

Attack

Attack is an envelope parameter. Attack is a term that describes the ascent rate of an envelope from its starting point to the point where it reaches its highest value. The attack phase is initiated immediately after a trigger signal has been received, e.g. after you play a note on the keyboard. SampleRobot recognizes the attack phase of a sample automatically and sets the Note-In marker to the starting point.

Attack Velocity

The attack velocity is a value that defines how fast a key is triggered. This value is generated by the speed and not by intensity of a key trigger.

Bit-Rate

Bit-rate, also known as "Word Length", is the number of bits used to store the audio information in a single sample. The higher the number, the more precise information contains each sample resulting in higher dynamic´s resolution. Normal CD audio uses 16 bit. SampleRobot supports full 24 bit resolution (depending on the audio hardware).

Clipping

Clipping is a sort of distortion that occurs when a signal exceeds its maximum value. The curve of a clipped signal depends on the system where the clipping takes place. In the analog domain clipping limits the signal to its maximum level. In the digital domain clipping means a numerical overflow and so the polarity of the signal's part above the maximum level is reversed causing uncomfortably noises.

Control Change (Controllers)

Normally MIDI controller messages enable you to manipulate the sound characteristics of MIDI sound generator to a significant degree.

This message essentially consists of two components:

- The controller number which defines the "address", the parameter that should be changed. In SampleRobot controllers from 1 to 120 are supported.

- The controller´s value which determines the extent of modification (0 to 127).

Controllers can be used for adding effects to a sound such as slowly swelling vibrato, changing the stereo panorama position and influencing the filter's frequency.

SampleRobot offers complete remote control of your MIDI gear to create dynamically playable Multi-Samples.

Key-Sample

A Key-Sample in SampleRobot is a recorded sample that belongs to a selected key. All Key-Samples are displayed as little waveforms underneath the Virtual Keyboard.

Layer

A layer is normally a part of a sound program or a different articulation. Most synthesizers' sounds contain up to four layers (oscillators, parts, etc.) and use different velocity layers for each sound. A sampler can have different sample velocity layers for each key, which are triggered by pressing a key with different velocities. SampleRobot can rebuild the dynamics of a recorded sound by using several Multi-Samples (see chapter Working with Projects and Multi-Samples on page 208).

MIDI

The acronym MIDI stands for "Musical Instrument Digital Interface". MIDI was developed in the early eighties. As a result various types of electronic musical instruments developed by different manufacturers could interact. Before that time a communication standard for heterogeneous sound devices did not exist (except voltage control), so MIDI was a significant advance. It makes it possible to link devices together via simple, uniform connections. Basically, this is how MIDI works: One sender is connected to one or several receivers. For instance, if you want to use a computer to play a synthesizer then the computer is the sender and the synthesizer is the receiver. With a few exceptions the majority of MIDI devices is equipped with two or three ports: MIDI In, MIDI Out and in some cases MIDI Thru. The sender transfers data to the receiver via the MIDI Out jack. Data is sent via a cable to the receiver's MIDI In jack. MIDI Thru has a special function. It allows the

sender to transmit to several receivers. It routes the incoming signal to the next device without modifying it. Another device is simply connected "thru" this unit. So it is possible to create a chain of receivers, which can be addressed by the sender. Of course it makes sense that the sender is able to address each device individually. Consequently there are additional rules so that a sender can reach each device individually. With the MIDI Thru function in SampleRobot you can control external sound sources "thru" SampleRobot via a MIDI master keyboard.

MIDI Channel

This is a very important element of most messages. A receiver can only respond to incoming messages if its receive channel is set to the same channel as the one that the sender is using to transmit data (exception: MIDI Omni Mode). Consequently the sender can address specific receivers individually by using different MIDI channels. MIDI channels 1 through 16 are available for this purpose.

Modulation

A modulation changes a sound-shaping component via a modulation source. Modulation sources include envelopes, LFOs or MIDI messages. The modulation's destinations are sound-shaping components such as filter or VCA.

Multi-Sample

A Multi-Sample is a bunch of different recordings of the same single sound in different pitch ranges or with different articulations. Since harmonics' characteristics of most sounds change enormously over the tone ranges and when played differently, Multi-Samples are the only way to capture all nuances of the entire sound. SampleRobot uses Multi-Samples to create very detailed recordings of the original sound.

Normalize

Normalize is a function to rise the level of a sample to its maximum (0 dB) without causing distortion. This function automatically searches for the maximum peak level in the sample and adjusts this level to the maximum. All the rest of the audio waveform is gained accordingly. In general this results in a higher overall volume of the sample. SampleRobot is equipped with comprehensive normalize functions.

Note on/ Note off

This is the most important MIDI message. It determines the pitch and the velocity of every generated note. The time of arrival defines the start time of the note. Its pitch information is the note number, which ranges between 0 and 127. The velocity ranges between 1 and 127. Zero velocity is often used as the "Note Off" event. Of course

SampleRobot allows you to use all these messages for complete remote control during sampling processes.

Pitch Bend

Pitch bend is a MIDI message. Although a pitch bend message is similar in function to control change messages, it is a distinct type of message. The difference is that the resolution of a pitchbend message is substantially higher (14 bit) than the 7 bit precision of a conventional control change message. The human ear is exceptionally sensitive to altering in pitch so the higher resolution is necessary to electronically simulate realistic pitch bendings.

Program Change/ Bank Select

These events are MIDI messages that switch sound programs and banks. Program numbers 1 through 128 can be changed via program change messages. The optional bank select operation (supported only by some MIDI devices) can be accessed by using the MIDI controller 0 (MSB) and 32 (LSB). There is no manufacturers' convention for using the bank change messages. So please refer to your manufacturer's manual to find out how the bank change operation can be executed. SampleRobot can change MIDI sound programs automatically with the function "Create Projects from Soundnames".

Release

Release is an envelope parameter. The term "Release" describes the descent rate of an envelope to its minimum value after a trigger is terminated or alternatively a "Note Off" event is received. The release phase begins immediately after Note Off, regardless of the envelope's current status. For instance the release phase might be initiated during the attack phase. SampleRobot uses own markers to define the release phase of a sample. While exporting, these releases will be saved as separate Release-Samples.

Release-Sample Trigger

SampleRobot can record the release phase of a sound to create a separate Release-Sample that can be triggered sampler and then release the dedicated key. As soon as you are releasing the key the normal sample playback stops and the Release-Sample starts playing. A lot of software sampler feature release triggers. Use this function in SampleRobot to record the depth and room information of the original instrument.

Release Velocity

MIDI release velocity can generated by some MIDI keyboards when you are releasing a key. Not many keyboards support release velocity. Release velocity can be transmitted in SampleRobot.

Root Key

The root key defines the original pitch of a recorded instrument or of a sample. Each root key represents a specific key on the keyboard. Key-Samples in SampleRobot contain the dedicated root key information. This information will be created automatically during recording and is also available in exported files.

Sample Rate

This is the frequency representing the amount of individual digital sample scans per second that are taken to capture the original siginal digitally. For normal CD audio recordings 44100 samples per second are used mostly indicated as a frequency of 44.1 kHz. SampleRobot offers sampling rates up to 192 kHz depending on audio hardware and drivers.

System exclusive Data

In some MIDI sound generators MIDI system exclusive messages give access to the heart of the device. Mostly you can access data and functions that no other MIDI messages are able to address. "Exclusive" in this context means that these messages can be understood only by a special device type or model. Every device that supports SysEx has got unique system exclusive data. The most common applications for SysEx data include editors and libraries to transfer sounds andglobal data. In some cases SysEx can be used to control and program a speficic device via MIDI.

Threshold

Threshold is a value used to denote specific levels, such as those belonging to volume. The threshold marks the level for a specific action. Values under the threshold are ignored while values above it cause certain actions. Thresholds are used within compressors and limiters. In SampleRobot special thresholds are used to determine the Note-In and the Note-Out markers.

Trigger

A trigger is a signal that activates events. Trigger signals can be very diverse. For instance a MIDI note or an audio signal can be used as a trigger. Various events and actions can be triggered. A common application for triggering is to start an envelope by hitting a key. SampleRobot supports release sample triggers to create authentic Multi-Samples.