SAMPLEMODELING

Solo, Chamber & Ensemble Strings

Version 2.0.1

User Manual

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Before you begin

Before using Samplemodeling Solo, Chamber and Ensemble Strings, please read carefully this User Manual. It will save your time and bring you much faster to the desired results.

What's new in version 2.0.1 ?

1) This version employs a different approach to the instrument body impulse response, more adherent to the acoustics of real instruments.
   The result is a much more defined sound, with sharper attacks and transients.

2) For velocities below 100, a simulation of the progressively rising speed of the bow is implemented. This is accomplished by an ascending ramp for CC11. The lower the velocity the wider and slower the ramp. This articulation (velocity below 100) plays the sustain samples with their original attacks.

3) Spiccato (off-the-string) and marcato (on-the-string) attacks can be added, and are under player's control. For this purpose, the function of CC38 has been revised. If CC38 is around 64, the original sustain samples are played. For velocities above 100 either Spiccato or Marcato are added, depending on CC38 settings. Higher CC38 values (>64) introduce progressively more intense Spiccato, while lower values (<64) introduce more intense Marcato attacks. The length of the spiccato release can be controlled by CC27, the duration of the marcato attack - by CC26.
   See page 17 for further details.

4) Legato/portamento/detaché and bow changes have been optimized. This can only be evaluated by playing the instruments.

5) Chamber Ensembles have been added. They simulate a small group of players starting from four solo instruments up to small sections. Chamber Ensembles differ from large Ensembles in many respects, the most important being the ability to play a very expressive, nearly synchronous vibrato. In our large Ensembles instead, expressive vibrato is both under control of CC1 and CC99, which act to recreate the richer sound of asynchronous vibrato. They can be used as a standalone multi (for chamber music) or in combination with the corresponding large Ensemble (for symphonic music): this combination has a richer sound, and adding the more soloistic vibrato of the Chambers to the Ensembles yields a much greater expressiveness.

6) Further smaller optimizations and bug fixes

Why Samplemodeling Solo, Chamber & Ensemble Strings?

Why another string package? There are already so many, either conventional libraries or based on physical modeling! Do we still need another one? The answer is YES. But not just another one. Something completely different. We need virtual instruments overcoming the limits of the current approaches. With a realistic timbre, sample-based, but allowing any kind of sound shaping and user-molded articulation, according to Samplemodeling philosophy. Equally suitable for composition and real time playing. Including all solo & ensemble string instruments. Compact and flexible. Not an easy task, which required four years of intensive research & development.

So, this is not just another string library. It's a complete set of virtual instruments – from solo, to chamber string orchestra, or large symphonic strings. Yes, using samples. But also using our renowned technologies to “model” them by the user. That means: very playable, even in real time, like our much appreciated brass instruments. The player can seamlessly vary the dynamics, vibrato intensity and frequency, shape the attacks, change the ensemble size and the coherence of ensemble vibrato, modify the timbre acting on selected harmonics, and on many other parameters. No need to recall pre-recorded articulations and hope they fit your musical context. Instead, the instruments can be entirely articulated by the player. It´s he who plays legato, detaché, staccato, runs, trills, grace notes, crescendos etc. directly on the keyboard, even without the use of keyswitches, which are only used to activate other articulations and functions, like pizzicato, harmonics, microtuning etc.

Why samples? Our virtual strings use recorded samples of real strings as base material. This – as opposed to other technologies, like physical modeling, for example - proved to be the best choice to preserve the complexity of timbral properties of the original instruments. We used state-of-the-art recording techniques, including multi-microphone placement, according to the radiation characteristics of the instrument. All sounds were recorded in an anechoic chamber.
Like the other Kontakt-based Samplemodeling instruments, the Solo, Chamber & Ensemble Strings use Giorgio Tommasini's proprietary "Harmonic Alignment" technology. It enables realtime, seamless morphing over the entire dynamic range, from *pp* to *ff*, an impossible task for conventional sample-based libraries, especially for solo instruments.

Congratulations on your purchase! You own now probably the most versatile virtual Solo, Chamber & Ensemble Strings on the market. They are at your fingertips, ready to play just out of the box.

System requirements & installation

Operating systems

PC:
Windows 7, 8 or 10 (current Service Pack, 64 bit only)
Mac:
OS 10.13, 10.14, 10.15 or 11, i5 (current update)

Note: Compatibility with OS and Hosts is only dependent on the Kontakt version in use. This means that if a future version of Kontakt works properly on your brand new system, and Native Instruments confirms its backward compatibility, our instruments will work as well. All the above OS are fully compatible with the Kontakt 6 Player supplied with the Strings. Please note, however, that the Strings v. 2.0.1 have been developed on Kontakt 6.6.1 and will not work with previous versions of Kontakt.

In case you´ve just installed a brand new, recently released Operating System, please refer to the Native Instruments site to find out whether your OS can be used with their newest Kontakt version.

Supported plugin standards:

macOS (64-bit only): Stand-alone, VST, VST3, AU, AAX

Windows (64-bit only): Stand-alone, VST, VST3, AAX

Kontakt Player

To play the Strings, the Kontakt Player v. 6.6.1 - the read-only version of Native Instruments Kontakt sampler - is needed. This free software requires a separate installation managed by Native Instruments´ Native Access utility. Kontakt will play in stand-alone mode, as well as plugin supporting various standards. Earlier Kontakt versions cannot be used, with the exception of the Strings Update for earlier string users. This update will still work on Kontakt v.5.8.1.

For further details, please refer to the Installation Guide and to the Kontakt Manual provided with the Kontakt software.

Kontakt Sampler

The instruments can be also loaded and played in the full version of the Kontakt Sampler. Please note, however, that they cannot be opened or modified, and no access to the samples, impulse responses or instrument programming is provided. If you already use a full but older version of Kontakt, you can install the newer Player along with it.

Installation

Please read carefully and follow the instructions found in the separate Installation Guide.

Computer

The Strings, like all Samplemodeling instruments, provides unprecedented realism and expressiveness. However, it's a demanding software in terms of CPU load. Especially the ensembles require a modern PC with at least i7 Intel Core, 2.6 GHz or an equivalent CPU, 4 GB RAM.
Less powerful systems may also prove satisfactory, but may require larger buffer sizes, involving higher latencies, and may reduce the amount of simultaneously playable instruments.

Note: This may not represent a real problem though. Using the freeze feature or bouncing/rendering the single MIDI tracks to audio is a useful remedy.

Important note on CPU load

Loading multiple solo instruments on a single instance of Kontakt leads to a less efficient use of the multiple cores, and to an increased CPU load. We strongly recommend using a separate instance of Kontakt for each instrument or ensemble.

Audio Interface (sound card)

A good quality audio hardware with suitable low latency drivers (ASIO for the PC) is required. Recommended buffer sizes may range from 128 (low-latency, very high CPU load) to 512 samples (higher latency, but less CPU load).

Keyboard, Breath- or Wind Controller

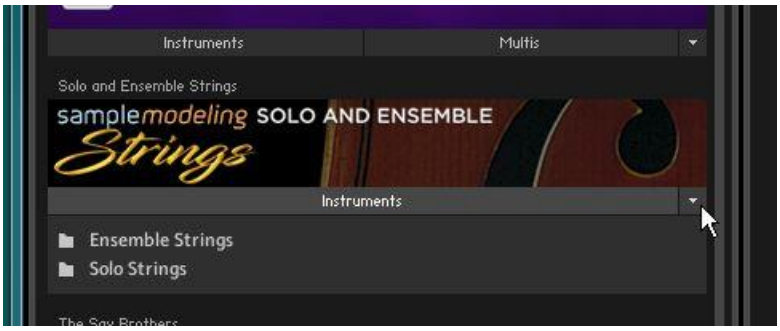
A five-octave MIDI keyboard, mappable from C1 to C6, with pitchwheel, modwheel, and an expression pedal or breath controller, constitute the minimum requirements for realtime playing. Seven-octave keyboards with several physical MIDI controllers, including expression and sustain pedals, or other expression controllers, are recommended for full exploitation of the expressiveness of the instruments.

Sequencer.

Programming MIDI tracks in a sequencer may avoid the need for several physical MIDI controllers, while maintaining full control of the instrument expressiveness. Samplemodeling Solo & Ensemble Strings work on all the common sequencers and work stations, and have been thoroughly tested on Cubase, Logic and Reaper.

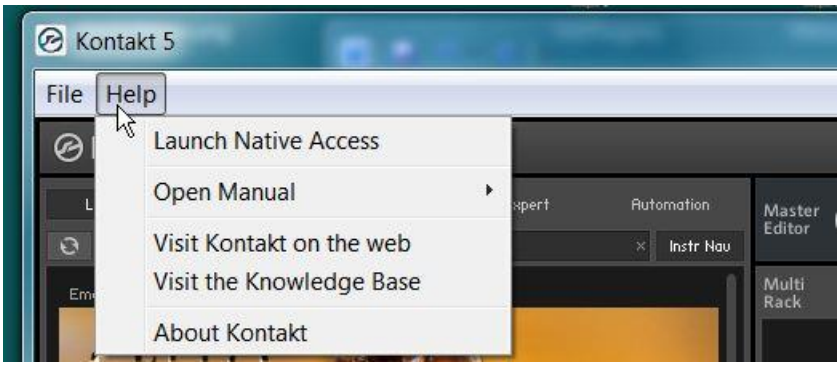
Accessing the Manuals

This Manual and other Strings documentation can be accessed at any time by clicking on the appropriate icon in the Kontakt browser:



Alternatively, the pdf files can be opened directly; they are placed in the folder "Documentation" inside the library folder (SM Solo & Ensemble Strings).

The Kontakt / Kontakt Player Manual is available from the Kontakt Help menu:



MOST IMPORTANT:

Like a real instrument, and unlike conventional sample libraries, the Strings allow continuous transition across the dynamics (from *pp* to *ff*), free from any side effects. To accomplish this, a suitable continuous MIDI data sent from a physical MIDI controller, such as an expression pedal (CC11) a breath controller or a wind controller (CC2), (or one of these CCs written into a MIDI track, driving the dynamics), is absolutely necessary.

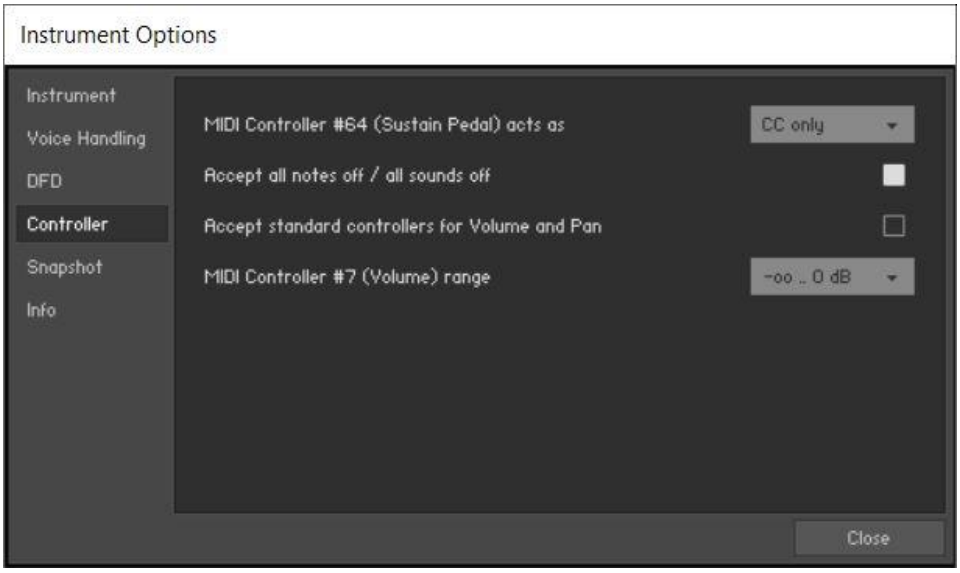
WITHOUT THIS CONTROLLER THE INSTRUMENT WILL NOT PLAY, displaying a warning.

Other physical MIDI controllers, like sliders, knobs, the modwheel, XY pads, or a Breath- or a Wind- controller can also be used for this purpose. Please refer to the Remapping section of this manual for further details.

General Notes

Tip: switching off the record-ready function of the tracks during playback may reduce the CPU load and significantly improve the overall performance.

Tip: Some users might experience hanging notes upon stopping the playback. The problem can be solved by checking the box "Accept all notes off/ all sounds off" under "Instrument Options -> Controller", as shown below.



Note: the MIDI note naming convention is based on the Yamaha standard: the middle C is C3, corresponding to MIDI note number 60.

Chamber and Ensemble Strings

Special attention has been given to creation of realistic string ensembles and chamber strings playing in unison. Advanced technologies have been used to control not only the dynamics, but also vibrato frequency, intensity, and coherence, even the ensemble size - something impossible when using conventional sample libraries.

Early Reflections

A sophisticate ER algorithm exploits the directional information of multi-microphone anechoic recordings to recover the full, rich timbre of the instrument along with its radiation pattern, adding a proper virtual space to the anechoic sound.

Virtual Soundstage

This feature allows precise positioning of the instruments in a virtual space located before the listener, using early reflections, pre-delay, convoluted panning, apparent width and perceived distance algorithms. This will set you free of adding a further suitable acoustic environment, without incurring multiple-ambience issues. This can be carried out within the same Kontakt Player, which provides a high quality convolution reverb.

Microtuning

Another feature is microtuning, applicable to individual keys even in real time, to better cope with non-tempered scales – so essential in, for example, Middle Eastern and Asian music.

Expression, Velocity and Pitch Mapping

User-drawn rescaling of the expression CC may give better control of the dynamics, particularly when tailored to suit your own input devices like expression pedal, breath or wind controller, for example. Similarly, the velocity and pitch can be remapped as well, optimizing the interaction between the controller hardware and the instruments.

Realtime Timbral Shaping

This new feature adds a virtually infinite timbral variety to sample-based instruments, by acting on the amplitude of individual harmonics or groups of harmonics, even in real time. This is not a graphic equalizer; the controlling vertical bars are not assigned to fixed frequencies, but to the first 10 harmonics of the played note. As a consequence, the affected frequencies vary with the pitch of the note.

The Instruments

The Solo & Ensemble Strings package includes all four solo strings – Violin, Viola, Cello and Double Bass – as well as ensembles – from small (Chamber Strings) to large (Ensemble Strings): 1st and 2nd Violins, Violas, Cellos and Double Basses. The size of the instrument groups is not pre-defined. It can be controlled by the user applying a continuous controller (CC95) changing the perceived ensemble size from “small” to “large”. Moreover,
Each instrument or instrument group allows playing monophonic lines and bichords – exactly as real instruments and ensembles do. This remarkably facilitates the proper “linear-” or “melodic thinking” while arranging or creating the sound of a string orchestra, as opposite to the “piano-like”, “vertical” approach when playing chords on a keyboard.
To mimic a unison ensemble there is no need to use countless solo instruments, using multiple MIDI tracks. Our proprietary technology magically recreates the ensembles using a single MIDI track per group of instruments.

The Graphical Interface (GUI)

Please note: the description of the Graphical User Interface (GUI) below refers to the solo instruments. However, It´s also valid for both the Ensemble and Chamber strings with only minor changes.

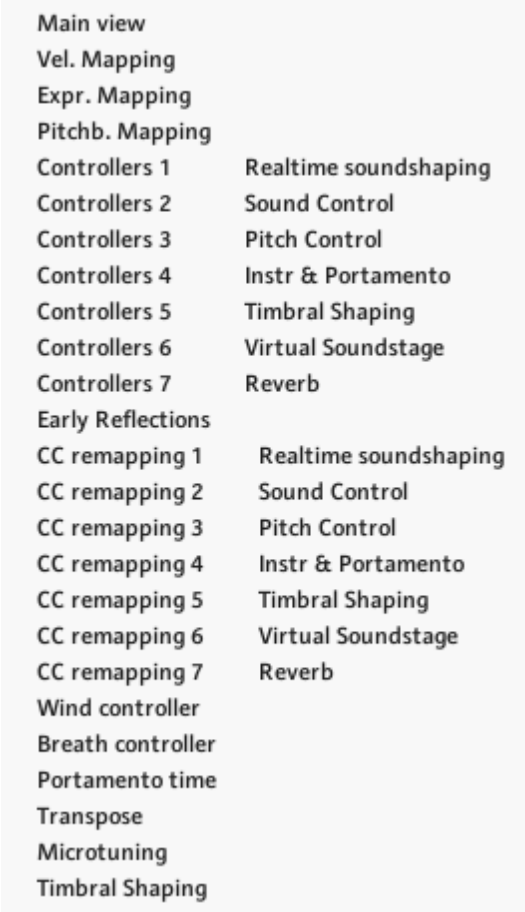
This is how the instrument looks upon loading. A warning message appears, reminding you that **an Expression controller i.e. CC11 (or CC2 if in Breath or Wind Controller Mode) is absolutely necessary for proper functioning of the instrument:**

Upon receiving the appropriate CC (from your keyboard (KB) or other MIDI sources, such as a wind controller (WC) or sequencer), the warning disappears, and the instrument is fully functional:

The GUIs below show, as an example, the appearance of the Ensembles and Chamber Strings:

The grey button to the right (“Main View”) opens a drop down menu.

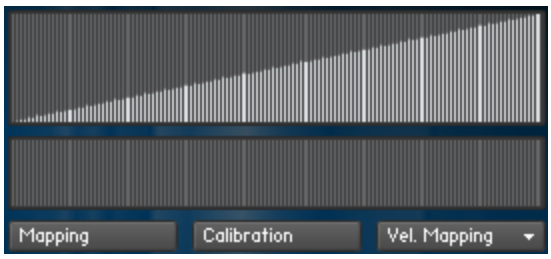
You may choose among several options:



Velocity Mapping

It is well known that MIDI keyboards have different and uneven velocity response, and this may heavily influence the performance of a virtual instrument. To obviate this problem, the instrument includes automatic detection of any velocity inhomogeneities or non-linearity emitted by the keyboard, and provides automatic remapping to any desired curve.

If “Vel. Mapping” is selected in the drop down menu, the velocity mapping GUI will be displayed:



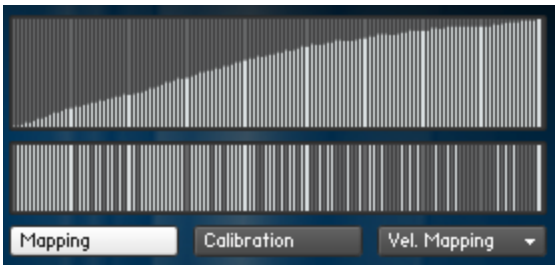
As a default, velocity mapping is disabled.
Velocity mapping is activated by clicking on the “Mapping” button until it turns white:

Now, the relationship between in (X axis) and out (Y axis) velocity values is represented by the upper graph. A straight line, from bottom left to top right means linear mapping, i.e. no changes. The graph can be directly edited with your mouse, so that you can program any velocity response you need.

Furthermore, to compensate for a nonlinear behaviour of your keyboard, an automatic calibration procedure is provided. Just click on the “Calibration” button until it turns white.

Now what you have to do is to hit any key at random velocities, trying to cover the whole velocity range. Each new output velocity will appear as a new bar in the lower panel. The overall velocity curve output of your keyboard will progressively be updated in the upper panel.

The response of a nonlinear keyboard:



After you’re finished with the automatic mapping procedure, i.e. when you notice, that no new velocity bar appears anymore, disable “Calibration” by clicking on it until it turns grey. From now on, compensation for nonlinearity of note-on velocities will be carried out if “Mapping” is active (i.e. white). You may also correct the compensated curve with your mouse. Please note that all changes will be maintained upon storing and reloading the instrument.

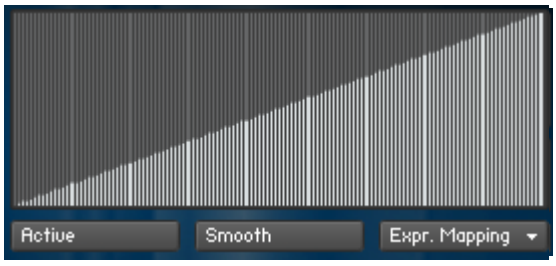
Tips: left clicking and dragging the mouse allows free hand drawing. Right clicking and dragging enables drawing of straight lines. Please note that constructing curves with multiple straight segments can be easier and faster.

Left clicking and dragging the mouse while pressing Ctrl resets the corresponding bars to zero.

Expression Mapping

The default setting for the expression controllers (CC11 or CC2) is linear in a dB scale. This means that a linear rise of the expression CC yields a perceived linear crescendo. While this is perfectly suitable for most applications, there might be cases where a nonlinear mapping would be advantageous. A very intimate piece, never entering the high dynamic range, or a wind controller too easily jumping to very high CC2 value are examples where a nonlinear mapping of expression could be very useful.

If “Expr. Mapping” is selected in the drop down menu, the velocity mapping GUI will be displayed:



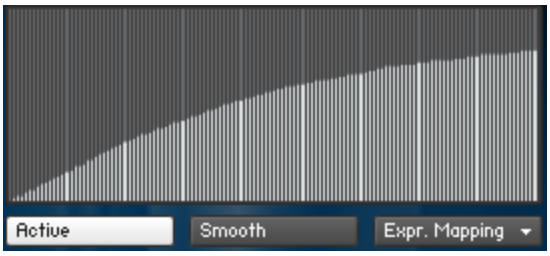
As a default, Expression Mapping is disabled.

Expression mapping is activated by clicking on the “Active” button until it turns white:

Now, the relationship between in (X axis) and out (Y axis) expression values is represented by the upper graph. A straight line, from bottom left to top right means linear mapping, i.e. no changes. The graph can be directly edited with your mouse, so that you can

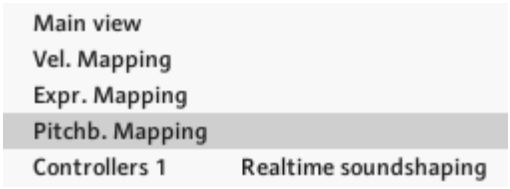
program any expression response you need. The "Smooth" button facilitates the task of drawing smooth curves.

An example of a nonlinear mapping:

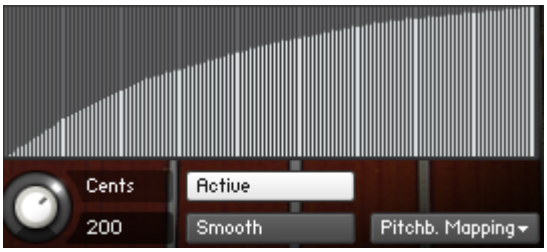


This example shows how to avoid very high dynamics. Mapping may be bypassed by clicking on the "Active" button until it turns grey.
Please note that all changes will be maintained upon storing and reloading the instrument.

Pitchbend Mapping



The default setting for the PB is linear, +/- 1 semitone. While this is perfectly suitable for playing our strings with a keyboard (KB) and PB, there may be cases where an extended range is desirable. Also, a rescaler with nonlinear settings may be useful for better control of a particular range of values.

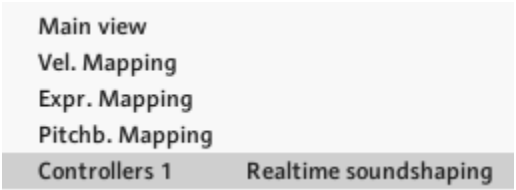


In this example one can see that the PB range has been extended to +/- 2 semitones, and the rescaling curve is shaped to increase the sensitivity of the PB at low values, thus allowing an easier bite vibrato when using a BC or a WC.

Tips: again, left clicking and dragging the mouse allows free hand drawing. Right clicking and dragging enables drawing of straight lines. Please note that constructing curves with multiple straight segments can be easier and faster.

Left clicking and dragging the mouse over the bars while pressing Ctrl resets these bars to zero.

Controller Knobs



All the controllers needed for proper functioning of the instrument are mapped to virtual knobs in seven GUI panels, which can be activated by the drop down menu.The function of each controller is indicated by the associated label.The virtual knobs permit to monitor the incoming midi data, but can also be used to control the instrument with the mouse. This allows users of keyboards without physical MIDI controllers or knobs, to explore the expressive capabilities of SM Solo & Ensemble Strings.

The seven controller GUIs show each MIDI-controlled function, the associated CC number and its current value. Each knob is bidirectionally mapped to its CC.This means that you may set each CC by acting on the associated knob. Conversely, any incoming MIDI CC will be mirrored by the corresponding knob, and its current value will be shown underneath.

Controllers 4 for Ensembles

Please note that, for realistic and expressive playing, these controller knobs cannot substitute some essential physical controllers, such as CC11, modwheel (C1) and pitchbend, which must be provided by your keyboard or sequencer.

Controllers and their function

Velocity

The effects of note-on velocity is manifold. It controls the intensity and the steepness of attacks. On overlapped notes, it controls the speed of legato/portamento.
In the range 1 -> 100, velocity mimics the acceleration of the bow, creating a kind of crescendo pattern, starting from a lower initial dynamics and progressively rising to the target dynamics dictated by CC11. The steepness and extent of this crescendo are linked to the velocity. As far as velocity approaches 100, the original attacks will be played.
If above 100, note-on velocity controls an additional attack, whose type and intensity depends on the settings of CC38. If CC38 is in the range of 64 -> 127, a spiccato attack is progressively added. Conversely, in the range 64 -> 0, a marcato attack is gradually added.

The Continuous Controllers (CC)

PB (pitchbend, not shown in the GUI): mapped to +/- one semitone. Larger range can be set in the Menu "Pitch Band Remapping" (see above)

Controllers 1 Realtime soundshaping

CC11:expression. Controls the continuous transition across the **dynamics**, from *pp* to *ff*, free from phasing artifacts, due to our proprietary Harmonic Alignment Technology. An expression pedal, or a breath controller, routed to CC11, are highly recommended for the most realistic realtime playing.
Please note: a medium, "comfortable" strings dynamics corresponds to CC11 around 60 - 70. Higher dynamics is achieved already at about 90 – 95. Extreme values of CC11 are generally best avoided unless a real ff sound is required

CC1 (modwheel): **vibrato intensity**.

CC19: **vibrato rate, tremolo rate**.

CC26: note-on **attack duration and duration of marcato attacks**. Default = 64.

CC27: note-off **release type and duration**. If set above 64, it activates an off-the-string release. The higher the value, the longer the release. If conversely set below 64, it activates an on-the-string release. The lower the value, the shorter the decay.

Note: CC26 also influences the duration of legato/portamento/detaché from 50% (for CC26 = 0) to 200% (for CC26 = 127).

Controllers 2 Sound Control

CC21: **bow noise**. It can be reduced or increased with respect to the original recording by +/- 6 dB for CC21 = 0 or CC21 = 127. Default = 64.

CC22: **overtones**. This control allows to imitate the typical out-of-Helmholtz sound produced by a transient mismatch between bow pressure and speed. This sound can be occasionally heard during

the performance of even excellent string players. It reminds the overblow of a flute, as if only the odd harmonics were present. This effect, if used sparingly and transiently may contribute to realism.

CC23: **vibrato delay**. Often, vibrato does not start immediately on the new note, but fades in gradually. This controller allows to set an automatic delay and fade-in of vibrato on each new note. Manual, fast changes of vibrato intensity (CC1) immediately take over, defeating the delay.

CC25: allows to control the **initial dynamics** by the interplay between note-on velocity and current CC11. If set to 127 (default) it automatically creates a dynamics ramp starting from the value of note-on velocity and ending at the current CC11. This allows automatic crescendo-sforzato effects, often too difficult to create with the expression pedal. BC and WC players may prefer to directly shape their attacks. In this case CC25 may be set to 0.

CC38: the functionality of this controller has been completely revised. Now, CC38 allows to control the type and intensity of the attacks (in conjunction with velocity – see page 16)
If CC38 is around 64, the original sustain samples are played. For velocities above 100 either Spiccato or Marcato are added, depending on CC38 settings. Higher CC38 values (>64) introduce progressively more intense Spiccato, while lower values (<64) introduce more intense Marcato attacks. The length of the release phase of spiccato can be controlled by CC27. The duration of the marcato attack is controlled by CC26.

Controllers 3 Pitch Control

CC24: **dynamics-to-pitch modulation**. In the real instrument, a transient increase of the bow pressure yields a transient increase in pitch. This is mimicked in the Strings by transiently linking the pitch to sudden dynamic changes. The intensity of this effect can be varied with CC24. suggested values are 30-50 for solo and slightly less for ensembles.

Tip: Higher settings of CC24 may also allow Breath Control players to perform a realistic vibrato by simply modulating the air flow.

CC28: **attack detuning.** Real playing is almost invariably characterized by slight pitch fluctuations, and the average pitch often departs from the tempered scale. The latter phenomenon is also likely to affect more the initial part of the note, before the players starts to correct the pitch. This behaviour is reproduced in the Strings, according to a pseudo-random model. The intensity of this effect can be controlled with CC28. Recommended values are 40-50 for solo instruments and 0-10 for ensembles.

CC33: dyn modulation. Real strings exhibit slight, continuous fluctuations of dynamics and pitch, due to the impossibility of maintaining a steady bow pressure and speed. CC33 controls the extent of these slight fluctuations. Suggested values are around 35 for solo and 20 for ensembles.

Controllers 4 Instr & Portamento

CC5: **portamento time**. By default, the duration of portamento is controlled by the velocity of the overlapped note. Under some circumstances, it may be preferable to control the duration of portamento with a dedicated CC. This is particularly true when using a Wind Controller, where the velocity of the overlapped note may correspond to the current dynamics. In this case lower dynamics would yield long portamentos and vice versa.

By selecting “Portamento time” in the drop down menu you will open a dedicated window. The two knobs show how the duration of portamento is currently controlled.
Default is 100% controlled by velocity, as already stated.
By acting on the knobs, you may set the relative weight of velocity vs. CC5 for controlling portamento time.

CC100: Instrument body impulse response. Each instrument is supplied with a certain number of different IRs, each one yielding a slightly different timbre. They can be selected via MIDI, acting on this controller.

CC95 (chamber & ensemble instruments only): ensemble size. Controls the perceived size of the ensemble, from small to large. Suggested settings for a small chamber group are 0 to 30. For a large ensemble 80-100.

CC99 (ensemble instruments only): synchronous vibrato. The ensemble vibrato effect is controlled by CC1 and CC99. CC1 adds a "random", asynchronous vibrato. CC99 adds some synchronous components. Please refer to the note below.

Important note on chamber and ensemble vibrato: a distinction needs to be made between the kind of vibrato used by a solo player, and the sectional vibrato of an entire string ensemble, which cannot be heard as a uniform quantity as such. Rather, it manifests itself in terms of the warmth and amplitude of the sound produced, as opposed to a perceptible wavering of pitch (https://en.wikipedia.org/wiki/Vibrato). This occurs because symphonic strings vibrato is usually asynchronous. Our ensembles mainly exploit asynchronous vibrato, so that CC99, the controller yielding a synchronous component, is best set to zero. Vibrato rate (CC19) should be set to low values, e.g. 10-40. Under these conditions, the main effect of increasing CC1 will be to generate the richer sound of a large string ensemble playing random vibrato. Increasing CC99 may add some synchronous components, but this effect must be used sparingly and with moderation, e.g. by setting CC99 from 0 to 20. Synchronous (first chair) vibrato is conversely best obtained with our chamber instruments. In this case, CC99 is not used, and CC1 controls the intensity of a quasi-synchronous vibrato. For best effects, vibrato rate (CC19) should be set to lower values than in solo instruments. Values between 20 and 40 will do.

Tip

Some hints about proper setting of some controllers in Chamber vs. Ensemble.

Chambers preferably work with zero or low values of CC95 (ensemble size). They work well with attack detuning (CC28) up to 20, or even higher if CC95 is very low. Dyn Modulation (CC33) are best set to low (zero to 30) value in combination of high cc95, but for cc95 =0 or very low, Dyn Modulation can be higher (e.g. 30 to 55) The modwheel (CC1) controls the intensity of vibrato, whereas CC19 controls vibrato rate. The latter must be set to lower values than in solo instruments, i.e 20-40.

Ensembles work well with virtually any value of CC95. Expressive vibrato (CC99) is best set to very low values (0-15). Attack detuning (CC28) is best set to zero. Dynamics to pitch (CC24) and Dyn Modulation (CC33) are best set to rather low values, say 5-15. The modwheel (CC1) introduces the rich sound of vibrato ensemble, and has to be used to low to moderate values, except for transitory climaxes. CC19 is best set to low values, say 20- 40.

This set of recommendations helps to get a standard response during common performance, while extreme values of controllers can be programmed on purpose by advanced users to get special effects and/or intense expressions in particular points of the score.

Realtime Timbral Shaping (Harmonics Gain)

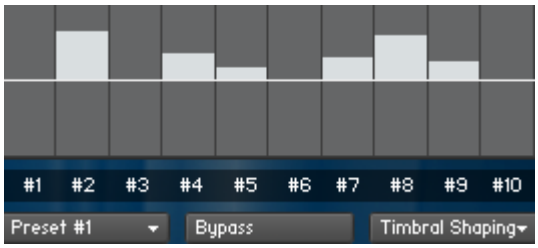
Controllers CC90 – CC93 are reserved for real time control of the Harmonics Gain, related to the our proprietary feature of Timbral Shaping (see page 10 and 27).

Their default setting is 64. In this "neutral", middle position the timbre will entirely reflect the bar settings in the Timbral Shaping menu (between -6 dB and +6 dB).

Outside the default value, CC90 – CC93 allow to shape the timbre in real time, according to the following rules:

CC91:controls the first (lowest) active* harmonic or group of harmonics.
CC92:controls the second active* harmonic or group of harmonics (if any).
CC93:controls the third active* harmonic or group of harmonics (if any).
CC90:controls the frequency shift of the harmonics settings (*pseudo*formant shift).

*) "Active harmonics" means the harmonics whose bars are set to any value different from "0".



In this example CC91 will control the harmonic number 2 (which is the first/lowest, separate bar set to a value different from "0"). CC92 will control the group of harmonics centered around the harmonic no. 4/5, andCC93 - the group of harmonics centered around harmonic 8.

Please note:

- acting on the controllers CC91-93 will not displace the displayed bars in the Timbral Shaping menu. Instead, the controllers will introduce an additional gain which must be added or subtracted from the current bar setting(s) according to their current values, following the rules below:
  CC91-93 = 64: 0 dB, i.e. no changes – the harmonics gain corresponds exactly to the bar settings
  CC91-93 between 64 and 127: adds up to 6 dB to the current bar setting(s)
  CC91-93 between 64 and 0: subtracts up to 6 dB from the current bar setting(s)
- Similarly, no frequency shift is applied if CC90 = 64 (default setting); rising the value up to 127 will gradually shift the settings up to one octave higher; decreasing the value down to 0 will shift the settings down to one octave lower.

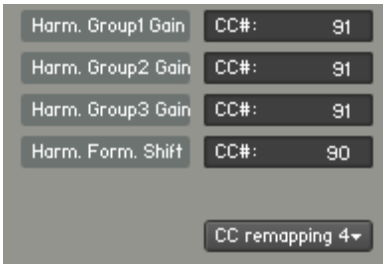
Tips:

- **If you intend to use the real time control by any of the controllers CC91 - 93, consider using very small, "shallow" settings of the bars - close to "0" as much as possible. These settings will make the particular harmonic "active", i.e. fully responsive/controllable by CC91 - 93. However, their**

level will be fully under control of the CC91 - 93 knobs in both directions (+/- 6 dB), with practically zero gain if the controllers are set to the middle (64).

- Please note that acting on single harmonics provides usually more "radical" changes in timbre, suitable for special effects, whereas acting on a group of harmonics (using wider curves and not too excessive gains) yields more "natural" results.

- If simultaneous control of all three harmonics or harmonic groups with just one MIDI controller is required, you can use the remapping feature ("CC remapping 4" from the drop down menu) and assign a single CC (e.g. CC91) to each Harm.Group Gains.



Virtual Soundstage

This feature allows precise positioning of the instruments in a virtual space located before the listener, using early reflections, pre-delay, convoluted panning and perceived distance algorithms. This will set you free of adding a further suitable acoustic environment, without incurring multiple-ambience issues. This can be carried out within the same Kontakt Player, which provides a high quality convolution reverb.

CC29: **early reflections**. As reported above, all samples were recorded in an anechoic chamber. This recording technique provides the cleanest sound, devoid of any contamination with an arbitrary ambience. However, all instruments have a complex radiation pattern that contributes to the richness of the sound. Using the spatial information gathered from multi microphone recording, a specially devised "early reflection" impulse response has been developed, which recreates the original radiation pattern in a virtual space from the anechoic sound. The intensity of this effect can be controlled with CC29. Default value = 90.

CC31: **pre-delay**. Controls the time delay of the first early reflections. Default = 64, corresponding to about 20 msec.

CC10: **panning**. It spans from zero (extreme left) to 127 (extreme right). Default = 64 (middle).

CC14: **distance**. Controls the perceived distance from the player. Default = 0.

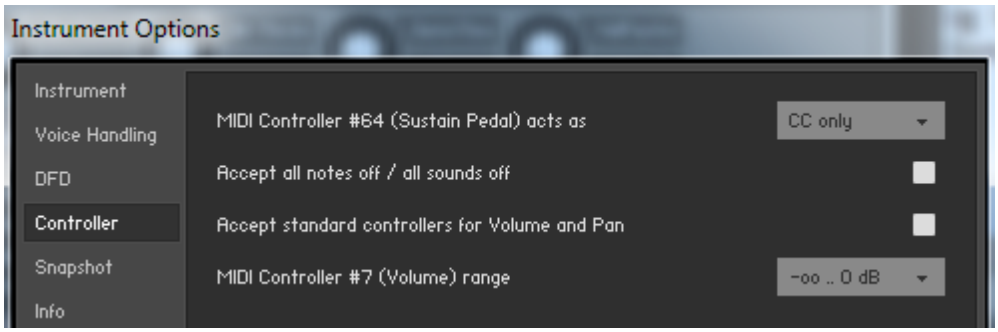
CC37 (ensemble instruments only): width. Controls the relative width of the stereo field, in synergy with CC29 (intensity of early reflections).

Note: When panning, do not use the standard pan slider on the Kontakt GUI. Always use the Virtual Soundstage pan knob (CC10) described above, which provides a much better spatial localization.

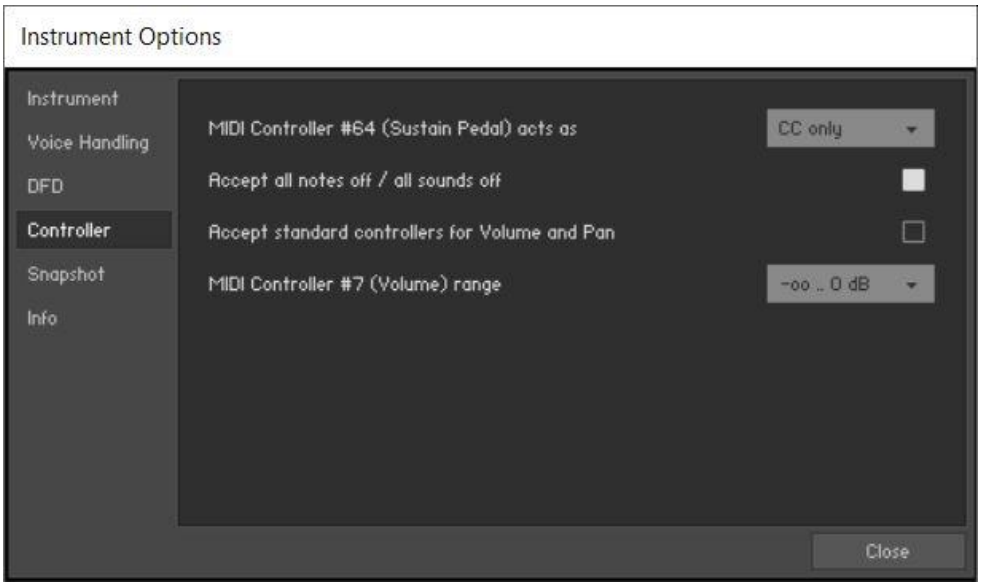
Note: setting CC29 to zero sets the early reflection convolution in a bypass mode, leading to a decreased CPU load. This setting is, however, generally best avoided, since it spoils the sound and the spatialization of the instrument. In any case, it may only be used in conjunction with an external reverberation unit including a suitable ER algorithm.

Volume control by CC7

Solo Instruments: if you wish to control the instrument volume (not the dynamics) by CC7,make sure that the box “Accept standard controllers for Volume and Pan” under “Instrument Options -> Controller”, is checked, as shown below.



Chamber and Ensemble Strings are using permanent internal assignment of CC7 to volume, hence the position of the instrument volume slider remains fixed at 0 dB. The box “Accept standard controllers for Volume and Pan” must not be checked:



Controllers 7 Reverb

Reverb (Solo instruments only)

Our Solo strings include a high quality convolution reverb, supplied with different ambience IRs, ranging from a small concert hall to a large auditorium.

CC34: reverb level.

CC35: relative duration of the reverb IR, usually set to 64.

CC36: reverb pre-delay

CC98: allows selection of the reverb IR, usually from the smallest to the larger ambience.

Early Reflections

Early Reflections

The Early Reflections menu will allow to select a different IR, named Instr.1, 2, 3 etc. At present, only a single IR (Instr.1) can be selected.
This menu is therefore reserved for future use.

CC Remapping

Five different CC-remapping panels allow remapping of all controllers to any CC.

CC remapping 1 Realtime soundshaping

CC remapping 2	Sound Control

CC remapping 3	Pitch Control

CC remapping 4	Instr & Portamento

CC remapping 5	Timbral Shaping

CC remapping 6	Virtual Soundstage

CC remapping 7	Reverb

Note: Aftertouch can be remapped as CC129, and used to control other parameters.

Note: Pitchbend cannot be remapped, nor used to control other parameters.

Wind Controller Mode

This option opens the WindController panel.

By clicking on “Use Windcontroller” button, you will activate the universal WC mode.

The selected mode will appear on the main view GUI.

WC mode automatically maps the Dynamics to CC2, and gives complete (100%) control of Portamento Time (see below) to CC5.
In Keyboard mode, the duration of portamento is determined by the velocity of the overlapped note. Since note-on velocities output by Wind Controllers generally reflect the current CC2 value, portamento time becomes a function of the current dynamics. This is undesirable, since, for example, playing pp will always lead to long portamento and vice versa. Linking portamento time to a separate controller, such as CC5, permits to overcome this limitation. The duration of portamento can now be controlled with any suitable physical controller mapped to CC5. If no controller is available, one might still set CC5 to a suitable value by directly acting with the mouse on the appropriate knob in the Controllers 4 panel.

A mixed-mode behaviour is also possible, partially linking the duration of portamento to both velocity and CC5, allowing even greater flexibility and expressiveness.

A pitch sensitivity knob is provided to compensate different pitch responses to lip pressure among different brands. For example, the pitch output of the Yamaha WC is generally smaller. This can be fixed by setting Pitch Sensitivity to a higher (200%) value. The default setting (100%) should be generally adequate for Akai devices (EWI).

WC mode is deactivated by clicking again on the “Use Windcontroller” (bright) button.
Dynamics control will be automatically remapped to CC11.

Breath controller

Breath controller Mode

This option opens the Breathcontroller panel.

By clicking on “Use Breathcontroller” button,
you will activate the BC mode.

The selected mode will appear on the main view GUI.

BC mode automatically maps the Dynamics to CC2.
In addition, it’s now the BC which triggers note-on & off when exceeding or falling below a certain threshold. The pressed key only determines the note which will be played. The note-on velocity is related to the steepness of the initial CC2 curve. That means: a quickly rising CC2 will generate a higher velocity, thus trigger a stronger attack than a slowly rising CC2.

This does not apply to legato notes, where legato/portamento duration is determined, as usual, on the keyboard, by the velocity of the overlapping notes.
When used for strings, please note that, due to the nature of bowing, it´s recommended to use the BC controller differently from brass instruments – namely in the Keyboard mode, remapping the expression to CC2. It should not be used for triggering note-on and note-off, but rather for driving the dynamics only, as if it were an expression pedal. This way the velocity – i.e. the attacks and the legato transitions/portamento – is controlled much more effectively via the keyboard.
BC mode is deactivated by clicking again on the (highlighted) “Use Breathcontroller” button.
Dynamics control will be automatically remapped to CC11.

Portamento Time

This option opens the Portamento Time panel.

In Keyboard (default) mode, the duration of portamento is determined by the velocity of the overlapped note. While this represents a very convenient approach to portamento control, there might be cases where linking portamento time to a separate controller (such as CC5) would be preferable. By setting the right knob to 100%, the duration of portamento could be linked to any physical controller mapped to CC5.

A mixed-mode behaviour is also possible, partially linking the duration of portamento to both velocity and CC5, allowing even greater flexibility and expressiveness.
In this example, portamento time is determined 30% by the velocity of the overlapped note, and 70% by CC5.

Transpose

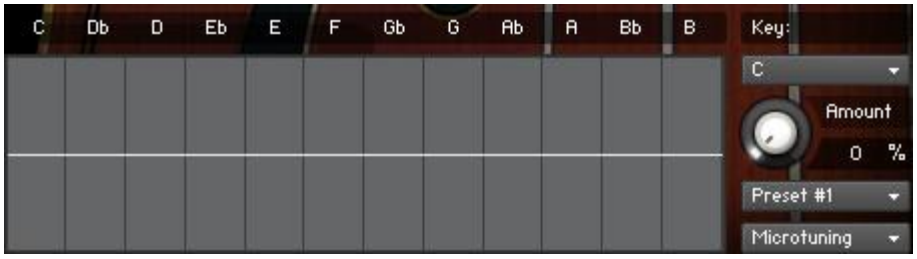
This option opens the Transpose panel.

The MIDI Transpose knob allows shifting of the instrument mapping +/- 36 semitones. Please note that the Key Switches will be correspondingly shifted as well.

Note: When transposing, always use the Transpose knob described above, or the transpose function of your MIDI source. Do not use "MIDI Transpose" function of the Kontakt software (Instrument Options), since it does not transpose the key switches and limits the instrument range.

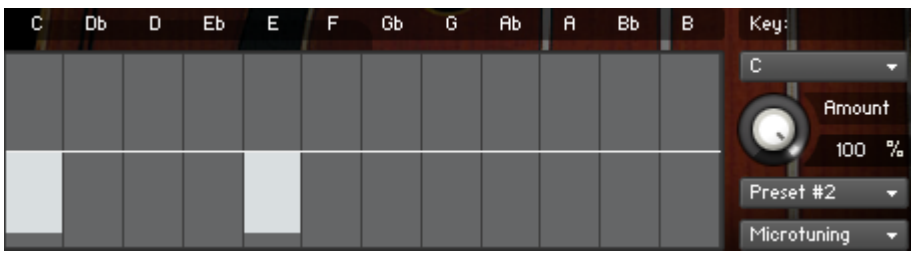
Microtuning

This option opens the Microtuning panel.



The reference note, and the overall % amount of detuning can be set for each preset by acting on the "Key" button and the "Amount" knob, respectively.

This is an important feature, coping with the requirements of musicians using non-tempered scales. Our approach to microtuning yields maximal flexibility, allowing user-defined scales where the extent of detuning (range +60/-60 cents) can be precisely set for each note by means of a sliding bar. The scale can be saved and recalled as a preset.



Example of static detuning.With this setting, all E and B notes will be permanently detuned by - 50 cents.

By setting the Key button to D, all F# and C# notes would be detuned instead.

Saving and restoring Microtuning settings.

Any Microtuning setting can be stored as a preset. Twelve presets are available, numbered from #1 to #12. They will be stored when saving the instrument, and will be immediately available upon reloading.

Please note: unlike the storage function within the Timbral Shaping feature (see below), storing Microtuning settings does not require clicking on "save as Preset #...". The user acts by directly modifying the preset, so that any previous setting is automatically overwritten.

Important Note: All presets are user-definable. However, preset #1 must be left empty, because recalling it will be the only way to defeat any microtuning and return to the tempered scale.

Tip: several wonderful Arabic scales (modi) using quartertones and other micro-intervals, as described below, can be stored under Presets # 2 - 12:

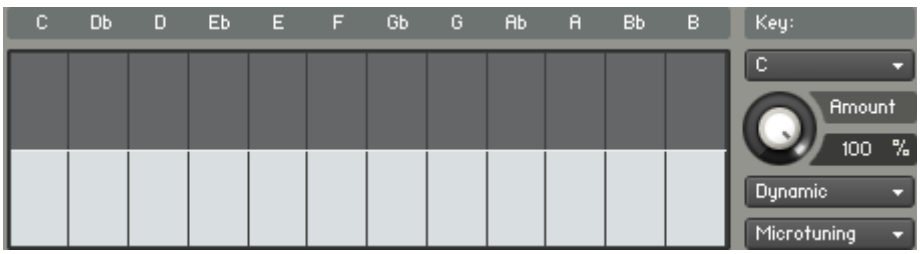
Rast	C - D - **E-50** - F - G - A - **B-50** - C
Husayni	D - **E-50** - F - G - A - **B-50** - C - D
Sikah	**E-50** - F - G - A - **B-50** - C - D - E
Saba	D - **E-50** - F - Gb - A - Bb - C - D
Bayati	D-**E-50** - F - G - A - Bb - C - D
Hijaz-Garib	D -**Eb+15** - **F# -25** - G - A - Bb - C -D

Recalling and activating microtuning presets

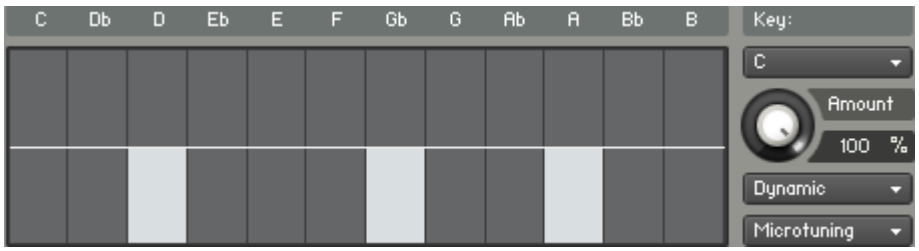
This is very easy. Holding down the lower B keyswitch (KS) and pressing any KS from C to upper B (1 to 12) will recall and activate the corresponding preset. Reset of microtuning can be accomplished by Holding down lower BKS and pressing C (empty preset) KS.

Dynamic Microtuning

In addition to the "static" microtuning described above, the present update adds another feature for maximum flexibility, namely, "dynamic" microtuning. If the preset "Dynamic" is chosen, selective detuning can be applied in real time to any combination of notes by holding down the lower B KS, then the sustain pedal, and any keyswitch between C and upper B corresponding to the keys one wants to detune. The amount of detuning can be globally or individually set for each note from -60 to 60 cents, using a combination of bar height and the "amount" knob in the "dynamic" preset. For example, if all the bars are set to -60 and the "amount" to 100%, as shown below:



by holding down the lower B KS, then the sustain pedal, and pressing D, F# and A, all D, F# and A notes will be detuned by the preset amount. The currently affected notes will then be displayed in the GUI, as shown below:

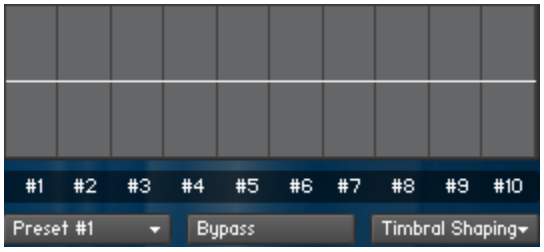


Also in this case, reset of microtuning can be accomplished by holding down the lower B KS and pressing C.

Timbral Shaping

Timbral Shaping Panel

This option opens the Timbral Shaping panel.

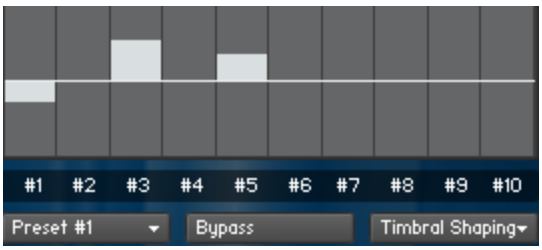


This revolutionary feature adds a virtually infinite timbral variety to sample-based instruments, by acting on the amplitude of individual harmonics, or groups of contiguous harmonics, accomplished in real time.

Shaping the timbre using the Harmonics Bars

Timbral Shaping allows modifications of the timbre of the instrument by acting on the first 10 harmonics of each note. It can be accessed via the drop-down menu. Going to Menu ->Timbral Shaping displays ten bars which can be dragged with the mouse between -6 dB and + 6 dB.

This is not a graphic equalizer; the bars are not assigned to fixed frequencies, but to the first 10 harmonics of the played note. As a consequence, their frequencies vary with the pitch of the note. So, raising, for example, bar #1 will boost the fundamental frequency (first harmonic) of each note played. Lowering bar #3 will decrease the intensity of the third harmonics etc.



For example, this bar setting yields the following:

- slight reduction (-1,5 dB) of the level of the fundamental frequency (1st harmonic)
- boost of the 3rd harmonic (+3.5 dB)
- slight boost of the 5th harmonic (+2 dB)

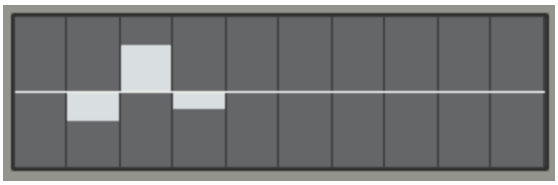
Harmonics separation and grouping.

Setting a single bar corresponding to the desired harmonic number (from 1 to 10) to any value different from zero, while leaving the adjacent bar(s) at zero, will enable individual control of that harmonic dictated by the height of the bar and by CC91. See the examples below.

Second harmonic increased 2 dB and controlled by CC91.

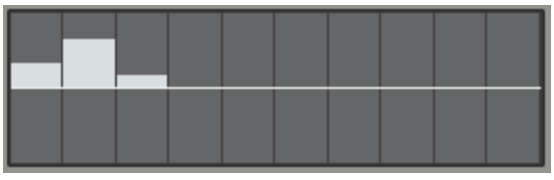
Third harmonic increased 4 dB and controlled by CC91.
Sixth harmonic increased 2 dB and controlled by CC92.

Setting the adjacent bar(s) to any value with reversed polarity with respect to the first active bar will enable individual control of the corresponding harmonics by different CCs, like in the example below:

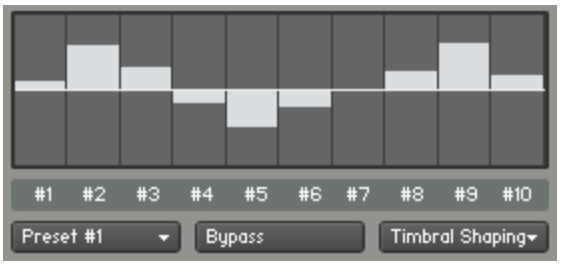


Second harmonic decreased 2 dB and controlled by CC91.
Third harmonic increased 4 dB and controlled by CC92.
Fourth harmonic decreased 1 dB and controlled by CC93.

Setting adjacent bars to the same polarity will create a group of harmonics:

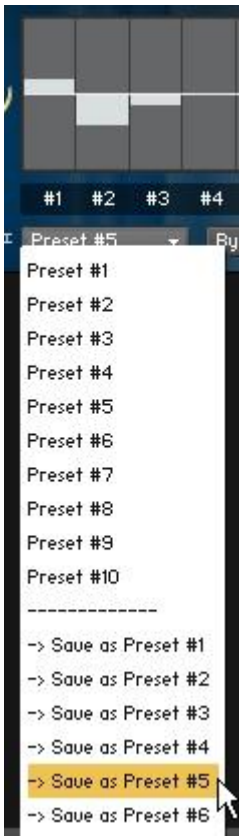


Single harmonic group (first, second and third harmonic, increased 2, 4 and 1 dB respectively), and controlled by CC91.



Three groups of harmonics, with different polarities, including harm. 1,2,3 - 4,5,6 - 8,9,10. The three groups are individually controlled by CC91, 92, 93, respectively.

Saving and restoring Timbral Shaping settings.



Once you're done with your Timbral Shaping settings within a certain preset, you can save it using the "save as preset" function. This needs to be accomplished before selecting another preset, otherwise these settings get lost. Ten presets are available, numbered from #1 to #10. They will be permanently stored only when saving the instrument, and will be immediately available upon reloading.

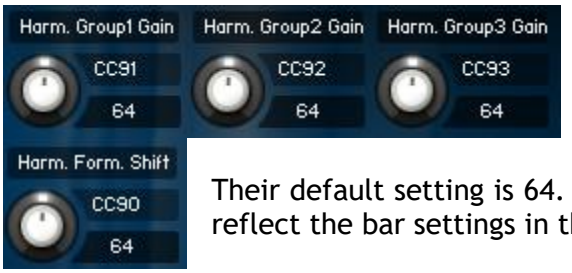
This example shows grouping of the first three harmonic gains, saved as preset #5.

Pressing the Bypass button temporarily switches off the effect of Timbral Shaping.

Tip: To reset a single bar, left-click on the bar you want to reset to zero while pressing the Ctrl key. To reset all the bars simply drag across the bars while left-clicking and holding the Ctrl key .

Note: Timbral Shaping activates an automatic loudness compensation, which keeps the overall volume virtually constant, independently of the settings of the bars and of CC91-93.

Harmonics Gain vs. external controllers.



Controllers CC90 – CC93 are reserved for realtime control of the Harmonics Gain. They can be accessed and monitored on the Menu page "Controllers 4 - Timbral Shaping".

Their default setting is 64. In this "neutral", middle position the timbre will entirely reflect the bar settings in the Harmonics Gain menu (between -6 dB and +6 dB).

However, controllers CC90 – CC93 can be used to shape the timbre in real time.
Please refer to the Menu page "Controllers 5 - Timbral Shaping" for further details.

Tip: If you intend to use the real time control by any of the controllers CC91 - 93, consider using very small, "shallow" settings of the bars - as close to "0" as possible. These settings - since different from zero - will make the particular harmonic "active", i.e. fully responsive to CC91 – 93. However, their level will be fully under control of the CC91 - 93 knobs in both directions (+/- 6 dB), with practically zero gain (no changes in timbre) if the controllers are set to the middle (64).

Timbral Shaping is intended to be used for:

- effective sound shaping of the instrument by permanent, gentle enhancement or reduction of certain groups of harmonics, introducing, for example, a "warmer", "softer", more "nasal" or midrange sound.
- dynamic, CC-controlled real time modulation of the tone quality, adding more "liveliness" to the sound
- special effects – like modulating the frequency of "fancy" gain settings of single harmonics, for example for some interesting vowel-like effects.
- creating fully unconventional sounds, far away from the timbre of the real instrument.

The SYNCHRONIZE ENSEMBLE button.

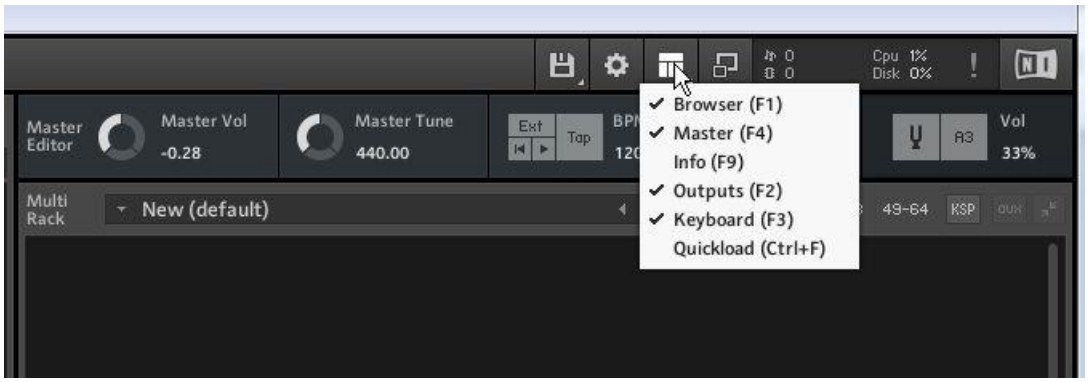
The ensemble modules are independent of each other. They receive the CCs from the external world and are therefore set to the same values. However , when acting on the GUI of the Master module , the changes will not automatically propagate to the other modules. The Synchronize Ensemble button takes care of this. When the script detects a change in the Master GUI, a prompt message is issued: PLEASE SYNCHRONIZE ENSEMBLE !! After the SYNCHRONIZE ENSEMBLE button is pressed, any change will propagate to all the modules. This synchronization is essential for proper functioning of the ensembles.

Additional Notes

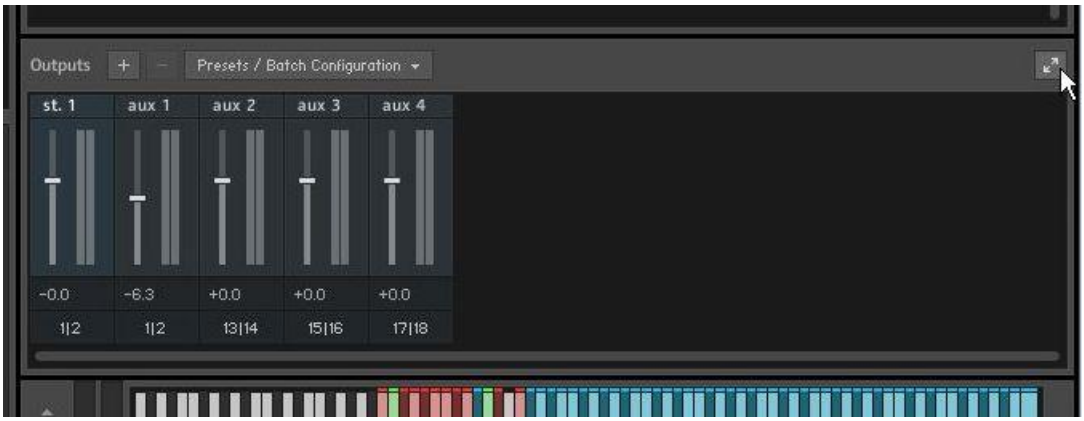
Please note that the modules of the ensembles cannot be soloed, muted, panned or otherwise modified. This would result in a completely spoiled, distorted, or even silent instrument. Should this occur, click on the exclamation mark (reset engine) and resend CC11. The ensemble will restart in default mode.

Please consider that all Solo & Ensemble Strings expect a CC11 (or CC2 if in BC or WC mode) input for proper initialization. Otherwise, they will not play.

Differently from solo instruments, the ensembles are supplied with an external convolution reverb, loaded with a suitable ambience impulse response. To control the reverb amount, one can act on the Aux1 channel (reverb return) in the Kontakt Output section (mixer). If it´s not shown in Kontakt, make it visible by pressing F2 or choosing the "Outputs" in the appropriate Kontakt menu:



The convolution reverb can be found in the insert section of the Kontakt mixer. To open it, click on the arrow icon to the right:



If you prefer to use your own ambience setup (recommended), "Dry" ensembles are provided in a separate folder.
If you are not familiar with Kontakt mixer section please refer to the Kontakt Manual.

Playing Techniques

Despite its structural complexity, the Solo & Ensemble Strings are very intuitive and easy to play.

Our instruments do not use pre-recorded articulations, so shaping the sound is the task of the player, carried out by proper use of a few midi controllers. Extensive use of advanced Artificial Intelligence (AI) techniques greatly facilitates this task.

Our "Adaptive Model" approach acts by minimizing the differences from the real instrument, whatever articulation or phrase you play. You can therefore concentrate on creating music, rather than mastering complex sample bank management.
Nevertheless, thorough knowledge of the controllers and the keyswitches (KS), and some practice are certainly needed to get the best results. Moreover, knowledge of musical styles and playing techniques of the real strings is very important as well.

Before starting to play, please make sure your expression pedal (or breath controller) is connected to the keyboard and properly mapped to CC11 (or CC2). Please note that the instrument(s) **will not play** (displaying a warning) unless you move the expression controller and initialize it.

Playing range

(The middle C, i.e. the MIDI note 60, is C3)

Violins:	G2 – E6 (Harmonics: up to C7) Keyswitches: B0 – C2
Violas	C2 – E5 (Harmonics: up to E6) Keyswitches: B0 – B1
Cellos:	C1 – E5 (Harmonics: up to C6) Keyswitches: B0 – C2
Double Basses	Key range: B0 – E4, sounding B-1 - E3 (harmonics up to C4) Keyswitches: B-1 – B0

The default mode (reset by the KS C) is solo mode. This corresponds to a monophonic mode, allowing, however, bichords if two notes are played simultaneously (within 25 ms). Using this mode one can perform the most common playing techniques and articulations. Further ones are available via key switches.

Detached notes

Detached (non legato), is a note separated from the previous one by some amount of time. They consist of an attack, a sustain, and a release phase.

The type of the attack depends on the interaction between note-on velocity, CC38 and CC11. As a general rule, the higher the velocity and/or CC38, the more "punchy" the attack. However, a much more sophisticated approach, linked to CC25, as described above in "The Controllers and their function", page 16, allows the player to shape virtually any attack from a crescendo (low key

velocity), a neutral attack (medium velocity), to a sforzato effect (high velocity). The duration of the attack phase depends on the velocity and on CC26 and CC27.

The dynamics of the sustain phase is entirely under control of CC11. You may continuously morph from *pp* to *ff* by acting on your expression pedal, breath controller, or other expression devices.

Legato/Portamento

Legato notes are not separated, but rather connected to the previous note by some form of transition. The transition time (and type) between subsequent notes represents one of the most important elements of expression. If it's short, it is usually named legato. If it exceeds a certain time, the transition may "carry" from one note to another by a slide, which is called "portamento".

Getting a legato or portamento with our virtual strings is actually very easy. You only need to overlap subsequent notes with the appropriate note-on velocity. The duration of legato/portamento ranges from 30 ms to about 1 sec., depending on the velocity of the overlapped note, the played interval and CC26. Higher values of the latter lead to longer portamento durations. Normal legato is obtained with velocities ranging from 70 to 90. Lower velocities lead to a softer transition. The lowest velocities introduce the portamento effect. Portamento may be interrupted by overlapping a new note. Bichord portamentos are also possible when a first bichord is followed by a second one played with overlapped notes.

Please note: very low velocities (below 10), which may be necessary for longer portamentos, might be difficult to play on some keyboards, so the proper calibration of the velocity response of your keyboard may be very helpful. Under these circumstances we strongly recommend using our velocity remapping tool. Please refer to the Menu description above for more details.

Vibrato

An extremely important element of musical expression. The vibrato of a real string instrument has a very complex "anatomy" which can be described as a modulation of pitch, intensity and timbre. Since vibrato intensity, shape and frequency vary slightly over time, our virtual strings create a realistic vibrato by reproducing these subtle variations by advanced AI (Artificial Intelligence) techniques. Vibrato intensity is controlled by the ModWheel (CC1). Vibrato rate - by CC19. "Self-articulated" vibrato by using a pitch or amplitude control of a breath or wind controller can also be obtained. String ensembles also use CC1 to control the intensity of "random" vibrato. An additional parameter for ensemble vibrato is under control of CC99. It adds a specific "density" to vibrato by increasing the synchronism of vibrato between players.

Trills & ornamentations

Realistic trills and ornamentations – both in ensemble and solo instruments - can be obtained by simply playing them on a keyboard. A very helpful retrigger feature greatly facilitates this task: upon release of an overlapped note, the previous note will be played again (retriggered) if the key is still held down. So in order to play a trill, keep the initial note pressed permanently, while pressing and releasing the other note. Try different velocities, which noticeably determine the character of the trill. This technique works also in more complex ornamentations using two or more overlapping notes.

Runs

Like trills and ornamentations, also runs can be played directly on the keyboard without using any keyswitches. Pay attention to play them legato, i.e. overlapping the notes, and choosing a velocity which suits you. Of course the dynamics (CC11) remains fully under player´s control.

Bow Change/Detaché

This mode is activated by either the sustain pedal (CC64) or by the keyswitch D. In this mode, when releasing a key, the note is prolonged until the same or a different note is pressed. In the first case a bow change will be heard. In the second case a detaché articulation will be reproduced. The duration of either articulation depends on the velocity of the new note, but is also controlled by CC26. Low values of the latter may be necessary for very fast detaché passages.

Poly (Arpeggio) mode

This mode is activated by Keyswitch C#. It allows to play several synchronous or subsequent notes for realistic broken chords or arpeggios.

Legato-Crescendo

This articulation is activated by the Keyswitch D#. It couples legato with an expressive crescendo effect, whose length is controlled by the velocity of the overlapped notes.

Tremolo

Tremolo corresponds to a rapid alternation of the bow direction. We provide an automated tremolo which is activated by the keyswitch KS E. The tremolo rate is under control of CC19.

Pizzicato

This articulation is activated by the keyswitch F. The dynamics of pizzicato are linked to note-on velocity, from pp to ff. A pizzicato slap is introduced at velocities > 110.

Col Legno

This articulation is activated by the keyswitch F#.

Harmonics

Natural and artificial harmonics are produced by pressing the keyswitch G.

Open Strings and Low vs. High Positions

The instruments are programmed by default to play without open strings (except the lowest one). The keyswitch G# allows playing them (if the appropriate pitch is played).

The instruments play in low positions by default. Higher positions (where possible) are activated by the keyswitch A#. Violin can play even higher positions, if the keyswitch C2 is activated.

Tip: while opening an ensemble, the following question appears: “Replace multi (pressing `No` will merge in the new instruments)?”. Click on “YES” if you want to load the multi with the convolution reverb. Click on “NO” only if you need a setup without ambience/reverberation, or you prefer to use your own reverb.

Note: loading multiple instruments or ensembles on a single instance of Kontakt leads to a less efficient use of the multiple cores, and to an increased CPU load. This may lead to dropouts and other audio-related side effects.

Hints about proper settings of some controllers in Chamber instruments vs. Ensemble

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Chambers preferably work with zero or low values of CC95 (ensemble size). They work well with attack detuning (CC28) up to 20, or even higher if CC95 is very low. Dyn Modulation (CC33) are best set to low (zero to 30) value in combination of high cc95, but for cc95 =0 or very low, Dyn Modulation can be higher (e.g. 30 to 55) The modwheel (CC1) controls the intensity of vibrato, whereas CC19 controls vibrato rate. The latter must be set to lower values than in solo instruments, i.e 20-40.

Ensembles work well with virtually any value of CC95. Expressive vibrato (CC99) is best set to very low values (0-15). Attack detuning (CC28) is best set to zero. Dynamics to pitch (CC24) and Dyn Modulation (CC33) are best set to rather low values, say 5-15. The modwheel (CC1) introduces the rich sound of vibrato ensemble, and has to be used to low to moderate values, except for transitory climaxes. CC19 is best set to low values, say 20- 40.

This set of recommendations helps to get a standard response during common performance, while extreme values of controllers can be programmed on purpose by advanced users to get special effects and/or intense expressions in particular points of the score.

The Keyswitches

Some additional articulations or playing techniques can be activated “on the fly” using the Keyswitches. Keyswitches are generally mapped from C below the lowest key of the instrument, down to B one octave lower. They are colored red on the virtual Kontakt keyboard. Activating a keyswitch turns the key green.

Keyswitch ranges:

Violins:	B0 – C2
Violas	B0 – B1
Cellos:	B-1 – B0
Double Basses	B-1 – B0

Most of the Keyswitches can be used in two modes: “momentary” and “latch”. Pressing a KS with low velocity (>86) enters the “momentary” mode. That means that the KS is active as long as you keep it pressed. Pressing the KS briefly with high velocity (>86) activates the “latch” mode: the KS remains active till it´s pressed again (with any velocity).

If you get lost and want to quickly return back to the default mode of the instrument, press briefly lower C in the KS area. A "panic" complete reset is obtained by simultaneously pressing 3 or more keyswitches.

All strings are using the same KS assignment:

B – activates the Microtuning (see the chapter “Microtuning”, page 25)

C – Solo (default) mode of the instrument

C# - Poly Mode; in this mode multiple notes can be played simultaneously (no legato on overlapping notes); necessary when playing arpeggio or broken chords.

D - Bow change/Detaché. When pressed, the note keeps playing on release. Playing the same or different note performs a bow change/detaché. The same articulation can be obtained if pressing the sustain pedal (which should be set as “CC only” in the instrument options - see Kontakt Manual). The duration of the bow change depends on velocity.

D# - applies an expressive crescendo on each new legato note

E – Tremolo. CC11 controls the dynamics, CC19 – the tremolo rate.

F – Pizzicato. Dynamics controlled by velocity. CC27 controls the decay curve.

F# - Col Legno.

G – Harmonics (natural and artificial). Vibrato and legato (by overlapping the notes) are also allowed for special effects. Sounds one octave higher.

G# - allows open strings. Per default open strings are not used, except the lowest ones.

A – Plays low positions (default key switch)

A# - Plays higher positions (where possible)

B – Reserved for future use

C – (solo Violin only) uses highest positions where possible

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Technical Support

All questions related to the activation of Solo & Ensemble Strings, or those pertinent to the Kontakt sampler/player, should be addressed to Native Instruments support:
http://www.native-instruments.com/support.info

Specific questions on how to use the Strings should be emailed to Samplemodeling,

info@samplemodeling.com,

or via the contact page on our website:

http://www.samplemodeling.com/en/contact.php,

providing as much information as possible on the system, including computer, OS, audio card, Kontakt version and sequencer and the settings. A MIDI file showing the problem is usually the best approach to fixing the problem.

Technology-related questions, exchange of experiences, tips & tricks, examples, demos (mp3) can be posted in our forum:
http://www.samplemodeling.com/forum

after registration.

Future **Updates** will be announced via our Newsletter or on our NEWS page.