The Soprano & Bass

Clarinets

USER MANUAL

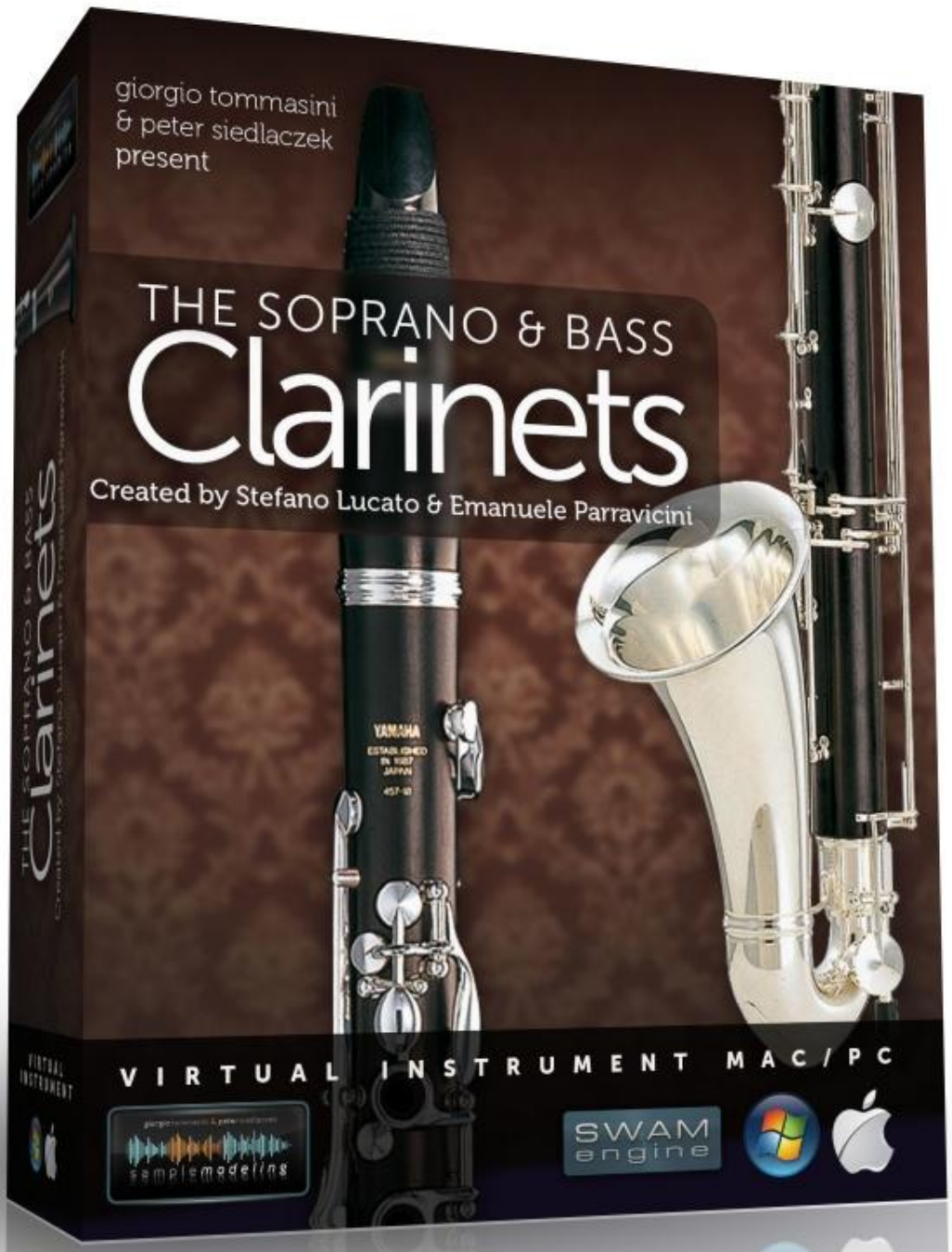


Table of Contents

Before you start

Even if this instrument is easy and intuitive to play, getting excellent results requires some practice and experience. Please read this User Manual carefully. It contains very important information which will help you to achieve best results in a much shorter time. Listen also to the demos and have a closer look into the demo MIDI file(s) available on our homepage www.samplemodeling.com. The demo MIDI files clearly show how the instrument is played and which parameters are most important for a realistic performance.

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

Licensing

Even if you purchased one virtual instrument, we provide two license keys. How to use them is a customer's choice. One can elect to install the instrument on two different systems, if both belong to him, and are not used simultaneously. Or, one can spare one license for future upgrades. Please note that operating system or hard drive changes do not affect instrument activation. However, major hardware upgrades, or installation of the instrument on a new computer require a new activation. That's the main reason for providing two license keys. If both are used, a deactivation procedure can be requested. Sharing unused license keys is strictly forbidden. Please note that all license keys are personalized, making the e-mail address of the owner visible on the instrument GUI.

Product description

The Soprano & Bass Clarinets belong to the most expressive virtual musical instruments. You can really PLAY them, shaping the sound like a real clarinet player does. They work on any up-to-date computer (see System Requirements), within any suitable host like a sequencer (Cubase, Logic, etc.), DAW (Digital Work Stations) or a free host application (see below). They use Stefano Lucato's proprietary SWAM (Synchronous Wavelength Acoustic Modeling) technology, providing the exceptional playability and realism which characterize all Samplemodeling instruments. It´s not a sample player, using pre-recorded articulations, but a complex virtual instrument, capable of shaping almost any kind of articulations and phrases in real time. It can be played using any MIDI device like a keyboard, breath- or wind controller. [However, it´s essential to provide the suitable control using appropriate MIDI devices, as described in this Manual]. Direct programming in a sequencer (without any MIDI devices) is also possible.
Please note that the name "Soprano Clarinet" and the commonly used "Clarinet" mean exactly the same. Our virtual Clarinet covers the range of both A and Bb clarinets.

Note: Like a real instrument or other Samplemodeling instruments, and differently from any conventional sample library, the Clarinets allow continuous transition across the dynamics (from pp to ff), free from any phasing artifacts. To accomplish this, a suitable continuous physical MIDI controller (such as an expression or volume pedal (CC11 or CC7), a breath or a windcontroller (CC2)) is absolutely necessary.
WITHOUT THIS CONTROLLER THE INSTRUMENT WILL NOT WORK, displaying the warning "Expression controller not received. Please move your expression controller"

Other physical MIDI controllers, like sliders, knobs or a modwheel, though not recommended, can be used for this purpose. Please refer to other sections of this manual for further details.

System Requirements

Supported Plugin Formats

PC:
VST 32/64 bit

Mac:
AU or VST 32 or 64 bit

Required operating systems

PC:
Windows 7 or XP, 32/64 bit
Mac:
Intel only, Mac OS 10.5 – 10.8

CPU load

The realism and expressiveness of the Clarinets is demanding in terms of CPU load. It needs an up-to-date computer with at least 1,6 GHz Core2Duo CPU. Less powerful systems may also prove satisfactory, but may require larger buffer sizes, involving higher latencies

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

Stand-alone mode

If you are a PC user and do not have any host application being capable of running VST or AU plugins (like a sequencer, DAW or another audio application), you can install a free host application like the excellent SaviHost by Hermann Seib, or Cantabile Lite. Other VST Hosts, albeit not necessarily free, can be found for example on http://www.kvraudio.com/get.php, for example. Mac users may use the Garage Band belonging to the system.

Hardware Requirements

Audio Interface (Sound Card)

A good quality audio interface (USB, FireWire, PCI) with suitable low latency drivers (like **ASIO for the PC)** is required. The allowed buffer size are 128 - 2048 samples. Recommended settings are 256 samples, or 512 samples (higher latency, but less CPU load).

MIDI devices

The Clarinets (like any other virtual instruments) can be successfully used without any additional hardware (except the audio interface) by drawing the controller curves and programming the notes directly in the host sequencer. However, a much more "human" and interactive configuration is recommended – especially for real time playing - using external MIDI devices:

- A MIDI keyboard with at least 5 octaves, Modwheel & Pitchbend, connected to the computer via USB or an external MIDI interface, equipped with a set of physical continuous MIDI controllers (usually knobs or sliders) to control effects like overblow, subharmonic, growl, etc.

- An Expression pedal, controlling the dynamics via CC11. Although the dynamics can be controlled by any other physical controller (knob, slider), a pedal is highly recommended. As an alternative, a Breath Controller, like Yamaha BC3, can be used. A pedal (alternatively: a Breath Controller, like Yamaha BC3) is highly recommended.

- Woodwind or brass players may prefer a Wind Controller like Yamaha WX or Akai EWI (USB or 4000S); both provide excellent results.

The Instrument and its controls

Main Instrument GUI

If properly activated (see “Installation” above), this is how the instrument looks after loading:

When you start playing, a warning message may appear, reminding you that **an expression controller (preferably CC11, CC7 or CC2) is absolutely necessary for the proper functioning of the instrument:**

Per default, the software assigns expression control to CC11 if in Keyboard mode and to CC2 if in Windcontroller mode. These default settings can be manually changed. For example, if you wish to use a volume pedal to control expression, just open the Options page (clicking on the "Options" button) and set the Expression CC to 7. If needed, this assignment can be permanently stored as a preset (see below). Automatic assignment is also possible. Just enter the Options page and activate “Exprs.CC AutoLearn” by moving the slider to the right. In this mode, the instrument recognizes the first incoming CC number (among 11, 2 and 7) and automatically assigns it to expression.

The installed instrument will start with the Preset "Default Clarinet Keyb.Contrl". These settings are suitable for playing the instrument with a MIDI (or USB) Keyboard, expression pedal, Pitchbend and Modwheel.

With a Breath controller, please use the same Preset "Default Clarinet Keyb.Contrl", but don't forget to remap Expression to CC2 in the Option Panel (see below).

With a Wind Controller (e.g. EWI or WX), please load the Preset: "Default Clarinet Wind.Contrl" , or press "Reset" -> Default Wind Controller". Remapping of Expression to CC2 is automatically performed, and portamento time is linked to CC5.

Main Controls vs. articulations

Velocity controls:
- Initial Attack (for detached notes)
- Portamento Time (for Legato, if Port.Time Button is set to Velocity)

Expression (CC11, CC2, CC7 or other CCs set on the OPTIONS page) controls the Dynamics (from pp to ff)

ModWheel (CC1) controls Vibrato intensity

CC19 controls Vibrato Rate

PitchBend controls the pitch within -3 to +2 semitones (default)

Staccato, "SemiLegato", and Legato Articulations are managed by a special algorithm which takes into account :
- Note Velocity
- Interval between the notes (semitones).
- Time between Note-OFF and subsequent Note-ON

GUI Parameter Controls

There are three types of Controls on the Main Instrument GUI enabling a convenient data entry:
- Sliders
- +/- Buttons
- Switches

Sliders

Set the desired value either by
- dragging the Slider (while holding the left mouse button) or
- acting on the slider with the mouse wheel

+/- Buttons

The values can be set in 3 different ways :
- Clicking on "+" and "-"
- Acting with the mouse wheel on the label (small steps), or on the +/- buttons (larger steps)
- Dragging the mouse vertically after clicking on the displayed value

Double-clicking on the slider or on the number displayed aside the +/- button reloads the previously saved or default settings.

Load & Save *): Loads and saves instrument settings (Paths – see below)

M.Tune Hz : Master Tune frequency in Hz

M.T.Cents : Master Tune in Cents (Linked to M.Tune Hz, A3 = 440Hz)

Reverb Time : Reverb Duration

Reverb Mix : Reverb Amount (if set to 0 Reverb is bypassed, saving CPU)

Transp : Instrument Transpose (Key Switches are not transposed)

PB D .. U .. : Pitch Bend Range; can be set for Down and Up Bending independently

Panpot : Panning between L and R (see also Pan Type on the OPTIONS page)

Main Volume : Instrument volume (in dB)

Instr. : Changes the instrument timbre (corresponding to different instruments or microphone placements)

Rand.Dyn : Controls the amount of random fluctuation of the dynamics

Dyn.Pitch : Amount of Pitch Modulation while changing the dynamics. Also controlled by CC8

Attack Dyn : Changes the attack behavior, assigning it to: 1. velocity (linear response, “Hard”), 2. Velocity (non-linear response, “soft”), and directly to Expression

Harm.Struct : Spectral characteristics of the instrument (balance between odd and even harmonics)

FallDown : Clicking on this button triggers a fall. This effect is assigned also to the Key Switch C1. Assigning to a CC is also possible (see OPTIONS page)

OverBlow : Clicking on it creates overblow. Also assigned to the Key Switch D1 (momentary) and D#1 (latch), as well as to the sustain pedal (CC64)

SubHarm : SubHarmonic Intensity, also controlled by CC20

Growl : Growl Intensity, also controlled by CC21

Flutter T : Flutter Tongue Intensity, also controlled by CC23

Breath N. : Breath Noise Intensity, also controlled by CC25

Key Noise : Key Noise Intensity, also controlled by CC9

Dyn.Harm : Amount of Harmonics and SubHarmonics modulation during Attacks and Dynamics changes

Release : Release Time on Note-Off

Compressor : Audio Dynamic Compression Intensity

Formant : Changes the Formants, hence the timbre of the instrument

Modal Res. : Intensity of Instrument Pipe Modal Resonance

Port.Time : Selects the source of the portamento time control. The portamento time (on legato) can be controlled by: Velocity (default), CC. or CC inverted (low value = long Time)

Reset : Resets the engine and reloads the default or previously saved parameters

Options : Opens Midi CC Remapper and Advanced Parameter Settings (see below)

Help & Credits : Opens Help and Credits page

***) Load & Save paths are:**

Windows:
<Programs>\Samplemodeling\SWAM\Clarinets\Clarinet\Presets
<Programs>\Samplemodeling\SWAM\Clarinets\BassClarinet\Presets

Mac:
/User/Shared/Samplemodeling/SWAM/Clarinets/Clarinet/Presets
/User/Shared/Samplemodeling/SWAM/Clarinets/BassClarinet/Presets

OPTIONS page

Clicking on the OPTIONS button opens the Midi CC Remapper, Microtuning section and Advanced Parameter settings.

MIDI CC Mapping Options

MIDI CC remapper allows to remap all the control parameters to any MIDI CC according to your needs.

Note: OverBlow and FallDown have only On (CC>64) and Off status (CC<64)

Advanced Parameters

Attack to Sust Time : Affects the velocity-dependent duration of the transition from attack to sustain.

Portam: Max Time :	Maximum duration of the Portamento, i.e. the duration of a legato transition played at the lowest velocity.
Portam: Vel Sens :	Controls the relationship between velocity and portamento duration (only if the Port.Time button on the Main Instrument GUI is set to velocity)
Auto Expression :	Amount of a dynamics modulation during legato
Vibrato Rate :	Vibrato Rate (also controlled by CC19)
Vibrato Rate Rand :	Amount of a random fluctuation of the vibrato rate
Squeak -> Overblow:	Crossfade between a brief squeak on attack (“S”), or a longer Overblow (“O”), if Overblow is triggered by a CC (CC Default: Sus Pedal). Not active if the Overblow is triggered by the Keyswitch (D1 or D#1, see below)
Expression Curve :	To cope with linear or logarithmic expression controllers (e.g. pedal) and optimize the overall expression controller curve
Pan Behavior :	Selects the pan behavior of the instrument vs. reverb (“Acoustic”: pan does not affect the reverb; “Balance”: pan affects both the instrument and the reverb)
Chromatic On/Off :	Activates an automatic chromatic scale during slow portamentos on larger intervals.
Attack-Exprs Bias :	Complex algorithmic remapping of Attack vs. Velocity curve, depending on Expression (disabled on the default setting “Clarinet Wind Contrl.")
ExprsCC AutoLearn :	Enables or disables AutoLearn, i.e. the automatic detection of the incoming Expression CC
KS Oct.Transp. :	KeySwitch Octave Transposition; “0” starts from C1, “-12” starts from C0. See also “Keyswitches” below.
Attack Start :	slightly shifts the sample start for more immediate attack response
Back to Main :	Returns to the Main GUI

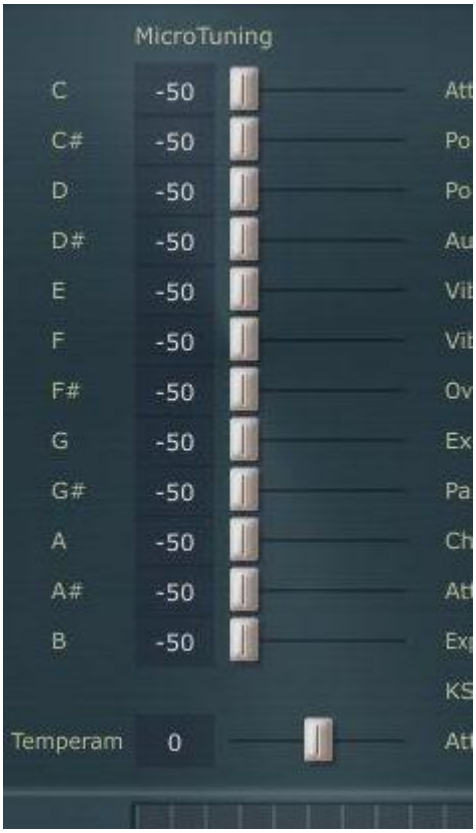
Microtuning

This is an entirely new 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 series of sliders. The settings can be saved along with the instrument presets.

The detuning can be applied in a selective manner to individual notes in realtime using the mouse or the keyswitches.

The default preset is a detuning of -50 cents:



Per default, the detuning is set, but not yet applied to any note. To apply the detuning, one can choose between two methods:

1. Acting with the mouse on the instrument GUI
2. "On the fly", using Keyswitches.

The "**Temperament**" slider, if set higher than zero, applies a kind of "spread intonation":

- it does not influence the pitch in the middle of the instrument;
- the higher the pitch, the more upward detuning is applied;
- the lower the pitch, the more downward detuning is applied.

That means that the overall intonation of the instrument can be additionally “spaced apart” for some special effects.

Applying the microtuning using the mouse

This is the simplest method, suitable for settings which do not need to be changed “on the fly”. To detune the specific pitch, simply click on the microtuning bar on the main instrument GUI. This will apply the detuning (set on the Options page by the microtuning sliders) to that particular note (which is B in the example below):

Clicking on the bargraph again will switch the detuning off.

Double-click anywhere in the bargraph area will switch the detuning of all the notes off.

Please note that the above works only on the main instrument page.

Applying the microtuning using the keyswitches

To apply microtuning to some notes using the keyswitches, one has to enter the Select Note Mode (**SNM** – see below), and press the appropriate keyswitches corresponding to the notes which must be detuned. For example, pressing the E1-keyswitch applies the detuning to all E notes.

How to enter the Select Note Mode (SNM)

The SNM is activated by sending a suitable CC value above 64. Which CC to use is the choice of the user: go to the Option page and enter the desired CC number in the field “MicroTuning (ON OFF)”. Entering “64” will define the sustain pedal, **which is most suitable for this task**. Pressing and holding the pedal switches **SNM** on.

Note: CC64 (sus pedal) is, per default, assigned to Overblow (see OPTIONS page, field “Overblow (ON OFF))”. If using the sus pedal for Microtuning, the Overblow must be assigned to another controller, or to none, since it can be also controlled by the keyswitch D1.

How to detune selected notes

1. Enter the Select Note Mode (**SNM**) by pressing and holding the sus pedal (or send a value greater than 64 via the CC you have assigned to the Microtuning);

2. Press the Keyswitches (even simultaneously) corresponding to the notes you want to detune.

3. Exit **SNM** by releasing the sus pedal (or send a value below 64 via the CC you´ve assigned for this task)

For example: you need an arabic scale in C and want to detune all E and B notes -50 ct. The steps are:

Press and hold the sus pedal

Press briefly E1 and B1

Release the sus pedal

Which notes and how much are detuned will be displayed on the instrument GUI:

How to reset and modify the current microtuning

As soon as you re-enter **SNM** (by pressing the sus pedal or sending a value greater than 64 via the CC you have assigned for this task) the current detuning of all the notes will be cancelled and the Microtuning display on the instrument GUI will be reset to zero:

Keeping the pedal pressed, you can immediately detune a new set of notes by pressing the appropriate keyswitches (see 2. above).

This way, activation of selective microtuning can be accomplished “on the fly”.

How to save the microtuning settings

The Microtuning settings – except those done “on the fly” with the Keyswitches – can be stored and loaded as instrument presets, using the Save/Load buttons on the Instrument GUI.

Keyswitches

Two parameters of the Clarinets can be triggered also by the Keyswitches C1 and D1. In case of an overlap with the instrument range after transposing it, the Keyswitches can be moved to the left, being mapped to C0 and D0 (see Options page)

C1 triggers a short fall.
D1 triggers a “squeak” (a short overblow on attack) or a continuous overblow, depending on its timing and velocity:

- low velocity triggers a squeak (if the KS is pressed before the note-on)
- higher velocity plays a continuous overblow (if the KS is pressed before the note-on)

The latter can be also applied after the note-on (in the middle of a tone), if CC11 is above 60.

D#1 behaves like D1 in latch mode.

These Keyswitches are colored red on the instrument GUI. Please note that the Keyswitches involved in Microtuning (see above) include both red and blue Keyswitches.

* * *

Technical Support

Before requesting technical support, please make sure that you have carefully read the User Manual and the pertinent FAQ on our website:

www.samplemodeling.com/en/faq.php (select “Swam-based instruments” on the top)

You will find there the appropriate answer to the most questions quickly.

Our Forum might also be a valuable source of technical information:

http://www.samplemodeling.com/forum

In case you still need a support, our first line customer care will be provided via email :

info@samplemodeling.com

or via our Contact page:

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

Note: write your email address carefully - it´s not possible to reply to a misspelled address!

More specific technical questions should be addressed to:

http://www.swamengine.com/contact/

When asking for a technical support, please do not forget to provide as much system information as possible, including computer, OS, audio interface, host application, software version, etc. If the problem can be demonstrated, a MIDI and/or an audio file is usually very helpful.

This manual is written by Giorgio Tommasini & Peter Siedlaczek. Art design by Vadim Nekrasov (Shramm).