Atomizer

Operations Manual

Atomizing loudly once a day keeps you happy :)

About Atomizer

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What Is Atomizer?

Atomizer is, at its heart, an instant looping device. It enables you to 'play' beat-synced loops on your keyboard in realtime, taken from any audio you choose to send into the Virus TI's inputs. The loop lengths can range from a 1/2 note (minimum) down to a 1/32nd note, and from there, down to slices so small that they are perceived as pitched notes.

The incoming audio is sent as a dry signal, straight back to the outputs, but as soon as you hit one of the loop or buffer keys, a sample is taken at that instant, and looped at the rate determined by the key you played. For as long as you hold the key down, you will only hear the looped buffer, and as soon as you release the key, you will hear the dry signal again. The time-flow of the incoming signal is not affected by this, so the song will continue 'underneath' the Atomizer.

Effectively, what you are doing is replacing portions of the incoming audio with looped slices of itself.

Enabling Atomizer

Atomizer is located in the Inputs pages of the COMMON EDIT menu.

- **TI Desktop/Keyboard/Polar**
  Press EDIT, use the Parameter keys to locate the Inputs page, and select Atomizer = On ..16 ('Normal' mode is 'On' - please select this value if it is your first time with Atomizer, for information on the other settings, please refer to the paragraph entitled ALTERNATIVE ATOMIZER MODES.). Alternatively dial up Virus Control and select an Atomizer preset from the list of presets in the Access folder.

- **TI Snow**
  Hold EDIT/SHIFT and press COMMON to enter EDIT SINGLE, locate the Inputs page, and select Atomizer= On .. 16 ('Normal' mode is 'On' - please select this value if it is your first time with Atomizer, for information on the other settings, please refer to the paragraph entitled ALTERNATIVE ATOMIZER MODES.). Alternatively dial up Virus Control and select an Atomizer preset from the list of presets in the Access folder.

Once you have switched Atomizer on, you should be able to hear the incoming audio. A good starting point are the Atomizer example patches which come pre-installed and can be accessed through Virus Control.

Note: Avoid using more than one instance of Atomizer at the same time.

Automatic tempo detection for the 4th Millenium

- **About Beat Scanner**

  Atomizer features a sophisticated algorithm which processes the incoming audio stream and adjusts the global tempo parameter of the Virus TI to match it. Scanning the beat can take anything from a couple of beats to a few bars, depending on the material - watch the LFO1 (Desktop, Keyboard and Polar) or BPM (Snow) LEDs while audio is playing, and you will instantly get a better picture of the process. Basically, the more confident Beat Scanner becomes in its analysis, the more abrupt the flashing becomes.

  With Beat Scanner taking care of the tempo for you, Atomizer can be used carefree and in an more intuitive way compared to manual tempo - even with music aside the "4 on the floor" genre. The Scanners accuracy, in comparison to a manually tapped in tempo, allows for much longer transitions in between the Atomized (and therefore looped) audio and the incoming live audio. On top, you can concentrate on Atomizing instead of watching the tempo sync.

  When using Beat Scanner, the tempo will always settle somewhere between 80 and 160 bpm, hence you may find that the tempo will sometimes be half or double that which you expect. Normally, this shouldn't matter too much, but if it's really important that you have a tempo outside of these boundaries, then you can use Tap Tempo as described below.

- **Phase Detection**

  In many cases, Beat Scanner is also able to detect the 'phase' of the beat, i.e. the beginning of the bar. However, there will be times when it gets the tempo correct, but the BPM led will flash on the 'off' beat. To correct this, simply hit the Tap Tempo button once on the first beat of the bar. Virus TI Snow users can see the phase by switching the play mode to "Atomizer" and watch the 8 LEDs in the upper row.

- **Assisting The Autopilot**

  In case the material you wish to Atomize is devoid of any rhythmic consistency, or you disagree with the tempo that Beat Scanner has settled on, you can easily override its decision at any time by using the Tap Tempo button. Beat Scanner will automatically catch up with your tempo, and lock to the music again. The longer you tap, the better the result. 8 taps should be sufficient in most cases.

  If at any time you realise that Beat Scanner does indeed know best, and you wish to return full control of the tempo to the auspices of its superior wisdom, simply hold the Tap Tempo button for a half a second and all your fingers will be free to glitch the night away. Also, if the tempo of the incoming audio changes significantly (i.e. a new song begins), Beat Scanner will re-awaken by its own accord and take the helm once more.

  Note: Opening Virus Control disables Beat Scanner and locks the Virus to the sequencer's tempo instead.

Atomizing audio

Press and hold the A1 key on your keyboard (the next 'A' up from the tempo key) - you should hear the incoming audio being swapped with a pretty quick loop which, assuming you tapped the tempo in 1/4 notes, will actually be looping every 1/16th note. Let the note go, and you will immediately it switch back to the original incoming audio.

Now spend a little time playing any of the keys from E1 and up. You will notice that from C2 and up, the loops are no longer recognisable in the time domain, and are instead perceivable by pitch. The loop lengths have in fact been tuned to the standard note pitches you would expect on a keyboard, which means you can play melodies along with the incoming audio.

Action keys

KEY	Action	Length
C#1	Gate	
D1	Reverse Audio	
D#1	Gate	
E1	Loop	1/2
F1	Loop	1/4
F#1	Loop	1/6
G1	Loop	1/8
G#1	Loop	1/12
A1	Loop	1/16
A#1	Loop	1/24
B1	Loop	1/32
C3		
~	Loop	Audio @ rate
C8		

Reversing Audio

Pushing the D1 key plays the buffered audio backwards. Please note that after reversing the audio buffer it might not be in sync with the playback anymore.

Gating Audio

Atomizer features a sophisticated implementation of a "DJ Kill EQ" - style audio gater effect. Hit C#1 to gate all incoming audio and the modwheel to narrow the range of the gater effect. This way you can limit the gate to for instance the bass frequencies of the playback. D#2 does exactly the same as D#1 does. If you hit D#2 while holding D#1 you temporarily release the gater key which is fun when performing stutter effects.

Modwheel

The Modwheel behaves as a crossfade mixer controller. If you move it without holding down any of the action keys, it will have no effect on the incoming audio.

At Minimum position, you will hear either the dry input, or the loop you are triggering. As you move the modwheel upwards, you will hear the looped signal fade out through a highpass filter as the incoming audio fades back in through a lowpass.....

...at the central position, you will only hear the incoming audio...

...and as you continue upwards from the central position the looped signal will fade back in through a low-pass filter as the incoming audio fades out through a highpass.

Look, just hold down a loop key and sweep the damn thing, OK? Oh - and do it slowly.. ;)

Pitch Bender

Try setting the pitch bender to relatively high and low values, and then play around with it while you hold a loop key. Slow sweeps back to the middle from just above or just below will often yield excellent results.

Modifier Keys

D1 Reverse - while you are holding down a loop key, holding the D#1 key will cause the loop to play backwards. As soon as you release it, the loop will play forwards again.

C#1 or D#1 Gate Keys - With the Modwheel in min or max position, pressing either of the C#1 or D#1 keys will 'kill' the incoming audio or close the gate until you release the key. Whilst holding either of these keys, tap the other to open/close the gate.

Try hitting both keys together to 'enter' the Gater without affecting the incoming audio, then tap one while continuing to hold the other. Release both keys to exit the effect.

When the Gater is triggered, you can use the modwheel to fade back to the incoming audio through a resonant filter. From Min position to Centre the filter is a 4-pole lowpass, and from Centre to Max, the filter is a 4-pole highpass. If you are holding one of the Gater keys down, try adding aftertouch to increase the resonance of these filters.

Try leaving the modwheel in a such a position that the Gate does not completely close, but rather acts as a low or high 'kill' EQ. Remember that if the Modwheel is in centre position, you will not hear anything but the incoming audio.

The Gater works in addition to the looping keys, so if you are holding down a loop key, you will gate in and out of the looped signal or cross-fade mix, depending on the position of the modwheel.

Virus TI Snow owners can access some modifier and action keys by switching the play mode to "Atomizer", which eliminates the need for an extra keyboard. The additional performance mode can only be activated when Atomizer was switched on before (manually or by a recalling an Atomizer preset). To locate Atomizer presets, enter preset search mode and choose "Atomizer" from the list.

- **Keyboard layout**
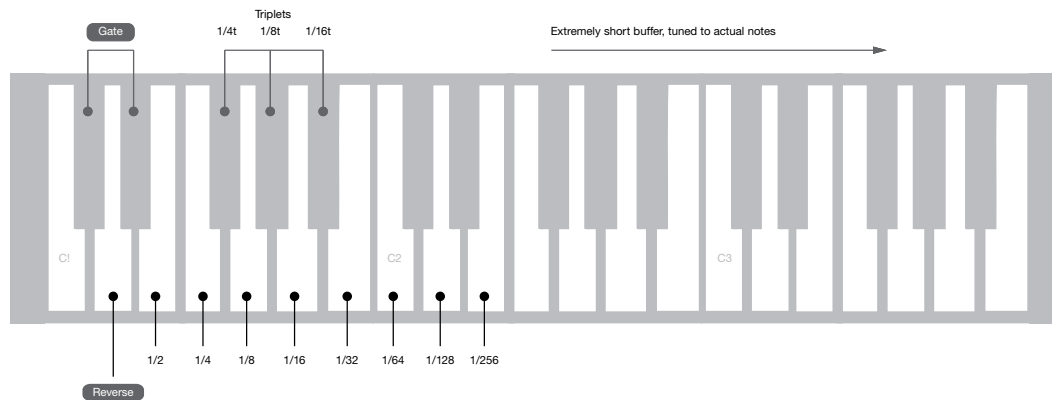
- **Virus TI Snow layout**
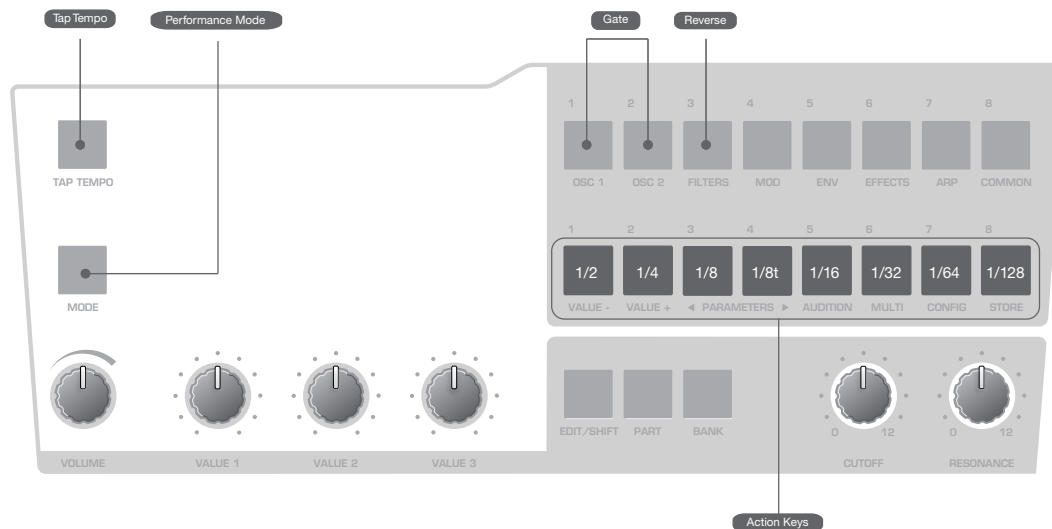
Applying additional FX

If you like, and you *will* like, you can use the Virus TI's effects section to enhance the Atomizer. Any effect you choose, i.e. Rate Reducer, Phaser, Delay, Reverb etc., will be applied to only the looped or 'Atomized' signal, so the incoming audio will always be dry.

Try using the Mod Matrix to assign LFOs or continuous controllers such as aftertouch (Chan Pressure), the pitch bender or the soft knobs to control the send or mix levels of any of the effects or modulate parameters such as Chorus Feedback.

Using the Amp or Filter envelopes will not work on the FX parameters, but you can use either LFO1 or LFO2 in Env mode instead. Of course, if you are using the LFOs for continuous selecting a clock divider for the LFO Rate mightn't be too daft an idea.

Alternative Atomizer modes

Now you have got a feel for the Atomizer in its 'normal' mode, try some the other settings between 2 and 16. In these modes, the loop is updated once it has played through the number of cycles equal to the number you select with this parameter. Those modes are great to create digital sounding "freeze time" effects.

For the most obvious demonstration of this effect, try a low number, say 2 or 4 and trigger some of the shortest loops or the audio rate keys.

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