



Icebreaker Audio's

# C-TOOLS

**CAPSULE** | **CLIQUE** | **COIL**

**User Manual**  
Version 1.0

**HEAVYOCITY**

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## 2 WELCOME TO CAPSULE

Thank you for purchasing **CAPSULE** from **ICEBREAKER AUDIO** and **HEAVYOCITY**. This guide will show you how to use the instrument, give you an overview of the controls, and offer some useful hints and tips along the way.

I personally hope you enjoy this release and find it to be an inspirational addition to your musical toolkit.

### 2.1 SYSTEM REQUIREMENTS

- PC/Mac running Native Instruments **REAKTOR 5.9.2** or higher.  
**CAPSULE** does not run in **Reaktor Player**, only the full version of **Reaktor**.

More information on Reaktor can be found on the Native Instruments website:

<http://www.native-instruments.com/en/products/komplete/synths/reaktor-5/>

### 3 ABOUT CAPSULE

**CAPSULE** is a retro drum synthesizer.

The sound of **CAPSULE** was inspired by many analogue drum machines from the late 70s and early 80s. Different styles of drum synthesis were analysed and researched. The idea was to capture an aesthetic of an idea of electronic sounds from the future, but from an era when technology was limited. No single device was emulated fully, but small parts from multiple classic drum machines were combined in different ways to create a sound that is both new and old at the same time.

These sounds are then partnered with an effect chain designed to create a full sounding drum mix, but without getting burdened with too many options. There's a Compressor, Saturator, and Reverb available to further polish the basic sounds.

## 4 GETTING STARTED

### 4.1 USING REAKTOR

For help and guidance with using Reaktor, either as standalone or in a host, please refer to the Reaktor user manual. The full details of Reaktor's features will not be covered in this manual.

For additional help and support with using Reaktor, use the Native Instruments' user forum, or contact the Native Instruments' support team. Only contact **ICEBREAKER AUDIO** if you are having a problem with the **CAPSULE** instrument specifically.

### 4.2 INCLUDED FILES

In the main **CAPSULE** folder you will find 2 versions of **CAPSULE**:

- **Capsule (stereo).ens** – the main Capsule ensemble file, with a stereo output for the full mix.
- **Capsule (multi-out).ens** – a version of the ensemble with individual outputs for each of the drums. (See section 7 Appendix: Multi-Channel Outputs for more information)

These files can be placed anywhere on your hard drive, but for use in Reaktor's browser we suggest you place them in the Reaktor user folder, located here:

```
<user>/Documents/Native Instruments/Reaktor5/Library
```

### 4.3 OPENING CAPSULE

To open **CAPSULE**, either:

- Double click on the \*.ens file
- Open Reaktor and go to File -> Open Ensemble ... (or press Ctrl+O)
- Drag and drop the \*.ens file onto the Reaktor desktop icon, or into Reaktor itself.
- Browse for **CAPSULE** in Reaktor's file browser.

Now **CAPSULE** should be open and ready to use.

### 4.4 PLAYBACK

In order for **CAPSULE**'s sequencer to run, Reaktor's own clock must be running. To start the clock running in standalone, either click on the play button in Reaktor, or press the spacebar on your computer keyboard.

If you are using **CAPSULE** in a host, Reaktor will be slaved to the host clock, so the sequencer will run when the host project is playing back.

**CAPSULE** is synchronized by using the song position, so the first beat of a bar is always played as such. However, if you change the rate of playback, this may cause the playback position of the sequencer to change.

### 4.5 CONTROL HELP

All controls in **CAPSULE** have info text. You can use this to better understand what each control in **CAPSULE** does without the need to refer to this manual. You can view these by activating **Info Hints**, either by clicking on the **i** symbol beside Reaktor's transport controls, or by pressing Ctrl + i. With Info Hints active, you can view the info text by hovering your mouse pointer over any control.

## 5 THE CAPSULE INTERFACE



1 THE FULL CAPSULE INTERFACE

The **CAPSULE** interface can be broken up into 4 main areas:

1. The **TRANSPORT** controls are located to the top left. Here you can control the playback and global editing functions of the patterns.
2. In the top centre is the **MONITOR**, which not only visualizes the sound, but also contains the settings controls.
3. The whole right side of the instrument contains the **MASTER FX**.
4. The lower left quadrant contains the **SOUND** controls, where you can adjust the synthesis parameters and the patterns.

## 5.1 THE TRANSPORT CONTROLS

The transport controls for the sequencer are located to the top left of the interface.



2 THE TRANSPORT CONTROLS

- **Play** – The play button activates the sequencer. Note that the sequencer playback is also tied to the host transport, so the Play button will only activate the sequence when the host is also in playback (this includes Reaktor when in standalone)
- **Rate** – Sets the rate of the sequence.
- **Steps** – Sets the number of steps in the patterns.
- **Rec** – Toggles recording mode on/off. If both **Rec** and **Play** are active, the MIDI input will be recorded into the currently playing pattern.
- **Pattern** – This control is used to display the currently playing pattern, and also select which pattern is to be edited using the step buttons in the **SOUND** area.  
The light-green hollow box highlights which pattern is currently playing, and the dark green filled square shows which pattern is selected for editing. There are four patterns, one in each corner of the pattern area.  
You can also select a pattern for viewing/playing by using the white keys on MIDI notes C3 to F3.
- **Cycle** – When set to 1, the currently selected pattern will be played on a loop. When set to any value other than one, the patterns will cycle from the first to the number specified by this control.
- **Erase** – sets all the values in the selected pattern to zero.
- **Erase All** – clears all of the patterns in the snapshot.
- **Copy 2 All** –copies all of the data from the currently selected pattern into the other three patterns.

## 5.2 THE SOUND CONTROLS

The Sound area has two pages, accessed by the switch to the top right:

- **A** – displays the main drums
- **B** – displays the percussion

To the top of each channel is a **Volume** control, which is used to set the output level of the drum before it reaches the Master FX.

Below each drum is a label. Clicking on the labels will display the sequence for this drum in the step sequencer button. Note that the hi-hat has **Closed** and **Open** variations, and that there are 3 toms you can select.

### 5.2.1 VIEW A – MAIN DRUMS

**CAPSULE** has 4 main drum sounds, each with their own set of controls:

#### **BASS DRUM**

Also known as a Kick Drum, this synthesis engine is designed to produce low drum sounds.



3 THE BASS DRUM CONTROLS

The controls are as follows:

- **Pitch** – sets the main pitch of the drum.
- **Wave** – blends the oscillator between a sine wave and a triangle wave.
- **P Dec** (Pitch Decay) – controls the decay time of the pitch envelope.
- **Dec** – controls the decay (fade-out) time of the volume envelope.
- **P Mod** – controls the intensity of the pitch modulation from the pitch envelope.
- **Noise** – controls the level of noise in the attack transient.
- **Attack** – controls the “clickyness” of the attack.
- **Drive** – controls the overdrive amount.



## SNARE

The Snare engine is designed to produce drum sounds that are sharp and noisy. It uses a simple tonal oscillator mixed with a noise generator.



4 THE SNARE CONTROLS

The controls are as follows:

- **Pitch** – sets the main pitch of the oscillator.
- **O/N Mix** – blends between the oscillator output and the noise output.
- **P Mod** (Pitch Modulation) – controls the intensity of a short decay envelope on the oscillator pitch.
- **Dec** – controls the decay (fade-out) time of the oscillator volume envelope.
- **NColour** – controls the colour (character) of the noise.
- **NDec** – controls the decay (fade-out) time of the noise volume envelope.
- **Attack** – controls the “clickyness” of the attack.
- **Drive** – controls the overdrive amount.

## HI HAT

The Hi Hat engine creates sounds that are high-pitched and metallic. It uses a bank of square-wave oscillators mixed with the noise generator, the result of which is then processed through a series of filters.

It has two modes: **Closed** (short decay) and **Open** (long decay).



5 THE HI HAT CONTROLS

The controls are as follows:

- **Filter** – sets the cutoff frequency of the main band-pass filter.
- **O/N Mix** – blends between the oscillator bank output and the noise output.
- **Pitch** – sets the central pitch of the oscillator bank.
- **Spread** – controls the frequency spread of the oscillator bank.
- **Dec Cl** (Decay Closed) – controls the decay (fade-out) time of the closed hi hat.
- **Dec Op** (Decay Open) – controls the decay time of the open hi hat.
- **Vol Cl** – controls the level of the closed hi hat.
- **Vol Op** – controls the level of the open hi hat.

## Toms

The Toms engine produces tonal percussion sounds at three different pitches. It uses a single oscillator running through a filter to give a range of timbral possibilities.

The 3 toms are all controlled from a single control set. The toms are also monophonic, so only a single tom can sound at any one time.



6 THE TOMS CONTROLS

The controls are as follows:

- **Punch** – controls the filter modulation during the initial attack phase.
- **Shape** – controls the overall cutoff of the filter.
- **Drive** – controls the overdrive amount.
- **P Dec** (Pitch Decay) – controls the decay (fade-out) time of the pitch envelope.
- **Dec** – controls the decay time of the volume envelope.
- **Dec Scale** – scales the decay time for each tom. At the zero setting, all toms will have the same decay time; at higher settings, the higher toms will decay faster than the lower toms.
- **P Mod** (Pitch Modulation) – controls the intensity of a short decay envelope on the oscillator pitch.
- **Noise** – controls the level of noise in the attack transient.
- **Attack** – controls the “clickyness” of the attack.
- **Pitch 1** – sets the main pitch of tom 1 (the low tom).
- **Pitch 2** – sets the main pitch of tom 2 (the mid tom).
- **Pitch 3** – sets the main pitch of tom 3 (the high tom).

## 5.2.2 VIEW B – PERCUSSION

CAPSULE has 4 percussion slots, into which you may load any of the 7 available synthesis types.



7 THE PERCUSSION CONTROLS

The percussion synths you can select from are:

- **2 Sines** – 2 sine wave oscillators that can be mixed and modulated in different ways.
- **Noise** – a noise generator going through a band-pass filter.
- **Synth** – a small-scale synth engine with a single saw wave oscillator and a low-pass filter.
- **Clap** – a special engine designed to emulate hand claps.
- **Digital** – based on some of the tech from **BitRate**, this engine gives you a single pulse-wave oscillator and a pseudo-noise generator, which you can blend in different ways.
- **Click** – generates a short click which is then routed through a multi-mode filter. Surprisingly versatile.
- **Zap** – a quick and easy engine for generating sweeps and zaps.

To select a sound engine for a percussion channel, follow these steps:

1. Click on the dropdown menu at the top of the percussion channel.
2. Select and click on the percussion engine you wish to use.

If you are not using a percussion channel, it is advised to set the engine selection to **<none>** as this will reduce the overall CPU load.

### LFO

The 4<sup>th</sup> percussion channel is attached to an LFO, which can be used to further manipulate the sound.

The LFO has three controls:

- **Rate** – sets the speed of the LFO.
- **Amp** – controls the amount the LFO will modulate the amplitude of Percussion 4.
- **Pitch** – controls the amount the LFO will modulate the pitch of Percussion 4.

If the percussion engine selected for Percussion 4 doesn't have a traditional oscillator that can have its pitch modulated, the LFO will modulate the filter cutoff instead.

## 2 SINES CONTROLS

- **Mode** – selects between the 3 mixing modes for the 2 sine waves:
  - **0% = Add** – the waves are mixed together equally.
  - **50% = Multiply** – the waves are multiplied together to produce a ring-mod effect.
  - **100% = FM** – sine 2 modulates the frequency of sine 1.
- **Attack** – controls the level and intensity of the initial attack.
- **Pitch 1** – sets the pitch of the first sine wave oscillator.
- **Decay 1** – sets the decay (fade-out) time of the first sine wave oscillator.
- **Pitch 2** – sets the pitch of the second sine wave oscillator.
- **Decay 2** – sets the decay time of the second sine wave oscillator.

## NOISE CONTROLS

- **Cutoff** – controls the cutoff pitch of the band-pass filter.
- **Res** (Resonance) – controls the level boost at the cutoff frequency.
- **Attack** – sets the attack (fade-in) time for the volume envelope.
- **Decay** – sets the decay (fade-out) time for the volume envelope.
- **P Dec** (Pitch Decay) – sets the decay time of the filter pitch envelope.
- **P Mod** (Pitch Modulation) – sets the modulation intensity of the filter pitch envelope.

## SYNTH CONTROLS

- **Pitch** – sets the pitch of the oscillator.
- **Decay** – sets the decay (fade-out) time for the volume envelope.
- **Cutoff** – controls the cutoff frequency of the low-pass filter.
- **Res** (Resonance) – controls the level boost at the cutoff frequency.
- **F Dec** (Filter Decay) – sets the decay time of the filter envelope.
- **F Mod** (Filter Modulation) – sets the modulation intensity of the filter envelope.

## CLAP CONTROLS

- **Density** – sets the number of electronic hands involved in the clapping.
- **Rate** – sets the time between each individual hand clap.
- **Weight** – controls decay time of each hand clap.
- **Color** – controls a filter that shapes the tone of the claps.
- **Tail** – controls the decay time of the tailing sound after the initial claps.

## DIGITAL CONTROLS

- **Mode** – sets the mixing mode between the 2 sound sources:
  - **0%** = pulse oscillator only
  - **25%-50%** = mix of pulse and noise
  - **75%** = noise only
  - **100%** = pulse and noise multiplied
- **Decay** – sets the decay (fade-out) time for the volume envelope.
- **Tune P** – controls the pitch of the pulse wave oscillator.
- **Tune N** – controls the rate of the LFSR pseudo-noise generator.
- **P Width** – controls the pulse width of the pulse wave oscillator.

### CLICK CONTROLS

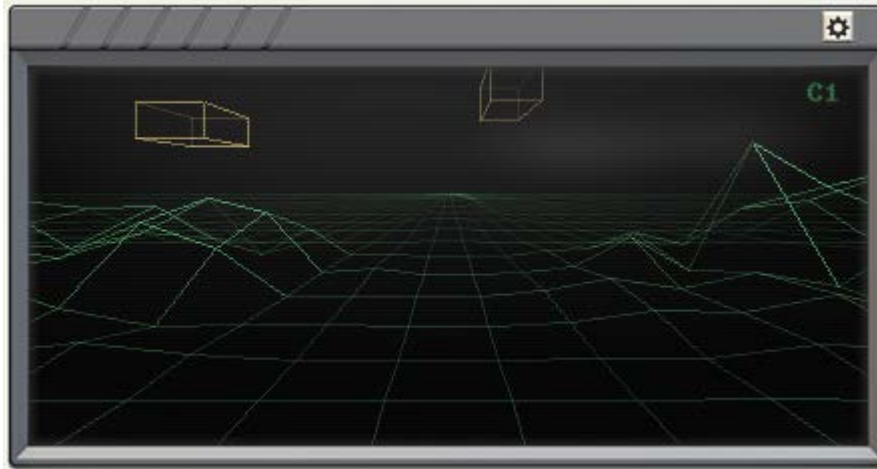
- **Length** – sets the length (or weight) of the click.
- **Filter** – blends between 3 filter modes:
  - Low-pass
  - Band-pass
  - High-pass
- **Cutoff** – controls the cutoff frequency of the filter.
- **Res (Resonance)** – controls the level boost at the cutoff frequency.

### ZAP CONTROLS

- **Start P (Starting Pitch)** – sets the oscillator pitch at the top of the envelope curve.
- **End P (Ending Pitch)** – sets the oscillator pitch at the bottom of the envelope curve.
- **Attack** – sets the attack (fade-in) time of the pitch and volume envelopes.
- **Decay** – sets the decay (fade-out) time for the pitch and volume envelopes.

## 5.3 THE MONITOR AND SETTINGS

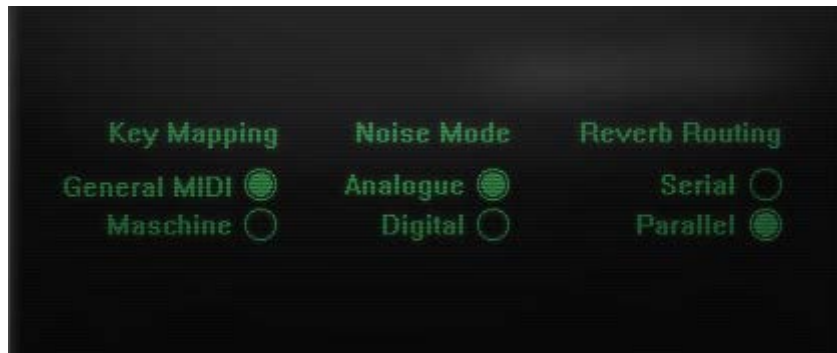
The monitor displays a visualization of the sound.



8 THE MONITOR

However, the monitor is not just a pretty face! To the top right of the monitor you will notice an alphanumeric display, which gives a value readout of any pitch controls. You can use this to make sure all your drums sounds are tuned to each other, and to the whole track.

Clicking on the gear icon above the pitch readout opens the Settings View.



9 THE SETTINGS CONTROLS

There are three main settings, each with two options:

- **Key Mapping** – selects the MIDI key mapping of the instrument. (See section 6 Appendix: MIDI Mappings for additional information)
  - **General MIDI** – maps the drums as closely as possible to the GM standard for drums.
  - **Maschine** – maps the drums chromatically for easy use with pad controllers like MASCHINE or the MPC
- **Noise Mode** – most of the drums use the same noise source, which can have two different modes:
  - **Analogue** – the noise is produced with a high quality random number generator
  - **Digital** – noise is produced using a 13-bit LFSR pseudo-random number generator.
- **Reverb Routing** – the reverb can be routed internally in two different ways:
  - **Serial** – the reverb signal is blended with the main mix before it reaches the compressor effect.
  - **Parallel** – the reverb signal is blended with the main mix after the saturator effect.

## 5.4 THE MASTER FX

### 5.4.1 COMPRESSOR

The built-in bus compressor can be used to alter the dynamics of the kit, either to control peaking, or to creatively alter the sound.



10 THE COMPRESSOR CONTROLS

The Compressor can be toggled on or off by clicking on the LED to the top right.

The main controls are as follows:

- **Thresh** – Controls the threshold level. Any audio that enters the effect above this level will be attenuated according to the setting of the ratio and knee controls.
- **Ratio** – The ratio of the compressor controls the amount of attenuation applied to audio above the threshold level. At the maximum setting, the compressor will act like a limiter.
- **Knee** – Controls the sharpness of the Ratio at the Threshold level. At low settings the transition is gradual and curved, but at high settings it is sharp and instant.
- **Att** – Controls the attack time of the effect. This is how long it takes for the compressor to react to audio when it passes the threshold.
- **Rel** – Controls the release time. This is how long it takes for the compressor to react to audio when it returns below the threshold level.
- **Out Gain** – Since a compressor lowers the audio level, it may be necessary to increase the effect output gain. This knob controls the output level of the compressor effect.
- **Mix** – Sets the dry/wet mix amount. This can be used to soften the artefacts of heavy compression, or to facilitate a technique called Parallel Compression.

To the bottom left are controls for the side-chain signal, which is the signal that the compressor listens to in order to calculate how much it should alter the amplitude of the input. By altering the side-chain with filters, you can make the compressor react more or less to certain frequencies.

- **HP** – controls the cutoff frequency of a high-pass filter. The higher the value of this knob, the less the compressor will react to low frequencies.
- **LP** – controls the cutoff frequency of a low-pass filter. The higher the value of this knob, the less the compressor will react to high frequencies.
- **Listen** – allows you to listen to the side-chain signal.

Between the side-chain controls and the Mix knob is a monitor that displays the input signal level (in green) and the compression amount (in red).



## 5.4.2 SATURATOR

The saturator emulates the effect of overdriving an amplifier circuit. Used in small amounts it can add warmth and subtle colouring to the sound; at extreme settings the sound will distort heavily.



11 THE SATURATOR CONTROLS

The controls are as follows:

- **In Gain** – controls the level of the signal entering the effect.
- **Tilt** – controls how the effect reacts to different frequencies. At higher settings the saturator will distort more with bass-heavy signals; at lower settings the saturator will have a heavier effect on high frequency signals.
- **Out Gain** – controls the output level of the effect.

## 5.4.3 GATED REVERB

A reverb effect creates an artificial simulation of an acoustic space. **CAPSULE** includes an algorithmic reverb with a built-in gate. A gated reverb allows you to artificially shorten the tail of a large reverb, so you can thicken a sound without blurring it.

The gated reverb has its own mixer, allowing you to send the different drums into the effect at different levels compared to the main output. It also has two routing options: serial and parallel. The routing can be set in the main settings described in section 0

The **MONITOR** and **SETTINGS**.



12 THE GATED REVERB CONTROLS

The top section of the reverb is the **Mix** area, which contains 8 level knobs that allow you to set the amount of each drum that is sent to the reverb effect.

Below this are the main reverb controls:

- **PreDel** (pre delay) – sets the delay time between the input signal arriving in the effect, and the reverb signal.
- **Position** – controls the blend between the early reflections and the late reflections, which affects the perception of the distance of the sound source.
- **Size** – sets the size of the virtual space.
- **Decay** – controls the reflectiveness of the walls of the virtual space.
- **LF Damp** – controls the low frequency damping of the reverb.
- **HF Damp** – controls the high frequency damping of the reverb.
- **Width** – controls the stereo width of the reverb.
- **Level** – controls the final output level of the effect.

To the right of these are the controls for the Gate:

- **thr** (threshold) – sets the level which the input level must pass in order to open the audio gate. When the signal drops below this level, the gate will close.
- **amt** (amount) – controls the intensity of the gate.
- **H** (hold time) – sets the shortest time the gate must remain open once it has been triggered.
- **D** (decay time) – sets how long it takes for the gate to close once the input level drops below the threshold value.

## 6 APPENDIX: MIDI MAPPINGS

GM Mapping	Maschine/MPC Mapping	Drum/Function
B0 & C1	C1	Bass Drum
D1 & E1	C#1	Snare
F#1 & G#1	D1	Closed Hi Hat
A#1	D#1	Open Hi Hat
G1	F1	Tom 1
A1	F#1	Tom 2
B1	G1	Tom 3
C2	G#1	Percussion 1
D2	A1	Percussion 2
E2	A#1	Percussion 3
F2	B1	Percussion 4
C3	C3	Select Pattern 1
D3	D3	Select Pattern 2
E3	E3	Select Pattern 3
F3	F3	Select Pattern 4

## 7 APPENDIX: MULTI-CHANNEL OUTPUTS

The outputs for the *multi-out* version of **CAPSULE** are as follows:

1. Main Stereo Mix Left Channel
2. Main Stereo Mix Right Channel
3. Reverb Left Channel
4. Reverb Right Channel
5. Bass Drum
6. Snare Drum
7. Hi Hat
8. Toms
9. Percussion 1
10. Percussion 2
11. Percussion 3
12. Percussion 4

## **8 CREDITS**

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