



AVANT

MODERN KEYS

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1 Welcome to AVANT: MODERN KEYS!

Thank you for purchasing AVANT: Modern Keys!

A bold transformation of the electric piano, AVANT pushes the ordinary into new realms of musical genres and scoring.

Selected for its distinctive sound and influential musical history, the Heavyocity team began with this classic Mark II electric piano and rediscovered the best-kept secret under its hood. With the inner components isolated, and captured through pristinely prepared performances (using hammers, ebows, twine, and picks), its breadth has been expanded to defy all expectations — delivering a diverse range of ornate, innovative, and unusual sounds for you to explore.

Paired with the powerful ASCEND engine, the sound sources in AVANT can be taken to an entirely new level, allowing for complete customization by layering, modulating, and processing up to three different sources at the same time. With AVANT, Heavyocity has forged a new class of modern electric keys capable of telling any story.

1.1 System Requirements

AVANT requires Native Instruments KONTAKT or KONTAKT PLAYER (version 6.7.1 or later).

1.2 Library Information

- Over 8.12 GB of uncompressed sample content (4.73 GB on Disk with lossless compression)
- Over 4000 Samples
- 109 Snapshots

2 Using the Instrument

2.1 Navigation and Anatomy



The AVANT Main Interface

The main interface of AVANT is split into two main sections: the top section contains the main triangular 2D mixer as well as some additional controls connected to the mixer; and the bottom section has 7 sub-pages of controls:

1. **SETTINGS** – where you define characteristics of the piano as well as how the instrument responds to MIDI.
2. **SOURCE** – where you can browse and load different sounds into the three channels.
3. **MODULATE** – where you can add extra levels of modulation and control to the mixer.
4. **ARP** – an arpeggiator for creating rhythmic broken chord effects.
5. **ECHOES** – an advanced MIDI delay and note generation effect.
6. **FX** – the Master Effects.
7. **CONVOLVE** – an addition effects chain characterized by a tempo-synched convolution effect.

2.2 The 2D Mixer

The main engine of AVANT is centered around the 2D triangular mixer. You can use this mixer to blend between three different sound sources in innovative ways.



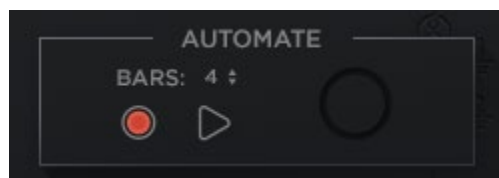
The 2D Mixer

At its most basic level, the mixer allows you to blend between sounds by simply clicking and dragging the circular cursor around the triangle. When the cursor is in a corner, you will only be able to hear the sound assigned to that corner.

However, the mixer also allows you to modulate, record, and randomize the sonic blend as well, and many of these options are polyphonic (i.e. per note) which turns this mixer into a powerful tool.

2.2.1 Automation

To the left of the triangle is a section labelled **AUTOMATE**; this area contains controls that allow you to record and play back manual movement of the mixer cursor.



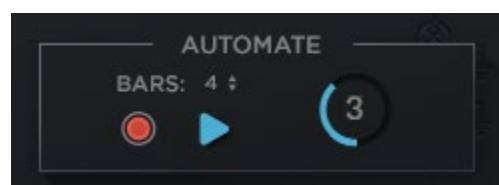
The Automation Controls

To record:

1. Set the number of bars you wish to record with the **BARS** control.
2. Click on the record arm button.
3. Clicking on the mixer will start the recording.
4. Move the cursor in the mixer until recording ends.
5. Playback will start automatically when the recording finishes.

You can start or stop automation playback using the play button.

For both recording and playback, the circle will show the automation progress.



2.2.2 Randomization

To the right of the triangle is a section labelled **RANDOM**; this area lets you control the randomization of the starting position and movement within the mixer for each note.



The Randomization Controls

There are three controls:

- **On/Off** – Toggles the mixer randomization on or off.
- **SCATTER** – Sets the randomization of the mixer position for each note.
- **DRIFT** – Sets the rate at which the mixer position of each note will drift within the mixer over time.

2.3 Channel Controls

Each channel (i.e. each corner of the triangle) has its own set of controls that can be displayed by clicking on the channel name.



The Channel Controls

Each channel has the following six knobs:

- **VOL** – Controls the main volume of the channel. This can be used to balance channels so that they blend better in the mixer.
- **PAN** – Controls the stereo position of the channel.
- **CONV** – Controls the level of the signal sent to the **CONVOLVE** effects (See section 2.10 Convolve Effects for more information)
- **ATTK** – Controls the attack character - at the central value the attack is the natural attack of the sound; turn the attack knob down to make the attack sharper and percussive; turn the knob up to make the attack long and soft.
- **REL** – Controls the release time of the channel.
- **TONE** – Controls the timbre of the channel - the central value the tone is neutral; turn the knob up to remove bass and increase highs; turn it down to remove the high end and increase bass.

Below the six knobs are three additional controls:

- **ON/OFF** – Toggles the channel on or off. When off the samples will be unloaded so only use this control if you do not plan to use this channel at all.
- **BROWSE** – Clicking on the channel name will open the **SOURCE** page with the current channel selected (see section 2.5 Source for more information)
- **SOLO** – Solos the channel and deactivates all modulation of the mixer so that the current channel is all that you'll hear. Note that this is a temporary control and will deactivate if you solo another channel or close the channel pop-up window.

2.4 Settings

The Settings page is where you define characteristics of the piano as well as how the instrument responds to MIDI.



The Settings Page

2.4.1 Mechanics

In this section you can activate or deactivate the mechanical noises of the piano, as well as control their volume. There are three sets of controls for the three mechanical elements:

- **PDL UP** – Controls for the sound when the sustain pedal is released.
- **PDL DWN** – Controls for the sound when the sustain pedal is pressed.
- **KEY PRESS** – Controls for an additional layer of the keys of the piano being pressed (but without the tonal element).
- **MECH** – Controls for the mechanical sounds coming from the mechanism of playing the piano, and not from the direct output.
- **REL** – Controls for a set of release samples that give a more natural sound when you release a MIDI note (when these are deactivated, a basic release envelope is used).

2.4.2 Stereo Spread

The original piano is a monophonic instrument. We have given the option to give each of channels stereo width by panning each note based on the key position.

- **ORIG** – Keeps the source in mono.
- **WIDE** – Applies panning per note to give the instrument a natural width.

2.4.3 Velocity Curve

In this section you can define how the instrument responds to MIDI velocity (i.e. how hard you hit the MIDI keys of your keyboard).

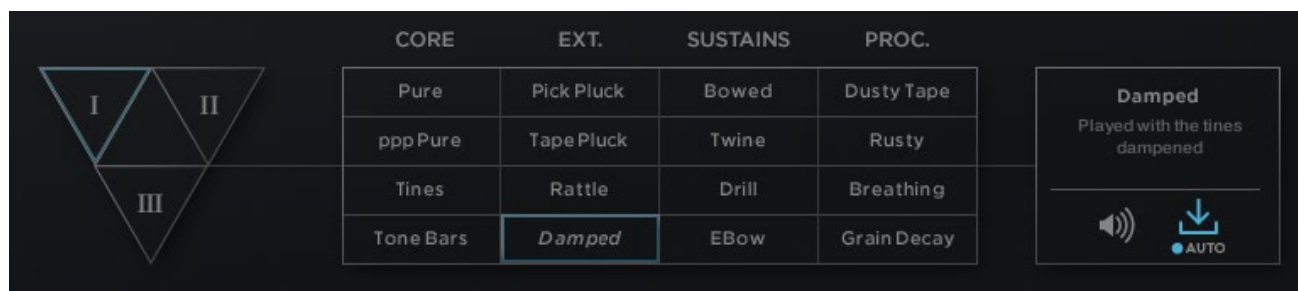
Clicking on the curve graph changes the shape of the curve. You can select between a single curve, and a double curve (or S-curve).

The **MIN** and **MAX** sliders define the minimum and maximum velocities (in other words, the softest and loudest levels that the instrument will make).

The horizontal slider defines the curve intensity. This control is bipolar, so the curve will be linear when this slider is in the center position.

2.5 Source

In the Source page you can browse and load different sounds into the three channels.



The Source Browser

On the left you can select a channel.

In the middle you can select a sound source (there are 16 sound sources spread across 4 categories)

To the right you can read information about the sound source and chose preview and loading options.

To load a sound:

1. Select the channel you wish to load the sound into.
2. Select a sound from the 4x4 grid of sounds.
3. Click on the load button (the downward arrow icon)

Sounds will load automatically if the **AUTO** option below the load button is on.

When the preview button (the speaker icon) is active, a preview will play when you select a sound source. This is a quick way to get an idea of how the source will sound before replacing the one you have selected.

2.6 Modulate

In the Modulate page you can add extra levels of modulation and control to the mixer.



The Modulate Page

There are three main modulation sources...

2.6.1 LFO / Envelope

The first modulation source has two modes: Low Frequency Oscillator (**LFO**) or Envelope (**ENV**).

- In **LFO** mode, the modulation source is a pattern that oscillates back and forth at a set rate.



- In **ENV** mode, the modulation source doesn't oscillate, but moves from the starting point at a steady rate.



In **LFO** mode you have two controls for each axis:

- **RATE** – Sets the rate of the oscillator.
- **AMT** – Sets the modulation intensity.

In **ENV** mode you have one control per axis:

- **AMT** – Sets the speed at which the mixer settings move from the starting point.

2.6.2 MIDI CC

In this section you can assign MIDI controllers (commonly known as MIDI CC) to each of the axis.

You can set a MIDI CC number by entering the CC number below the corresponding axis label.

Alternatively, you can use the MIDI Learn function:

1. Activate the **LEARN** button for the axis you wish to control.
2. While the **LEARN** button is active, move the MIDI controller you wish to assign to the axis.
3. The MIDI CC number will be updated to the MIDI controller you used, and the **LEARN** button will deactivate.

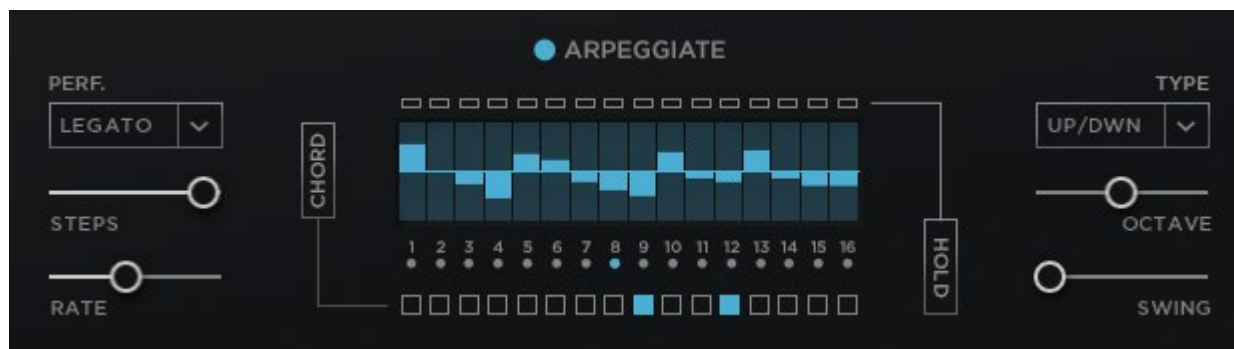
2.6.3 Keyboard

You can also control the mixer position with values generated by your MIDI keyboard. There are two sources you can assign to modulate the mixer:

- **VEL** (velocity) – The strength with which you press the MIDI key.
- **KEY** (key position) – The key number.

2.7 Arpeggiator

An arpeggiator takes chords and breaks them into their individual notes, which it then plays back in a pattern. The AVANT arpeggiator offers additional controls that enable you to make complex patterns.



The Arpeggiator Page

The main playback parameters are on the left of the interface:

- **PERF** – selects how the arpeggiator sequence should react to incoming MIDI. There are 4 options:
 - **Retrig** - the sequence will retrigger with every new MIDI note.
 - **Legato** - the sequence will retrigger with new MIDI notes, but not when played legato.
 - **Host** - the sequence will start running with the first MIDI note and then continue running freely from that point on. When used in a host this mode will sync to the host tempo and song position.
 - **1 Shot** - like **Legato** mode, but the sequence does not loop and will stop when it reaches the end.
- **STEPS** – sets the number of steps in the sequence.
- **RATE** – sets the rate at which the arpeggiator will play back.

In the middle of the page is the **Velocity Table**. By default the arpeggiator will use the played velocity when generating new notes, but the velocity table can be used to adjust the velocity for a given step, allowing you to create accents and ghost notes in the arpeggiator pattern.

Above the velocity table is a row of buttons. These are the **TIE** buttons; activating one of these will tie the respective step to the next step. So the next step won't trigger, but the current step will be twice as long.

At the bottom of the velocity table you will find the **CHORD** buttons. Activating one of these for a step will temporarily set the arpeggiator to **Chord** mode for the respective step. Note that when the arpeggiator is already in **Chord** mode, these buttons will have no effect.

To the right of the page are three playback parameters:

- **SWING** – applies swing to the arpeggiator rhythm.
- **ARP TYPE** – from this menu you can select the order in which the arpeggiator will generate notes:
 - **Chord** – the held chord will be played as is, without being broken into individual notes.
 - **Up** – the notes of the chord will be played from lowest to highest.
 - **Down** – the notes of the chord will be played from highest to lowest.
 - **Up/Down** – cycles between Up mode and Down mode, starting with Up.
 - **Down/Up** – cycles between Down mode and Up mode, starting with Down.
 - **Repeat (x2, x3, x4)** – similar to Up mode, but each note is repeated.
 - **Random** – the notes of the chord are played in a random order.
- **OCTAVE** – this menu allows you to add additional octaves of notes to the arpeggiator. If you select **+1 oct.** from the menu, the arpeggiator will play through the held notes as well as then the same notes one octave higher.

2.8 Echoes

The **ECHOES** page contains a MIDI Delay effect that can also be used as a semi-random accompaniment generator.



The Echoes Page

At the bottom of the page is a switch that you can use to switch between these modes:

- **REPLICATE** – The effect will act as a traditional MIDI delay, replicating each note you play with a series of echoes.
- **GENERATE** – The effect becomes a note generation engine, playing notes based on the chords you play.

Most of the controls for the two modes are the same, only the left side of controls change. Let's look at the shared controls first.

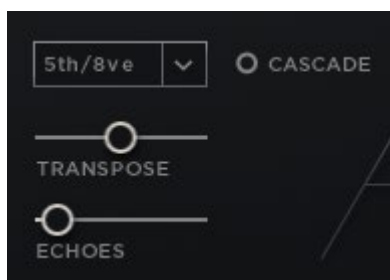
Above the mode switch is the master **AMT** knob, this sets the main velocity level of the generated notes.

Above that is a series of buttons that can be used to toggle individual notes on or off. The notes that are deactivated will not be generated by the effect, and this can help avoid notes being played out of scale.

To the right are three sliders:

- **PRE-DELAY** – Sets the time between the played note and the first echo. When set to OFF the pre-delay will be the same as the rate.
- **RATE** – Sets the rate at which new notes will be generated by the effect.
- **DECAY** – Sets the decay amount for the echoes (i.e. how much they should decrease in velocity with each new echo).

When in **REPLICATE** mode, the controls to the left are as follows:



- **INTERVAL** – Use this menu to select an interval pattern for the MIDI echoes.
- **CASCADE** – When active, the repeating echoes will increase in octave each time the interval pattern repeats.
- **TRANSCOPE** – Sets the base transposition of notes for the effect.
- **ECHOES** – Selects the number of echoes to be generated by the effect.

When in **GENERATE** mode, the controls to the left are:



- **LENGTH** – Sets how long the engine will generate notes while a MIDI note is held.
- **TRANSCOPE** – Sets the base transposition of notes for the effect.
- **COMPLEXITY** – Sets the complexity of the generated notes (i.e. how much they will deviate from the note that creates them).

2.9 Master Effects

The FX page contains a customizable effects chain for the main output of the instrument. You can load any of the 12 provided effects into the four effect slots. The effect slots can be re-arranged and customized until you get the perfect sound you want.



The Master Effects Page

In the middle of the page is the main effect chain, represented by 4 icons.

Clicking on one of the icons will display the controls for that effect. Each effect has four parameters that are controlled via knobs.

Above each icon is an on/off switch for the effect.

There is also a master on/off switch that can be used to bypass the whole effect chain with one switch.

2.9.1 Loading an Effect

Loading effects is accomplished by a drag and drop system:

1. Click on the effect you wish to load in the menus to the left and right of the page.
2. Drag the effect over the slot you wish to load it into and the slot will highlight.
3. Release the effect and it will load into the selected slot.

Loading an effect will turn it on and set all its parameters to the default values.

2.9.2 Rearranging Effects

Rearranging the effects in the chain is also accomplished by dragging:

Click on an effect in the effect chain.

Drag it to the slot you wish to move it to. The other effects will automatically move out of the way.

Release the effect and the effect chain will re-load in the order you specified.

2.9.3 Effects Presets

AVANT comes with 12 effects presets, accessed by clicking on the **EFFECTS PRESETS** button on the **FX** page.



The Effects Preset Browser

The effects preset browser works in a similar manner to the main **SOURCE** browser:

- Clicking on an effect preset will highlight it and display information to the right of the interface.
- Clicking on the load button (the downward arrow icon) will load the preset, and close the browser window.

You can also close the preset browser by clicking on the **X** icon at the top of the browser window.

2.9.4 Effect Types

This section of the manual is a reference of the 12 available effects...

Clean Compressor (CLN COMP)

A clean compression effect, used to control and shape dynamics.

The four controls are as follows:

- **THRESH** – The threshold above which the sound will be compressed.
- **RATIO** – The compression amount which will be applied when the sound exceeds the threshold level.
- **ATTACK** – The reaction speed of the compressor.
- **MAKEUP** – The amount of makeup gain to be applied after compression.

Dirty Compressor (DIRTY COMP)

A compressor with a saturating pre-amp, for dirtier sounds.

The four controls are as follows:

- **DRIVE** – The signal overdrive level (i.e. distortion)
- **THRESH** – The threshold above which the sound will be compressed.
- **RATIO** – The compression amount which will be applied when the sound exceeds the threshold level.
- **MAKEUP** – The amount of makeup gain to be applied after compression.

Overdrive Saturation (DRIVE SAT.)

An effect that mimics an analogue circuit being overloaded.

The four controls are as follows:

- **DRIVE** – The overdrive amount.
- **TONE LO** – The gain level of the low (bass) frequencies.
- **TONE HI** – The gain level of the high frequencies.
- **OUT** – The output gain of the effect.

Aging

An effect that mimics an old tape machine.

The four controls are as follows:

- **WEAR** – The quality of the tape (as the wear increases, so too will signal saturation and high and low frequency loss)
- **WARBLE** – The instability of the playback rate. Increased levels will lead to vibrato-like effects.
- **NOISE** – The level of background noise.
- **MONO** – The stereo width of the signal. At higher settings the width will be reduced until it becomes fully mono.

Equalizer (EQ)

A corrective effect used to shape the tone/timbre of the sound.

The four controls are as follows:

- **LOW** – The gain level of the low frequency shelf.
- **MID** – The gain level of the middle frequency band.
- **MID FREQ** – The central frequency of the middle band.
- **HIGH** – The gain level of the high frequency shelf.

Filter

A creative tonal effect that is more extreme than an EQ.

The four controls are as follows:

- **HP CUT** – The cutoff frequency of the highpass filter (higher settings will remove low frequencies).
- **HP RES** – The resonant level at the cutoff frequency of the highpass filter.
- **LP CUT** – The cutoff frequency of the lowpass filter (higher settings will remove high frequencies).
- **LP RES** – The resonant level at the cutoff frequency of the lowpass filter.

Gate

A rhythmic effect that controls the volume of a sound with an LFO.

The four controls are as follows:

- **RATE** – The rate of the rhythmic gate.
- **DEPTH** – The intensity of the effect (i.e. how much of the signal's volume will be affected by the gate).
- **SHAPE** – Blends between a square waveform and a triangular waveform. The triangle setting will lend towards tremolo style effects.
- **WIDTH** – The width of the waveform.

Diffusion Delay (DIFF DELAY)

A delay (echo) effect with built in diffusion. This effect can blend between echo sounds and reverb sounds.

The four controls are as follows:

- **TIME** – The delay time.
- **FEEDBK** – The amount of signal that is fed from the delay output back into the effect input (i.e. the number of echoes).
- **DIFFUSE** – The diffusion amount.
- **LEVEL** – The output level of the delayed signal.

Stereo Delay

A delay/echo effect.

The four controls are as follows:

- **TIME** – The delay time.
- **FEEDBK** – The amount of signal that is fed from the delay output back into the effect input (i.e. the number of echoes).
- **DAMP** – The amount of high frequency dampening applied to the delayed signal.
- **LEVEL** – The output level of the delayed signal.

Digital Reverb (DIGI VERB)

An algorithmic reverb effect.

The four controls are as follows:

- **PRE-DEL** – The time between the input signal and the reverb signal.
- **SIZE** – The length of the reverb tail.
- **COLOR** – The brightness (i.e. high frequency level) of the effect signal.
- **MIX** – The dry/wet mix.

Plate

A convolution-based plate reverb.

The four controls are as follows:

- **PRE-DEL** – The time between the input signal and the reverb signal.
- **SIZE** – The length of the reverb tail. The natural length of the impulse response is at the central setting.
- **COLOR** – The brightness (i.e. high frequency level) of the effect signal.
- **MIX** – The dry/wet mix.

Hall

A convolution-based hall reverb.

The four controls are as follows:

- **PRE-DEL** – The time between the input signal and the reverb signal.
- **SIZE** – The length of the reverb tail. The natural length of the impulse response is at the central setting.
- **COLOR** – The brightness (i.e. high frequency level) of the effect signal.
- **MIX** – The dry/wet mix.

2.10 Convolve Effects

The Convolve effects are a send effect chain that is separate to the main master effects. The mix for the convolve chain can even be different as it is set by the **CONV** knob in the channel pop-up windows (see section 2.3 Channel Controls).



The Convolve Page

The Convolve effects chain contains the following effects in this order:

- Highpass and Lowpass Filters.
- Tempo-synced Convolution effect.
- Delay and Algorithmic Reverb.
- Rhythmic Gater.

The namesake of this chain, and the main focus of it, is the convolution effect. Traditional convolution effect use impulse responses to mimic tonal effects (like EQs and filters) or special effects (like delays and reverbs). For AVANT, we created a convolution effect that automatically syncs to your host, allowing you to explore reverse effects, rhythmic effects, and other creative impulse responses, all tempo-synced to your project.

The other effects in the chain are used to support the convolution, but can also be used on their own for interesting layers.

Finally, there is a **MASTER** slider that is used to control the overall output volume of the convolve chain.

2.10.1 Shape

The filters and gate effect are controlled in the **SHAPE** section of the page. The effects have four controls:

Filter

- **LP** – Controls the lowpass filter cutoff (used to remove the higher frequencies).
- **HP** – Controls the highpass filter cutoff (used to remove the lower frequencies).

Gate

- **RATE** – Controls the rate of the rhythmic gate effect.
- **AMT** – Controls the intensity of the rhythmic gate effect.

2.10.2 Convolve

At first glance, the **CONVOLVE** effect has one control: the **LENGTH** menu that is used to set the length of the impulse response in beats.

However, by clicking on the **CONVOLVE** heading, you will open the Convolution browser.



The Convolution Browser

There are four categories of impulse responses, and each category contains 12 files, giving you a total of 60 to choose from.

The categories are selected by clicking on their names, and they are:

- **FORWARD** – more traditional reverb style impulse responses can be found here, along with some arrhythmic material.
- **REVERSE** – a selection of reverse reverb and swelling effects.
- **RHYTHMIC** – rhythmic delays and percussive patterns.
- **RHYTHMIC REV** – similar to the Rhythmic category, but with reverse elements.

After you have selected a category, you can select an impulse response by clicking on its name in the matrix of buttons.

Information will be displayed on the right, and you can then load the impulse by clicking on the load button (the downward arrow icon).

You can also cycle through impulse responses by clicking on the arrows to the left and right of the **CONVOLVE** title.

2.10.3 Ambience

The **AMBIENCE** section of the page contains the controls for the delay and algorithmic reverb effects.

There are six controls for these effects:

- **DEL** – Sets the delay time for the delay effect.
- **AMT** – Controls the intensity of the delay effect.
- **PRE-DEL** – Sets the amount of time between the input signal and the reverb signal.
- **MOD** – Controls the amount of modulation in the reverb effect (higher settings will sound more chorusy)
- **SIZE** – Sets the length of the reverb tail.
- **MIX** – Controls the dry/wet mix of the reverb effect.