QUANTUM

1.0.2

QUANTUM
Default
Attack
Solo
Volume
Sens.
Mode
Decay
Hold
Beats
4x
Sustain
Solo
Volume
EQ
Enhancer
Convolution
Limiter
30
100
300
1k
3k
10k
Mix
1
2
3
4
5
Freq
Q
Gain
Out
Compressor
Chorus
Saturation
Pitch Shifter
Stereo Tools
Delay
Mix
-36
-24
-12
-6
0db
+6
Out

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INTRODUCTION

Quantum is an audio plugin that automatically detects the transients of an audio signal, splitting the attack and sustain parts so they can be processed separately and then joined back together. **Quantum** is a transient toolbox, giving you endless sonic possibilities that weren't possible until now. Includes 16 high quality DSP effects that can be applied to the attack and sustain parts independently in any order you want.

Quantum gives you total control over your transients in ways that are unprecedented.
We believe Quantum is an indispensable tool in your studio.

GETTING STARTED

SPECIFICATIONS

- Automatic high quality transient detection.
- Attack and sustain parts processed independently.
- Real-time graphic display of both signals.
- Volume of each signal.
- Sensitivity for fine-tuning of the detection algorithm.
- Adjust the length of the transients accurately with the Decay parameter.
- Global mix and output volume controls.
- Chorus.
- Compressor with auto-gain.
- Convolution with included IRs and import function.
- Stereo Delay with tempo sync.
- Enhancer (a la Spectre).
- Graphical EQ with 5 bands and 7 filter types.
- Flanger.
- Limiter with lookahead.
- Lo-Fi.
- Phaser.
- Pitch shifter.
- Algorithmic reverb.
- Saturation.
- Stereo Tools with mid/side processing.
- Tremolo.
- Vibrato.
- Preset system.
- Resizable GUI.
- Auto-updater.
- Formats: VST, VST3, AU, AAX (64 bit only).
- Platforms: macOS, Windows.

SYSTEM REQUIREMENTS

Mac OSX 10.9 or superior.
Windows 7 or superior.
64-bit operating system and DAW / host.

INSTALLATION

MAC
Double-click on the PKG file downloaded from Wavesfactory.
Follow the steps to install the plugin.

The installer will place the different plugin formats in these folders:
- **AU**: Library/Audio/Plug-Ins/Components/Quantum.component
- **VST**: Library/Audio/Plug-Ins/VST/Quantum.vst
- **VST3**: Library/Audio/Plug-Ins/VST3/Quantum.vst3
- **AAX**: Library/Application Support/Avid/Audio/Plug-Ins/Quantum.aaxplugin

The installer will also create a folder in Library/Application Support/Wavesfactory named Quantum that will contain all the necessary files like presets, user manual and license.

WINDOWS
Double-click on the EXE file downloaded from Wavesfactory.
Follow the steps to install the plugin.

The installer will place the different plugin formats in these folders:
- **VST 64 bit**: C:\Program Files\Steinberg\Vstplugins\
- **VST3 64 bit**: C:\Program Files\Common Files\VST3\
- **AAX 64 bit**: C:\Program Files\Common Files\Avid\Audio\Plug-Ins

The installer will also create a folder at C:\Users\'username'\AppData\Wavesfactory named Quantum that will contain all the necessary files like presets, user manual and license.

TROUBLESHOOTHING

If Quantum doesn't appear in your DAW plug-in list you can try following steps:

- Re-scan all plug-ins.
- If you're on Windows make sure that the plug-in is in the correct folder as the installer will place it in the default VST location and your DAW may be using a custom one.
- Make sure that your OS version is 10.7 minimum on Mac and Windows 7 minimum on Windows.

If Quantum crashes your DAW on start-up or while using it please delete it from the folder and reinstall it.
Make sure that you have the latest version by downloading the installer from the website:
https://www.wavesfactory.com/audio-plugins/quantum

If the crashes continue, contact support with any available crash reports, specifying your OS version, DAW version and any other valuable information that you may have.
https://www.wavesfactory.com/support#contact

DEMO EVALUATION

Quantum will run in demo mode by default. It will output a 2-seconds volume dip every 90 seconds, parameters won't be recalled when saving the session and preset saving will be disabled. All other features will be available for full evaluation with no specific time expiration.
While in demo mode the plugin will show the authorisation panel every time you open the UI. If you still want to evaluate it you have to click on "Click to continue demo" at the bottom of the pop-up.

AUTHORISATION

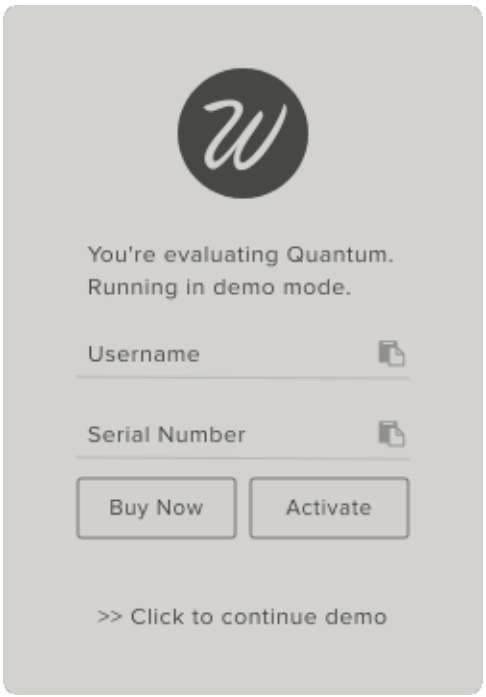
When purchasing Quantum from Wavesfactory you'll receive an e-mail containing the username and serial number formatted like this:

Username: john@doe.com
Serial: 1234567890987654321

You have to copy this to the clipboard by selecting it and either:
- Right-click and select "copy".
- Click the paste buttons in order to paste the username and serial number.

Important: Make sure that you copy them without empty spaces as it will result in a not valid authorisation. It is **highly recommended** that you use the built-in paste buttons in order to paste both the username and serial number instead of using keyboard shortcuts.

Then, open the plug-in and the authorisation panel will appear. Insert your username and serial. Press the "paste" button and the contents of the clipboard will be copied accordingly. Finally, press the Activate button. If the information is correct he plug-in will save your serial number in Wavesfactory/Quantum/License. If the information is not correct the panel will
In order to de-authorise you can simply delete the file inside Wavesfactory/Quantum/License.



WHAT IS A TRANSIENT?

Transients are the short burst of energy that you hear at the start of any sound. Think of a snare drum being hit by a drumstick, the punchy sound produced for the first few milliseconds is called the transient. Transients are everywhere, from the sound of your guitar pick to the aggressive pluck sound of your favourite synth, to the consonants of your vocal tracks.

WHY ARE TRANSIENTS IMPORTANT?

Transients are an essential part of any sound, eating a lot of headroom, being destroyed by dynamic processors like limiters, being the main punch of your drum tracks and giving time and dimension awareness of any instrument in the first milliseconds of a sound. Having them under control and knowing how to deal with them is a crucial job for every producer and engineer.

USE CASES

Quantum is not a one-trick pony like the vast majority of transient shapers. In fact, the use cases of Quantum are huge. Quantum is a transient toolbox, giving you all the tools that we came up with. We are sure that you will find more uses for it that we can imagine right now. However, here you have a list of use cases:

- Completely remove the room sound of your drum tracks or loop by lowering the sustain volume.
- You want to increase the volume of your drums but the transients are peaking, and using a limiter is not ideal: lower the volume of the Attack, increase the volume of the sustain.
- You want your transients to sound sharper and brighter but you don't want to ruin the sound of the cymbals: EQ boost on just the attack.
- Reshape the sound of your kick by EQing the attack only and set the desired length of the sound by changing the Decay parameter.
- Change the tune of your drums without loosing any of the punch. Pitch Shifter on the sustain part only.
- Lo-fi on transients only to make them sound crisper than ever.
- Add reverb to just the attack so you get cleaner decays without any of the nasty rumbling.
- Add chorus or flanging to the sustain part, retaining all of the transients without smearing.
- Mono your attacks, make them sound more focused.
- Make your tracks wider without loosing any of the attack. Stereo Tools on the sustain, increase the Side parameter.
- Increase the dynamic perception of your mix saturating the transients and boosting them a bit safely using the limiter with lookahead.

USER INTERFACE

MAIN VIEW

The main window is divided in four sections. In the top section you can find the Quantum logo which will show the About page when clicked. In the middle you can see the presets box with navigation arrows. And on the right you are able to find the auto-updater icon if an update is available (more on that later), the main menu and the global bypass switch.

On the main section you can see two big knobs which correspond to the attack and sustain main volume parameters. Just using these knobs can have a drastic difference in the sound of your track.
In the middle you can see the waveform display which shows you real-time information about the current state of the plugin and how it's doing with the detection. Just below the display you'll find three crucial knobs: sensitivity, decay and curve. Tweak the sensitivity knob first so each transient is detected the way you want. This will heavily depend on the track that you're working on.

The next big section is for the effects. It has three main sections: attack effects list on the left, sustain effects list on the right and the main effects editor screen in the middle.

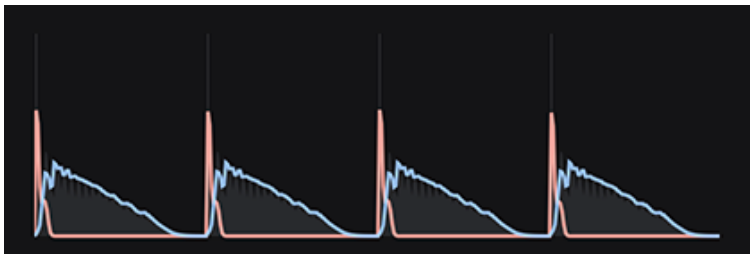
Finally, in the bottom of the window you'll be able to see the output meter and the global mix and output volume parameters.

At the bottom right corner you'll see the icon indicating that the whole GUI is resizable. Just drag to resize. The plug-in will remember it's size and it can always be reset by clicking on the main menu and selecting "Default size".

All knobs in Quantum can be dragged vertically to change their value, which is normal behaviour for all plugins, but you can also tweak them while hovering using the mod wheel. Typing the exact value is also possible by double clicking on the label and entering the desired value.
Double-clicking on the parameter will set it to the default value.

WAVEFORM DISPLAY

The waveform displays three signals: attack signal in orange, sustain signal in blue and each transient detection with a vertical line in grey. The speed of the display can be tweaked with the Beats parameter, with which you can choose how many beats are shown at a time: 1, 2, 4, 8 or 16.



MAIN PARAMETERS

- **Attack volume** - *ranges from -96dB (muted) to +12dB.*

Controls the volume of the attack signal, or transients.

- **Attack solo**

When enabled the attack signal will be solo-ed.

- **Sustain volume** - *ranges from -96dB (muted) to +12dB.*

Controls the volume of the sustain part of the signal, i.e. the part of the signal that is not a transient.

- **Sustain solo**

When enabled the sustain signal will be solo-ed.

- **Power**

Bypass switch. When disabled the process won't be applied to the output signal.

- **Sensitivity** - *ranges from -100% to 100%*

Adjusts how sensible is the transient detection algorithm to the input signal. Its use is fairly simple:
Are you getting too much transients detected? Lower the sensitivity.
Do you want more transients detected? Increase the sensitivity.

- **Mode** - *Drums, General and Soft*

Adds a little crossfade between the sustain part and the attack part. Use this parameter if you think you are getting a transition that is too abrupt and it generates unwanted clicks. Drums mode has instant attack. General mode has 5ms attack. Soft mode has 20ms attack.

- **Decay** - *ranges from 0ms to 500ms*

Sets the time that passes from the detection of a transient to the sustain signal. It can also be seen as a crossfade time between the attack and sustain parts. It can be turned down to 0ms, which will just output a single sample for the attack.

- **Hold** - *ranges from 0ms to 100ms*

This parameter sets the minimum amount of time between the detection of transients. It's similar to hysteresis. It helps you get rid of multiple transients being detected too quickly. Works in conjunction with the **Sensitivity** parameter.

- **Beats**

Sets how many beats you want the waveform graph to display. It's synced to your tempo and it can show 1, 2, 4, 8 or 16 beats.

- **Mix** - *ranges from 0% to 100%*

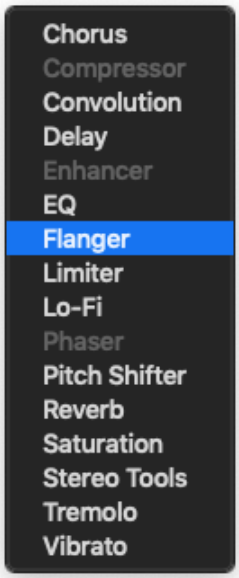
Mixes the dry and the wet signals. The dry signal is not processed by the plugin in any way. 0% is the dry signal at full volume and no wet signal. 100% is wet signal at full volume and no dry signal.

- **Output** - *ranges from -24dB to +24dB.*

This parameters controls the volume of the output signal.

EFFECTS

Quantum includes 16 effects. You can add them in the attack or sustain paths independently using the big plus button. When you click on the plus sign a menu will appear with all the available effects. The effects that have already been inserted will be greyed out. This is done in order to have a fixed number of parameters, and therefore full automation compatibility with all DAWs.
You can add one instance of each effect only.



To **bypass** the effect you can use the illuminated button on the left of each effect button.
Effects can be **rearranged** in any order you want. To move an effect you just have to drag and drop it to the desired location.
You can completely **remove** an effect by clicking on the cross icon on the right.

CHORUS

The chorus effect creates two copies of the main signal, delays them and modulates the pitch of each one using a delay line. The modulation can be controlled with the following parameters.

- **Waveform.**

Choose between a sine wave or a triangle wave to modulate the pitch of the delay lines.

- **Depth.**

Sets how much the pitch is changed in the delayed signals.

- **Stereo.**

Adjusts the phase of the modulation signal on the right channel so you can have them out of phase for a more pronounced stereo image.

- **Speed.**

Adjust in Hertz the speed of the modulation signal.

- **Mix.**

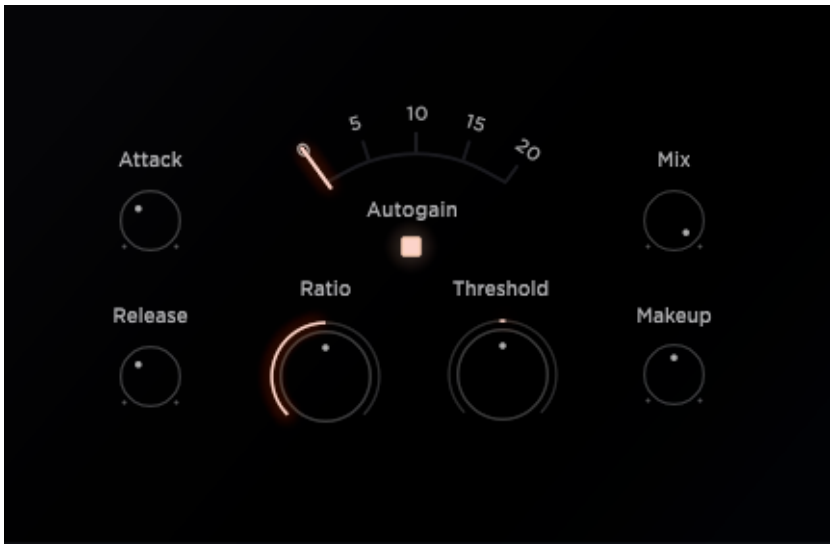
Set how much of the dry signal is mixed with the wet signal. For maximum effect, set at 50%.

- **Output.**

Adjusts the output volume from -24dB to +24dB.

COMPRESSOR

Compressors are used to reduce dynamic range. The compressor included in Quantum is based on VCA technology and it's designed to be used in a wide variety of scenarios, with special focus on transient heavy material.



- **GR display.**

See visually how much reduction is applied to the signal in dB. From 0dB (no effect) to -20dB.

- **Attack.**

Sets the amount of time in milliseconds it takes for the compressor to react to the incoming signal.

- **Release.**

Sets the amount of time in milliseconds it takes the compressor to recover once the signal has fallen below the threshold.

- **Ratio.**

The ratio parameter lets you specify how much compression is applied when the compressor starts working.

- **Threshold.**

Sets the value from which the compressor will start working. It's set in dB.

- **Makeup.**

It's effectively the output gain of the compression. It's meant to be used to compensate for the volume loss that audio compression inherently applies to the signal.

- **Auto-gain.**

Tell the compressor to auto-compensate for the volume loss.

- **Mix.**

Mixes the dry with the wet signal. Specially useful here to achieve that desired NY style compression easily and effectively.

CONVOLUTION

Convolution lets you choose an impulse response and convolve it with the input signal. Used widely for reverberation and space modelling, but also for capturing the frequency response of the desired medium or object. Quantum includes a set of impulses and you can also add your own.

- **Impulse.**

Select from the dropdown menu one of the included impulse responses, or use the left and right arrow for quick navigation. You can also drag and drop your own WAV directly in the waveform display, or click on the “Choose file...” button, and it will be automatically added to the list for future reference.
You can import all of your impulse response library by placing the impulses here:

- **Mac**: Library/Application Support/Wavesfactory/Quantum/Impulses/User
- **Windows**: C:\Users\YOUR_USERNAME\AppData\Roaming\Wavesfactory\Quantum\Impulses\User

- **Mix.**

Mixes the dry and wet signals. Both signals are at full volume when this parameter is set to 50%.

- **Pre Delay.**

Delays the wet signal in milliseconds.

- **Low Cut.**

Puts a low cut filter to the wet signal in order to remove excessive rumble in the low end.

- **High Cut.**

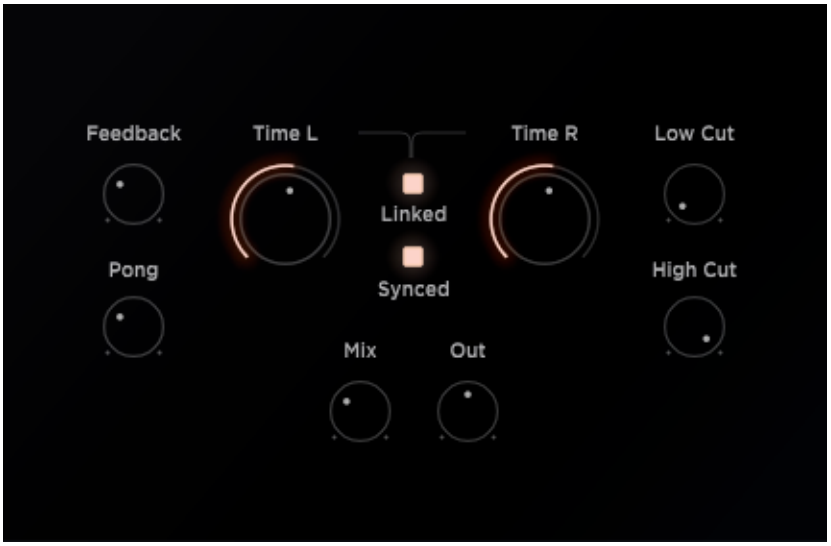
Puts a high cut filter in the wet signal in order to remove the high end and make it sound duller and darker.

- **Out.**

Controls the output signal from -24dB to +24dB.

DELAY

Delay is an audio signal processing technique that records an input signal to a storage medium and then plays it back after a period of time. The delayed signal may be played back multiple times, or fed back into the recording, to create the sound of a repeating, decaying echo.



- **Time L.**

Adjusts the delay time of the left channel. If the channels are linked, this knob will also control the **Time R** parameter. This knob can be synced to the tempo or set free.

- **Time R.**

Adjusts the delay time of the right channel. If the channels are linked, this knob will also control the **Time L** parameter. This knob can be synced to the tempo or set free.

- **Linked.**

Links the Time L and Time R parameters. If this is not enabled you will be able to set different delay times for the left and right channels.

- **Synced.**

Makes the delay effect synced to the tempo so you can select delay times that are directly related to the BPM3 of your host.

- **Feedback.**

Sets how much of the output signal is fed back to the input. Increasing this will result in longer decay. When set at 100% the signal won't decay and will get easily out of control.

- **Pong.**

This is a special parameter that will gradually turn the delay effect into ping pong-style. A ping pong delay is a stereo feedback delay where the delay signal bounces back and forth between the left and right channels.

- **Low Cut.**

Low cut filter in the delay signal path.

- **High Cut.**

High cut filter in the delay signal path. Useful to replicate the sound of an analog delay.

- **Mix.**

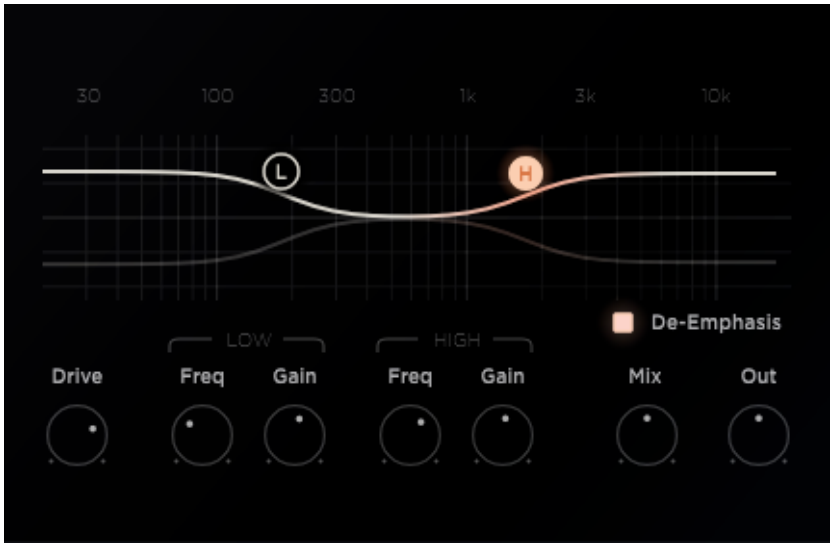
Mixes the dry and wet signals. At 50% both signals are at full volume.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

ENHANCER

This effect will extract the difference between the dry and EQ'd signal, saturate that difference and mix it back with the dry signal. That way you will be applying saturation exactly where you want in the spectrum.
This effect is a stripped down version of Spectre.



- **Graphical display.**

L control the low shelf, **H** controls the high shelf. Moving the filters horizontally change the frequency and moving them vertically change their gain, just like a regular graphical EQ. Additionally, you can change their Q value with the mouse wheel.

- **Drive.**

Adjusts the amount of saturation in dB. Effectively, it works like an auto-compensated input volume.

- **Low Frequency.**

Frequency of the low shelf filter.

- **Low Gain.**

Gain in decibels of the low shelf filter.

- **High Frequency.**

Frequency of the high shelf filter.

- **High Gain.**

Gain in decibels of the high shelf filter.

- **De-Emphasis.**

When enabled the Enhancer will automatically cancel the EQ boost so you only get the saturation without the extra gain.

- **Mix.**

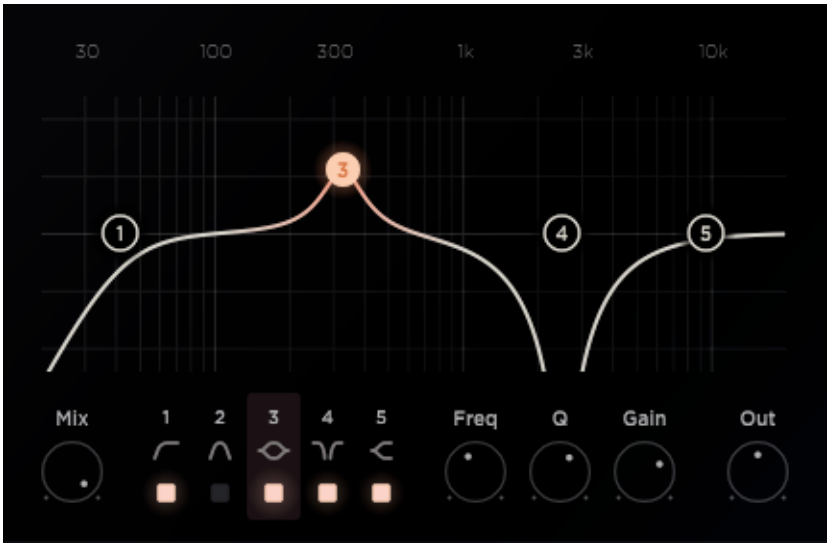
Mixes the wet signal with the dry signal. At 50% both signals will be at full volume.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

EQ

Equalization is the process of changing the balance of different frequency components in an audio signal. This EQ effect lets you graphically control five selectable filters.



- **Graphical display.**

The graphic display shows you the frequency range from 20Hz to 20KHz on the X-axis, and gain from -12dB to +12dB in the Y-axis. You can drag each one of the filters (labeled from 1 to 5) to set their frequency and gain value, adjust the mouse wheel to change their Q value, and double click for setting the default value. On right click, you will be able to select the filter type.

- **Frequency.**

Adjust the frequency of the filter from 20Hz to 20KHz.

- **Q.**

Adjusts the Q or bandwidth of the filter from 0.1 to 20.

- **Gain.**

Adjusts the gain of the filter from -12dB to +12dB. Bear in mind that some filter types won't accept a gain value, like the low cut.

- **Filter selector.**

Select between bell, low cut, low shelf, high cut, high shelf, notch and band pass filters.

- **Mix.**

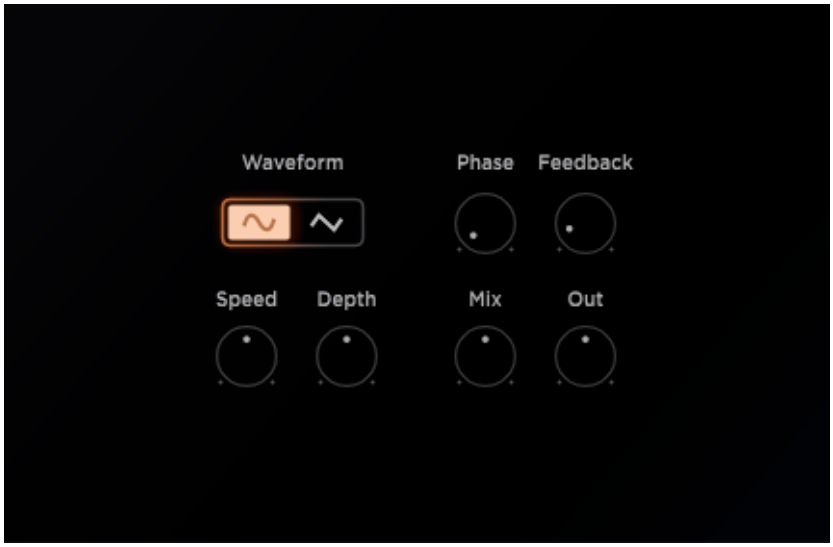
Mixes the dry and wet signals.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

FLANGER

Flanging is an audio effect produced by mixing two identical signals together, one signal delayed by a small and gradually changing period, usually smaller than 20 milliseconds. This produces a swept comb filter effect: peaks and notches are produced in the resulting frequency spectrum, related to each other in a linear harmonic series. Varying the time delay causes these to sweep up and down the frequency spectrum.



- **Waveform.**

Lets you select the modulation waveform from sinusoidal to triangular.

- **Phase.**

Offsets the phase of the right channel by the desired amount, making a pronounced stereo effect.

- **Feedback.**

This parameter controls how much of the output signal is fed back to the input signal, resulting in a more pronounced flanging effect.

- **Speed.**

Controls the speed of the modulation signal, from 0.1Hz to 20Hz.

- **Depth.**

Sets the amplitude of the modulation signal.

- **Mix.**

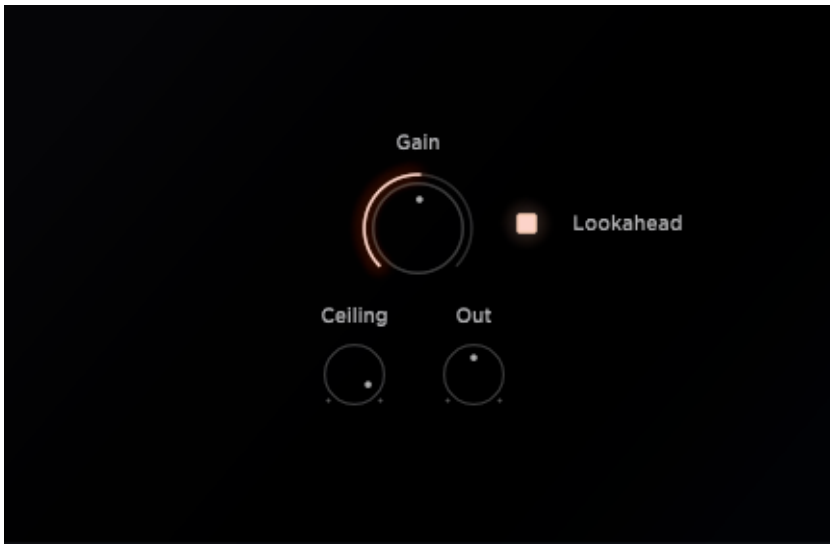
Mixes the dry and wet signals. For maximum flanging effect, this parameter should be at 50%.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

LIMITER

Brickwall limiter that lets you boost the level of the audio signal without it surpassing the limit set by the ceiling parameter.



- **Gain.**

Boost of the signal level from 0dB to 12dB.

- **Lookahead.**

The effect will be much more smooth and responsive by catching peaks before they happen. This is done introducing 15 ms of latency, but it's auto-compensated. If you need 0 latency, leave this unchecked.

- **Ceiling.**

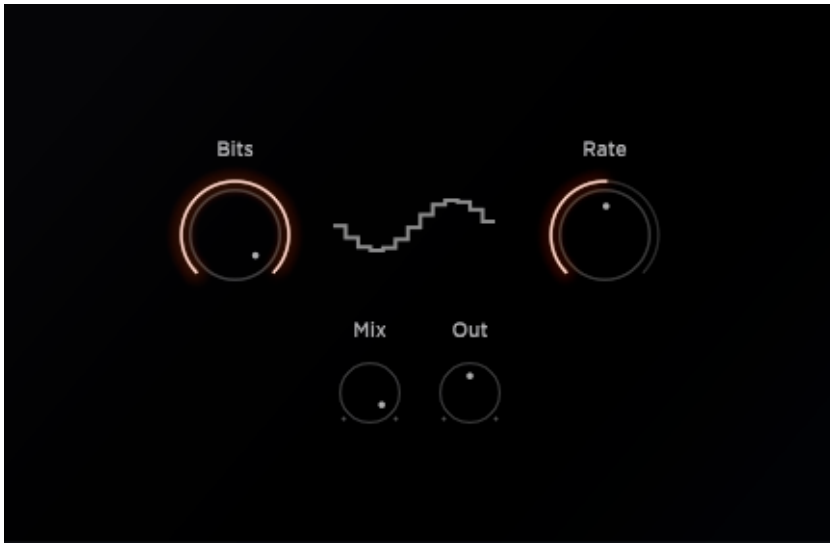
Sets the maximum allowed value for the signal to peak. Everything that exceeds this value shall not pass. Gandalf style.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

LO-FI

This effect includes a sample rate reducer and a bit crusher.



- **Waveform display.**

See how the sample rate reducer and bit crusher affects the input signal. This is just for reference purposes and it's not directly related to the signal.

- **Bits.**

Creates distortion by reducing the resolution of the audio data. This parameter lets you set the amount of bits from 24 bit to 2 bit.

- **Rate.**

Reduces the sampling rate of the input signal from 1x (no reduction) to 50x. If the input signal is at 44.1KHz sampling rate and this parameter is set to 2x, the effective sampling rate is 22.05KHz.

- **Mix.**

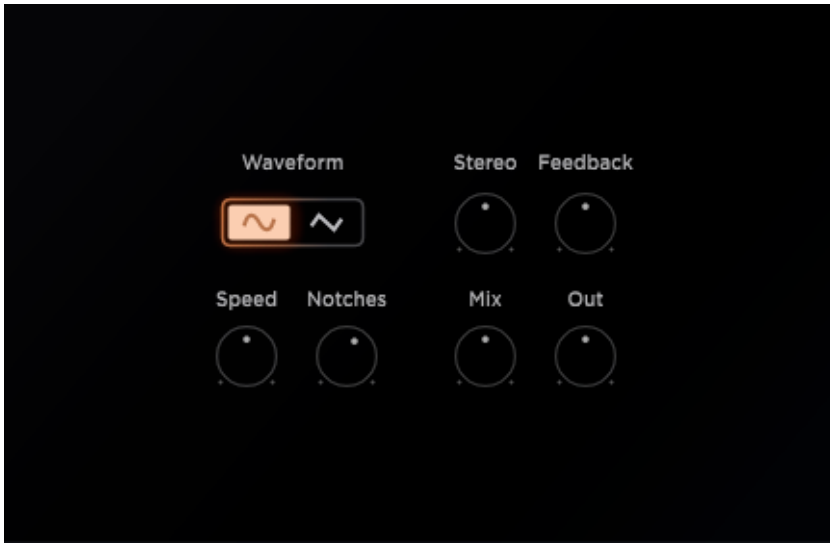
Mixes the dry signal with the wet signal.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

PHASER

The phaser splits the incoming signal into two paths. One of the paths is filtered using modulated all-pass filters, and then both paths are mixed back together creating notches in the frequency spectrum due to the difference in phase.



- **Waveform.**
Lets you choose the waveform of the modulation signal between sine and triangle.

- **Stereo.**
Shifts the phase of the modulation signal on the right channel, creating a pronounced stereo effect.

- **Feedback.**
Sends back the output to the input, creating shaper peaks and changing their tonal quality.

- **Speed.**
Set the speed of the modulation signal in Hertz.

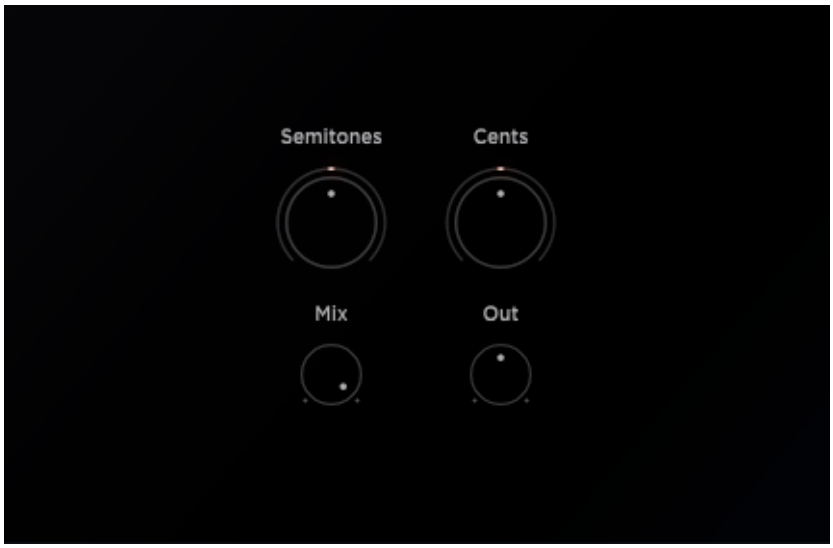
- **Notches.**
Set how many notches you want the phaser to produce from 2 to 12.

- **Mix.**
Mixes the dry signal with the wet signal. For full effect this parameter should be set to 50%.

- **Out.**
Controls the output volume of the effect from -24dB to +24dB.

PITCH SHIFTER

This effect changes the pitch of the incoming signal without affecting the length of it.



- **Semitones.**

Set how many semitones up or down you want the signal to be pitched. This value is then summed with the cents value.

- **Cents.**

Set how many cents you want the signal to be pitched. This value is then summed with the semitone value.

- **Mix.**

Mixes the dry with the wet signal.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

REVERB

This effect simulates the reflections of a room creating multiple filtered copies of itself that grow in density over time. It's designed to be a mixture between room and plate reverb.

- **Time.**

Sets the decaying time of the reverberation effect in RT60 value. That means that this is the time it will take the signal to reach -60dB.

- **Pre Delay.**

Sets the time that the wet reverb signal will be delayed.

- **Distance.**

This parameter is used to balance the early reflections with the late reflections. When set to 0% only early reflections will be heard. When set to 100% only the late reflections will be heard.

- **Clarity.**

Post-reverb high shelf filter on the reverb signal, making the reverb sound duller when turned down or brighter when turned up.

- **Low Cut.**

Pre-reverb low cut filter, that gets rid of the low-end rumbling before it happens, making the reverb sound cleaner.

- **Mix.**

Mixes the dry signal with the wet signal. When set at 50% both signals are at full volume.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

SATURATION

Toolbox for total saturation modelling.

- **Type.**

Select the type of saturation curve that is applied to the signal. **Symmetric** will create even harmonics; **Asymmetric** will create even and odd harmonics; **Hard Clipper** will limit the signal strongly; **Rectify** will make the negative values of the signal turn positive giving a higher pitched signal; **Half Rectify** will get rid of the negative values of the signal.

- **Dynamic.**

Special parameter that started as an experiment but it was kept in the final version of the plugin. At 0% the saturation is static, meaning that it doesn't have any memory and it behaves exactly the same in any situation. When increasing the value you'll hear how the saturation gradually changes, you've made it dynamic, now it has memory and acts differently depending on the input signal and past samples.

- **High Cut.**

High cut filter that acts on the signal after the saturation is applied. Use it to make the saturation less aggressive and harsh.

- **Drive.**

Boosts or cuts the input signal in dB so you get more or less saturation. It's auto-compensated so you don't notice a loss or gain in the output volume.

- **Character.**

This parameter lets you control how much more the low frequencies are saturated compared with the high frequencies. At 0% all frequencies are saturated equally. At 100% the low frequencies are much more saturated than the high frequencies.

- **Mix.**

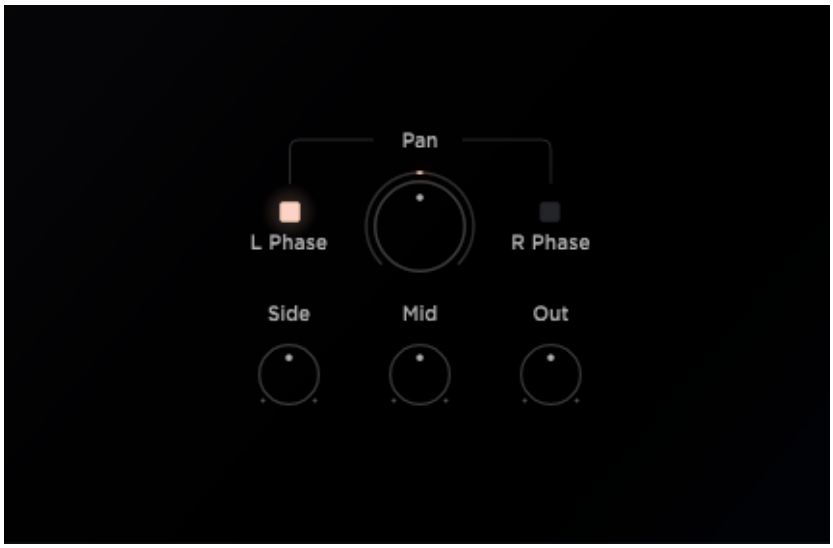
Mixes the input dry signal with the wet saturated signal.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

STEREO TOOLS

Utility effect that lets you control the volume and phase of the different channels of the signal.



- **Pan.**

Adjust the balance between the left and right channels.

- **L Phase.**

Shifts the phase of the left channel by 180 degrees.

- **R Phase.**

Shifts the phase of the right channel by 180 degrees.

- **Side.**

Changes the volume of the side channel (left - right) from -96dB (muted) to +12dB.

- **Mid.**

Changes the volume of the mid channel (left + right) from -96dB (muted) to +12dB.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

TREMOLO

Effect that changes the amplitude of the incoming audio signal by modulating it using a low frequency oscillator.

- **Waveform.**

Sets the waveform of the modulation signal. You can choose between a sine wave and a triangle wave.

- **Depth.**

Sets the amplitude of the modulation signal. Effectively, sets amount of effect applied to the signal.

- **Phase.**

Offsets the phase of the right modulation signal relative to the left modulation signal. This increases the stereo feel of the effect.

- **Speed.**

Sets the speed of the modulation signal in Hertz from 0.1Hz to 20Hz.

- **x10.**

Multiples by 10x the speed, converting the tremolo effect in a ring shifter.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

VIBRATO

Effect that changes the pitch of the incoming audio signal by modulating it using a low frequency oscillator.

- **Waveform.**

Sets the waveform of the modulation signal. You can choose between a sine wave and a triangle wave.

- **Depth.**

Sets the amplitude of the modulation signal. Effectively, sets amount of effect applied to the signal.

- **Phase.**

Offsets the phase of the right modulation signal relative to the left modulation signal. This increases the stereo feel of the effect.

- **Speed.**

Sets the speed of the modulation signal in Hertz from 0.1Hz to 20Hz.

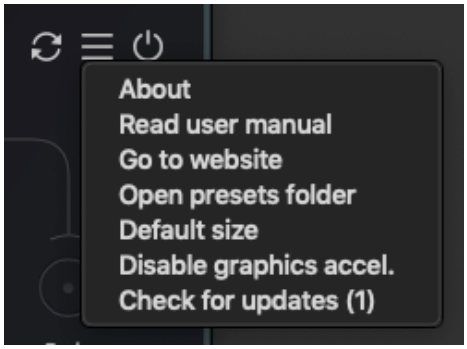
- **x10.**

Multiples by 10x the speed, converting the tremolo effect in a frequency shifter.

- **Out.**

Controls the output volume of the effect from -24dB to +24dB.

MAIN MENU



The menu on the top right contains these elements:

- **About**: this will open a pop-up panel that shows the version number and credits.
- **Read user manual**: the folder containing the user manual will be opened.
- **Go to website**: this will launch https://www.wavesfactory.com/audio-plugins/quantum in your default browser.
- **Open presets folder**: it will open the presets folder so you can manage the preset structure.
- **Default size**: selecting this option will reset the plug-in to the default size of 850x663 pixels.
- **Enable/Disable graphics accel.** : if you're having issues with the rendering of the plug-in you can try to enable/disable the graphics acceleration, which is linked to OpenGL.

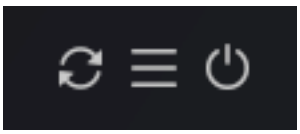
Extra:
If an update is available the menu will also feature an option named "Check for updates (1)". More on that in the next chapter.

AUTO-UPDATER

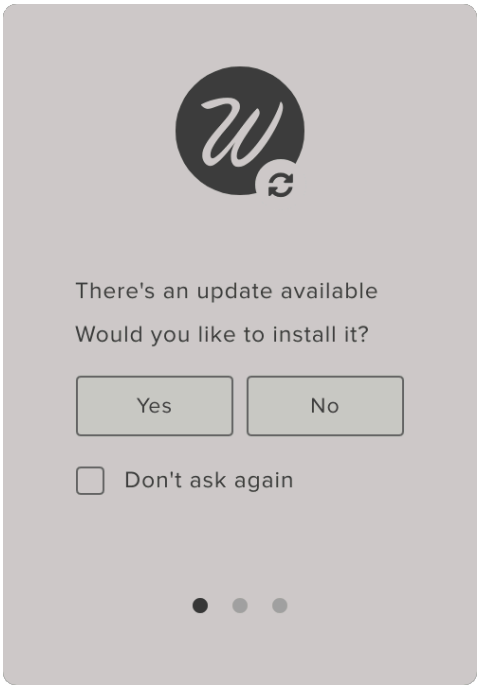
In order to make the plug-in easier to use and improve the user experience we've included a new method for updating it. Rather than sending an e-mail for letting you know that there is an update and tell you to go to the website and download it, we've thought of a better method.

The plug-in itself will warn you that there is an update available by displaying a red icon at the top right of the main GUI.

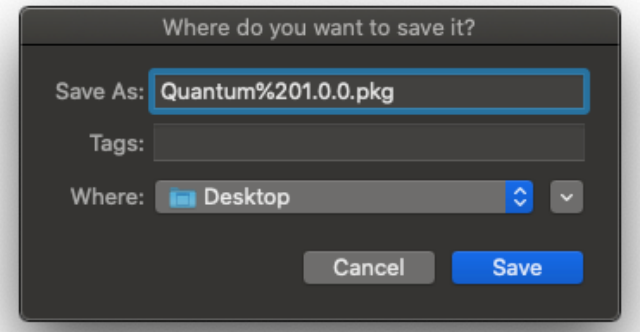
This icon will only appear if your computer is connected to the internet and if it's possible to perform the update.



When clicking on this update icon this panel will appear:

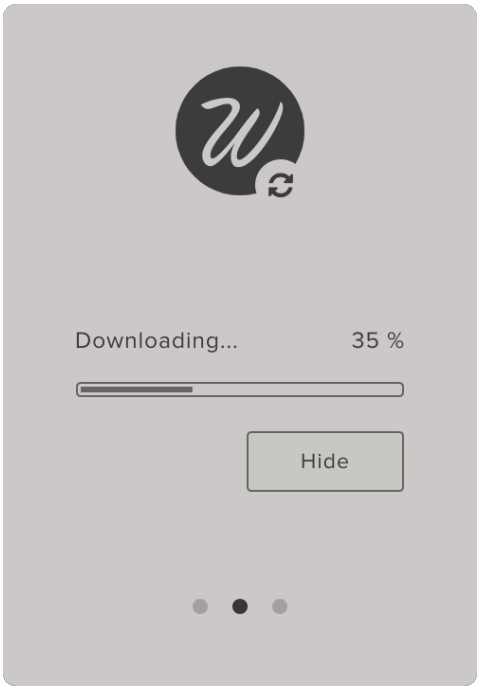


If you don’t want to install the update you can postpose it by clicking “No”.
If you don’t even want the plug-in to warn you again you can toggle the “Don’t ask again” switch.
Then, the icon will disappear but a new option will appear in the main menu named “Check for updates (1)”. This menu option will trigger the same process as the yellow update icon.
If you would like to perform the update (always recommended!) you have to click on “Yes”.
The plug-in will ask you where you want to download the installer in your hard drive using a native window. In this case, in a macOS system.



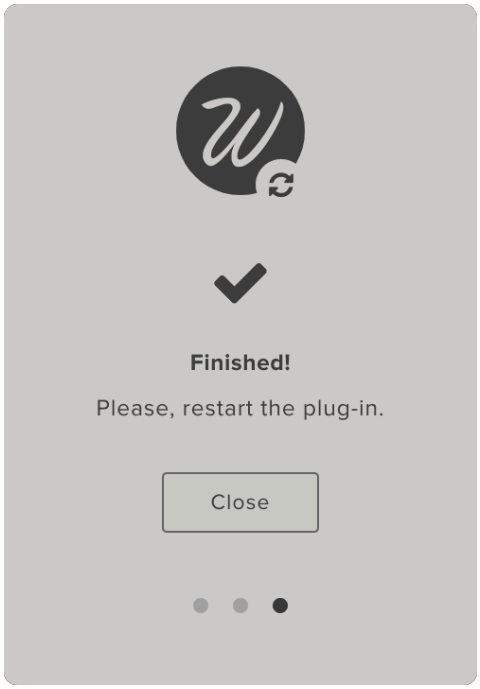
If you click on “Cancel” or if something goes wrong, an error message will appear indicating that there has been an error and you should try again.

If a valid location has been set, the download will begin.



In this window you can see the download progress. Here we depend on the server speed and your own connection speed. Usually, it should be fine and the download should be ready in 1 minute (the installer's size is roughly 100MB).
You can always click on "Hide" so the plug-in downloads the installer in the background while you work in the main interface.

Once the download finishes the plug-in will launch the installer automatically, you should install the plug-in normally. Then, this message will appear.



Then, as you can read in the window, you should relaunch the plug-in and everything should be updated.

PRESETS

ABOUT

At the top centre of the plug-in you'll find the presets menu. It will be set to the "default" preset when you open the plug-in for the first time. It works like a regular preset manager where you have a list that it lets you pick any item and all parameters will be changed accordingly.
The presets are stored in .wfp (Wavesfactory Preset) format in:

- **Mac**: Library/Application Support/Wavesfactory/Quantum/Presets
- **Windows**: C:\Users\'username'\AppData\Wavesfactory/Quantum/Presets

You can directly manage the presets in this folder, if you create different sub-folders for drums, bass, guitars, mastering, each containing a set of presets, Quantum will take care of that structure and will show it accordingly using sub-menus.

To open the presets folder you can simply click on the top right menu and select "Open presets folder".

SAVE / LOAD / DELETE

The first three elements in the presets menu are: Default, Save and Save As.
Select the default preset for going back to the initial state. This default preset can't be changed or re-saved.

In order to save a new preset you first have to tweak the parameters to your taste, then open the presets menu and select "Save As". This will open a native OS window that will let you name the preset and save it in the presets folder.

When you have a preset loaded and you tweak it, the Save label will appear with an asterisk like this: Save*. This means that the preset has been modified and you can save it directly without going through the "Save As" dialog.

If you want to save a new preset based on a saved one you can select "Save As" and the save dialog will appear.

Deleting a preset is as easy as clicking "Delete..." or delete the file in your computer.

SUPPORT

If you find any bug or you have any questions please get in contact with us following this link:
https://www.wavesfactory.com/support#contact

FINAL WORDS

A huge thanks to all people involved in this project. Beta testers, video makers, reviewers, artists, designers, composer and coding friends!
We hope you like it as much as we do and it helps you take your mixes to the next level.

Thank you very much for supporting Wavesfactory.

CREDITS

- **Production**: Wavesfactory.
- **Design**: Mikael Eidenberg.
- **DSP**: Jesús Ginard, Ivan Cohen.

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CHANGELOG

All bug-fixes, additions and all relevant changes made to Quantum will be documented here.

✓ **Version 1.0.2** - 29/04/2024
- Added: Native M1 support for Pro Tools AAX.
- Improved: copy protection.
- Improved: transient detection algorithm.
- Improved: meter drawing optimisation.

✓ **Version 1.0.1** - 20/09/2021
- Fixed: weird noises in Logic Pro X.
- Fixed: effects not enabled when UI was not initialised.
- Fixed: Lo-Fi effect correctly handles the dry and wet mix.
- Fixed: Reverb bug where it was only optimised to be used with a 44.1KHz sample rate.
- Fixed: Pitch Shifter latency compensation bug.
- Improved: dry signal is not affected by the output volume.
- Improved: smoother waveform display.

✓ **Version 1.0.0** - 14/09/2021
- Initial release.