

Mac OS X • Windows • AAX/Audio Suite/Audio Units/VST • 64 bit

# Mikron Cascade Manual

112dB 

# QUICK INDEX



## INTRODUCING...

Mikron Cascade is an sound effect that has been originally developed for the Cascade synthesizer. Its complex delay network enables you to create some very interesting soundscapes and ambient sounds. A sound run through Mikron Cascade can develop over time, adding extra dimensions to it.

The cascade effect is the result of the accumulation of delayed versions of the sound you feed it. It's like a waterfall that comes down and splits on a rock, a cascade as it is called, and hence the name. Mikron Cascade's delay network can densify a sound up to 5832 times. That doesn't mean that a sound you run through it will necessarily sound 'denser'. It can also be more lush and spacious, depending on the settings you choose.

Mikron Cascade was inspired by the work of Austrian composer Peter Ablinger. He experimented in the late 1980's with sound densification using 12 tape decks. Sound was recorded and played, recorded and played, and so on, until colored static noise itself was the result. In 1993-94 Peter Ablinger's concept of sound densification was refined by Peter Böhm, Wolfgang Musil (ELAK, University of Music and Performing Arts, Vienna) and Thomas Musil (IEM, Institute of Electronic Music and Acoustics, Graz). Thanks to the IRCAM Signal Processing Workstation (ISPW), that contained an at the time incredible powerful audio processor could for the first time sound densification be achieved in real time.

### THE MIKRON SERIES

The 112dB Mikron series is all about simplicity. We believe that too many features can stand in the way of the creative process. Simply said: more features also means more tweaking and having to delve into all kind of technical details. And that often distracts you from what it's all about: creating music. You really don't need that many knobs to get a great sound. The effect pedals for guitars are a perfect example of this. Their limited functionality is more than compensated by their fun to use. Or do you really believe that Jimi Hendrix and Kurt Cobain would have made better music if they just had these few extra knobs on their stompboxes? Limitations often inspire creativity instead of blocking it.

# INSTALLATION

## A. DOWNLOADING THE LATEST INSTALLER

To make sure you are running the latest version of Mikron Cascade please visit our Product Updates page at [www.112dB.com/download/mikron/cascade](http://www.112dB.com/download/mikron/cascade) and download the latest installer for your operating system. (If you already have a demo with the same version number installed you may skip this step and continue to C. Authorizing the plugin below.)

## B. PLUGIN INSTALLATION

Mikron Cascade comes in the form of a single installer for all available plugin formats: VST3, AAX, and Audio Units.

## MAC OSX

1. Double click the Mikron Cascade Installer.pkg file to start the installer. If everything goes as expected, you will now see the welcome screen shown on the right.

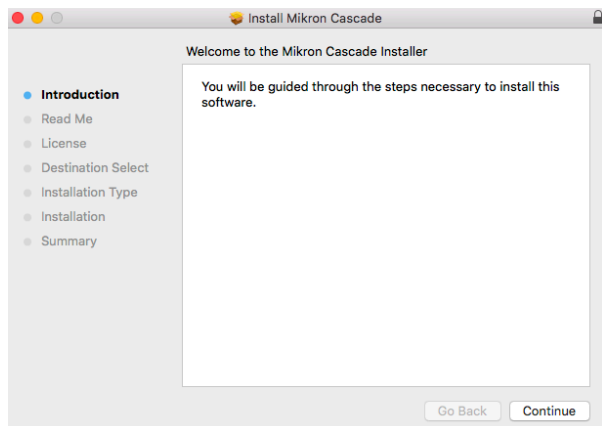
2. You might want to have a quick look at the readme, as it may contain important last-minute information that was not available at the time of writing.

3. You will be asked to agree to the terms of the license agreement.

4. The installer installs all plugin formats (VST3, AAX, and Audio Units) by default.

5.. You will be prompted for your Mac password to complete the installation.

6. If the installer detects you haven't activated your license yet, the 112dB License Manager will be started.



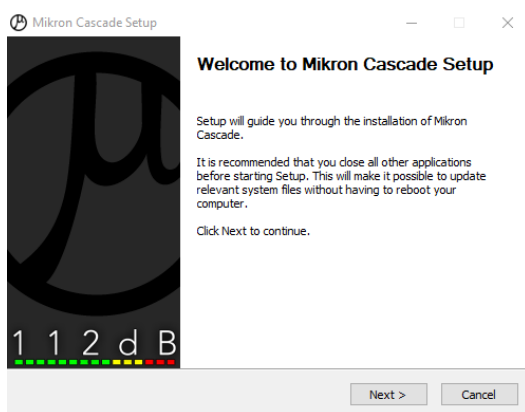
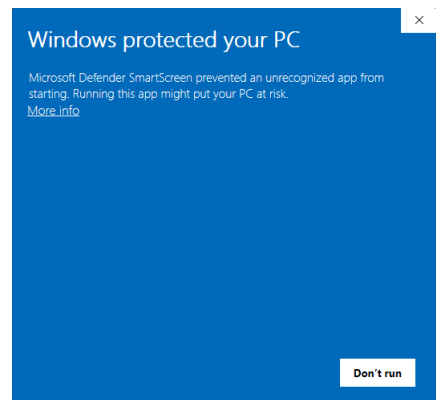
# WINDOWS

1. Double click the Mikron Cascade Installer.exe file to run the setup program.

Windows might give you the following warning:  
'Microsoft Defender SmartScreen prevented an unrecognized app from starting. Running this app might put your PC at risk'

No need to worry, this simply means that the installer is too new to be recognized by Microsoft Defender yet. We can assure you that we're not in the habit of putting malware in our plugins, so if you downloaded the installer from our website, you can safely ignore this. Click on '[More info](#)'. Make sure that 112dB is mentioned as Publisher. Then click 'Run Anyway'.

Depending on your system settings, you now might get another message: 'Do you want to allow this app to make changes to your device?' Click 'yes' to continue with the installation.



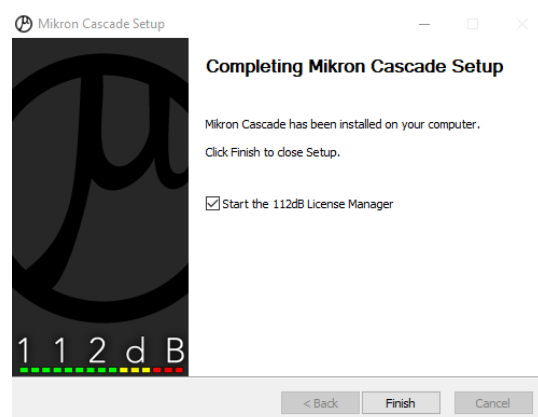
2. If everything goes as expected, you will now see the welcome screen shown on the left.

3. In the next step you will be asked to agree to the terms of the license agreement.

4. The installer installs all plugin formats (VST3 and AAX) by default.

5. When Mikron Cascade has been installed, Setup is complete and you may click the Finish button. By default 'Start the 112dB License Manager' will be selected. Keep it selected if you haven't activated your license yet, and want to activate it now. If you already have a license installed, you can deselect it.

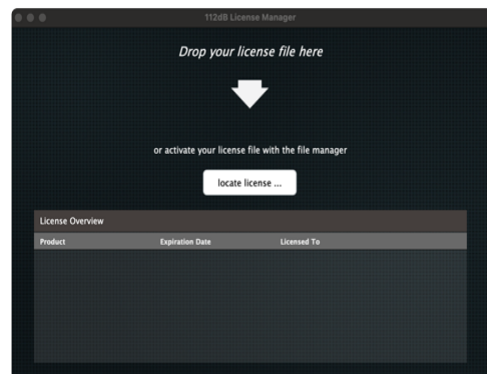
6. You might want to have a quick look at the readme, that was installed in \Program Files\112dB\Mikron Cascade, as it may contain important last-minute information that was not available at the time of writing.



## C. AUTHORIZING THE PLUGIN

With your purchase or demo download you should have received an email containing a license file (in the form of an XML-document). Save this file to your computer.

The 112dB License Manager will be started automatically after the installation is finished. Drag and drop your license file on the License Manager window. Or alternatively click on 'locate license...', navigate to the folder where you saved the license file, select it, and click 'Open'. You can decide to skip this step, and activate your license later from within the plugin.



### FROM DEMO TO PERMANENT LICENSE

To replace a demo license with a permanent license, first save the permanent XML license from your purchase confirmation email to your computer. Open the 112dB License Manager (see 'Where can I find the License Manager?' below). Drag and drop your license file on the license manager window to activate Mikron Cascade. Or alternatively, click on 'locate license...', navigate to the folder where you saved the license file, select it, and click 'Open'. In your License Overview you will now see 'perpetual' instead of a specific expiry date for Mikron Cascade under 'Expiration Date'.

### WHERE CAN I FIND THE LICENSE MANAGER?

The 112dB License Manager can be found here:

Windows: \Program Files\112dB

Mac: /Applications/112dB

### TROUBLESHOOTING

Some email clients do not like plain text attachments. For this reason the license is attached in both text (.xml) and zipped (.zip) formats. If you receive an error message saying that the 112dB Mikron Cascade .xml license is invalid or corrupt, the most likely cause is that it got corrupted during email transfer. In this case please save the 112dB Mikron Cascade License.zip attachment to your computer instead, unzip the file (this will produce a 112dB Mikron Cascade License .xml file) and try authorizing again.

### SUPPORT

If you encounter any problems during the installation or authorization process, please contact us by email at [support@112dB.com](mailto:support@112dB.com).

### INSTALLING ON MULTIPLE COMPUTERS

The license file you received is not tied to a specific computer, only to a specific person. You can use the same license file to authorize the plugin on any system, as long as it is yours. This way you can install and use the plugin on your studio setup, your home computer, and your travel notebook at the same time.

## U N I N S T A L L I N G

The uninstaller for Mikron Cascade can be found here:

Mac: /Applications/112dB/Mikron Cascade

Windows: \Program Files\112dB\Mikron Cascade

In addition the uninstaller will be listed on Windows under Control Panel » Add/Remove Programs.

## I N S T A L L A T I O N   L O C A T I O N S

Factory presets:

Mac: /Library/Application Support /112dB/Mikron Cascade

Windows: \Program Data\112dB\112dB\Mikron Cascade

User presets:

Mac: /Documents/112dB/Mikron Cascade/User Presets

Windows: \Documents\112dB\Mikron Cascade\User Presets

License Manager:

Mac: /Applications/112dB

Windows: \Program Files\112dB

VST3-plugin:

Mac: /Library/Audio/Plug-Ins/VST3

Windows: \Program Files\Common Files\VST3

AAX-plugin:

Mac: /Library/Application Support /Avid/Audio/Plug-Ins

Windows: \Program Files\ Common Files\Avid\Audio\Plug-Ins

AU-plugin:

Mac: /Library/Audio/Plug-Ins/Components

## M A N U A L

The manual for Mikron Cascade can be downloaded from our website:

[www.112db.com/plugins/mikron/cascade/help/Manual.pdf](http://www.112db.com/plugins/mikron/cascade/help/Manual.pdf)

## BASICS

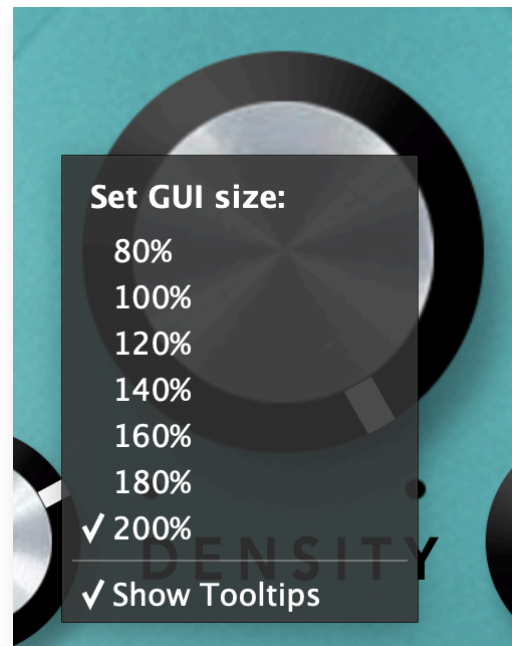
The Mikron Cascade user interface has been designed to be as intuitive and easy to operate as possible. There are functions that might not be immediately obvious, however, and could use some explanation.:

### RESIZE

To change the size of the GUI, you can drag at the corner of the plugin window, but you can also right (cmd)-click anywhere on the plugin interface and select your size of choice in the pop-up window that will appear.

### TOOLTIPS

Hovering over any item of the interface brings up a floating tooltip window with a brief description of that control's function. If you want to disable this function, right (cmd)-click anywhere on the plugin interface and deselect 'Show tooltips' in the pop-up window that will appear.



### NUMERICAL ENTRY

Turning a knob or hovering over it will change the name below the knob into its value. Clicking on this number will open a small edit window that allows you to change this value by typing in a new one. To dispose of the edit window either hit <Enter> or click anywhere outside it.

### RESET TO DEFAULT VALUE

<Ctrl>-clicking knobs and sliders will reset them to their default value.

### FINETUNE

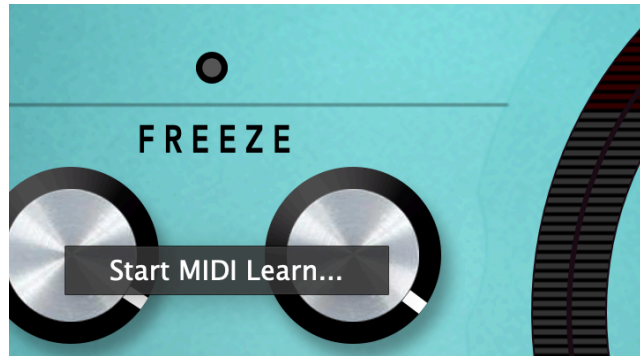
Cmd-click-drag makes very small moves with the knob possible.



## MIDI AUTOMATION

All knobs can be controlled by an external MIDI keyboard or MIDI controller. To assign a MIDI control simply right- (cmd-)click on the knob you want to connect and a window will pop up: 'Start MIDI learn'.

Click on this window, and move the control on your external MIDI keyboard or controller that you want to assign to this knob. If everything goes as expected, you will now see the knob moving when you move the control on your MIDI keyboard. Right-click (ctrl-click) on the control again and click 'Stop MIDI learn'. Do you want to detach the knob again? Right (ctrl)-click on the knob, and choose: 'Detach from midi automation'



# PRESETS

Mikron Cascade comes with a set of carefully selected factory presets, and of course, there is an option to add your own presets as well. The name of the currently selected preset is displayed in the preset display at the top of the plugin.



For quick access to presets there's the preset menu: a drop-down list of presets you can scroll through. Clicking on the preset name will open up a menu. At the top of it you will find two items: Factory Presets, and User Presets. Factory Presets contains the presets that come with the plugin. They can't be altered. Under User Presets you will find the presets that you added yourself. Those you can change in any way you like.

Clicking on 'User Presets' or 'Factory Presets' brings up a complete list of currently loaded presets, optionally organized by category, from which you can select a new preset. The currently selected preset is shown with a checkmark (✓) in front of it, as are the category folders in which it resides.

Alternatively you can use the prev/next buttons next to the preset menu to move one preset up or down

## CREATING A PRESET

So you found a great new setting that you want to save as a preset. Use 'save' to save it under the current name (the name that is shown in the display). 'Save as' gives you the option to choose a different name and/or a different location for your preset.

## ORGANIZING PRESETS

Clicking on 'Show User Preset Folder' will open a file manager window of your computer. If you want to delete a preset or change its name, you can do it here. You can also add subfolders, or anything else you would do in the file manager. After you are done select 'Rescan Presets' from the drop down menu to see you changes reflected in the menu.

## LOAD

This enables you to load presets from a different location than your User Preset Folder.

## SET AS DEFAULT

This sets the current preset as the default preset Mikron Cascade will start up with.

## EXCHANGING PRESETS

You created a preset on another computer or want to use some presets that someone else made? No problem. The only thing you need to do is to save these preset(s) in the User Presets folder on your computer. If you haven't changed the location of this folder, it can be found in / Documents/112dB/Mikron Cascade

Or if you just want to have a quick look at a preset, use 'Load' in the preset menu, go to the place where you saved your presets, select a preset, and click 'open'. Note that you have to save this preset to your User Presets if you want it to show up in the preset menu .

# THE KNOBS

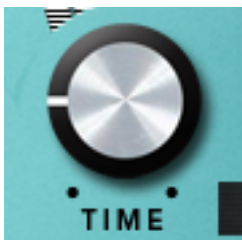


INPUT (-60dB+6dB)

Controls the input signal level. The cascade-effect can get sometimes quite intense, the input level helps you to control how much input is fed into the effect. With a continuous input level you should turn the input level all the way down, and only open it occasionally in case more input is needed.

FEEDBACK (0-100%)

Determines how long it will take for the first delayed signal (the one that functions as an input for the cascade delays) to decay. Usually every repetition will be a little softer, until you won't hear the delayed signal anymore. 50% feedback means that the first repetition will be 50 percent as loud as the original signal, the second one will be 50 percent as loud as the first, etc. With feedback put on 100% the volume of the signal will stay the same and the delay will go on forever.



TIME (1-10.000 ms)

Sets the delay time in milliseconds. Or to be more precise: sets the delay time of the feedback delay prior to the cascade delays (the cascade delay times are modified by the model type only).

FREEZE

By selecting this radio button you will freeze the sound for the time you set the 'Time' knob to. This gives you a sound loop with 100 percent feedback. At the same time the input signal will be suppressed. Basically this is a shortcut for turning feedback to the max, and turning the input to -60dB. You can use this function to build up resonating sounds.





**MODELS** (STEADY BIG (0), STEADY MEDIUM (1), STEADY SMALL(2), FAST PACED BIG (3), FAST PACED MEDIUM (4), FAST PACED SMALL (5))

Cascade gives you 6 types of delay network models to choose from. There are 32 delay times per model, and the combination of these result in a very unique character. All models have one thing in common they are designed to distribute the sound continuously over time. The idea behind this is to get the least amount of additions and cancellation effects.

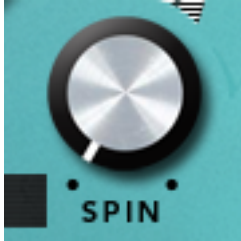
The difference between the models lies in the way the density is spread over the delay network. The 'steady' models have rather long delay times in the first cascade stage and short delay times in the last stage. The delay times of the 'fast-paced' models are inverted so the sound will build up much quicker.

#### DENSITY (0-32)

With density you can change the amount of the densification. Or to be more precise: the amount of delays that are involved. The maximum amount is: 32 (all delays). The minimum amount is 0. In that case you will only hear the first delayed signal that functions as the input for the cascade delays.

The cascade effect is the result of the accumulation of delayed versions of the sound you feed it. It's like a waterfall that comes down and splits on a rock, a cascade as it is called, and hence the name. In the first cascade you get 8 signals. The second will give you  $8 + (8 \times 8) = 72$ . The third stage has  $72 + (72 \times 8) = 648$  signals. In the last stage it will be  $648 + (648 \times 8) = 5832$ . In other words: the sound will get exponentially more dense by adding the delays. That doesn't mean that a sound will necessary sound 'denser', it can sound more spacious or 'fluffy' as well, depending on the settings you choose.





SPIN (0-100%)

Adds movement to the delays. Basically this adds a very subtle pitch warbling of the delayed signal. Usually a delayed signal that builds up will give you 'standing waves', which is not always desirable. A spin effect will break this 'sound wall'.

TONE (0-127)

Determines whether the focus of the feedback will lie more in the low, mid or high (whether the low frequencies will decay quicker or the high frequencies). The number stands for the center frequency of the filter in midi pitch. For example 69 = middle A = 440 Hz.

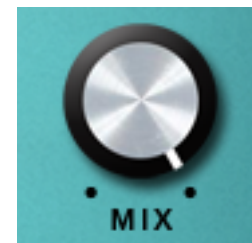


OUTPUT (-60dB-+6dB)

Controls the output level. The volume of the cascade effect might be to quiet or to loud. The output knob helps you to quickly adjust the overall level of the effect.

MIX (0-100%)

Allows you to mix between a dry and a wet signal. When you put the mix on 100% you will only hear the delayed signals, 0% means you will hear only the dry input signal.



ON/OFF

Gives you an easy way to bypass Mikron Cascade. When the light is on, the effect is applied to the signal. When it is off, the effect is disabled.

# SYSTEM REQUIREMENTS

## OPERATING SYSTEM

- Windows 10 or up
- Mac Os X (Intel or Apple Silicon ): 10.11 (El Capitan), and up

## HOSTS

Mikron Cascade is compatible with any host that understands the AAX, VST3, and/or Audio Units protocol.

# UPDATES AND SUPPORT

Updates will be made available at

[www/112dB.com/download/mikron/cascade](http://www/112dB.com/download/mikron/cascade)

For product support, questions, comments, feature suggestions, and anything you feel is worth sharing, please contact our support staff by email at

[support@112dB.com](mailto:support@112dB.com)

# CREDITS

Mikron Cascade © 2017 112dB. All rights reserved  
Concept Klaus Voltmer | Graphic design Anouschka Busch  
112dB team: Anouschka Busch, Klaus Voltmer, Martijn Zwartjes.

No part of this documentation may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without prior written permission from 112dB.

libcrypto++ © 1995-2006 Wei Dai.  
AVIR image resizing algorithm designed by Aleksey Vaneev

OS X and Audio Units (AU) are registered trademarks of Apple Computer, Inc.  
AAX is a registered trademark of Avid Technology, Inc.  
VST is a trademark of Steinberg Media Technologies GmbH.  
Windows is a registered trademark of Microsoft Corporation.  
All other trademarks or registered trademarks are the property of their respective owners.

Mikron Cascade is inspired by a live electronic effect created by Wolfgang Musil for composer Peter Ablinger

Special thanks go to: ELAK, University of Music and Performing Arts, Vienna, and the 112dB beta team