

USER MANUAL

_EMULATOR II V

ARTURIA

_The sound explorers

Special Thanks

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Product version: 1.0.1

Revision date: 31 March 2021

Thank you for purchasing Arturia's Emulator II V!

This manual covers the features and operation of Arturia's **Emulator II V**, the latest in a long line of incredibly realistic software instruments.

Be sure to register your software as soon as possible! When you purchased Emulator II V you were sent a serial number and an unlock code by e-mail. These are required during the online registration process.

Special Messages

Specifications Subject to Change:

The information contained in this manual is believed to be correct at the time of writing. However, Arturia reserves the right to change or modify any of the specifications without notice or obligation to update the hardware that has been purchased.

IMPORTANT:

The software, when used in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. **DO NOT** operate for long periods of time at a high level or at a level that is uncomfortable.

If you encounter any hearing loss or ringing in the ears, you should consult an audiologist.

Introduction

Congratulations on your purchase of Arturia's Emulator II V!

We'd like to thank you for purchasing Emulator II V, a virtual instrument recreation of the groundbreaking E-mu Systems® Emulator II 8 bit hardware sampler first released in 1984.

We've painstakingly studied and modelled every nuance of the original hardware to provide you with the classic sound and experience of the legendary sampler. But we didn't stop there - we've expanded on the original design with new features that make this classic sampler a powerhouse instrument adapted to a modern workflow.

As with all of our products, we believe in offering the best of both worlds in a single package and letting you choose how you want to use it - either use the original features on the main panel for a classic experience, or dive deep into the advanced features to create sounds not possible with the original hardware.

We hope you enjoy using it and hope it will bring inspiration, excitement and joy to your music making!

Musically yours,

The Arturia team

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1. WELCOME

1.1. History of E-mu Systems

The company was founded in 1971 by Scott Wedge and Dave Rossum and they began the business as a manufacturer of microprocessor chips, digital scanning keyboards and components for other companies electronic instruments.

They licensed this technology to other instrument manufacturers which gave E-mu plenty of capital to invest in research and development. They began to develop a range of electronic instruments including the very rare Audity system and their unique sounding modular synthesizers. When founders Scott and Dave saw the Fairlight CMI (also available in the V Collection) and the Linn LM-1 at a music convention in 1979 they had a bit of an epiphany, and were in turn inspired to design and produce first the original Emulator and the vastly improved Emulator II.

The original Emulator released in 1981, was a floppy disk-based 8-bit sampling keyboard with a basic feature set. A simple filter, and the ability to add one loop to a sample. The four-voice model, and an eight-voice model added a VCA envelope generator and basic sequencer in 1982. The Emulator was designed to be played in split mode predominantly, so to play the same sound on the full keyboard span meant loading the same sample stored on a floppy disk in each drive.

Prominent Emulator users were Stevie Wonder, (who received the first unit serial number "0001"), New Order, Tangerine Dream and Genesis. It was used extensively on Michael Jackson's Thriller album.

Only 500 of these mk1 units were sold before the model was discontinued in early 1984 and the Emulator II was released becoming an immediate success

E-Mu Systems then went on to produce the E-III which was sold between 1987 and 1991 and E-IV range of 16 bit samplers released in 1994 building on their earlier success but while these were mass production units of extremely high quality they lost some of the "mojo" of their earlier models. The E-IV range were notable by being one of the first samplers to read other manufacturers sample libraries. They also released a range of extremely groovy drum machines including the Drumulator, SP12 and SP1200, the last 2 being absolute staples of the hip-hop world with a sound and groove unlike anything before or since.

1.2. About the Emulator II

Like the original, the Emulator II was an 8-bit sampler, but it sounded so much better than the original due to new digital companding techniques and a higher 27.7 kHz sample rate. Better filters were added too with resonance. The EII had much more in terms of real time control. It wasn't cheap at US\$7,995 for the "basic" model, and \$9,995 for the 'plus' model which featured more sample memory. There were several upgrades made available including a second floppy drive, a 20 MB hard drive, and a 512K memory upgrade were also available. At a third of the price of a Fairlight CMI Series II it was a bit of a bargain really.

Notable users of the Emulator II were (again) Stevie Wonder, Front 242, Depeche Mode, New Order, Talking Heads, ABC, A-ha, Tears for Fears, Genesis, Marillion, Paul McCartney, David Bowie, Herbie Hancock, Vangelis, Tangerine Dream, Jean-Michel Jarre, Yes, Whitesnake, OMD, Dire Straits, Stevie Nicks, Mr. Mister, Ultravox, Webstrarna, Visage, Modern Talking and many more. Lets just say it was used on many many records you've heard.

The Emulator II is based on a 8 layer multitimbral architecture. Each of these layers is basically a sample assigned to a range on the keyboard. These sounds can then be played polyphonically up to 8 notes. Each voice consists of a filter (+ADSR), VCA (+ADSR) and LFO. It has a very unique sound mostly down to its "DPCM mu-255 companding, divider-based variable sample-rate principle and analog output stages featuring SSM2045 24 dB/oct analogue four-pole low-pass resonant filters" (try remembering that after a night out....). The output stages in more modern samplers perform their magic in the digital domain and many would argue that the warm sound of the analogue output stage is lost.

Many third party sample libraries were developed for the Emulator II, including great high quality orchestral sounds. Some of the EII's 'factory' sounds were actually resampled from the Fairlight and Synclavier. Some of the original samples are instantly recognisable including the Shakuhachi flute which was used by Peter Gabriel on his song "Sledgehammer" and the band Enigma on their album MCMXC and the Marcato Strings were heard on lots of popular '80s records, including the Pet Shop Boys' "West End Girls" and apparently every sound on that track, apart from the Neils voice, were made using an Emulator II.

1.3. Arturia's Version of the Emulator II

An original Emulator II is nowadays a very rare beast. Even a broken one is worth quite a lot of money and maintaining a working one is now quite difficult to do as a lot of the spare parts will have to come from scrap machines. Transporting one around can be inconvenient and as a hardware device are often prone to breakdown. Hardware can also present certain workflow limitations, since devices can only serve one function at a time.

At Arturia we pride ourselves on offering the best of both worlds - the uncompromised quality and character of the original hardware, delivered in a convenient software package that is adapted to a modern workflow. Arturia's Emulator II V is a faithful recreation of the original hardware, capturing all of its nuances and sonic character with utmost detail. In addition to this, we have expanded on the original design with new features and capability not found on the original unit, including:

- A simple but very funky arpeggiator
- Advanced modulation capabilities
- 3 FX slots featuring 11 high-quality effects
- Easy graphical editing of sample mapping
- Up to 32 voices of polyphony
- Run multiple instances with different settings
- Automate sound parameters from your DAW
- Unlimited patch recall

2. ACTIVATION AND FIRST START

Emulator II V works on computers equipped with Windows 8 or later and macOS 10.13 or later. You can use the instrument in standalone mode or as an Audio Unit, AAX, VST2 or VST3 instrument inside your Digital Audio Workstation (DAW) software.



2.1. Activate the Emulator II V license

Once Emulator II V has been installed, the next step is to activate your license for the instrument. This is a simple process that is done through a separate program called the Arturia Software Center. This program allows you to keep your Arturia software up to date at all times.

2.1.1. The Arturia Software Center [ASC]

If you have not already installed the ASC, you can do so by going here: [Arturia Updates & Manuals](#).

Look for the Arturia Software Center at the top of the page, and then download the version of the installer that you need for your system (macOS or Windows).

Once the software is installed:

- Launch the Arturia Software Center (ASC)
- Log into your Arturia account
- Scroll down to the My Products section of the ASC
- Click the Activate button and follow the instructions

That's it!

2.2. Emulator II V as a plug-in

Emulator II V comes in VST, Audio Unit (AU) and AAX plug-in formats for use in all major DAW software such as Ableton, Cubase, Logic, Pro Tools and so on. When using Emulator II V as a plugin, all audio and MIDI device settings are handled by the host music software. Please refer to your host music software's documentation if you have any questions about loading or using plugins.

Note that when you load Emulator II V as a plug-in instrument inside your host software, its interface and settings work the same way as in standalone mode, with a few small differences:

- Emulator II V will synchronize to your DAW's host tempo/bpm rate, when tempo is a factor
- You can automate numerous parameters using your DAW's automation system
- You can use more than one instance of Emulator II V in a DAW project (in standalone mode you can only launch one instance of Emulator II V)
- You can run the output of Emulator II V through any additional audio effects available to your DAW such as delay, chorus, filters, etc.
- You can route Emulator II V's audio outputs more creatively inside your DAW using the DAW's own audio routing system.

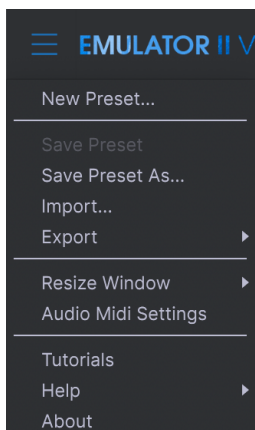
2.3. Initial setup for Standalone Use

If you would like to use Emulator II V in standalone mode, you will need to set up your instrument and ensure that MIDI and audio signals are flowing properly through the software. You generally only need to do this one time unless you make major changes to your computer. The setup process is the same on both Windows and macOS computers.

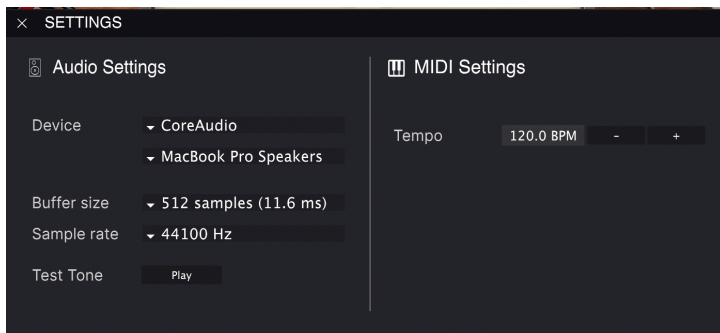
i!: This section only applies to readers that plan to use Emulator II V in standalone mode. If you are only going to use Emulator II V as a plugin inside a host music software, you can safely ignore this section (your host music software handles these things).

2.3.1. Audio and MIDI settings

At the top left of Emulator II V is a pull-down menu. Click it to reveal the following:



Select **Audio MIDI Settings** to bring up the following window. Note that this menu is only available when using Emulator II V in Standalone mode:



Starting from the top we have the following options:

- **Device** selects which audio driver and device will handle playback of Emulator II V. This can be your computer's internal driver, or an external soundcard driver. The name of your hardware interface may appear in the field below depending on your selection.

i 🎵: On MacOS all devices, including external soundcards, use the built-in CoreAudio driver. The device can be selected from the second menu.

- **Buffer Size** menu lets you select the size of the audio buffer your computer uses to calculate sound.

i 🎵: A larger buffer means a lower CPU load as the computer has longer periods of time to process commands and fewer interruptions, but this can result in a noticeable latency between keypress and hearing a result (an obvious problem when playing an instrument). A smaller buffer means lower latency between pressing a key and hearing the note, but a higher strain on your CPU. A fast, modern computer should easily be able to operate at low sample buffer sizes (256 or 128) without audio glitches. However, if you do hear clicks, pops and or artifacts, try increasing the buffer size until you have smooth playback without any glitches. The latency time is displayed in milliseconds on the right-hand side of this menu.

- **Sample Rate** menu lets you set the sample rate at which audio is sent out of the instrument. The options listed here will depend on the capability of your audio interface hardware.

i 🎵: Virtually all audio hardware can operate at 44.1 or 48 kHz which is perfectly fine in most applications, including Emulator II V. Higher sample rates place greater loads on the CPU so we recommend staying at 44.1 or 48 kHz unless you have a specific requirement to work at high sample rates.

- **Show Control Panel** button will jump to the system control panel for whatever audio device is selected.



Note that this button is only available in the Windows version.

- **Test Tone** plays a simple test tone to help you troubleshoot audio issues. You can use this feature to confirm that the instrument is routed correctly through your audio interface and audio is playing back where you expect to hear it (your speakers or headphones, for example).
- Your connected MIDI devices will appear in the **MIDI Devices** area. Note that this is only displayed if MIDI devices are present on your computer. Click the check box to accept MIDI data from the device you want to use to trigger the instrument. Note that you can select more than one MIDI device if you wish to play Emulator II V from multiple controllers.
- **Tempo** lets you set the tempo of the Emulator II V sequencer. When using Emulator II V inside a host music software as a plugin, the instrument gets tempo information from your host software.

2.4. Taking Emulator II V for a test drive

Now that you have Emulator II V up and running, let's take it for a quick test drive!

If you haven't done so already, launch Emulator II V as a plugin or as a standalone instrument. If you have a MIDI controller set up, use it to play some notes on Emulator II V. If not, use your mouse to play the on-screen keyboard.

The Up and Down arrows at the top of the instrument let you step through all of the Emulator II V's available presets. Try playing a few and when you find one that you like, try adjusting some of the other on-screen controls to see how it affects the sound.

Play freely with the controls - nothing is saved unless you specifically save a preset (described later in this User Guide), so there is no chance of messing up any of Emulator II V's factory presets.

At this point, we can wrap up the installation and test drive. We hope you have gotten off to a smooth start. The rest of this guide will help you work your way through all of the Emulator II V features on a section-by-section basis. By the time you reach the end, we hope you'll understand all of Emulator II V's features and will be using the instrument to create fantastic music!

3. THE USER INTERFACE

In this chapter we'll start with an overview of the Emulator II V user interface. This will give you an idea of how the instrument is organized and where to find things. The point here is to establish how the interface is composed at a high level. We'll dive deeper into the main panel explaining every module in detail in the next chapter.

3.1. High-Level Overview



The Emulator II V is neatly subdivided into three sections as shown in the illustration above.

1. **The Upper Toolbar:** This is where you handle administrative tasks such as saving, loading and browsing presets, editing various setup and configuration parameters, adjusting MIDI mappings and accessing advanced features of Emulator II V. We will go over the Toolbar in the next section of this chapter.
2. **The Main Panel:** Here is where you will likely spend most of your time when working with Emulator II V. It contains a detailed reproduction of the Emulator II panel and features. We will go over this panel in the [Main Panel And Features \[p.21\]](#) section of this guide.
3. **The Lower Toolbar:** This section provides quick access to a number of important parameters and useful bits of information such as CPU usage, panic button and undo history. We will go over the Lower Toolbar at the end of this chapter.

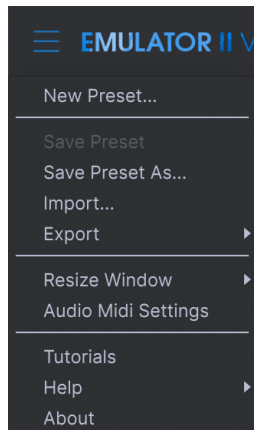
3.2. The Upper Toolbar



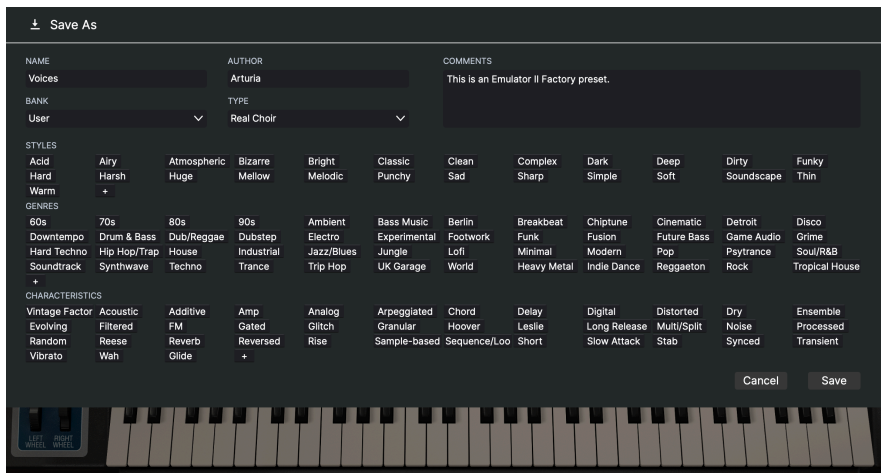
The toolbar that runs along the top of the instrument provides access to many useful features including the Emulator II V menu, preset browsing features, access to Emulator II V's "advanced" Screen mode and lastly the gear button which opens the side panel giving access to various MIDI functions including global MIDI channel and mapping features.

3.2.1. The Emulator II V menu

Clicking the Emulator II V box at the top-left corner opens a drop-down menu and lets you access ten important features.



- **New Preset:** This option creates a new preset with default settings on all parameters. It is a good place to start if you would like to create a new sound from scratch.
- **Save Preset:** This option will overwrite the currently loaded preset with any changes you have made. If you would like to save the current preset under a different name, use the "Save As..." option below.
- **Save Preset As...** This lets you save your preset under a different name. Clicking this option reveals a window where you can name your preset and enter information about it.



i 🎵: Arturia's powerful browsing system lets you save much more than just a preset name. For example, you can enter the Author's name, select a Bank and Type, select tags that describe the sound, and even create your own Bank, Type, and Characteristics. This information can be read by the preset browser and is useful for searching the presets banks later. You can even enter freeform text comments in the Comments field, which is handy for providing a more detailed description of a sound. This can help you remember a sound or to provide context to other Emulator II V users with which you are collaborating.

- **Import:** This command lets you import a preset file, which can be either a single preset or an entire bank of presets.
- **Export Menu:** You can export presets in two ways: as a single preset or as a bank.
 - **Export Preset:** Exporting a single preset is handy when you want to share a preset with someone else. The default path to these files will appear in the "save" window, but you can create a folder at another location if you like. The saved preset can be reloaded using the *Import Preset* menu option.
 - **Export Bank:** This option can be used to export an entire bank of sounds from the instrument, which is useful for backing up or sharing presets. Saved banks can be reloaded using the *Import Preset* menu option.
- **Resize Window:** The Emulator II V window can be resized from 50% to 200% of its original size without any visual artifacts. On a smaller screen such as a laptop you may wish to reduce the interface size so it doesn't dominate the display. On a larger screen or a second monitor you can increase the size to get a better view of the controls. The controls work the same at any zoom level but smaller controls can be easier to see at higher magnification levels.

i 🎵: While working with Emulator II V, you can also use the keyboard shortcuts Ctrl & +/- (or Cmd & +/-) to quickly adjust the window size.

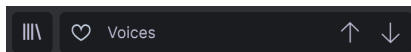
- **Audio Settings: (only available in Standalone mode)** Here you manage the way the instrument transmits audio and receives MIDI. See the section Audio and MIDI settings for more information about this topic.

i!: The Audio Settings menu is only available in when using Emulator II V in Standalone mode. When using Emulator II V as a plugin, the host software handles all of the parameters in this menu including audio and MIDI routing, buffer size settings, and more.

- **Tutorials:** Emulator II V comes with tutorials that walk you through different features of the instrument. Select one of the tutorials to get step-by-step descriptions of how to make the most of the Emulator II V features.
- **Help:** This section provides handy links to the Emulator II V User Guide and the Emulator II V Frequently Asked Questions page on Arturia's website. Note that accessing these pages will require an Internet connection.
- **About:** Here you can view the Emulator II V software version and developer credits. Click the About window again to close it.

3.2.2. Browsing Presets

Emulator II V comes packed with lots of great-sounding factory presets and we hope you'll create many more of your own custom presets. To help you search through large numbers of presets, we have a powerful preset browser with a number of features to help you find sounds quickly.



The browsing features of the Toolbar (shown above) include the following:

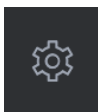
- The **Preset Browser** (on the left) opens and closes the preset browser. This is covered in detail in the next section of this guide
- The **Preset Filter** (set to "All Types" in the image above) helps you narrow down your selection. For example, you can narrow your search to only include presets tagged with *Keys*, *Lead*, or *Pads* so that you can find those sounds more quickly. To use this feature, click this section to open a pull-down menu and select any preset from the various categories ("Keys" "Lead" "Pads" etc.) This will load that preset and set the filter to only show you other sound tagged. You can now use the Preset Name or Arrow Icons to step through the filtered options. To reset the filter and show you all options, open the menu and select any preset from the "ALL TYPES" menu.
- The **Like Button** allows you to tag presets as favorites. Click the like button to like or unlike the preset.
- The **Preset Name** is listed next in the toolbar. Clicking on the name reveals a pull-down menu with other available presets. Click on any name to load that preset or click away from the menu to close it.

- The **Arrow icons** select the previous or next preset in the filtered list. This is the same as clicking on the preset name and selecting the next option in the list, but does it with only one click.

: The Previous and Next arrows can be MIDI mapped. This means you can use buttons on your MIDI Controller to easily step through the available presets without having to use the mouse at all.

- The **Screen** button opens up the in depth editing windows for deeper manipulation of the Main Panel, sample and modulation mapping and FX editing. You can also open up these functions by clicking on the picture of the computer monitor on the main page.

3.2.3. Side Panel




At the far right of the Toolbar, you will find the Gear icon which when pressed opens up the Side Panel. The Side Panel gives access to various MIDI related options. In here you can set the global MIDI channel, set up MIDI controller mapping to virtually any parameter of the Emulator II V, select either a generic MIDI keyboard controller OR one of Arturia's own MIDI controllers, set up the Macros and access the tutorials.

3.3. The Lower Toolbar

The Lower Toolbar runs along the bottom of the Emulator II V user interface and provides quick access to several important parameters and useful bits of information.



- **Parameter Name** on the left displays the name of the parameter as you adjust controls. The current value of the control is listed in a tooltip that appears next to the control.
- **Undo** undoes the last change in Emulator II V.
- **Redo** redoes the last change in Emulator II V.

: The Undo and Redo buttons only become visible AFTER you have started editing on the Main Panel. Try moving the Freq (or any other) control now and you'll notice the Undo button will magically appear.

- **Undo History** lets you to see a list of recent changes. Click on a change to restore the patch to that state. This can be useful in the event you happened to go too far in your sound design and want to revert to an earlier configuration.
- **CPU Meter-Panic Button** displays the current CPU usage of the instrument and when pressed it resets all MIDI signals in the event of stuck notes or other issues.

i!: If the CPU meter is high, you may hear clicks, pops and other audible glitches in playback. In this case, consider increasing the audio buffer size setting. This is found under Audio Settings when working in Standalone Mode or in your host music software's preferences menu. Alternatively, you can limit polyphony with the Poly and Unison settings.

3.4. Side Panel

The Gear icon at the top right side of the upper toolbar opens up the Side Panel.

- **Settings** this sets the global MIDI channel for the Emulator II V

i!: By default, Emulator II V will receive MIDI data on all 16 MIDI channels (All setting). You can change this by selecting a specific channel here. You will need to do this if, for example, you want to use an external controller with multiple instances of Emulator II V. In this situation, every instance of Emulator II V can be set to a unique channel, and you can change the preset or MIDI channel on your controller to control the different instances of Emulator II V.

- **MIDI** this section lets you set the MIDI controller you are using and setup the mapping of MIDI CC commands.

3.4.1. MIDI controller configuration



If you click on the drop-down menu to the right of where it says MIDI Controller you can set whether your using a generic MIDI controller or one of Arturia's own. Underneath this you have the MIDI configuration dropdown menu. Here you can manage different setups of MIDI mappings for controlling Emulator II V. For example, if you have multiple hardware controllers (small "live performance" keyboard, large "studio" keyboard, pad based controller, etc.), you can create a profile for each of them just once and then quickly load it here. This saves you from having to redo the MIDI mapping assignments from scratch each time you swap hardware.

Once you have created a profile, you can save, delete, import or export it using the options in this menu.

Your MIDI Mapping profiles are listed at the bottom of this drop-down menu and the currently active profile has a checkmark next to it.

Underneath this you will see all the MIDI mappings currently setup. MIDI-assignable parameters are shown highlighted and you can map physical controls on your MIDI Controller to them. A typical example might be to map a real expression pedal to the Master Volume control, or a physical knob on the MIDI controller to the Frequency knob of the Filter module.



Notice in the image above that some of the assignable controls appear in red whereas others are in purple. Purple controls are unassigned whereas red ones have already been assigned to an external MIDI control.

3.4.2. Assigning / Un-assigning controls

When MIDI Learn mode is switched on, click on any purple control to select it. Then turn a knob, move a slider or push a button on your MIDI controller. Your selected on-screen control will change from purple to red, indicating that a link has been made between your hardware control and the on-screen software parameter.

i Pitch Bend is a reserved MIDI controller that cannot be assigned to other controls.

3.4.3. Min / Max value sliders

By default, a hardware control will span the entire range of the on-screen control (i.e., from 0 to 100%). The minimum and maximum value sliders let you restrict the range something other than 0%-100%. This is very useful for making sure you cannot accidentally make the sound too quiet or too loud when performing.

3.4.4. Relative control option

If you right click on a mapped parameter in the list, you can make a parameter "absolute" or "relative". Only change to "relative" if your hardware MIDI control is sending "relative" MIDI messages. If the MIDI controller is sending out "absolute" messages leave it set to "absolute" (this is the more common behavior).

A "relative" change instructs the receiving device to increase or decrease its current value. The receiving device (Emulator II V in this case) interprets this command as "increase/decrease your current value." This type of control is often implemented on "endless" or "360 degree" knobs that do not have hard stops at the ends of their range. The advantage of this is that physical knobs always remain in sync with on-screen controls. However, not all hardware devices support this mode of operation which is why both options are available in Emulator II V.



There are two common types of messages when working with MIDI knobs: Absolute and Relative. Absolute positioning sends the exact position of the knob as a specific numerical value (i.e., "Set value to 54, 55, 56, etc.") when you turn the knob on your hardware controller. This is the most common implementation and is almost always used when using potentiometer knobs with "hard" stops at the ends. One downside to this implementation is that if you change presets, your physical knob and on-screen control will be "out of sync" with each other and turning the physical control can cause the on-screen control to suddenly jump to that position.

3.4.5. Unassigning or "un-learning" a MIDI mapping

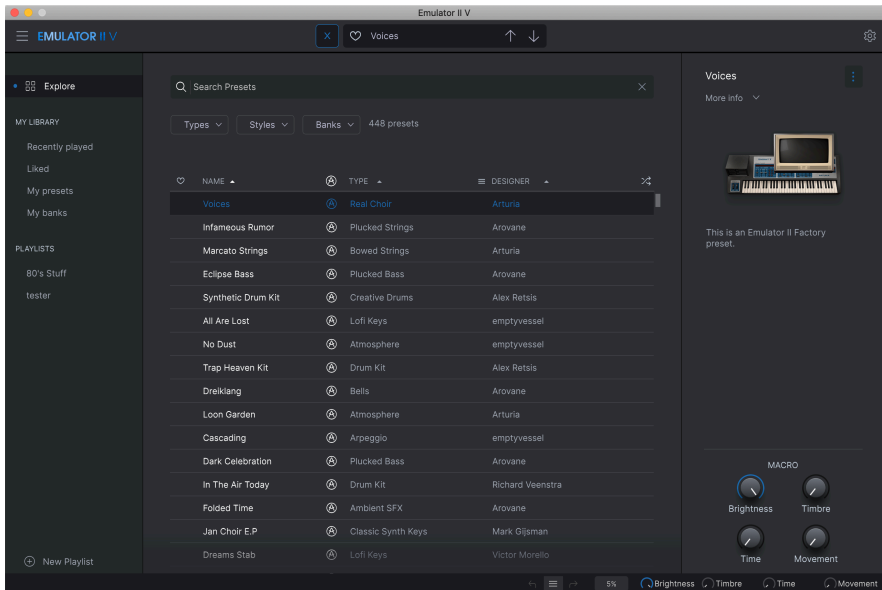
Click on an assigned parameter to highlight it then press the delete button on the keyboard to disconnect.

- **Macro** this function lets you setup the functionality of the macro section. Basically a macro lets you change a group of parameters together and there are 4 available (you can see the status of the 4 macros along the lower toolbar). The macro is selected using the back or forward arrows either side of the name and if you click on the name it can be changed.



You can add extra controls into the macro by selecting "add control" and clicking on the desired control on the panel. You will see it get added to the macro control list and you can set upper and lower limits for each control. When you tweak one of the macro controls in the lower toolbar you will see all the link controls move. Very handy indeed!

3.5. The Preset Browser in Detail



The Preset Browser (shown above) is where you can search through all of the presets for the Emulator II V. Open the Preset Browser by clicking the library symbol on the toolbar. To close the Preset Browser and return to the main screen, click the "X" that appears in the Toolbar.

To narrow down your choice and help you find the sounds you want, you can enter keywords in the search bar. You can narrow your search further by clicking on one of the drop down menus under the search bar which lists categories and has tags to point you in the right direction. You can cancel the list by pressing "clear all".

The results of your search are listed in the middle column. You can easily audition any displayed preset by clicking on it and playing a connected MIDI keyboard. You can sort the list results in various ways by clicking the column headers directly above the preset names. If you're feeling spontaneous, click the Shuffle button at the top right to randomly select one preset from the results list. This is a fun and quick way to audition sounds without having to step through the list one-by-one.

Details about the currently selected preset are listed in the right column.

i Factory presets cannot be modified, deleted or overwritten. Only "User" (user generated) presets can be deleted, overwritten or saved under a different name. This is done by using the "Delete" "Save" or "Save As" buttons at the bottom of the right column. If you have modified a Factory preset and would like to save it, you must save your modified preset under a different name (only the "Save As" option appears in this case since you cannot delete or overwrite factory sounds).

3.5.1. Browse Presets With MIDI Controller

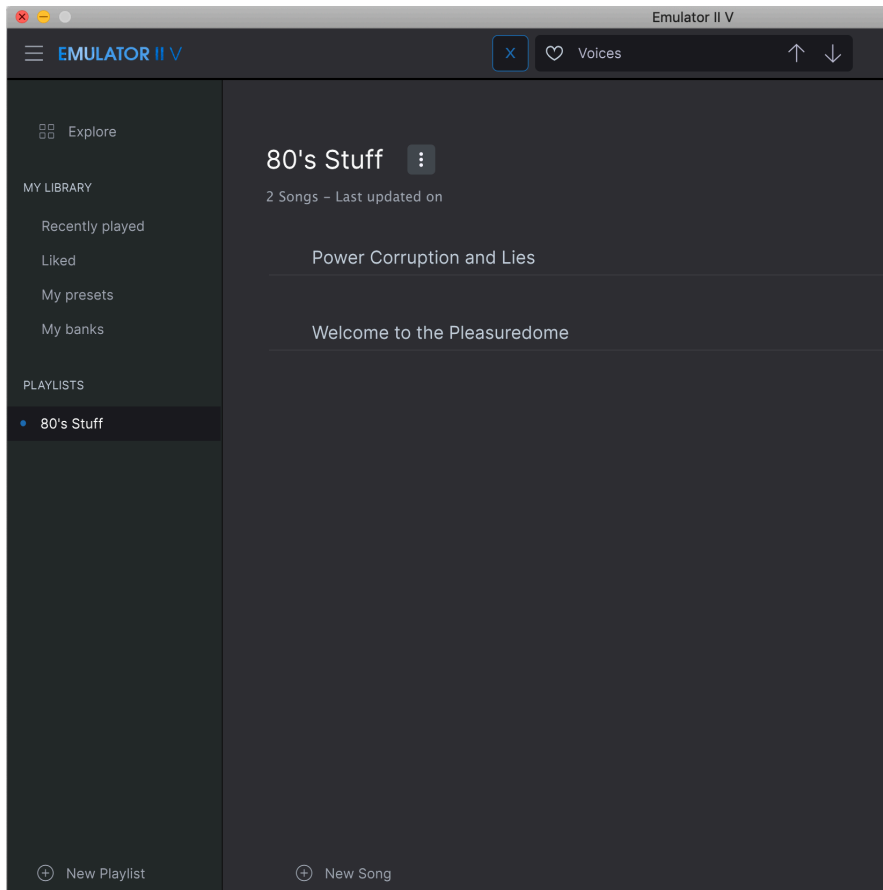
This option allows you to browse presets using the Browse knobs on Arturia MIDI Controllers. This makes it incredibly efficient to quickly audition sounds without having to reach for the mouse. To use this feature, select your Arturia controller from the menu and its Browse knob will be automatically mapped to preset browsing.

3.5.2. Playlists

In the lower left corner of the Preset Browser window is a feature titled Playlists. This is used to collect presets into collection groups, such as a set list for a particular performance or a set of presets related to a particular studio project.

3.5.2.1. Add a playlist

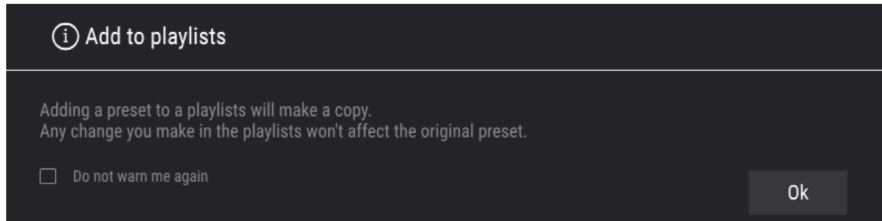
To create a playlist, click the **+ New Playlist** button. Give the playlist a name and it will appear in the Playlists menu. To rename the playlist at any time, double click on the name.



3.5.2.2. Add a preset to the playlist

You can use the Search window to locate the presets you want to add to your playlist. Once you have found the right preset, click and drag it onto the playlist name on the left.

You will see a message which tells you that the new preset will be duplicated. Emulator II V will create a copy of the preset so that you can modify settings in the playlist presets without impacting the original preset it is based on, and vice versa.



To view the contents of a playlist, click on the playlist name.

3.5.2.3. Re-order the presets in the playlist

Presets may be reorganized within a playlist. For example, to move a preset from slot 3 to slot 1, drag and drop the preset to the desired location.

This will move the preset into the new location.

3.5.2.4. Remove a preset from the playlist

To remove a preset from a playlist, right click on the preset name.

3.5.2.5. Delete a playlist

To delete a playlist, right click on the playlist name.

4. MAIN PANEL AND FEATURES



If you look at the Emulator II V front panel, you'll see that the sampler is composed of 7 different sections or "modules", each dedicated to a different function of the sampler. But we didn't stop there - in addition to providing faithful recreations of the original modules and controls, we have also expanded on the original design by offering additional modulation and effects which can be found in the Advanced Panel (see [Advanced Panel And Features \[p.28\]](#) section of this manual).

In this section we'll explain each feature of the Main Panel and its associated controls.

4.1. Master Control

This section contains several global instrument controls.



- **Volume** controls the output volume.
- **Tune** adjusts the fine tuning of the plugin. The "center" detent is set at 440hz, the lower limit at 400hz and upper limit at 480hz



ⓘ: Note that 440hz is the A above middle C and is often referred to as "concert pitch".

- **Transpose** adjusts the tuning in 1 semitone steps to a maximum of 24 semitones in either direction.
- **Voicelink** allows the linking of voices. This mirrors the link button in Screen view. When voices are linked you can share the same value for some parameters between voices (with a per voice offset).

4.2. Filter Section



This section contains the filter controls, which are responsible for sculpting the frequency spectrum and timbre of the sound. Emulator II V is equipped with a faithful recreation of the 24db/octave 4-pole resonant low-pass filter used in the original hardware.

- **Frequency** controls the cut-off frequency of the filter over a range of 65hz to 20 Khz. Frequencies above this setting will be rolled off, at -24db/octave.

i In the Advanced Panel, try assigning Velocity to Cutoff Frequency with positive modulation. Now the harder you press a key, the more the filter will open up, resulting in a brighter sound. You can achieve the same result using the VEL knob under the resonance knob.

- **Resonance** controls the resonance around the cut-off frequency. Turning up Resonance not only boost frequencies at the cut-off band, but will also attenuate frequencies outside the cut-off band resulting in a quieter sound with more emphasis around the cut-off frequency.
- **ENV** sets the amount of modulation that will be applied to the Filter Frequency from the Filter Envelope.
- **KBD** sets the amount of offset that will be applied to the Filter Frequency the higher they are played.

- **LFO** sets the amount of LFO modulation that will be applied to the Filter Frequency from the LFO.
- **VEL** sets the amount of modulation offset that will be applied to the Filter Frequency depending on how hard the keys are played.

The Filter Envelope controls are as follows:

- **A** controls the duration of the Attack stage of the Filter Envelope.
- **D** controls the duration of the Decay stage of the Filter Envelope.
- **S** controls the amplitude of the Sustain stage of the Filter Envelope. When holding a note, the envelope will settle into this stage for as long as the note is held, after the initial Attack and Decay stages complete.
- **R** controls the duration of the Release stage of the Filter Envelope, which describes how long it will take for the envelope to reset to its minimum position once a note has been released.

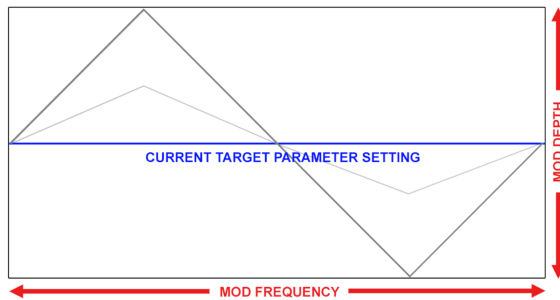


The initial minimum value of the Filter Envelope modulation corresponds to the current settings of the **Frequency** knob. The amount of positive (upward) or negative (downward) modulation that will be applied by the Filter Envelope can be controlled with the **ENV** knob.

4.3. LFO Section



This section contains settings for the Low Frequency Oscillator (LFO). An LFO is used to modulate instrument properties, such as filter cutoff and oscillator pitch, to create movement and evolution to the sound. This Modulation section is hard-wired to control a specific subset of parameters, just as it was offered in the original Emulator II.



Example of Triangle waveform modulating a target effect parameter. LFO amount determines the amplitude of the oscillation around the current setting, while frequency (rate) determines the speed of the modulation



ⓘ LFO modulation is bipolar, so the target effect parameter will be modulated in a positive and negative direction from its current setting.

- **RATE** controls the rate, or speed, of the LFO.
- **DELAY** controls the amount of time in seconds before the LFO modulation actually takes effect.
- **VIBRATO** controls the amount of LFO modulation applied to the pitch of a voice.



ⓘ Vibrato can be useful for creating expression in the sound, by applying a fast bending effect to the pitch of the signal. This is similar to a technique that's often used by string players, who slide a finger up and down a strings quickly while bowing or plucking the string to add expression and movement to the sound.

4.4. VCA Section

The VCA Envelope controls are as follows:

- **LFO** sets the amount of LFO modulation that will be applied to the level of the VCA from the LFO
- **VEL** sets the amount of modulation offset that will be applied to the level of the VCA depending on how hard the keys are played.
- **A** controls the duration of the Attack stage of the Loudness Envelope.
- **D** controls the duration of the Decay stage of the Loudness Envelope.
- **S** controls the amplitude of the Sustain stage of the Loudness Envelope. When holding a note, the envelope will settle into this stage for as long as the note is held, after the initial Attack and Decay stages complete.
- **R** controls the duration of the Release stage of the Loudness Envelope, which describes how long it will take for volume to decrease to silence once a note has been released.

4.5. Arpeggiator Section



An arpeggiator allows you to hold down one or more notes and hear those notes played back, one after the other. When a single note is held it will be repeated; when two or more notes are held the arpeggiator will alternate between the notes. With an Arpeggiator, the pitch values are defined by which keys you hold down. Octave jumps can also be defined and randomized, so the arpeggios can be as intricate as you want them to be.

An arpeggio is basically an outline of a chord; rather than hearing all of the notes at once, they are delivered at different times. Many great pieces of music have arpeggios at their core, from Bach's Prelude 1 in C Major to Eddie Van Halen's hammer-on segment in Eruption.

In some ways an arpeggiator is more improvisational than a step sequencer, because you can decide on the spur of the moment to change which notes the arpeggio will produce by changing which notes you are holding, and how many.

Arpeggiator On switch turns the arpeggiator on and off.

Arpeggiator Rate sets the speed of the arpeggiator.

Arpeggiator Sync specifies whether the arpeggiator will be free-running, or locked to a tempo. When Sync is off, the rate is adjustable from 0.01 to 50 Hz. When Sync is on, the rate is adjustable from 1 to 1/64th of the current tempo, with 1/4 equaling one beat.



The tempo is set in the Audio MIDI Settings in the standalone version, or, by the DAW's tempo setting when running Emulator II V as a plug-in.

4.5.1. Pattern

When you click on the Pattern area of the arpeggiator, a drop-down menu allows you to make a selection from six different response patterns for the arpeggiator, and the octave knob controls how many octaves the arpeggiator will cover.

Mode	Description
As Played	Held notes will be arpeggiated in the same order they were played.
Up	Notes are played back in ascending order. New notes are inserted into the arpeggio as they are played.
Down	Notes are played back in descending order. New notes are inserted into the arpeggio as they are played.
Up-down Inclusive	Held notes are played back in ascending order and then descending order. The highest and lowest notes are triggered twice and then the direction is reversed.
Up-down Exclusive	Held notes are played back in ascending order and then descending order. The highest and lowest notes are triggered only once and then the direction is reversed.
Random	Held notes are played back in random order.

4.5.2. Octave

When 1 is selected, the arpeggiator will play just the notes in the keyboard range you're playing. When 2 is selected, it will play those notes, then repeat them an octave higher before restarting the cycle. Octaves 3 4 and 5 do the same thing: play the notes of the Mode through a 3 4 or 5 octave range.

4.6. FX Section

The FX section controls are as follows

Voice

FX 1 type opens a dropdown menu to select the FX type for slot 1.

FX 1 amount controls the mix between DRY and WET signal for slot 1.

FX 2 type opens a dropdown menu to select the FX type for slot 2.

FX 2 amount controls the mix between DRY and WET signal for slot 2.

FX 3 type opens a dropdown menu to select the FX type for slot 3.

FX 3 amount controls the mix between DRY and WET signal for slot 3.

4.7. Mod Wheel and Pitch Bend



This section contains performance controls and settings for the Pitch Bend and Modulation wheels. You can adjust these controls on-screen but they are best controlled by the pitch bend and modulation wheels on your keyboards.

- **Pitchbend Wheel** controls the amount of pitchbend up or down
- **Mod Wheel** controls the amount of modulation.

5. ADVANCED PANEL AND FEATURES

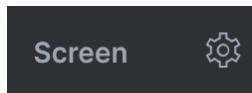
Now that we've covered the classic features in the Main panel, let's dive deeper and explore the Advanced Panel.

5.1. Overview



Things have come a long way since 1984 when E-mu Systems® launched the Emulator II. We now have technologies that musicians from the 1980s could've only dreamt about and these technologies are actively driving music-making forward.

At Arturia, we are not content to simply model a classic sampler with astounding accuracy and leave it at that. We want to make powerful instruments that are relevant to the music makers of today. We try to do this in a way that is tasteful and honors the sound and legacy of the original instrument and this is why we hide the advanced features of the Emulator II V away in a mode that you only see *if* you want to go further. This way, if you just want to get the classic Emulator II experience – without all the extra features – you can have that by default. However, if you are ready to access the state-of-the-art features under the hood, just click the Screen button at the top-right of the screen or click on the picture of a video screen on the main view.



5.2. Offset Assign

When linked, all voice controls having a hardware counterpart are tied to their hardware corresponding control (with the same name). This means that moving, let's say the filter frequency knob, on the hardware will set the linked voices' filter frequency to the exact same value.

Using the same logic, moving a linked voice's parameter will also move the hardware value and the other linked voices' corresponding parameter. To indicate clearly the impact on other voices, the whole selector of linked voices is light up when editing and hovering such a control from one voice.

The fact that hardware controls set the values in an absolute way might be a bit limiting. To offer more flexibility using this method, we will introduce a concept of offset on individual parameters. For each hardware related voice parameter, an offset is applied by clicking and dragging the ring around the knob when the "offset assign mode" is on. The size of the arc defines how much offset is applied. The offset always start from the voice parameter value, and can be grown on either side (left/right).

The offset ring is visible only when the voice is linked to hardware.

5.3. Navigating the Advanced Features

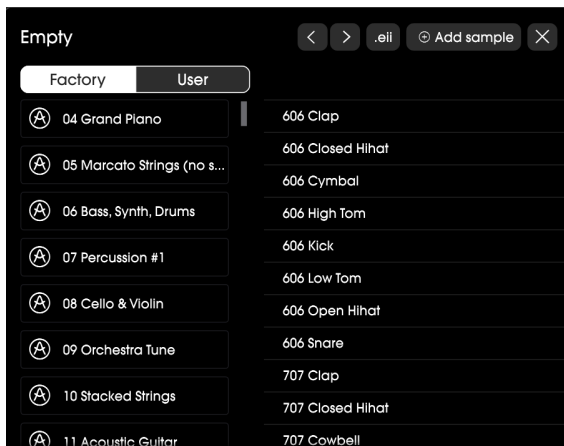
Emulator II V's advanced features are separated into three sections as shown on the left of the interface: **Edit**, **Assign**, and **Effects**. Click on a tab to reveal its features. The currently displayed panel is highlighted.

5.4. Edit Section



The Edit section lets you really get under the surface of the voice architecture.

- **Voice Selector:** On the left hand side you can see the 8 voices and whichever one is highlighted is the voice currently being edited. Each voice has a solo button, a mute button, a copy/paste button which allows you to copy the parameters of one voice onto another voice, a volume fader which is a duplicate of the voices VCA level parameter and lastly a voice link button.
- **Voice:** This section basically deals with the sample in the selected voice.
- **Sample Browser:** Click on the browse button in the Sample Viewer to open the Sample Browser.



- **Selecting Samples:**

The left column shows the Sample banks. Factory banks are displayed with Arturia's logo in their tabs. These cannot be removed or deleted.

Scroll up and down to view the samples inside the current bank. There are two ways to select a sample:

- A single click selects a sample without closing the browser window, which allows you to audition samples one after the other.
- If you find the one you want to keep, double-click its name and the browser window will close.

You can also select a different bank on the left side and then audition or choose a sample from that bank the same way.


To close the browser window, click the X.

Here you can make changes that affect the samples independently, such as Tuning, Playback and Mix. You can also define which part of a sample plays back by moving the Trim Start / Stop markers at the top of the Sample Viewer.

Select the sample you want to edit by clicking on a voice slot on the left and then adjust the following parameters as needed:

- **Start/End:** allows you to define the region of a sample you wish to hear. You can either drag the start and end bars on the waveform or manually enter a value between → [0%; 100%]
- **Transpose:** Transposes the selected sample by +/- 24 semitones.
- **Detune:** Fine-tunes the selected sample by +/- 1 semitone (50 cents).
- **Gain:** this sets the level of the sample [-80dB; +24dB]
- **Play direction:** Selects the playback mode for the samples: forward, backwards, forward + backwards, backwards + forward.
- **Play direction balance:** only active if "forward+backward" or "backward+forward" is active, volume mix between forward and backward phase: range → [100% forward ; 100% backward] in crossfade (forward volume decreases only after 0.5 knob position, same with backward volume in the opposite direction).
- **Trig delay bypass:** activates/deactivates the trig delay feature. If off, the trig delay rate and sync controls are greyed out.
- **Trig delay:** time after which the whole voice is delayed. After the user has pressed a key, the engine must wait for this delay time before triggering the sample at its start position, as well as the VCF/VCA envelopes or any voice related, time dependent module. Unsynced range {0; 2000ms} Synced Range {1/32; 1 bar}
- **Trig delay sync:** if active, trig delay is expressed in bars, seconds otherwise.
- **Loop on/off:** activates the loop inside the sample, when active loop bounds visualizers appear on the sample view
- **Loop start/end:** loop start and end position, can be modified by moving the loop bars on the waveform or setting the parameters by directly entering a value. Their position is constrained by the sample start and end (they cannot be outside these bounds). End point position is independent from start point. range → [0%; 100%]

- **Loop fade:** sets the amount of loop crossfade. The range is [0; 1], at zero no crossfade is applied, at 1 the fade length is defined by the minimum time between loop length and [loop start - start trimmer]. Hence loop start point needs to be different from start trimmer for crossfade to be effective.
- **Loop in release:** if this is active, when you release a note and the release of the VCA envelope is set quite long, you will hear the sample loop as the sound fades away. If off, releasing a key lets the sound continue playing as normal.

 It is worth noting that you are not limited to the memory constraints of the original hardware so you can load up pretty much any audio file ending in .wav, .aiff, .aif and .flac.

5.5. Filter

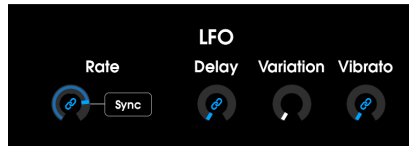
there are a few extra parameters here that are not in the main panel view.

- **F Vel:** controls the amount of filter modulation that is mapped to keyboard velocity
- **Cutoff:** controls the cut-off frequency of the filter over a range of 65hz to 20 Khz. Frequencies above this setting will be rolled off, at -24db/octave.
- **Q Vel:** controls the amount of filter resonance modulation that is mapped to keyboard velocity
- **Resonance:** controls the resonance around the cut-off frequency. Turning up Resonance not only boost frequencies at the cut-off band, but will also attenuate frequencies outside the cut-off band resulting in a quieter sound with more emphasis around the cut-off frequency.
- **LFO amount:** sets the amount of LFO modulation that will be applied to the Filter Frequency from the LFO.
- **KBD:** sets the amount of offset that will be applied to the Filter Frequency depending on the pitch of the key played.
- **ENV:** sets the amount of modulation that will be applied to the Filter Frequency from the Filter Envelope.
- **Vel:** this sets the amount of velocity modulation on the VCF ADSR's attack parameter, bipolar (the 50-100% range of the knob allows the original behavior, and the 0-50% range can be used to reduce the attack time by playing with high velocity)
- **Attack:** controls the duration of the Attack stage of the Filter Envelope.
- **Decay:** controls the duration of the Decay stage of the Filter Envelope.
- **Sustain:** controls the amplitude of the Sustain stage of the Filter Envelope. When holding a note, the envelope will settle into this stage for as long as the note is held, after the initial Attack and Decay stages complete.

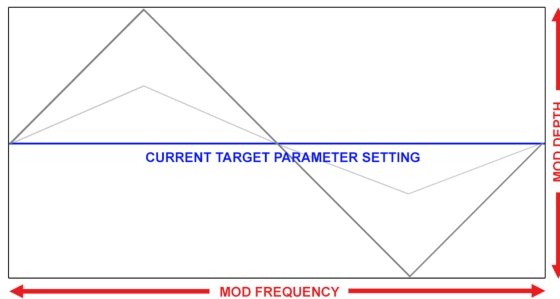
- **Release:** controls the duration of the Release stage of the Filter Envelope, which describes how long it will take for the envelope to reset to its minimum position once a note has been released.

i The initial minimum value of the Filter Envelope modulation corresponds to the current settings of the **Frequency** knob. The amount of positive (upward) or negative (downward) modulation that will be applied by the Filter Envelope can be controlled with the **ENV** knob.

- **LFO**



This section contains settings for the Low Frequency Oscillator (LFO).



- **Rate:** controls the rate, or speed, of the LFO.
- **Sync:** synchronises the rate of the LFO modulation to the tempo of the project
- **Delay:** controls the amount of time in seconds before the LFO modulation actually takes effect.
- **Variation:** LFO variation adds a randomised quality to sounds by providing slightly different vibrato rates for each key being held down. Each time a new note is entered, a new random value is retrieved to define the new rate associated with this specific note. Playing twice the same note results in different rates as well. In sync mode, we will play on the phase of the different LFOs to create an "ensemble" effect, without losing the benefits of synchronisation.
- **Vibrato:** controls the amount of LFO modulation applied to the pitch of a voice.

5.6. VCA

The VCA Envelope controls are as follows:

- **Alternate > Pan:** this parameter is routed to set the amount of left/right modulation on the panning. The behavior here is quite simple, each time the user plays new notes, each one is located left and the next one right, alternating ping-pong style in the stereo space. How far they are from the center is defined by this parameter value. At zero all notes are centered. This knob is bipolar, with the left side making the alternate starting left and right side on right. This will allow for different behaviors between voices.
- **Pan:** this sets where in the stereo image a sample is placed initially but the Alternate > Pan knob will affect this too
- **Level:** This sets the initial level of a sample
- **LFO amount:** sets the amount of LFO modulation that will be applied to the level of the VCA from the LFO
- **Vel:** sets the amount of modulation offset that will be applied to the level of the VCA depending on how hard the keys are played.
- **Attack:** controls the duration of the Attack stage of the Loudness Envelope.
- **Decay:** controls the duration of the Decay stage of the Loudness Envelope.
- **Sustain:** controls the amplitude of the Sustain stage of the Loudness Envelope. When holding a note, the envelope will settle into this stage for as long as the note is held, after the initial Attack and Decay stages complete.
- **Release:** controls the duration of the Release stage of the Loudness Envelope, which describes how long it will take for volume to decrease to silence once a note has been released.

5.7. Voice FX

in this section you can select an insert effect at the end of the voice channel with a mix parameter adjusting the Dry/Wet FX levels. You can choose FX from the following list:

- **Chorus:** (Freq; Depth)
- **Phaser:** (LFO Rate, LFO Amount)
- **Distortion:** (Tone, Drive)
- **Bitcrusher:** (Bit Depth, Downsampling)
- **Reverb:** (Damping, Decay)
- **Delay:** (Delay Time Synced, Feedback)
- **3 band EQ:** { Low shelf gain ; Mid band gain ; High shelf gain } (no dry/wet)
- **Multimode Filter:** (Filter Mode, Cutoff, Resonance) (no dry/wet)



the 2 parameters in brackets in the above list are available to edit ie you can adjust the modulation depth and speed of the chorus effect. If you don't wish for an effect in this slot choose 'none' from the list

5.8. Output

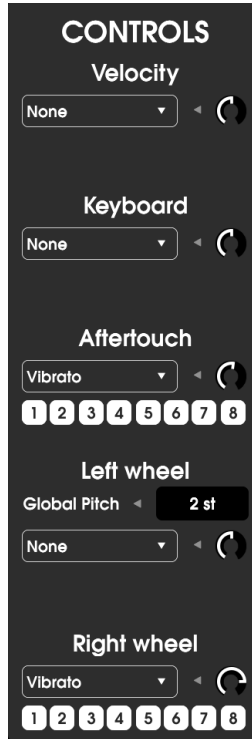
- **Polyphony:** this sets how many notes are allocated to a voice from monophonic (1 note) upto 32 note polyphony
- **DAC Mod:** This switches between emulating the exact sound of the vintage 12 bit DAC (digital to analogue converter) circuitry or the modern clean DAC sound. This setting is voice dependent, meaning that some voices can be on vintage mode and others on modern.

5.9. Additional Parameters

This page is divided into two parts. First it allows you to see where all the voices are mapped across the keyboard. This is also where one can assign MIDI controls to the instrument's parameters. You use the same voice selector as on the edit page so the you can access the same functions (solo / mute / copy / adjust level). However, the concept of "current voice" doesn't apply here. [Keyboard zones assignments] Every sample zone assignment is displayed here so the user can visualize from a single place how the patch is configured and gives a great overview of how everything is mapped. Like on the edit page, each rectangle represents the low and high notes of the sample on the keyboard, with the root note displayed inside it. The original instrument allowed for multiple ways to handle the specific case where voices keyboard assignments overlap on the same notes: Further parameters can be found in the areas beside the virtual keyboard. These are available on both the Edit and Assign pages.

- **Key Assignment:** On the virtual keyboard, some basic settings can be made regarding the keyboard range in which a sample is played. Click KEY (on the lower left corner) to enter Key Assignment Mode. The current sample area is shown with a white border. Click and drag directly in the highlighted area to move the entire voice zone up or down the keyboard. Click the buttons to the right or left of the playback area to set the upper and lower limits. Click and drag on the white bar above the keys to create a crossfade between the different voice zones. This will have a smoothing effect when moving between samples on the keyboard.
- **Velocity Assignment:** Basic settings for the behavior of the velocity can be made in the virtual keyboard too. Click on VEL (on the lower left corner) to enter the Velocity Adjustment Mode. The current velocity range (from 0 to 127) is outlined in white. Click to the right or left of the area and drag to narrow the velocity range. For example, with a range from 30 to 100, a sample will only be triggered if the incoming MIDI note has the appropriate velocity between 30 and 100. Click and drag on the white bar above the range display to create a crossfade on the left or right, in which a sample range is faded in or out by the corresponding velocity.
- **Root note:** This defines the note that a sample plays back at its original pitch and can be anything from C-2 (midi note 0/1) to G8 (midi note 127/128). You can also click on this root note in the virtual keyboard and set it by moving it.

5.10. Controls Section



Here we have a very simple but very handy modulation matrix. There are 5 fixed sources.

- Velocity
- Keyboard
- Aftertouch
- Pitch wheel (left wheel)
- Mod-wheel (right wheel)

These modulation sources can be routed to any of the following destinations:

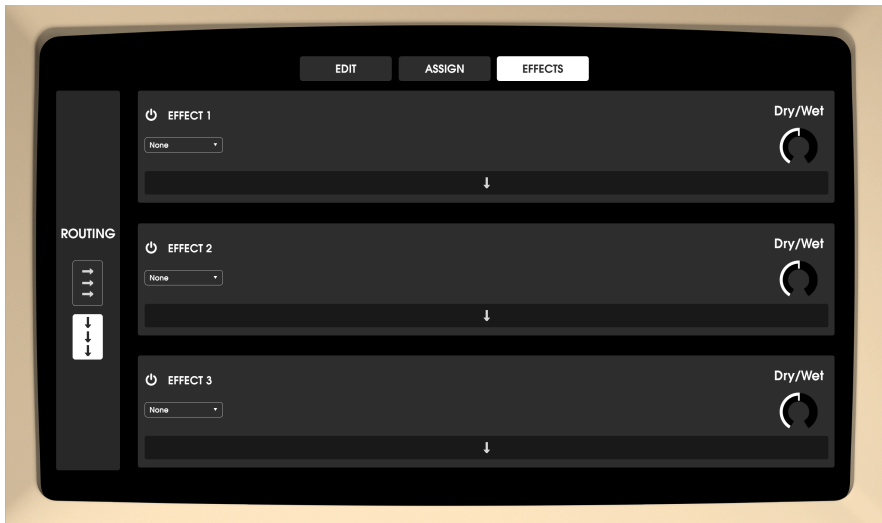
- VCA level
- VCA attack rate
- Filter frequency
- Filter resonance

- Pitch (transpose)
- LFO Rate
- LFO → VCA level
- LFO → filter cutoff
- Vibrato amount (LFO → pitch)
- Voice FX 1-8 dry/wet
- Master FX 1-3 dry/wet
- Master FX 1-3 mod param

To the right of each target parameter you will find an amount control that you can use to set the modulation intensity either positive or negative. In addition to freely assigning the modulation target, the Left Wheel also offers the option of setting the pitch change range in semitone steps from 0 to 24. If you only want to use the left wheel for modulation purposes, you should set Global Pitch to 0 st.

For each target parameter that is basically tied to a voice module (such as filter frequency, VCA level, etc.), eight buttons (from 1 to 8) are displayed under the selection menu in order to switch the modulation for certain voice modules on or off. In this way you can emulate the control function of the original to ensure compatibility with older presets

5.11. The Effects

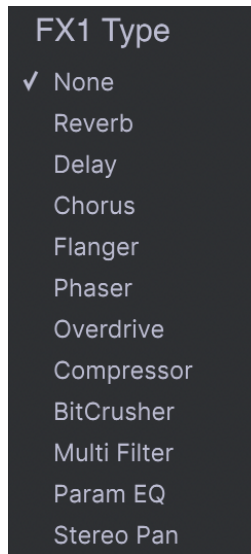


5.11.1. Why use effects at all?


The way we think about effects has changed since the 1980s. In earlier times, effects were not considered an essential part of the synthesis process and were used sparingly. Today, effects are a vital component of a sound, and their importance sometimes even supersedes that of samples and other sound generators. Why? We believe it's because effects are really effective at adding expression and emotion to raw sounds. We expect that effects will continue to be a source of inspiration and innovation in music and this is why we revive classic effects and modernize them with 21st century touches.

5.11.2. Selecting an effect

Emulator II V includes 11 powerful effects that can be arranged serially or in parallel. To start using and editing the effects, click the Effects section in Advanced mode. Here you will see three effect slots. Each slot has its own **Bypass** switch to enable and disable its effect and a pull-down menu to select the effect that you would like to use.




Each slot also has a **Wet/Dry** knob that controls the percentage of the original signal that passes through to the output. Moving this all the way down will effectively bypass the effect. Finally, the **Serial** and **Parallel** Arrows at the top of the panel let you decide if you want the effects to be arranged serially or in parallel. In Serial mode, Emulator II V's output goes from one effect to the next in succession; In parallel mode, Emulator II V's output goes into all three effects at the same time and the output of the three effects are then mixed together.

 All effect parameters are MIDI-assignable, which means you can use the MIDI "learn" function to map effect parameters to hardware controls on an external USB MIDI device. This is covered in the [MIDI controller configuration \[p.13\]](#) section of this guide.

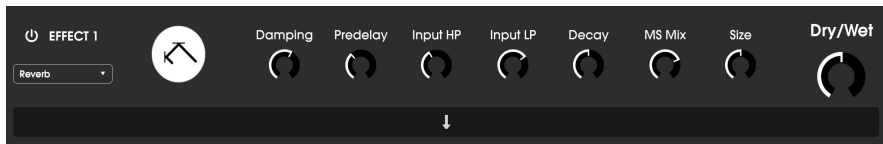
5.11.3. Each effect in detail

Each of the effects has its own unique controls and indicators as well as a single parameter (**mod param**) that can be easily routed and assigned in the [Controls Section \[p.36\]](#). We will discuss each effect in detail separately below.

 Param EQ is the only one of the FX without a "mod param."

5.11.3.1. Reverb

This effect simulates the reverberant sound of a room or large space by creating a large number of filtered echoes that fade or "decay" over time. You can greatly affect the character of the reverberant sound by adjusting knobs controlling delay, filter and various other parameters.



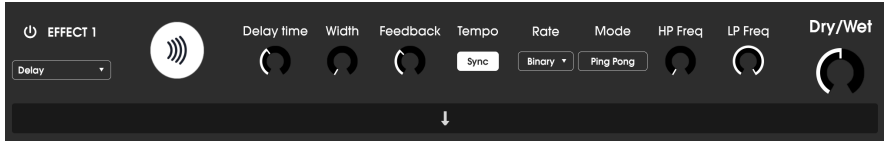
The controls are:

- **Damping:** Controls the "brightness" of the sound by attenuating high frequency content of the reverberant echoes. Low settings will provide very little damping and will result in a bright sound; high settings will filter much of the high frequencies and will result in a duller sound.
- **Predelay:** Sets the amount of time before the input signal is affected by the reverb. Adjusting this parameter can affect the sense of space.
- **Input HP:** This is a high pass filter that can be used to remove some of the low frequency tones that can make reverberation sound "muddy" indistinct and washed out. This filtering happens on the input signal before the reverberation takes place. Use this knob in conjunction with the Input LP Frequency to dial in clear reverberations.
- **Input LP:** This is a low pass filter that can be used to remove some of the high frequency tones that can make reverberation sound "sizzle-y" or unnaturally bright. This filtering happens on the input signal before the reverberation takes place. Use this knob in conjunction with the Input HP Freq knob to dial in clear reverberations.
- **Decay (mod param):** Sets how much time it takes for reverberant echoes to fade away.
- **MS Mix:** This knob controls the "stereo width" of the reverberation. Low settings will sound monophonic whereas high settings will have a wide, expansive stereo sound field.
- **Size:** Controls the size of the reverberant space. Low settings result in smaller sounding rooms whereas high settings sound like massive halls and chambers. Use this knob in conjunction with the Predelay to achieve a variety of different sonic spaces.

5.11.3.2. Delay

A delay can increase the spaciousness of a sound without making the sound “swim” the way some reverbs do. It can also be used as a rhythmic counterpoint to accentuate a groove. This delay repeats the input signal and creates an “echo”, giving it more space and depth. The Time dial offers a range of settings from 2 milliseconds to two seconds (2000 ms).

i This is a modern “digital” delay that provides clear, precise echoes that are common in modern delay effects.



The controls are:

- **Delay Time (mod param):** Sets the length of the delay. Turning the dial clockwise increases the delay time; turning in the opposite direction shortens it. Values here are shown in either bars or milliseconds, depending on how Sync is set (see below).
- **Width:** This knob controls the “stereo width” of the delay. Low settings will sound monophonic whereas high settings will have a wide, expansive stereo sound field.
- **Feedback:** Determines how much of the Delay’s output is fed back into its own inputs. Higher settings mean that the delay will be heard for a longer period of time before fading out.


i Setting Feedback to its maximum amount will mean that a signal is looped infinitely and never fades out. This effectively turns the Delay into a looper!

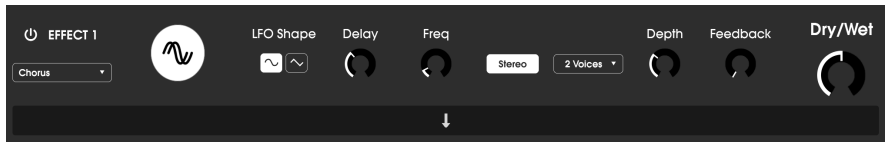
- **Tempo Sync:** Locks the delay to the current tempo of the DAW (or Emulator II V’s internal tempo when using the standalone version). When Tempo Sync is switched on, Delay Time is displayed in Bars. If Sync is deactivated, Delay Time is shown in milliseconds.
- **Rate Synced Type:** Sets the timing of the delays from Binary, Ternary (Triplet) or Dotted. This parameter is only active when Sync is engaged (it does nothing when Sync is switched off).
- **Mode:** When activated this produces “ping-pong” delays alternating hard panned left and right, so that they “bounce” from left to right.
- **HP Freq:** This is a high pass filter that can be used to remove some of the low frequency tones that can make the delay sound “muddy” indistinct and washed out. This filtering happens on the input signal before the delay takes place. Use this knob in conjunction with the LP Frequency to dial in clear delays.

- **LP Freq:** This is a low pass filter that can be used to remove some of the high frequency tones that can make delay sound unnaturally bright. This filtering happens on the input signal before the delay takes place. Use this knob in conjunction with the HP Freq knob to dial in clear delays.

5.11.3.3. Chorus

A chorus module recreates the sound of multiple takes of an instrument being combined in a mix. The effect works by duplicating the incoming signal, delaying one side while using an LFO to slowly modulate the delay time and mixing the delayed signal back with the original sound. To make the choral sound more rich and lush, the signal can be duplicated multiple times and modulated by separate LFOs.

: The chorus effect is very similar to the Flanger effect (see below) except chorus delay times tend to be longer (0.6ms minimum for this effect) which results in a subtle and pleasing choral effect.



The controls are:

- **LFO Shape:** Selects the shape of the LFO used to modulate the delayed voices. Options are Sine or Sawtooth.
- **Delay:** Sets delay time for the chorus effect.
- **Freq:** Adjust the speed of the chorus by setting the LFO rate.
- **Stereo Mode:** The output of the chorus can be set to stereo for a wider and more modern sound or mono for a more vintage sound.
- **Voices:** Sets the number of duplicated voices in the chorus effect, from one to three voices.
- **Depth:** Sets the strength of the LFO's modulation on the delayed signal, from very subtle to quite extreme.
- **Feedback (mod param):** Determines how much of the Chorus output is fed back into its own input.

5.11.3.4. Flanger

The Flanger effect is similar in principle to the Chorus effect above, except that the delay time tends to be much shorter (as low as 0.001ms in the case of the effect). The extremely short delay time produces a “comb filter” effect that sweeps up and down through the harmonics of the original signal.



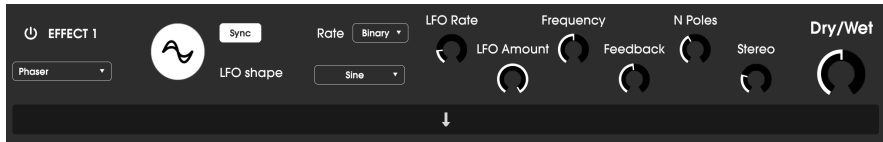
Flanging can create both subtle and extreme effects, depending on the Frequency and Depth of the modulation. With higher Depth settings you will begin to hear changes to the pitch of the sound. This is how the circuits in an analog flanger work, and we have taken care to recreate these conditions in our software.

The controls for the effect are:

- **Shape:** Selects the shape of the LFO used to modulate the delayed voices.
- **Polarity:** This determines whether the feedback polarity will be positive or negative. This can provide smoother or harsher flanging effect depending on your other settings, so experiment with positive and negative settings to see what works best for your track.
- **Stereo:** The output of the flanger can be set to stereo for a wider and more modern sound or mono for a more vintage sound.
- **Freq (mod param):** Sets the LFO's modulation rate for the minimum delay time.
- **Feedback:** Determines how much of the flanger's output is fed back into its own input.
- **Min Delay:** Sets a minimum limit for the delay time, which can be useful for controlling the flanger's harmonic content.
- **Depth:** Sets the strength of the LFO's modulation. This is set to “max out” at less than 100% to limit runaway feedback.
- **HP Freq:** Sets the highpass cutoff frequency for the flanger effect. Frequencies below this are not flanged.
- **LP Freq:** Sets the lowpass cutoff frequency for the flanger. Frequencies above this are not flanged.

5.11.3.5. Phaser

Phase shifting is a sweeping effect that was first popularized in the 1960s. It adds motion and a swirling character to the sound. It works by splitting the incoming signal, changing the phase of one side, and recombining it with the unaffected signal. This creates a notch-comb filter which can be swept through the frequency spectrum, causing the signature “whooshing” sound of the phase shifter. This particular phaser is a stereo model with tempo synchronization.

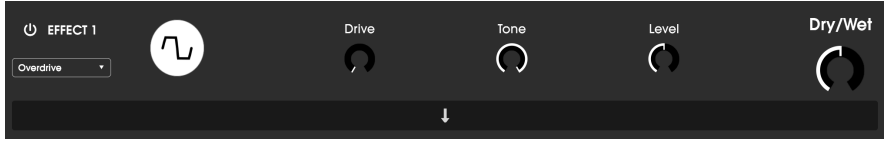


The controls are:

- **Sync:** Locks the phaser's LFO to the current tempo of the DAW.
- **Rate (mod param):** Sets the timing of the modulation from Binary, Ternary (Triplet) or Dotted. This parameter is only active when Sync is engaged (it does nothing when Sync is switched off).
- **LFO Shape:** Sets the wave shape of the modulating LFO.
- **LFO Rate:** Sets the speed of the LFO. If tempo synchronization is enabled (see below), this parameter is displayed in bars. If synchronization is disabled, the Rate parameter is displayed in Hz.
- **LFO Amount:** Sets the strength of the LFO's modulation.
- **Frequency:** Sets the center frequency at which the phaser affects the incoming signal
- **Feedback:** Effectively controls the amount of phaser resonance. Look out! Higher settings can make the filtering effect very pronounced.
- **N Poles:** Sets the number of poles used in the sweeping filter. Low settings will have a gentler sound whereas high settings will have a more pronounced sound.
- **Stereo:** Sets the stereo width of the effect, from mono to maximum stereo (hard left to hard right).

5.11.3.6. Overdrive

Will add gain to a signal causing it to clip and distort. This introduces new harmonics that add a harsh edge to sounds. This is similar to an overdrive pedal for a guitar.



The controls are:

- **Drive (mod param):** Sets the overdrive amount.
- **Tone:** Brightens the sound and adds a harsher edge through a high frequency shelving filter.
- **Level:** Sets the output level of the overdrive. This allows you to compensate for increased output caused by the drive.

5.11.3.7. Compressor

At its core, a compressor is simply a device that is used to maintain a consistent level of sound. You can think of it as a very fast manual control that turns down the volume when the input is too loud and raises it again when the loud parts have passed. Over the decades, audio engineers have found many creative uses for compressors beyond simply evening out loudness levels. For example, many mix engineers use compressors to bring an increased sense of power and excitement to a single track or an overall mix.



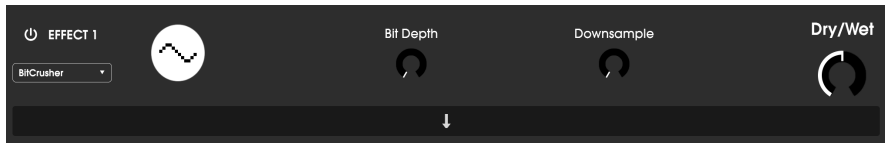
If you are using a compressor in a chain of effects, the compressor can keep the attack transients of a sound from overloading the input of the next effect. It can also re-contour a sound that naturally decays quickly so that it has a longer sustain. Drums are often compressed to add "punch". Compression is also routinely added to radio and television audio levels to keep them within a certain volume range.

The controls are:

- **Makeup:** Switches the compressor's automatic make-up gain feature on and off. This feature compensates for the natural reduction in output loudness as the compressor brings down peaks.
- **Attack:** Sets the speed with which the compression will react to an incoming signal. Short attack times mean the compressor will immediately affect an incoming signal. Longer attack times allow momentary peaks to slip through before the compressor has a chance to affect on the signal. In some cases this can be desirable as it allows a signal to maintain some of its natural "attack" transients before it starts working.
- **Release (mod param):** Sets the release time of the compressor. Generally, this is set such that the output of the compressor sounds natural and transparent. However, many contemporary artists deliberately choose to set this to more extreme values in order to achieve "pumping" and "breathing" artifacts. Go ahead and experiment—maybe you'll stumble upon a sound you love!
- **Input Gain:** Adds gain to the signal before the start of the compression process.
- **Threshold:** Sets the loudness level above which the compressor will begin to work. The compressor ignores signals that fall below the threshold.
- **Ratio:** The compressor ratio determines the amount of compression that will be applied once the threshold is reached. For example, if the ratio is set to 2:1, signals exceeding the threshold by 2 dB will be allowed to increase by only 1 dB. An 8 dB increase will be reduced to a 4 dB increase, and so on.
- **Output Gain:** Controls the final output level of the compressor.

5.11.3.8. BitCrusher

Arturia instruments generate very high fidelity sounds, however, in some scenarios you may prefer a gritty lo-fi sound. The BitCrusher effect can really help make this happen! It adds nasty digital distortion by intentionally reducing the bit depth and sampling rate of incoming signals.

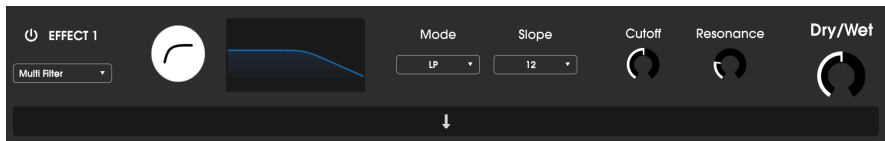


To explore this effect, start by setting the Bit Depth and Downsample dials to the minimum settings. Then gradually turn each dial up to reduce the bit depth and sampling rate of the incoming signal. Each knob has a different degrading effect and you can experiment with different settings to find the perfect blend of sonic destruction for your sound!

The controls are:

- **Bit Depth (mod param):** Reduces the resolution of your sound (i.e., the number of bits used to render an output) as this knob is turned up. There is no reduction at the minimum setting and extremely reduction at the maximum setting.
- **Downsample:** Resamples the already bit-reduced signal (set by the Bit Depth knob). As you turn up this knob, your incoming signal will be re-sampled at lower and lower frequencies, increasingly destroying the fidelity of the pure sound.

5.11.3.9. Multi Filter



Multi Filter is a powerful sound shaping filter, that offers an additional way of sculpting frequencies at the output stage.

The controls are as follows:

- **Filter Mode:** Chooses from one of 5 different filter modes: Low Pass, High Pass, Band Pass, Comb Feed Back, Comb Feed Forward.
- **Slope:** This changes the slope of the filter: -12, -24, or -36db/octave.
- **Cutoff (mod param):** controls the cut-off frequency of the filter.
- **Resonance:** controls the resonance around the cut-off frequency.

5.11.3.10. Param Eq



The Parametric EQ

Emulator II V offers a five-band fully parametric equalizer. An equalizer (EQ) selectively amplifies or attenuates frequencies in the frequency spectrum. A parametric EQ allows you to adjust the range that will be affected by its frequency bands (i.e., the Q, or width).

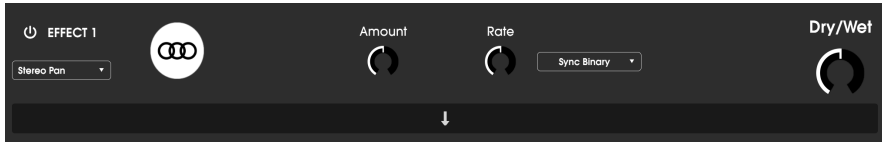
Many parametric EQs take the easy way out and use shelving EQs for the lowest and highest frequency ranges, but Emulator II V allows you to adjust the Q for all 5 frequency bands.

The circles in the picture correspond to the controls on the left of the curve visualizer. The circles may be dragged around, which adjusts the frequency and the gain of the selected band at the same time. A right-click on the circle will adjust the width of that band as you drag the cursor up and down.

You can also select a particular EQ band by clicking on its tab to the left of the curve visualizer.

Control	Description
Curve visualizer	Provides visual image of EQ curves
Low / Peak X / High fc (frequency)	Sets center frequency of band: Low 50-500 Hz; mids 40-20kHz; High 1k-10kHz
Low / Peak X / High gain	Each control adjusts the gain of its EQ band
Low / Peak X / High Q	Sets width of band: Low / High range: 0.100 - 2.00; Peak X ranges 0.100 - 15.0

5.11.3.11. Stereo Pan



The StereoPan effect

This is an LFO-driven effect that moves the signal from left to right in the stereo field. It can move the signal left and right ever-so-slightly from center, or it can swing wider and wider until it covers the entire range.

The controls are as follows:

- **Amount:** Controls the amount of deviation from center.
- **Rate (mod param):** Sets the rate at which the stereo motion will occur, with freerun and sync options.
- **Sync (dropdown menu):** Options are Hz, binary, triplets and dotted (set by rate control)

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