REVERB CLASSICS

RC 24

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NATIVE INSTRUMENTS

Table of Contents

1 Welcome to RC 24

Thank you for downloading RC 24 by Native Instruments.

The following manual will give you an overview of the features of RC 24, as well as explain how to use the software.

1.1 What Is RC 24?

The RC 24 is a classic reverb with a very special and warm sound that was inspired by a classic hardware device. The RC 24 brings this renowned unit to your DAW, successfully recreating its unique, vintage sonic characteristics while greatly extending its usability!

1.2 Manual Conventions

This manual uses particular formatting to point out special facts and to warn you of potential issues. The icons introducing the following notes let you see what kind of information is to be expected:

> ⚠ Whenever this exclamation mark icon appears, you should read the corresponding note carefully and follow the instructions and hints given there if applicable.

> 💡 This light bulb icon indicates that a note contains useful extra information. This information may often help you to solve a task more efficiently, but does not necessarily apply to the setup or operating system you are using; however, it's always worth a look.

Furthermore, the following formatting is used:

- Text appearing in (drop-down) menus (such as *Open…*, *Save as…* etc.) and paths to locations on your hard drive or other storage devices is printed in *italics*.

- Text appearing elsewhere (labels of buttons, controls, text next to checkboxes, etc.) is printed in light blue. Whenever you see this formatting applied, you will find the same text appearing somewhere on the screen.

- Important names and concepts are printed in **bold**.

►   Single instructions are introduced by this play button type arrow.

→   Results of actions are introduced by this smaller arrow.

2 Installation and Activation

2.1 Installing RC 24

The following section explains how to install and activate RC 24. Although this process is straightforward, please take a minute to read these instructions, as doing so might prevent some common problems.

► To install RC 24, double-click the installer application and follow the instructions on the screen. The installer application automatically places the plug-in into a directory. Alternatively, during the installation process, choose the directory where you would like to have RC 24 installed.

2.2 Activating RC 24

When installation is finished, start the Service Center application, which was installed with RC 24. It will connect your computer to the Internet and activate your RC 24 installation.

⚠ As long as your NI product has not been activated, it will run in Demo mode with limited functionality.

In order to activate your copy of RC 24, you have to perform the following steps within the Service Center:

Log in: Enter your Native Instruments user account name and password on the initial page. This is the same account information you used in the Native Instruments Online Shop, where you downloaded RC 24, and for other Native Instruments product activations.

Select products: The Service Center detects all products that have not yet been activated and lists them. You can activate multiple products at once if necessary.

Activate: After proceeding to the next page, the Service Center connects to the Native Instruments server and activates your products.

Download updates: When the server has confirmed the activation, the Service Center automatically displays the Update Manager with a list of all available updates for your installed products. Please make sure that you always use the latest version of your Native Instruments products to ensure they function correctly.

> Downloading updates is optional. After activation is complete, you can always quit the Service Center.

3   Using RC 24

RC 24 has controls that are common with a classic hardware unit, as well as some unique features—in particular a powerful display and a more streamlined interface. The user interface is organized as follows:

The RC 24 interface.

- The topmost row provides a Menu bar with various features mainly concerning preset management.

- The upper part (above the display) holds a few controls affecting the overall behavior of the reverb unit.

- The middle part holds the multi-purpose display.

- The bottom part holds the faders and knobs allowing you to finely adjust the characteristics of the reverb.

> 💡 For all knobs and faders, the value is displayed in place of the control label when the mouse cursor hovers over the control, or when you are interacting with the control.

The following sections describe each of these areas.

3.1 The Menu Bar

At the very top of the RC 24 interface, you will see the Menu bar. This is primarily used for saving and loading presets, but also has a few other functions.
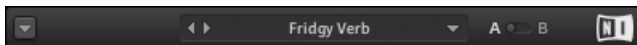
The Menu bar is located at the top of the interface.

3.1.1 Loading Presets

In the center part of the Menu bar, you will see the Preset menu. This menu provides quick access to all available presets for your effect.

To load presets, either:

► Click the left and right arrows at the left of the Preset menu to cycle through and load the presets one at a time, or

► Click the Preset menu (displaying the name of the loaded preset) to display a structured list of all available presets, navigate through the preset folders, and click the desired preset to load it. See below for a detailed description of the Preset menu.

> ⚠ In Demo mode you cannot load user presets! Presets saved in Demo mode will be available once you have activated your effect (see section ↑2.2, Activating RC 24 for more on this).

Using the Preset Menu
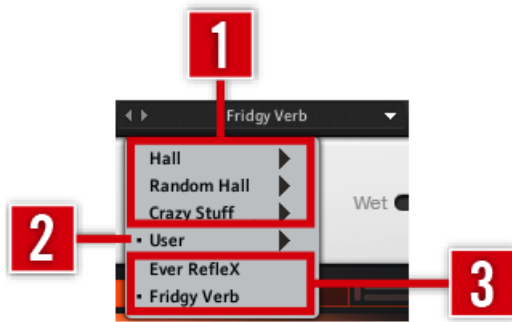
The Preset menu.

In the top part of the Preset menu, presets are organized into several submenus. Each submenu represents a particular **preset folder**:

(**1**) Factory content submenus: At the top, a series of submenus holds the factory presets.

(**2**) *User* submenu: Once you have saved presets of your own (see ↑3.1.2, Saving and Deleting Presets), a *User* submenu appears under the factory content submenus. This *User* submenu holds all the user presets you have created. You can organize its content into preset subfolders according to your needs—see below for more on this.

(**3**) Current preset folder: At the bottom of the Preset menu, you can see all presets located in the same folder as the preset currently loaded. This allows you to quickly switch between presets of the same folder without having to navigate each time through the same submenu(s).

Additionally, in the menu a small dot is displayed in front of the loaded preset and its parent subfolder(s), if any.

Organizing Your Own Presets

The Preset menu displays your various user presets in the way they are organized in your file system: The menu directly mirrors the subfolder structure of your **user preset folder**. To modify the way the Preset menu displays your own presets, do the following:

1.   Click the drop-down arrow to the very left of the Menu bar to open the File menu.

2.   Select *Show User preset folder* from the File menu:
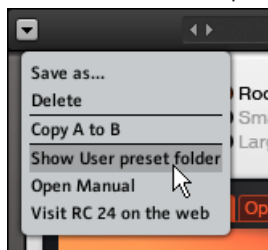
The folder containing your user presets opens in the Explorer (Windows) / Finder (Mac OS).

3.   In this folder, create, rename, and move subfolders, and move preset files (extension ".nifx") across subfolders according to your needs—you could for example move into a subfolder the various presets used in a song or on the same track/instrument.
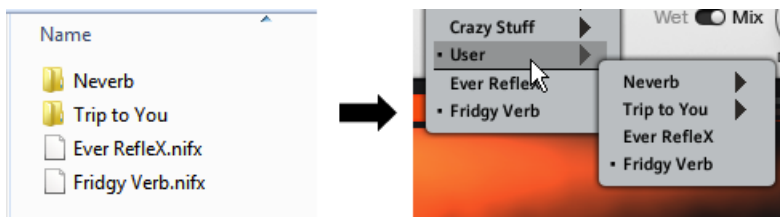
4.   Close the RC 24 window and open it again so that the plug-in can mirror your changes.

→   The Preset menu now mirrors the new preset organization.

The User submenu of the Preset menu mirrors the file structure in your file system.

> 💡 You can create nested subfolders within your user preset folder: These will appear as nested submenus in the Preset menu!

> 💡 You can also rename and delete the preset files in your file system: The changes will be mirrored in the Preset menu.

3.1.2   Saving and Deleting Presets

If you change any setting in the loaded preset, an asterisk appears in front of the preset name in the Menu bar to indicate that the preset has been modified:
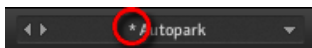
The asterisk indicates that the settings have been modified.

To save the current settings as a preset:

1. Click the drop-down arrow to the very left of the Menu bar to open the File menu.
2. Select *Save as…* from the File menu:
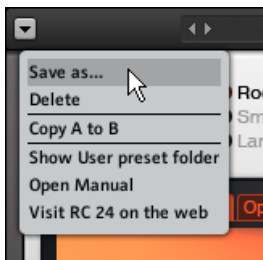
3. Enter the name of your preset in the field under the label New Preset Name:
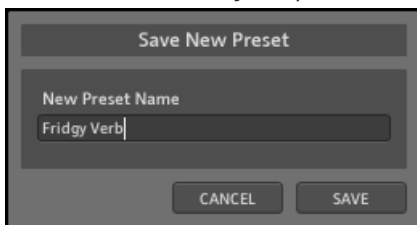
4. Click SAVE to finish the process and close the dialog box.

→   The current settings are saved as a user preset file on your hard disk. The preset will appear in the *User* submenu of the Preset menu.

> ⚠ In Demo mode you can save your own presets but you cannot recall them! You will be able to load user presets once you have activated your effect (see section ↑2.2, Activating RC 24 for more on this).

Deleting a User Preset

If you wish to remove a user preset you no longer want, you can delete it by loading it and selecting *Delete* from the File menu.

Alternatively, you can delete the preset file (extension ".nifx") from the Explorer (Windows) or in the Finder (Mac OS). After restarting the RC 24 plug-in, the list in the Preset menu will be updated accordingly.

You cannot delete factory presets.

3.1.3 A/B Comparisons

RC 24 offers an A/B comparison system to help you fine-tune your settings.

Basically, this feature gives you two slots into which you can enter different parameter settings. You can then quickly switch between the two slots to quickly compare the settings and use whichever sounds better.

By default, you edit the parameters of slot A. To **switch to slot B**:

► Click on the **A/B** switch located beside the preset menu.

→ You will now be editing and listening to the parameters of slot B, until you click on the switch again.

To **copy the settings of slot A to slot B**:

► Go to the File menu on the left side of the menu bar and select *Copy A to B* from the list. You can also copy from B to A when editing the parameters of slot B.

3.1.4 Other functions

The File menu also offers the following options:

- *Open Manual*: opens this PDF document for reference.
- *Visit RC 24 on the web*: opens your default web browser and takes you to the RC 24 page on the Native Instruments website.

3.2 Global Parameters

The upper part of the RC 24 interface contains a few global parameters.

The upper part of the user interface.

(**1**) Reverb selector: Selects from three different reverb algorithms, each of them emulating a different type of reverberating room. The Reverb selector is your first stop when searching for a particular reverb sound since it defines the overall type (size and characteristics) of the room to be emulated. Click the desired radio button or the label nearby to select the corresponding room type (the selected radio button lights up while the other two labels are grayed out). Available algorithms are: Room, Small Hall, and Large Hall. These algorithms closely emulate the corresponding programs of a classic hardware unit—including their distinctive (and meanwhile much appreciated) limitations and flaws!

(**2**) Wet/Mix switch: Selects whether the effect should output the reverberated signal only (switch set to Wet) or a mix of the reverberated signal and the original, unprocessed signal (switch set to Mix). Click the switch to change its setting. Setting the switch to Mix activates the Dry/Wet knob (**3**) next to it (see below).

> The Wet/Mix switch is the only control in the plug-in interface that is **not** saved with the preset. However, it will be saved with your project in your host software.

The Wet/Mix switch can be very useful according to your current effect setup:

- If you want to use RC 24 as an insert effect, set the Wet/Mix switch to Mix so that you can use the Dry/Wet knob (**3**) to adjust the amount of reverb applied to your input signal.

- Alternatively, if you want to use RC 24 as a send effect, you would set the Wet/Mix switch to Wet and adjust the amount of processed signal using the level control(s) on your send bus.

(**3**) Dry/Wet knob: Adjusts the balance between the original, unprocessed ("dry") signal, and the processed ("wet") signal—i.e., the signal onto which the reverb was applied. The Dry/Wet knob is enabled only if the Wet/Mix switch (**2**) is set to Mix (if this switch is set to Wet, only the wet signal is output anyway). At full left (Dry), you hear only the original signal. At full right (Wet), you hear only the processed, reverberated signal.

3.3   Using the Display

The middle part of the RC 24 interface holds a powerful, yet intuitive, multi-purpose display. This tool can be used both to visually monitor how the reverb affects the signal, and to further shape the effect. The display provides two pages:

- The Spectrum page displays a graphic representation of how the reverb affects the input signal. Optionally, you can superimpose a live representation of the input signal being processed by the reverb—see the description of the Options page below.

- The Options page provides a few more parameters affecting the display and the reverb effect.

Either page can be enabled by clicking the corresponding tab at the top of the display, as described below.

3.3.1   Common Controls

At the top of the display, you always find the same three elements: the Spectrum and Options tabs, and the Level meters. The other elements in the display depend on the selected page.

The three controls in the top row of the display are always visible.

(**1**) Spectrum tab: Click this tab to show the Spectrum page.

(**2**) Options tab: Click this tab to show the Options page.

(**3**) Level meters: The Level meters allow you to monitor the input and output signal levels in real-time. Levels are indicated via horizontal segments, starting from the center of the meters: short segments that stay close to the center will indicate low levels, while longer segments extending horizontally on both sides will indicate higher levels.

- In the top row (with a little "I" for "Input" in the middle), the left and right white meters indicate the left and right input levels, respectively.

- In the bottom row (with a little "O" for "Output" in the middle), the left and right orange meters indicate the left and right output levels, respectively.

These Level meters allow you to keep levels under control; if necessary, adjust the input and/or output levels via their dedicated controls in the Options page (see ↑3.3.3, The Options Page).

On either side of the meters, an additional pair of clipping indicators lights up yellow in case of internal processing overload. If this tends to happen too often, decrease the Input Gain value in the Options page (see ↑3.3.3, The Options Page) or adjust the Bass and Mid faders until the clipping indicators stay continuously off.

3.3.2 The Spectrum Page

The Spectrum page of the display provides the following elements:

The display showing the Spectrum page.

(**4**) Spectrum display: Taking up the biggest part of the display, the spectrum display visually illustrates the current effect of the reverb on the incoming signal (see below for more details).

(**5**) Zoom controls: The little "-" and "+" buttons allow you to halve/double the time units on the x-axis, respectively.

The Spectrum Display in Detail

In the picture above, there is no signal sent to the reverb input. The graphic representation in the spectrum display (**4**) looks like a **cloud** that represents the sound of the reverb with the current parameter settings. This cloud can be described as follows:

▪ **Short version**: The reverb cloud shows the overall frequency response of the reverb over time to a short audio burst containing the full frequency spectrum.

▪ **Longer version**:

  ◦ The **x-axis** represents **reverb time** (in seconds), starting from 0 at left and increasing to the right of the display—in other terms, the x-axis represents the time it takes for the reverb signal to fade away.

  ◦ The **y-axis** represents **frequencies** (in hertz), starting from the low frequencies at the bottom and increasing to the top of the display.

◦ In the cloud, a **bright region** indicates that the reverberated signal will have a strong response to these particular frequencies at this point in time of the reverb tail—in other words, these frequencies will be more present in the reverberated signal around these particular times in the reverb tail.

Realtime Audio Analysis

When the reverb receives a signal at its input, the spectrum display is enhanced by a live representation of the sound travelling through the reverb cloud: The incoming signal is analyzed in real-time and the display shows how the signal is processed by the reverb as it runs from left to right through the reverb tail. The same color coding is used (the brighter, the louder).
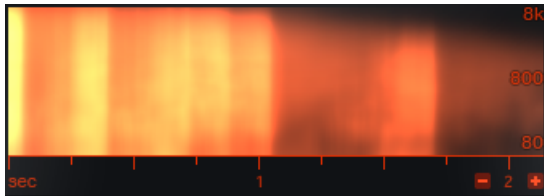
A series of kick and snare hits being processed by the reverb.

> You can disable the Realtime Audio Analysis in the Options page. See ↑3.3.3, The Options Page for more info.

Playing with the Reverb Parameters

Of course, the reverb characteristics strongly depend on the values of the reverb parameters. Accordingly, the display automatically mirrors any change made in the reverb parameters.

With some practice, you will see that the spectrum display is a very useful tool to experiment with the various parameters and quickly "see" how they affect the sound.
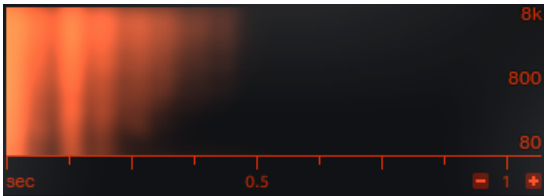
> You will find a description of every parameter available in the lower part of the RC 24 interface in section ↑3.4, Adjusting the Reverb Parameters.

Here are a few examples:
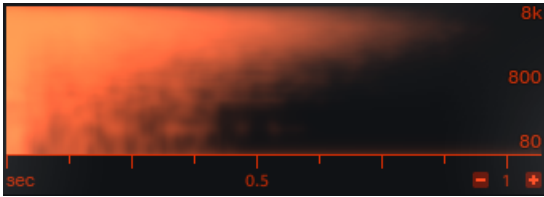
A rather short reverb with longer tails in the high frequencies.

A similar reverb, even shorter than above, with interesting waving, discrete, echo-like reflections (the vertical structures).
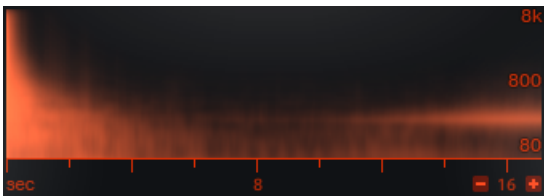
A thundering reverb with very long delay times in the low frequencies.
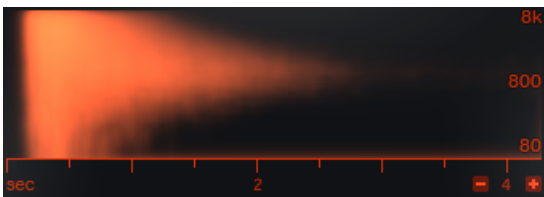
A reverb with persistent mid frequencies. Note the predelay on the left (black vertical stripe).

3.3.3   The Options Page

The Options page of the display provides the following controls:

The display showing the Options page.

(**6**) Input Gain and Output Gain knobs: Adjust the level of the signals at the input and the output of the reverb unit, respectively. Used in conjunction with the Level meters above, these knobs notably allow you to avoid any clipping from occurring (see ↑3.3.1, Common Controls for more on the Level meters).

(**7**) Reverb Color selector: This selector is available only if the Reverb selector is set to Small Hall or Large Hall at the top of the RC 24 interface (see ↑3.2, Global Parameters for more details). For each of these reverb types, the Reverb Color selector allows you to choose between two variants of the algorithm. Click Dark to get a gloomier, somewhat muffled effect, or click Bright to obtain a sparkling, more singing reverb.

(**8**) Quantization Noise button: Enables sound artifacts that are created as a side effect of the lower bit resolution of classic hardware devices for a more authentic vintage sound.

> The state of the Quantization Noise button is **not** saved with the preset. However, it will be saved with your project in your host software.

(**9**) Realtime Audio Analysis button: If you disable the Realtime Audio Analysis button, the display in the Spectrum page only shows the static cloud of the reverb (i.e. without live input). Disabling the Realtime Audio Analysis can be useful to save CPU power, for example if you have many plug-in instances running in your host. See ↑3.3.2, The Spectrum Page for more information.

> The state of the Realtime Audio Analysis button is **not** saved with the preset. However, it will be saved with your project in your host software.

3.4   Adjusting the Reverb Parameters

In the bottom part of the RC 24 interface you can adjust each single parameter of the reverb effect. These parameters are arranged into two groups:

- Parameters in the left part define general characteristics of the reverb shape. These are mostly independent of the input signal's frequency content—in other terms, they affect the entire incoming signal.

- Parameters in the right part allow you to set distinct reverberating behaviors for various frequency bands of the signal to be processed.

The RC 24 plug-in honors a classic piece of hardware gear by taking over parts of its quite unusual set of parameters. For example, there is not one "reverb time" (also called "decay time") parameter for the reverb but two: the Bass and Mid faders define decay times for two distinct frequency bands, whose respective bandwidths can be adjusted via the Crossover knob below.

The reverb parameters: frequency-independent on the left (1–4), frequency-related on the right (5–8).

Frequency-independent Parameters

On the left side of the plug-in interface you find four controls (three faders and one knob).

(**1**) Predelay fader: Adjusts the initial delay between the original signal and the first reverberant sound. The possible values range from 24 to 152 milliseconds. At higher values this can also be used in many creative ways.

(**2**) Depth fader: Adjusts the apparent distance between the listening point and the source signal. The possible values range from 0 to 71. Increasing Depth creates a richer, fuller—but also less focused—reverb. High values of Depth emphasize the "running reverberation" (the reverberation occurring while the music is playing), whereas lower values bring out the attack of the sound.

(**3**) Modulation knob: Allows you to choose from four modes labeled Mode A–D. These modes subtly modulate the reverb tail in various ways. This can lead to somewhat "unstable" phases and pitches during the decaying phases while producing a warmer sound. Whatever mode is selected here, the intensity of the modulation is controlled via the Intensity fader (**4**). From the four modes, mode A has the smallest impact on the sound, while mode B, C, and D modify the sound increasingly (in that order). The resulting changes in the reverberant sound are especially noticeable on very long decaying phases.

(**4**) Intensity fader: Adjusts the intensity of the modulation as selected with the Modulation knob below. The possible values range from 1.00 to 3.00. At the minimal value, the modulation is rather subtle. Increasing the Intensity value accentuates the slight phase and pitch variations in the reverb tail.

Frequency-related Parameters

On the right side of the plug-in interface, another four controls (also three faders and one knob) let you adjust parameters related to specific frequency bands. Indeed, the input signal is dynamically split into two frequency bands (the low frequencies and high frequencies). Hence, you can apply different reverbs to each band, and further modify the frequency content of the processed signal.

(**5**) Bass fader: Adjusts the reverb time for the lower frequency band. The possible values range from 0.60 to 70.00 seconds. Lower values can be helpful for example to focus the reverb on higher frequencies while keeping the bottom clean. Higher values of Bass can create massive reverb effects, and even reach never-ending reverb sounds!

(**6**) Mid fader: Adjusts the reverb time for the higher frequency band. The possible values range from 0.60 to 70.00 seconds. Like Bass, higher values of Mid can lead to infinite reverb sounds! Of course, this is even more true when increasing both parameters simultaneously.

(**7**) Crossover knob: Adjusts the split frequency between the lower and higher frequency band. The possible values range from 100.0 to 10,900.0 hertz. Turn the knob *counterclockwise* (i.e. towards the Bass fader) to *increase* the split frequency, hence widening the frequency band controlled by the Bass fader. Inversely, turn the knob clockwise (i.e. towards the Mid fader) to make the Mid fader control a wider frequency band.

(**8**) HiCut fader: Adjusts the cutoff frequency of a low-pass filter that is applied to the processed signal to attenuate its higher frequencies. The possible values range from 100.0 to 10,900.0 hertz. Notably, cutting the high frequencies of the reverberant sound can make it sound more natural.

4   Credits

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