



RMV
Drum Synthesizer
Drum Sampler
Loop Slicer
Drum Librarian
6000 Drum Sounds
2600 MIDI grooves
1500 Loops

The LinPlug **RMV** Reference Manual

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Welcome

Thank-you for buying the LinPlug *RMV*.

The RMV combines analog-style percussion synthesis, a fully-featured percussion sampler, and a sophisticated Loop Editor/Player. The instrument combines all of the features found on the LinPlug RM IV with several new and innovative features that represent a substantial step forward.

The RMV contains forty-eight velocity-sensitive Pads, each which can be used to trigger any one of a range of high quality Audio Modules (a selection of percussion synthesis modules *and* a sophisticated percussion sampler module). Each Pad has its own processing path containing an AHDSTR-controlled pitch envelope, three LFOs, an AHDSTR-controlled multi-mode Filter and EQ, three Insert Effects (with nine Effect options) and a “Varizer”. Each Pad also contains two distortion processors (Distortion and BitCrusher). In addition to this, each Pad also features a twelve-by-twelve Modulation Matrix, thirty-two-voice polyphony (selectable per Pad), as well as separate Volume, Output, Tune, Pan, Choke, Mute and Solo controls.

The RMV introduces several new features including a sophisticated Loop Editor/Player, a Send Effects section, several “Librarians” and an “intelligent” MIDI Mapper. The Loop Editor/Player enables audio loops to be imported and then automatically “sliced” into separate segments. Slice points can be adjusted manually if required. Six separate Loop Editors/Players are available, each having its own dedicated processing path. The Send Effects section contains 3 separate Effects Racks, each containing 4 Effects Units. The first three Slots of each Effects Rack can be selected by the user, while the last Effects Slot contains an EQ. The four Librarians feature detailed search and management tools for Drum Kits, Pads, Loops and Grooves. Existing files can be imported and managed by the RMV Librarian. The “intelligent” MIDI Mapper ensures that MIDI files are played back correctly even when the Kit used to play them does not exactly match the contents of the MIDI file being played. The MIDI Mapper automatically ensures that the closest matching sound in the current Kit is used to play back the MIDI messages. For example, if a specific HiHat sound is not present in the current Kit, the Mapper selects the next-best HiHat sound from the current kit.

This guide describes all aspects of the RMV and is designed so that your use of this software is as efficient and as pleasurable as possible.

We feel that the RMV is exceptional because of its audio quality, its wide range of features and its sonic potential. We hope you get a lot of pleasure using the RMV and that it becomes an important part of your music-making.

Peter Linsener and the LinPlug Team, July 2008

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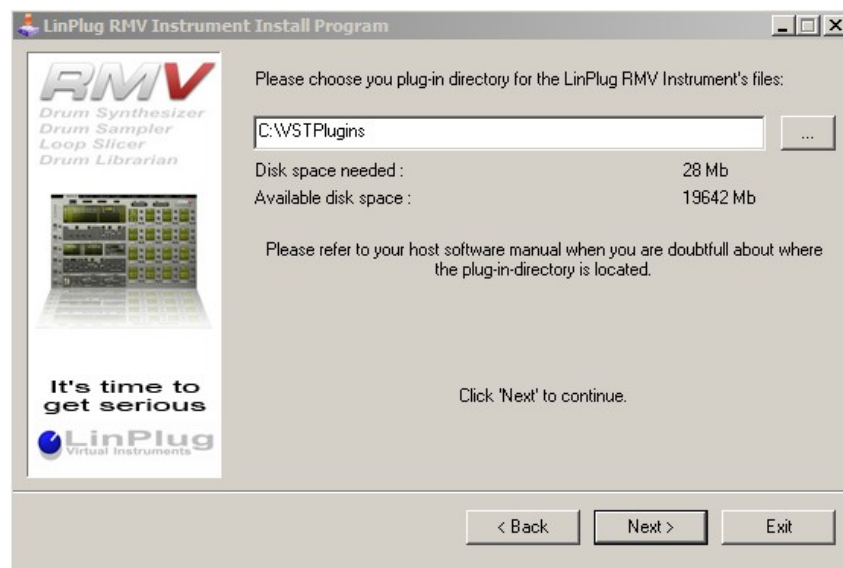
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Installation and Activation

Windows Installation

The **RMV** has been designed to run on computers using the Windows XP and Windows Vista operating systems. Double-click on file named RMV5xxInstaller.exe to begin the installation process. Once installation commences you will see the window shown below:



By clicking the three dots on the right of the installation path textbox you can choose the plug-in directory to which the instrument will be copied. Refer to your host software's manual if you are unsure about where the host software plug-in directory is located.

After selecting the desired directory click the "Start" button. In a similar manner you can later on choose a folder for the RMV's data, so you can place the library on a different drive or wherever it best suits your system.

The next time you start your host software the RMV will be listed in the VST Instrument list. Refer to your host software's manual if you are unsure about where VST Instruments are listed in the host software.

Once **RMV** is installed it must be registered using your personal serial number. This registration process is described in the Registration section of this manual.

If you have any questions regarding the installation of the RMV please contact us via our support form at www.linplug.com/support/support.htm

OS X Installation

The **RMV** has been designed to run on computers using the Mac OSX 10.3 to 10.5 operating systems.

RMV comes with its own Installer. After downloading RMV you will find a file named "RMV5xx.dmg" located in your web browser's download folder. Double-click this file to decompress and open the image, then double-click the installer program to begin the installation process.

The installer will guide you through the installation process. The next time you start your host software RMV will be listed in the AU and VST instrument list.

Once **RMV** is installed it must be registered using your personal serial number. This registration process is described in the Registration section of this manual.

If you have any questions regarding the installation of the RMV please contact us via our support form at www.linplug.com/support/support.htm

Features

- Forty-eight polyphonic Percussion Pads
- Six Audio Loop Modules (each with up to 64 Slices)
- Available for Mac OSX and PC.
- Up to thirty-two-voice polyphony
- Multiple instances of the instrument can be opened.
- Internal 32/64 bit processing.
- Each Percussion Pad and each Slice includes its own controls for Volume, Pan, Output Selection, Tune (+- 24 semitones in 10 cent intervals), Polyphony (mono...8, full), two independent Effects Send, and a MIDI activity display.
- Each Pad and Slice can belong to one of 10 Edit Groups (parameters for all Pads or Slices in a Group can be adjusted simultaneously)
- Each Pad additionally includes its own controls for loading and saving Pad files, Choke Group (12 groups are available including prev/next and self-mute), Trigger Key, Polyphony (mono...8, full), Mute and Solo.
- Each Pad and each Slice has access to a own 12x12 Modulation Matrix, three independent LFOs, two separate distortion effects processors (Distortion and BitCrusher), a multi-mode AHDSR-controlled filter, a four-band parametric equalizer, three insert effects racks each of which can be set to one of nine different effects units, and a "Varizer" for unbeaten realistic humanizing.
- Upon mouse over and editing the Pad and Slice displays automatically show parameter settings.
- Pads and Audio Loop Modules provide mono and true stereo sample playback and processing (all filters and effects are mono and stereo).
- A wide range of different Sampler and Synth Audio modules which include:
 - A percussion sampler module.
 - Two different kick drum modules.
 - Two different snare drum modules.
 - Open and closed hihat modules.
 - A Tom module.
 - A Clap module.
 - Two cymbal modules.
 - A percussion module.
 - A universal purpose drum synthesizer
 - Six independent Audio Loop Modules.
- Each Sampler module can hold up to 30 samples that can have individual volume settings and can be layered, velocity-switched or velocity-crossfaded, can be played forwards or backwards.
- Sampler also features a Pitch Envelope with two successive Pitch and Time phases and a AHDSR Envelope for controlling Amplitude.
- Sample Waveform Display shows the audio waveform as well as the Pitch Envelope, Amplitude Envelope and Filter Envelope.
- Samples can also be opened and edited in an external editor and then reloaded into the RMV right from RMV user interface.
- The Amplitude Envelope Release Time can be set to "endless" so that long samples

are not cut off before they have finished and can be set to respond to MIDI Note Off.

- Sample playback parameters can be edited using snap-to-zero-crossing point.
- Supported sample formats: WAV 8-32 bit, mono and stereo, any samplerate, AIF 8-24 bit, mono and stereo, any samplerate.
- Samples, Pads, Kits, Grooves and Loops can be browsed while the instrument is playing.
- The paths to samples, Pads, Kits, Grooves and Loops are saved when the file dialog is closed so that when the file dialog is re-opened, it opens at the same location.
- Dial response is switchable between linear and circular modes.
- Display can show either note numbers or note names.
- Adjustable Velocity response curve.
- Almost all instrument parameters are MIDI controllable
- MIDI Learn supporting conventional and Alpha Dial controller.
- Sample accurate timing.
- Instrument comes with a vast selection of partly multisampled acoustic and electronic kits and synthesized kits.
- Four specialized “Librarians” are now incorporated into the RMV. Each Librarian has sophisticated search capabilities and is used for the storage and retrieval of various types of data that the instrument supports. The Librarians can be used with Pads, Kits, Grooves and Loops.
- Samples can be searched using the Sample Browser with prelistening
- The Kit Librarian features a “Live” control that enables different Kits to be loaded using MIDI program change messages.
- Each of the instrument's 48 Pads has access to three Insert Effects Racks and three Send Effects Racks, each of which can be set to one of nine different Effects Units.
- Six independent Loop Players are available. Each Loop Player can be used to load and playback audio loops in WAV, AIF, REX and REX2 format. Samples can be automatically sliced.
- Slice start and end points, as well as automatic slicing sensitivity are user-definable.
- The output of the Pads and Loops can be mixed using the instrument's Master section.
- Note Selects Pad (NSP). When a note is received via MIDI the instrument switches to the Pad to which the note is set. This means that you always edit the Pad that has just been triggered.
- An “intelligent” MIDI Mapper ensures that MIDI files are played back correctly even when the Kit used to play them does not exactly match the contents of the MIDI file. The Mapper ensures that the closest matching sound in the current Kit is used to play back the MIDI messages. For example, if a specific HiHat sound is not in the current Kit, the Mapper selects the next-best HiHat sound from the kit.
- Map 35 to 84 maps MIDI note number 35, which is outside the range of most MIDI keyboards to MIDI note number 84.
- Mouse-wheel support (on PC).

What's New in the RMV

- The RMV's user interface has been completely redesigned. The instrument now features 48 Pads displayed on three 4x4 panels. This means that the user interfaces now matches hardware drum machines more closely. In addition to this, there are six Loop Panels, a Send Effects section and a Master section. The Rear Panel has been moved to the Setup Panel.
- A dedicated, universal drum synthesizer has been added to the RMV's Audio Modules. The new drum synthesizer features an oscillator with a wide frequency range, multiple source waveforms, a noise oscillator with a multimode filter, and a wide range of modulation possibilities. The drum synthesizer is simple, versatile and sounds amazing! We're confident that you won't need any other drum synthesizer. Six independent Loop Players are available. Each Loop Player can be used to load and playback audio loops in REX format. In addition to this, audio samples can be loaded and manually or automatically sliced. Slice start and end points, as well as slice sensitivity are user-definable. Slices can be opened and edited in an external editor and then reloaded into the RMV. All slice editing is non-destructive. Each slice can be individually processed by various envelopes, LFOs, a Filter, a complete Modulation Matrix, and can be processed using Insert and Send effects. Multiple Slices can be edited simultaneously using Edit Groups.
- Each of the instrument's 48 Pads has access to three Insert Effects Racks, each of which can be set to one of nine different Effects Units. The available effects include Delays, Reverbs, WahWah, Distortion and Filter, Equalizer, Compressors, Flanger and Phaser.
- Each of the instrument's 48 Pads has access to three Send Effects Racks, each of which contains four Effects Slots that can be set to one of nine different Effects Units. The available effects include Delays, Reverbs, WahWah, Distortion and Filter, Equalizer, Compressors, Flanger and Phaser.
- Each of the instrument's 48 Pads has access to three individual LFOs.
- The Modulation matrix has been extended so that it now has 12 slots. It also contains several new modulation possibilities.
- A key feature of the RMV is the addition of several "Librarians" that are used for the storage and retrieval of various types of data that can be used with the instrument. Four Librarians are available. These are for Pads, Kits, Grooves and Loops. Each Librarian includes sophisticated search capabilities.
- Samples can be searched using the Sample Browser.
- The Kit Librarian features a "Live" control that enables different Kits to be loaded using MIDI program change messages.
- The RMV's Master section is used to mix the output of the Pads and Loops.
- The maximum size of an RMV Kit has been increased to 48 Pads. The 48 Pads are arranged into 3 groups of 16 so as to match current hardware controllers. Because the 48 Pads are arranged into 3 groups of 16 it also means that there won't be a large number of unused Pads when working with small Kits.
- An "intelligent" MIDI Mapper ensures that MIDI files are played back correctly even when the Kit used to play them does not exactly match the contents of the MIDI file. The Mapper ensures that the closest matching sound in the current Kit is used to

play back the MIDI messages. For example, if a specific HiHat sound is not in the current Kit, the Mapper selects the next-best HiHat sound from the kit.

- The RMV comes with the complete library of Drum Kits and single Hits found in the RM IV. In addition to this, several new Kits and a large selection of up-to-date and exciting Loops have been added. The new Kits and Loops have been produced exclusively for the RMV by some of the world's best sound designers.
- Note Selects Pad (NSP). When a note is received via MIDI, the instrument automatically switches to the Pad to which the note is set. This makes editing Kits or Loops much faster.
- A range of improvements have been made to the RMV's internal audio engine. These include:
 - Voice Limit per Hit
 - Fixed position per Pad. This ensures that a Pad always has the same pan position, independent of the Kit or Kit type that is currently loaded. This means that a sound's pan position remains constant whether it's part of an RM IV Kit, an RMV Kit, or any of the supported import formats. Sounds are panned so that they maintain a 1:1 match with your hardware controller (this feature supports any Akai MPD or M-Audio Trigger controller).
 - Parameter Readout upon mouse-over
 - Adjustable Envelope shape
 - Many improvements in the dedicated drum synth modules (Clap, Kick, Snare, etc.)
 - Modulation in the Matrix can now be "one-shot" or continuous. In the case of "one-shot" modulation, a modulator's current value is captured as a "snapshot" when a sound is triggered. Alternatively, a modulator's value can be used to continuously modulate a sound.
 - Envelopes can now be used in Normal Mode, One-Shot Mode or Loop Mode.
- Map 35 to 84. General MIDI defines two kick drums (at note number 35 and 36). This can be inconvenient as many MIDI keyboards end at note number 36. Map 35 to 84 makes it possible to trigger the sound at note number 35 using note number 84 (C5) which is found on most MIDI keyboards.

Overview

The **RMV** is a 64-note-polyphonic VST percussion synthesizer and sampler, Audio Loop Player and Slicer, MIDI Groove Player and Drum Librarian. The instrument is designed specifically for creating and playing synthetic percussion sounds, as well as playing sampled percussion sounds. The instrument can also be used for playing loops and non-percussion sounds.

The synthesis algorithms used in the RMV have their roots in classic analogue drum machines like the Roland TR808 and TR909. However, while the RMV can replicate many of the sounds of these classic analogue drum machines, it also extends them into new sonic territory and so has far greater creative potential.

The RMV consists of 48 Pads, each of which uses one of the instrument's Audio Modules (a Pad can be set to play one of the percussion synthesis modules, the Sampler module, or one of the Loop modules) to generate sound. Each Pad has its own dedicated set of controls which include Display, Pan, Tune, Volume, Output, Choke Mode, Mute, Solo and Trigger. Each Pad also incorporates three LFOs, an AHDSR-controlled multi-mode filter, an EQ, an Insert Effects section, a Varizer, as well as a 12 x 12 Modulation Matrix. A Send Effects section and Master section are also present.

The RMV is divided into 13 sections: Audio Module, Pad, Filter, Filter Envelope, EQ, Insert Effects, Varizer, Send Effects, Modulation Matrix, Master, Kit, Groove, and Setup Panel. The instrument also includes several Librarians which are used for searching and storing instrument settings.

Audio signals are generated by any one of the RMV's Audio modules (one of the percussion synthesis modules, the Sampler module or a Loop module) which get trigger information from the synthesizer's MIDI input or from mouse-clicks on a Pad's Trigger button. The RMV receives MIDI on all Channels simultaneously (this can be changed on the instrument's Setup panel). The various parameters for the synthesis modules, which differ according to the individual algorithm, can be set in the RMV's Audio module section. The parameters for the Sampler module can also be set in this part of the RMV. The parameters for the six Loop modules are set on their respective panels.

The RMV contains twelve different synthesis modules. Eleven of the synthesis modules are designed to produce a specific type type of percussion sound such as kick drum sounds or snare drum sounds. The Drum Synth module is multi-purpose and can be used to produce a range of percussion sounds.

The RMV's Sampler module can be used to load up to 30 samples into an individual Pad. It can also be used to view the samples once they are loaded. The Sampler module is made up of three separate components: The Sample Display, The Pitch Envelope and the Amplitude Envelope. The Sample Display shows various parameters for the currently-

loaded sample/s. It can also be used to show the sample's envelope settings (Pitch, Amplitude and Filter). The Sampler module has two envelopes available for each Pad: Pitch and Amplitude. It's important to note that these envelopes apply to all of the samples currently loaded into the module.

The RMV's Loop module is used to load either samples or audio loops. In the case of samples, the file is automatically sliced into segments. Each segment of the sample/loop can then be triggered independently via the host software. Each Loop module has envelopes available for controlling the loop's pitch and amplitude.

The signal from each Audio Module is processed via the RMV's internal signal path. The signal is first sent to an LFO section containing three independent LFOs. From here the signal is sent to a multi-mode AHDSR-controlled filter and EQ. This section also incorporates BitCrusher and Distortion effects.

Following the Filter/EQ section is an Insert Effects section containing three Insert Effects Racks, each of which can be set to one of nine different Effects Units. A "Varizer" with controls for Style, Precision and Spectrum is also available as a separate effects unit.

Each Pad also has access to a Send Effects section. The Send Effects section is arranged into seven independent Sets of Effects Racks. One Set of Effects Racks is for use with the RMV's 48 Pads. The remaining six Sets of Effects Racks are for use with each of the instrument's six Loop Pads. Three separate Effects Racks are available in each Effects Set. Each Effects Rack contains three Effects Slots and an EQ. Each Effects Slot can be set to one of nine different Effects Units. For each Effects Set, the three Effects Racks are in parallel. The output of the three Effects Racks in each Set is mixed together before leaving the Send Effects section.

Finally, the signal from the Pads is mixed in the RMV's Master section before being output to the host software. Note that the output of the Send Effects Racks can be sent directly to the host software independently of the Master section.

The RMV's Modulation Matrix enables 12 user-defined modulation routings to be created. 26 modulation destinations are available for modulation by 23 modulation sources.

The audio outputs of the RMV are automatically connected to the input of the host software's mixer.

Finally, the RMV's Setup Panel enables various global parameters including Power Pan, Pad Velocity, Linear Dials, Note Names, as well as various MIDI and file search path parameters to be set by the user.

Hopefully, this chapter has provided a brief overview of the internal workings of the RMV. More detailed information can be found in the following chapters.

Controls

Users have the option of controlling all *RMV* dials in either a circular or a linear manner depending on the Dial Mode setting on the RMV's Setup Panel (see the "Setup Panel" section of this manual for more information).

Holding down the ALT key while clicking on a control changes the selected control's value a minimum step upwards (when clicking in the upper half of the control) or a minimum step downwards (when clicking in the lower half of the control). The value of the minimum step varies depending upon the control.

Holding down the CTRL key while clicking on a control sets the control to its default value (e.g. for Volume controls it sets the control's value to -3 dB). The value of the default setting varies depending upon the control.

Holding down the SHIFT key while changing a control's value enables finer control values to be set.

When controls are changed, the value of the control is displayed in the corresponding active Pad's Data Display. After a short period of time the Data Display reverts to showing the title of the respective Pad. This applies to all RMV pad controls except those found in the Audio Modules and the Modulation Matrix.

All controls can be automated and controlled using external MIDI messages. To use external devices it is necessary to use the RMV's ECS which is described in detail later in this manual.

PC users who have a mouse with a wheel can use the mouse-wheel to change RMV parameter values provided that the host software supports this (an example of a VST host program that supports the use of mouse-wheels is Cubase).

Optimizing CPU Usage

Software synthesizers are highly CPU-intensive. The real-time calculation of audio waveforms, filters, effects and modulators places a significant load on the host computer's CPU.

As such, the main limiting factor in software synthesizer performance is CPU processing power. Each additional oscillator, filter, effect and modulator that is included in an instrument adds to the CPU load. As a result, it's best to switch off any unused units within the RMV to conserve CPU resources. It may also be useful to use the send effects of your host's mixer instead of the RMV's effects as they are shared among all instruments.

Pads

The **RMV** contains 48 Pads. Forty-eight of these Pads are used for triggering the instrument's Audio Modules. These are arranged into three sets of 16 Pads and are accessible using the tab controls at the top of the instrument. The remaining six Pads are used to trigger audio loops and are located in the instrument's six Loop Modules.

Each of the Pads located in instrument's Pad section can be used to trigger a particular Audio Module (any one of the drum synthesis modules or the Sampler module) that can be selected by the user. Each Loop Module contains its own dedicated Pad that can only be used with that particular module.



The RMV's Pads are numbered in horizontal rows from the top of the instrument to the bottom. Only one Pad is active at a time. The currently active Pad is shown by an illuminated “E” indicator located in the top left corner of the Pad. The instrument displays the Audio Module for the currently active Pad, as well as the settings of its signal processing path. To change to a different Pad click on either the “E” button or any control in the desired Pad. A new Pad can also be selected using the Pad control located above the Audio module section. This control also displays the currently active Pad.



When a new Pad is selected, the RMV's display is updated so that it shows the Audio Module and the signal processing path of the currently active Pad.

The 48 Pads found in the instrument's 3 Pad sections can be used to trigger any one of the RMV's selection of Audio modules. The modules that use percussion synthesis algorithms to generate sound are described in more detail in the Percussion Synthesis Module section of this manual. One of the Audio modules uses sampling to playback sounds. This module is described in the Sample Module section of this guide.

An Audio module is assigned to a Pad using the Module control located directly above the Audio module section. To do this, first, select the desired Pad, and then select one of the RMV's Audio modules from the drop-down list. The selected module is now assigned to the Pad. Note that the number of the currently active Pad is shown in the Pad control which is located to the left of the Module control. It is also possible to change Pads by clicking and dragging on the Module control.

Each Pad in the RMV's 3 Pad sections is identical and consists of 19 controls. These are: E, M, L, G, Title, Pan, Trigger Note, Out(put), Trigger Button, Mute, Solo, Tune, Vol(ume), Snd1 (Effects Send 1), Snd2 (Effects Send 2), Choke, Voices, Pad and Module. These are described in detail below. The first fifteen controls are located on the Pad itself. The other four controls are located above the Audio Module section.

- E (Edit):** The E (Edit) Indicator (the small light at the top left of each Pad section) shows the Pad that is currently active. A different Pad can be selected by clicking any control in the desired Pad.
- M (Menu):** The M (Menu) control is used to open a popup menu containing 4 items related to the Pad's settings. These items are: Save, Copy, and Paste. The Save menu item enables the current Pad settings to be saved to a .PAD file. The file is saved to the RMV's internal Pad library. The Copy menu item enables the current Pad settings to be copied, while the Paste menu item enables the copied settings of another Pad to be applied to the current Pad.
- L (Load):** Clicking on the L (Load) button opens the Pad Librarian. The Pad Librarian enables Pads to be loaded and saved. See below for more information about the Pad Librarian.
- G (Group):** Each of the RMV's Pads can be assigned to a Group. Assigning a Pad to a Group enables all Pads in that Group to be edited using the controls of a single Pad. To set a Pad to a Group, click and drag on the G (Group) button until the desired Group is displayed. Ten Groups are available. Note that Group editing is relative which means that if the value of one control in a Group is changed, the other controls in the Group are changed by the same amount. They are not set to the same value as the first control.
Attention: to change all Pads in a Group, use the right mouse button. With the left mouse button you only change the current Pad, even when it has been assigned to a group!
- Title:** A Pad's settings can be named using the Title control which is located below the E, M, L and G controls. The name of the Pad is saved with the Kit that it is a part of.
- Data Display:** Each Pad has its own Data Display that shows the value of the parameter currently being edited. For example, if the value of the Amplitude Envelope's Attack Time is changed, the value is displayed in the current Pad's Data Display.
- Pan:** The Pan control is used to set the stereo position of the Pad's output and is located below the Pad's Data Display. The Pan control has a range of 1.00 L to 1.00 R. A setting of "C" places the output in the

centre of the stereo field. Note that if the Pad's output is set to a mono destination the Pan control has no effect.

- Trigger (Note):** The Trigger (Note) sets the MIDI note that triggers the Pad. This parameter only applies to the Percussion Synthesis modules. The Trigger (Note) for the Percussion Sampler module is set on a per-sample basis in the Sampler window on the RMV's Front Panel (see the Sampler section of this manual for more information about the RMV's Percussion Sampler module).
- Out(put):** The Out(put) control is used to set the output destination of the Pad. Available destinations depend upon the instrument's current audio output settings. Note that all stereo outputs are listed first, followed by all of the mono outputs.
- Trigger Button:** The Trigger button allows the Pad to be played using the mouse. To activate the Trigger button click the mouse on the button. If Pad Velocity is enabled on the RMV's Setup Panel (see below for more information about the RMV's Setup Panel), the Pad becomes velocity-sensitive. In this case, as the cursor is moved from left to right over the Trigger button, the trigger velocity increases. In other words, clicking on the left of the button triggers the Pad at lower velocities than clicking on the right of the Pad. The Activity Indicator shows that the Pad has been triggered. It stays lit until the Pad has finished playing.
- Mute:** The Mute button silences the output of the selected Pad.
- Solo:** The Solo button silences all Pads other than the ones that are selected. Note that more than one Pad can be soloed at a time. This is useful if you want to listen to particular combinations of Pads in isolation.
- Tune:** The Tune control sets the Pad's tuning. The available range is +/- 24 semitones in 10 cent steps.
- Vol(ume):** The Vol(ume) control is used to set the output volume of the Pad. The available range is -∞ to +6 dB. The default value is -3 dB.
- Snd1 Amount:** Each Pad can send its output to the Effects Racks in the RMV's Send Effects section (see the Send Effects section of this manual for more information about the RMV's Send Effects). The percentage of the signal sent to the Effects Rack selected using the Snd1 Destination control is set using the Snd1 Amount control.

Snd1 Destination: The Snd1 Destination control is used to set the destination of a Pad's first Effects Send. Three destinations, Snd1, Snd2 and Snd3 are available. Each corresponds to one of the RMV's three Send Effects Racks. Note that only one destination is active at a time.

Snd2 Amount: Each Pad can send its output to the Effects Racks in the RMV's Send Effects section (see the Send Effects section of this manual for more information about the RMV's Send Effects). The percentage of the signal sent to the Effects Rack selected using the Snd2 Destination control is set using the Snd2 Amount control.

Snd2 Destination: The Snd2 Destination control is used to set the destination of a Pad's second Effects Send. Three destinations, Snd1, Snd2 and Snd3 are available. Each corresponds to one of the RMV's three Send Effects Racks. Note that only one destination is active at a time.



Pad: The Pad control is located directly above the Audio module section. The Pad control is used to select a Pad for editing. To select a Pad

for editing, click and drag on the Pad control until the desired Pad number is shown.

- Module:** An Audio module is assigned to a Pad use the Module control located directly above the Audio module section. Thirteen different Audio modules are available. The Audio modules are described in the Audio module section of this manual. To set the Audio module for a particular Pad, first, select the desired Pad, and then select one of the RMV's Audio modules using the Module control. The Audio module is now assigned to the Pad.
- Choke:** The setting of the Choke control determines which of the RMV's various choke modes is used. The available choke modes are:
- "-" No Choke is applied to this Pad.
 - "me" Whenever this Pad is triggered, it chokes itself.
 - "prev" Whenever this Pad is triggered, the previous Pad is choked.
 - "nxt" Whenever this Pad is triggered, the next Pad is choked.
 - "1"... "9" The RMV has 9 user-definable choke groups. Whenever an Instrument in a particular choke group is triggered all other instruments in that choke group are muted. This is typically used to simulate the way that real drums generate sound. For example, an open hihat is "choked" or muted when the drummer closes it with the footpedal. As such, open and closed hihats often form a choke group.
- Voices:** The Voices setting determines the maximum number of voices that a Pad can play at a single time. This ranges from mono...2...8...full ("full" is equivalent to 64 voices). This control is especially useful for instruments that sound for a long time such as cymbals.

Pad Librarian

The **RMV** can load and save data in a variety of different formats. One of these formats is a Pad file. A Pad file contains all of the current settings of an individual Pad, however it is important to note that a Pad file does not contain sample data, even in the case where the Pad is set to use the Sampler module. The idea is that Pads are used to build up Kits, however when a Kit file is saved, internally, it only contains references to samples not to the pads it was initially made from. Although this may seem confusing the reason behind this is as follows: if Kits were constructed from Pads then any changes made to a Pad used by one Kit would also affect any other Kits that used the same Pad. This is avoided by having Kits and Pads stored separately in the RMV's internal library.

The RMV features several Librarians which can be used for searching and saving files. A search operation typically uses text or numeric information to search for files located in the RMV's internal library. A Librarian can also be used to import files from outside the RMV's internal library, as well as to save custom files to the internal library.

The RMV's Pad Librarian consists of three parts: the Information display, the Search display, and the Search Result Display.

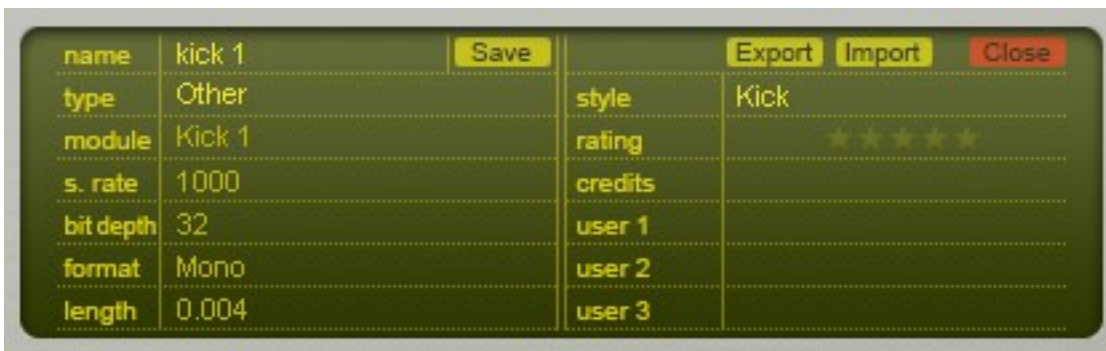


The Information display shows the attributes of the currently selected Pad. It also enables

Pads to be Saved, Imported and Exported. The Pad Search Input display is used to set the search parameters that are used when the RMV searches its internal Pad database. The Pad Search Results display shows the results of the previous Pad search. Further details of these three displays are presented below.

Pad Information Display

The Pad Information display shows the descriptive attributes of the currently loaded Pad. It also enables a Pad's descriptive attributes to be set by the user prior to the Pad being saved.



The Pad Information display operates in two ways. Firstly, when a Pad is loaded from either the internal library or from an external location, the Pad Information display shows the Pad's descriptive attributes (the actual attributes are listed below). Secondly, the Pad Information display enables a Pad's descriptive attributes to be set prior to the Pad being saved. Note that only some of the descriptive attributes can be edited by the user.

The following descriptive attributes can be saved in a Pad file:

Name: Displays the name of the current Pad file. This control is also used to enter the name of the Pad when a new Pad is created.

Type: Displays the type of sound in the current Pad file. The Types of Pad available are: Other, Kick, Snare, HiHat, OpenHat, Clap, Cymbal, Tom, Rimshot, Click, Glitch and Latin.

Module: Displays the name of the Audio Module used by the current Pad File. The Types of Audio Module available are: Not Set, Sampler, Kick 1, Kick 2, Snare 1, Snare 2, Tom, Open Hat, Closed Hat, Ride Cymb., Cymbal 2, Claps, Plop and Drum Synth.

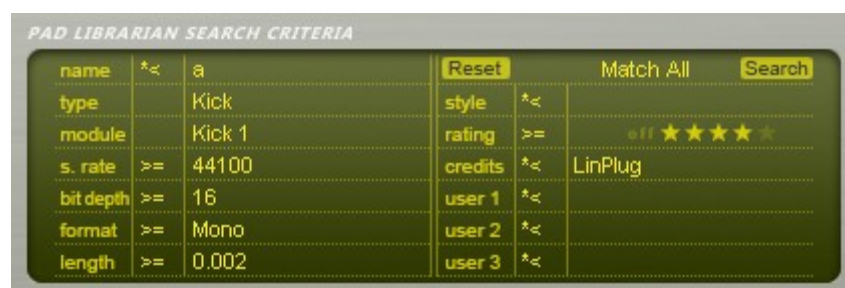
S.Rate: Displays the sample rate of the current Audio module's output.

Bit Depth: Displays the bit depth of the current Audio module's output.

- Format: Displays the number of channels of the current Audio module's output.
- Length: Displays the length of the Audio module's output (in seconds). In the case of a sample, the Length is the actual length of the sample. In the case of a synthesized signal, the Length represents the duration of the output signal.
- Style: Displays the style of sound in the current Pad file.
- Rating: A rating of the quality of the Pad.
- Credit: A reference to the creator of the Pad.
- User 1: A user-definable Pad attribute.
- User 2: A user-definable Pad attribute.
- User 3: A user-definable Pad attribute.
- Save: Saves the current Pad settings to the RMV's internal Pad library.
- Export: Exports the current Pad settings.
- Import: Imports a Pad file from an external location.
- Close: Closes the Pad Librarian.

Pad Search Input Display

The Pad Librarian's Search Input section is used to set the criteria used when searching the RMV's internal library for Pads.



Thirteen search keys are available. They are used in combination with mathematical

operators to determine the parameters of the search. The thirteen search keys can be divided into two types: text keys and numeric keys. The mathematical operators used with each search key depend upon the type of the search key. Text keys can be searched using the following operators: "=", "*<" and "<*>". Numeric search keys can be searching using the following operators: "<", ">", "=", "<=" and ">=". These operators are described below. In addition to this, the Pad Search Input section enables any or all of the selected criteria to be used in the search. The search is performed using the Search button. The search criteria can be set to the display's default values using the Reset button. Note that the Type and Module search keys can only be set to predetermined values.

Text Operators:

- =: Equal to. The "Equal To" operator finds all items in the database that are exactly the same as the search term.
- *<: Begins with. The "Begins With" operator finds all items in the database that begin with the search term.
- <*>: Contains. The "Contains" operator finds all items in the database that contain the search term.

Numeric Operators:

- <: Less Than. The "Less Than" operator finds all items in the database that are less than the search term.
- >: Greater Than. The "Greater Than" operator finds all items in the database that are greater than the search term.
- =: Equal To. The "Equal To" operator finds all items in the database that are equal to than the search term.
- <=: Less Than or Equal To. The "Less Than or Equal To" operator finds all items in the database that are less than or equal to the search term.
- >=: Greater Than or Equal To. The "Greater Than or Equal To" operator finds all items in the database that are greater than or equal to the search term.

Search Key:

- Name: The name, or portion of the name, of the Pad file to search for in the internal library. The search results depend upon the operator used to define the search (see above).

Type:	The type of Pad file to search for. The Types of Pad available are: Other, Kick, Snare, HiHat, OpenHat, Clap, Cymbal, Tom, Rimshot, Click, Glitch and Latin.
Module:	The name of the Audio Module used by the Pad File. The Types of Audio Module available are: Not Set, Sampler, Kick 1, Kick 2, Snare 1, Snare 2, Tom, Open Hat, Closed Hat, Ride Cymb., Cymbal 2, Claps, Plop and Drum Synth.
S.Rate:	The value of the sample rate used by the Audio module.
Bit Rate:	The value of the bit rate used by the Audio module.
Format:	The output format used by the Audio module (Stereo or Mono).
Length:	The duration of the signal played back by the Audio module. In the case of the Sampler module, this figure indicates the length of the longest audio sample. In the case of synthesis-based Audio modules this figure represents the duration of the output signal.
Style:	The style of sound in the current Pad file.
Rating:	The rating of the quality of the Pad.
Credit:	The reference to the creator of the Pad.
User 1:	The first user-definable Pad attribute.
User 2:	The second user-definable Pad attribute.
User 3:	The third user-definable Pad attribute.
General:	
Reset:	The Reset control restores the search parameters to their default values.
Match:	The match control enables the search to be defined so as to match any or all of the selected criteria.
Search:	The Search control starts the search of the internal Pad database.

Search Results Display

The Pad Librarian's Search Results Display shows the results of a search of the RMV's internal Pad library using the parameters supplied in the Pad Search Input section.



Prior to a Search, the Search Results section shows all the Pad files in the internal library.



After a Search, the Search Results section shows all the Pad files in the internal library that match the search criteria entered in the Search Input section.

The Search Results section displays a list of all Pads that meet the search criteria. The results are displayed as a list. The Search Results section has three controls. These are Play, Preview and Load.

Play: The Play button is located to the left of the Pad's name. The Play button is used to play back the Pad's Audio module output without any additional processing.

Preview: The Preview button is located to the right of the Pad's name. The Preview button is used to temporarily load and play the Pad. Previewing the Pad includes all of the processing that is applied to the Pad including filtering, effects processing and enveloping.

Load: The Load button loads the Pad file into the currently active Pad.

Note that if the Pad Librarian is closed without a new Pad being loaded the Pad is restored to its initial state.

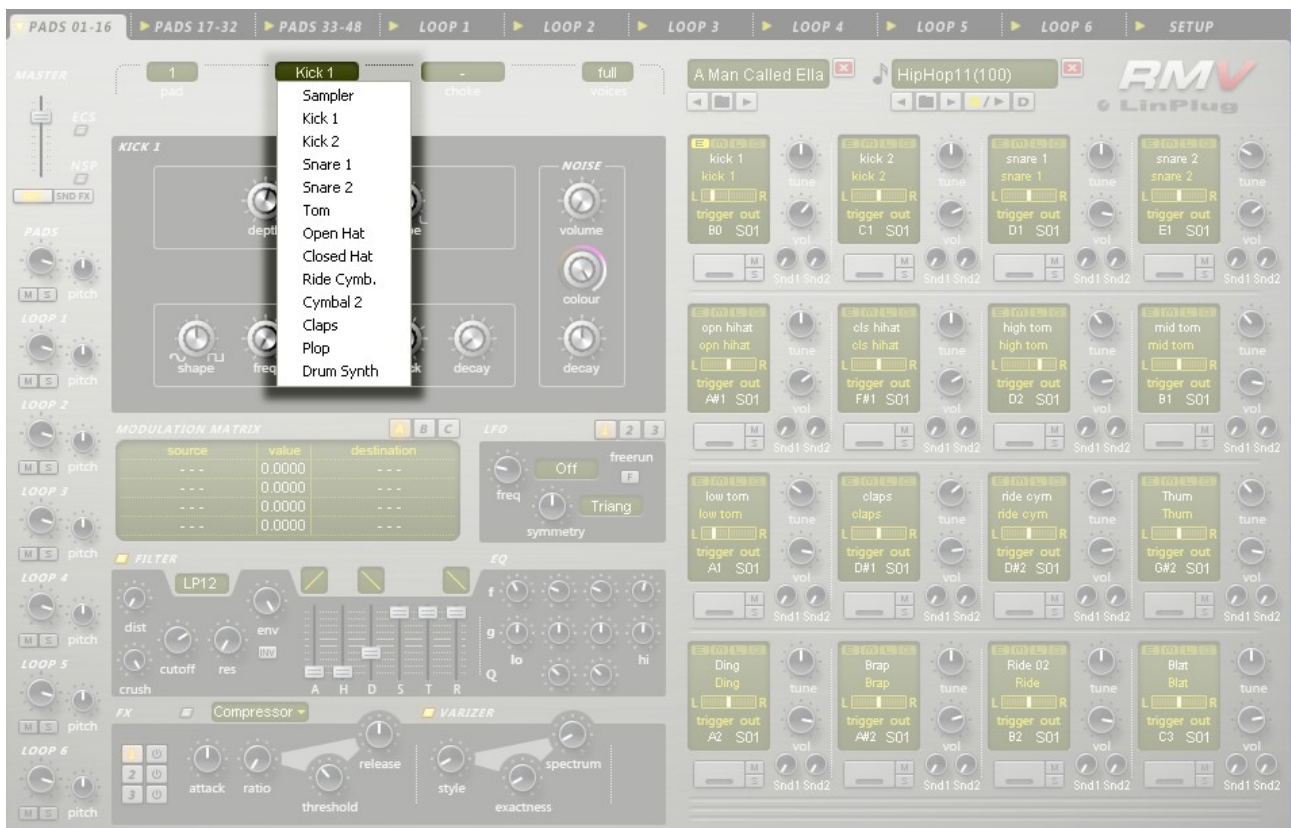
Audio Modules

The **RMV** produces sound using Audio modules. Three different types of Audio module are available: (1) Percussion Synthesis modules, (2) a Sampler module, and (3) a Loop module. Each type of module produces sound in a different way. This section describes the RMV's Percussion Synthesis modules and Sampler module. The Loop module is described in the Loop module section of this guide.

An Audio module functions as the sound source for a Pad, and is assigned to a Pad using the Module control located above the Audio module section. The Audio module used by the currently active Pad is shown in the Module display located above the RMV's Audio module section.



At the same time, the user interface for the Audio module is displayed in the RMV's Audio module section. Note that the Audio module is displayed for the currently active Pad, and changes as different Pads become active.



Twelve different Percussion Synthesis modules are available in the RMV. Each is designed to produce a particular type of percussion sound. The Sampler module is used to play back audio samples and so can be used to play any type of sound.

Percussion Synthesis Modules

Each Percussion Synthesis module uses a unique synthesis algorithm to generate sound, and so has its own unique set of controls. The various synthesis algorithms used in the RMV's Percussion Synthesis modules are described in detail below:

Kick 1

The Kick 1 Percussion Synthesis module is specifically designed for producing electronic kick drum sounds.



The Kick 1 Percussion Synthesis module contains the following controls:

Pitch Env(elope) Depth: The Pitch Env(elope) Depth control determines the extent to which the drum's pitch is controlled by the pitch envelope.

Pitch Env(elope) Decay (Time): The Pitch Env(elope) Decay (Time) control is used to set the rate at which the drum's pitch returns to the fundamental frequency.

Pitch Env(elope) Shape: The Pitch Env(elope) Shape control is used to set the shape of the drum's pitch envelope. This can range from linear to extreme exponential.

Osc(illator) Shape: The Osc(illator) Shape control is used to set the shape of the

oscillator waveform. When turned fully anti-clockwise the oscillator produces a sine wave, while when turned fully clockwise the oscillator produces a pulse wave.

- Osc(illator) Frequency:** The setting of the Osc(illator) Frequency control determines the drum's fundamental frequency. The frequency changes from low to high as the dial is turned in a clockwise direction. This control interacts with the Tune control on the associated Drum Pad.
- Osc(illator) Delay Time:** The Osc(illator) Delay control is used to set the delay time between the triggering of the oscillator and the time it starts playing. The delay time increases as the dial is turned in a clockwise direction.
- Osc(illator) Attack (Time):** The Osc(illator) Attack (Time) control is used to set the drum oscillator's attack time. Setting this control to a high value delays the onset of the drum waveform, creating damping or muffling effects.
- Osc(illator) Decay (Time):** The Osc(illator) Decay (Time) control determines how fast the sound decays after it is triggered. The decay time changes from short to long as the dial is turned in a clockwise direction.
- Noise Volume:** The Noise Volume control is used to set the amount of noise added to the drum sound.
- Noise Colour:** The Noise Colour control setting determines the frequency spectrum of the noise.
- Noise Decay (Time):** Noise Decay (Time) control is used to set the decay time of the noise component of the drum sound.

Kick 2

The Kick 2 Percussion Synthesis module is specifically designed for producing electronic kick drum sounds.



The Kick 2 Percussion Synthesis module contains the following controls:

Pitch Env(elope) Depth: The Pitch Env(elope) Depth control determines the extent to which the drum's pitch is controlled by the pitch envelope.

Pitch Env(elope) Decay (Time): The Pitch Env(elope) Decay (Time) control is used to set the time taken for the drum's pitch to return to the drum's fundamental frequency.

Pitch Env(elope) Shape: The Pitch Env(elope) Shape control is used to set the shape of the drum's pitch envelope. This can range from linear to extreme exponential.

Osc(illator) Shape: The Osc(illator) Shape control is used to set the shape of the oscillator waveform. When turned fully anti-clockwise the oscillator produces a sine wave, while when turned fully clockwise the oscillator produces a pulse wave.

Osc(illator) Phase: The Osc(illator) Phase control is used to determine the starting point in the oscillator waveform when it is triggered. In effect, this control functions as a delay with a range of one waveform cycle. The starting position of the oscillator's waveform is increased as the dial is turned in a clockwise direction.

- Osc(illator) Freq(ue)ncy: The setting of the Osc(illator) Frequency control determines the drum's fundamental frequency. The frequency changes from low to high as the dial is turned in a clockwise direction. Note that this control interacts with the Tune control on the associated Drum Pad.
- Osc(illator) Delay (Time): The Osc(illator) Delay (Time) control is used to set the delay time between the triggering of the oscillator and the time it starts playing. The delay time increases as the dial is turned in a clockwise direction.
- Osc(illator) Decay (Time): The Osc(illator) Decay (Time) control is used to determine the time taken for the sound to decay after it is triggered. The decay time changes from short to long as the dial is turned in a clockwise direction.
- Noise Volume: The Noise Volume control is used to adjust the amount of noise added to the drum sound. As the dial is turned in a clockwise direction more noise is added to the sound.

Snare 1

The Snare1 module combines an oscillator with a noise source.



The Snare 1 Percussion Synthesis module contains the following controls:

- Osc(illator) Shape:** The Osc(illator) Shape control is used to set the shape of the oscillator waveform. When turned fully anti-clockwise the oscillator produces a sine wave, while when turned fully clockwise the oscillator produces a pulse wave. In intermediate positions the oscillator produces a hybrid waveform.
- Osc(illator) Frequency:** The setting of the Osc(illator) Frequency control determines the drum's fundamental frequency. The frequency changes from low to high as the dial is turned in a clockwise direction. This control interacts with the Tune control on the associated Drum Pad.
- Osc(illator) Attack (Time):** The Osc(illator) Attack (Time) control is used to set the drum oscillator's attack time. Setting this control to a high value delays the onset of the drum waveform, creating damping or muffling effects.
- Osc(illator) Decay (Time):** The Osc(illator) Decay (Time) control determines how fast the sound decays after it is triggered. The decay time changes from short to long as the dial is turned in a clockwise direction.
- Osc(illator) Pitch Mod(ulation):** The Osc(illator) Pitch Mod(ulation) control is used to set the extent to which the drum's pitch is controlled by the oscillator's pitch envelope.

- Noise Colour:** The Noise Colour control setting determines the frequency spectrum of the noise generator.
- Noise Reso(nance):** The Noise Res(onance) control is used to set the amount of emphasis around the noise oscillator's cutoff frequency. Higher settings create a more pronounced peak in the signal while lower settings produce a flatter response.
- Noise Decay (Time):** The Noise Decay (Time) control sets the decay time of the noise component of the drum sound.
- Noise Env(elope) Mod(ulation):** The Noise Env(elope) Mod(ulation) control is used to set the degree to which the noise oscillator's filter cutoff frequency is modulated by the oscillator's amplitude envelope.
- Noise HPF (High Pass Filter):** The Noise HPF (High Pass Filter) control is used to set the cutoff frequency of a high pass filter that processes the output of the noise oscillator. Rotating the control in a clockwise direction increases the cutoff frequency of the filter.
- Mix:** The Mix control is used to set the relative amounts of the pitched oscillator and the noise oscillator in the output signal. Rotating the control in the anti-clockwise direction increases the proportion of pitched oscillator signal in the output, while rotating the control in the clockwise direction increases the proportion of noise signal in the output.

Snare 2

The Snare 2 module combines a noise oscillator and a pitched oscillator that incorporates a specially designed "Knarks" control. The "Knarks" control adds a unique sound (reminiscent of the word "knarks") to the module's output. The "Knarks" effect is created by crossmodulating the noise source and the oscillator.



The Snare 2 Percussion Synthesis module contains the following controls:

The Mix control is used to adjust the mix of the "Knarks" oscillator and the Noise Oscillator. The Decay control is used to determine the rate at which the mixed sound decays.

Noise Colour: The Noise Colour control setting determines the frequency spectrum of the noise oscillator's output. As it is crossmodulated with the pitched oscillator, the setting of this control directly affects the sound of the output.

Noise (Res)onance: The Noise Res(onance) control is used to set the amount of emphasis around the noise oscillator's cutoff frequency. Higher settings create a more pronounced peak in the signal while lower settings produce a flatter response.

Noise Decay: The Noise Decay (Time) control determines how fast the noise oscillator output decays after it is triggered. The decay time increases as the dial is turned in a clockwise direction.

Noise Env(elope) Mod(ulation): The Noise Env(elope) Mod(ulation) control is used to set the degree to which the noise oscillator's filter cutoff frequency is modulated by the oscillator's amplitude envelope.

- Osc(illator) Freq(ueency):** The setting of the Osc(illator) Freq(ueency) control determines the drum's fundamental frequency. The frequency changes from low to high as the control is turned in a clockwise direction. This control interacts with the Tune control on the associated Pad.
- Osc(illator) Delay (Time):** The Osc(illator) Delay (Time) control is used to set the delay time between the triggering of the oscillator and the time it starts playing. The delay time increases as the dial is turned in a clockwise direction.
- Osc(illator) Decay (Time):** The Osc(illator) Decay (Time) control determines how fast the pitched oscillator output decays after it is triggered. The decay time increases as the dial is turned in a clockwise direction.
- Osc(illator) Knarks:** The Osc(illator) "Knarks" control varies the amount of crossmodulation between the pitched and noise oscillators.
- Mix:** The Mix control is used to set the relative amounts of the pitched oscillator and the noise oscillator in the output signal. Rotating the control in the anti-clockwise direction increases the proportion of pitched oscillator signal in the output, while rotating the control in the clockwise direction increases the proportion of noise signal in the output.

Tom

The Tom module employs a pitched oscillator and a noise oscillator to create the characteristic sound of a tom.



The Tom Percussion Synthesis module contains the following controls:

Pitch Env(elope) Depth: The Pitch Env(elope) Depth control determines the extent to which the drum's pitch is controlled by the pitch envelope.

Pitch Env(elope) Shape: The Pitch Env(elope) Shape control is used to set the shape of the drum's pitch envelope. This can range from linear to extreme exponential.

Osc(illator) Shape: The Osc(illator) Shape control is used to set the shape of the oscillator waveform. When turned fully anti-clockwise the oscillator produces a sine wave, while when turned fully clockwise the oscillator produces a pulse wave.

Osc(illator) Freq(ueency): The setting of the Osc(illator) Freq(ueency) control determines the drum's fundamental frequency. The frequency changes from low to high as the dial is turned in a clockwise direction. This control interacts with the Tune control on the associated Pad.

Osc(illator) Attack (Time): The Osc(illator) Attack (Time) control is used to set the drum oscillator's attack time. Setting this control to a high value delays the onset of the drum waveform, creating damping or muffling effects.

Osc(illator) Decay (Time): The Osc(illator) Decay (Time) control determines how fast the sound decays after it is triggered. The decay time increases as the dial is turned in a clockwise direction.

Noise Volume: The Noise Volume control is used to determine how much noise is mixed with the output of the pitched oscillator.

Open Hat/Closed Hat

The Open/Closed (Hi)hat module employs a noise oscillator and a filter to create open and closed hihat sounds.



Note that a similar algorithm is used for both the Open and Closed (Hi) hat sounds however the parameter ranges for each control are different in each case. The Open/Closed Hat Percussion Synthesis module contains the following controls:

Osc(illator) Colour: The Osc(illator) Colour control is used to set the frequency spectrum of the oscillator's output.

Osc(illator) Decay (Time): The Osc(illator) Decay (Time) control determines how fast the oscillator decays after it is triggered. The decay time increases as the control is turned in a clockwise direction.

Osc(illator) (Decay) Shape: The Osc(illator) (Decay) Shape control is used to set the shape of the oscillator's decay envelope. The shape of the envelope segment can range from extreme negative exponential to extreme positive exponential. At the midpoint the decay envelope shape is linear.

Filter Reso(nance): The Filter Res(onance) control is used to set the amount of filter resonance. This in turn, emphasizes a specific frequency depending on the setting of the Osc(illator) Colour control and the Filter Env(elope) Depth control.

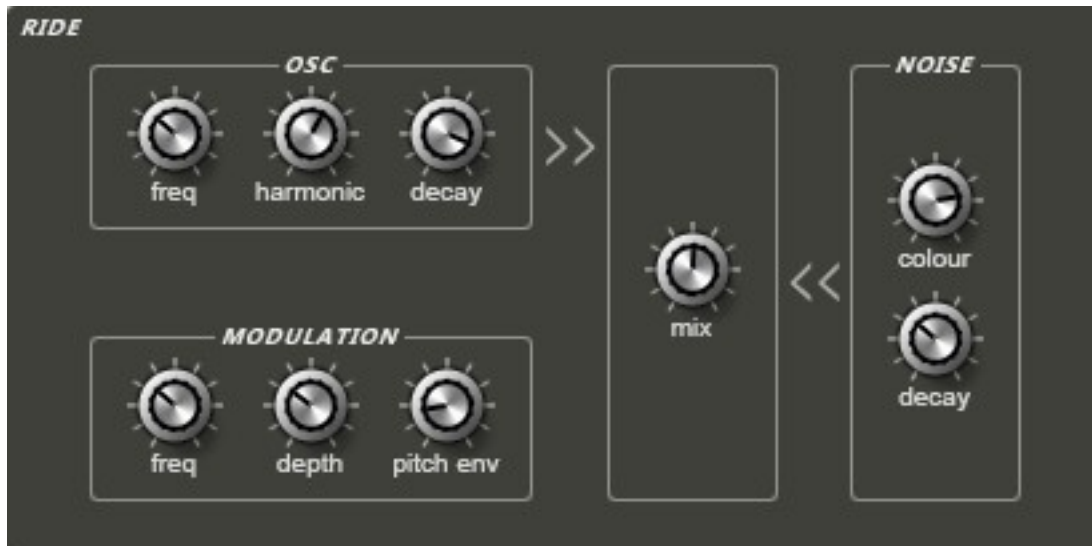
Filter Env(elope) Depth: The setting of the Filter Env(elope) Depth control determines

the degree to which the filter is closed while the sound decays (when turned fully clockwise) or open while the sound decays (when turned fully anti-clockwise).

Filter Thin: The Filter Thin control is used to make the hihats sound thinner and sharper, reducing the "body" of their sound.

Ride Cymb. (Cymbal)

The Ride Cymb. (Cymbal) module combines a pitched oscillator and a noise oscillator.



The Ride Cymb. (Cymbal) Percussion Synthesis module contains the following controls:

Osc(illator) Freq(ueency): The setting of the Osc(illator) Freq(ueency) control determines the sound's fundamental frequency. The frequency changes from low to high as the dial is turned in a clockwise direction. Note that this control interacts with the Tune control on the associated Pad.

Osc(illator) Harmonic: The Osc(illator) Harmonic control is used to set the harmonic content of the oscillator. In general, as the control is turned clockwise, the sound becomes brighter.

Osc(illator) Decay (Time): The Oscillator Decay (Time) control determines the rate at which the pitched part of the cymbal sound decays. Turning the control in a clockwise direction increases the pitched oscillator decay time.

Noise Colour: The Noise Colour control is used to set the frequency spectrum of the noise oscillator.

Noise Decay (Time): The Noise Decay (Time) control is used to set the rate at which the noise part of the cymbal sound decays. Turning the control in a clockwise direction increases the noise oscillator decay time.

Modulation Freq(ueency): The Modulation Freq(ueency) control is used to set the

frequency at which the cymbal oscillator's pitch and amplitude envelopes are modulated. This parameter adds life and movement to the cymbal's sound, however the effect is intentionally quite subtle.

Modulation Depth: The Modulation Depth control sets the depth to which the cymbal oscillator's pitch and amplitude envelopes are modulated. This parameter adds life and movement to the cymbal's sound, however the effect is intentionally quite subtle.

Modulation Pitch Env(elope): The Modulation Pitch Env(elope) control is used to add a decay stage to the oscillator's pitch envelope.

Mix: The Mix control adjusts the mix of pitched sound and noise in the module's output. Rotating the control in the anti-clockwise direction increases the proportion of pitched oscillator signal in the output, while rotating the control in the clockwise direction increases the proportion of noise signal in the output.

Cymbal 2

The Cymbal 2 module employs a noise oscillator to produce the sound of a crash cymbal.

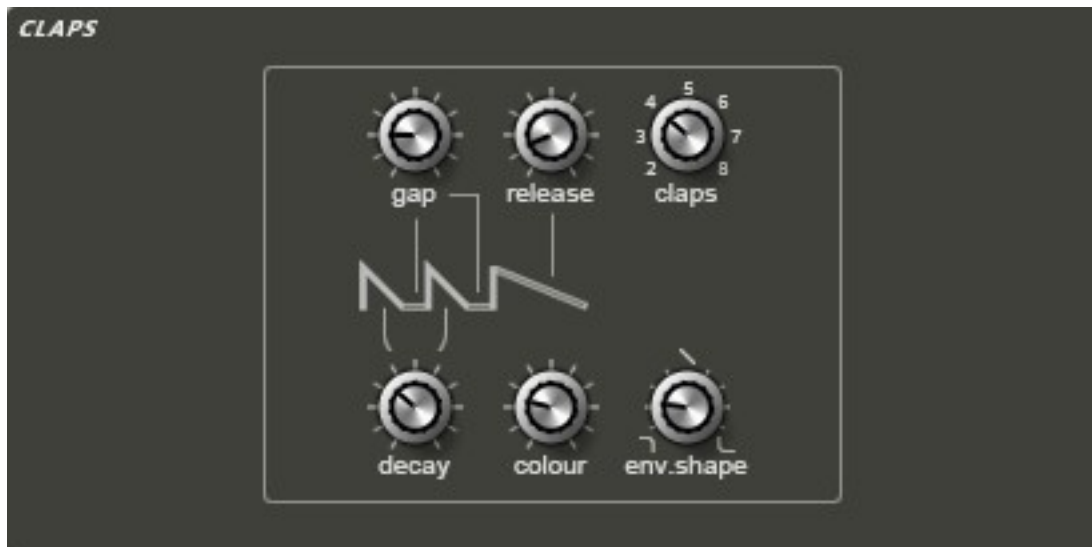


The Cymbal 2 Percussion Synthesis module contains the following controls:

- Timbre Density:** The setting of the Timbre Density control determines the richness of the cymbal's sound. Rotating this control in a clockwise direction increases the number of oscillators involved in sound production from three to fifteen. As a result, higher settings produce a richer sound.
- Timbre Tone:** The Timbre Tone control is used to control the cymbal's overall timbre. This can range from dark to light depending upon the setting.
- Timbre Decay:** The Timbre Decay control is used to determine how the cymbal's timbre changes as its signal decays. As the dial is turned clockwise, the cymbal's timbre changes more slowly as the signal decays.
- Env(elope) Release (Time):** The Env(elope) Release (Time) control is used to set the cymbal's amplitude envelope release time. As the control is turned in a clockwise direction, the release time increases.
- Env(elope) Shape:** The Env(elope) Shape control is used to set the shape of the decay portion of the instrument's amplitude envelope. When the control is turned in an anti-clockwise direction the envelope shape becomes linear. As the control is turned in a clockwise direction, the envelope shape becomes exponential.

Claps

The Claps module uses short noise bursts and a longer noise tail to create a characteristic electronic "clap" sound.



The Claps module contains the following controls:

- Gap:** The Gap control is used to set the length of time between the noise bursts that produce the "clap" sound. Rotating the control in a clockwise direction increases the length of time between the noise bursts.
- Release:** The Release control is used to determine the duration of the release portion of the clap signal's noise tail. Rotating the control in a clockwise direction increases the duration of the release portion of the clap's noise signal.
- Claps:** The Claps control is used to set the number of claps produced by the Clap module. Setting this to higher values increases the number of claps and thickens the sound.
- Decay:** The Decay control is used to set the rate at which the single noise bursts decay to silence. Rotating the control in a clockwise direction increases the decay time of each noise burst.
- Colour:** The Colour control is used to set the frequency spectrum of the clap noise oscillator. Rotating the control in a clockwise direction increases the spectral content of the clap noise oscillator.

Env(elope) Shape: The Envelope Shape control is used to set the shape of a single clap's decay and release envelope segments. When the control is turned in an anti-clockwise direction the shape of the envelope segments becomes linear. As the control is turned in a clockwise direction, the shape of the envelope segments becomes exponential.

Plop

The Plop module uses Frequency Modulation to create a unique "plop" sound.



The Plop module contains the following controls:

- Attack Range:** The Attack Range control is used to set the frequency range of the attack portion of the sound. The sound's Attack Range is adjusted relative to the Body Range setting.
- Attack Decay:** The Attack Decay control is used to set the rate at which the attack part of the plop sound decays. Rotating the control in a clockwise direction increases the decay time of the plop sound's attack.
- Attack Depth:** The Attack Depth control is used to set the intensity of the attack portion of the plop sound. This can be used to make the sound more aggressive. Rotating the control in a clockwise direction increases the effect and makes the sound "harder".
- Attack Drive:** The Attack Drive control is used to make the attack part of the sound harder and more aggressive. Rotating the control in a clockwise direction increases the effect and makes the sound "harder".
- Attack Velocity:** The Attack Velocity enables trigger velocity to control the intensity of the attack part of the sound. Rotating the control in a clockwise direction increases the effect and makes the module more responsive to the instrument's trigger velocity.

- Body Range: The Body Range control is used to set the range (frequency) of the body sound that follows the attack part of the module's sound. Rotating the control in a clockwise direction increases the frequency range of the body portion of the module's sound.
- Body Decay: The Body Decay control is used to set the rate at which the body sound decays to silence. Rotating the control in a clockwise direction increases the decay time of the body portion of the module's sound.

Drum Synth

The modules described above are designed to produce a specific type of percussion sound. Because of this they do not offer certain parameters, and the parameters that are available are limited to specific ranges. The Drum Synth module is unlike these modules as it has been designed as a “universal drum synthesizer”. This means that it has features not found in any of the other synthesis modules. The Drum Synth module is based on one conventional oscillator and one noise oscillator. Each oscillator can be delayed relative to the other, and can be modulated using an envelope and a fast LFO at the same time. The modulation controls are unusual in that they have extremely large depth and time ranges.



The Drum Synth module contains the following controls:

Oscillator Wave: The Oscillator Wave control is used to set the oscillator's waveform. Three waveforms are available: Sawtooth, Triangle and Sine.

Oscillator Freq(ueency): The Oscillator Freq(ueency) control is used to set the frequency of the oscillator. The available range is 20 Hz to 20000 Hz.

Oscillator Phase: The Oscillator Phase control is used to set the point in the waveform cycle at which the wave starts when the oscillator is triggered. The available range is 0 degrees to 360 degrees which represent one complete waveform cycle.

Oscillator Delay: The Oscillator Delay control is used to set the delay time between the triggering of the oscillator and the time it starts playing.

- Oscillator Decay:** The Oscillator Decay control is used to set the duration of the oscillator's decay envelope.
- Pitch Modulation Env(elope) Amt (Amount):** The Pitch Modulation Env(elope) Amt (Amount) control is used to set the degree to which the Drum Synth's pitch is modulated by the module's internal envelope. Turning the control in an anti-clockwise direction causes the modulation to start from below the pitch of the oscillator. Turning the control in a clockwise direction causes the modulation to start from above the pitch of the oscillator.
- Pitch Modulation Env(elope) Dec(ay):** The Pitch Modulation Env(elope) Dec(ay) control is used to set the time taken for the pitch of the Drum Synth's oscillator to move from its initial modulation value to the final oscillator value. The available range is 0.1 ms to 10 seconds.
- Pitch Modulation LFO Type:** The Pitch Modulation LFO Type control is used to select the waveform used by the Drum Synth's internal LFO. Four waveforms are available: sine, triangle, sawtooth, and sample and hold.
- Pitch Modulation LFO Mod(ulation) Amt (Amount):** The Pitch Modulation LFO Mod(ulation) Amt (Amount) control is used to set the degree to which the Drum Synth's internal LFO modulates the pitch of the Drum Synth's oscillator. The available range is +/- 8 octaves.
- Pitch Modulation LFO Mod(ulation) Freq (uency):** The Pitch Modulation LFO Mod(ulation) Freq (uency) control is used to set the degree to which the Drum Synth's internal LFO modulates the frequency of the Drum Synth's oscillator. The available range is 0.01 Hz to 4400 Hz.
- Noise Cut:** The Noise Cut(off) control is used to set the cutoff frequency of the Drum Synth's noise oscillators internal filter.
- Noise Reso(Resonance):** The Noise Reso(nance) control is used to set the amount of resonance present in the noise oscillator's internal filter.
- Noise Delay:** The Noise Delay control is used to set the delay time between the triggering of the noise oscillator and the start of it playing.
- Noise Decay:** The Noise Decay control is used to set the duration of the noise oscillator's decay envelope.
- Noise Attack:** The Noise Attack control is used to set the time taken for the noise oscillator to reach its full output value once it has been triggered.

Noise Dec(ay) Cur(ve): The Noise Dec(ay) Cur(ve) control is used to set the shape of the noise oscillator's decay envelope. Turning the control in an anti-clockwise direction makes the curve more concave which means that the envelope value decreases more rapidly at the start, while turning the control in a clockwise direction makes the control more convex which means that the envelope value decreases more slowly at the start.

Mix: The Drum Synth's Mix control is used to set the balance between the module's pitched oscillator and its noise oscillator. Turning the control in an anti-clockwise direction increases the proportion of the pitched oscillator in the output signal. Turning the control in a clockwise direction increases the proportion of the noise oscillator in the output signal. At the mid-point, the module's output is equally divided between the two oscillators.

Sampler Module

The RMV's Sampler module is used to load up to 30 Samples into an individual Pad, and also to edit the playback parameters of Samples once they are loaded. This module is made up of three separate components: The Sample Display, The Pitch Envelope and the Amplitude Envelope. Note that the Filter Envelope parameters are also displayed in the Sample module's Waveform view.



The RMV's Sample Display has two separate “views”. Table view displays a set of “Sample Slots”, while Waveform view displays the Sample's waveform as well as the parameters of the pitch, amplitude and filter envelopes that are applied to it. The RMV Sampler Module also has three envelopes available for each Pad. The controls for these envelopes are located below the Sample Display. The Pitch Envelope is located on the left, while the Amplitude Envelope is located on the right. The Pitch Envelope is used to set the Pad's various pitch parameters, while the Amplitude Envelope is used to set the Pad's amplitude parameters. It's important to note that these envelopes apply to all of the Samples currently loaded into the Pad. The Waveform Display also shows the current filter settings for the Module. The parameters of the Filter Envelope are set using the controls found in the RMV's Filter section.

Table View

The Table view consists of 30 "Sample Slots" divided into five groups of six slots into which samples can be loaded. The Sample Display shows various parameters for the currently-loaded Sample/s.

	sample		vel	diy	vol	R	E	
A	↔↔↔ HH1.D4T	✘	1 127	0.0	1.0	↑	↺	↻
B	↔↔↔ HH2.D4T	✘	1 127	0.0	-1.0	↑	↺	↻
C	↔↔↔	✘	1 127	0.0	0.0	↑	↺	↻
D	↔↔↔	✘	1 127	0.0	0.0	↑	↺	↻
E	↔↔↔	✘	1 127	0.0	0.0	↑	↺	↻
	↔↔↔	✘	1 127	0.0	0.0	↑	↺	↻

Selector: The Selector button array is located to the left of the main display. It consists of five small square vertically-aligned buttons which allow a choice of five screens ("A", "B", "C", "D" and "E") each of which displays six sample "Slots". The first screen displays "Slots" one to six. This is probably all that will be required for normal drum instruments. However, if a multisampled instrument is being used, it may be necessary to use more than six "Slots". In this case you can switch to the second screen to see "Slots" seven to twelve and so on up to "Slot" thirty on the fifth screen.

File: The File section consists of three controls: a "Browse Backwards" button (left-pointing arrow icon), a "Directory" button (directory icon) and a "Browse Forwards" button (right-pointing arrow icon). These controls allow Samples from a particular directory to be loaded and browsed. Clicking on the "Directory" button opens the Sample Browser dialog which allows you to load Samples into the currently active Drum Pad. The Sample Browser acts as a replacement for the operating system file browser adding additional functions such as Preview. The Sample Browser is described in more detail below. Once a Sample has been loaded, the "Browse Backwards/Browse Forwards" buttons on either side of the "Directory" button can be used to navigate forwards or backwards within the currently selected directory. This significantly reduces the time taken to locate and load samples. The Sampler module currently supports .WAV, .AIF and LinPlug's D4T file formats. The Sampler module can also load .REX files however in this case, the playback of individual file slices is not supported.

Sample: The Sample parameter displays the name of the currently loaded

sample. Note that the name of the currently active Sample Slot is highlighted.

Clear: To the right of the sample's name is the "Clear" button ("X" icon). Clicking on this button removes the currently loaded sample from the selected slot.

Velocity: The Velocity setting determines the velocity range in which a particular sample is triggered. Setting different velocity ranges for individual samples allows you to create expressive multisampled instruments that respond dynamically to MIDI input. For example, imagine that you have three samples assigned to a single key. If you set the sample velocities so that sample 1 is triggered in the 1 to 59 velocity range, and sample 2 is triggered in the 60 to 89 velocity range you have what is known as hard velocity switching. If however, you overlap the two samples' velocities (for example, sample 1 is triggered in the 1 to 80 velocity range while sample 2 is triggered in the 50 to 100 velocity range) you create what is known as a velocity crossfade. In the crossover region (50 to 80) the volume of one sample is successively reduced, while the volume of the other sample is successively increased until only one sample is heard.

Clicking on the "Vel" label open a menu which allows you to automatically assign velocity regions to the currently loaded samples. This is useful when you build kits from scratch and have loaded a number of samples to a pad to create a multisampled sound. In the menu "Up" assigns the lowest velocity range to the first sample while "Dw" (Down) assigns the highest velocity range to the first sample. The "Lin" and "Log" sub entries refer to a linear or a logarithmic assignment (where the lower ranges are not as detailed than the higher velocity ranges).

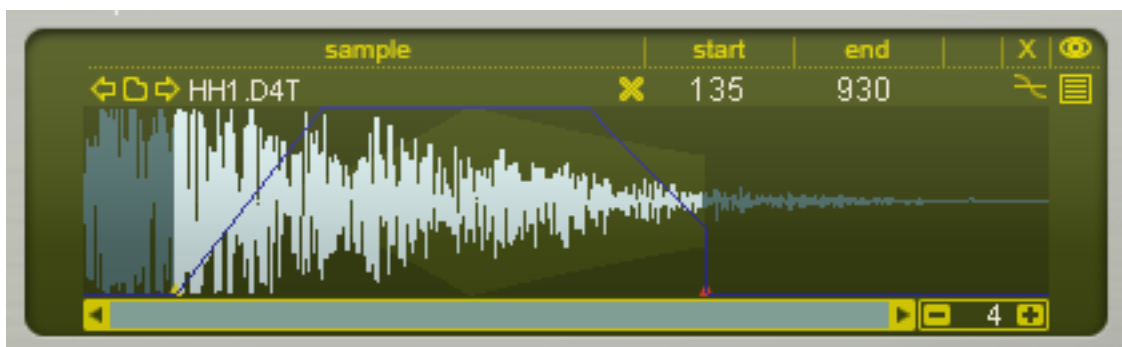
Delay: The Delay setting determines the position in the sample at which playback begins. This is often referred to as Offset or Shift and allows you to start the sample at a position after the normal starting point. Offsetting the starting point of a sample is useful when layering sounds or when the attack portion of a sample is too slow.

Vol: The Vol (Volume) setting adjusts the volume of samples. This parameter is useful when the samples used in a multisampled instrument have different volume levels. Adjusting the Vol setting enables multisamples to be matched to each other thereby producing a more realistic Instrument. The Vol setting can also be used to adjust the volume of individual samples within layered Instruments in order to make them sound smoother.

- R:** The R or "reverse" setting determines the direction in which the sample is played back. Normally, samples play from start to end. However, by clicking on the R button sample playback is reversed.
- Edit:** The Edit button is used to open the Sample Editor menu. This menu enables the currently loaded sample to be edited in an external editor. The editor that is used is specified in the Sample Editor control which is located in the RMV's Setup panel (see the Setup Panel section of this guide for more information about the RMV's Setup Panel). The Sample Editor menu contains 3 items: Edit in external editor, Edit copy in external editor, and Reload. The first menu option opens the Sample in an external editor. The second menu option opens a copy of the Sample in an external editor, while the third menu option reloads the Sample from the external editor.
- View:** Clicking on the "Waveform" symbol at the far right of each sample slot (assuming that a sample is loaded into the "Slot") changes the display from "Table" mode to "Waveform" mode and vice-versa.

Waveform View

Waveform mode enables several sample playback parameters to be set. Once in Waveform mode, the top line of the Sample Playback Editor displays the currently loaded sample's various parameters.



The Sampler's Waveform view also shows a Sample's Pitch, Amplitude and Filter envelope settings which greatly assists in setting their various values.

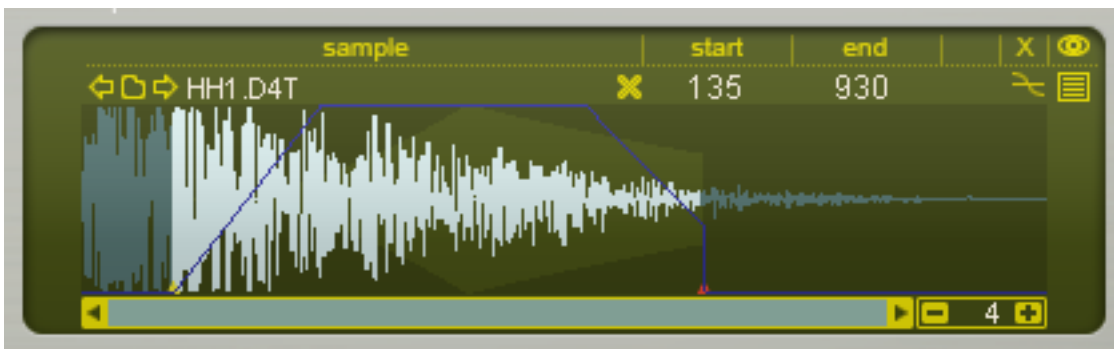
The Waveform display's magnification is set using the plus/minus buttons at the bottom right of the display. The number in the middle of the plus/minus buttons shows the number of samples compressed into a single pixel's width. For example, if the magnification is 1, then one sample is displayed per pixel. If the display shows 16, then 16 samples are compressed into a single pixel thus creating a display of the waveform that is compressed 16 times. The scrollbar at the bottom of the display allows you to scroll the sample when it

is too long to be displayed in the window. This, of course, depends on the current magnification setting.

- Sample:** The Sample parameter displays the name of the currently loaded sample. Note that the name of the currently active Sample Slot is highlighted.
- Clear:** To the right of the sample's name is the "Clear" button ("X" icon). Clicking on this button allows you to remove the currently loaded sample from the selected slot.
- Sample Start:** The point in the file at which playback starts can be set in two different ways. The first way is by dragging the start point cursor to the required position. The second way is by setting the "Start" control to the desired numeric value (in samples).
- Sample End:** The point in the file at which playback ends can be set in two different ways. The first way is by dragging the end point cursor to the required position. The second way is by setting the "End" control to the desired numeric value (in samples).
- Snap to Zero Crossing:** The setting of the Snapping Zero Crossing button determines whether sample start and end cursors automatically "snap" to the nearest zero crossing point or not. When switched on, (the default setting) sample start and end cursors can only be set to a zero-crossing point within the sample. This produces a smoother, more natural sound. When the Zero Crossing button is switched off, sample start and end cursors can be placed at any point within the waveform. This can be used to produce aggressive or "clicky" sounds.
- View:** Clicking on the "View" symbol at the far right of each sample slot (assuming that a sample is loaded into the "Slot") changes the display from "Table" mode to "Waveform" mode and vice-versa.

Pitch Envelope, Amplitude Envelope and Filter Envelope

The Waveform view shows the sample's waveform, along with the Pad's amplitude, and pitch envelopes. The amplitude envelope is shown as a grey envelope behind the sample. The pitch envelope is calculated directly into the sample and is not shown as a separate envelope. If the filter is on, its envelope is shown as a blue line.



It should be noted that the length of the sustain phase of each envelope cannot be displayed exactly as it depends on when a Note-Off message is received. It is shown in the display merely as an example. It should also be noted that in order to see the entire amplitude and filter envelopes, the magnification setting needs to be set so that the whole sample waveform is visible in the display.



- P(itch):** P(itch): The first Pitch slider determines the pitch envelope's initial value. For example, a value of three means the envelope begins playing back the sample 3 semitones above its base pitch. The Pitch slider can be set to a wide range of values; from +48 semitones (4 octaves up) to -48 semitones (4 octaves down).
- T(ime):** The first Time slider determines the length of time it takes for the pitch envelope to move from the first pitch value (see above) to the second pitch value (see below). For example, if the Time slider is set to 0.100 seconds, the sample's pitch will move from the sample's first pitch value to the sample's second pitch value within 100 milliseconds.
- Envelope Shape:** The Time slider has a corresponding "curve" control located above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the "curve" setting, click on the control and drag the cursor up or down. The change in the

curve's shape will be shown on the control.

P(itch): The second Pitch slider determines the pitch envelope's target value. For example, a value of twelve means that after the first time period has elapsed (see above), the envelope changes the sample's pitch by +12 semitones. The Pitch slider can be set to a wide range of values; from +48 semitones (4 octaves up) to -48 semitones (4 octaves down).

T(ime): The second Time slider determines the length of time it takes for the pitch envelope to move from the second pitch value (see above) back to the sample's base pitch. For example, if the Time slider is set to 0.100 seconds, the sample's pitch will move from the value set by the Pitch slider to the sample's base frequency within 100 milliseconds.

Envelope Shape: The second Time slider has a corresponding "curve" control located above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the "curve" setting, click on the control and drag the cursor up or down. The change in the curve's shape will be shown on the control.

Amplitude Envelope

A(ttack): The Attack dial determines the length of time it takes for the amplitude envelope to reach the full envelope depth. For example, if the Attack slider is set to 0.100 seconds, the sample's amplitude will move from zero to full volume within 100 milliseconds.

Attack Envelope Shape: The Attack dial has a corresponding "curve" control located above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the "curve" setting, click on the control and drag the cursor up or down. The change in the curve's shape will be shown on the control.

H(old): The Hold dial determines the length of time the amplitude envelope is held at the maximum level.

D(ecay): The Decay dial determines the length of time that the amplitude envelope takes to move from the Attack level to the Sustain level after the Hold time has elapsed.

Decay Envelope Shape: The Decay dial has a corresponding "curve" control located

above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the “curve” setting, click on the control and drag the cursor up or down. The change in the curve’s shape will be shown on the control.

- S(ustain):** The Sustain dial determines the level that the amplitude envelope is held at during the Sustain portion of the envelope. It should be noted that the length of the sustain phase cannot be displayed exactly as it depends on when a Note-Off message is received. It is shown in the display merely as an example.
- T(ime)** The T(ime) control is used to set a time value for the sustain segment of the envelope. When set to its maximum value the sustain time is infinite, that is, it is controlled by a MIDI NoteOff command. Setting the T(ime) control to other values means that the sustain time is independent of the MIDI NoteOff message.
- R(elease):** The Release dial determines the length of time that the amplitude envelope takes to move from the Sustain level to 0 after a Note-Off message has been received.

Release Envelope Shape: The Release dial has a corresponding “curve” control located above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the “curve” setting, click on the control and drag the cursor up or down. The change in the curve’s shape will be shown on the control.

The Filter Envelope settings for each Pad are displayed in the Sampler's Waveform view as a blue line.



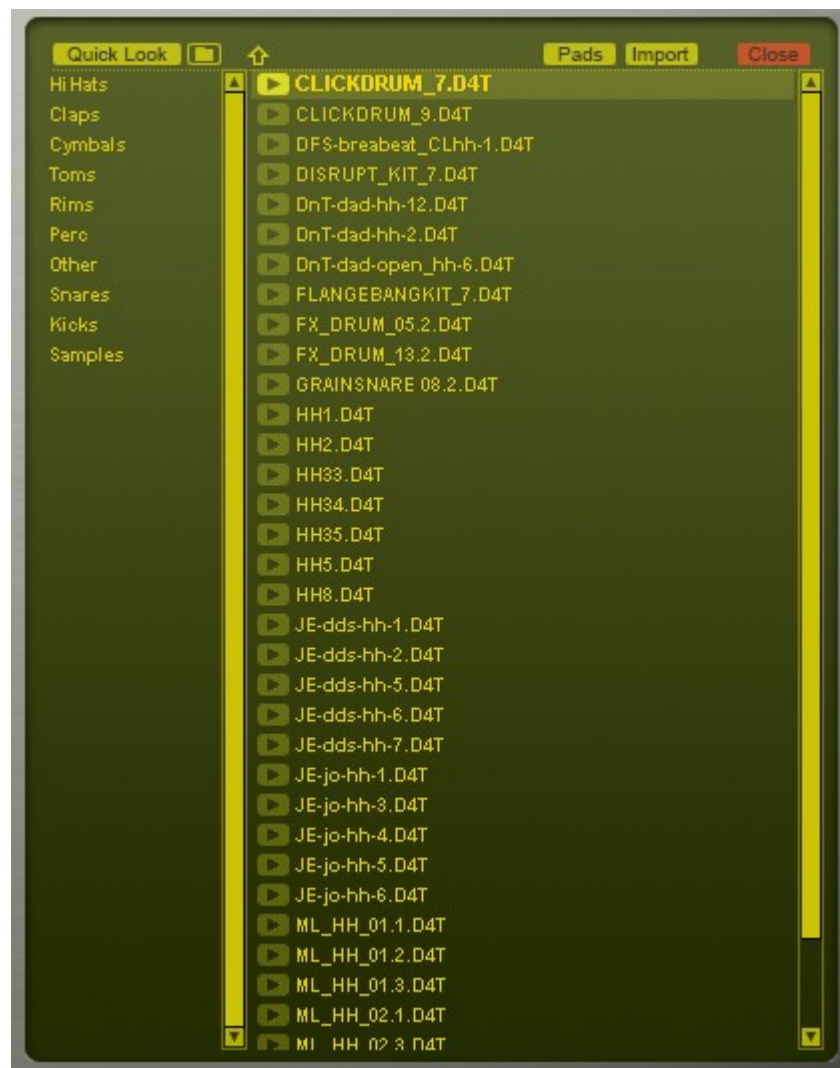
The Filter Envelope settings are controlled using the RMV's Filter controls which are found in the Filter section. The RMV's Filter section is described below.

Sample Browser

Clicking on the "Directory" button when the Sampler Module is in Table View mode opens the Sample Browser.



The Sample Browser enables Samples to be loaded into the currently active Sample Slot.



The column on the left of the Sample Browser shows the current Sample Search Paths (note that the Sample Search Paths can be set in the RMV's Setup Panel. See the Setup Panel section of this guide for more information).

Quick Look: The Quick Look button opens a conventional file browser and can be used for quickly loading samples without setting the path to the directory in the Setup Panel.

Up Arrow: The Up Arrow button moves up one level within the file system's directory hierarchy.

Once a directory containing samples or .REX files has been opened, the contents of the directory are displayed in the File List in the centre of the Sample Browser. Clicking on a sample or .REX file in the File List selects the file. Once selected, the file can be previewed using the "Preview" button located to the left of the file's name.

- Pads:** The Pads button is used for loading multiple samples into successive Pads. For example, if three samples are selected, clicking the Pads button loads all three samples into the currently active Pad and the next two Pads.
- Import:** The Import button is used to load the audio file into the Sampler's currently active Slot.
- Close:** The Close button closes the Sample Browser.

Loop Module

The RMV's Loop Module is used to load audio loops and samples into an individual Pad. It can also be used to edit the playback parameters of loops and samples once they are loaded. The RMV contains six identical Loop Modules.



Each Loop Module contains three sections: a Loop section, a Pad section, and a Signal Processing section. A Loop Module's Loop section is used to load, edit and play audio loops. A Loop Module's Pad section is similar to the Pad section that is used with the RMV's Percussion Synthesis/Sampler modules, however there are several minor differences which are described below. A Loop Module's Signal Processing section is the same as that used by the Percussion Synthesis/Sampler modules. The Loop module's Signal Processing section is described in the Signal Processing section of this guide. Each Loop Module also has access to the RMV's Sample Browser and Loop Librarian. The Sample Browser is described in the Sample Browser section of this guide, while the Loop Librarian is described below.

The key feature of the Loop Module is that it can play back “sliced” files. A “sliced” file is a file that has been “sliced” into segments, usually at the onset of a sound. “Sliced” files have two advantages. Firstly, the tempo of a sliced file can be changed without the use of time-stretching or pitch-shifting. This means that the presence of “artefacts” is minimised.

Secondly, slices can be played back individually. This means that some slices can be omitted from playback or that the order in which slices are played back can be changed compared to that of the original file. Note that Loop editing is non-destructive; all changes only affect the playback parameters of the audio loop.

The three sections of the RMV's Loop Module are described below.

Loop Section

The RMV's Loop section is used to load, edit and play audio loops. The RMV supports files in .REX format and can also load samples in .WAV, .AIF or LinPlug's D4T formats.



Files in .REX format already contain information regarding the slices in the file. This information is used to slice the file when it is loaded. In the case of audio samples, the files are automatically sliced when they are loaded. The Loop section contains two sections: the Waveform section and the Slice section.

Waveform Section

The Loop Module's Waveform section displays the audio file's waveform as well as other information such as the playback start and end points, and amplitude, pitch and filter envelope shape. The Waveform section also contains several controls for working with audio loops. These controls are described below.



- L(oad):** The (L)oad button is used to load Loops (in .REX format). The Load button opens the Loop Librarian which enables Loops to be loaded from either the RMV's internal Loop library or from any directory on the user's computer. The Loop Librarian also enables Loops to be saved, either to the RMV's internal Loop Library or to any directory on the user's computer. See below for more information about the Loop Librarian.
- I(mport):** Clicking on the Import ("I") button opens the Sample Browser which allows Samples to be loaded into the Loop module. The Sample Browser acts as a replacement for the operating system file browser adding additional functions such as Preview.
- Edit:** The Edit button is used to open the Sample Editor menu. This menu enables the currently loaded sample to be edited in an external editor. The editor that is used is specified in the Sample Editor control which is located in the RMV's Setup panel (see the Setup section of this guide for more information about the RMV's Setup panel). The Sample Editor menu contains 3 items: Edit in external editor, Edit copy in external editor, and Reload. The first menu option opens the Sample in an external editor. The second menu option opens a copy of the Sample in an external editor, while the third menu option reloads the Sample from the external editor.
- Clear:** To the right of the Edit button is the Clear button ("X" icon). Clicking

on this button removes the currently loaded Loop from the module.

- Stop/Play:** The Stop/Play buttons are used to control the playback of the current Loop.
- H** The setting of the “H” Host Sync control determines whether or not the module's internal MIDI data is used when the host application is played (for more info refer to Appendix D).
- D:** The “D” Drag control is used for dragging a MIDI file containing the timing information for all of the Slices to the host software. By doing this, it is possible to play back individual slices while retaining the timing information of the original file. This opens up a wide range of creative possibilities including removing selected slices from playback, or changing the order of slice playback.
- Bars:** When a Loop or a Sample is initially loaded it is automatically sliced, and it is stretched or compressed so that it matches the tempo of the host software. In some cases however, the length of the Sample or Loop may not match the host software's tempo. For example, the file might be one-and-a-half bars in length. In this case, it is possible to set the duration of the Loop or Sample so that it matches a different tempo division such as two or three bars. Available options are from one to sixteen bars.
- Sensitivity:** The Sensitivity control is used to set the number of segments or slices that a Loop or Sample is divided into. Setting the Sensitivity control to its leftmost position sets it to its minimum value, which means that the Loop or Sample is not sliced. Increasing the value of the Sensitivity control increases the number of segments that the Loop or Sample is divided into. The maximum number of slices that an individual file can contain is 64. The number of slices that the current Loop or Sample is divided into is shown in the RMV's Slice section which is described below.
- Waveform Display:** The Waveform Display shows the currently loaded Loop or Sample. The currently active slice is shown in white, while the remainder of the Loop or Sample is shown in blue. It should also be noted that in order to see the entire Loop or Sample, the magnification setting needs to be set so that the whole sample waveform is visible in the display. The magnification of the Waveform Display is set using the Magnification control which is described below.
- Slice Start Cursor:** The Start Cursor for the currently active slice is shown as a yellow triangular marker positioned at the left edge of the currently active slice. The start position of the slice can be adjusted by dragging the

yellow triangular marker to the left or right. Note that the Start Cursor can only be moved to the left as far as the start position of the preceding slice, or to the right the position of the slice's end position.

Slice End Cursor: The End Cursor for the currently active slice is shown as a red triangular marker positioned at the right edge of the currently active slice. The end position of the slice can be adjusted by dragging the red triangular marker to the left or right. Note that the End Cursor can only be moved to the left as far as the start position of the slice, or to the right as far as the end position of the following slice.

Magnification: The Waveform Display's magnification is set using the plus/minus buttons at the bottom right of the display. The number in the middle of the plus/minus buttons shows the number of samples compressed into a single pixel's width. For example, if the magnification is 1, then one sample is displayed per pixel. If the display shows 16, then 16 samples are compressed into a single pixel thus creating a display of the waveform that is compressed 16 times. The scrollbar at the bottom of the display allows you to scroll the sample when it is too long to be displayed in the window. This, of course, depends on the current magnification setting.

Slice Display

The Slice Display shows the entire Loop or Sample as a set of Slices. Each Slice has a Start and End Cursor which is shown as a yellow triangular marker. The currently active slice is shown in white, while the other slices are alternately coloured blue and olive-green. Each Slice is also labelled according to its content. "K" refers to a Kick drum Slice, "S" refers to a Snare drum slice, and "H" refers to HiHats and other percussion. Start and End cursors for each Slice can be adjusted by dragging the triangular markers to the left or to the right. Note that a cursor can only be moved as far as the preceding or following cursor.



Clicking on a Slice triggers the Slice and highlights it in the Waveform Display (described above). The position at which the Slice is clicked determines the MIDI NoteOn velocity at which the Slice is triggered. Clicking at the lower edge of the Slice triggers the Slice with a low NoteOn velocity. The NoteOn velocity increases as the Slice is clicked at higher positions.

Pad Section

Each Loop module contains its own Pad section which is used for triggering the module's currently active slice. Note that the Pad section changes position relative to the currently active Slice, moving back and forth across the display.



The Pad in each of the RMV's six Loop Modules is identical and consists of eleven controls. described in detail below.

- Vol(ume):** The Vol(ume) control is used to set the output volume of the Pad. The available range is -∞ to +6 dB. The default value is -3 dB.
- E (Edit):** The E (Edit) Indicator (the small light at the top left of each Pad section) shows the Pad that is currently active.
- G (Group):** Each of the RMV's Slices can be assigned to a Group. Assigning a Slice to a Group enables all Slices in that Group to be edited using

the controls of a single Slice. To set a Slice to a Group, click and drag on the G (Group) button until the desired Group is displayed. Ten Groups are available. Note that Group editing is relative which means that if the value of one control in a Group is changed, the other controls in the Group are changed by the same amount. They are not set to the same value as the first control.

Attention: to change all Slicess in a Group, use the right mouse button. With the left mouse button you only change the current Slice, even when it has been assigned to a group!

- Data Display:** Each Pad has its own Data Display that shows the value of the parameter currently being edited. For example, if the value of the Amplitude Envelope's Attack Time is changed, the value is displayed in the current Pad's Data Display.
- Pan:** The Pan control is used to set the stereo position of the Pad's output and is located below the Pad's Data Display. The Pan control has a range of 1.00 L to 1.00 R. A setting of "C" places the output in the centre of the stereo field. Note that if the Pad's output is set to a mono destination the Pan control has no effect.
- Trigger (Note):** The Trigger (Note) sets the MIDI note that triggers the Pad.
- Out(put):** The Out(put) control is used to set the output destination of the Pad. Available destinations depend upon the instrument's current audio output settings which are shown on the RMV's Setup Panel (for more information about the RMV's Setup Panel, see below). Note that all stereo outputs are listed first, followed by all of the mono outputs.
- Trigger Button:** The Trigger button allows the Pad to be played using the mouse, which in turn, triggers the currently active Slice. To activate the Trigger button click the mouse on the button. If Pad Velocity is enabled on the RMV's Setup Panel (see below for more information about the RMV's Setup Panel), the Pad becomes velocity-sensitive. In this case, as the cursor is moved from left to right over the Trigger button, the trigger velocity increases. In other words, clicking on the left of the button triggers the Pad at lower velocities than clicking on the right of the Pad. The Activity Indicator shows that the Pad has been triggered. It stays lit until the Pad has finished playing.
- Tune:** The Tune control sets the Pad's tuning. The available range is +- 24 semitones in 10 cent steps.
- Snd1 Amount:** Each Pad can send its output to the Effects Racks in the RMV's Send Effects section (see the Send Effects section of this manual for more information about the RMV's Send Effects). The percentage of the

signal sent to the Effects Rack selected using the Snd1 Destination control is set using the Snd1 Amount control.

- Snd1 Destination:** The Snd1 Destination control is used to set the destination of a Pad's first Effects Send. Three destinations, Snd1, Snd2 and Snd3 are available. Each corresponds to one of the RMV's three Send Effects Racks. Note that only one destination is active at a time.
- Snd2 :** Each Pad can send its output to the Effects Racks in the RMV's Send Effects section (see the Send Effects section of this manual for more information about the RMV's Send Effects). The percentage of the signal sent to the Effects Rack selected using the Snd2 Destination control is set using the Snd2 Amount control.
- Snd2 Destination:** The Snd2 Destination control is used to set the destination of a Pad's second Effects Send. Three destinations, Snd1, Snd2 and Snd3 are available. Each corresponds to one of the RMV's three Send Effects Racks. Note that only one destination is active at a time.

Signal Path

The Signal Path of a Loop module is identical to that of the RMV's other Modules. The signal path of the audio output of a Loop module is described in the Signal Path section of this guide.



Loop Librarian

The RMV can load and save data in a variety of different formats. One of these formats is a Loop file. A Loop file contains audio data as well as metadata describing the onset points of the sounds contained within the file. The RMV incorporates a Loop Librarian which is used to search for, load and save Loop files in .REX format. The Loop Librarian is opened using the Load button. The Loop Librarian enables Loops to be loaded from either the RMV's internal Loop library or from any directory on the user's computer. The Loop Librarian also enables Loops to be saved, either to the RMV's internal Loop Library or to any directory on the user's computer.

The RMV's Loop Librarian consists of three parts: the Information display, the Search display, and the Search Result Display.



The Information display shows the attributes of the currently loaded Loop. It also enables Loops to be Saved, Imported and Exported. The Loop Search Input display is used to set the search parameters that are used when the RMV searches its internal Loop database. The Loop Search Results display shows the results of the previous Loop search. Further details of these three displays are presented below.

Loop Information Display

The Loop Information display shows the descriptive attributes of the currently loaded Loop. It also enables a Loop's descriptive attributes to be set by the user prior to the Loop being saved.



The Loop Information display operates in two ways. Firstly, when a Loop is loaded from either the internal library or from an external location, the Loop Information display shows the Loop's descriptive attributes (the actual attributes are listed below). Secondly, the Loop Information display enables a Loop's descriptive attributes to be set prior to the Loop being saved. Note that only some of the descriptive attributes can be edited by the user.

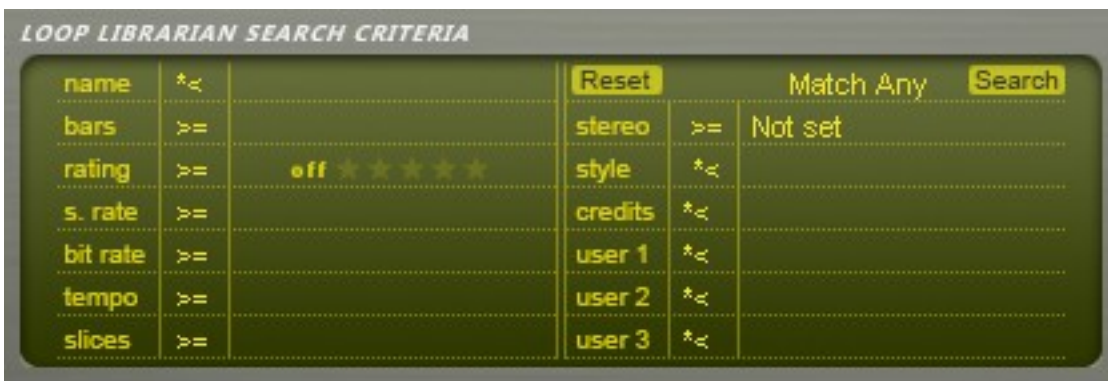
The following descriptive attributes can be saved in a Loop file:

- Name:** Displays the name of the current Loop file. This control is also used to enter the name of the Loop file when a new Loop file is created.
- Bars:** Displays the number of bars that the current Loop file is fitted to. The Bars control has a range of one to sixteen bars.
- Rating:** A rating of the quality of the Loop indicated in "stars". The Rating control has a range of zero to five stars.
- S.Rate:** Displays the sample rate of the current Loop file.
- Bit Rate:** Displays the bit depth of the current Loop file.
- Tempo:** Displays the default tempo of the current Loop file. The default tempo is the tempo of the file prior to it being sliced.
- Slices:** Displays the number of slices that the current Loop file contains.
- Format:** Displays the format of the current Loop file (Mono or Stereo).

- Style: Displays the style of the current Loop file.
- Credits: A reference to the creator of the Loop file.
- User 1: A user-definable Loop file attribute.
- User 2: A user-definable Loop file attribute.
- User 3: A user-definable Loop file attribute.
- Save: Saves the current Loop file settings to the RMV's internal Loop library.
- Export: Exports the current Loop file.
- Import: Imports a Loop file from an external location (that is, not from the RMV's internal Loop library).
- Close: Closes the Loop Librarian.

Loop Search Input Display

The Loop Librarian's Search Input section is used to set the criteria used when searching the RMV's internal library for Loops.



Thirteen search keys are available. These are: Name, Bars, Rating, S.Rate, Bit Rate, Tempo, Slices, Format, Style, Credits, User 1, User 2, and User 3. The search keys are used in combination with mathematical operators to determine the parameters of the search. The thirteen search keys can be divided into two types: text keys and numeric keys. The mathematical operators used with each search key depend upon the type of the search key. Text keys can be searched using the following operators: "=", "<*" and "<*>". Numeric search keys can be searching using the following operators: "<", ">", "=", "<=" and

">=". These operators are described below. In addition to this, the Loop Search Input section enables any or all of the selected criteria to be used in the search. The search is performed using the Search button. The search criteria can be set to the display's default values using the Reset button.

Text Operators

- =: Equal to. The "Equal To" operator finds all items in the database that are exactly the same as the search term.
- *<: Begins with. The "Begins With" operator finds all items in the database that begin with the search term.
- <*>: Contains. The "Contains" operator finds all items in the database that contain the search term.

Numeric Operators

- <: Less Than. The "Less Than" operator finds all items in the database that are less than the search term.
- >: Greater Than. The "Greater Than" operator finds all items in the database that are greater than the search term.
- =: Equal To. The "Equal To" operator finds all items in the database that are equal to than the search term.
- <=: Less Than or Equal To. The "Less Than or Equal To" operator finds all items in the database that are less than or equal to the search term.
- >=: Greater Than or Equal To. The "Greater Than or Equal To" operator finds all items in the database that are greater than or equal to the search term.

Search Key

Name: The name, or portion of the name, of the Loop file to search for in the internal library. The search results depend upon the operator used to define the search (see above).

Bars: The number of bars in the Loop file. The Bars control has a range of one to sixteen bars.

Rating:	The rating of the quality of the Loop file. The rating value can range from zero “stars” to five “stars”.
S.Rate:	The value of the sample rate of the Loop file.
Bit Rate:	The value of the bit depth of the Loop file.
Tempo:	The value of the default tempo of the Loop file. The default tempo is the tempo of the file prior to it being sliced.
Slices:	The number of slices that the Loop file contains.
Format:	The format of the Loop file (either Stereo or Mono).
Style:	The style of sound in the Loop file.
Credits:	The reference to the creator of the Loop file.
User 1:	The first user-definable Loop file attribute.
User 2:	The second user-definable Loop file attribute.
User 3:	The third user-definable Loop file attribute.
General	
Reset:	The Reset control restores the search parameters to their default values.
Match:	The match control enables the search to be defined so as to match any or all of the selected criteria.
Search:	The Search control starts the search of the internal Loop database.

Loop Search Results Display

The Loop Librarian's Search Results display shows the results of a search of the RMV's internal Loop database using the parameters supplied in the Loop Search Input section.



The Search Results section displays a list of all Loops that meet the search criteria. The results are displayed as a list. The Search Results section has three controls. These are Play, Preview and Load.

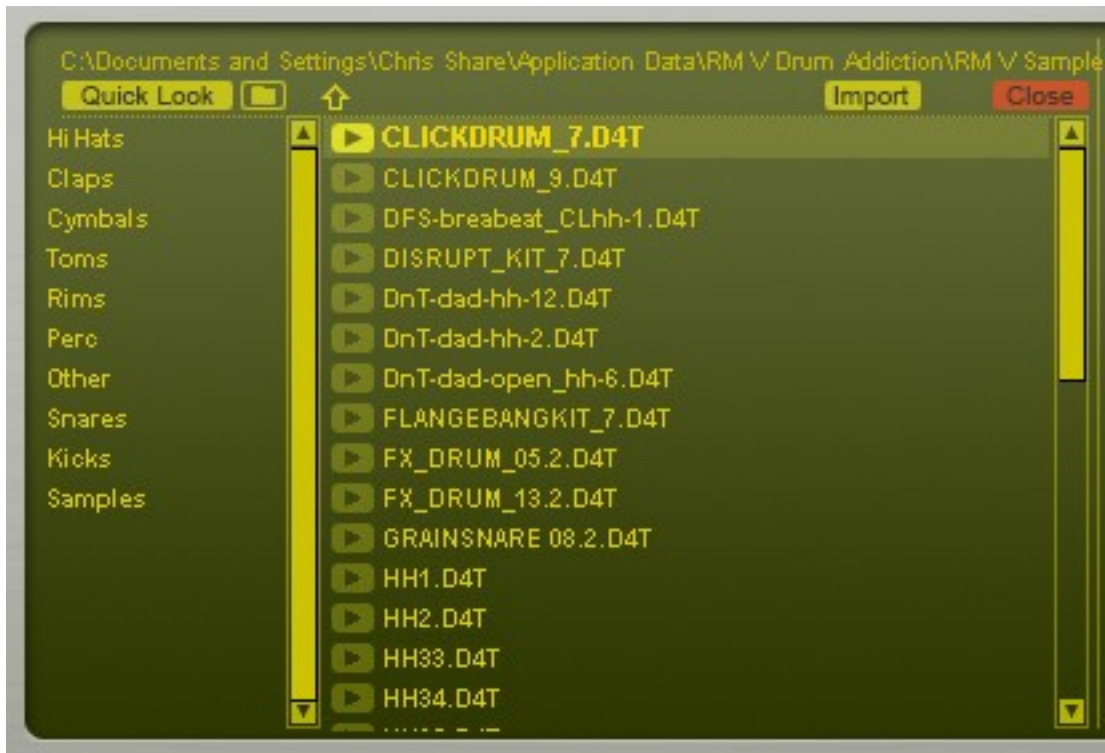
Preview: The Preview button is located to the right of the Loop file's name. The Preview button is used to temporarily load and play the Loop. Previewing the Pad includes all of the processing that is applied to the Pad including filtering, effects processing and enveloping.

Load: The Load button loads the Loop file. Note that if the Loop Librarian is closed without a new Loop being loaded the current Slicer is restored to its initial state.

Sample Browser

The Sample Browser used to load Samples into the Loop module is similar to the Sample Browser used in the Sampler module. Note that the Pads button is not present in the Loop Module's Sample Browser as only one Pad is present in each Loop module. The Sample

Browser is described in the Sampler Module section of this Guide.



Signal Path

Once an Audio module is triggered, its signal can undergo further processing using the RMV's Filter, EQ, Insert Effects and Varizer. Note that each Pad can also utilise the RMV's Send Effects section which is described in the Send Effects section of this guide.

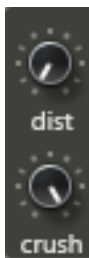


Filter

The RMV's Filter section is located between the Modulation Matrix and Effects sections. The Filter section contains three subsections: The Distortion subsection, the Filter subsection and the Filter Envelope subsection. These are shown below.



Distortion



The RMV's Distortion section contains two independent distortion units: Dist (Distortion) and Crush (BitCrusher). These are located at the left of the RMV's Filter section. The two effects units operate as "insert" effects (as opposed to "send" effects) which means that they can be set independently for each Pad.

The Crush (BitCrusher) effect is located before the Dist (Distortion) effect in the signal chain. The Crush effect enables the bit depth of the signal to be decreased, thereby decreasing the resolution and making the sound rougher and noisier. The Distortion effect saturates the signal adding a digital "hardness" to the sound.

Each Distortion effect has a single control which is described below.

Dist(ortion): The Distortion control enables the Drum Pad's output signal to be distorted within a range of 0% (no distortion) to 100% (full distortion).

Crush: The BitCrusher control enables the bit depth of the output signal to be reduced from ∞ bits (the signal is not changed) to 1.00 bits. Reducing the bit depth adds a harsh, noisy quality to the sound.

Filter

The RMV's multi-mode filter is located to right of the Distortion subsection. The filter is switched on or off using the button above the Filter section.



Eight different types of filter are available:

- LP12 ("Low Pass 12 dB/Octave")
- LP24 ("Low Pass 24 dB/Octave")
- HP12 ("High Pass 12 dB/Octave")
- HP24 ("High Pass 24 dB/Octave")
- BP12 ("Band Pass 12 dB/Octave")
- BP24 ("Band Pass 24 dB/Octave")
- BR12 ("Band Reject 12 dB/Octave")
- BR24 ("Band Reject 24 dB/Octave")

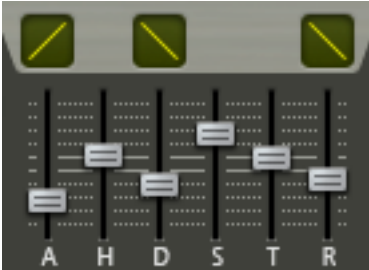
To change the filter type, click on the Type control and select the desired filter type.

The RMV Filter subsection contains controls for three parameters: Cutoff, Res(onance) and Env(elope Depth), as well as an AHDSTR envelope for controlling the filter cutoff frequency. There is also a button for inverting the filter envelope. These controls are described below:

- Cutoff:** Cutoff is used to set the frequency (in Hz) of the filter cutoff point. This has different effects depending on the type of filter being used. For more information see the Glossary.
- Res(onance):** Resonance is used to set the amount of emphasis around the cutoff frequency. Higher settings create a more pronounced peak in the signal while lower settings produce a flatter response.
- Env(elope Depth):** Envelope Depth is used to set the degree to which the filter's envelope effects the signal. Setting Env.Dth to 0.00 means that the envelope has no effect on the filter. Setting Envelope Depth to 1.00 means that the filter is modulated by the envelope's full range.
- Inv(ert):** The Invert button is used to set either a positive or negative envelope shape. This can be used for a range of effects including opening the filter when a note is released (this is impossible with a non-inverted envelope).

Filter Envelope

The Filter Env(elope) section is located to the right of the Filter section.



It consists of 9 controls for setting the filter envelope parameters. These are described below:

- A(ttack):** The Attack slider determines the length of time it takes for the filter cutoff frequency to move from its initial value to the full envelope depth. For example, if the Attack slider is set to 0.100 seconds, the cutoff frequency will move from its initial value to full envelope depth within 100 milliseconds.
- Attack Envelope Shape:** The Attack dial has a corresponding “curve” control located above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the “curve” setting, click on the control and drag the cursor up or down. The change in the curve's shape will be shown on the control.
- H(old):** The Hold slider determines the length of time the filter cutoff frequency is held at the maximum envelope depth.
- D(ecay):** The Decay slider determines the length of time that the filter cutoff frequency takes to move from the full envelope depth to the Sustain frequency after the Hold time has elapsed.
- Decay Envelope Shape:** The Decay dial has a corresponding “curve” control located above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the “curve” setting, click on the control and drag the cursor up or down. The change in the curve's shape will be shown on the control.
- S(ustain):** The Sustain slider determines the frequency that the filter cutoff is held at during the Sustain portion of the envelope. It should be noted

that the length of the sustain phase cannot be displayed exactly as it depends on when the instrument receives a Note-Off message. It is shown in the display merely as an example.

T: The T slider sets the envelope's Sustain Time. When set to its maximum value the sustain time is infinite, that is, it is controlled by the MIDI Note Off command that trigger the Pad. It is also possible to set a sustain time after that is independent of the MIDI Note off that triggered the Pad.

R(elease): The Release slider determines the length of time that the filter cutoff frequency takes to move from the Sustain frequency to 0 envelope depth after a Note-Off message has been received.

Release Envelope Shape: The Release dial has a corresponding "curve" control located above it that is used to set the shape of the envelope segment. The shape of the segment can range from extreme negative exponential to extreme positive exponential. To adjust the "curve" setting, click on the control and drag the cursor up or down. The change in the curve's shape will be shown on the control.

Don't forget that the filter's AHDSTR envelope is shown using a blue line in the Sampler Display when the display is in "Waveform" mode and the Filter is switched On.

EQ

The RMV's EQ (Equalizer) section is located to the right of the Filter Envelope section. It consists of 4 independent parametric equalizers.



The EQs are designed to work over different frequency ranges. The Lo EQ is located on the left of the EQ section, while the Hi EQ is located on the right of the EQ section. In between the Lo and Hi EQs are two variable-Q Mid EQs. Note that the two Mid EQ stages are arranged in series.

The features of the three different EQ types are described below:

- | | |
|----------------|--|
| Lo Frequency: | The Lo Frequency control is used to set the frequency at which the EQ operates. A range of 20 Hz to 1000 Hz is available. |
| Lo Gain: | The Lo Gain control is used to set the amount of gain that is applied to the selected frequency. Note that the gain can be positive or negative. A positive gain corresponds to boosting the signal while a negative gain corresponds to cutting the signal. A range of -∞ dB to +18 dB is available. |
| Mid Frequency: | The Mid Frequency control is used to set the frequency at which the EQ operates. A range of 20 Hz to 11000 Hz is available. |
| Mid Gain: | The Mid Gain control is used to set the amount of gain that is applied to the selected frequency. Note that the gain can be positive or negative. A positive gain corresponds to boosting the signal while a negative gain corresponds to cutting the signal. A range of -∞ dB to +18 dB is available. |
| Mid Q: | The Q (Quality) control sets the bandwidth of the EQs boost/cut. A large value means that a wider bandwidth is affected by the filter. A range of 0.33 to 12 is available. |

Hi Frequency: The Hi Frequency control is used to set the frequency at which the EQ operates. A range of 440 Hz to 11000 Hz is available.

Hi Gain: The Hi Gain control is used to set the amount of gain that is applied to the selected frequency. Note that the gain can be positive or negative. A positive gain corresponds to boosting the signal while a negative gain corresponds to cutting the signal. A range of -∞ dB to +18 dB is available.

Insert Effects

The RMV's Insert Effects section is located on the lower left of the instrument's Pad Panel, and on the lower right of the instrument's Loop Panel. Three independent stereo Effects Racks are available for each Pad: Effects Rack 1, Effects Rack 2 and Effects Rack 3. All three Effects Racks are identical.

Each of the RMV's three Effects Racks can be set to one of nine Effects Units. These are: Delay, Ping Pong, Flanger, Filter, Reverb, Gator, WahWah, Compressor and Crusher. To select an Effects Rack, use the Selection buttons labelled "1", "2" and "3" at the left of the Insert Effects section. To set the Effects Unit for a particular Effects Rack, click on the Effect Name located above the Insert Effects section. This opens a popup menu displaying the available Effects Units. Select one of the Effects Units in the popup menu to place it in the Effects Rack.

All effects modules can be set to either "On" or "Thru" using the Power button to the left of the Effect Type menu, or by using the three Power buttons to the right of the Selection buttons. Note that only one Insert Effects Unit is displayed at a time. To switch between the three Effects Racks, click on the Selection buttons labelled "1", "2", and "3" at the left of the Insert Effects section.

Each Effect Unit's controls differ. All Effects Units are described in detail below.

Delay

The Delay effect can be used to create "echoes" and other related effects. It features controls for Wet, Time, Fract, Filter and Feedback.



- Wet:** The Wet control is used to set the balance between the processed "wet" signal and the original unprocessed "dry" signal.
- Time:** The Time control is used for setting the delay time (in milliseconds). This can range from 1 ms to 680 ms.
- Fract:** The Fract popup menu is used to synchronise the delay time with the current tempo (see Appendix B for the range of possible sync settings).
- Filter:** The Delay effect incorporates a variable low pass/high pass 6dB/Oct filter which is adjusted using the Filter control. Turning the control to the left introduces low pass filtering while turning the control to the right introduces high pass filtering.
- Feedback:** The Feedback control is used to set the number of times the signal repeats or "echoes". Turning the control to the right increases the number of echoes that are added to the input signal.

PingPong

The PingPong (Delay) effect can be used to create "echoes" that bounce around three different positions in the stereo field. The PingPong (Delay) features controls for: Wet, Stereo, Balance, Feedback, Left (Sync Time), Centre (Sync Time) and Right (Sync Time).



The PingPong (Delay) functions as follows: the input signal is first delayed by Centre (Sync Time) amount, then it's delayed by Left (Sync Time) amount and finally by the Right (Sync Time) amount. If Feedback is applied, the Right (Sync Time) signal is fed back into the left delay line, so that an alternating left-right delay is produced.

- Wet:** The Wet control is used to set the balance between the processed "wet" signal (that is, the delayed signals) and the original unprocessed "dry" signal.
- Stereo:** The Stereo control is used to set the panning positions of the left and right delays in the stereo field. Turning the Stereo control to its maximum value (in either a clockwise or anticlockwise direction) gives the maximum panning value for the left and right delays. Setting the Stereo control to the "12-O-Clock" position places the left and right delays in the centre of the stereo field. Note that the Stereo control can be used to exchange the pan positions of the left and right delays. For example, if rotating the control in an anticlockwise direction from the midpoint causes the processed signal to appear on the right side of the stereo field first, then rotating the control in a clockwise direction from the midpoint causes the processed signal to appear on the left side of the stereo field first.
- Balance:** The Balance control is used to set the balance between the centre delay and the left and right delays.
- Feedback:** The Feedback control is used to set the number of times the processed signal repeats or "echoes".
- Left (Sync Time):** The left channel of the PingPong (Delay) can be independently synced to the song's current tempo using the Left (Sync Time) popup

menu (see Appendix B for the range of possible sync settings).

Centre (Sync Time): The centre channel of the PingPong (Delay) can be independently synced to the song's current tempo using the Centre (Sync Time) popup menu (see Appendix B for the range of possible sync settings).

Right (Sync Time): The right channel of the PingPong (Delay) can be independently synced to the song's current tempo using the Right (Sync Time) popup menu (see Appendix B for the range of possible sync settings).

Flanger

The Flanger effect can be used to create the classic flanging sound produced by using two analog tape machines playing back the same signal but with small (and changing) differences in the playback speed of the machines.



The RMV's Flanger features controls for Wet, Time, Rate, Mod (Modulation) Depth, Feedback and Invert.

- Wet:** The Wet control is used to set the balance between the processed "wet" signal (that is, the "flanged" signal) and the original unprocessed "dry" signal.
- Time:** The Time control is used to set the time of the flanger's delay, which represents the delay time between the original (tape machine 1) signal and the delayed (tape machine 2) signal.
- Rate:** The (Modulation) Rate control sets the speed of the flange effect (that is, the speed of the cyclic changes of the two tape machines). The rate is set as a fraction of the song tempo using the "Sync" popup menu (see Appendix B for the range of possible sync settings).
- Mod Depth:** The Mod (Modulation) Depth control is used to set the depth of the flanging effect. The higher the setting, the more pronounced the effect.
- Feedback:** The Feedback control is used to feed the processed signal back into the input of the effect producing a richer, more pronounced flanging effect.
- Invert:** The Invert control inverts the processed signal's phase against the original signal, producing a subtly different flanging sound.

Filter

The RMV's Filter enables the frequency spectrum of the instrument's signal to be controlled, allowing some frequency regions to pass through the instrument unaffected, while other regions are either boosted or attenuated.



The RMV's Filter has six controls:

- Type:** The RMV's Filter can be set to one of four 12 dB filter types: LP (Low Pass 12 dB), HP (High Pass 12 dB), BP (Band Pass 12 dB) and BR (Band Reject 12 dB).
- Wet:** The Wet control is used to set the balance between the processed "wet" signal (that is, the "filtered" signal) and the original unprocessed "dry" signal.
- Cutoff:** The Cutoff control is used to set the frequency (in Hz) above which frequencies are filtered out of the signal. Higher settings produce brighter sounds while lower settings result in darker sounds.
- Rate:** The Modulation Rate of the Filter's Cutoff Frequency can be synced to the song's current tempo using the Rate popup menu (see Appendix B for the range of possible sync settings).
- Mod DP:** The Mod DP (Cutoff Frequency Modulation Depth) control is used to set the depth to which the filter's cutoff frequency is modulated. A setting of 0% means no modulation occurs, while a setting of 100% means that maximum modulation occurs.
- Reso:** The Resonance control is used to set the amount of emphasis around the cutoff frequency. Higher settings create a more pronounced peak in the processed signal while lower settings produce a flatter response.

Reverb

The Reverb effect is used to add ambience to sounds, making them appear to be located in an acoustic space.



The Reverb effect features controls for:

- Wet:** The Wet control is used to set the balance between the processed "wet" signal (that is, the "reverberated" signal) and the original unprocessed "dry" signal.
- Size:** The Size control is used to set the size of the simulated room. The Roomsize varies from a small chamber up to a huge hall.
- Pre:** The Pre (Predelay) control is used to delay the processed signal by a given amount (in milliseconds) so as to achieve a more natural reverberation effect. Normally, shorter predelay times are applied in the case of smaller room sizes while longer predelay times are applied in the case of larger room sizes. The Pre (Predelay) popup menu can be used to sync the predelay time with the current tempo (see Appendix B for the range of possible sync settings).
- Mod:** The Mod (Modulation) control is used to set the rate at which the Reverb's room size is modulated. The modulation effect is quite subtle. Modulation can be turned off by turning the Mod ("Modulation") control fully anticlockwise.
- Damp:** The simulated room's wall materials can be adjusted with the Damp (Damping) control. This parameter ranges from practically loss-free reflecting walls (0% damping) up to very absorbent walls (90% damping). In practical terms, the amount of damping determines the amount of higher frequencies that are contained in the processed signal: The higher the Damp (Damping) setting, the more that higher frequencies are removed from the processed signal.

Gator

The Gator effect is a step-controlled audio gate that can be used to create rhythmic, stuttering and pulsing effects. The effect is unique in that it separates the input signal into left and right components, each of which can be gated independently.



The Gator effect contains three controls:

- Smooth:** The Smooth control sets the envelope shape of the gate for each step value. A lower setting of the Smooth control creates a sharper envelope shape that produces a more pronounced gating effect. Increasing the value of the control “smooths” the envelope creating a more pulsing, tremolo-like sound.
- Steps:** The Steps control consists of two rows of sixteen “buttons”, one for each rhythmic step of the pattern. When a button is on, the signal is passed through the effect. Alternately, when a button is off, the signal is gated. The duration of each step depends on the setting used in the Tempo control (described below).
- Tempo:** The Tempo control sets the duration of each step. For example, a setting of 1/16 means that each pattern step is equivalent to a 16th note. Note that the overall tempo at which the Gator effect operates is set in the host software.

WahWah

The WahWah effect is an amplitude-controlled bandpass filter that can be used to produce vocal-like sounds, particularly “wah-type” sounds.



The WahWah effect contains five controls:

- Cutoff:** The Cutoff control is used to set the centre frequency (in Hz) at which the bandpass filter operates.
- Reso:** The Reso (Resonance) control is used to set the amount of emphasis around the cutoff frequency. Higher settings create a more pronounced peak in the signal while lower settings produce a flatter response.
- Attack:** The Attack control is used to set the response time of the filter to changes in the input signal's amplitude. Faster Attack times mean that the wah effect is triggered more quickly, while slower Attack times introduce a delay before the wah effect is produced.
- Decay:** The Decay control is used to set the recovery time of the filter after the input signal's amplitude has changed. Faster Decay times mean that the wah effect returns to its default value more quickly, while slower Decay times mean that the wah effect returns to its default value more slowly.
- Sens:** The Sensitivity control sets the degree to which the input signal's amplitude affects the filter cutoff frequency. Lower values produce a less-pronounced wah effect, while higher values produce stronger, more vocal-like wah sounds.

Compressor

The RMV's Compressor can be used to control the dynamic range of the effect's input signal. Compression can be used to increase the perceived volume of a sound by reducing the level transient peaks, and thus allowing for an increasing of the average signal level without clipping.



The RMV's has four controls: Attack, Ratio, Threshold and Release. The Compressor's controls are described below. Because compression reduces the average amplitude of the input signal it is often necessary to increase the signal's amplitude once it has been compressed. The RMV's provides this “make-up” gain automatically.

- Attack:** The Attack control is used to set the speed at which the compressor responds to changes in the input signal.
- Ratio:** The Ratio control is used to set the ratio between the input and output level of signals that are above the Compressor's Threshold level. The compression ratio can be set anywhere between 1:1 and 10:1.
- Threshold:** The Threshold control is used to set the signal level at which the Compressor begins operating. The Threshold dial has a range of -24 to 0dB and automatically adjusts the make-up Gain to give 0dB signal peaks.
- Release:** The Release dial sets the amount of time that it takes for the compressor to return to unity gain after the signal falls below the Threshold level. The Release time has a range of 0.001 to 4.000 seconds.

Crusher

The RMV's Crusher is a distortion effect that combines bit-depth and sample-rate reduction with "smoothing" algorithms allowing the resolution of the signal to be decreased, thereby making the sound rougher and noisier. This effect processor also includes a filter.



This effect has the following controls:

- Wet:** The Wet control is used to set the balance between the processed "wet" signal (that is, the "crushed" signal) and the original unprocessed "dry" signal.
- Bits:** The Bits control enables you to reduce the bit depth of the output signal from ∞ bits (the signal is not changed) to 1.00 bits. Reducing the bit depth adds a harsh, noisy quality to the sound.
- Cut:** The Cut (Cutoff) control is used to set the frequency (in Hz) above which frequencies are filtered out of the signal. Higher settings produce brighter sounds while lower settings result in darker sounds.
- Reso:** The Reso (Resonance) control is used to set the amount of emphasis around the cutoff frequency. Higher settings create a more pronounced peak in the signal while lower settings produce a flatter response.
- Div:** The Divider control is used to set the value of a sample-rate divider that divides the current sample-rate by the current control setting. For example, if the current sample-rate is 44.1 kHz, then setting the Divider control to 2, halves the sample-rate, making it equal to 22.05 kHz. When the Divider control is set to a value other than 1, a new output sample value must be created for each group of samples in the input audio stream. For example, if the Divider slider is set to a value of 4, then four (possibly different) samples in the input stream are replaced by four samples with a single value in the output audio stream.

Filter Type: The Crusher's Filter can be set to one of four 12 dB filter types: LP (Low Pass 12 dB), HP (High Pass 12 dB), BP (Band Pass 12 dB) and BR (Band Reject 12 dB).

Varizer

The Varizer is a unique feature of the RMV. It is located below the EQ section. Essentially, the Varizer is used to introduce an element of randomness to the RMV's playback.



Real drummers never play two drum hits in exactly the same way. The RMV's Varizer is designed to imitate the small variations that naturally occur from drum hit to drum hit when a real drummer plays. This can add life and variety to drum parts.

The Varizer has three controls:

- Style:** The Style control subtly varies the "playing style" each time a sound is played, as if the instrument was being played slightly harder or softer each time it was triggered. When a real instrument is played there are always small variations that occur from note to note. For example, a drummer never strikes a cymbal in the same position, nor is the stick held in exactly the same way, etc. This control affects the volume, pitch and to a lesser extent, the timbre (provided the filter is switched on) of the sound.
- Exactness:** The Exactness control affects virtually all aspects of RMV playback, introducing small random variations in many areas of the RMV's internal architecture. Increasing the value of the Exactness control can be thought of as a way of introducing the "tolerances" that are found in the electronic components that make up hardware instruments. The Exactness setting affects volume, pitch and timbre but in a way that is different to the Style parameter.
- Spectrum:** The Spectrum control sets the degree to which the sound's frequency spectrum varies each time it is played back. Increasing the value of the Spectrum control introduces more spectral variation from note to note. The RMV's spectrum control can be used to simulate the changing nature of the sound's frequency spectrum from note to note.

Modulation

The RMV contains numerous modulation sources which can be used to modulate a wide range of modulation destinations. The Modulation section is divided into two subsections: the Modulation Matrix which is used for routing modulation sources to destinations, and the LFO section which provides three dedicated modulation oscillators. The modulation destinations of the LFO are defined using the Modulation Matrix. Note that the Modulation Matrix section and the LFO section are available on a per-Pad basis which means that 48 independent Modulation Matrix sections and LFO sections are available for a kit.



Modulation Matrix

The RMV's Modulation Matrix allows you to create 12 user-defined modulation routings. 26 modulation destinations are available for modulation by 23 modulation sources (see Appendix A for a listing and description of all modulation sources and destinations). The modulation routings are arranged into 3 groups of 4, labelled A, B and C. To change the modulation routing group, click on the Group Select buttons (labelled A, B and C) located above the Modulation Matrix.



source	value	destination
LFO 1	4:80	Pitch [c]
Amp Anvelope	0.3000	Cutoff [c]
CC16 Controller	1.0000	Distortion
Random Bipolar	-0.2000	Pan

Modulation sources are shown in a column on the left of the display, while the destinations are shown on the right. The modulation amount is displayed in the middle. To change a routing click on the source or destination that you want to change. A menu will appear which lets you select the new source or destination. To remove a modulation source or destination select the "- - -" entry in the menu. Modulation destinations that have an "[S]" following them apply to the RMV's Sampler module.

Many modulation destinations have a "[c]" following them. This signifies that the modulation destination is modulated continuously. Normally, the modulation value is only applied when a MIDI NoteOn message is received. In the case of modulation destinations that have a "[c]" following them, the modulating signal is applied for the whole time the sound plays.

To change the modulation depth click on the amount display and move the mouse (while keeping the mouse button pressed) upwards or downwards (increasing or decreasing the value) until the desired value has been reached. A negative modulation depth inverts the waveform of the modulation source.

The modulation of "Pitch" has a special display for modulation depth. The number to the left of the colon shows the number of semitones that the destination is modulated, while the number to the right of the colon shows the number of cents that the destination is modulated. For example, a modulation depth of "2:40" means that Pitch is modulated to a depth of 2 semitones and 40 cents (or 2.40 semitones).

LFO

An LFO is an oscillator that generates low frequency signals that can be used to modulate other aspects of the signal. Each RMV Pad has 3 independent LFOs each offering 5 user parameters. These are: Wave, Freq(Frequency), Symmetry, Sync and Free Run.



The RMV's 3 LFOs are displayed one-at-a-time. To change LFO, click on the desired LFO Select button (labelled 1, 2 and 3) located above the LFO.

- Wave:** The Wave control is used to select one of the RMV's LFO waveforms. To select a waveform, click on the waveform control. This opens a popup menu containing 6 LFO waveforms. These are: Sine, Triang(le), Sawtoo(th), Square, Noise and SamHo (Sample and Hold). It should be noted that when the Noise and Sample and Hold waveforms are synced to tempo, they run at a faster tempo than the other LFO waveforms. For example, if you set Sync to 1/1, use a tempo of 120 BPM and play a whole note (4 beats), the duration of one cycle of the regular waveforms (Sine, Triang(le), Sawtoo(th), Square) will be 2 seconds. However, the Noise and SamHo (Sample and Hold) waveforms will change their state within 1/8 of 2 seconds or 0.25 seconds.
- Freq(ueency):** The Frequency parameter determines the LFO's frequency (in Hz). This parameter has no effect if the Sync control is active (see below).
- Symmetry:** The Symmetry parameter controls the waveform's shape, stretching it or compressing it as required.
- Sync:** The Sync control is used to sync LFO triggering with the current tempo (see Appendix B for the range of possible Sync settings).
- Free Run:** The setting of the F (Freerun) switch to the right of the Sync control determines whether or not a new note restarts the LFO. If the F (Freerun) switch is off, and there is a gap between two notes, then the LFO waveform will restart from its initial value with each note.

This means that the phase of the LFO will be the same for each note. If the F (Freerun) switch is on, and there is a gap between two notes, then the LFO waveform will continue on, irrespective of whether or not a note is played. This means that for each note, the LFO phase will be different.

Send Effects

The RMV's Send Effects section is accessed by using the Snd (Send) FX button located in the Mixer section on the upper left of the instrument's front panel. The Send Effects section contains seven independent Sets of Effects Racks. One Set of Effects Racks is for use with the RMV's forty-eight Pads. The remaining six Sets of Effects Racks are for use with each of the instrument's six Loop Modules.

Three separate Effects Racks are available in each Effects Set. Each Effects Rack contains three Effects Slots and an EQ. Each Effects Slot can be set to one of nine different Effects Units. For each Effects Set, the three Effects Racks are in parallel. The output of the three Effects Racks in each Set is mixed together before leaving the Send Effects section.



Each of the nine Effects Slots in the RMV's three Effects Racks can be set to one of nine Effects Units. These are: Delay, Ping Pong, Flanger, Filter, Reverb, Gator, Wah Wah, Compressor and Crusher. To set the Effects Unit for a particular Effects Slot, click on the Effect Name located above the Effects Slot. This opens a popup menu displaying the available Effects Units. Select one of the Effects Units in the popup menu to place it in the Effects Slot.

All Effects Slots can be set to either "On" or "Thru" using the Power button to the left of the Effect Type menu. Note that Effects Units that are switched to "Thru" are bypassed.

Each Effect Unit's controls differ and are described in the Insert Effects section already.

Output

Each of the RMV's Effects Racks contains an Output section. The Output section contains three controls. These are Vol (Volume), Destination and Balance.



The Output section's controls are described below.

- Vol:** The Vol (Volume) control is used to set the output level of the Effects Rack.
- Destination:** Each Send Effects Rack can send its output to the host software's mixer via any of the instrument's outputs. The Destination popup menu lists all available audio outputs for the instrument. Note that these outputs bypass the instrument's Master volume control.
- Balance:** The stereo positioning of the output of each of the three Effects Racks is controlled using the Balance control. When the Balance control is set to the twelve-o-clock position, 0dB of gain is applied to the left and right channels. As the control is rotated (either clockwise or anticlockwise) one channel is attenuated while the other remains unchanged.

Mixer

The RMV's Mixer section is located at the far left of the instrument. The Mixer section contains controls for setting the audio parameters of the Pad and Loop sections of the instrument, as well as several miscellaneous controls related to the general operation of the instrument.



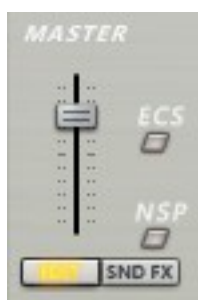
The Mixer section contains seven sets of Master controls, one set for the RMV's Pad section and one for each of the six Loop sections. These controls are: Volume, Pitch, Mute and Solo. The various controls found in the RMV's Mixer section are described below.

Volume: The Volume control is used to set the output volume of the selected section. The available range is -∞ to +6 dB. The default value is -3 dB.

Pitch: The Pitch control sets the selected section's overall pitch level. The available range is ± 24 semitones in 10 cent steps.

- Mute:** The Mute button silences the output of the selected section.
- Solo:** The Solo button silences all sections other than the ones that are selected. Note that more than one section can be soloed at a time. This is useful if you want to listen to particular combinations of sections in isolation.

The Mixer section also contains controls for ECS (Easy Controller Setup), NSP (Note Selects Pad), switching between the Pad/Loop view and Send Effects view, and a master volume control.



- Edit/SndFX:** The Edit/SndFX button toggles the user interface between the currently selected section (either one of the Pad sections or one of the Loop sections) and the Send Effects section. To display the Send Effects section click the SndFX button. To return to the previous section click the Edit button.
- ECS:** The ECS (Easy Controller Setup) button switches the RMV into ECS mode which is used for assigning MIDI controllers to the RMV. Use of ECS is described in the ECS section of this guide.
- NSP:** The NSP (Note Selects Pad) button configures the RMV so that when a note is received via MIDI, the instrument automatically switches to the Pad to which the note is set. This makes editing Kits or Loops much easier and reduces the likelihood of editing the wrong Pad by mistake.
- Master Volume:** The Master Volume control is used to set the overall output level of the RMV's Loops and Pads (that is, the main sound generating components of the instrument). Note that this control does not affect the output of the RMV's Send Effects.

File Input and Output

A key feature of the RMV is its support for several different file formats. The RMV supports the following file types: Samples, Loops, Pads, Kits and Grooves. To load Samples into the RMV, the instrument provides a Sample Browser. The Sample Browser acts as a replacement for the operating system file browser adding additional functions such as Preview. Directories containing Samples can also be searched using the Sample Browser. The remaining four file types (Loops, Pads, Kits and Grooves) each have their own dedicated “Librarian”. The Librarians are more sophisticated than the Sample Browser and offer file searching, loading and saving capabilities.

The term “Librarian” is used because it enables the user to search the internal file library that comes with the RMV. The user can also add data to the internal library. Note that only the RMV's internal library can be searched by the user. Files in other locations can be imported into the RMV and then saved into the instrument's internal library, however external locations cannot be searched.

Each Librarian consists of three parts: the Information display, the Search display, and the Search Result display. The Information display shows the attributes of the currently loaded File. It also enables files to be Saved, Imported and Exported. The Search display is used to set the search parameters that are used when the RMV searches its internal library. The Search Result shows a directory hierarchy and a list of the files contained in the current directory. The Search Result also allows files to be previewed before they are loaded into the instrument.

The Sample Browser is described in the Sampler module section of this guide. The Loop and Pad Librarians are described in the Loop and Pad sections of this guide. The Kit and Groove Librarians are described below.

Kit Section and Kit Librarian

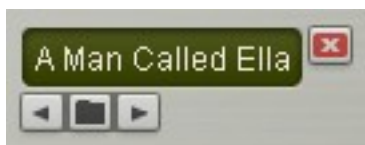
The Kit section is located above the upper middle of the RMV's Pad section.



The Kit section contains controls that are used to load and unload Kit files. The RMV can load files in the following formats: RM III, RM IV, CM-505 and LM 4.

Kit Section

The Kit section contains five controls: Browse Backwards, Open Kit Librarian, Browse Forwards, Kit Name and Unload Kit.



These controls are described below.

- Open Kit Librarian:** Clicking on the "Open Kit Librarian" button opens the Kit Librarian which enables Kit searching within the RMV's internal library, as well as the importing of Kits from other locations. The Kit Librarian is described in more detail below.
- Browse Backwards:** Once a Kit has been loaded, the "Browse Backwards" button on the left of the "Open Kit Librarian" button can be used to navigate backwards (by name) within the currently selected directory. This significantly reduces the time taken to locate and load Kits.
- Browse Forwards:** Once a Kit has been loaded, the "Browse Forwards" button on the right of the "Open Kit Librarian" button can be used to navigate forwards (by name) within the currently selected directory. This significantly reduces the time taken to locate and load Kits.
- Title:** The Title control is located above the "Browse Backwards/Open Kit Librarian/Browse Forwards" controls. This control displays the name of the currently loaded Kit.
- Unload Kit:** To the right of the Title control is the "Clear" button ("X" icon). Clicking on this button removes the currently loaded Kit from the RMV.

Kit Librarian

The RMV can load and save data in a variety of different formats. One of these formats is a Kit file. A Kit file contains all of the current settings of an RMV Kit. Clicking on the "Open Kit Librarian" button opens the Kit Librarian which enables Kit searching within the RMV's internal library, as well as the importing of Kit files from other locations.

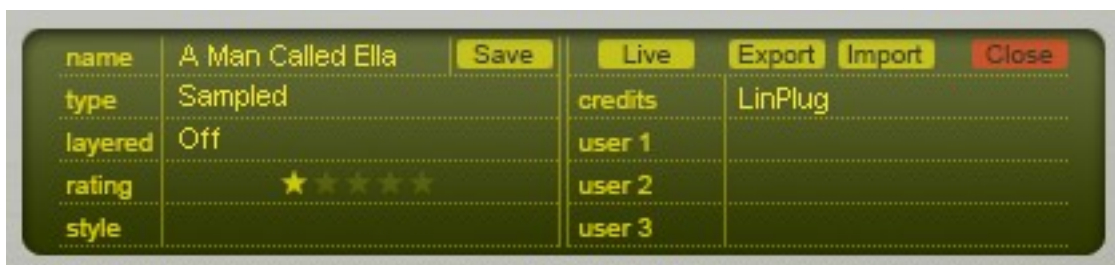
The RMV's Kit Librarian consists of four parts: the Information display, the Search display, the Search Result display, and the Live display.



The Information display shows the attributes of the currently loaded Kit. It also enables Kits to be Saved, Imported, Exported and configured for live use. The Kit Search Input display is used to set the search parameters that are used when the RMV searches its internal Kit database. The Kit Search Results display shows the results of the previous Kit search. Further details of these three displays are presented below.

Kit Information Display

The Kit Information display shows the descriptive attributes of the currently loaded Kit. It also enables a Kit's descriptive attributes to be edited by the user prior to the Kit being saved or exported.



The Kit Information display operates in two ways. Firstly, when a Kit is loaded from the

RMV's internal library or imported from an external location, the Kit Information display shows the Kit's descriptive attributes (the actual attributes are listed below). Secondly, the Kit Information display enables a Kit's descriptive attributes to be edited prior to the Kit being saved or exported. Note that only some of the descriptive attributes can be edited by the user.

The following descriptive attributes can be saved in a Kit file:

- Name:** Displays the name of the current Kit file. This control is also used to enter the name of the Kit when a new Kit file is created.
- Type:** Displays the type of the current Kit file. This control is also used to enter the Kit Type when a new Kit file is created. Available Types are sampled and synthesized.
- Layered:** Displays the type of layering used by the current Kit file. This control is also used to enter a description of the Kit's layering when a new Kit file is created. A Kit file can be either single or multi-layered.
- Rating:** Displays a qualitative rating of the quality of the Kit file. This control is also used to enter the rating for a Kit when a new Kit file is created.
- Style:** Displays the musical style of the current Kit file. This control is also used to enter the Style of the Kit when a new Kit file is created.
- Credits:** A reference to the creator of the Kit file. This control is also used to enter a reference to the creator of the Kit file when a new Kit file is created.
- User 1:** A user-definable Kit file attribute. This control is also used to enter a user-definable Kit file attribute when a new Kit file is created.
- User 2:** A user-definable Kit file attribute. This control is also used to enter a user-definable Kit file attribute when a new Kit file is created.
- User 3:** A user-definable Kit file attribute. This control is also used to enter a user-definable Kit file attribute when a new Kit file is created.
- Save:** Saves the current Kit file settings to the RMV's internal Kit library.
- Live:** The Live button opens the Live Kit display. This display enables Kits to be configured for use in live performance. The Live Kit display is explained in more detail below.

- Export:** Exports the current Kit file settings to a location on the host computer. Note that when using the Kit Librarian, exported Kit files cannot be included in a search.
- Import:** Imports a Kit file from an external location on the host computer. Note that when using the Kit Librarian, Kit files that are not located within the RMV's internal library cannot be included in a search.
- Close:** Closes the Kit Librarian.

Kit Search Input Display

The Kit Librarian's Search Input section is used to set the criteria used when searching the RMV's internal library for Kit files.

KIT LIBRARIAN SEARCH CRITERIA			Reset	Match All	Search
name	*<	a	credits	*<	LinPlug
type		Sampled	user 1	*<	
layered		SingleSample	user 2	*<	
rating	>=	4 ★★★★★	user 3	*<	
style	*<				

Nine search keys are available. These are: Name, Type, Layered, Rating, Style, Credits, User 1, User 2, and User 3. The search keys are used in combination with mathematical operators to determine the parameters of the search. The nine search keys can be divided into two types: text keys and numeric keys. The mathematical operators used with each search key depend upon the type of the search key. Text keys can be used in combination with the following operators: "=", "*<" and "<*". Numeric search keys can be used in combination with the following operators: "<", ">", "=", "<=" and ">=". These operators are described below. In addition to this, the Kit Search Input section enables any or all of the selected criteria to be used in the search. The search is started by clicking on the Search button. The search criteria can be set to their default values using the Reset button. Note that the Type and Layered search keys can only be set to predetermined values.

Text Operators

- =:** Equal to. The "Equal To" operator finds all items in the database that are exactly the same as the search term.
- *<:** Begins with. The "Begins With" operator finds all items in the database that begin with the search term.

<*>: Contains. The “Contains” operator finds all items in the database that contain the search term.

Numeric Operators

<: Less Than. The “Less Than” operator finds all items in the database that are less than the search term.

>: Greater Than. The “Greater Than” operator finds all items in the database that are greater than the search term.

=: Equal To. The “Equal To” operator finds all items in the database that are equal to than the search term.

<=: Less Than or Equal To. The “Less Than or Equal To” operator finds all items in the database that are less than or equal to the search term.

>=: Greater Than or Equal To. The “Greater Than or Equal To” operator finds all items in the database that are greater than or equal to the search term.

Search Key

Name: The name, or portion of the name, of the Kit file to search for in the internal Kit library. The search results depend upon the operator used to define the search (see above).

Type: The type of Kit file to search for. The Types of Kit file available are: Sampled and Synthesized.

Layered: The number of audio layers used in the Kit file. Layering only applies to Sampled Kits. The Layer search key can be set to either Single or Multi.

Rating: The rating of the quality of the Kit file.

Style: The musical style of the Kit file.

Credits: The reference to the creator of the Kit file.

User 1: The first user-definable Kit file attribute.

User 2: The second user-definable Kit file attribute.

User 3: The third user-definable Kit file attribute.

General

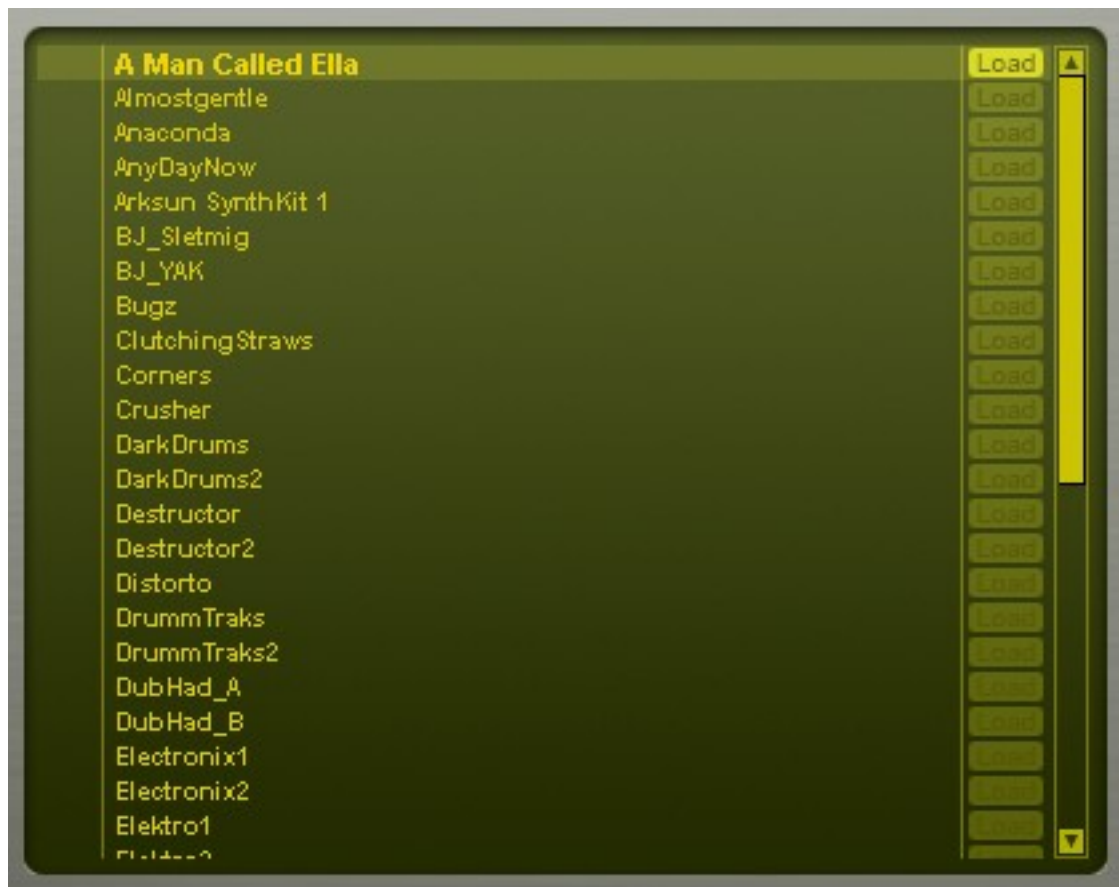
Reset: The Reset control restores the search parameters to their default values.

Match: The match control enables the search to be defined so as to match any or all of the selected criteria.

Search: The Search control starts the search of the internal Kit file database.

Kit Search Results Display

The Kit Librarian's Search Results display shows the results of a search of the RMV's internal Kit database using the parameters supplied in the Kit Search Input section.



The Search Results section displays a list of all Kits that meet the search criteria. The results are displayed as an alphabetical list. The Search Results section has one control:

Load, which is located to the right of the Kit's name.

Load: The Load button loads the selected Kit file into the RMV.

Note that if the Kit Librarian is closed without a new Kit being loaded, the RMV is restored to its initial state.

Live Kit Display

The Kit Librarian's Live Kit display enables the RMV to be configured so that MIDI program change messages control the loading of Kits into the instrument. This function is intended for use in live performance. One-hundred and twenty-eight slots are available for Live Kits.



The Live Kit display is used in conjunction with the Kit Search Results display. Once a Kit search has been conducted, Kits displayed in the Kit Search Results display can be added to a Live Kit list. Kit lists can be loaded and saved.

The Live Kit display contains eight controls. To the left of the Live Kit display are five buttons which are used for editing the Live Kit list. At the top of the Live Kit display are two buttons which are used for loading and saving Kit lists. There is also a Close button for closing the Live Kit display. Note that Kits can be dragged from the Kit Search Results

display and dropped into the Live Kit list. These controls are described below.

- >: Add the currently selected Kit to the Live Kit list.
- *>: Add all of the currently selected Kits to the Live Kit list.
- X>: Remove all Kits from the Live Kit list and add all of the currently selected Kits to the Live Kit list.
- <: Remove the currently selected Live Kit from the Live Kit list.
- X: Remove all of the Live Kits from the Live Kit list.
- Load: Loads a file containing a Live Kit list from the host computer.
- Save: Saves the current Live Kit list to the host computer.
- Close: Closes the Live Kit display.

Groove Section and Groove Librarian

The Groove section is located in the upper right of the RMV's Pad section.



The Groove section contains controls that are used to play, load, unload and export Groove files. A Groove file is similar to a MIDI drum loop and contains note and timing information for a short percussion pattern. Instruments are mapped to MIDI note numbers according to the General MIDI specification. An overview of this format specification can be found at http://en.wikipedia.org/wiki/General_Midi in section 1.3 Percussion Notes.

Groove Section

The Groove section contains controls for loading, playing and handling MIDI Grooves. These controls are described below.



Browse Backwards: Once a Groove has been loaded, the "Browse Backwards" button on the left of the "Open Groove Librarian" button can be used to navigate backwards (by name) within the currently selected directory. This significantly reduces the time taken to locate and load Grooves.

- Open Groove Librarian:** Clicking on the "Open Groove Librarian" button opens the Groove Librarian which enables Groove searching within the RMV's internal library, as well as the importing of Grooves from other locations. The Groove Librarian is described in more detail below.
- Browse Forwards:** Once a Groove has been loaded, the "Browse Forwards" button on the right of the "Open Groove Librarian" button can be used to navigate forwards (by name) within the currently selected directory. This significantly reduces the time taken to locate and load Grooves.
- Stop/Play Groove:** Grooves can be played independently of the application hosting the VST instrument. To start playback of a Groove file, click on the Play button. To stop playback of a Groove file, click on the Stop button. Note that Groove playback always commences from the start a Groove file regardless of where playback was stopped.
- H:** The setting of the "H" Host Sync control determines whether or not the module's internal MIDI data is used when the host application is played (for more info refer to Appendix D).
- D:** The "D" Drag control enables a Groove file to be dragged and dropped into the host software (provided that the host software supports the display of MIDI files) where it is displayed as a MIDI file. Although it's great to be able to preview Groove files, playing them from within the RMV means that neither the file's tempo nor its individual elements can be edited. Once the Groove file is dragged to the host application, the user is free to edit and rearrange the loop as desired.
- Title:** The Title control is located above the "Browse Backwards/Open Groove Librarian/Browse Forwards" controls. This control displays the name of the currently loaded Groove, as well as the tempo of the Groove file.
- Unload Groove:** To the right of the Title control is the "Clear Groove" button ("X" icon). Clicking on this button removes the currently loaded Groove from the RMV.

Groove Librarian

The RMV can load and save data in a variety of different formats. One of these formats is a Groove file. A Groove file is similar to a MIDI drum loop and contains note and timing information for a short percussion pattern. Clicking on the "Open Groove Librarian" button opens the Groove Librarian which enables Groove searching within the RMV's internal library.

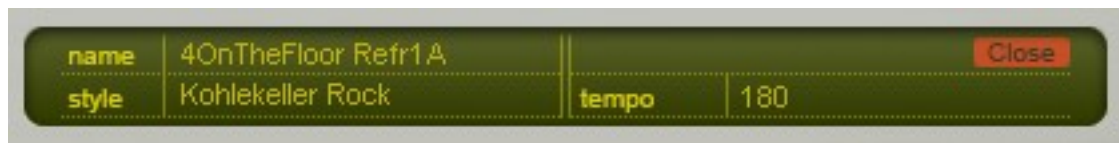
The RMV's Groove Librarian consists of three parts: the Information display, the Search display and the Search Result display.



The Information display shows the attributes of the currently loaded Groove. The Groove Search Input display is used to set the search parameters that are used when the RMV searches its internal Groove database. The Groove Search Results display shows the results of the previous Groove search. Further details of these three displays are presented below.

Groove Information Display

The Groove Information display shows the descriptive attributes of the currently loaded Groove file.



When a Groove is loaded from the RMV's internal library, the Groove Information display shows the Groove's descriptive attributes (the actual attributes are listed below).

The following descriptive attributes of a Groove file are displayed to the user:

- Name: Displays the name of the current Groove file.
- Style: Displays the musical style of the current Groove file.
- Tempo: Displays the tempo of the current Groove file.
- Close: Closes the Groove Librarian.

Groove Search Input Display

The Groove Librarian's Search Input section is used to set the criteria used when searching the RMV's internal library for Groove files.



Three search keys are available. These are: Name, Style and Tempo. The search keys are used in combination with mathematical operators to determine the parameters of the search. The three search keys can be divided into two types: text keys and numeric keys. The mathematical operators used with each search key depend upon the type of the search key. Text keys can be used in combination with the following operators: "=", "<*" and "<*>". Numeric search keys can be used in combination with the following operators: "<", ">", "=", "<=" and ">=". These operators are described below. In addition to this, the Groove Search Input section enables any or all of the selected criteria to be used in the search. The search is started by clicking on the Search button. The search criteria can be set to their default values using the Reset button. Note that the Style search keys can only be set to predetermined values.

Text Operators

- =:** Equal to. The “Equal To” operator finds all items in the database that are exactly the same as the search term.
- *<:** Begins with. The “Begins With” operator finds all items in the database that begin with the search term.
- <*>:** Contains. The “Contains” operator finds all items in the database that contain the search term.

Numeric Operators

- <:** Less Than. The “Less Than” operator finds all items in the database that are less than the search term.
- >:** Greater Than. The “Greater Than” operator finds all items in the database that are greater than the search term.
- =:** Equal To. The “Equal To” operator finds all items in the database that are equal to than the search term.
- <=:** Less Than or Equal To. The “Less Than or Equal To” operator finds all items in the database that are less than or equal to the search term.
- >=:** Greater Than or Equal To. The “Greater Than or Equal To” operator finds all items in the database that are greater than or equal to the search term.

Search Key

- Name:** The name, or portion of the name, of the G file to search for in the internal Groove library. The search results depend upon the operator used to define the search (see above).
- Style:** The musical style of the Groove file. Note that this search key can only be set to predetermined values. The available values are listed in Appendix C: Groove Style Settings.
- Tempo:** The tempo of Groove file to search for.
- Reset:** The Reset control restores the search parameters to their default values.
- Match:** The match control enables the search to be defined so as to match

any or all of the selected criteria.

Search: The Search control starts the search of the internal Groove file database.

Groove Search Results Display

The Groove Librarian's Search Results display shows the results of a search of the RMV's internal Groove database using the parameters supplied in the Groove Search Input section.



The Search Results section displays a list of all Grooves that meet the search criteria. The results are displayed as an alphabetical list. The Search Results section has one control: Load, which is located to the right of the Groove's name.

Load: The Load button loads the selected Groove into the RMV.

Note that if the Groove Librarian is closed without a new Groove being loaded, the RMV is restored to its initial state.

ECS

The RMV's ECS (Easy Controller Setup) makes it simple to control the RMV from an external MIDI controller (either hardware or software). Clicking on the ECS control's label opens the ECS popup menu.



This menu provides the following seven options: Off, Learn, Clear, Clear All, Load, Save and Rest.Fact (Restore Factory Settings). These are described in detail below. ECS can be activated directly, without the use of the ECS menu, by clicking on the ECS Indicator.



To access the ECS section click on the ECS control's label which is located in the Master section of the instrument on the upper left of the RMV's front panel. Clicking on the ECS button opens a popup menu containing the following items: Off, Learn, Clear, Clear All, Load, Save and Rest.Fact (Restore Factory Settings).

To use the RMV's ECS, proceed as follows. Click on the ECS control's label and then select "Learn" from the popup menu. Select an RMV parameter with the mouse and then send some MIDI messages to the RMV from your MIDI source. Then select "Off" from the popup menu. This process configures the selected RMV control so that it receives MIDI from the source that transmitted the MIDI messages. From now on the selected RMV parameter can be changed with using the chosen controller. In addition to this, more than one controller can be configured to change a particular RMV parameter. In fact, up to 128 parameter/controller combinations can be defined. This does not depend on the type of controller, nor the particular MIDI Control Change messages it sends.

ECS settings can be saved and restored using the "Load" and "Save" functions located in the menu that pops up when the ECS control's label is clicked. In addition to this, a single controller assignment can be cleared using the "Clear" menu item. To do this, select "Clear" from the ECS popup menu (the ECS indicator light goes on) and move control that is to be cleared. This de-assigns it from the MIDI Control Change message it is currently

controlled by. Make sure that the “Clear” function is switched off by clicking the “Off” menu item after all de-assignments have been completed. The “Clear All” menu item clears all parameter/controller assignments at once. The Rest.Fact (Restore Factory Settings) menu item restores the RMV's MIDI assignments to their default values.

Note that ECS assignment can also be performed directly by clicking on the ECS Indicator. Clicking on the ECS Indicator performs the same function as using the “Learn” and “Off” items from the ECS popup menu. In this case, proceed as follows. Click on the ECS Indicator so that it is illuminated. Select an RMV parameter with the mouse and then send some MIDI messages to the RMV from your MIDI source. Then click on the ECS Indicator so that it is no longer illuminated. This process configures the selected RMV control so that it receives MIDI from the source that transmitted the MIDI messages. From now on the selected RMV parameter can be changed with using the chosen controller.

Setup Panel

The Setup panel of the RMV is accessed by clicking on the "Setup" tab.

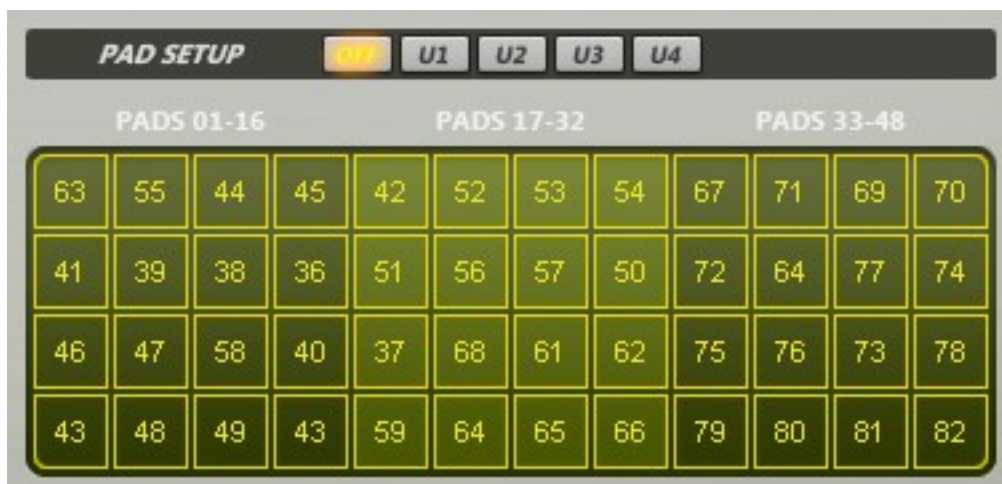


Several master controls have been located on the RMV's Setup Panel to make the instrument's user interface less crowded, and also so that they are not changed accidentally while the RMV is in use. The Setup panel is divided into four sections: Pad Setup, MIDI Channel Setup, Miscellaneous Setup and Directory Paths Setup. Each of these sections is described in detail below. Note that the Setup panel also displays the credits for the design and programming of the instrument as well as its version number.

Pad Setup

The Pad Setup section is used to set the position in which Pads appear when a Kit file is loaded. For example, a Kit can be setup so that Pad 1 always contains a kick drum, or that Pad 2 always contains a snare drum, regardless of the actual Kit file that is loaded. This means that no matter how the kit was saved, when it is loaded, each Pad will appear where the user wants it to appear. This capability is also useful if the RMV is used with a hardware controller such as the M-Audio Trigger Finger or any of the AKAI MPD/MPC controllers. In this case, the RMV can be setup so that the contents of the Pads is consistent from Kit to Kit. In other words, Pad 1 of the hardware device will always trigger a kick drum sound, or Pad 2 will always trigger a snare drum sound.

The Pad Setup section contains two sets of controls. The first set of controls are located at the top of the section and are used to selecting the current Pad Setup. The second set of controls, called the Pad Matrix, are located below the Pad Setup buttons and are used for arranging the contents of the RMV's Pads.



Current Pad Setup: The Current Pad Setup buttons are used to select the Pad arrangement that is used when a Kit is loaded. Four User Presets are available: U1, U2, U3 and U4. The Current Pad Setup can also be set to Off in which case the Pad is arranged according to its default settings. Note that the Pad Setup is stored in the RMV itself and is not part of the Kit data. To create a new Pad Setup, choose one of the User Presets (U1, U2, U3, U4) and then rearrange the Pads according to the method described below.

Pad Matrix: The Pad Matrix displays a Matrix Element for each Pad. The number shown in each Matrix Element is the mapping for the Pad. For example, in the picture above the Matrix Element for Pad 1 is set to 63. This means that when a Kit is loaded, Pad 1 will contain whichever Pad in the Kit is set to be triggered by MIDI Note 63. To change the setting for a Matrix Element click and drag the desired element to a new position in the Pad Matrix. The destination Matrix Element will then be exchanged with the source Matrix Element.

MIDI Channel Setup

The MIDI Channel Setup section is used to set the manner in which the RMV responds to incoming MIDI messages.



The MIDI Channel Setup section contains seven controls. Each control is used to set the MIDI input channel for one section of the RMV. All forty-eight of the RMV's Pads receive incoming MIDI messages on the same MIDI channel (however each Pad is usually triggered by a different MIDI note). Each Loop module can receive MIDI messages on its own MIDI channel. This is necessary so that Pads and Loop Slices are not triggered by the same incoming MIDI message. To change the setting of a MIDI Channel control, click and drag on the control.

MIDI Ch Pads: Sets the MIDI channel for the RMV's forty-eight Pads. Available settings are 01 to 16 and "All". In the case of "All", the section responds to MIDI Note-On messages regardless of their channel.

MIDI Ch Loop 1: Sets the MIDI channel for the Loop 1 module. Available settings are 01 to 16 and "All". In the case of "All", the section responds to MIDI Note-On messages regardless of their channel.

MIDI Ch Loop 2 up to MIDI Ch Loop 6 are working in the same way for the Loop Modules 2 to 6

Miscellaneous Setup

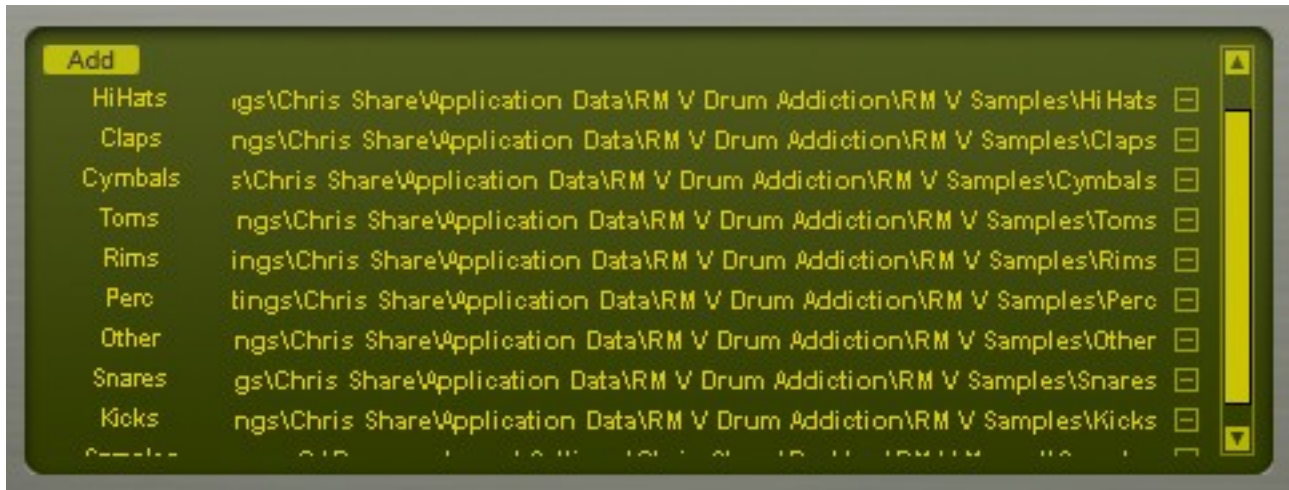


- Power Pan:** When this control is switched on panning operates in "constant power" mode. Otherwise, the pan control operates in "constant voltage" mode (see the Glossary for more information about constant power and constant voltage panning modes). As you mix down the various instruments within the RMV it is useful to have the option to choose whichever is more suitable for the task at hand. The default and recommended option is constant power panning.
- Pad Velocity:** When this control is switched on, the Trigger Button becomes "velocity sensitive" and responds to the velocity parameter of MIDI Note On messages. In this case, clicking on a Trigger button's left side produces a low velocity note. When the right side of a Trigger button is clicked, a higher velocity note is produced. The note velocity value varies linearly from left to right across the Trigger button. When this control is switched off, the trigger velocity does not depend on where the trigger button is clicked. In this case, the note is always triggered at full volume. The default position for this switch is on.
- Linear Dials:** This control is used to select the RMV's dial operation mode. Two modes are available: linear (when the button is on) and circular (when the button is off). In linear mode the RMV's dials track vertical cursor movement. In circular mode the RMV's dials track cursor movement in a circular fashion around the dial. It's important to note that some sequencers can override the instrument's dial mode settings so if the RMV's dials are not operating in the correct manner, check the host program's settings.
- Note Names:** When the Note Names control is switched on, notes are displayed by name (for example "D#1") in the Settings display (see below for more information about the Settings display). When this control is switched off notes are displayed by their MIDI note numbers (for example "39").

- Map 35 to 84:** The General MIDI standard (http://en.wikipedia.org/wiki/General_MIDI) defines two kick drums (at note number 35 and 36). This can be inconvenient as many MIDI keyboards end at note number 36. Map 35 to 84 makes it possible to trigger the sound at note number 35 using note number 84 (C5) which is found on most MIDI keyboards.
- Startup Kit:** The Startup Kit control displays the Kit that is loaded when the RMV is started. Clicking on the directory icon at the right of the control opens a browser that can be used to set the Startup Kit.
- Velocity Curve:** This slider allows you to set one of ten different velocity responses; from linear through to an extreme exponential velocity response.
- Sample Editor:** The Sample Editor control enables a sample editor application to be set as the default application that opens when sample editing is desired. The control displays the current editor, or if no editor has been chosen, the control is empty.
To select a sample editor, click on the directory icon at the right of the control. This opens the External Sample Editor Browser which is used to navigate to and select the desired sample editor.
The selected sample editor can then be opened automatically from the Sampler module or any of the Loop modules.

Directory Paths

The Directory Paths Setup section is used to set the default directory paths that the RMV's Sample Browser displays when it is opened. The Directory name is listed on the left of the display, while the directory path is listed on the right of the display.



The Directory Paths Setup section contains two controls: Add and Remove.

Add: Clicking on the Add control opens a browser that enables a new directory to be added to the default Sample directories.

Remove: The Remove (“-”) control, located at the right of the directory path. Clicking on the Remove control removes the directory from the default Sample directories.

Registration

After you've installed and opened the full version of RMV, go to the instrument's Setup Panel (see the Setup Panel section of this manual for more information about the instrument's Setup Panel). The Serial Number edit box will read "Enter here". Enter the serial number you have received into the Serial Number edit box. If the serial number has not been entered or it has been entered incorrectly, the RMV will run in demo mode.

After entering the serial number correctly, the Serial Number edit box displays the word "Valid" indicating that the instrument is registered. Once registered, the serial number is no longer displayed on the instrument. Make sure to keep your serial number in a safe place as you might need it again to register RMV, in example when you bought a new computer.

If you have any questions regarding RMV's registration process, please visit our support area at www.linplug.com/support/support.htm.

Support

If you require help installing the RMV or have any general questions regarding the operation of the RMV please contact us via our support form at:

www.linplug.com/support/support.htm

For general discussion related to the RMV and other LinPlug VST instruments go to the LinPlug forum on the KVR website:

<http://www.kvraudio.com/forum>

Appendix A: Modulation Sources and Destinations

Two types of modulation source are available: unipolar and bipolar. Unipolar modulation sources increase the modulation destination's value in a single direction (e.g. Velocity), while bipolar modulation sources both increment and decrement the destination value (e.g. the Pitch Wheel).

All modulation destinations that contain "[S]" apply only to the Sampler module.

All modulation destinations that contain "[c]" are modulated continuously while the note is playing. A modulation destination that does not have a "[c]" is modulated only when the note is triggered.

Modulation Sources

"_""	The modulation source is off.
Note played Exp	The note being played with exponential response. The modulation value follows the frequency of the played note (bipolar). Note that this modulation source is only useful for playing pitched sounds, as non-pitched sounds normally do not have an exact trigger note. In this case there is no variation in the modulation source.
Note played Lin	The note being played with a linear response. The modulation value follows the note number (e.g. C3 = 60) (bipolar). Note that this modulation source is only useful for playing pitched sounds, as non-pitched sounds normally do not have an exact trigger note. In this case there is no variation in the modulation source.
Velocity	The MIDI note-on velocity. The harder the key is hit, the higher the modulation value (unipolar).
Aftertouch	The Aftertouch value of the note is used as modulation source. Note that your MIDI input device must support this message type. If this doesn't work it is likely that your MIDI input device does not support aftertouch (unipolar).
LFO 1	LFO 1 (bipolar).
LFO 2	LFO 2 (bipolar).
LFO 3	LFO 3 (bipolar).

Appendix A: Modulation Sources and Destinations

Pitch Envelope	The Main Pitch envelope. This envelope controls the overall pitch, however if it makes sense within the preset to do so, the envelope can be used as a modulation source (unipolar).
Amp Envelope	The Main Amplitude envelope. This envelope controls the overall output Volume, however if it makes sense within the preset to do so, the envelope can be used as a modulation source (unipolar).
Filter Envelope	The envelope of the Filters. These envelope control the respective Filter, however if it makes sense within the preset to do so, the envelope can be used as a modulation source (unipolar).
Pitch Wheel	The value of the Pitch Wheel (bipolar).
Modulation Wheel	The MIDI modulation wheel (MIDI Control Change 1) (unipolar).
Breath Controller	MIDI Control Change 2 (unipolar).
Foot Controller	MIDI Control Change 4 (unipolar).
ExpressionContr	MIDI Control Change 11 (unipolar).
CC16 Controller	MIDI Control Change 16 (bipolar).
CC17 Controller	MIDI Control Change 17 (bipolar).
CC18 Controller	MIDI Control Change 18 (bipolar).
CC19 Controller	MIDI Control Change 19 (bipolar).
Random Unipolar	A random unipolar source. The value of this source is the same if used in several modulation routing. If you in example route it to filter and amplitude both will be modulated with the same random amount . The amount of course changes randomly on each note being played. Unipolar means that the source is only increasing (or if applied with negative depth, decreasing) the targets value.
Random Bipolar	A random bipolar source. Bipolar means that the source is randomly increasing or decreasing the target's value.
Alt	The Alternate modulation source changes between values of 1 and -1 for each note. This is useful for modulation effects such as auto-panning (bipolar).

Const The Modulation Amount is used as a constant modulation value (unipolar).

Modulation Destinations

"---" The modulation destination is off.

Pitch Overall pitch of the module. Often used for vibrato effects (applies only to the Sampler module).

Pitch [c] Overall pitch of the module. Often used for vibrato effects (applies only to the Sampler module). The destination is modulated continuously while the note is playing.

Cutoff Cutoff frequency of the Filter, often used with Velocity to simulate an acoustic instrument's response to note attack.

Cutoff [c] Cutoff frequency of the Filter, often used with Velocity to simulate an acoustic instrument's response to note attack. The destination is modulated continuously while the note is playing.

Resonance Resonance of the Filter.

Resonance [c] Resonance of the Filter. The destination is modulated continuously while the note is playing.

Amplitude Overall amplitude of all Audio Modules. Often used for tremolo effects or rhythmic variations.

Amplitude [c] Overall amplitude of all Audio Modules. Often used for tremolo effects or rhythmic variations. The destination is modulated continuously while the note is playing.

Pan The position of the audio signal in the stereo field. Applies only if the Pad is routed to a stereo output.

Pan [c] The position of the audio signal in the stereo field. Applies only if the Pad is routed to a stereo output. The destination is modulated continuously while the note is playing.

Pitch Level 1 [S] The pitch envelope's initial value (applies only to the Sampler module).

Pitch Time 1 [S] The length of time taken for the pitch envelope to move from the first

Appendix A: Modulation Sources and Destinations

pitch value (see above) to the second pitch value (see below) (applies only to the Sampler module).

Pitch Level 2 [S]	The pitch envelope's target value (applies only to the Sampler module).
Pitch Time 2 [S]	The length of time taken for the pitch envelope to move from the second pitch value (see above) to the samples base pitch value (applies only to the Sampler module).
Amp. Attack [S]	The length of time taken for the amplitude envelope to reach the full envelope depth (applies only to the Sampler module).
Amp. Hold [S]	The length of time the amplitude envelope is held at the maximum envelope depth (applies only to the Sampler module).
Amp. Decay [S]	The length of time that the amplitude envelope takes to move from the Attack level to the Sustain level after the Hold time has elapsed (applies only to the Sampler module).
Amp. Sustain [S]	The level that the amplitude envelope is held at during the Sustain portion of the envelope (applies only to the Sampler module).
Amp. Release [S]	The length of time that the amplitude envelope takes to move from the Sustain level to 0 after a Note-Off message has been received (applies only to the Sampler module).
Filter Attack	The length of time it takes for the filter cutoff frequency to move from its initial value to the full envelope depth.
Filter Hold	The length of time the filter cutoff frequency is held at the maximum envelope depth.
Filter Decay	The length of time that the filter cutoff frequency takes to move from the full envelope depth to the Sustain frequency after the Hold time has elapsed.
Filter Sustain	The frequency that the filter cutoff is held at during the Sustain portion of the envelope.
Filter Release	The length of time that the filter cutoff frequency takes to move from the Sustain frequency to 0 envelope depth after a Note-Off message has been received.

Appendix A: Modulation Sources and Destinations

Distortion	The setting of the "Distortion" effect. This enables you to modulate the amount that a Pad's output signal is distorted.
Crusher	The setting of the "BitCrusher" effect. This enables you to modulate the bit depth of the output signal. Reducing the bit depth adds a harsh, noisy quality to the sound.

Appendix B: Sync Settings

LFO Sync Settings

Off, 16/*1, 16/1, 16/1T, 8/*1, 8/1, 8/1T, 4/*1, 4/1, 4/1T, 2/*1, 2/1, 2/1T, 1/*1, 1/1, 1/1T, 1/2, 1/2T, 1/4*, 1/4, 1/4T, 1/8*, 1/8, 1/8T, 1/16*, 1/16, 1/16T, 1/32*, 1/32, 1/32T, 1/64, 5/16, 7/16, 9/16, 5/8, 11/16, 13/16, 7/8, 15/16.

Note: "T" stands for Triplet and "*" stands for a dotted note. In the case of a dotted note, the note duration is equal to 1.5 times its original undotted value.

Delay Sync Settings

Off, 1/2, 1/2T, 1/4*, 1/4, 1/4T, 1/8*, 1/8, 1/8T, 1/16*, 1/16, 1/16T, 1/32*, 1/32, 1/32T.

Note: "T" stands for Triplet and "*" stands for a dotted note. In the case of a dotted note, the note duration is equal to 1.5 times its original undotted value.

Appendix C: Groove Styles

The RMV's Groove Librarian can search for Groove files according to their style. The available styles are:

ACDC, Alternative, Anthem, Ballad, Basics, BigBeat, Blues, BreadNButter, Breakbeat, Busy, Cajun, Country, Disco, DnB, Downbeat, EasyRock, FourFloor, Funk, Fusion, Groove Monkee Electronic, Groove Monkee Funk Hip Hop RB, Groove Monkee Jazz, Groove Monkee World Beats, Hard Rock, Heavy Rock, HipHop, House, Hyper, Intro, Jazz, Kohlekeller Rock, March, Metal, MoTown, New Wave, Pop, Progressive Rock, Psychedelic, Punk, Quicksilver, Rock, Rockabilly, RockNRoll, Slade, Slow, Soul, Straight, Surf, Techno, ThreeFour, Trips, Urban.



Appendix D: RMV to Host Synchronization

The tempo and bar position of the RMV is always in sync with the host application. However, it is possible to choose whether or not a particular module plays back its internal MIDI data when the host applications transport is started. This function is controlled by the “H” Host Sync switch.

Position of the “H” Host Sync switch for the MIDI Grooves

Position of the “H” Host Sync switch for the Audio Loops

The “H” Host Sync function is intended to be used as follows. Usually, when you build up your drum and percussion parts, you will let each module (MIDI Groove and Audio Loop) run in sync with the host application so that you can try things out and see how they fit together.

Once the drum and percussion parts are completed, you drag the MIDI file (either a MIDI Groove file or an Audio Loop MIDI file) to the host application using the respective “D” button. Once the MIDI file is transferred to the host application you will not want the RMV to continue playing back the respective module's internal MIDI data as this would result in two files being played at once – one in the host application and another in the RMV. To stop this happening, the “H” Host Sync switch enables the module's internal MIDI player to be switched off so that only the MIDI data in the host application triggers the RMV. In practice, this means that when the “H” Host Sync switch is on, the module's MIDI data will not be used for playback. Note however that the internal MIDI data can still be played back by using the “Play” button in the module.

Glossary

- Algorithm:** A process or set of rules used for calculation or problem-solving. In terms of audio synthesis, an algorithm is the way in which various components are combined to generate sound.
- Bit Depth:** The number of bits (binary digits) used to represent an audio signal. CD quality audio uses 16 bits to represent an audio signal. Reducing the bit depth of a signal means that it is less accurately represented and is thus, distorted.
- Constant Power/Constant Voltage Panning:** A Pan (Panorama) control is used for positioning an audio signal in the stereo field by varying the amounts of signal that are sent to the left and right channels. There are two different ways that panning is most commonly implemented. When "constant power" panning is used, the volume of an instrument remains constant when it is moved within the stereo panorama. This method is suitable when an instrument's stereo positioning is changed during the course of a song as the instrument volume remains constant. However, this approach is not mono-compatible because when the stereo mix is played back on a mono device the volume of the instrument changes. Alternatively, "constant voltage" panning is mono-compatible, however the volume of the instrument changes when a stereo mix is played back on stereo devices (as intended).
- Effect:** A signal processing device that changes some aspect of the input signal. An enormous number of different effect types are available. These include Chorus (which produces a thickening of the signal), Delay (adding echoes to the signal) and Distortion (which changes the shape of the waveform usually adding overtones).
- Envelope:** A time-varying signal used to control the development of another signal after it has been triggered. Envelopes are most often used for controlling a signal's amplitude. The shape of the envelope is determined by the number of control parameters. Usually four parameters are available: Attack Time, Decay Time, Sustain Level and Release Time.
- Filter:** A signal processing algorithm that suppresses or "filters" out specific parts of a signal's frequency spectrum. Numerous types of filter are used in audio synthesis. These include Low Pass, High Pass, Band Pass and Notch. The tone controls on a stereo amplifier are one example of an audio filter.

Filter Cutoff:	The frequency that marks the transition from the filter's passband to the filter's stopband. Usually it is defined as the frequency at which the signal is attenuated by 3 dB.
FM:	FM or "Frequency Modulation" is a process where the frequency of one oscillator (the carrier) is controlled by another (the modulator). When the frequency of the modulator is periodic and below the audio range (less than 20 Hz) vibrato is produced. When the modulation frequency is within the audio range, Frequency Modulation is produced.
Modulation Matrix:	A signal "junction" where a source signal can be patched so that it controls a destination signal. The RMV's Modulation Matrix is used for tasks such as modulating an envelope parameter by Velocity.
Noise:	A sound with a distributed spectrum. The most common form of noise, "white" noise, has a "hissing" sound.
Oscillator:	A signal source that generates a periodic waveform at a given frequency.
Zero-Crossing:	The point where the polarity of an electrical or sampled signal changes from positive to negative (or vice-versa) as it passes through zero. A zero crossing provides a convenient point to splice two sounds because the levels of the two splice points are the same at zero volts.

MIDI Implementation Chart

Product: RMV Version 1.x Date: 24 July 2008

Manufacturer: **LinPlug Virtual Instruments GmbH**

Function	Transmitted	Recognized	Remarks
Basic Channel			
Default	No	No	
Changed	No	No	
Mode			
Default	No	Omni	
Changed	No	Omni/Poly	
Note Number			
	No	Yes	
TrueVoice	No	No	
Velocity			
NoteOn	No	Yes	
NoteOff	No	No	
Aftertouch			
Poly(Key)	No	No	
Mono (Channel)	No	No	
Pitch Bend	No	Yes	Via Matrix
Control Change	No	Yes	Via ECS and Matrix
Program Change	No	No	
System Exclusive	No	No	
System Common			
Song Position	No	No	

MIDI Implementation Chart

Song Select	No	No	
Tune Request	No	No	
System Realtime			
Clock	No	No	
Commands	No	No	
Aux Messages			
Local On/Off	No	No	
All Notes Off	No	Yes	
Active Sensing	No	No	
System Reset	No	Yes	

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