RHINO 3

Hybrid FM synthesizer

VST3 / AU / Standalone · macOS / Windows
VERSION 1.4.2



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CHAPTER 1
GETTING STARTED

Rhino 3 is a hybrid FM synthesizer made by MAP Audio in collaboration with Big Tick Audio. Each voice has six oscillators, two multimode filters and 31 drawn envelopes. An oscillator plays a built-in waveform or one of six wavetables drawn on the Additive page, and any oscillator can frequency-modulate any other, itself included. Rhino also has two ring modulators, a 16-step sequencer and four effect slots. A preset stores all of it, with its macro assignments, tuning and author notes.

INSTALLATION

Download the installer from your MAP Audio account at map.audio/account. Close your DAW before installing, then rescan its plug-ins if Rhino 3 does not appear. Rhino 3 runs as VST3 and as a standalone app on macOS and Windows, and as an Audio Unit on macOS. There is no VST2, CLAP or AAX version.

The macOS installer lets you choose the Standalone Application, the VST3 and Audio Unit plug-ins, and the Factory Presets & Wavedata. On Windows, **Full installation** installs everything, and **Plugin only (update)** leaves the factory content out. The factory library includes Rhino 2's factory presets, wavedata and tunings.

> **CAUTION** The Windows installer is not code-signed yet. If Windows shows **Windows protected your PC**, click **More info**, then **Run anyway**.

ACTIVATION

Open Rhino 3, enter your purchase email and press **Email me a code**, then type the 6-digit code and press **Verify and activate Rhino 3**. **Use a license key** activates with the key from your purchase email instead. One license covers three computers. Until it is activated, Rhino shows the activation screen and makes no sound. There is no trial: the browser version at map.audio/rhino plays a selection of the factory presets.

For a computer without internet access, choose **Activate offline**, enter your license key and press **Create activation request**. Copy or export the request, use it in your account on a computer that is online to create a `.mb` license file, then press **Import .mb license**. Settings → Account shows the license and can deactivate this computer.

Rhino 2 owners get Rhino 3 free. Sign in with the email address your Rhino 2 purchase is registered to at Big Tick Audio, and the license is added to your account. If you can no longer open that inbox, sign in at map.audio/account with an address you use now and enter your old Big Tick Audio username or email and its password there. Rhino 2 stays installed beside Rhino 3 and keeps working.

THE WINDOW

From top to bottom: the header, the macro strip, the page tabs, the page, the keyboard and the status bar. Drag the window's bottom-right corner to resize it. The interface keeps its proportions, and Rhino reopens at the size you left it.

Logo Click **RHINO 3** for the version, credits and license.

Undo, Redo Cmd/Ctrl+Z and Shift+Cmd/Ctrl+Z. Right-click either arrow for the list of recent steps.

PB, MOD, SUS Pitch bend, mod wheel and sustain pedal as they arrive.

Glide The switch turns glide on. **Legato** glides only between overlapping notes, and **Fixed** gives every glide the same time instead of the same rate. Each oscillator sets its own Glide Time.

Voices Polyphony, 1–32: drag the readout up or down, or click it for a list. The button beside it is Panic, which silences every sounding note.

Patch display The loaded preset, with an asterisk while it has unsaved changes. Click it to open Presets, right-click it for preset actions. The arrows load the previous and next preset (Cmd/Ctrl+Left and Right), and the disk button saves.

Dice Randomize the page (Alt+P) or the whole preset (Alt+R). See *Randomizing* below.

Vib, Master Vib sets how far the Global Pitch envelope moves every oscillator's pitch. Master sets the output level, with the output meter under its fader.

Macros Six macro knobs (chapter 3). Bend and MIDI sit at the right end of the strip.

Bend The pitch-bend range up (up to +12 semitones) and down (up to −12). With the factory content installed, Rhino keeps the ranges you set and applies them to every preset it loads.

MIDI **Out** sends parameter changes to the host as MIDI CC. **Learn** starts MIDI Learn (chapter 3).

Tabs Osc 1–6, Filter 1–2, Additive, Mod Matrix, Sequencer, Effects, Macros and Presets. Click the light on an Osc or Filter tab to switch that unit on or off without leaving the page. Drag an Osc tab onto another Osc tab to copy its shape, envelopes, curves and knobs. Filter tabs copy the same way, mode included. Mod Matrix amounts stay as they were.

Status bar The tooltip for the control under the pointer, the computer keyboard's note and octave, the voices playing out of the polyphony, and DSP load.

PLAYING AND EDITING

Click the on-screen keyboard, or play the computer keyboard while Rhino's window has focus: A to ; play the white keys from C4, W, E, T, Y, U, O and P the black keys, and Z and X shift the octave. MIDI from your host or controller plays Rhino on every channel unless Settings → MIDI → **MIDI input channel** picks one. The standalone app starts with its MIDI inputs off: switch your controller on under Settings → General → **Audio and MIDI devices**. Rhino responds to velocity and to channel and polyphonic aftertouch.

Drag a knob up or down to turn it, holding Shift for finer steps. A fader follows the pointer. Double-click a control to reset it, or double-click its value to type one. Right-click any control for **Reset to default**, **Edit value...**, **Copy value**, **Paste value**, **MIDI Learn** and the **Macro** row. The mouse wheel turns the control under the pointer, in finer steps with Shift. Settings → General → **Mouse wheel** sets its direction or turns it off.

RANDOMIZING

The left die rolls the page in view, but the Additive, Macros and Presets pages have nothing for it to roll. The right die rolls the oscillators, filters, matrix and effects, and leaves the sequence alone. Rolls move the oscillator and filter knobs, the matrix amounts, the effect controls apart from HP Cutoff, and the sequencer steps. Curves, shapes, modes, effect types, the power and tempo-sync switches, the envelope faders and the controls in the header and macro strip keep their settings. Each roll is one undo step.

Right-click either die for the randomizer. **Amount** (10, 25, 50 or 100%) sets how far each value moves toward a new random one. **Lock** keeps the Osc, Filter, Matrix or FX section through every roll. **Roll** randomizes one whole section: all six oscillators, both filters, the matrix, the effects or the sequence.

CHAPTER 2
THE SOUND PAGES

The Osc and Filter pages share a layout: envelopes on top with the waveshaper beside them, then keyboard tracking, the velocity and aftertouch response, and the unit's own controls. The cards of a unit that is switched off turn gray.



Osc 1 playing User1, a wavetable drawn on the Additive page (preset Beautiful Keys)

ENVELOPES

The Osc pages have Level, Waveshape, Pitch and Phase envelopes for their oscillator, and Global Pitch, which all six share. The Filter pages have Cutoff, Rez (resonance) and WS Amount (waveshape amount). A tab's light shows while the newest voice runs that envelope.

Click the curve to add a point. Drag a point to move it, and double-click or right-click it to remove it. Drag a segment to bend it, and Alt-click it to straighten it. While a note is held, the envelope loops between the two filled triangles under the curve (drag them to move the loop), and it plays the segments after the loop when you release the note. The outlined triangles above them set how far a Time target of keyboard or velocity tracking can shorten each segment. With the curve focused, [and] select a point, the arrow keys move it and Delete removes it. Right-click the curve to copy it or paste it into another envelope.

The A, D, S and R faders are shared by every envelope. A and D stretch the rising and falling segments before the loop, S scales the levels in the loop, and R stretches the segments after it. **ADSR** sets how much the four faders change the envelope on screen, and **Level** sets its overall level.

The three-dot menu holds **Length** (the envelope's overall length), **Lock length**, **Tempo sync**, and **Load envelope…** and **Save envelope…** for `.env` files. With Lock length on, as it is by default, moving a point leaves the total length alone. With it off, a drag stretches the segment before the point. Tempo sync replaces Length with **Beats** (1–16), and a note icon beside the three-dot button marks a tempo-synced envelope.

OSCILLATORS

Waveshaping A transfer curve that the oscillator's output passes through. The Waveshape envelope sets how much of it applies. The switch turns it on, and so does editing the curve. While a note plays, the curve lights up with the shaping the voice applies.

Keyboard Tracking A curve across the keys, C1 to G10, for the target its menu picks, such as Level, Time, Pitch, Detuning or FM.

Velocity, Aftertouch The same kind of curve against velocity or aftertouch, each tab with its own target menu.

Shape The switch turns the oscillator on or off, and so does a click on the waveform display. The menu lists the waveforms in groups (Acoustic, Synthesized, User-Defined and more). Type to search it, or step with the arrows. User-Defined → User1 to User6 are the Additive page's wavetables. If a preset uses a shape that the installed wavedata lacks, the menu reads **Missing**.

Knobs Pitch Coarse (±48 semitones), Pitch Fine, Pitch Mod (how far the Pitch envelope moves the pitch, up to 96 semitones), Pitch Random (a random detune for each note, up to a semitone), Phase Mod (depth of the Phase envelope, and at RND each note starts at a random phase) and Glide Time.

FILTERS

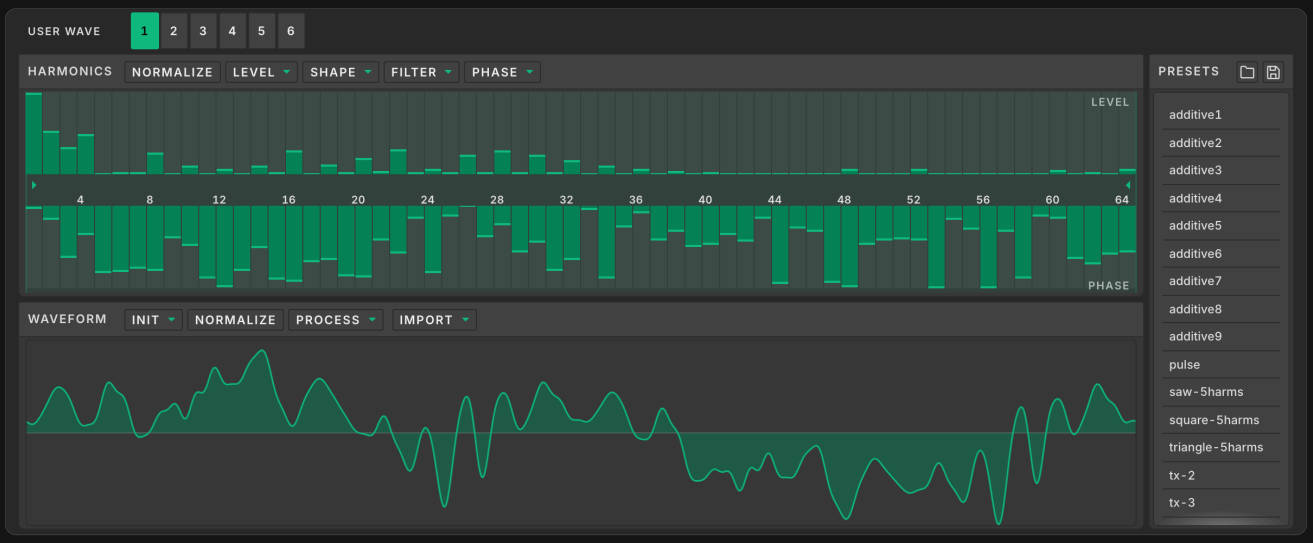
The Filter Mode card's switch turns the filter on or off, and its menu picks one of 26 modes: Lowpass, Hipass, Bandpass and Notch at −12, −24 and −36 dB/Oct, Analog Lowpass 1–3, Analog Highpass 1–3, Comb Filter, Allpass Filter, Diode Filter, Transistor Ladder, Sallen-Key LP and HP, and SEM LP and HP.

Knobs Cutoff and Resonance; Cutoff Env and Reso Env, how far their envelopes move them; Feedback 1 and Feedback 2, how much of Filter 1's and Filter 2's output returns to this filter's input, positive or negative; and WS Morph.

Waveshaping, Morph Two transfer curves inside the filter. WS Morph blends from the first to the second, and the WS Amount envelope sets how much shaping applies. One switch turns both on.

Tracking and response As on the Osc pages, with filter targets such as cutoff, resonance, pan and feedback.

ADDITIVE



User wave 1 in Beautiful Keys: 64 harmonic levels and phases, the resulting cycle and the .add presets

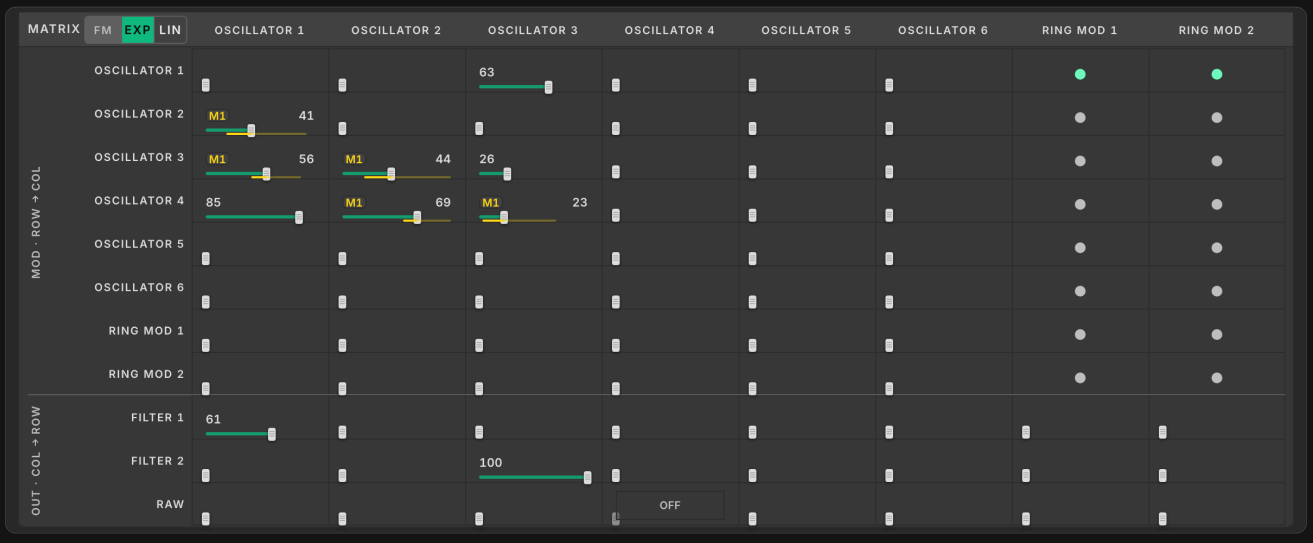
The Additive page draws the six wavetables that oscillators play as User1 to User6. **User Wave** 1–6 picks the one to edit. If you hold a note while you draw, the note changes as you draw.

Harmonics Level and phase of 64 harmonics: drag across the bars to draw. The two triangle markers set the range that Normalize and the Level, Shape, Filter and Phase menus act on.

Waveform The resulting cycle. Drag it to deform the wave (Shift syncs, Cmd/Ctrl clips), and Rhino works out the harmonics again. **Init** starts again from Sine, Saw, Square or silence. **Process** holds Rectify, Remove Ripples and Phase shift. **Import** reads a WAV file or copies another oscillator's waveform.

Presets Click an `.add` preset to load it into the wavetable. The folder and disk buttons load and save `.add` files.

MOD MATRIX



Other World: FM into oscillators 1 to 3, Macro 1 on five cells, and a disabled output cell

The columns are the six oscillators and the two ring modulators. In the top eight rows (MOD), the row's source frequency-modulates the column that it crosses. Along the diagonal, an oscillator modulates itself. In the Ring Mod columns, the switches pick up to three sources for each ring modulator. The bottom three rows (OUT) set how much of each column goes to Filter 1, Filter 2 and Raw, the output that bypasses the filters.

FM switches between **EXP** and **LIN**, exponential and linear FM. Right-click a cell and choose **Disable routing cell** to silence it: the cell reads OFF and keeps its amount until you click OFF.

SEQUENCER

The sequencer plays while you hold a key. Each step plays a note transposed from the key you hold. Click a number in the Steps row to set the loop length and switch the sequencer on. Click the lit number, or the power switch, to switch it off.

Note Each step's transposition. C4 plays the held key.

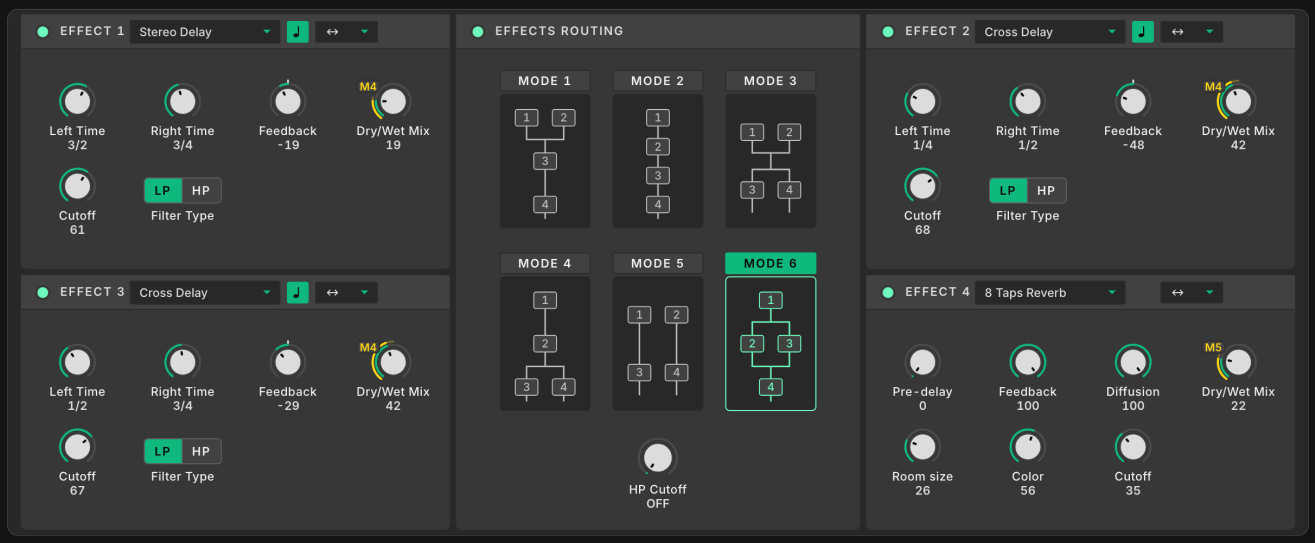
Velocity, Length Velocity raises or lowers the played velocity (the middle leaves it as played), and Length sets how long the step's note lasts.

Speed, Random Speed sets the step rate against the tempo, and the status at the right of the rail names it, for example 1/16 notes. **Random** plays the steps in random order.

BPM, files In the standalone app, BPM sets the tempo for the sequencer and synced effects. The buttons at the right load and save `.seq` files.

> **NOTE** With Voices at 1, the first sequenced note takes the voice from the held key, so the sequence stops after one step.

EFFECTS



Liquid Shards in Mode 6: Stereo Delay, then two Cross Delays in parallel, then 8 Taps Reverb

Each of the four slots has a power switch, a type menu, up to six controls and **Dry/Wet Mix**. The 24 types are Stereo Delay, Cross Delay, AutoPan, Rotary Speaker, Chorus 1, Rich Chorus, Crossover Chorus, Chaos Chorus, Vintage Chorus, Chorus+Delay, Stereo Granulator, CrazyComb, Flanger 1, Stereo Ensemble, Cross-Ensemble, Rich Ensemble, Quad Phaser, Stereo Reverb, 8 Taps Reverb, Jezar's Reverb, Stereo Oktaverb, 3-bands EQ, Ring Modulator and Overdrive. Choosing a type resets the slot's controls. The note button, shown on effects that can follow the tempo, syncs them. The swap menu exchanges the slot, settings and all, with another slot.

The Effects Routing switch is **Master FX**, which turns all four slots off or on. **HP Cutoff** is a high-pass filter in front of the effects. It keeps working while Master FX is off, and at OFF it only removes DC offset. The six modes connect the slots:

- **Mode 1** Effects 1 and 2 in parallel, then 3, then 4.
- **Mode 2** Effects 1, 2, 3 and 4 in series.
- **Mode 3** Effects 1 and 2 in parallel, mixed into effects 3 and 4 in parallel.
- **Mode 4** Effect 1, then 2, then effects 3 and 4 in parallel.
- **Mode 5** Two parallel lanes: effect 1 into 3, and effect 2 into 4.
- **Mode 6** Effect 1, then effects 2 and 3 in parallel, then effect 4.

CHAPTER 3
PRESETS, MACROS AND MIDI

THE PRESET BROWSER

Open Presets from its tab or by clicking the patch display.

Types All presets, Favorites, the sound types (Bass, Lead, Pad, Keys and others, read from bank and preset names) and the banks. Drag one of your presets onto a bank to move it there.

Presets Click a preset to load it. **Search** looks through the whole library for every word you type, and **A–Z** reverses the order. The star marks a favorite. Right-click a preset, or click its three-dot button, for Load, Add to Favorites, Rename..., Move to Folder..., Duplicate, Copy Name, Show in Finder (Show in Explorer on Windows) and Delete....

Patch Info The author and four comment lines, saved with the preset, and its tuning (chapter 4).

SAVING

The disk button beside the patch display offers **Save** and **Save As...** for one of your presets. On a factory preset, or before anything is saved, it goes straight to Save As, which asks for a name and a folder (**New folder...** makes one). Cmd/Ctrl+S saves and Cmd/Ctrl+Shift+S saves as. Right-click the patch display for **New preset** (start from the Init patch), **Rename...**, **Copy name** and **Show in Finder**. Loading another preset while the name shows an asterisk asks whether to save first.

Factory presets are locked: their author and comment are read-only, Rename, Move and Delete are unavailable, and saving one makes a copy through Save As.

RHINO 2 PRESETS AND BANKS

Drag `.fxp` presets or Rhino 2 `.fxb` banks onto Rhino, or click **Import...** at the top of Types. A bank becomes a folder named after it, with one preset per slot: empty slots are skipped, and unnamed presets are named by slot (Preset 01, Preset 02...). Single presets go to the Imported folder. Drop files onto a bank in the Types column to import them into it. The first imported preset loads. Importing needs an activated Rhino.

MACROS

Each of the six macro knobs moves up to 16 controls at once: a macro at 0 puts every target at its Min, and a macro at 100 puts it at its Max. To assign a control, drag the macro's grip (the dots before its name) onto it, or right-click the control and click a number in its **Macro** row. An assigned control carries a badge such as M1. Double-click a macro's name to rename it.

The Macros page edits one macro at a time. **+ Add target** picks a control from a searchable list, and each row sets **Min** and **Max** (0–100). A Min above Max reverses the direction. **Default CC map** assigns the six macros to MIDI CC 20 to 25, and **Clear CC map** removes those assignments. A preset stores its macro targets and names.

MIDI LEARN

Right-click a control, choose **MIDI Learn** and move a knob or fader on your controller. The control then shows a CC badge. To map several controls, press **Learn** in the macro strip: learnable controls light up, so click one, move a controller, and repeat. Esc cancels. Right-click a mapped control for **Clear CC** to remove its mapping.

Settings → MIDI lists every mapping under **CC assignments**. **Add mapping** maps a CC number (0–119) to a parameter by hand, **Export...** and **Import...** save the list to a file and read it back, and **Clear all** removes every mapping. Rhino keeps the mappings in its own settings, so they stay when you load another preset.

CHAPTER 4
TUNING AND SETTINGS

TUNING

The **Tuning Scale** field at the bottom of Patch Info names the tuning the patch plays. Click it to retune the patch:

Scale Pick a Root Note and a scale from Modes, Pentatonic & Blues and Other, or click keys on the small keyboard to add or remove notes. Keys outside the scale play the nearest scale note. Name a note set and press **Save** to keep it under User Scales for any patch.

Scala (.scl) **Import .scl** retunes to a Scala file's degrees. **Root Key** sets the MIDI key that plays degree 0.

Reference A Concert pitch, 400 to 480 Hz.

The folder button beside the field loads a Rhino `.tun` file. A saved preset keeps its tuning.

The **Global** switch beside Tuning Scale, or Settings → Tuning → **Global microtuning**, plays every patch in one tuning, and Rhino keeps it the next time it opens. While Global is on, the Tuning Scale field edits the global tuning. In Settings → Tuning, **Load .tun...** chooses that tuning from a file, **Pick...** opens the key, scale and Scala picker, and **Reset** returns each patch to its own tuning.

Follow MTS-ESP (Settings → Tuning, on unless you switch it off) takes the tuning of an MTS-ESP master such as MTS-ESP Mini, or of MIDI Tuning Standard SysEx that Rhino receives. New notes then play that tuning instead of the patch or global tuning, which return when the master disconnects. **MTS-ESP status** shows what Rhino is following.

SETTINGS

The gear at the top right opens Settings. Its search field finds a setting by name.

General Show tooltips, Check for updates (looks for a newer Rhino 3 when the editor opens), Mouse wheel, and Appearance: MAP or Heritage Teal, with an Accent hue for MAP. The standalone app adds its audio driver, output device, sample rate, buffer size and MIDI inputs. **Content folder** shows where Rhino keeps presets, wavetables and tunings. Help & Support links the support page, the website and What's New.

MIDI MIDI Learn mode, MIDI-out automation (the same switch as **Out** in the macro strip), MIDI input channel and the CC assignments.

Tuning Global tuning and MTS-ESP.

Account The license, **Manage account**, **Refresh**, **Deactivate** (it asks first) and offline activation.

TROUBLESHOOTING AND SUPPORT

No sound Check that Rhino is activated and that Master is up. Played notes light the on-screen keyboard. If they don't, set Settings → MIDI → MIDI input channel to All channels or to your controller's channel, and in the standalone app switch the controller on under Settings → General.

A note hangs Press Panic beside Voices.

A shape reads Missing The preset names a shape that this installation's wavedata lacks. Install the factory presets and wavedata if you left them out.

Bend does not follow the preset With the factory content installed, Rhino applies the Bend ranges you last set to every preset it loads.

Contact support@map.audio with your Rhino 3 version (click the logo), operating system, host and plug-in format, and the steps that lead to the problem. Release notes are at map.audio/changelog, the product page is map.audio/rhino, and the license terms are at map.audio/eula.