

USER GUIDE

"The Nonmonotonous Metronome"

Polyphonic Polyrhythmic Stochastic Lambdama Matrix Metronome

Quixotic, whimsical, free & fun, 8-voice metronome for practice, improvisation & composition.

"Metronome practice is indispensable yet many find metronomes tedious & monotonous."

VECTRONOME features:

- randomness to create unpredictability & variety!
- the Lambdama as basis for Time relationships. Explore complex polyrhythms!
- probability & 'pattern' filtering to shape & limit chaos.
- randomizes Accents (loudness) within a set velocity range.

More than a fully loaded "bells & whistle" novelty metronome, **Vectronome** is a teaching tool for both music & mathematics.

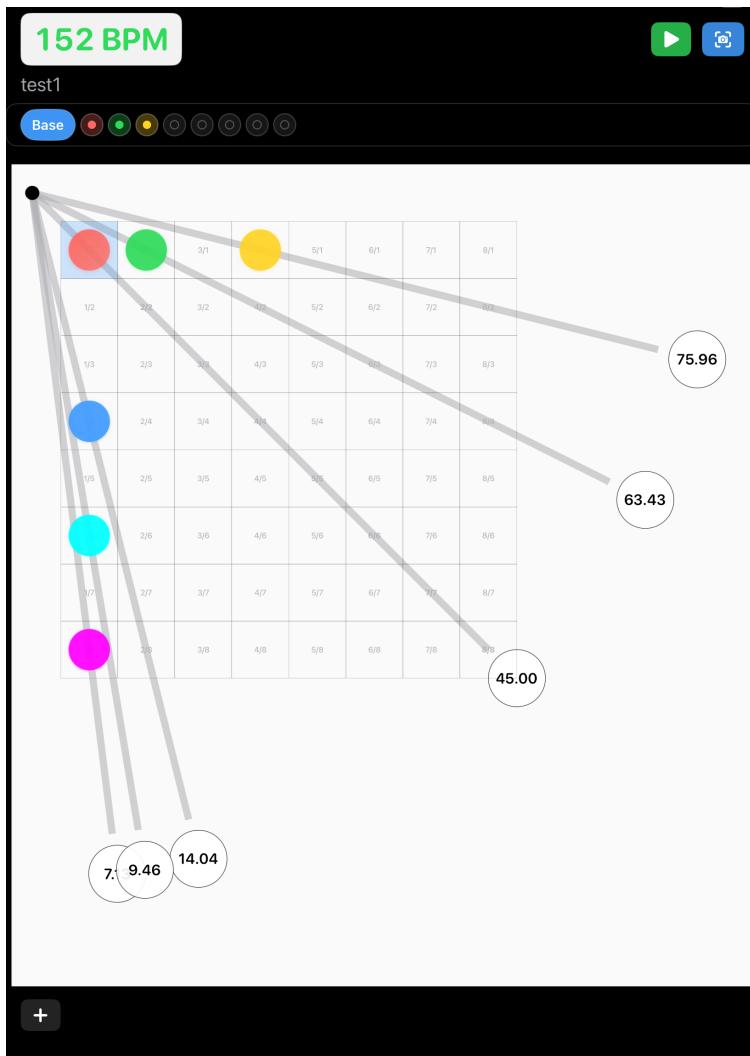
p.s. The Metronome is Your Friend!

Features:

- 128 high quality drum sounds
- Tempo range from 1 - 500 Beats Per Minute (BPM)
- 8 independent Drum voices, with Pattern & Probability filters.
- Create 'Time Scenes' with up to 8 'Snapshots' each.
- Save up to 3 Time Scenes.

Unlock unlimited saves (& remove banner ads) via In-App Purchase.

- USB, Bluetooth, & Wi-Fi MIDI output
- Intuitive interface. Ideal for practice, improvisation & composition.



MAIN SCREEN

Tempo in BPM



Start / Stop Metronome



Save / Load Scene

Scene Title

“Base” - tap to sync metros

- long-press to Overwrite Scene

8 Radio Buttons - “Snapshots”

store & recall variations of the scene

- long press to store
- tap to recall

The 8x8 Lambdoma Matrix

- two-finger pinch to zoom,
- two-finger drag to pan.

Rays emitted from the point of Origin (0,0)
time relationships expressed as an angle
($0 < r < 90$)

Drum Modules

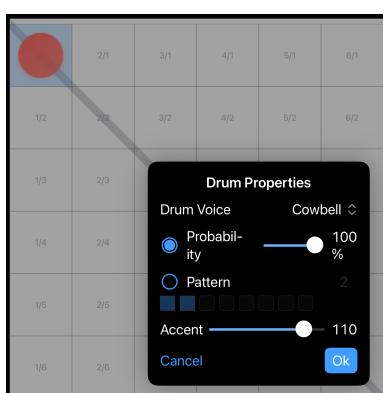
- long press an empty square to create a new drum (max. 8)
- long press existing drum to edit
- double tap to mute / unmute
- touch & drag a drum off grid to delete
- touch & drag a drum to a new position

Free version of the app displays a Non-tracking Google Banner Ad

+ Extras - User Guide, Support Links, In-app purchases & Licenses.

Drum Properties

When a new Scene loads, by default it has a Drum with “Cowbell” in grid location (1,1).
• Long press on the Red Dot, the Drum Properties window opens.



- Choose from 128 GM drum samples
- Set the percentage of drum hits that will get through.

Patterns:

- The numerator of the time ratio (column) sets the size of the available pattern (minimum 2).
- Set a rhythmic pattern, i.e. 3rd column, “1 0 1” can create a “swing” feel. 4th column 0 1 0 1, a syncopation.
- Patterns (if present) are applied first, then probability is calculated.

Drum hits only sound if they pass both filters.



“I need 2% less cowbell!!”

Accent sets the minimum value for a random velocity (loudness). Each drum sounds at a random velocity between maximum (127) & the minimum (slider setting).

Drum Actions

| | |
|-------------|---------------------------------------|
| Create Drum | long press an empty square (max. 8) |
| Edit Drum | long press existing drum |
| Mute Drum | double tap to mute / unmute |
| Delete Drum | touch & drag a drum off grid |
| Move Drum | touch & drag a drum to a new position |



Save Scene

Tap “Save”, enter name & save.

Saved presets appear as a list in the Save window.

Free version allows for 3 scene saves. In-app purchase unlocks unlimited saves & removes all ads.

Tap a name to restore a saved setting.

Long press on the name to “Rename” or “Delete”



To **Overwrite / Update** a Scene long press “Base”

N.B. Scenes are saved along with a **Tempo**.

To change the Tempo of a Scene & all its snapshots

1) set the Tempo

2) long press “Base” to overwrite & Save.

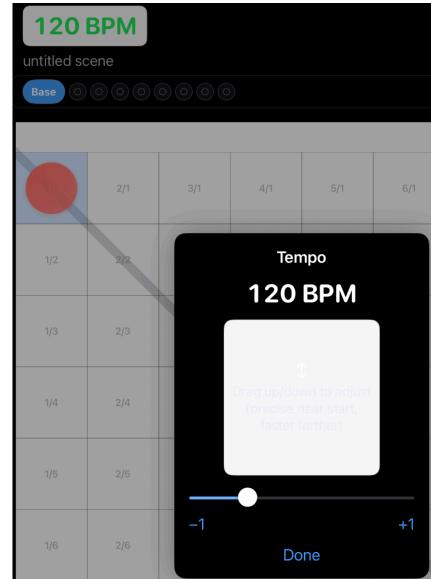
When the metronome is active, tapping “Base” will restore the saved Scene Tempo & sync up all Drums.



Tempo

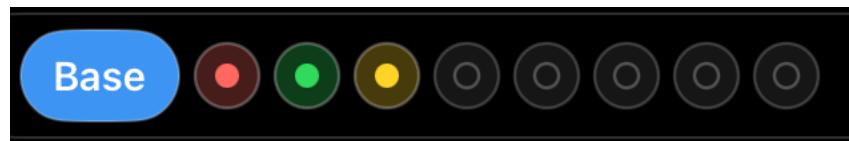
Tap to open the Tempo window.

To adjust Tempo, set the slider &/or use touch pad for precision setting.



Snapshots

Variations of a Scene Time Structure can be made & stored by taking snapshots. For example, double tap a drum to mute. Change the sound of a drum. Set a new pattern or probability.



| | |
|-----------------|----------------------------------|
| Create Snapshot | long press an empty radio button |
| Overwrite | long press existing |

| | |
|-----------------|------------------------|
| Recall Snapshot | tap snapshot |
| Delete Snapshot | double tap to 'Delete' |

Rays

The rays emanating from the Point of Origin (0,0) are illustrative of the relationship:

$$\theta = \arctan(r)$$

The “vector” in **Vectronome** comes from

- magnitude as represented by Tempo.
- direction as an angle derived from the ratio.

+ Extras

In the Extras menu, In-app purchases, licenses, links to User Guide & Website

MIDI Connection

Vectronome sends MIDI via Bluetooth (see full MIDI specs.)

How to connect to your Mac via wireless MIDI

Steps:

1. On your Mac, open Audio MIDI Setup (found in Applications > Utilities).
2. In the menu, choose Window > Show MIDI Studio.
3. In the MIDI Studio window, double-click Network to open MIDI Network Setup.
4. Under My Sessions, select Session 1, then click Enable.
5. In the Directory, select your iOS device.
6. Click Connect to link your iOS device to the session.

Once connected, your iOS app will appear as a MIDI source and can transmit wirelessly to any MIDI-enabled software on your Mac.

Troubleshooting

Out of Sync?

When changing tempos, adding new drums, or modifying values, small timing offsets can occasionally accumulate. Tap “Base” to re-sync all drums.

Long-press “Base” to save your scene & sync all drums.

No Sound After Returning to the App?

After switching from another app (such as a game), Vectronome may stop producing sound. Some apps do not properly release the iOS audio session when they are backgrounded. This can prevent Vectronome from immediately regaining full audio control.

Briefly minimize Vectronome again and reopen it — or switch to another app (for example, Xitter or Music) and then return. Sound should resume normally. Note: This is an iOS system limitation. We follow Apple’s audio guidelines but cannot control how other apps behave.

⚠ Data & Deletion Warning

- Deleting the app will permanently remove all saved scenes and snapshots on this device.
- Saved scenes are stored locally unless otherwise backed up via device or iCloud backup.
- Double-check before deleting snapshots or uninstalling the app.

ℹ First-Time UI Behavior

When certain interface elements are loaded for the first time, you may notice a brief pause. After initial use, performance should remain smooth and stable.

We have found no other issues when this app is used as directed. Please report any unexpected behavior so it can be addressed in future updates.

📜 Licenses

FluidR3_GM SoundFont. Licensed under the MIT License
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Apple Licenses

<https://developer.apple.com/terms/>

💬 Questions? Feedback?

We hope you enjoy **Vectronome - The Nonmonotonous**”

Your feedback is important to us. Reach out via the online support form.

We'll do our best to respond as soon as possible 🙏

We're constantly developing & improving our products. Coming soon, “accents, echoes & delays”.

Got a great idea or feature request? We want to hear it!

Sign up to share feedback, get early access to new apps, & receive exclusive offers.

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Vectronome – MIDI Specification Sheet

This document outlines the MIDI messages sent by the Vectronome app, including relevant technical details useful for integration with external MIDI devices, DAWs, or for developer reference.

1. MIDI Messages Sent

| MIDI Message | Purpose | Channel(s) | Trigger / Event |
|----------------------------|----------------------------------|---------------------|-------------------------------|
| Note On (0x9x) | Triggers metronome / drum event | User-defined (1–16) | Timing pulse or drum event |
| Note Off (0x8x) | Ends note event | User-defined | Immediately after Note On |
| Control Change (0xB0) – C6 | Sets channel volume to max (127) | 0–15 | On app launch |
| Program Change (0xC0) | Selects instrument / sound | User-defined | On instrument or scene change |

2. Technical Details

- MIDI messages are sent using CoreMIDI APIs via the system MIDI output port.
- All Note On and Note Off messages are transmitted with timestamp 0 (immediate delivery).
- Program Change messages use the 0xC0 status byte followed by the program number.
- Volume is set on all channels using Controller 7 (CC 7) with a value of 127 at launch.
- Vectronome publishes a virtual MIDI source and also sends messages to all available system MIDI destinations.

Note: Vectronome does not receive MIDI input. Only outbound MIDI messages are supported. SysEx, MIDI Clock, and MTC are not implemented.