



DUAL CORE DRUM GADGET

Kinetic Motion Drum Utility
& MIDI controller.

Twitch, Tilt, Tap, & Touch!
Play drums by moving your phone.

USER GUIDE

Shake, Rattle & Roll!

Dual Core Drum Gadget is an expressive motion-sensitive drum controller. Get your groove on, anyplace, anytime! Move your iPhone or iPad to trigger percussion sounds — or Tap the screen. Select a pair of drum sounds. Adjust reverb & filter parameters. Save your settings. Sends Bluetooth MIDI output.

This fun, easy to use, drum utility turns your phone into a percussion instrument. Cheer for your team! Jam with friends. Teach the kids. Experiment. Improvise. Have fun!

Features:

- Dual trigger support: left/right drum assignments
- 128 high quality drum sounds
- Motion-sensitive velocity & pan
- Adjustable reverb, filter cutoff, & resonance
- USB, Bluetooth, & Wi-Fi MIDI output
- Low-latency response with real-time feedback
- Intuitive interface built for performers
- Save presets. Plan your performances.

*** Works best with built-in speakers or wired output.

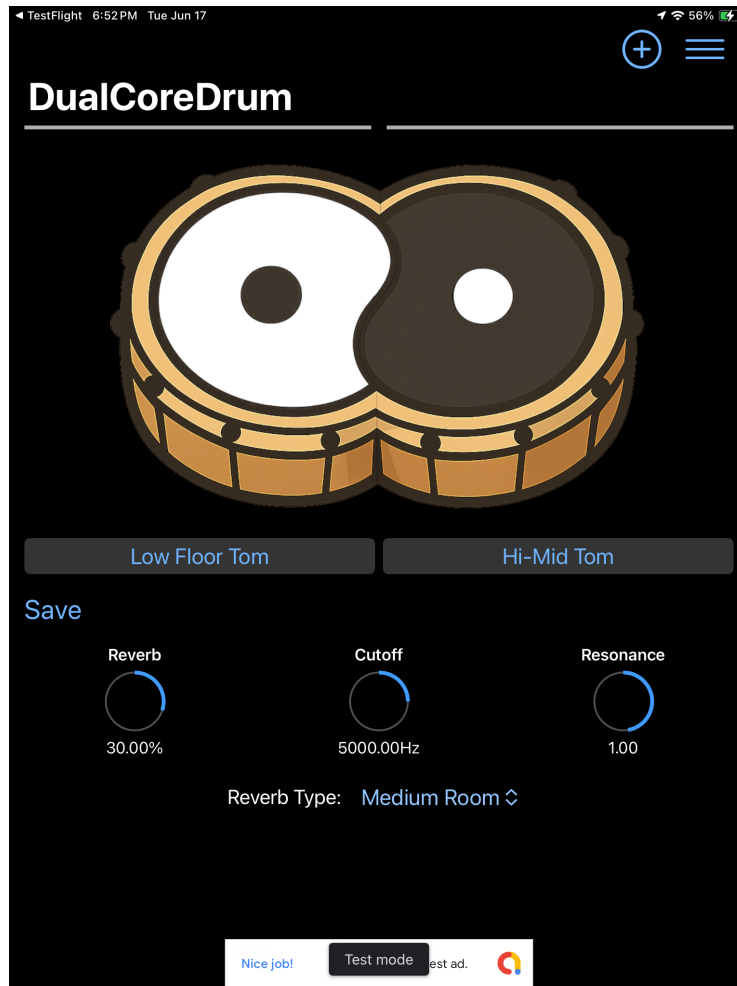
⚠ **Bluetooth audio is not recommended due to latency.**

N.B. This utility app cannot compete with, nor will ever replace real physical drums!

Dual Core Drum Gadget is a new tool in development, designed as an extension & addition to the collection of available instruments in the mobile age.

Remember: as with any musical instrument, it takes practice!

MAIN SCREEN



- + **About** (Quick Start, Licenses, Links)
- = **Settings**

Stereo Output Level Indicators

2 playing modes:

- (1) **Motion Detection** (recommended)
Shake or Tap the instrument!

Alternate method:

- (2) **Touchscreen** playing surface
Tap the onscreen drum icons.

- (3) **Drum Selection Menus**
Left & Right voices

- (6) **Save(d) Presets**

- (4) **Fx Dials** Reverb, Cutoff, Resonance

**N.B. UI Dials act like sliders. Dials do not turn! Touch the dial center, drag up to increase the value, drag down to decrease value.*

- (5) **Reverb Type Selection**

- (7) Non-tracking Google Ad

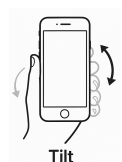
Welcome to DUAL CORE DRUM GADGET!

This drum utility uses motion detection & orientation to trigger drum sounds.

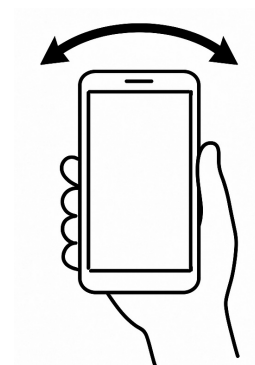
(1) Hold your device flat, level to the ground. Tilt it left & right (as your would turn a door handle). Give it a shake, a little jolt to either side. When the app detects motion above a threshold it triggers the drum sound based on its current position.

When shaking the device, the magnitude of the movement will play the drum louder or softer. Tilt from left to right is also associated with panning (spatial position of the sound).

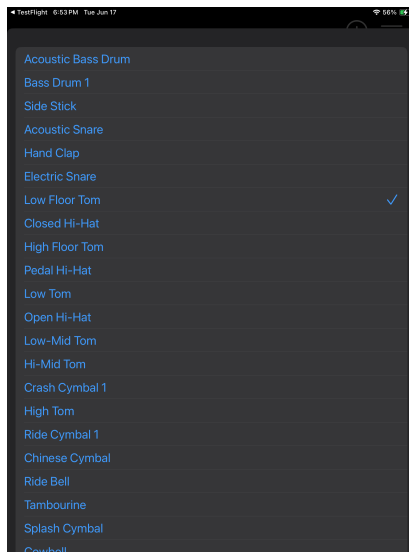
Try playing the device like a tambourine. Tap it on the palm of the other hand, turning from left to right. This method produces accurate rhythms & expressive control over velocity (volume).



(2) You can also tap the Left & Right regions of the drum image on screen. When tapping on screen, **tilt the device up & down** to control velocity. (this feature can be turned off in Settings)



Tilt Left or Right Triggers Drum



(3) DRUM SELECTION MENUS

Choose from 128 GM drum samples. One for each side.

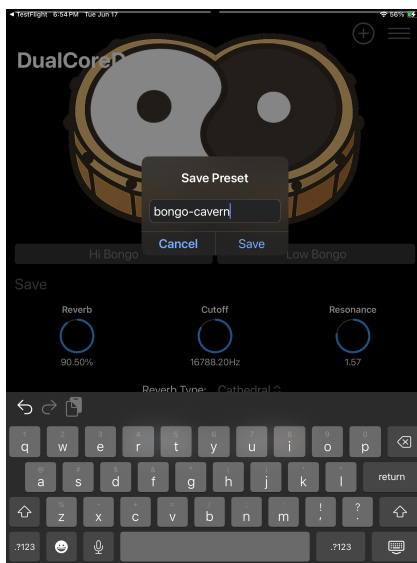
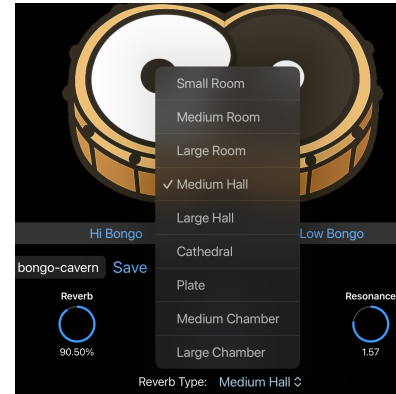
- Try a complementary pair: High & Low Agogo.
- Mix & match: “Snare” & “Cymbal” for a Drumroll.
- Can set both sides to the same sound.

(4) EFFECTS DIALS

3 parameters: Reverb amount, Filter frequency cutoff, & Resonance.

(5) REVERB TYPE

Choose from 10 reverb settings: rooms, halls, chamber, plate, et al.



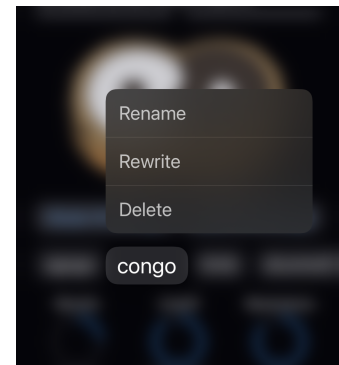
(6) SAVED PRESETS

Once you have a drum setting with effects you want to use again, click “Save”. Pop-up will ask for a name.

Saved presets appear as a side scrolling list next to the Save button.

Click to restore a saved setting.

Long press on the name to “Rename”, “Rewrite”, “Delete”



(7) The app displays a non-tracking, non-personalized Google ad to support continued development. It does not collect personal data or track your activity.

= Settings

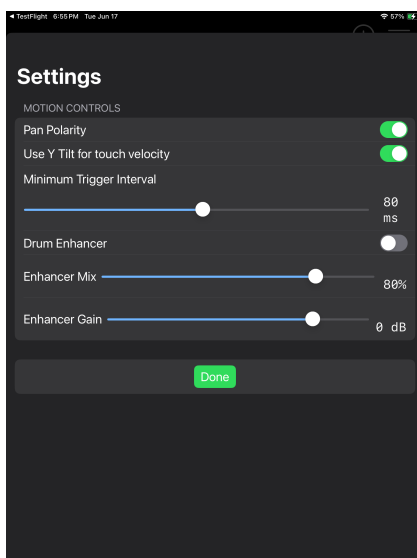
Pan Polarity - invert panning (X-tilt)

Velocity by default Y tilt is associated with velocity when using the onscreen drum icons. When disabled velocity for tapping set at constant 120.

Minimum Trigger Interval is how often a drum can be triggered using motion detection. This limits flams & extra triggers. Adjust sensitivity.

Drum Enhancer is a tool to warp & amplify the sound.

Settings are Global & are automatically saved by the app.



+ Extras

⚠ Audio Output Warning

★ Due to latency issues, Bluetooth speakers are NOT recommended.

Please use the device's built-in speakers, USB audio, or wired line outputs for the best performance.

🔊 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

🔊 The App Makes No Sound?

Please quit the app & restart. Try turning Bluetooth audio off before restarting the app.

If Bluetooth speakers are enabled, a warning will appear. Click OK to proceed. Latency will be noticeable.

🔊 No Sound After Returning to the App?

Issue: After switching from another app (like a game), Dual Core Drum Gadget might stop making sound.

Why it happens: Some apps don't release the audio session properly when you leave them. This prevents Dual Core Drum Gadget from regaining full audio control.

Fix: Just briefly minimize the app again & reopen it or switch to a different app (like Xitter or Music), then back again — sound should return.

Note: This is an iOS limitation. We're following Apple's rules, but can't control how other apps behave.

👉 Sometimes My Taps Don't Register?

Why it happens: Occasionally, a tap might be ignored — this isn't a bug in Dual Core Drum Gadget, but a result of how the iOS touch system works. It can happen due to:

- Light or glancing touches that the screen doesn't detect fully
- Multiple fingers touching at once, confusing the system
- Motion or sweat affecting conductivity
- System lag (e.g., background processes using up resources)

Tips:

- Tap directly and firmly, especially during fast play
- Avoid sliding fingers between taps
- Clean the screen if it's damp or dirty

When Shaking, More than One Drum Sound Plays?

Why it happens: The app responds to angular acceleration — when you swing the device, it detects rapid changes in movement direction (centrifugal force). These changes can trigger multiple drum hits. The instrument is responsive & flexible. It's a feature, not a flaw.

Tip: To control how often sounds are triggered (sensitivity), adjust the *Minimum Trigger Interval* slider in Settings.

Device Feels Unresponsive or Laggy?

- Make sure Low Power Mode is OFF
- Close background apps that may be using motion sensors or sound
- Restart your device if the issue persists

Licenses

FluidR3_GM SoundFont
© 2000-2002 Frank Wen
Licensed under the MIT License

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

Questions? Feedback?

This app is our first official release & part of a growing collection!
Your feedback is important to us. Reach out via the online support form (We'll do our best to respond as soon as possible 🙏).

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.

<https://bondinstitute.io/>
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Dual Core Drum Gadget – MIDI Specification Sheet

This document outlines the MIDI messages sent by the DualCoreDrum 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 drum hit	User-defined (typically Ch. 9)	Touch input – drum strike
Note Off (0x8x)	Ends drum sound	User-defined	Touch release (or immediately after On)
Control Change (0xB0) – CC 7	Sets volume to max (127)	0–15	On app launch
Program Change (0xC0)	Sets instrument sound	User-defined	On drum/instrument change

2. Technical Details

- MIDI messages are sent using CoreMIDI APIs via the system MIDI output port.
- All Note On/Off messages are sent with a timestamp using ``mach_absolute_time()`` for precision.
- 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.

Note: The current implementation does not receive MIDI input. Only outbound messages are supported.