

# Koushion User Manual

## v4.3

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August 26, 2015



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# Preface

Congratulations! You are about to be a member of the elite few who have actually read a software manual! Being the author, I'm probably a bit biased, but I think the information contained in this short manual will be extremely helpful in ensuring that you get the most out of Koushion.

First, a bit of history. Koushion was created from my personal desire for an extremely flexible step sequencer that didn't cost a fortune. The iPad had just been released, and I began contemplating whether it would be a viable option for my MIDI setup. After playing with several "toy" sequencers, both online and on the iPad (Beatwave provided hours of entertainment), the idea for Koushion was born. Now, over 3 years since the first release, it has evolved into a mature sequencer that provides a great deal of flexibility, while still maintaining the familiar interaction paradigms of hardware units.

If you have already purchased Koushion, you have my sincere thanks. If you are checking out this manual before purchasing, I hope you find the information you're looking for in evaluating your purchase. Feel free to contact me via the [Koushion Facebook page](#) (or the in-app feedback mechanism if you already have the app). The majority of Koushion's new features are added based on user requests (and how many people request each feature). Thanks for reading, and I look forward to helping you make music!



# Chapter 1

## Setting Up

### 1.1 Connecting via a MIDI Cable

Koushion can be connected either wired or wirelessly. However, due to the lag that is often present in wireless connections, a cable is highly recommended. Koushion can be integrated with any MIDI setup using an iPad MIDI adapter such as [iConnectMIDI](#), or via a USB to MIDI cable and the iPad Camera Connection Kit.

**Note on the Camera Connection Kit** In theory, any USB-to-MIDI cable should work with the CCK. However, in testing, I discovered that certain cables such as the M-Audio MIDISport Uno only support clock in one direction (USB to MIDI, but not MIDI to USB, which is no good since Koushion will never be able to receive clock messages). I found that the E-MU Xmidi 1x1 works fine though, and I recommend this adapter if you are on a tight budget and want to use the CCK rather than an iPad MIDI adapter. In my humble opinion, unless you already have a USB-to-MIDI cable or a Camera Connection Kit lying around, your money would be better spent on a commercially supported solution such as the [iConnectMIDI](#). I currently do all of my production work with an [iConnectMIDI 2+](#), which I think is a great bargain. In addition to an iPad connection (Lightning or 30-pin), [iConnectMIDI](#) units also have DIN ports and can act as an audio output for your iPad, which greatly simplifies the recording process if you work with a DAW such as Ableton Live.

## 1.2 Mac Wireless Setup

*NOTE: While the latency is more tolerable with CoreMIDI Network Sessions on Mac than on the third-party emulations available for Windows, I strongly suggest that you use a MIDI cable whenever the option is available.*

1. Enable CoreMIDI networking on your Mac by opening the Audio MIDI Setup utility (in your Applications/Utilities folder). *In the MIDI Studio window, double-click on the Network icon, make sure that it is enabled, and that it has at least 1 session configured (click the plus button to create one if necessary).*
2. Connect your iPad to the same wireless network as your Mac and launch Koushion.
3. In the MIDI Network Setup window, you should see your iPad appear in the Directory pane. Click on your iPad, and then click *Connect*. Your computer and iPad should now be connected.
4. Configure your music production software to accept input from the network session (it will show up just like any other MIDI device in your audio software; consult your program's documentation on how to configure it to receive MIDI).
5. *(Recommended)* Configure your music production software or other clock-generating device to output MIDI clock signals to the network session you created (this process will vary by program, so consult your program's documentation).

## 1.3 Using Koushion with Other iPad Apps

Koushion, being a MIDI step sequencer and controller, is not a standalone tool, but rather a controller for your existing software and hardware synthesizers, drum machines, etc. While the most common setup is to integrate with other MIDI hardware or a software-based DAW such as Ableton Live, Koushion is quite capable of interacting with other iPad apps as well via the shared CoreMIDI bus or Virtual MIDI ports.



Using either internal or external clock sync, Koushion will broadcast MIDI notes to all CoreMIDI-compatible apps that are running in the background. For example, you can start Sunrizer Synth (a very popular synth app that I highly recommend), press the *Audio BKG* switch to enable background mode, and then switch to Koushion to control the synth. Koushion also has its own *Background MIDI* switch in the settings popover, which you must enable to keep it running in the background.

## 1.4 Notes on Wireless Performance

When using a wireless network, there is always the possibility that timing packets will be dropped or delayed. It can happen at any time, based on other wireless traffic and the quality of the router. If you are experiencing issues, you may want to try creating an ad-hoc network to bypass the wireless router and reduce lag (see the link below). Any time that there is an “air gap” then you significantly increase the likelihood of lag. If timing is important, then you should use a MIDI cable.

[Apple Support](#)

## 1.5 Setting up MIDI Clock with Your Production Software

While I can't provide directions for every piece of audio production software out there, here are links with information on setting up MIDI clock sync with some of the most popular music production applications.

[Ableton Live](#)

[Cubase](#)

[Reason\\*](#)

\* Not all music production software is able to send MIDI clock signals (Reason is one example of this). In this case, you will need to install a program that sends MIDI sync signals or use Koushion's internal clock. One such program

for Windows users can be downloaded from <http://midiclock.com/>. For Mac programs that lack a MIDI clock feature (such as GarageBand), I used to recommend the midiO AudioUnit. However, the developer's site seems to be down as of this writing, so I am unaware of a Mac MIDI clock solution, aside from using the Koushion built-in clock.

# Chapter 2

## Making Music with Koushion

### 2.1 Organization

#### 2.1.1 Steps, Scenes, and The Grid

Koushion is a MIDI step sequencer that can be used to arrange notes on a timeline, much like a roll used by a player piano. The smallest unit of time in a sequence is known, not surprisingly, as a *step*. As you can see upon opening the app, you can view and edit 16 steps at a time. A group of 16 steps is known as a *scene*. A *scene* is analogous to a *pattern* in most other sequencers. For historical reasons, Koushion calls this, the basic loopable unit, a *scene*. The 8 circular buttons in the upper right-hand corner of Koushion control which *scene* is active. In most playback modes, the active scene (the one that is currently selected and visible) is the scene that is being “played back” whenever the sequencer is running. See [Layer Settings](#) for more details.

Your main interface to Koushion is via the main editing area, known as *The Grid*. To enable a pitch for a particular step, just tap on it. To disable it, tap again. You can quickly enable multiple notes in a single swipe. This is very useful for performing live. *The Grid* is fully multitouch capable, so you can easily add chords to a sequence. Your manipulations to the grid are not complete until you release your finger, as Koushion can’t predict the future of what you’re planning to write (yet...). If you enable a series of notes in the course of a single swipe that consists of the same pitch being repeated 2 or more times, Koushion will automatically tie the notes together so that the pitch is sustained.

Tied notes are denoted in shades of orange. Note that the gate parameter is *ignored* for all steps in the chain except for the last.

### 2.1.2 Layers

If all you could do was play a single *scene* (or pattern) of 16 steps, Koushion would not be a terribly useful app. Fortunately, Koushion has 16 *layers*, which multiply its usefulness. You can think of a layer as analogous to a synth voice or sequencer track (in reality a layer is a bit more flexible, but hopefully the analogy is helpful). Each layer contains 8 scenes (of 16 steps), for a total of 128 steps per layer. All layers in Koushion are tied to the same master clock and are played back simultaneously. There is no option to disable a layer (or a scene) at this time. Koushion has a number in the upper right-hand corner of the screen that shows you what layer you are viewing/editing. The up and down arrow buttons above and below the layer indicator let you view different layers.

## 2.2 Step Settings

There are currently 4 settings that can be applied on a per-step basis: mute, control change, gate, and velocity.

**Mute** Underneath each step is a green button. Tapping this button will toggle whether the step is enabled or not. The entire step column will appear greyed out to indicate that it is muted. Notes and CC value changes will not be triggered for muted steps.

**Control Change** All 120 non-reserved MIDI CC parameters can be sequenced by Koushion as of the 4.0 release. CC sequences are created on a per-scene basis, just like notes and cannot be independently moved or copied. When you use the scene manipulation functions, both notes and CC automation are copied, moved, or swapped together. You can think of the CC sequencer as another dimension of the grid that is triggered at the same time, and in the same order as the notes on the grid. To toggle CC editing mode, tap the *MIDI CC* button. When in CC editing mode, the note grid will appear slightly greyed out, and each step will act like a fader. Drag your finger vertically over the grid to adjust the CC values for

each step. *To facilitate mapping using MIDI learn or similar functionality of your DAW, when playback is stopped, dragging CC will trigger CC changes in real-time.* You can switch which CC is being edited by tapping the *CC 0* button (which will update its title to show you the current CC you are editing). The CC selection popover will show unused CCs (those that are currently a “blank slate”) as greyed out. Blank CC sequences do not trigger any MIDI CC messages. However, as soon as at least one CC fader in the scene has a value, the previously “blank” fader values for that scene and CC become zeros. To return a scene to its initial state (where it does not trigger any MIDI messages), press the *Clear* button while editing the CC sequence you want to erase. While a single CC message can only support a 7-bit range, some synthesizers such as the Moog Voyager allow controllers 0-31 to be paired with controllers 32-63 to create 14-bit values from 2 messages. Note that this behavior is not supported by most synthesizers or software. Koushion has a 14-bit switch to facilitate sending high-resolution CC messages, but Koushion does not determine how your devices handle the messages. If a device does not know about 14-bit messages, then it will just see them as 2 normal 7-bit messages. *Warning: If you sequence a particular CC in 2 different scenes that use the same MIDI channel and play simultaneously, the later scene (in order of iteration) will override the values from earlier scenes. You can re-use CCs, but you should do so on a different channel, or the behavior will not be what you expect.*

**Gate** The gate button toggles gate editing mode, which uses faders just like the CC editing mode. The gate value ranges from 0 to 200, and controls how long each step is held for. It is a percentage value, so gate setting of 0 causes the note to be released immediately. A value of 100 causes the note to be released exactly when the next step is triggered, and a value of 200 causes the note to be held until the end of the *next* step.

**Velocity** The velocity button toggles velocity editing mode, which uses faders just like the CC and gate editing modes to adjust the velocity of each step. Velocity ranges from 0 to 127 to reflect the underlying MIDI velocity values.

## 2.3 Layer Settings

The following settings are applied on a per-layer basis. First, here are the layer-specific settings that are accessible from the main screen (without going into the *settings popover*). All layer-level settings are saved or loaded when you save or load a project.

**Octave** The layer octave +/- buttons transpose the range of the *layer* up or down by an octave.

**Quantization** The value of a step is controlled by the quantization of the layer it belongs to. The default value is to make each step an eighth note, but it can be changed to be anywhere from a whole note to a 32nd note (assuming 4/4 time).

**Playback Mode** Each layer has its own playback mode setting, which will cause the layer to behave as follows.

**Single** Loops over the active scene (the scene that is currently selected).

**Simul** Plays all 8 scenes in the layer simultaneously.

**Chain** Loops over each scene in the layer, in order, until all remaining scenes are blank (i.e. if you have notes programmed in scenes 1, 2, and 4, Chain mode will loop over scenes 1-4 repeatedly).

**Rebound** Loops over the active scene backwards and forwards, as if playing a game of ping pong. Note that the first and last step of the sequence is NOT repeated by rebound mode.

**Random** Random mode does exactly what it sounds like. It plays steps from the active scene in random order. Hey, what's electronic music without a little experimentation every now and then?

*Note that Chain and Simul modes are the only modes in which the scene you have selected for viewing/editing can be controlled independently of what scene is actually playing. Changing the active scene in any other mode will also change what scene is being used for playback.*

The remaining layer-specific settings are found in the *settings popover*.

**Key** Koushion can adapt the grid of notes to any major, minor, or pentatonic scale. Pentatonic scales are particularly good for improvisation, or for creating music with a bit of an eastern vibe. A chromatic scale is also available for additional flexibility or drum machine programming. Additional scale types (i.e. Dorian, Aeolian, etc.) as well as custom scales are planned for a future release. To apply a key that you have selected, hit the *Apply Key to Current Layer* button, and it will be instantly applied to the current layer. If you want to apply it to all layers, you can do so using the *Apply Key to All Layers* button.

**CC Smoothing/Glide** By default, control changes are triggered in distinct, hard jumps whenever the sequence advances to the next step. However, you may wish to smooth the transition, just as if you were moving a physical knob on a controller. The CC smoothing/glide setting lets you enable this behavior. When enabled, the CC value will move in a linear fashion (evenly) from the current step value to the next step's value throughout the duration of the step. Note that even when Koushion is not reliant on an external clock source, to preserve consistency, intermediate CC values will only be sent on each clock tick. This has the side-effect of decreasing the resolution of the intermediate steps added for smoothness, which may lead to a stair stepping effect.

**Scene MIDI Channel Assignment** Each scene in a layer can be mapped to a different MIDI output channel. With 16 layers of 8 scenes each (a total of 128 unique scenes, each with its own MIDI channel), you've got plenty of flexibility to control multiple channels. While you generally won't need *that* much flexibility, Koushion lets you assign each individual *scene* in a *layer* to a different MIDI channel to give you ultimate flexibility.

**Layer Channel Sync** Most of the time, you'll want to change the channel for every scene in the entire *layer* at once. The *Layer Channel Sync* setting, when activated, will automatically update all channel mappings in the current layer to the same channel whenever a channel change is made.

## 2.4 Global Settings

The remaining settings in the *settings popover* apply to all layers globally. These settings are saved automatically whenever they are changed, and automatically loaded when the app is launched.

**Quantized Switching** Enabling this option delays scene switching so that it happens “in rhythm.” In modes other than *chain* mode, switching scenes will change what is playing back, and in most cases you want this to happen at the end of the currently playing loop. This option may be disabled when you want to switch scenes instantly.

**Monophonic Drawing** Normally, Koushion will let you trigger as many notes as you want on a single step. Turning on monophonic drawing only allows one note per step. This is great for quickly programming a lead, especially while improvising live.

**Dark Theme** Enabling this option switches Koushion to a dark color scheme. Many users find this to be easier on the eyes, especially when performing in a low-light environment.

**Background MIDI** Koushion can keep running in the background so that you are free to experiment with synth parameters, set up an effects chain, etc. Flip this switch to enable background operation. However, you may want to forcibly quit the app, or just switch this setting off when you’re done, as running in the background will slowly drain your battery.

**Show MIDI Pitches** Koushion normally shows you human-friendly pitch names, because that’s what you usually want to see. However, as there are competing standards for naming pitches, many MIDI units, particularly drum machines, also give you the raw MIDI note values for reference. Just flip this switch on if you want to see the raw pitch values.

**Show CC Names** By default, Koushion will show you the canonical names for MIDI Continuous Controllers. However, these mappings are more or less suggestions, and every synthesizer manufacturer does things differently (and of course, most DAWs have a MIDI learn feature that gives you infinite flexibility). If you find these names distracting, feel free to hide them using this switch.



**MIDI Clock Settings** Koushion synchronizes with your other MIDI gear via MIDI clock pulses. Koushion can be configured as either a master or slave (sender or receiver). You can toggle this mode by tapping the *internal/external* button. The text of the button shows the current state (i.e. if it says *external*, then Koushion is a slave, listening for a MIDI clock start signal on the MIDI bus). When Koushion is the master (internal sync), you can set the tempo from 60 to 180 BPM by either changing the slider, or tapping a tempo with your finger on the tap button.

*NOTE: The stop/play buttons send a MIDI CC message when in slave mode, which you can map to your start and stop transport controls in your DAW. Only in internal sync mode are the stop/play buttons guaranteed to start and stop the sequencer.*

## 2.5 Saving and Loading your Work

At the bottom of the main screen, you will see *save* and *load* buttons, which can be used to save and load your work. All non-global settings are saved/loaded when you use the save/load project mechanism. Note that the sequence playback state is NOT preserved when loading a project during playback, but is reset. Therefore, it is generally not advisable to load a project during playback unless you're feeling lucky and a bit over-confident in your ability to time things perfectly. Unlike a CDJ, Koushion doesn't let you bend time (at least, not yet).

Koushion 4.0 supports iTunes file sharing for easy backup or transfer of your project files. There are no special tricks required to use the feature; simply connect your iPad to your computer running iTunes and copy project files to and from Koushion. New files will be automatically recognized by Koushion the next time you tap the *Load* button.



# Closing Thoughts

I hope that this manual has been helpful to you. If you have any additional questions, feature requests, bug reports, etc., please use the in-app feedback system or the Koushion Facebook page to send me an message. I read every email, and try to respond in a timely manner. All feature requests are considered, and many of Koushion's best features are a result of the ideas submitted through the feedback system, so please avail yourself of that.

Special thanks to [Chris Stack](#) and Bryan DeChaine for testing Koushion for me, and for giving me LOTS of feedback that has shaped its development.