



Generating Good KARMA

Tutorial Series for KARMA Triton/KARMA MW

By Scott Raposa • Last Updated 03/27/2004
© 2004 Karma Lab LLC. All rights reserved.



Tutorial 2: Jammin' With KARMA

In Tutorial 1, we learned that each KARMA Performance exposes ten, custom tailored real-time parameters that can be controlled via KARMA's 8 sliders and 2 switches. In other words, we discovered that KARMA is highly configurable, and therefore highly powerful and highly expressive. But just *how* configurable, powerful, and expressive is KARMA?

Well...combine the fact that a single KARMA Generated Effect (GE) has access to 400+ musical parameters and a single KARMA Performance can utilize up to 4 GE's and...oh boy. You're beginning to get a sense of just how deep the rabbit hole goes. But there's no need to worry! This tutorial will be your faithful companion as you begin to explore this wonderful, new world.

In Tutorial 2, we'll take an in-depth look at seven diverse Performances:

- **!{Tricky} Kit!** - an inspiring drum kit
- **TenorSax Brth -Y** - an impressive improvisational sax
- **LogDrum&Bells** - a soothing, melodic log drum rhythm
- **4 Arp Cycle-Note** - complex synth arpeggios
- **Earthy Groove** - a drum groove, bass line, & gated synth all wrapped up in one
- **^Gods Bathtub^** - a relaxing and moving synth pad
- **Magic Flute [JS]** - a magical flute backed up by some beautiful guitar picking

Now, be forewarned. If you stick with us for about an hour, we guarantee you'll be hooked. And not only that, but you'll also be ready to:

- load any one of the 768 preload Performances and feel confident exploring its real-time parameters
- use the **Note Series Display** for visual feedback on the inner workings of many of KARMA's Generated Effects
- use the **Performance Editor** to modify the tempo of a Performance and get a high-level view of how the Performance works

Prerequisites

The prerequisites for Tutorial 2 are the same as those for Tutorial 1. If you need to, please refer back to [Tutorial 1](#). Also, *open the **RTC Editor** using **Cmd+L (Mac)** or **Ctrl+L (Windows)**.*

Loading A Performance

Remember that loading a KARMA Performance is a matter double-clicking the appropriate bank in the KDF Window, and then clicking on the desired Performance. For example, when you're ready to open **Combi A016: Earthy Groove**, simply double-click Bank 5, "Preload Combi Bank A," and then select "16 Earthy Groove". When following the examples in this tutorial, always be sure to double-check whether a Performance is a Program or Combi in order to select the appropriate bank.

Important Hints Regarding KARMA Real-Time Parameters

As mentioned in Tutorial 1, it can be helpful to think of a Performance as its own instrument. In the case of KARMA, the expressiveness of the instrument, or Performance, is defined not only by how you play the keys on the keyboard, but by how you use its real-time parameters. Therefore, understanding these real-time parameters is essential to fully expressing yourself as you create music with KARMA.

When you open a particular Performance for the very first time and begin to get familiar with its parameters, there are, in general, three ways to go about it:

1. **Using Your Ear** – after completing this tutorial, you'll have a solid understanding of KARMA's most commonly used real-time parameters. With this knowledge and your own listening skills, you'll be amazed at how easy it will be to "master" just about any Performance after spending 5-10 minutes experimenting with its real-time controls.
2. **Detailed Inspection** – since the KARMA software is both a *player* and an *editor*, you can use the software to inspect the parameters of a Performance as you play it. This is the method that was used to generate the detailed documentation in this tutorial. (Later in this tutorial you may begin wondering where all the "hidden" details are coming from. Now you know).

Note, however, that this method requires a considerable understanding of the KARMA software. By the time you've finished this tutorial, you'll be well on your way. But you'll need some additional time with the software and the KARMA help file before you'll have enough experience to fully "inspect" a Performance.

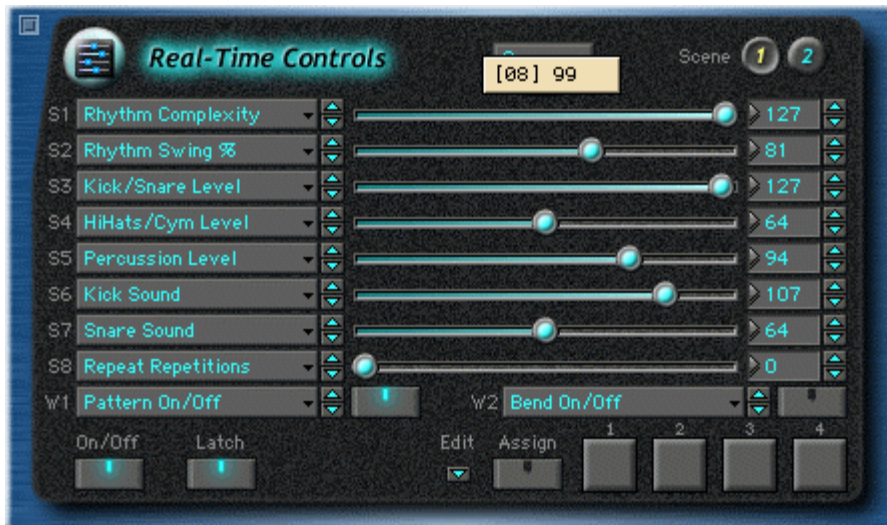
3. **Use The Documentation (when available)** – if you can get a hold of documentation for the Performance, by all means, use it. By spending just a few minutes reading, you'll learn the ins-and-outs of the Performance and you'll probably pick up tips and tricks that will take much longer to discover on your own. But which Performances are documented and where is this documentation? Here's your guide:
 - The Chemistry and Reincarnation Combi sets, available through Karma Lab, each come with extensive documentation on each Combi. In fact, even if you don't own the Combi sets, you can download and read the User's Guides in order to get an idea of what these sets contain. For more information, visit <http://www.karma-lab.com/sounds>.
 - From time to time, members of the user community post tutorials and other help files to the Files Area of the Karma Lab Forum at <http://www.karma-lab.com/forum>.
 - This tutorial includes detailed documentation on 7 Performances in the Preload KDF.

A couple more important points before we get started:

- **KARMA's real-time parameter names are not absolute!** What does this mean? Mostly, it means that you should use the real-time parameter names more as guides and less as hard-and-fast indicators as to how each will affect the Performance. It also means that you shouldn't necessarily assume that a parameter name (e.g., "Improvisation") will have exactly the same affect on Performance A as it does on Performance B.

Much of this "variability" has to do with the fact that there are a finite number of parameter names (in the preload KDF) while there are a near-infinite number of KARMA effects. For now, suffice it to say that you should always use your ear as the final word on how a given parameter affects the Performance. Regardless of whether you recognize the name of a parameter and regardless of what you "think" a parameter will do, get comfortable experimenting and using your own ear as a guide.

- **Slider/Switch Values vs. Parameter Values.** Each KARMA slider has a range of 0 (hard left) to 127 (hard right). A KARMA switch is either ON or OFF. However, the underlying KARMA parameters that are assigned to these controls have their own range of values. It is helpful to know the relationship between a control's values and the "controlled", or parameter, values.



To best understand this relationship, [open Program](#)

[A004: !{Tricky} Kit!](#) and then [open the Real-Time Controls Editor](#). Let's take a look at **Rhythm Complexity [S1]**. As you [move your mouse over the slider for \[S1\]](#), notice that a "parameter tooltip," which reads "[08] 99" (shown above), appears above the slider. For now, you can ignore the "[08]". The second number, 99, is the underlying parameter value. Now, [move \[S1\] from side to side](#), and notice that this particular parameter value has a range of -99 to 99 while the slider's value moves between 0 to 127. Now, [try the same experiment on Rhythm Swing % \[S2\]](#) and notice how it has a range of 0 to 100. Next, [move Repeat Repetitions \[S8\]](#) and notice that it only has 5 distinct values (0 thru 4). Finally, [switch Pattern On/Off \[W1\] to OFF](#) and notice how the underlying parameter value goes from 1 to 0.

If you don't yet grasp the significance of these values, don't worry. Their meanings will become clearer as you progress through the tutorial.

Also, you may have noticed that some "help tooltips" were popping up along with the parameter values. If these other tool-tips begin to get in your way, you can turn them off (and back on) using the "Show Tooltips" option in the **Help Menu**. Alternatively, for more control over when and how they are shown, use the Preferences dialog. In the main menu, choose **Edit > Preferences**. On the General tab, you can uncheck the "Show Tooltips" box, or selectively disable certain types of tooltips. You can even change the amount of time it takes to popup when the mouse moves over an object having a tooltip.

It may be useful to turn them off while experimenting with the Real-Time Control Editor, but be sure to turn them back on as you progress to experimenting with other windows later. The tooltips provide explanations of every parameter, and while they are showing, can take you directly to the in-depth Help File when you press **Cmd+H (Mac)** or **Ctrl+H (Windows)**.

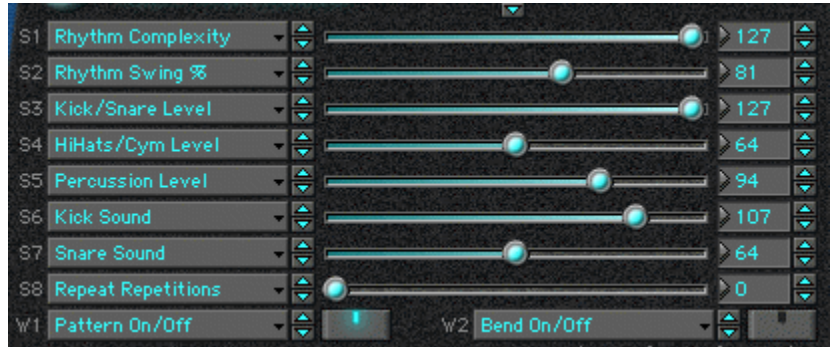
And Away We Go

Before we continue, [click the Compare button](#) in the Real-Time Controls Editor to reset the controls to their default values.

OK. Enough talk. Let's jam!

Prog A004: !{Tricky} Kit!

Program A004: !{Tricky} Kit! is one of over 20 drum kits provided in the Preload Program banks. In this section, you'll discover how easy it is to generate and manipulate a drum groove using KARMA.



- Double-click “Preload Prog Bank A” and click on “A004 !{Tricky}! Kit to load the Performance.
- *Strike any note on your keyboard* to start the drum groove. Now, *play some additional notes on the keyboard* and notice that the keys play “thru” on this Performance. This feature allows you to *play fills or add additional notes as the groove is playing*.
- Using **Rhythm Swing % [S2]**, you can *generate anything from a straight rhythm to a slight shuffle to a major swing beat*. *Slide Rhythm Swing % [S2] to 0 (hard left)* and notice how the rhythm becomes completely straight.

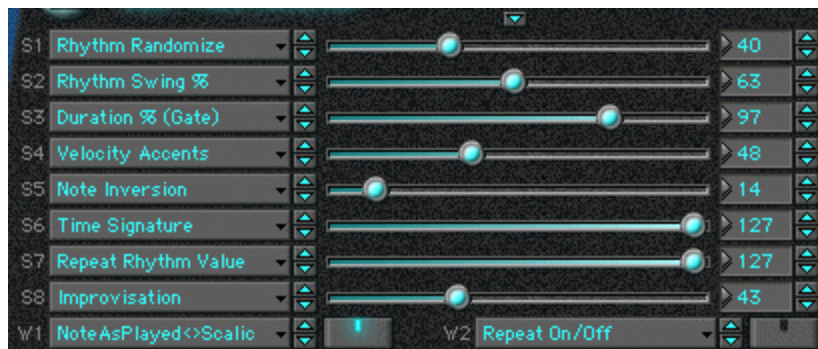
Important Note: Since all of the steps in this tutorial build upon the previous steps, you should follow each step literally and leave the control at the position mentioned before you continue. For example, in this step, feel free to move Rhythm Swing % [S2] around to see how it affects the Performance. However, be sure to *leave Rhythm Swing % [S2] at 0* before you continue.

- **Kick/Snare Level [S3]**, **HiHats/Cym Level [S4]**, **Percussion Level [S5]**, and **Pattern On/Off [W1]** are used to *fade/mute the individual drum sounds*. *Take a minute to experiment with [S3], [S4], [S5], and [W1]*. Remember to *fade the drums back into the mix* before you move on.
- **Kick Sound [S6]** and **Snare Sound [S7]** allow you to *alter the actual timbres used for the kick and snare parts* and thereby give the Performance an entirely different feel. These parameters work by mapping the range of the slider to a range of notes within the drum kit. For example, Kick Sound [S6] lets you choose sounds between notes B0 and E1. *Try tweaking both Kick Sound [S6] and Snare Sound [S7]* until you find some new sounds that you like.
- Next, let's experiment with a handy parameter called **Repeat Repetitions [S8]**. This parameter, along with the many other “Repeat” parameters that we'll get to later, allows you to *generate sophisticated MIDI delay effects, with many enhancements only available in KARMA (a feature known as Melodic Repeat™)*. Repeat Repetitions [S8] represents the number of note repetitions to send through KARMA's repeat algorithm and is a parameter that you'll find on many Performances, both rhythmic and melodic. *Slowly move Repeat Repetitions [S8] to the right* to increase the number of repetitions. *Return [S8] to 0* when you are done.
- **Rhythm Complexity [S1]**, one of the more interesting parameters in this Performance, allows you to *increase the rhythm complexity by removing note rests or decreases complexity by adding note rests*. To hear this in action, *move Rhythm Complexity [S1] to 0 (hard left)* in order to add all “optional” rests to the rhythm, thereby decreasing the complexity. Now, *very slowly move [S1] to the far right* and listen as the rests are removed (i.e., more notes are added).
- KARMA offers a wealth of pitch bend effects that can be applied to both melodic and rhythmic GE's. In this Performance, **Bend On/Off [W2]** allows you to *initiate a unique-sounding “arpeggiated” pitch-bend effect*. *Switch Bend On/Off [W2] to ON* to hear its effect. Then, *switch [W2] back to OFF* to remove the pitch bend.

- Let's quickly review how scenes work in KARMA. *Click the **Scene 2 button*** to switch to scene 2. (Alternatively, you can use **[F8]** on your computer keyboard to toggle scenes). Notice that the real-time controls jump to alternate positions that are stored inside the scene. Now, *slide **HiHats/Cym Level [S4]** to 0 (hard left)* to fade out the Hi Hats in *scene 2 only*. Next, *click the **Scene 1 button*** (or [F8] on your computer keyboard) to jump back to scene 1. It should sound exactly as you left it. Finally, *click the **Scene 2 button*** to return to scene 2 and notice the controls are just as you left them, which includes the faded Hi Hats.
- Congratulations! You've now been introduced to many of the commonly used "drum kit" parameters which means you'll have no problem becoming familiar with many of the other preload drum kits. To show off your expertise, *take a minute to play with **A020: House Kit***. Then *give **B004: Jazz/Brush Kits** a quick spin*.

Prog B029: TenorSax Brth.-Y

Prog B029: TenorSax Brth –Y shows off a few of KARMA's many improvisational features.

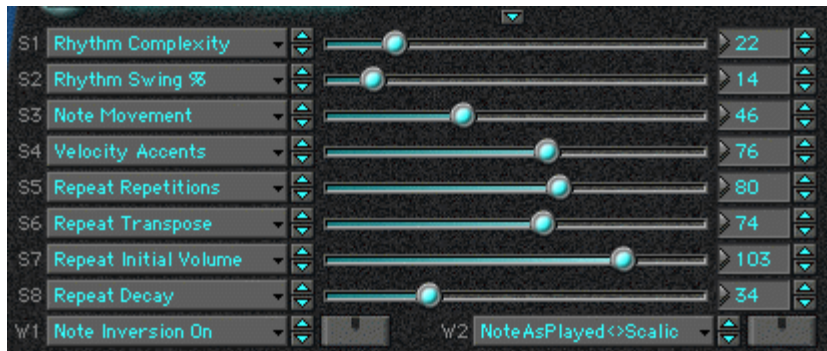


- To get our virtual sax player started, we need to tell KARMA which scale to improvise on by playing a chord on the keyboard. Press **Chord Trigger 1 [F1]** to generate an F Maj7 chord.
- First, let's simplify the rhythm by using the **Rhythm Randomize [S1]** parameter. To do so, move **Rhythm Randomize [S1]** to 0 (hard left). This parameter increases the number of rests in the rhythmic pattern, thereby decreasing the number of notes, while moving it towards the right increase the number of notes and removes rests. Let's leave it set at 0 for now.
- **Duration % [S3]** can be used to increase/decrease the note durations. Slide **Duration % [S3]** to 0 (hard left) to shorten the note durations. Then, slide **[S3]** to 127 (hard right) to generate longer notes.
- As you listen to the sax pattern, notice the slight variations in volume on each note. These volume changes are due to KARMA's velocity pattern which can be scaled using **Velocity Accents [S4]**. To exaggerate the velocity pattern, slide **Velocity Accents [S4]** to 0 (hard left). Notice that some notes are quite loud, while others are quite soft. Now, slowly slide **[S4]** to the right until you reach 127 (hard right) to flatten out the velocity pattern and notice that each note has the same velocity. Finally, return **[S4]** to its default position of 48.
- In order to change the amount of improvisation, use the **Improvisation [S8]** parameter. First, move **Improvisation [S8]** to 0 (hard left) to remove all the improvisation and listen for a few bars until you become familiar with the pattern. Now, slowly move **Improvisation [S8]** to the far right. Notice the "randomness" that gets introduced. Essentially, the higher this parameter's value, the higher the chances that KARMA will "jump around" within the notes of the scale rather than follow the original pattern.
- You can also affect the notes of the scale via the **Note Inversion [S5]** parameter and the **NoteAsPlayed<->Scalic [W1]** parameter. First, move **Note Inversion [S5]** slowly to the right to hear different inversions of the scale being played. Remember that the scale is based on the chord that you played. Next, switch **NoteAsPlayed<->Scalic [W1]** to OFF in order to switch from the "Scalic" mode to the "As Played" mode. In this second mode, you are instructing KARMA to improvise only on the notes that you actually play. For example, simultaneously play a C and E. Notice that you only hear the notes C and E in the sax riff. Now switch **[W1]** back to ON, and you'll begin to hear all the notes in the CMaj scale.
- Often, you'll find that certain KARMA parameters are directly related to other parameters in the same Performance. For example, in this Performance, **Repeat Rhythm Value [S7]** and **Repeat On/Off [W2]** are related to the pattern's repeat algorithm. To see the relationship, make sure **Repeat On/Off [W2]** is OFF, then move **Repeat Rhythm Value [S7]** and notice that you don't hear any changes. Now, switch **[W2]** to ON in order to hear the MIDI delay/harmony effect. Finally, slowly move **[S7]** to the left to scroll through the different rhythmic values for the repeat algorithm. Note also that the delay/harmony effect is triggered by notes with lower velocities: move Velocity Accents [S4] to the far left to cause it to kick in more frequently, and far right to limit the effect.

- Finally, using the **Time Signature [S6]** parameter, you can **generate some interesting rhythmic variations**. In this Performance, Time Signature [S6] represents the numerator (1 thru 8) while the denominator is fixed at 4. In its default position of 127, the time signature is, therefore, 8/4. To hear the riff in 1/4 time, **move Time Signature [S6] to 0 (hard left)**. For future reference, this parameter tells KARMA how many beats to spend in each step of the Phase Pattern. You'll learn more about Phase Patterns and Pattern Steps in future tutorials.
- For a slight twist on this same theme, **switch to Prog A029: TenorSax Growl-Y**. Then, **turn Latch ON** by using [F9] on your computer keyboard. Finally, **trigger the Combi by pressing Chord Trigger 1**. Notice that **TenorSax Growl-Y** uses the exact same set of parameters as the Performance we've been working with, yet it has a completely different feel to it. Mostly, this different feel is due to some "hidden" (i.e., not exposed via the RTC Editor) GE parameters that are programmed slightly differently in each Combi. Feel free to **take a minute to tweak the parameters in TenorSax Growl-Y**.

Prog E024: LogDrum&Bells+Y

Prog E024: LogDrum&Bells combines KARMA's melodic and rhythmic capabilities to provide a moving percussive line.

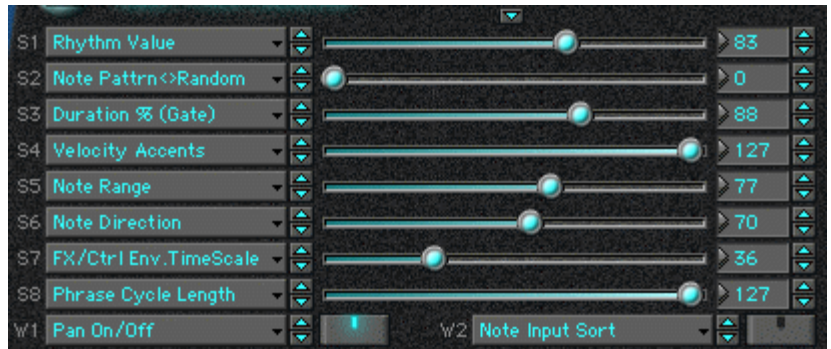


- *Strike any key on your keyboard or press one of the **Chord Triggers** to start the drums and bells.*
- As you scan the parameters in this Performance, you should recognize a few of the names (e.g., **Rhythm Complexity [S1]**, **Rhythm Swing % [S2]**, and **Velocity Accents [S4]**). In order to reacquaint yourself, *take a minute to tweak [S1], [S2], and [S4]* and *create some tasty rhythmic patterns*. When you're done, *return Velocity Accents [S4] to its default position of 76* (remember that the slider button will return to blue at its default position). Then, *move [S1] and [S2] to 0 (hard left)* in order to *simplify the rhythm* before continuing.
- Let's *dive into some of the special effects that you can create with KARMA's Melodic Repeat™ algorithm using Repeat Repetitions [S5]*. First, *slide Repeat Repetitions [S5] to 0 (hard left)* in order to temporarily remove all repeated notes. Wait a few seconds, then *slowly move [S5] to the right until you hit 64 (middle)* and listen as more repeated notes are added. At the center of the slider, you will be generating 4 repeated notes. Remember that you can check the slider's parameter tooltip in order to verify the value of the Repeat Repetitions parameter.
- Next, let's *make the repeat effect more/less subtle* by using **Repeat Initial Volume [S7]**. To lower the initial volume of the repeated notes, *move Repeat Initial Volume [S7] to 0 (hard left)*. Listen to the effect, then *slowly move [S7] to the right* and listen as the repeated notes grow in volume. To get an even better perspective on the effect of Repeat Initial Volume [S7], *return Repeat Initial Volume [S7] to 0 (hard left) and then slowly sweep Repeat Repetitions [S5] back and forth. Repeat this experiment with [S7] at 64 (middle) and again with [S7] at 127 (hard right)*.
- You can *affect the overall volume of the repeated notes* via **Repeat Decay [S8]**. This parameter tells KARMA how quickly to decay the volume of each repeated note. In this particular Performance, you can hear it best when you *move both Repeat Repetitions [S5] and Repeat Initial Volume [S7] to 64 (middle)* and then *move Repeat Decay [S8] back and forth between 0 (hard left) to 127 (hard right)*. For an interesting effect, *move Velocity Accents [S4] to 0 and again experiment with Repeat Decay [S8]*. When you're done, *return [S4] to its original position of 76* before moving on.
- Now, let's *take control of one of the more dramatic repeat effects* via **Repeat Transpose [S6]**. But first, we'll simplify the repeat pattern by generating only 1 repeated note. To do so, *move Repeat Repetitions [S5] to a value of about 17* (or until its parameter tooltip says [08] 1). Now, *very slowly move Repeat Transpose [S6] to the right*. If you are using your mouse (as opposed to a MIDI controller), you may find it easier to repeatedly click the small up arrow to the right of the slider rather than dragging. As you increase Repeat Transpose [S6], listen as the repeated notes are transposed at higher intervals. Add in some more Repetitions [S5] and try it again, for an even more noticeable effect.
- This is a good time to *experiment with a few of the remaining parameters* including **Note Movement [S3]**, and **NotesAsPlayed<->Scalic [W2]**. If these parameters sound familiar, it's because we've already played with them in **TenorSax Brth -Y**. (Note that the "Note Movement" parameter is labeled "Improvisation" in the **TenorSax Brth -Y** Performance. The musical effect of these two parameters, however, is the same.)

- **Note Inversion [W1]** is a different sort of effect than the one in the *TenorSax Brth -Y* Performance. Here it adds another line of generated notes on top of the others, essentially inverting the notes on top of themselves. Try this out in combination with some of the previous parameters - it instantly doubles the sound in a symmetrical reverse direction.
- For the grand finale, *move your keyboard's Joystick in the +Y direction* in order to *generate a real-time sweep through the notes of the generated pattern*. This effect is accomplished using an advanced KARMA technique called Direct Indexing.

Combi B012: 4 Arp Cycle-Note

For the remaining examples in this tutorial, we'll move from Programs to Combis. Therefore, to open **Combi B012: 4 Arp Cycle-Note**, double-click on "Preload Combi Bank B" in the KDF Window.

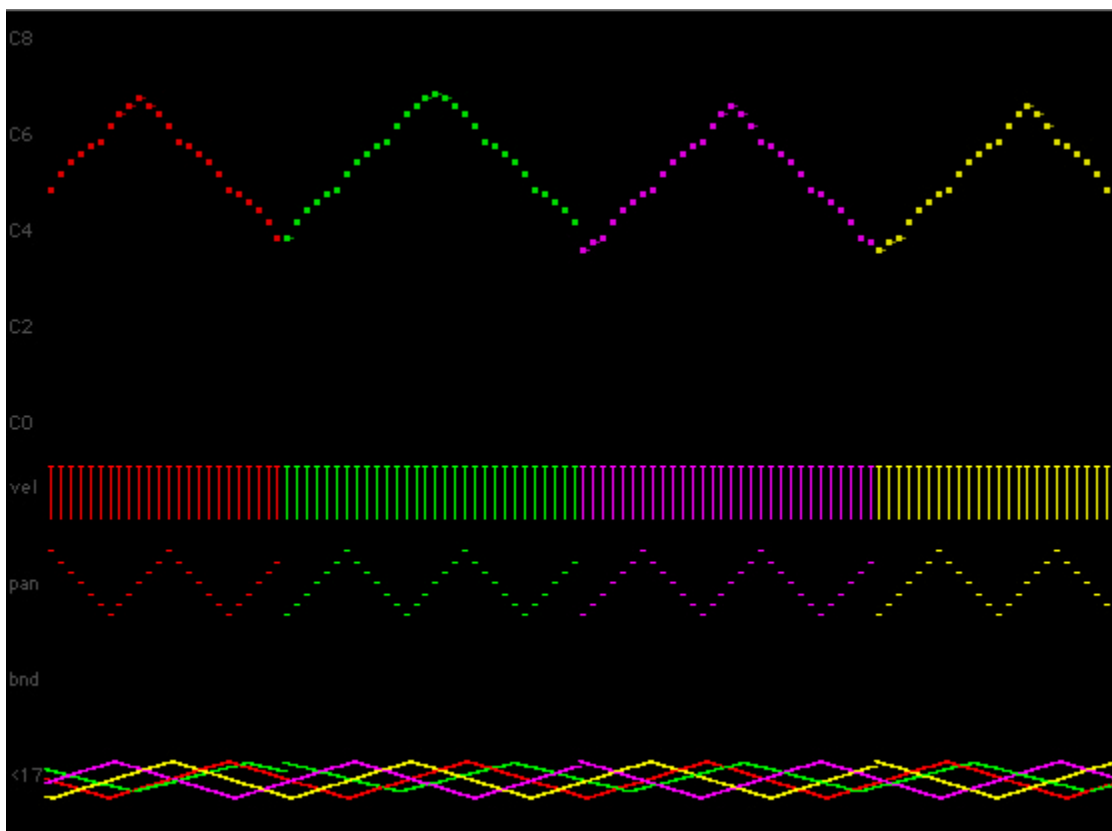


Using this Performance, in which the four KARMA Modules each play an arpeggio and cycle between the Modules in rotation, you'll discover why KARMA is light years beyond a typical arpeggiator. And, since we are in Combi mode, we now have access to keyboard layers, splits, and other effects that aren't available in Program mode.

- In this particular Performance, you'll hear a lush synth pad layered beneath a synth lead arpeggio. The KARMA effects (arpeggio) are only triggered in the upper octaves of the keyboard. *Play some notes in the lowest octave on the keyboard.* Notice that you hear the synth pad, but no KARMA action – this allows you to use your left hand to provide bass tones to the effects triggered by your right hand. Now, *hold and release Chord Trigger 1 [F1]* or play some notes in the RH area to start the KARMA-generated arpeggio.
- Using **Rhythm Value [S1]**, you can effectively expand/compress the overall rhythm by using a KARMA feature called the Rhythm Multiplier. *Experiment with Rhythm Value [S1]* in order to hear its effect. Notice that the popup parameter tooltip shows four separate values being controlled – you are actually varying the same parameter for KARMA's four separate Modules at the same time, on four different timbres. When you're done, *leave the slider at 64* with the four values set to "4" for a slower rhythm.
- Using **Note Pattn<->Random [S2]**, you can choose from 1 of 3 modes for moving through the notes of the arpeggio. At its default value of 0, KARMA will walk linearly through the notes of the arpeggio. This is the effect you are listening to now. Now, *move Note Pattn<->Random [S2] to 64 (middle)* in order to set the value to 1. Here, you'll hear KARMA jumping around randomly. If you listen carefully, you will notice that KARMA is not repeating the same note twice in a row. This feature provides a less machine-like and more musical effect. Finally, *move [S2] to 127 (hard right)* to set the value to 2. In this mode, KARMA is using a "random walk" effect. As you listen, you'll notice the effect of the randomness. Yet, the random "jumps" are constrained so that the notes are, in general, moving up and down the notes of the scale. Notice that the shape of the random phrase generated by each module is the same for four repetitions, then the phrase changes for a new shape for four repetitions, etc.
- Notice that this Performance exposes a couple of familiar parameters: **Duration % (Gate) [S3]** and **Velocity Accents [S4]**. These parameters are quite useful and show up in many Performances in the Preload KDF. Take a minute to *experiment with Duration % (Gate) [S3] and Velocity Accents [S4]* and notice how they affect the notes of the arpeggio.
- At this point, let's restore all of the sliders to their default positions before continuing. To do so, *click the Compare button.* (Note, as an alternative to the Compare button, you can move each slider manually until its button returns to blue).
- The **Note Range [S5]** parameter is fairly self-explanatory. Use this parameter to set constraints on the upper end of the arpeggio. *Move Note Range [S5] to 127 (hard right)* and listen as the arpeggiator produces much higher notes in the scale. Now, *slowly move [S5] to 0 (hard left)* and listen as the range of the arpeggiator is flattened. Finally, *return [S5] to its default position of 77.*

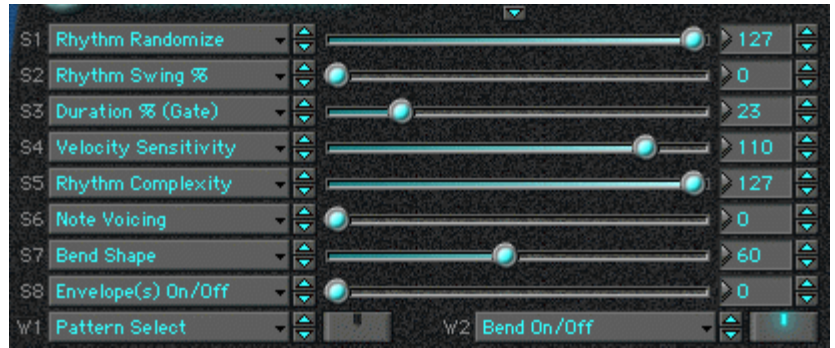
- In this Performance, **Note Direction [S6]** offers 4 modes (values 0-3). In its default position, the value is set to 2 and the arpeggio moves “Up -> Down”. *Move Note Direction [S6] to 0 (hard left)* for an “Up -> Up” arpeggio. Then, *slowly move [S6] to the right until the “controlled” parameter value hits 1* for a “Down -> Down” pattern. Finally, *move [S6] to 127 (hard right)* to hear the final “Down -> Up” pattern.
- The **FX/Ctrl Env.TimeScale [S7]** parameter is our introduction to KARMA’s ability to **generate effect envelopes that can be manipulated in real-time**. In this particular Performance, we can control the time scale of a MIDI CC#16 (the ribbon controller) envelope. First, *move FX/Ctrl Env.TimeScale [S7] to 0 (hard left)* to turn the envelope OFF. Then, *very slowly move [S7] to the right* to turn the envelope ON. You should hear a rapid sweeping effect. As you *continue moving [S7] to the right*, you’ll hear the sweeping effect slow down. If you have trouble hearing the effect, *try slowing down the rhythm by moving Rhythm Value [S1] to the left*. Note that the popup parameter tooltip shows that 8 parameters are being controlled at the same time!
- The **Phrase Cycle Length [S8]** parameter controls how quickly the four Modules “trade-off” their arpeggios. *Experiment with Phrase Cycle Length [S8]* and note its affect on the arpeggio (see the Data Display Window below). When you are done, *return [S8] to 127 (hard right)*.
- In this Performance, the notes in the arpeggio are based solely on the notes that you play. For example, *hit a single key on the upper octaves of the keyboard* and notice that only that note is played, albeit in various octaves depending on your parameter settings. Now, *hit three notes simultaneously (e.g., C E and G)* and notice that all three notes are included in the arpeggio. You can now use **Note Input Sort [W2]** to the way KARMA sorts the individual notes before it repeats them to create the arpeggio. By default, [W2] is OFF and the notes are sorted “up” which means you are hearing C, E, G, C, E, G etc. *Switch Note Input Sort [W2] to ON* in order to sort the notes “down”. You are now hearing a pattern of G, E, C, G, E, C etc. Move Rhythm Value [S1] to a slower setting to more easily analyze the effect.

Note that the **Data Display Window (Cmnd+D (Mac) or Ctrl+D (Win))** can be very useful in watching the cycling of the different modules and the note patterns produced by them, along with the CCs generated by the envelopes:



Combi A016: Earthy Groove

Combi A016: Earthy Groove shows off KARMA's ability to produce a full groove – bass, drums, and a gated synth line – in a single Performance.



- The **Earthy Groove** Combi is split so that the upper octaves of the keyboard trigger a gated synth line while the lower octaves trigger a bass line and drum groove. **Press Chord Trigger 1 [F1]** to **start off the Earthy Groove** by generating notes in both octaves. See if you can pick out the bass line, the drum groove, and the gated synth line. Now, **play the groove by alternating between the 4 Chord Trigger buttons**. As you press the chord triggers, notice how the bass line and the gated synth pattern are re-triggered (i.e., restarted). The drum groove, however, is only triggered once and plays straight through regardless of how you play the keyboard or chord triggers. Stop KARMA with the **Return** key, and just play a chord on the keyboard in the RH area – you will only trigger the gated synth pad. Then you can bring in the bass and drums with the LH when you are ready.
- As you inspect the RTC Editor, notice that you've already worked with many of the parameters such as **Rhythm Randomize [S1]**, **Rhythm Swing % [S2]**, and **Velocity Sensitivity [S4]**. The difference here is that each of these sliders allow you to **affect multiple KARMA modules (bass, drums, synth) at once**. **Spend a minute playing with [S1], [S2], and [S4]**. Notice the controls affect each aspect (bass, drums, synth) of the groove.
- **Duration % (Gate) [S3]** can be used to **change the duration on the bass and synth**. However, it has no effect on the drums. **Move Duration % (Gate) [S3] to the right** and listen as the duration of the bass and synth notes increase.
- **Rhythm Complexity [S5]** is a bass-only parameter and lets you **simplify the bass line** by removing some of the notes. **Slide Rhythm Complexity [S5] to 0 (hard left)**, and then listen to the bass groove for a few bars before continuing. Now, **move [S5] to 127 (hard right)** and notice how some additional notes are added to the bass line.
- **Pattern Select [W1]** is also a bass only parameter that lets you **toggle between two different bass grooves**. **Switch Pattern Select [W1] to ON** and notice the variation in the bass line.
- **Note Voicing [S6]** allows you to **change the note voicing on the bass line**. **Slowly slide Note Voicing [S6] to the right** to hear its affect. As you do so, pay attention to the drum groove. What's going on here? In addition to the bass note voicing, Note Voicing [S6] also **increases the note repetitions on the drum groove** (normally labeled Repeat Repetitions). At first, it may seem a little bizarre that the slider for the bass "Note Voicing" parameter also adds notes to the drum groove. Yet, as you play with Note Voicing [S6], you'll hear the beauty of this particular combination of parameters. Also, as you begin to imagine the combination of other seemingly unrelated parameters, you begin to get a sense of the infinite possibilities of KARMA.

Note that while moving this slider, the popup tooltip displays something like "1 [08] 4 2 [10] 03" – this is telling you that you are varying Module 1's GE Parameter 08 and then the value, and Module 2's GE parameter 10, and then the value. Don't worry if this doesn't make sense at the moment – just a further bit of insight into the inner workings of KARMA.

- The **Earthy Groove** bass line provides a good opportunity to **hear some of KARMA's advanced pitch bend effects**. The **Bend Shape [S7]** parameter lets you choose from KARMA's three bend types:

0: "Bend" – where a note in the groove bends to another note and remains there

1: "Hammer" – where a note in the groove bends to another note and returns back to the original

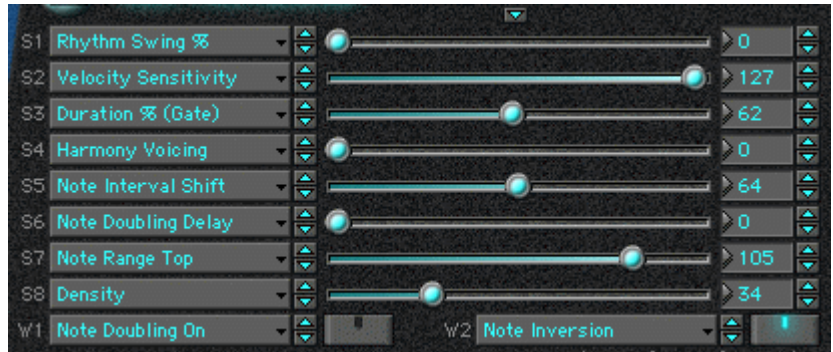
2: "Hammer Bend" – where a note in the groove bends to another note, returns back to the original, then back again; can be effective for ethnic pitch bend effects.

Using Bend Shape [S7], you can call up the "Bend" value at 0 (hard left), "Hammer" at 64 (middle), and "Hammer Bend" at 127 (hard right). *Experiment with Bend Shape [S7]* and see if you can pick out the subtle differences in the bend shape. If you need to, *tweak some of the other sliders* so you can better hear the bass and the bend effect. You can also stop KARMA, and just trigger the LH area, to hear only the bass and drums. Note that you can also **remove the bend effect completely** using **Bend On/Off [W2]**.

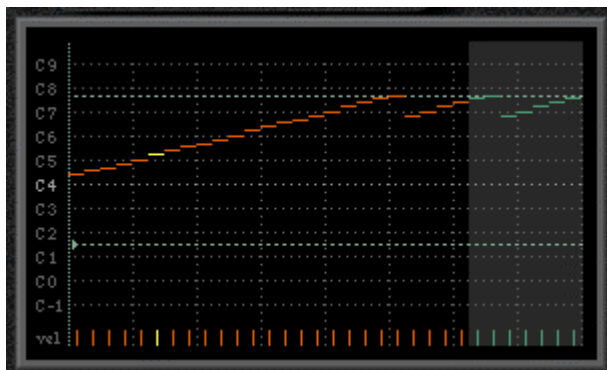
- Finally, **Envelope(s) On/Off [S8]** can be used to **activate a slew of effect envelopes on the bass, drums, and synth**. Envelope(s) On/Off [S8] is also an example of a "toggle", or On/Off, parameter that is assigned to a slider rather than a switch. In other words, when the slider value is 0 (hard left) to 63 (middle), the parameter is OFF. In the range of 64 to 127 (hard right), the parameter is ON. *Slide Envelope(s) On/Off [S8] to the right*. Funky, eh? First, **notice the subtle pitch bend envelope on the drums**. If you have trouble hearing it, compare it to the original groove by sliding [S8] back to the left, then back to the right. Next, see if you can **hear the modulation (CC #16) envelope on the bass**. Also, notice that the bass is now panning left and right. Finally, notice that the synth is now quite muted due to a MIDI CC #16 (alternate modulation) envelope.

Combi A020: ΛGods BathtubΛ

Although KARMA is great at pounding out drum grooves, producing complex bass lines, and generating wild arpeggios, KARMA is equally adept at generating subtle effects such as the ones in **Combi A020: ΛGods BathtubΛ**.



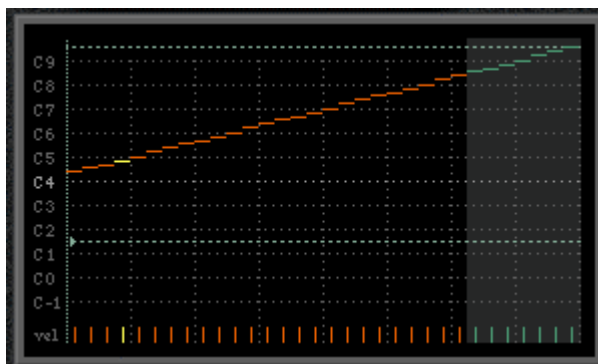
- Before we begin, *switch Latch to ON by clicking the Latch button* (or pressing **[F9]** on your computer keyboard). With the Latch ON, you'll hear the KARMA-generated pad effects even after you release the keys. Then, *switch Note Inversion [W2] to OFF*. We'll get to Note Inversion [W2] in just a little bit.
- Now, *press and continue holding Chord Trigger 3 [F3]* to enter **ΛGods BathtubΛ**. Notice that as you hold the chord trigger you get a full pad sound. Now, *release the chord trigger* and notice that you periodically hear some notes (be patient, you may have to wait a few seconds). These generated notes are due to the **Pad Helper** GE which drives this Performance.
- **Density [S8]** allows you to control the “density” of the pad by leaning towards lower note velocities (towards 0) or higher note velocities (towards 127). *Move Density [S8] to 127 (hard right)* to fill in the gaps by producing notes at higher velocities. For the best results, it is important that you *leave [S8] at 127* for the rest of this section.
- Before we continue, you may find it helpful to temporarily remove the “water” effect in this Combi. To do so, *hold your keyboard's Joystick in the -Y (down) position as you click the SW2 switch above the joystick* (to hold the position).



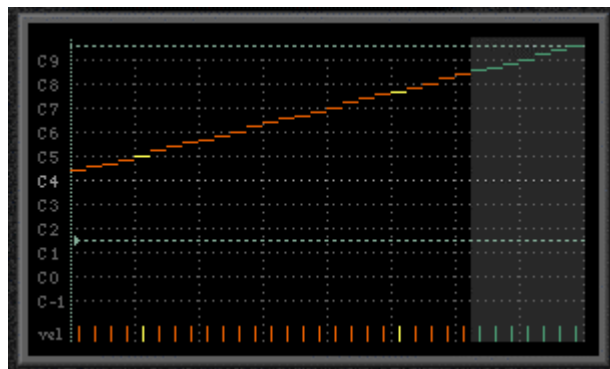
Note Series – Based on Chord Trigger 3

- In order to get a better understanding of some of the parameters in **ΛGods BathtubΛ**, let's take a brief look at KARMA's Note Series Display (shown here). *Open the Notes Series Display using Ctrl+T (Windows) or Cmnd+T (Mac)*. The row of ascending orange vertical lines represent the notes buffered up in the Note Series, while the moving yellow “Notes Series Index”, represents the note(s) that are currently playing. The Y-axis (left side) represents the full range of possible notes/octaves.
- (Note that if you see the index move quickly and you don't actually hear the note changes, it is because the synth timbres in this Performance have a relatively slow attack time. You can adjust the synth so that the notes are easier to hear by *rotating Realtime Controls Knob 1B* “Assignable 1” (above the joystick) *to the far left*, thereby shortening the attack time and making the notes easier to hear – try it!)
- Let's shake up the Note Series using **Harmony Voicing [S4]**. This parameter allows you to “spread out” the notes in the Note Series using various resorting algorithms. In total, there is one “closed” voicing mode (which corresponds to 0, the mode you are looking at now) and 8 “open” voicing modes. *Slowly move Harmony Voicing [S4] to the right* and watch the Note Series Display as you listen to the subtle differences in the voicing. *Return [S4] to 0* - “closed voicing” - and then continue.

- Notice that the notes near the top of the *note range* (the dotted horizontal line between C7 and C8) are resorted so that they remain within the note range. You can modify the note range via **Note Range Top [S7]**. *Slowly move Note Range Top [S7] to 0 (hard left)*. Watch the Notes Series Display as you listen. Notice that the Note Series begins to compress and the generated notes become lower. Now, *slowly move [S7] to 127 (hard right)*. Watch the Note Series open up (as shown to the right).



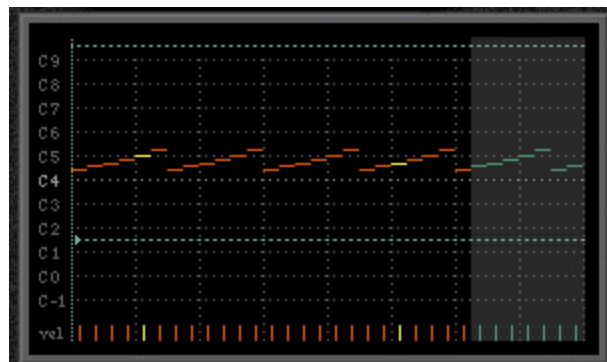
Note Series – Note Range Top [S7] at 127



Note Series – Note Inversion [W2] ON

- We can use **Note Inversion [W2]** to produce a whole new effect by using two indices into the series instead of one. *Switch Note Inversion [W2] to ON* and notice that there are now two notes playing simultaneously. These notes are visually indicated by the two green horizontal lines (shown to the left).

- It is helpful to know that, in this particular moment, the full Note Series is actually comprised of a set of six notes (which are based on the notes from the chord trigger) which are then repeated several times to the right. Using **Note Shift Interval [S5]**, we can change the note interval between each repetition for some interesting musical effects. *Slowly move Note Interval Shift [S5] towards 0 (hard left)* as you watch the Note Series Display. With [S5] at 0, you can clearly see each repetition of 6 notes (see image to the right). Notice that the 2nd index (green bar towards the right) is now playing notes in the same range as the original index. *Slowly move [S5] to 127* and listen as the range of notes truly opens up. At its maximum value, the interval is 24 (or 2 octaves). Notice that you can visually see the 2 octave interval between the first note in each repetition.



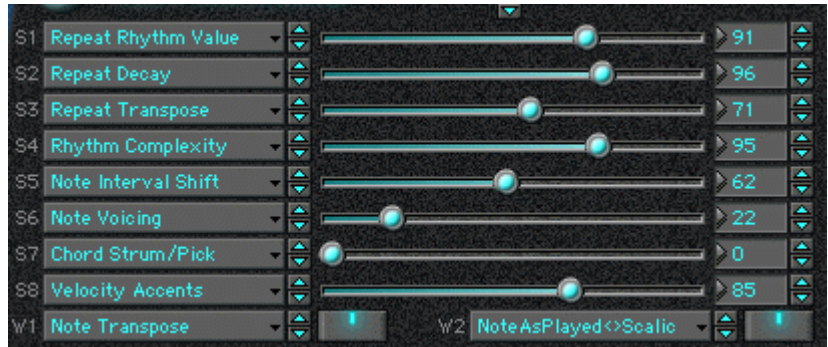
Note Series – Note Interval Shift [S5] at 0

- Now is a good time to spend a few minutes playing with the Notes Series parameters that you've just been introduced to. *Experiment with [S4], [S5], [S7], and [W2] as well as the 4 Chord Triggers and/or the keys on your keyboard* as you splash around in *ΛGods BathtubΛ*. Pay particular to the Notes Series display and notice how the various parameters interact with each other to produce a wide array of musical effects. Don't be concerned if the Note Series concept is not 100% clear at this point. For now, simply use it as a visual guide to backup what you are hearing. We'll revisit the Note Series in detail in a future tutorial.
- Before we continue, *switch Note Inversion [W2] to OFF* in order to remove the second index.

- Next, let's experiment with **Note Doubling On [W1]** and **Note Doubling Delay [S6]**. These parameters work off the Note Series but don't actually modify it. First, *switch Note Doubling On [W1] to ON* and *notice the new harmony line that is introduced*. This harmony is generated by adding a single repeated note at an interval of +7 semi-tones (i.e., a 5th). As it happens, you don't get access to change note interval in this Performance, but you can change the timing of the repeated note via **Note Doubling Delay [S6]**. When [S6] is at 0 (hard left) as it is now, the GE produces the repeated note simultaneously with the note from the Note Series. As you *move Note Doubling Delay [S6] to the right*, the repeated note is increased up to a maximum value of 6 beats, creating an interweaving motion between the melody and "repeat" harmony.
- When you play notes on your keyboard (or use a Chord Trigger), KARMA is not only processing your notes in order to build the Note Series, but it is also receiving and processing the note velocities. Using **Velocity Sensitivity [S2]**, you can *scale the velocity sensitivity for this Performance*. *Move Velocity Sensitivity [S2] to 0 (hard left)*. Then, *play some notes on the keyboard at varying sensitivities* and listen as the velocities of the generated notes generally match your input. In other words, the effect is fully velocity sensitive. Now, *move Velocity Sensitivity [S2] to 127 (hard right)* to *effectively remove velocity sensitivity*. Then, *again play some notes at varying sensitivities* and notice that the generated velocities are no longer tied to your input. This second method of playing can be useful if, for example, you wanted to sequence the KARMA output at a fixed velocity level.

Combi A014: Magic Flute [JS]

For our last jam session, let's have some fun with a "magical" Combi, **Magic Flute [JS]**, one of our favorites created by the KARMA inventor himself, Stephen Kay.



- **Magic Flute [JS]** uses all 4 available GE modules. The first 3 play various guitar picking GE's, while the 4th generates a Melodic Repeat™ effect on a flute timbre. *Press and continue holding Chord Trigger 1 [F1]* in order to *simultaneously trigger the 3 guitar GE's* with an A Min7 chord. Beautiful and quite realistic, isn't it? When you're ready, *release the chord trigger* in order to *gracefully fade out the guitars*. The fade effect is generated by KARMA Velocity Envelopes.

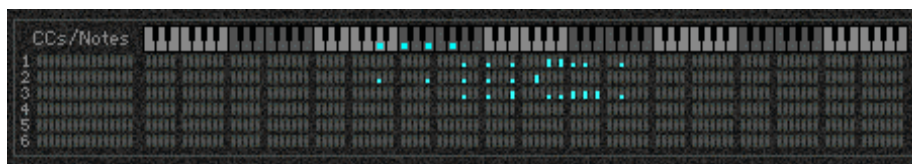


- *Open the Performance Editor using Ctrl+P (Windows) or Cmd+P (Mac).* The KARMA Performance Editor is a key component of the KARMA interface which allows you to create new Performances and/or edit existing Performances. However, the Performance Editor also contains many useful features for inspecting the details of a Performance. The triangular buttons on the left side of the Performance Editor (pictured here) allow you to navigate to the various panels within the editor. By default, you will be looking at the "Mix/FX Panel." (If you aren't, simply click the "Mix/FX" button.)
- A useful feature of KARMA is that *all of KARMA's effects are always in sync with the tempo* (unless, of course, you don't want them to be...). To see how easy it is to change the tempo of this Performance, *locate the Tempo control at the top of the Performance Editor* (shown below). Now, *type 110 to slow down the tempo*. Notice the flashing blue LED slows down to match the new tempo. Alternatively, you can *turn on the "Tap Tempo" feature under the Options menu*. You can then *"tap" the tempo using the Space Bar*.



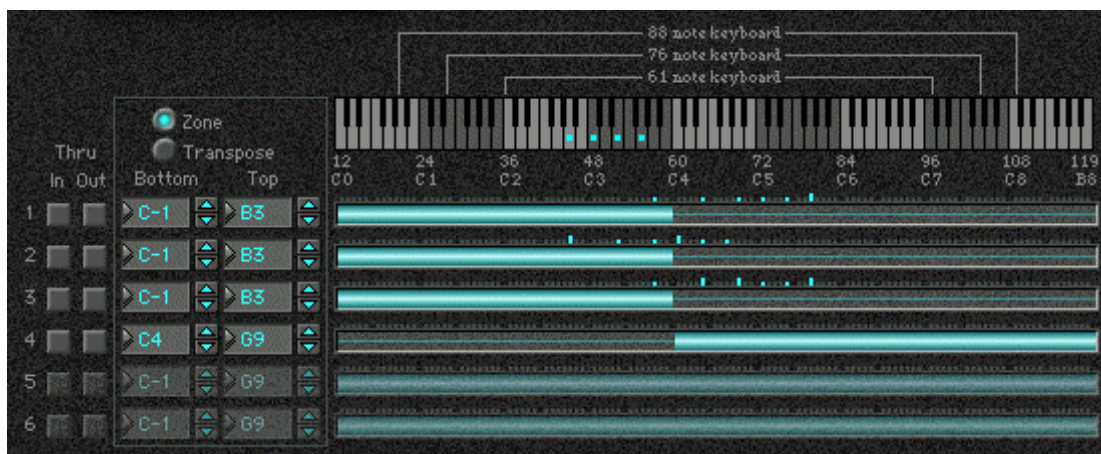
Tempo Control

- *Hold Chord Trigger 1* as you watch the CC/Notes Display (shown below) at the top of the Mix/FX Panel. The four notes on the mini-keyboard display represent the notes played via the Chord Trigger. The rows beneath the keyboard represent the KARMA-generated notes for each module. (Note that although there are 6 rows, the current version of the software only supports 4 modules in order to remain compatible with the Karma keyboard). Notice how the guitar notes are being generated by modules (rows) 1 thru 3. The height of each individual bar (note) indicates the note velocity. Now, *play around with all four Chord Trigger buttons*. Notice how the input notes affect the generated notes.



CC/Notes Display

- Although you are only hearing/seeing action on the first 3 modules, **Magic Flute [JS]** actually uses all 4 KARMA modules. So why haven't we heard or seen anything on the 4th module? To find out, [click the "Zones" button on the left side of the Performance Editor](#) to switch to the Key Zones panel shown below.



Key Zones

Notice that the first 3 modules (rows) have a blue bar that covers the lower end of the keyboard and stops at note B3. Again, [play Chord Trigger 1 \[F1\]](#), and notice that the played notes (shown on the mini-keyboard) fall within the zones, and, therefore, those modules are “triggered”. The 4th module, however, has a trigger zone in the upper octaves of the keyboard, or C4 thru G9 (see the Bottom and Top parameters).

- Let's trigger module 4 now. [Play a middle C \(C4\) directly on the keyboard](#). You can be sure you are hitting C4 by watching the mini-keyboard display above the zones. At this point, you should [see & hear the “magic” flute as it meanders its way up the notes of the scale](#). Notice that the generated notes for the flute are shown in row 4 of the Key Zone panel.
- Now, [hold and release Chord Trigger 1 and again play middle C \(C4\)](#). You may notice that the flute is jumping around on the guitar's scale (A Min7) provided by the chord trigger, even though the chord trigger plays in the guitar zone. For a comparison, [hold and release Chord Trigger 3 and then play middle C](#). If you listen carefully, you'll hear that the flute pattern is now using the notes in the D Maj9 chord provided by the chord trigger. In fact, it becomes obvious that the second flute pattern is different from the first when you notice that it begins by moving slightly down the scale (instead of up). Feel free to [repeat this exercise a few times using any of the 4 Chord Trigger buttons](#). Also, quite an illustrative demonstration can be provided by sweeping your hand on the keys in a glissando in the RH area, letting the repeated notes generate in a great flurry, and then change the chord in the LH while they are repeating – they shift to fit the new chord!

Behind the scenes, **Magic Flute [JS]** is using an advanced KARMA feature called “Chord Scan” in order to pull off this trick. But what does all this mean to you, the musician? Simply put, it means that [it's impossible to play the flute out of key!](#)

- Repeat Rhythm Value [S1], Repeat Decay [S2], and Repeat Transpose [S3]** all affect the flute's echo, or MIDI delay, effect. By now, you're likely to be fairly comfortable with these parameters as we've explored them in several other Performances. Take a minute to [experiment with \[S1\], \[S2\], and \[S3\]](#), while playing notes in the RH area.

- Now, *click the **Scene 2** button jump to scene 2*. Then *hold and release **Chord Trigger 1*** to hear the new guitar pattern. Then, *play **C4*** to hear the new flute pattern.
- While in Scene 2, let's use **Note Interval Shift [S5]** to generate a neat, “driving” guitar effect. First, *slide **Note Interval Shift [S5]** to 0 (hard left)*. Then, *hold down **Chord Trigger 1***. Notice that, for the most part, the guitar pattern is constrained to only one or two notes. Now, *while holding **Chord Trigger 1**, slowly slide **[S5]** slightly to the right (until some new notes are heard) and then return **[S5]** to 0. Repeat this slide-right-then-return-to-0 a few times, only move **[S5]** a little further to the right each time*. Fun.
- The remaining parameters - **Rhythm Complexity [S4]**, **Note Voicing [S6]**, **Chord Strum/Pick [S7]**, **Velocity Accents [S8]**, **Note Transpose [W1]**, and **NoteAsPlayed<>Scalic [W2]** – all affect the guitar GE's. In addition, you will be familiar with many of these parameters from the other Performances in this tutorial. *Take a few minutes to experiment with all of the guitar parameters*. Notice that you can generate an almost limitless number of guitar patterns from this small set of parameters. Particularly impressive is Chord Strum/Pick [S7] – at 0 (far left) you will get finger-picking, and as you move slowly towards the right, it will gradually introduce strumming and more strumming until at far right it's all strumming.
- Finally, the “[JS]” in the Performance name clues us into the fact that there's a special feature waiting on the Joystick. *Move the **Joystick** in the +X (right) and -X (left) directions* to “strum” the guitars. This effect is due to the same Direct Indexing feature that we first heard in **LogDrum&Bells+Y**. Now, however, you have a better understanding of what Direct Indexing means. Bring up the Note Series window and watch!

Moving Forward After the Jam

Phew! If you've played this tutorial straight through, it's likely that you've been jamming for at least an hour now. And the amazing part is that **you've just barely scratched the surface of KARMA!** I mean, just think... there are another 761 Performances in the preload KDF alone!

The most important thing is that you've now got a great foundation on which to build. You've played with a wide variety of Performances and you're familiar with many of the most common (and important) real-time parameters. You've even taken a peek at some of KARMA's more advanced windows including the Note Series Display, the Performance Editor and the Data Display Window. **You're well on your way to creating your own unique and inspired music with KARMA.**

So what next? Here are a couple of suggestions:

1. **Play, Explore and Experiment** - Continue working your KARMA muscles by exploring more of the Preload Performances. When you come across parameter names that are unfamiliar, don't get discouraged. Just let yourself experiment while using your ear as a guide.
2. **The KARMA GE Guide** – The Karma keyboard comes with an extremely useful guide called the “KARMA GE Guide”. If you've misplaced yours or you are using a TRITON (and don't own a Karma), you can download the GE Guide (and all of the Karma Manuals) in PDF format from the [Karma Lab Documents Page](#).

This “KARMA GE Guide” provides a detailed explanation of all of the GE parameters that are available in KARMA. The parameters are logically organized by group. For example, if you turn to pages 32-36 (“Repeat Group”), you'll find detailed explanations for many of the parameters that we've been using in this tutorial including: Repeat Repetitions, Repeat Rhythm Value, Repeat Decay, and Repeat Initial Volume.

3. **The online KARMA Help File** – Your KARMA software comes equipped with detailed documentation on every aspect of KARMA, in the form of the online Help File, which can be opened from the **Help Menu** or by pressing **Cmd+H (Mac)** or **Ctrl+H (Windows)**. After reading the “Using This Help File” chapter, we suggest starting with “Section 2: Performance Editor”. Since you've already been introduced to the Performance Editor in this tutorial, you've got a good head start. You'll probably want to pick a Performance that you are comfortable with (e.g., **Combi A016: Earthy Groove**) and then use the Help file to explore the details of the Performance.
4. **The KARMA Lab Forums** – Don't be shy. Don't be bashful. No question is a stupid question at the [Karma Lab Forums](#).

Let's put it another way: If you've gotten this far and don't have at least a dozen questions, then something's probably wrong. So, visit the ultimate online resource for KARMA technology and feel free to post your questions there. It's likely you'll even get a personal response from Stephen Kay (the “K” in KARMA) himself. Alternatively, you can come and just browse around and see if maybe somebody's already been brave enough to ask. Either way, you can't beat the price of admission!

5. **Future Tutorials** – We hope to release more tutorials in the future, and you'll be the first to know if you're on Karma Lab's [mailing list](#) or you are a frequent visitor to the [Karma Lab Forums](#).

Oh, and just one more thing. If you've completed this tutorial with a Demo Version of the KARMA software, we'd like to seriously thank you for your time in evaluating the software. We hope that your eyes (and ears) have been opened enough for you to catch a glimpse of the possibilities.