

A R R A Y M B I R A

SONICCOUTURE

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ARRAY MBIRA

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INSTALLATION

1. Insert the *Array Mbira* disk you received from Soniccuture.
2. Copy the folder "SC Array Mbira" to a safe place on your hard drive.

If you do not own Kontakt, you will need to download and install the free Kontakt player which you can do here ; [Kontakt Player Download Link](#)

TO ADD THE LIBRARY AND AUTHORIZE IN KONTAKT

1. In Kontakt or Kontakt Player open the Browser on the left (the folder Icon at the top).
2. In the Libraries tab at the top of the Browser go to "Add Library"
3. Click and use the dialogue window to navigate to and point Kontakt to the location of the *Array Mbira* Library folder. This will add it to the Kontakt Library list AND to the Service Center.
4. If Kontakt asks you to Activate the library, the *NI Service Center* program will launch and you will need your serial number to authorize the Mbira.

If Kontakt *doesn't* ask you to authorize, you can force it to by clicking the little "Activate" button in the upper right corner of our Mbira Library logo, in the Browser/Libraries list. It will then prompt you to launch the Service Center.

(You will find your serial number in the email you were sent when you purchased. If for some reason you haven't received this yet, you can run your library in demo mode until it arrives.)

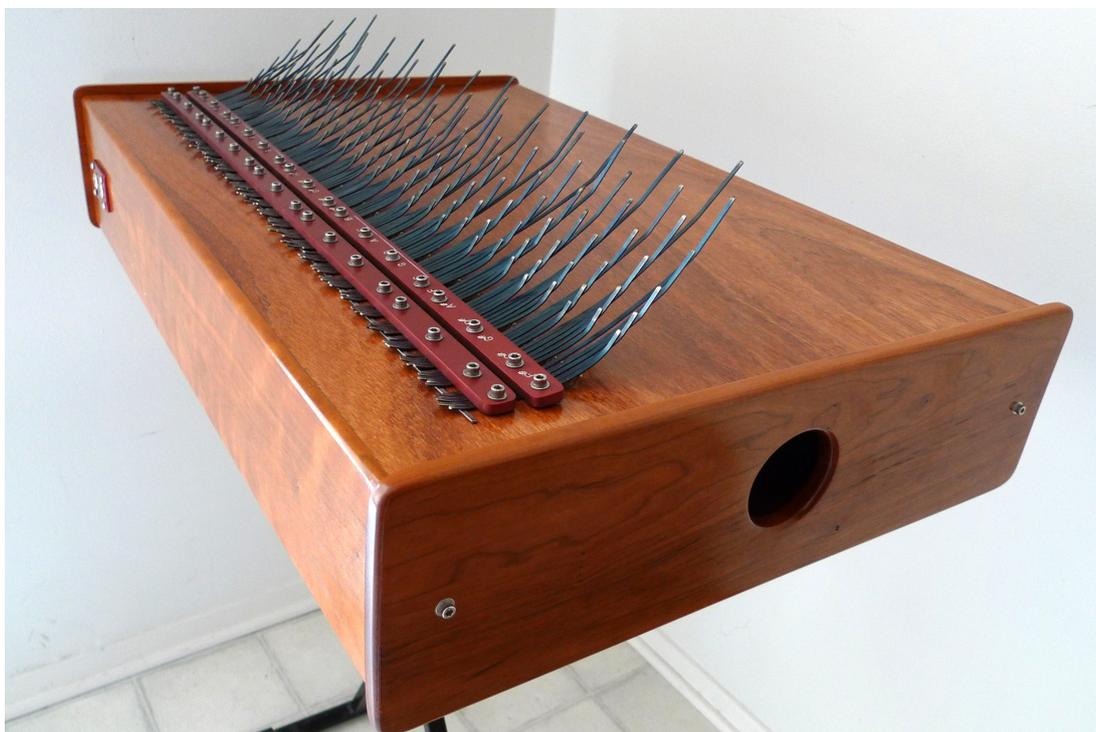
N.B : After authorization, you should restart Kontakt.

THE ARRAY MBIRA

The Mbira is originally a folk instrument from Africa. Sometimes called a Thumb Piano, or Sanza, or Kalimba, they were generally home-made and consisted of several metal tines attached to a gourd or piece of wood, which are then plucked with the thumbs.



[Array Instruments](#), a company started by Bill Wesley and Patrick Hadley, have taken this ancient African idiophone and converted it to a whole new level, not only in terms of instrument design but also in purity of sound, and in range of pitch. The Array Mbira is no toy, it's a highly advanced musical instrument built to exacting specifications.



The large sound box (this model is about 77 cm across) allows for much deeper pitches to be heard acoustically (the lowest fundamental on our model is in the region of 33 Hz). All Array Mbira's also come equipped with a 2-channel piezo pickup system, allowing for easy amplification and line-out recording.

The Array Instrument that we ordered was the largest model they make, the 5 octave chromatic Mbira, which has a range from C1 to B5 (actually the fundamentals are one octave below that, but for ease of use we mapped it



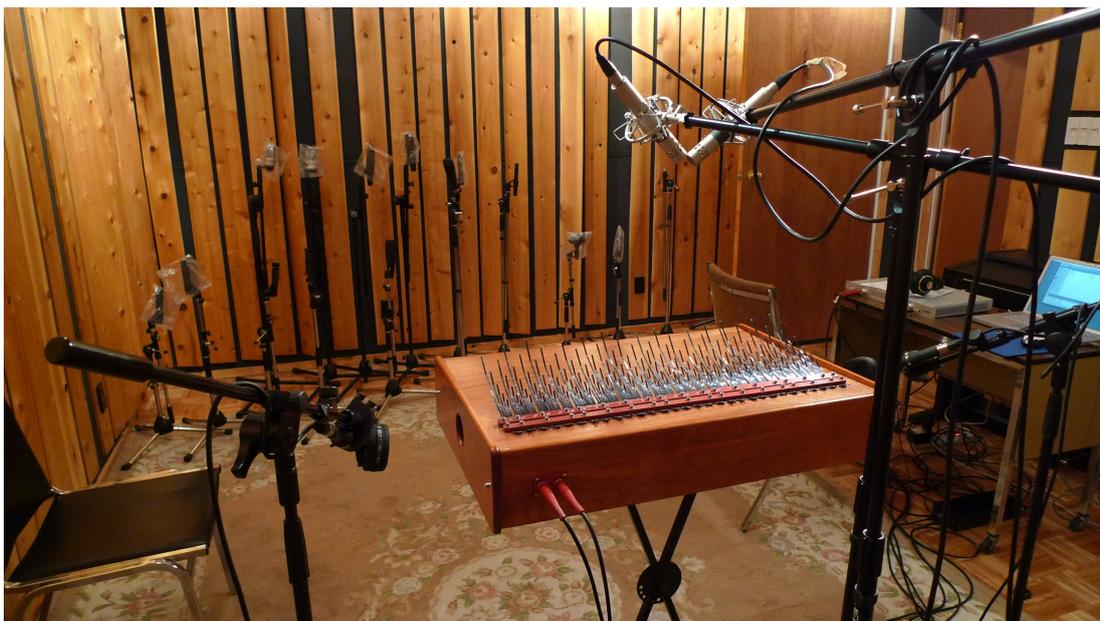
for a standard 61 note keyboard). We chose the American Cherry model, which is noted for its purity of tone and long sustain.

This is the Mbira that ate Manhattan.

You can find more information about Array Instruments, Bill and Patrick, at: <http://www.thearraymbira.com>

Some well known users of the Array Mbira include Ry Cooder, Emil Richards, and Imogen Heap.

SAMPLING THE MBIRA



Since the Mbira contains stereo pickups, we decided to record it with microphones and pickups at the same time. This recording was then mixed down to a 4 channel file for each note, preserving the phase relationship between the pickups and microphone channels throughout the entire recording and editing process.

In the Kontakt instrument these 4 channels are available for each and every sample. They are aligned no matter which robin or velocity zone happens to be triggered. This allows you to mix the Mic and Pickup signals in Kontakt as if you were mixing the instrument in the studio yourself.

Since the pickup signal arrives sooner than the acoustic signal, we provide a control for you to delay the Pickup signal to alter its phase relationship to the Mic signal. We find that about 1.3 ms aligns the transients, but you can adjust this yourself and hear how the timbre and stereo image change.

This Mbira covers a range of 5 octaves, mapped from C1 to B5. We sampled each pitch at 8 velocity levels, 3 times for round robin. We also sampled the damping sound of each pitch 8 times for each note (a small clunk sound when the ringing note is stopped).

The Array system of note layout makes it possible to strum a single pitch through all 5 octaves. We sampled strums for each pitch at 4 velocity levels 3 times each for round robin. These strums appear on your MIDI keyboard at C6 to B6.

This gives a total of 4,112 samples, in stereo, at 24 bit / 44.1kHz.

The uncompressed version of the library utilizes approximately 9.5 GB of disk space. Kontakt 4's sample compression allowed us to reduce this considerably.



THE KONTAKT INSTRUMENT

There are three main pages or 'tabs' for the Mbira, which appear below the instrument in Kontakt: Performance, Instrument, and Effects. In this section we'll go through the functionality of each.

THE PERFORMANCE TAB



This page allows you to set up various options that affect how the Mbira responds to your actions. In this section we'll explain what each of these does.

STRUMMER

The Strummer is a KSP script that allows you to use a MIDI controller (CC) to virtually strum the instrument. By default this controller is set to be the Mod Wheel (CC1), but you can change this to any controller you like.

Rather than strumming every note of the instrument, the Strummer algorithm chooses only the pitches you hold down on the keyboard at that time.

For example, if you hold down a C major chord (C, E, and G), and move the strum controller you will generate a strum that includes all the Cs, Es, and Gs that the instrument contains, across the entire range. It doesn't matter what octave you hold down on your keyboard, the strummer will include all octaves of any pitch being held.

The Strummer is switched on and off with the little blue LED at the top of the STRUMMER section. The remaining controls are as follows:

- The STRUM wheel is both a display of the current state of your Strum Controller, and will generate a strum if you use the mouse to turn it.
- RANDOM will introduce random velocity variation into your strum. The last note you play provides a default velocity for the strummer effect. But this can sound a bit artificial if your strum has a constant velocity. Introducing a bit of randomness to the strummer the result is more natural and organic sounding. RANDOM controls the range of randomness to be introduced.
- RANDOM only subtracts from the velocity it last receives, it will never add to it. This means you can be confident that the velocity you played your chord at is the loudest the strum will generate, and any variation will be lower than that. The range of the RANDOM velocity knob is 0 to 100.
- MIDI CC is the the controller that you define for the STRUMMER effect. This defaults to 1, but you can change it to any other MIDI controller if you prefer, and save the instrument with your own preference.
- INVERT inverts the direction of the strum. By default, the STRUMMER will map the CC from low to high. If you choose INVERT, then the STRUMMER will map the CC from high to low.
- MUTE INPUT allows you to mute the incoming MIDI so that *only* the STRUMMER is heard. In other words, it mutes the notes you play, but not the output of the STRUMMER.

DAMPING

The DAMPING section gives you options to control ways of stopping the Mbira sound. Since the Mbira rings so long, and common technique while playing is to damp the notes with your hand. This results in a little buzz or chunk sound, as well as cutting the note that's ringing.

This little sound helps the realism, but you can turn DAMPING on and off using the little blue LED at the top of the section.

You can also adjust the LEVEL of the DAMPING sound with the main knob in this section. (Note that this DAMPING level is an offset to the main Mix level set in the Instrument section, not an absolute level.)

The DAMPING in our Kontakt version can be triggered by both a note and a MIDI controller (CC). You can set the MIDI KEY and MIDI CC in this section. By default these are set to MIDI note 35 (B0 , which is the note just below the lowest note of the Mbira) and MIDI CC 64, which is the Sustain pedal on most MIDI keyboards. When the MIDI CC is received at a *value* higher than 65 it results in the damping being triggered.

CC INVERT allows you to invert the behaviour of the MIDI CC so that DAMPING is triggered if the MIDI CC is received *below* a value of 64.

Note that even if DAMPING is off, the MIDI KEY and MIDI CC will still cause damping of the ringing notes, they just won't generate any DAMPING sounds and won't use any extra polyphony.

PURGE

The PURGE can be set to on or off. Purge is ON when the blue LED is lit.

If PURGE is on, then turning off the Mic or Pickup channel in the Mix page will remove the samples from memory.

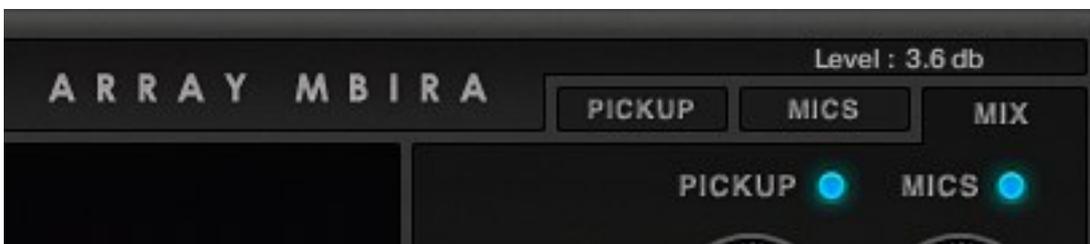
This can be useful if you're working with a system where RAM is at a premium and only need, say, the Mic channel sound or the Pickup sound in a given piece of music.

THE INSTRUMENT TAB



This page contains three sub-tabs of its own (along the top right) and is the main editor for the Mbira instrument. In this section we'll explain the controls available in each of those tabs.

Note that for all the knobs in this section, a numeric value appears at the top right of the screen (above the tabs) while you're adjusting the knob. This can be useful for precise settings.



Also remember that every control in Mbira has a mouse-hover help attached to it. If you turn on the 'Show Info' pane in Kontakt, then you will see a reminder of each control's function at the bottom of the screen when the mouse is hovered over a control.



Finally, as in many of our instruments, Command-click (or Control-click) will reset a knob to its default value.

THE MIX TAB

The MIX tab is the main page of the Instrument section. This allows you to control the relative LEVEL of the PICKUP and MICS signal.



LEVEL is controlled by the two large knobs for each channel.

You can turn either signal on or off using the blue LED switches. (If PURGE is enabled in the Performance section, then these samples will be removed from memory when turned off).

For both the PICKUP and MICS channel you have control of the stereo WIDTH. It's important to

remember that WIDTH is *normal* when set to 0. When WIDTH is greater than 0, the signal is being artificially widened, and when it's less than 0 you are bringing the stereo pair inwards toward mono. Mono is in fact a value of -100.

The PICKUP channel naturally has a very wide stereo image, each note being almost hard panned left or right. (There are two pickups in the instrument, placed on either side.) We often find that bringing the PICKUP WIDTH in a bit improves the stereo image if being mixed with the MICS channel, and especially if being used in very low registers. However, WIDTH at 0 is the natural response of the PICKUP output, so it's up to you how you would like to manage this.

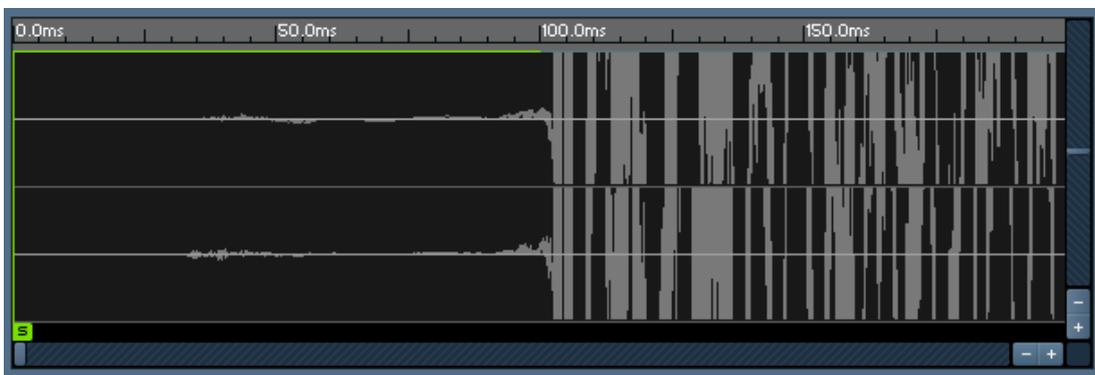
PAN of course controls the panning of each channel.

PICKUP PHASE is a tiny amount of delay introduced to the PICKUP channel. Since sound travels faster through copper than through air, the PICKUP signal is naturally slightly ahead of the MICS channel. This knob allows you to compensate for this. You'll find that the transient quality, overall EQ, and stereo image change as this PHASE is offset. We made 1.3 ms our default value since this seems to be approximately where the transients line up most of the time.

THUMB

THUMB controls the start position of the sample.

When THUMB is at 0, the sample is played from the beginning of the transient. But a thumb piano has a bit of noise *before* the transient that is quite integral to its sound quality, this is the THUMB noise, or pluck sound.



The green line in this picture shows the modulation area of THUMB.

When THUMB is at maximum, or 100 ms, then 100 ms of sound *before* the transient is heard. This results in a more natural attack.

However, it also results in the sound being 100 ms late!

So, using the THUMB control you can do one of two things.

1- You can use it to find a comfortable medium in which the sound is natural enough for your purposes but responds relatively quickly (often 30 ms or so is fine for this).

2- You can be very exact and program your sequence so that the rhythm is precise when THUMB is set to 0. Then change the THUMB to 100 ms,

slide your MIDI part 100 ms **earlier** in your track, and the result will both sound natural and be in time.

THE MICS AND PICKUP TABS



These two tabs provide access to some of Kontakt's editing features. The MICS and PICKUPS tabs are essentially the same, they just provide control over those two channels separately. So we'll just cover the controls once.

The first control to take note of is the LINK button at the bottom right. If this is lit, then whatever you are doing to MICS channel you are also doing to the PICKUPS channel, and vice versa. Often, this is what you want, but if you want to be creative and have different filter settings on the PICKUP than on the MICS channel, for example, then make sure LINK is turned off.

FILTER

The FILTER section above the LINK button provides access to the main filter controls. The large knob in the middle is CUTOFF, and this adjusts the main cutoff frequency of the 12 db Low Pass Filter.

To the left of CUTOFF you have RES, which is control of the Resonance of this main filter. To the right of CUTOFF you have ENV, which is control of the Filter Envelope Depth to that filter. (Note that ENV is bipolar, 0 is at the top.)

Below CUTOFF you have VEL, which provides control of the velocity to cutoff depth. Again, this control is bipolar. To its right you have TRACK, which controls the slope of the filter cutoff keyboard tracking. And to the left you have HPF, which is a 6 db High Pass Filter. The HPF is not dynamic and is not affected by the filter envelope, the tracking, or the velocity.

You can bypass the FILTER section entirely with the blue LED at the top of that section.

EFFECT SENDS

On the left of the FILTER section you have the EFFECT SENDS. There are three sends, one for each DELAY, REVERB, and PHASER. You can have different send levels for each of PICKUP or MICS channels so long as the LINK button is unchecked. (The controls of the effects themselves are on the EFFECT Tab, which we'll cover in the next section of this manual.)

You can disable all the sends at once with the blue LED at the top of that section.

ENVELOPE

The ENVELOPE section controls the Attack, Decay, Sustain, Release, and Velocity sensitivity of the envelopes. Using the FEG LED you can access the same controls for the Filter Envelope.

Note that when in FEG (Filter Envelope Generator) mode, the Velocity Sensitivity is bipolar.

Also note that velocity to FEG depth is not the same as velocity to cutoff. They have a *similar* result, but velocity to Cutoff changes the base frequency of the filter, velocity to FEG depth changes the DEPTH of the filter from the same base frequency.

THE EFFECTS TAB



Select the Kontakt tab below the main panel, and the view will change to the effects panel. All of these effects can be turned on and off with the blue LED at the top right of their section. N.B. ***This will save CPU if you turn them off, especially in the case of the REVERB since we're using the Convolution effect.***

Again, watch the top right of the panel for a display of numeric values of settings you make with knobs in this section.

On the next page we'll run through the functionality of each effect processor.

TAPE

TAPE actually is a combination of effects.



DRIVE, the big knob, provides a tape saturation effect.

COMP provides a little bit of subtle compression, and the threshold of this compressor is brought lower as you increase the value of COMP. BASS is a gain control for a low end EQ.

TAPE WOW, is a subtle (usually) pitch wobbling effect aimed at simulating an old tape recorder. The WOW knob gives you control of the depth of pitch movement, and SPEED gives you control of the speed of this pitch drifting.

PHASER



The large knob is the RETURN level, since this Phaser is used as a send. (The send levels are in the Instrument tab on the MICS and PICKUP pages.)

You have four smaller knobs to control the SPEED, DEPTH, FEEDBACK, and PHASE of the PHASER effect.

If you experience clipped or 'hot' levels from the Mbira instrument, trim down any effects RETURN knobs that may be active. When all four effects are running, it can increase the overall gain quite a lot.

DELAY



The large knob is the RETURN level.

You have four smaller knobs to control the TIME, DAMPING, FEEDBACK, and PAN of the DELAY effect.

There is also a switch to change between SYNC delay and free delay.

If you are in SYNC mode, the TIME knob displays sixteenth note values.

REVERB



The large knob is the RETURN level.

You have two smaller knobs to control the SIZE and HPF (High Pass Filter) of the REVERB.

The drop down menu gives you a selection of some of our favourite impulse responses. These are divided into 'Rooms' and 'SFX' - the later for more creative, sound design effects.

If your CPU seems strained when using Mbira, please turn off REVERB first. The Convolution effect is the most CPU intensive aspect of the Mbira instrument. The longer the REVERB impulse response, the more CPU will be used to process it.

THE PRESETS

The Array Mbira Library contains 2 different preset folders ; *Natural* and *Sound Design*. The former contains, as you might expect, different timbres and combinations of pickups and mic channels, as well as versions optimised for use as basses, and patches with some subtle reverb and effects.

The latter, *Sound Design*, contains some much more unusual, creative sounds, using the full synthesis functions available in the instrument.

NATURAL

- Array Mbira Natural - FX1.nki
- Array Mbira Natural - FX2 Tight.nki
- Array Mbira Natural - FX3 Soft.nki
- Array Mbira Natural - FX3 Warm.nki
- Array Mbira Natural - FX4 Vel Space.nki
- Array Mbira Natural (Combi 1).nki
- Array Mbira Natural (Combi 2).nki
- Array Mbira Natural (Combi 3).nki
- Array Mbira Natural (Combi 4).nki
- Array Mbira Natural (Mics).nki
- Array Mbira Natural (Pickups).nki
- Bass (Combi).nki
- Bass (Mics).nki
- Bass (Pickups).nki
- Mbira Mics Natural.nki
- Mbira Pickup Natural.nki

SOUND DESIGN

- Abandoned Fairground.nki
- Bayaka Arpeggiator.nki
- Brian's Church.nki
- Chesil Beach 11am.nki
- Deep Tank Bass.nki
- Double Speed.nki
- Dub No Bass With My Thumb Man.nki
- Floating Overhead.nki
- Half Speed No Release.nki
- In Reverse.nki
- Karachi Roche.nki
- Long Way From Africa.nki

- mBira Filters - Lo Mello.nki
- mBira Filters - Silver Apple Tree.nki
- Night Pulses.nki
- Porpoise.nki
- Prepared Thumb Piano.nki
- Release Pitch Glide.nki
- Reversed Samples (Warning 4 GB RAM).nki
- Scotts Keyboard.nki
- Smearred Bells.nki
- Strums Everywhere.nki
- Triple Speed.nki

SONICCOUTURE

SUPPORT

If you have any problems or questions relating to the use of this product, please feel free to contact us. You can either email us at :

customerservices@soniccouture.com

or we have a support forum within the KVR Audio community, which can be found here :

[Soniccouture Support Forum](#)

We will always endeavour to reply to any enquiry within 12 hours, but do bear in mind the differences in time zones, so please be patient!

E.U.L.A.

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