

Microtuning in Kontakt 5

Warren Burt

Kontakt 5 – the full version – is a very powerful sampler. One of its powerful features is its ability to do microtuning – in a way that, depending on the programming of the sample set – usually doesn't distort the timbre of the samples. Once you "get there," it's a very powerful and easy way to do microtuning, but alas, the documentation for how to do it is scattered around a number of sources. What has been needed, a group of my friends and I feel, is a very clear (idiot's) guide to how do microtuning in Kontakt. Hopefully, this article will serve that purpose.

First of all, microtuning in Kontakt is accomplished through the use of a "Tuning Script." This is a text file that tells Kontakt to play certain notes with certain amounts of detuning – generally no more than plus or minus 50 cents. Here's an excerpt from a Kontakt 'Tuning Script.'

```
%keynum[60] := 60
%tune[60] := 0
%keynum[61] := 62
%tune[61] := 3910
%keynum[62] := 62
%tune[62] := 9911
```

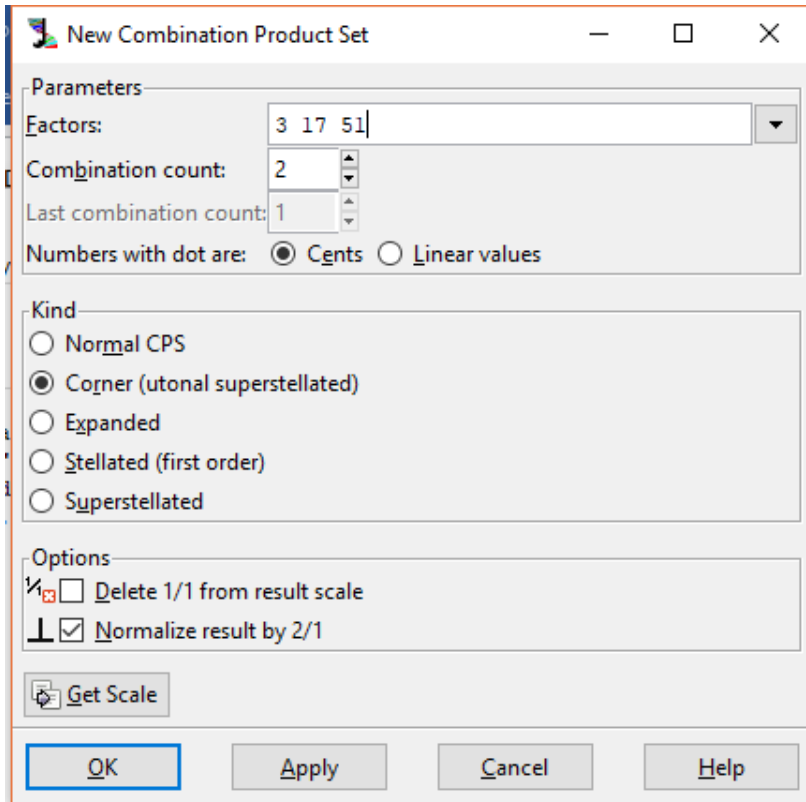
This first line tells Kontakt that when MIDI note 60 is received, MIDI note 60 should be played in the Kontakt program. The second line says that there will be 0 pitch detuning. So the first two lines say that when middle C (MIDI 60) is received, MIDI 60 (middle C) will be played, with no detuning. The next two lines are more interesting. Line 3 says that when MIDI key 61 is received, MIDI key 62 is to be played in the Kontakt program, with a detuning of +3.910 cents. (Note 1: This is not a mistake – incoming Note 61 is indeed now routed to Note 62 to get the proper sampled key for the desired tuning.) (Note 2: In the number 3910, the last 3 digits are assumed to be after a decimal point.) Numbers in this slot (%tune) can be from +50000 to -50000, so a tuning of +/- a half a semitone is possible. The next two lines say that when MIDI key 62 is received, MIDI key 62 is played, but with a detuning of +9.911 cents. So these three pitches are middle C (MIDI 60) and then two detuned Ds above that, one 3.910c sharp and the other 9.911 cents sharp. If you had access to a complete Kontakt 'Tuning Script,' say for 12 tone equal temperament (and one is available for download at <http://www.warrenburt.com/storage/Default12Tone.txt>), if you wanted to, you could painstakingly assemble by hand a complete Kontakt 'Tuning Script' which could be copied and pasted into Kontakt (more on this later, too). Possible, effective, and quite tedious.

PART 1: USING SCALA to Make Kontakt .txt files.

Fortunately, there's a better way. Using the program Scala, one can make scale files, and then save them as Kontakt ready text files. And while a complete tutorial on Scala is not possible here, we can at least cover how to use it to produce a scale file which can be used in Kontakt. Scala is available, for PC or Mac, at <http://www.huygens-fokker.org/scala/>. It's free, as well.

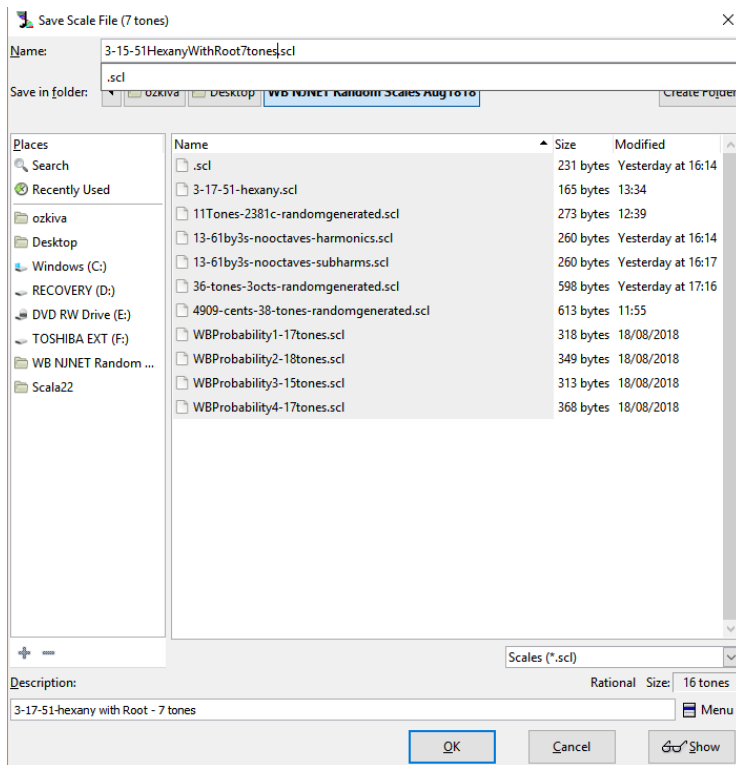
Opening Scala, we can use some of its many tools to make a scale. Here's a 7-note scale made with Scala. (Fig1) Even though we can't go into any depth in how to generate scales in Scala, let's quickly show how our example scale was made. Go to File/New/Combination Product Set. In the window that appears, type in the following values: In Factors – type in 3 17 51. In Kind, check the option called Corner (utonal superstellated). In Options, uncheck "Delete 1/1 from result scale." This is

shown in Fig 0, below. Then press “OK” and in the Scala main window, press F6 to get the scale listing printed out. This is shown in Fig 1.



The important listings here are the second column, which is the ratios of the tuning, and the third column, which is the listing of the pitches of the tuning in cents, or 1/100ths of a semitone. Having gotten our tuning, and pressed F6 to get a listing of the current tuning, and having it listed like this, we now need to save the file in a form that our target synthesizer/sampler can understand. Most synthesizers understand the Scala.scl format. Even though Kontakt doesn't, let's show how we do that. (Note: Jacky Ligon has an article about how to set your centre key and root tuning in Scala – we won't cover that here, but it's pretty important material, so to refer to that, go to <http://xen-arts.net/microtuning-virtual-instruments-part-4/>.)

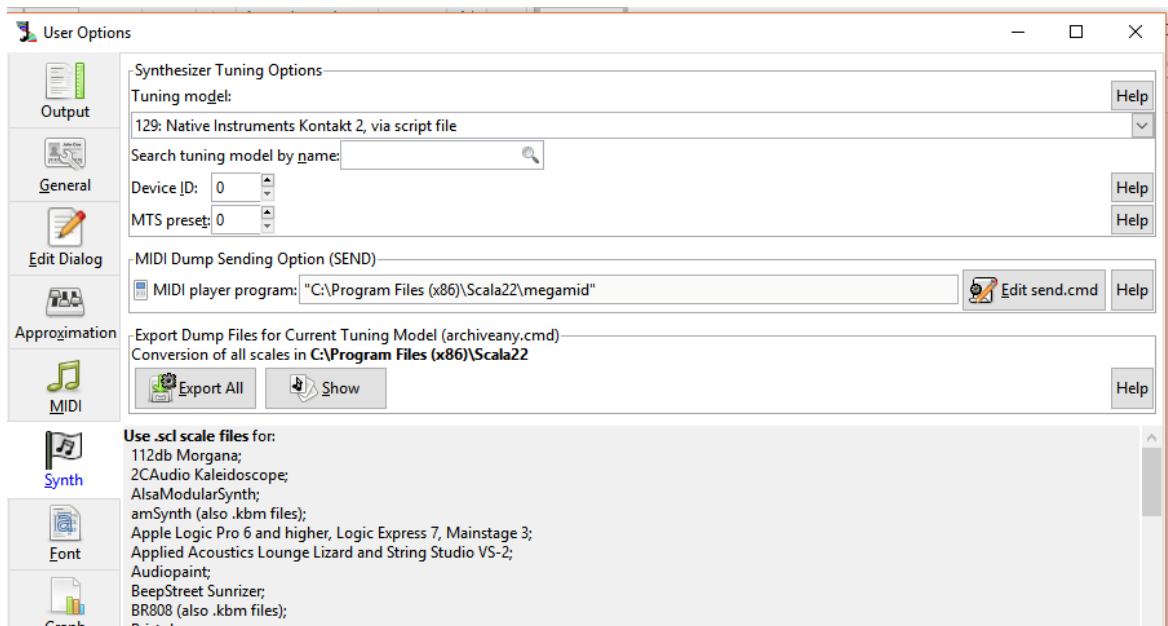
Go to File/Save Scale As and you'll get a page like this (Fig 2):



To save your scale as a .scl file, first type a description in the “Description” line at the bottom (some synths refuse to play a Scala file unless there is something in this line), make sure your directory is selected correctly in the “Save in folder” line, and type a file name, ending in .scl in the “Name” line. Then press “OK” and presto, your scale is saved as a .scl file.

Now, to save your scale as a file to use in Kontakt is just a little bit more complicated. After you press “OK,” Scala will return you to the main page.

On your main page, go to Edit/Preferences. When you’re on the Preferences page, in the column on the left select “Synth.” In the top window, labelled “Synthesizer Tuning Options, Tuning Model,” you’ll see a window with a drop down arrow on the right. If you click in this window, you’ll see a list of tuning formats that Scala can save its files in. We’ve selected “129: Native Instruments Kontakt 2, via script file.” Having selected this, click “OK.” (Fig. 3)



Almost done with Scala. Now on the Scala main page, go to “File/Export Synth Tuning” and you’ll get a page like Fig. 4. Again, select your “Save in Folder” path near the top of the screen, and type in the filename you want, ENDING IN .TXT, click OK, and your scale is now saved in a format the Kontakt understands, but not one it will immediately read. (We’ve saved this as “3-17-51-hexany.txt.”) And that’s where Part 2 of the article comes in.

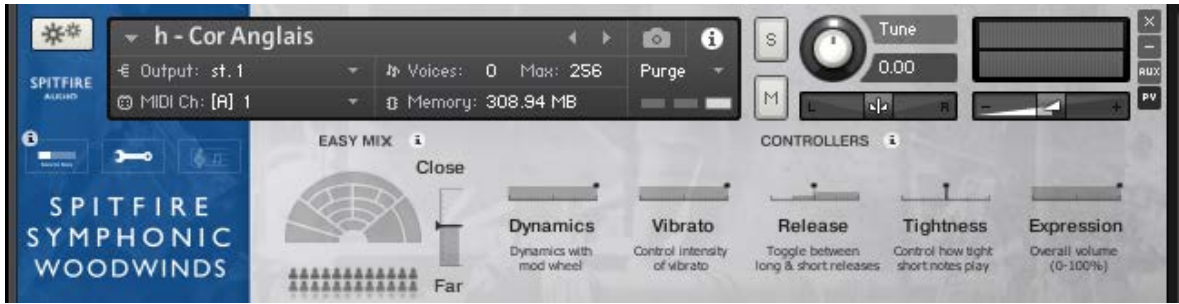
PART 2: USING THE .TXT FILES IN KONTAKT.

The first thing we need to do in Kontakt, is set up a place where our Kontakt tuning scripts are going to be stored. On a PC, the place where tuning files are stored is at Documents/Native Instruments/Kontakt 5/Presets/Scripts. You should download the “Default12Tone.nkp” file from <http://www.warrenburt.com/storage/Default12Tone.nkp> and place it in the Scripts folder. Also, in the Scripts folder, you should make some other folders where you want to store your own tuning files.

Load up Kontakt and load up any sort-of-normal instrumental file (we want a sort-of-normal instrumental sound so we can clearly and immediately hear the effect of our scale.) Make sure that the instrumental file has a “key” icon showing, meaning it allows editing. If there is a “2 gears” icon showing, it means the developer has forbidden editing, and we can’t use script files to retune this particular instrument. (For instruments like this, I described an alternative method of retuning Kontakt instruments in <http://soundbytesmag.net/spitfiresymphonyorchestrapart2/>).

Here’s an illustration of the “key” icon (Fig. 4), followed by the “2 gears” icon, (Fig. 5). The “key” icon instrument is editable, the “2 gears” icon instrument is not.





Assuming your instrument has the key icon, click on that, and then the editing page opens up, and it looks like this (Fig 6).



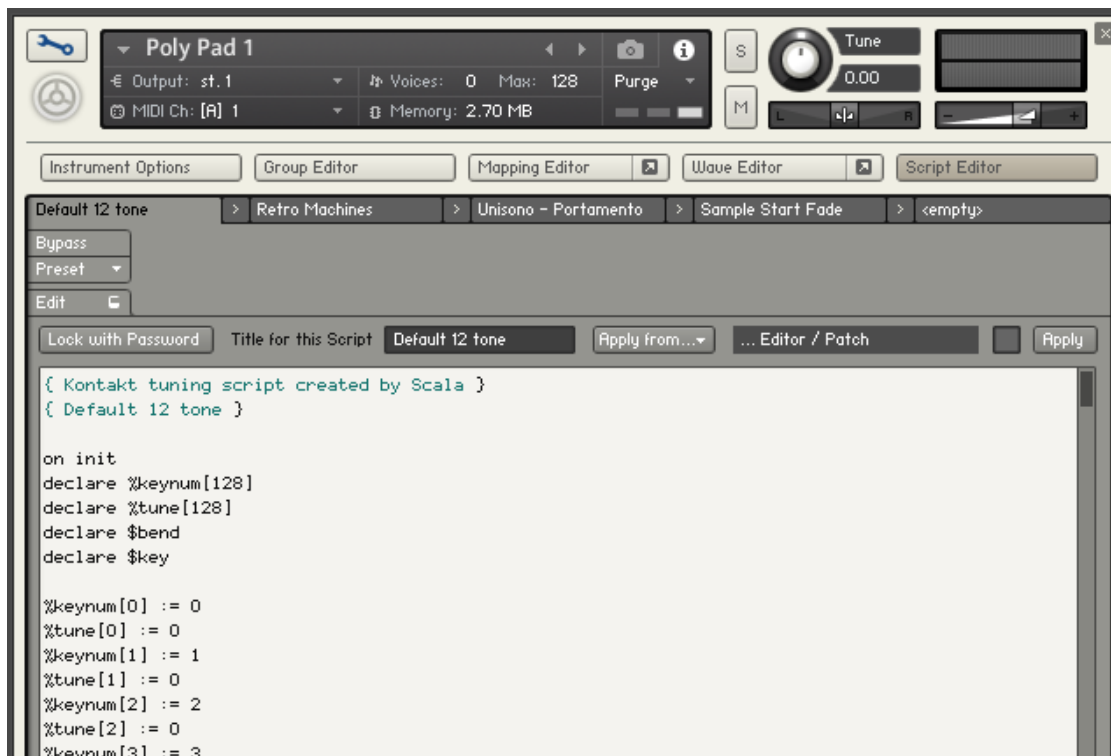
Click on the 5th button over, "Script Editor," and you'll get this view (Fig 7)



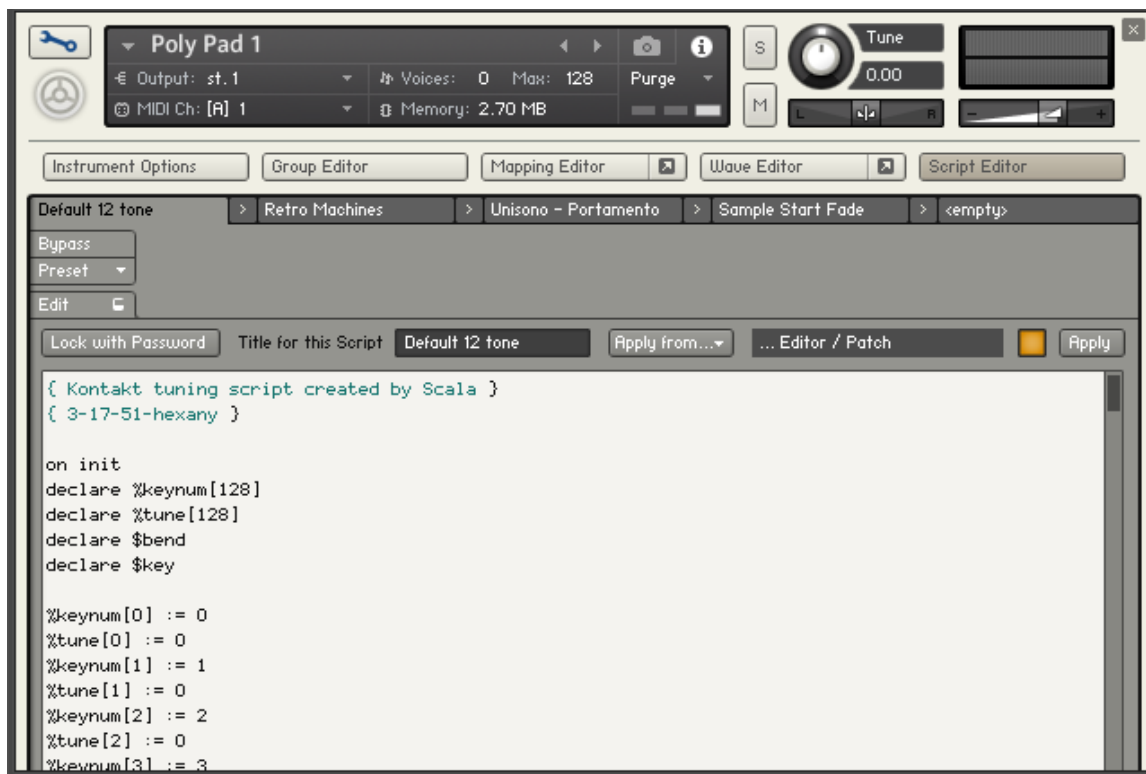
Select the far left tab ("<empty>" in this patch, but it can be something else), click on Preset, select "User", and select "Default12Tone." (Fig 8)



Click on “Default 12Tone” and an editing window should appear (Fig 9):

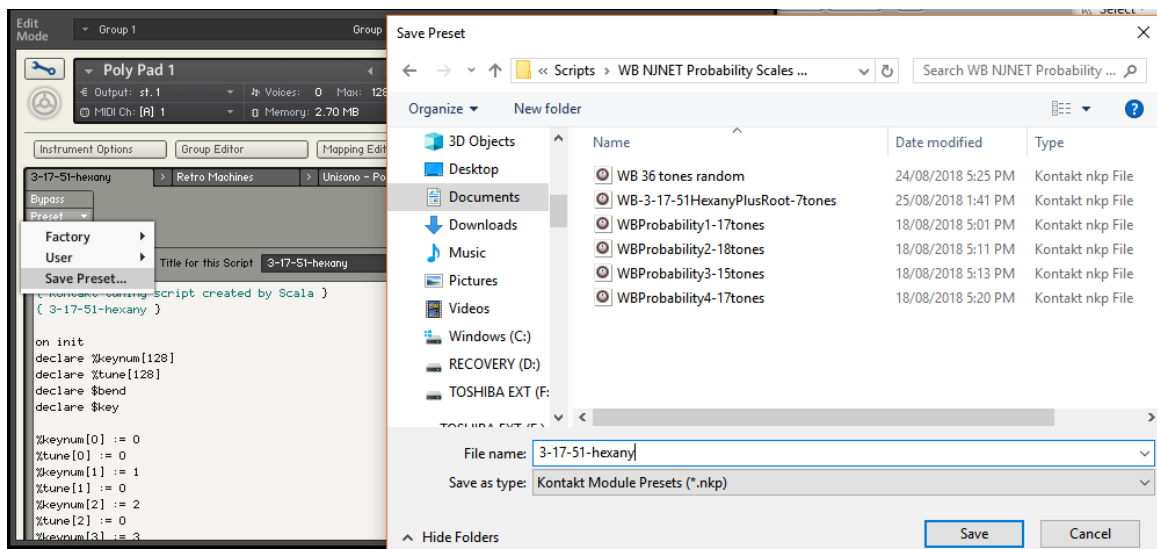


Now, we’re going to copy and paste our desired tuning into this window. Open the text file we saved earlier, “3-17-51-hexany.txt” and Ctrl-A to select all, and Ctrl-C to copy the entire file. Now go to the edit window shown above, click in the upper left corner, now Ctrl-A to select everything in the window, and Ctrl-V to paste the text from “3-17-51-hexany.txt” into the window. Now it looks like this (Fig. 10):



You'll notice that the name of the file has changed in the window. Two things to do now – in the window “Title for this Script” change that to the name of the file – in this case “3-17-51-hexany”, and then click the “Apply” button on the far right. The orange light next to the “Apply” button should then turn grey. Test the scale out on the keyboard (either external MIDI or the one at the bottom of the Kontakt window. In this case, since it's a 7-note scale, playing C-G-D-A etc – ascending 5ths on the keyboard – should have you hearing a chain of octaves. (Every 7 notes of this scale produces a sounding octave.)

Now, click “Preset” in the upper left, then “Save Preset.” In the “Save Preset” window that opens, select the folder you want your .nkp file to be saved in, type in your desired file name, and press “Save.” You have now saved your scale in a form (a .nkp file) that other Kontakt instruments can use. (Fig 11). Click the “key” icon to leave the editing page and return to the normal GUI for that instrument.



For multiple instruments, you need to load the .nkp file individually for each instrument. This means, of course, that with multiple instruments you can have multiple tuning systems. I'll leave it up to you to contemplate the delights available with that.

There is one more thing to consider. Your instrument might have a number of keyswitches, generally low MIDI keys not used in the normal range of the instrument. This kind of detuning will mess up the keyswitch assignments. The solution is simple, in the editing window shown in Figs 9 and 10 above, for each keyswitch, change the

```
%keynum[N] := X
```

So that it reads "%keynum[N]:=N" and adjust the

```
%tune[N] := X so that %tune[N]:=0.
```

That is, it will look like this:

```
%keynum[0] := 0
```

```
%tune[0] := 0
```

```
%keynum[1] := 1
```

```
%tune[1] := 0
```

```
%keynum[2] := 2
```

```
%tune[2] := 0
```

Since there will usually be only a dozen keyswitches, this will not be a lot of editing. When you're done editing your file, press "Apply," and save the file again, maybe with an additional indication of what instrument it is for – eg "3-17-51-hexany-7notes-SpitfireSoloViola.nkp." By doing this you'll have a custom tuning file for that instrument playing that scale. You might find that the ranges the notes of your scale are playing on might be different than the range of the keys in 12 tone tuning, but with a bit of exploration, you'll find that you will now have a world of microtuning to explore using your Kontakt sound sample sets.