K5KEditor *A simple way to program the Kawai K5000 synthesizer when you hate math !*

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Small user's guide

1. Prerequisites

You need at least :
-Java 1.4.2 installed on your computer (see http://www.javasoft.com).
-Plumstone for Mac users (see http://www.cems.uwe.ac.uk/~lrlang/plumstone/)

You also need a sound editor to create basic sound materials.

2. Features

-Real time editing (Edited parameters are automatically sent to the K5000)
-Mouse editing
-Reverse, invert and move left / right harmonic series
-Load / Save tone (experimental support for ka1 file format), source, harmonic series, harmonic envelope, formant band.
-Load simple waveform (sound period) and Sharc database into harmonic series
-Copy / Paste harmonic series, formant band, source
-Compute average between harmonic series
-Apply formant filter to a harmonic series
-Recreate existing filter from another synthesizer.
-Extract harmonic series and formant from multiple sample periods of an instrument

3. Files and folders

K5KEditor.jar : the software !
licence.txt : the GPL license
datas : to store your additive material
src.zip : source code
.slaf : look and feel datas
.slafrc_k5k.txt : look and feel parameters
User's guide : this file !

4. Getting ready (the first time)

- Power on your K5000 ! Check your MIDI cables.
- Unpack the archive you have downloaded and double-click on K5KEditor.jar.
- Select the "Edit" menu, choose "Midi setting", check the correct MIDI device and MIDI Channel.
- Select the "Edit" menu again and choose "New tone".
- If it works fine, the K5000 shows "IntPatch".
- You are ready now !

5. Real time editing

Some tasks like loading, pasting and enabling a source, can take a long time to perform because the parameters are sent to the K5000. On the main window, a Progress Bar keeps track of particularly long processes.

6. Menus

The "File" menu allows you to load / save a tone / source.
The "Edit" menu allows you to copy, paste or initialize a source.

7. Harmonics editor

Before editing anything, go to "Edit" menu and choose "New tone". This will initialize the K5000 with 2 ADD sources and only one Sine for each.
The Harmonic Editor looks like to the Emagic Soundiver.

Moving your mouse over the biggest harmonic bar graph, will display the number, current value and new value of the harmonic below your mouse. By left clicking on the bar graph you will set the new value.
The small bar graphs allow you to choose the harmonic series to edit. You just have to left click on the one you want to edit.

Right-click on a small bar graph to show a popup menu. It allows you to copy, paste, invert, reverse, load and save the corresponding harmonic series (notice that you can load a sampled waveform).

7.1 Drawing a line

To draw a line, just click on the "draw" button. It becomes grayed and displays "set X1 / Y1". Click on the big harmonic bar graph, the "draw" button now displays "set X2 /Y2". Click again (X2 must be greater than X1).

7.2 Envelope

To load, save, copy and paste an envelope, right-click on it to show a popup menu.
You can control what the envelope displays. Look at the left of the envelope, you can decide to show / hide envelope points or to view the effect of the envelope over soft / loud.

8. Formant Filter

Nothing special, you can edit formant band like an harmonic series: right-click, drawing a line, ...

9. DCO, DCA, DCF, LFO and Source control

Nothing special, just edit your parameters. These windows are not yet finished, this is work in progress and I plan to do a segment envelope.

10. Additive tools

With the additive tools you can perform some mathematic operations over harmonic series. You can copy / save the result by right clicking.

10.1 File manager

Before using the additive tools, use the file manager. It allows you to load some series by clicking on "add" (use shift or control key for multiple selection).
By selecting a series, you display it.
The "Save" button saves all the selected series, it is useful when you have loaded sampled waveforms and want to save them as series (the name of the saved series is the same as the sampled waveform).

10.2 Average

In the file manager, select the series you want to use (shift and control key) and click "average". "Average" is useful when you have a complex steady state waveform (when it rolls over several periods). Cut each period with your favorite sound editor and compute the average, it can be useful in combination with "Extract"

10.3 Sub

In the file manager, select 2 series and click "sub". If you want to subtract a series in the list that is before the second series, select the second series and move it up.
"Sub" is useful to recreate existing filter from other synthesizers: sample a pure Sawtooth waveform from a synthesizer and sample it once again filtered. The resulting formant band displays the filter.

10.4 Extract

Before going through an extraction, you have to select each series separately and give them a semitone value. For example, if you have sampled steady state periods from a PCM reader (like Korg Trinity, Yamaha Motif, Roland XVxxx, ...), give a 0 value to the lower period (the first). For each of the other periods, give them the difference with the first (for a period 5 semitones higher, give it the value "5"). Once this is done, select all the waveforms and save them (this saves the semitone value). Now you can click "Extract" and wait ... this is a time consuming operation, look at the Progress Bar in the Tool Bar. The result will display red bars witch are interpolate (linear).