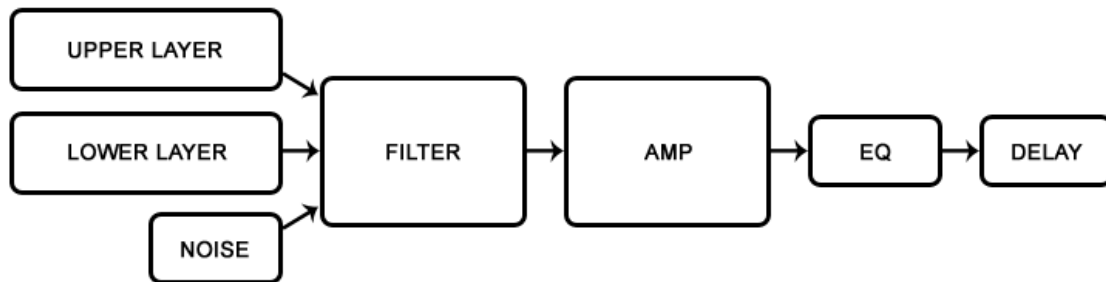


# JP6K User guide

Thank you for using the JP6K synth! This document will guide you through the synthesizer and shows its different controls and functions.



The synth can be divided into three parts: the oscillator section, the modulation section, and the effects section. The above image shows the signal flow for the JP6K. Two Super Saw oscillators called an upper layer and a lower layer, and a noise oscillator enter the filter, where the combined sound can be shaped with a low pass, a band pass, or a high pass filter. From the filter, the volume is changed with the amplitude envelope. The sound then enters the effects section, where one can apply additional EQ and delay.

## The controls:

### Knobs and sliders:



The knobs and sliders can be controlled by clicking on them, and dragging up or down in a vertical direction. To have more accuracy, hold down the *SHIFT* key while dragging the knobs or sliders. To reset the controls to their default value, hold down *CTRL* while clicking on the controls.

The main detune knob also allows the user to simultaneously change the detune and mix controls at the same time. To do this, click on the detune lines inside the detune knob (marked red area), and move the mouse in a horizontal direction to control the detune, and move it in a vertical direction to control the mix. Holding down *CTRL* while clicking on the detune lines, resets both the detune and mix controls to their default value.



### Selectors:



When clicking on the selector buttons several times, it scrolls through the different

selection options. It is also possible to click directly on the desired selection to mark it.

### The display:



The display is an important area of the synth. It shows the current preset name, and displays the value and name of a control, when the mouse pointer is hovering over it. By left clicking on the display, the presetlist comes up, and it is possible to select a preset directly from this list. One can also use the "prev" and "next" buttons to scroll through the presets. Right clicking on the display makes it possible to rename the currently selected preset. The patch button opens up options to load and save individual sounds, or whole banks.

### The LFO:

The LFO is the main modulation source for the sounds. There are three independent LFOs in JP6K, controlling the pitch, filter, and the amplitude with four different oscillator types to choose from: triangle, saw, square and random. The rate controls the speed of the oscillation, and the depth controls the amount. The depth has both positive and negative values, so one can have normal, or inverted modulation. The sync button changes the default rate values to timed values, and the rate will be in sync with the songs BPM tempo.



### The Oscillators:



The Super Saw oscillators are the heart of the synth, and these generate the sound. JP6K has two Super Saw oscillators, separated into two layers: upper and lower. One can switch between these two oscillators by clicking the selector button, or clicking on the selectors directly. By muting the layer the oscillator is turned off. There is also a noise oscillator which becomes disabled and uses no additional CPU if its volume is 0.

A Super Saw oscillator has four different controls: detune, volume, mix, and range. The part detune and noise controls, are global, and are not part of any layer. When switching between the layers the previous layers controls become hidden, and the new layers controls appear (marked red area).

The volume changes the overall amplitude of the oscillator. The detune knob adjusts the amount of pitch detuning, making the sound "thicker". The mix knob adjusts the volume of the detuned sounds relative to the centre sound. As the mix knob is increased, the detuned sounds become louder, making the Super Saw effect more apparent. Use the range knob to change the note of the oscillator.

The part detune controls the fine tuning of both layers at the same time. It adjust the pitch difference

between the upper layer and lower layer. Positive settings will raise the upper layers pitch and lower the lower layers pitch. Negative settings will have the opposite effect.

## The Filter:



The filter allows specific frequencies of a sound to pass while restricting others, thereby changing the brightness of the sound. The JP6K has three different filters: Low Pass, Band Pass, and High Pass each with -12 & -24 dB/Octave.

The cutoff slider controls the frequency of the filter, while the resonance attenuates the cutoff area of the filter, creating a resonant peak.

The key follow tracks which notes the synth is playing and applies a separate cutoff value accordingly. If the key follow is 0, then all notes will have the same cutoff value, set by the cutoff slider. If the key follow has a positive value, then higher notes will have a higher cutoff, while lower notes will have lower cutoff. When the key follow has a negative value, the effect is reversed, that is, low notes will have a high cutoff, while high notes will have a low cutoff.

The env depth knob controls the depth of the filter envelope. The envelope has no effect when the env depth is 0. When the env depth is positive, it will apply the envelope modulation to the filter cutoff. To have an inverse effect, use a negative value.



When one clicks on the “more” button, a new panel shows up instead of the filter envelope. In this panel, there are additional controls for the synth. The pitch env knob changes the range of the pitch modulation, defined by the attack and decay controls on the envelope. The analog knob, randomizes the pitch of each note played, making the sound more organic, and makes it sound less perfect and digital.

When using the glide control, the synth will change from polyphonic to monophonic mode, and portamento is enabled. The glide controls how long it will take for the new note to slide from the old one. There are two glide modes: Legato and Always. In Legato mode the portamento works when two notes are held down, thus gliding from one note to the other. In Always mode, the note glides at every note from the start. The Glide Hold function holds the previously held key when turned on. The osc pan knob pans each Super Saw oscillator left and right, making it possible to make wide sounds. When the osc pan is in the middle (has the value 0) the synth switches from the stereo mode to a more CPU friendly mono mode, so a slight click or pop might be heard. Therefore, it is not advisable to automate this control.

The pitch bend range sets the range of the pitch bend modulation, while the amp vel and filter vel knobs control the velocity amount for the velocity and filter of the synth.

## **The Amp Envelope:**

The amplitude envelope changes the volume of the sound over time. The envelope consists of four stages: attack, decay, sustain, and release. When the attack is high it will take a while until the sound reaches its maximum volume. After the attack, the decay controls how much the volume will go down, before entering the sustain. The sustain slider controls the volume at which the sound will loop until a key is held down. The release sets how long the sound will fade away after the key is released.

The volume knob changes the main level of the output of the synth. The tune controls the main tuning of the synth.



## **The Effects:**



The effect section consists of an EQ and a delay. The EQ has a bass and a treble knob, controlling the lower and higher frequencies to give a different tone for the sound.

The delay has a time control, which sets the time signature of the delay. The feedback controls how

long the delay should be active while the level increases the volume of the delay. When the level is 0, the delay is disabled and bypassed.