

The BlueSynth

Oscillator Mix / Amp

Oscillators / LFOs

Filter

Pitch Envelope

Global

Connections



[Return To Main Table Of Contents](#)

Oscillator Mix / Amp

The BlueSynth is an easy-to-use polyphonic synthesizer with three oscillators and four assignable LFOs plus a filter with its own ADSR envelope. The filter and the amp envelope can additionally be modulated by one of the four LFOs.

At bottom right is a small window where the **MIDI channel** can be dialed in. Next to this is a **MIDI activity indicator**.

In the **Oscillator Mix** section, the relative loudness of the three oscillators can be adjusted.

Master Vol is the main volume control for the BlueSynth.

The amplitude can optionally be additionally modulated by one of the LFOs, as selected in the small LFO window at right – just click and hold the left mouse button over this field and move the mouse up and down, then release the button when the number of the desired LFO appears. The **LFO Depth** knob controls the amount of LFO effect on amplitude.

The **Aftertouch** control adjusts the amount of effect which MIDI Aftertouch messages will have upon volume.

Key Follow causes the envelope times to vary according to the keyboard position from which a note is played. Positive settings cause the envelope to speed up as you go higher up the keyboard (similarly to the way that high



notes on a piano decay more quickly than low notes). Negative settings produce the reverse effect. Via the **Velocity** control, the envelope depth can be affected to varying degrees by the velocity with which a note is played.

Oscillators / LFOs

The three **oscillators** are identical. Available waveforms include sine, triangle, sawtooth down, sawtooth up and square. These can be selected independently for each oscillator. Likewise, each oscillator can be independently tuned via the **Semi Tone** control ("coarse" control: 24 semitones up or down) and the **Cent** control ("fine" control: 100 cents, or one semitone, up or down).

Each oscillator can be independently modulated by a pitch envelope (when the **Pitch Env** button is pressed) as well as by one of the four LFOs. Controls are provided for **LFO selection** and **LFO Depth**.

Each of the four **LFOs** (Low Frequency Oscillators) has its own set of controls. Waveforms include sine, square wave, sawtooth up, sawtooth down, triangle and sample/hold (random). The **Speed** knob sets LFO frequency. LFOs can be set to kick in a short time after each new note, adjustable via the **Delay** knob. LFO 4, also known as **LFO MW**, lacks the delay but can be depth-modulated by MIDI Mod Wheel messages. **Mod Wheel Depth** adjusts this modulation, while **Gain** controls the LFO output.

Normally the LFOs "free run", whether notes are played or not. If **Retrigger** is turned on for an LFO, it is restarted with each new note, providing a consistent relationship between the LFO and the note start. This also lets you "free play" the LFOs in time with a rhythm. The

Oscillator waveform select



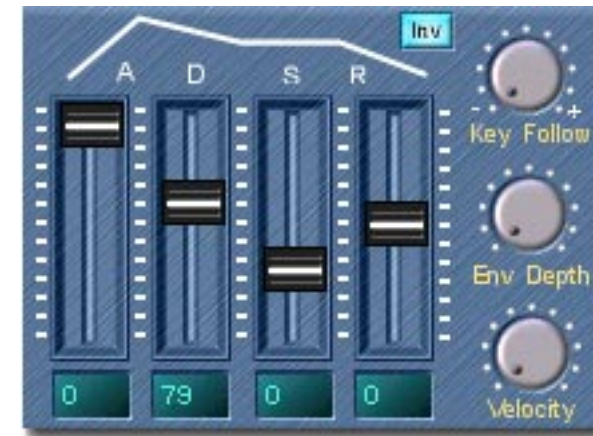
LFO waveform select



corresponding LFOs in previous notes are not affected – a rhythmically useful side effect which lets you play the LFOs in multiple notes against one another.

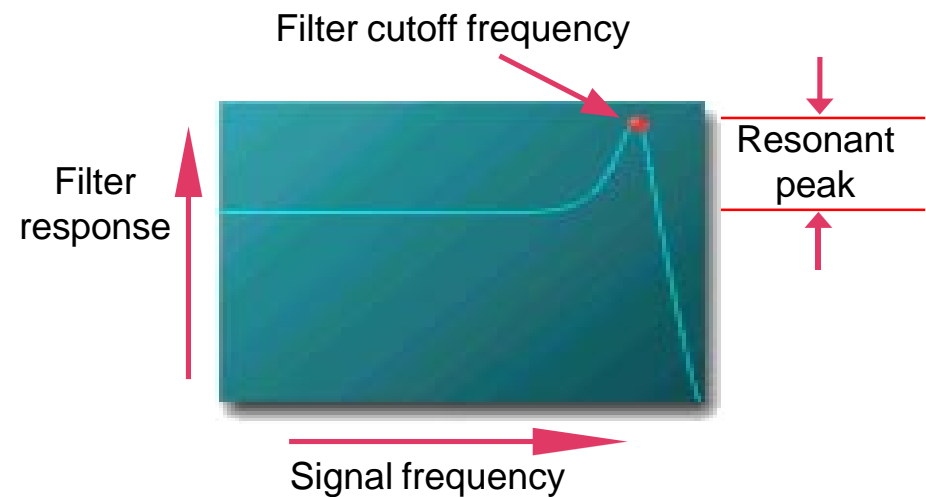
Activating **Clock Sync** causes the LFO waveform to synchronize to a MIDI clock (from a sequencer program or coming in on the Pulsar MIDI Input). The timing is determined by the **MIDI Clock Divider** setting. A separate setting for each LFO is provided in the Global drawer.

Filter



The low-pass **Filter** on the output of the BlueSynth is fully resonance-capable. The left fader controls the filter cutoff frequency, while the right fader controls filter resonance. Raising the Resonance setting increases the filter response in the vicinity of the cutoff frequency. At extreme resonance settings, the filter can itself begin oscillating.

The **cutoff frequency** can be modulated via an **LFO**, via MIDI **Aftertouch** messages and via the filter **envelope**. The **Env Depth** control sets the amount of effect the filter envelope has upon the filter. **Key Follow** and **Velocity** affect the filter envelope in the same ways as described earlier in the Amp section. The **Inv** button inverts the filter envelope.



Pitch Envelope

The controls for the Pitch Envelope, which modulates the pitches of the oscillators, are found in a slide-out drawer which opens up when you click on its visible edge.

Although the Pitch Envelope controls have a somewhat different layout, they operate in relation to oscillator pitch in exactly the same ways as the filter or amp envelope controls described previously.

The **Global** drawer contains controls which affect the basic tuning of the BlueSynth and its response to a couple of specific MIDI message types.

The **Pitch Wheel Range** control sets the maximum pitch bend amount (in semitones) up or down. This maximum bend is obtained when the (external) pitch wheel is deflected to its full limit in one direction or the other.

The **Transpose** control adjusts the overall pitch of the BlueSynth up or down in full semitones. As usual in Pulsar, you can double-click on this control to send it directly back to its default setting of zero.

The **Mod Wheel Depth** control regulates the depth of response to MIDI Mod Wheel input for BlueSynth controls assigned to this message.



Global

The **Global** drawer contains controls which affect the basic tuning of the BlueSynth and its response to a couple of specific MIDI message types.

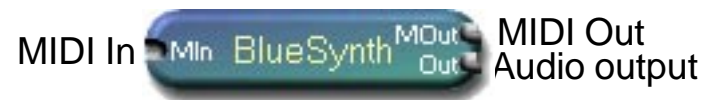
The **Pitch Bend Range** control sets the maximum pitch bend amount (in semitones) up or down. This maximum bend is obtained when the (external/MIDI) pitch wheel is deflected to its full limit in one direction or the other.

The **Transpose** control adjusts the overall pitch of the BlueSynth up or down in full semitones. As usual in Pulsar, you can double-click on this control to send it directly back to its default setting of zero.

The **MIDI Clock Dividers** determine the speeds of the individual LFOs when operated in Clock Sync mode. The 24 PPQN (Pulses Per Quarter Note) MIDI clock stream (from a sequencer program or external device) is divided by the selected value to obtain the rate at which the LFO waveform repeats.



Connections



Project window (module) representation



Minimized (icon) representation