MEGASAUR

Rack Extension for Propellerhead Reason

User Manual

Version 1.0.1

DLD
TECHNOLOGY

Introduction

Megasaur is a polyphonic synthesizer based around three rich sounding Supersaw oscillator blocks. It also features stereo, analog and humanizing effects, tempo synchronised delay, gate sequencer and dual resonant filters.

The Supersaw

The Supersaw oscillator originated in the Roland JP-8000 synthersizer, and although was designed to emulate thick, rich sounding strings, it quickly became popular in Trance music in the late 90's and was the basis of many dance anthems of the era.

The Supersaw works by using 7 sawtooth waveforms. The centre oscillator is usually the loudest, then 3 waveforms are set lowering frequencies, and another 3 at higher frequencies.

Megasaur takes this approach further, and uses 3 stereo oscillator banks, each capable of 14 saw-waves at once. This gives a maximum of 42 saw-waves per note in polyphonic mode, and up to 126 waves in mono layered modes.

Megasaur uses a graphical display to show the spread and amplitude of each saw-wave, and can be changed by dragging the mouse over the display. This can also be recorded and automated within Reason.

Front Panel

Performance Controls

BEND

This is a standard pitch bend defaulting to +/- 2 semitones range. If your keyboard has a pitch bend wheel then it will be mapped to this control.

BEND AMT

The Pitch Bend range can be adjusted with the BEND AMT control on the right.

MOD

This modifies the filter bank to increase both low and high pass filter frequencies. If your keyboard

has a mod wheel then it will be mapped to this control.

WARBLE

This applies an LFO to the main oscillator bank frequency. If your keyboard supports after-touch then it will be mapped to this control.

Oscillators (OSC1, OSC2, OSC3)

Note, all 3 oscillators modules are identical.

OCT

This changes the note frequency up or down 1 to 3 octaves.

SEMI

This changes the note frequency up or down up to 11 semitones.

VOL

This changes the volume of the entire oscillator module.

TUNE

This changes the tuning of each oscillator module.

Supersaw Display

This shows the amplitude and spread of each of the 7 saw-waves that make up the Supersaw. Hold down the left mouse button to adjust.

Moving the mouse left and right will change the frequency spread. With a narrow spread (all lines near the middle), it will produce a familiar sounding sawtooth wave. As the mouse is moved to the right, the frequencies will start to detune, moving from a rich chorus effect to eventually sounding out of tune.

You can also click on the left or right of the display to fine tune the frequency spread.

Moving the mouse up and down will change the amplitude of the centre sawtooth in comparison with the others (the centre sawtooth is always the correct frequency). Moving the mouse up increases the amplitude of the detuned sawtooth waves, moving the mouse down will increase the amplitude of the centre wave, reducing the Supersaw effect.

Stereo

When lit green, the stereo button will create 2 Supersaw sounds, detuned between the left and right channels to create a beat-frequency several octaves lower than the original note. This gives a pleasing stereo widening effect that can often help the sound fit in the mix better.

Sync Gate

Megasaur has a tempo synchronised gate sequencer. Coloured boxes indicate where a note will be played. Unlike many gate sequencers, the note is not continuously played for each lit box, instead it will be held until the next blank box.

Filters (High and Low Pass)

High Pass Cut

The determines the frequency of the high pass filter. Frequencies lower than this value will be attenuated.

High Pass Res

This controls how sharp the high pass filter is. High values will emphasize the cut-off frequency.

Low Pass Cut

The determines the frequency of the low pass filter. Frequencies above than this value will be attenuated.

Low Pass Res

This controls how sharp the low pass filter is. High values will emphasize the cut-off frequency.

TRACK

This controls how the filter frequencies track the note being played. When set to a low value, the filters will work over a wider range of frequencies.

Envelopes (Amplitude and Filter)

These are standard ADSR envelope generators as found on most synthesizers.

Note that the filter envelope controls the low pass filter only.

A -Attack

Controls how quickly the initial sound builds. A low value will give instant 'on', a high value will give a slow build up.

D – Decay

Controls how quickly the sound drops to the sustain value.

S – Sustain

Sets how loud / open the sound is after the initial attack and decay section has finished. Set to zero if you don want a sustained sound.

R – Release

Sets how long the sound will continue after the key is released.

ENV AMT

Sets how much control the envelope has on the filter.

Play Controls

Mode

This controls the polyphonic nature of the synthersizer, and can have the following values:

- Poly – Up to 22 separate notes can be played.

- Mono 1 – One note can be played, and will 'slide' if a new note is played before the first is released.

- Mono 2 – As Mono 1, but also plays a note one octave lower.

- Mono 3 – As Mono 1, but plays a note one octave lower, and another one octave higher.

- Monster – Plays a large octave spread of notes, with alternating stereo settings.

Slide

In Mono 1, Mono 2, Mono 3 or Monster modes, this will control how quickly the frequency of the note will change if a new key is pressed before releasing the last.

Velocity

Controls how note velocity will affect the sound. Can be one of:

- Off – velocity has no affect on the note.

- Amp – velocity will affect the amplitude of the note.

- Filter – velocity will affect the cut-off frequencies of the filters.

- Amp + Filter – velocity will affect both amplitude and filter cut-offs.

Effects

Analog

This control adds an analogue feeling to the sound by introducing errors in the oscillator frequencies that were common to pre-digital synthesizers.

Human

Emulates a vocal sound by using multiple formant filters to create an 'Ahhhh' sound. This controls the dry-wet mix of the filters.

Delay

Megasaur contains an emulation of a bucket brigade device (BBD) delay, synchronised to the sequencer tempo. This controls the delay time.

Feedback

Sets how much of the delayed audio is fed back into the mix. Set to zero to disable the delay, or 100% to echo a sound forever.

Displays

Saw Count

This shows how many saw-waves are being generated. Megasaur can output a maximum of 924 waves at once.

Clicking on this display with the mouse will change the colour of all displays on the synthesizer. This can be helpful when multiple Megasaur devices are used in one track.

Note On

This simple LED lights every time Megasaur receives a new note on event.

Back Panel

Megasaur has various CV inputs to control the sound from external oscillators and sequencers.

CV Inputs

Gate – standard CV gate input.

CV – standard CV note input.

BEND – fed through to the pitch bend control on the front panel.

MOD – fed to the modulation wheel on the front panel.

Low Pass Filter

CUT – controls the cut-off frequency of the low pass filter.

RES – controls the resonance of the low pass filter.

High Pass Filter

CUT – controls the cut-off frequency of the high pass filter.

RES – controls the resonance of the high pass filter.

Modulation

PITCH – controls the pitch of all oscillators. Connect a LFO for a vibrato effect.

AMP – controls the amplitude of all oscillators.

Audio Out

LEFT – the left channel audio. Will be automatically attached to a Mix Channel when the device is created.

RIGHT – the right channel audio. Will be automatically attached to a Mix Channel when the device is created.

Tips and Tricks

When creating a sound, leave the high pass cut value at zero. Then, when playing in the mix, raise

the cut value until it starts to sound 'tinny'. This will remove a lot of low frequency energy that would otherwise make the mix sound 'muddy'.

Instead of using the internal delay or external reverb, try increasing the amplitude and filter sustain values. This can often give a more natural feel.

On bass sounds, try a high resonance value for the high pass filter, with the cut-off frequency being close to zero.

Credits

Many of the included patches were created by artists during the beta test phase, and therefore deserve a special mention:

Matt Hammond *(Brassy Pluck Bass, Breathy Organ, Bull Fight, Rough Buzzer, Rubber Band, Solid Pad)*

Frans Aal *(Housy Stab, Hold Down The Key)*

SyncLab *(Dark Net, Dramatic, Gated 75, Ghosted, Hubstab, Reverse, Skab Stab 3, Skab Stab)*

Simon Bader *(Chord Pattern 1, Chord Pattern 2, Dark Pad, Dynamic Gated Chord, Dynamic Tech, Female Pad, Male Pad, Mono Down Beat, Pad Sweeper, Poly Saw Upbeats, Super Saw 1, Super Saw 2, Super Saw 3, Vintage Mono Sub Pluck, Vintage Mono)*

Support

For any support queries, please email support@dldtechnology.com