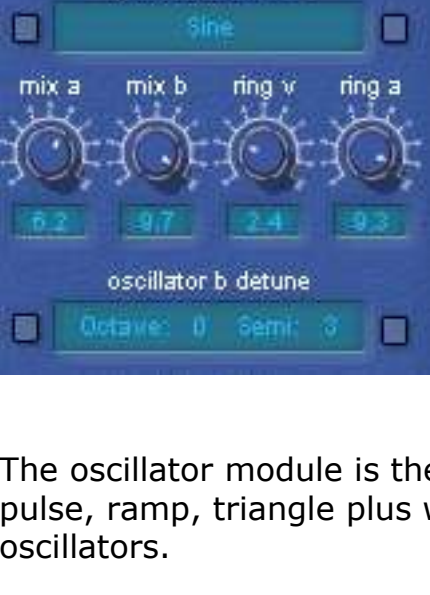


Angular Momentum CV-2SEQ VSTi

Specifications

- * **2 Oscillators**
- * **Sub Phase Distortion Oscillator**
- * **Sound font Oscillator (loads any SF2)**
- * **ADSR Envelope +/-**
- * **Multi Mode Filter with Envelope +/- / Moog/Tarrabia/State Variable**
- * **LFO with many routing options**
- * **Modulator with multiple sources and destinations**
- * **FM Modulator with Envelope +/-**
- * **Ring modulator**
- * **2 CV BPM synced sequencers with multiple destinations**
- * **Phrase Arpeggiator**
- * **Stereo Chorus**
- * **2 delays with pan**
- * **Independent FX channels**
- * **3 stereo outs**
- * **128 Patches with professional sounds**

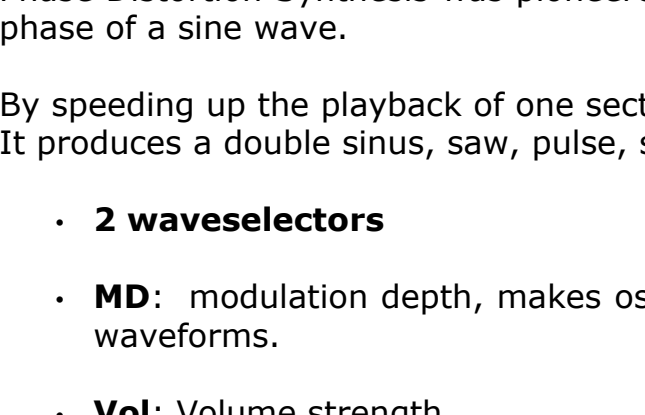
Oscillators A & B



The oscillator module is the starting point for the patches. It produces a choice of simple waveforms, like sinus, saw, pulse, ramp, triangle plus white or pink noise. The CV-2SEQ comes with 4 oscillators. Oscillator 1 and 2 are identical oscillators.

- **2 waveselectors:** for osc A/B.
- **Mix A/B:** Volume Strength.
- **Oscillator B Detune:** Octave detune & Semi detune.
- **Ring V:** Ring Modulator volume.
- **Ring A:** Ring Modulator Amount.

Sub Oscillator

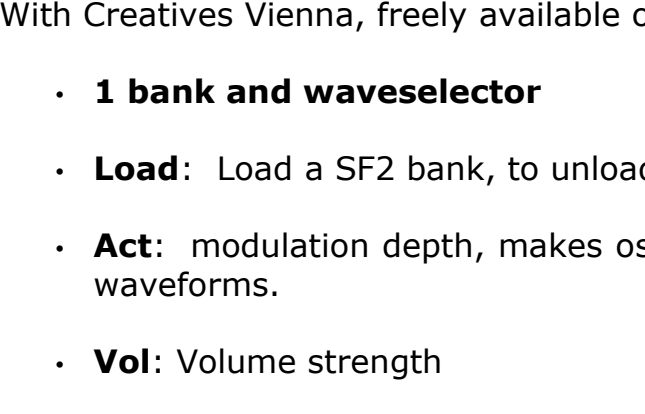


Phase Distortion Synthesis was pioneered by **Casio** in the 1980's and is based on the idea of distorting the playback phase of a sine wave.

By speeding up the playback of one section of the sine wave, it can approximate the shape of a sawtooth waveform. It produces a double sinus, saw, pulse, saw-pulse, square and 3 different reso types.

- **2 waveselectors**
- **MD:** modulation depth, makes oscillator's shape restart preliminary without finishing its phase. Useable on all waveforms.
- **Vol:** Volume strength
- **Octave :** Pitch detune
- **Semi:** Pitch Detune

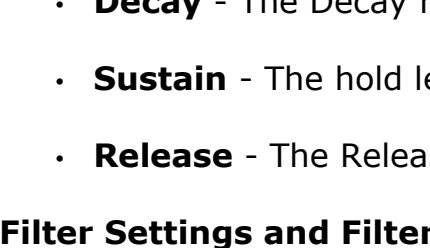
Sounfont 2 Oscillator



The soundfont Oscillator is a samplebased oscillator. By clicking the load button You can load up any SF2 soundbank. With Creatives Vienna, freely available on the web You can create Your own SF2 banks and load them up.

- **1 bank and waveselector**
- **Load:** Load a SF2 bank, to unload rightclick on the selector screen and select unload.
- **Act:** modulation depth, makes oscillator's shape restart preliminary without finishing its phase. Useable on all waveforms.
- **Vol:** Volume strength
- **Octave :** Pitch detune
- **Semi:** Pitch Detune

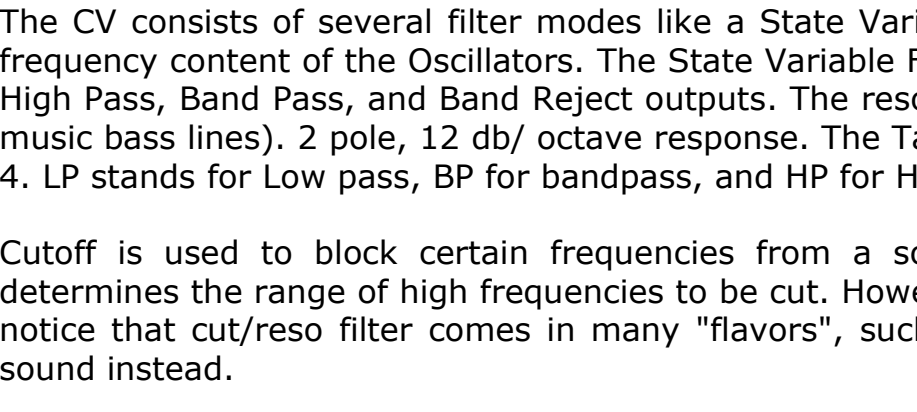
ADSR Envelope



ADSR amplitude envelope with pan and main volume of all the oscillators.

- **Attack** - Controls the rate of the attack, 0 V is quickest, 10 V slowest
- **Decay** - The Decay rate
- **Sustain** - The hold level, while the gate is high (key is down).
- **Release** - The Release rate

Filter Settings and Filter Envelope



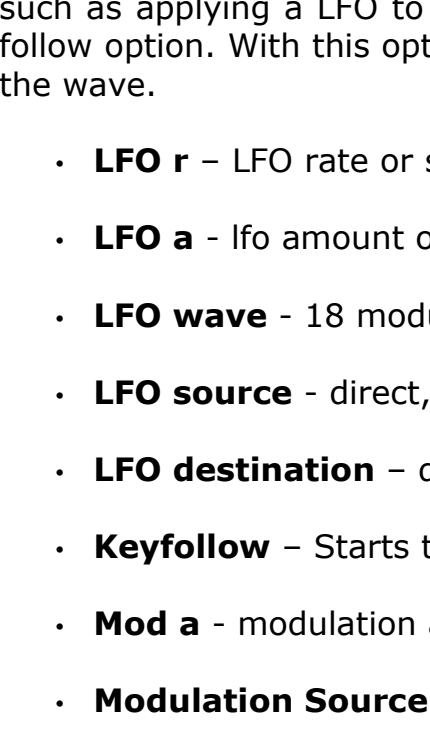
The CV consists of several filter modes like a State Variable Filter, a Tarrabia Filter and a Moog filter. Changes the frequency content of the Oscillators. The State Variable Filter provides Low Pass (only low frequencies pass through), High Pass, Band Pass, and Band Reject outputs. The resonance control adds a peak to the response (great for dance music bass lines). 2 pole, 12 db/ octave response. The Tarrabia Filter comes with 5 modes, LP4, LP2, BP, HP2 and HP 4. LP stands for Low pass, BP for bandpass, and HP for High Pass.

Cutoff is used to block certain frequencies from a sound. In a standard LP (Low Pass) cut/reso filter, cutoff determines the range of high frequencies to be cut. However, in modern software and hardware synthesizers you will notice that cut/reso filter comes in many "flavors", such as HP (High Pass), which cuts the low frequencies of the sound instead.

Resonance effect originates from an artifact in the original cutoff filter used in old hardware synthesizers. It is narrow band of frequencies, near the cutoff level, where the sound is amplified. Today this artifact can be easily avoided, but it is still available though, because it can be used as a special effect. Changes in the cutoff level together with high resonance produces interesting phaser-like effect, which is one of the reasons for the popularity of the TB-303 bass synthesizer.

- **Attack** - Controls the rate of the attack, 0 V is quickest, 10 V slowest
- **Decay** - The Decay rate
- **Sustain** - The hold level, while the gate is high (key is down).
- **Release** - The Release rate
- **Env amnt** - Envelope to Filter wheel - The amount of modulation of the filter envelope over the filter cutoff (negative or positive). This amount is added to the existing cutoff value.
- **Key amnt** - The amount of modulation of the notes pitch over the cutoff values.

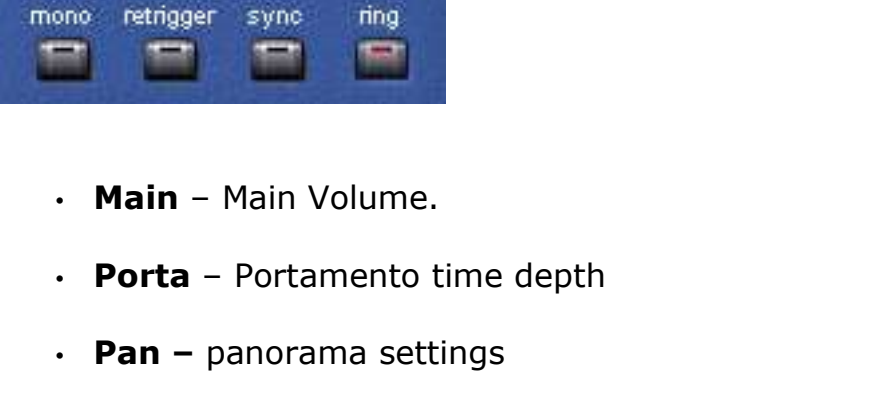
Modulation and LFO Settings



Adds modulation to an instru-ment patch. There are 7 different sources and more then 30 different destinations to route to. The modulator can read for instance LFO's, pitch bend and modulation wheel. Mod amount sets the depth of the modulation. LFO stands for Low Frequency Oscillator. Such oscillators are used to modulate a property in a synthesizer or effect. It can be used to simulate natural instrument effects, such as vibrato (by applying LFO to pitch) and tremolo (LFO applied to volume), or can be used to change gradually a setting to create special effects, such as applying a LFO to the cutoff value, thus creating phaser-like effect. LFO 1 is not BPM synced but has a key follow option. With this option the LFO restarts its wave. Lfo rate sets the speed of the wave, lfo amount the depth of the wave.

- **LFO r** - LFO rate or speed
- **LFO a** - lfo amount or depth
- **LFO wave** - 18 modulation waveforms + "Off" option
- **LFO source** - direct, wheel
- **LFO destination** - determines where the modulation is send to.
- **Keyfollow** - Starts the wave when Key is stroke. On/Off
- **Mod a** - modulation amount or depth
- **Modulation Source** - determines where the modulator reads its source from.
- **Mod Destination** - determines where the modulation is send to.

2x BPM Synced CV Step Sequencer

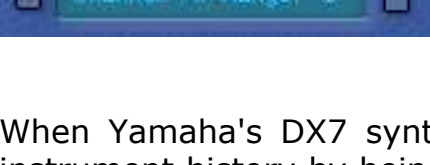


- **Sequencer Mode** - Direction of the step sequencer
- **Sequencer destination** - determines the destination routing
- **Act**- Sequencer On/Off

Global Settings

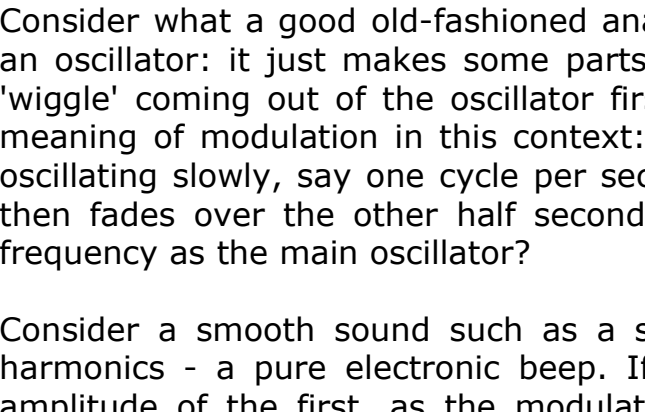


- **Main** - Main Volume.
- **Porta** - Portamento time depth
- **Pan** - panorama settings
- **Fine** - finetune osc B
- **Mono** - mono/polymode
- **Retrigger** - Restarts adsr settings or plays on.
- **Sync** - Sync Oscillator A and B
- **Ring**- Ring modulator On/Off



- **LFO** - Low Frequency Oscillator On/Off
- **LFO Sync** - Sync with keystroke
- **FM mod** - FM Modulation Osc A and B On/Off
- **Subosc**- Sub Phase Distortion Oscillator On/Off

FM Modulation (frequency modulation) and FM Envelope



When Yamaha's DX7 synth came out in the 80s, it caused a sensation, immediately taking its place in musical instrument history by being the first affordable synthesizer to use frequency modulation (FM) to create its sounds. It was also one of the earliest pieces of equipment to boast a truly sophisticated MIDI specification, and it could store a massive 32 user programs. It sold by the truckload, and although it may not be at the forefront of musical creation these days, at the time it caused a distinct shift in the culture of gravity of synthetic sound production.

The principles of FM synthesis are actually very simple, but are so different from sampling and 'traditional' analogue synthesis most that people found their minds reeling from any attempt to make sense of it. But it really isn't that complicated, honest...

Consider what a good old-fashioned analogue low frequency oscillator (LFO) does when applied to the amplitude of an oscillator: it just makes some parts of the signal louder and other parts softer. In other words, the electronic 'wiggle' coming out of the oscillator first wiggles enthusiastically, then less enthusiastically. This is essentially the meaning of modulation in this context: to change a waveform periodically. This is easy to grasp when the LFO is oscillating slowly, say one cycle per second; the amplitude of the sound increases during the first half second, and then fades over the other half second. But what happens when the LFO is vibrating at around the same audio frequency as the main oscillator?

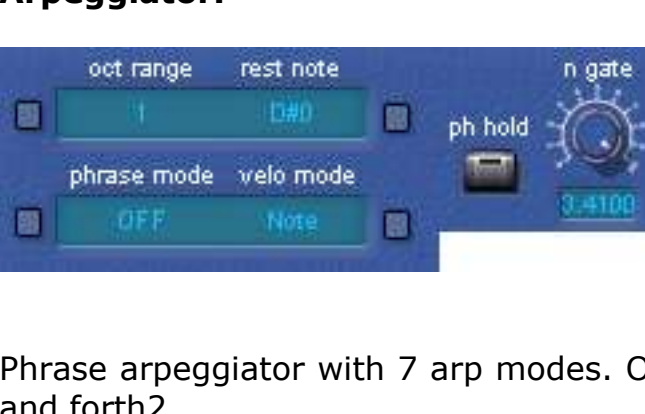
Consider a smooth sound such as a sine wave that, if produced theoretically perfectly, is a pure tone with no harmonics - a pure electronic beep. If a second audio frequency sine wave is used to modulate or control the amplitude of the first, as the modulating wave goes positive it will boost the amplitude of the sounding wave, steepening the curve; and when it goes negative it will tend to reduce the output of the first wave, thereby distorting the originally smooth sinusoidal curve and in effect introducing extra harmonics into the sound.

This is the exact opposite of the analogue synthesis method that starts with a buzzy sound such as a triangle or pulse wave and then subdues it with a filter that selectively removes harmonics, usually tending to smooth the waveform.

Frequency Modulation (FM) - When turned on, modulates the frequency of oscillator 1 and 2.

- **Atk** - Controls the rate of the attack, 0 V is quickest, 10 V slowest
- **Dec** - The Decay rate
- **Sus** - The hold level, while the gate is high (key is down).
- **Rel** - The Release rate
- **Depth** - Modulation depth
- **Key** - Modulation Strength

2x BPM Synced Feedback delay effect



- **Delay 1/2 quant** - Quantize
- **2x Pan** - Pans delay left/right
- **2x fbk** - Delay Feedback
- **2x Vol** - Delay level

Stereo Chorus Effect.



- **Mix**- Chorus strength
- **Fbck** - Sets the minimal feedback of the delay-line inside the chorus.
- **Depth** - This controls the range of the chorus action. The chorus delay will be swept between delay and delay+depth. If you set this value to zero, the flanger will remain 'static' as the delay will stay constant.
- **Rate** - This is the speed of the depth and delay
- **Mod** - Modulation Frequency

Arpeggiator.

Phrase arpeggiator with 7 arp modes. Off, forward, backward, forth and back, back and forth, forth and back2, back and forth2.

- **Phrasemode** - Sets arp's melody/line
- **Octave Range** - sets the octave range from 1 to 4
- **Velo mode** - Velocity mode On/Off
- **Ngate** - Note duration
- **PH Hold** - Phrase Hold pushed keyboard notes

End of File Version 1