REVOICER

SPECTRUM FILTER BANK
VOCODER OSC

Re
Rack Extension

FX device by Turn2on Software

Vocoders rely on two signals being present at the same time in order to operate. These signals are the **Carrier** signal, which normally takes the form of a synth, and the **Modulator** signal, which normally takes the form of a human voice, although other instruments can work well (such as drums).

The Modulator signal is analysed by the vocoder and broken down into a number of frequency bands. The more bands that are available, the better quality of the analysis, which means that a clearer vocoded sound will be available.

A typical Vocoder synthesizes a modulator (usually a voice) in the right channel of a stereo track with a carrier wave in the left channel (any active sound) to produce a vocoded version of the modulator (right channel).

A Vocoder applies the spectrum of one sound to another using a filter-bank.

What makes the **ReVoicer** different from a typical Vocoder? It is a Stereo Spectrum filter-bank Vocoder with an Internal Oscillator.

The External Carrier stereo inputs can be used, or use/mix the Internal oscillator (which includes basic waveforms such as Pulse, Saw, Tri, Sub and Noise), to vocode the Modulator inputs. The Internal Oscillator can also be used as a simple Oscillator (it can be processed by the Vocoder) and as part of a vocoder (internal carrier) for fast results without the need to create any external Carrier device in Reason's rack.

ReVoicer comes with a variety of patches including 70+ Combi vocoder FX patches.

ReVoicer is a modern stereo Vocoder with internal oscillator, limiter and frequency controls. It allows for a lot of vocoder variations in order to create unique Vocoder textures for any vocal or instrument sound.

VOCODER BASICS

The Voice Operation Demonstrator (Voder) was developed by Homer Dudley at Bell Labs in the 1930's as a device capable of imitating human speech electronically. The first commercial use of a Vocoder in music was in 1968. Bruce Haack built his own vocoder that was used on the album The Electronic Record For Children. At the same time, Bob Moog developed his own Vocoder. Kraftwerk brought the instrument to mainstream when they used it on their album Autobahn in 1974. The Soulsonic Force used a Vocoder in their hit Planet Rock as early hip-hop artists in 1982. Modern use of the Vocoder can be heard in various music albums and in main themes such as those produced by Daft Punk.

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The **Modulator** signal is analysed by the vocoder and broken down into a number of frequency bands. The more bands that are available, the better quality of the analysis, which means that a clearer vocoded sound will be available.
 Hardware vintage vocoders have a fixed number of frequency bands. Modern software vocoders will normally allow for control of a greater number of bands.
In the guitar world, we are familiar with the classic effect - TalkBox. This is also a Vocoder. Talk boxes operate by delivering an amplified signal through a tube into mouth, which is then vocalised back into a live microphone.

A typical Vocoder synthesizes a modulator (usually a voice) in the right channel of a stereo track with a carrier wave in the left channel (any active sound) to produce a vocoded version of the modulator (right channel), but there some additions in the ReVoicer Vocoder rack extension.
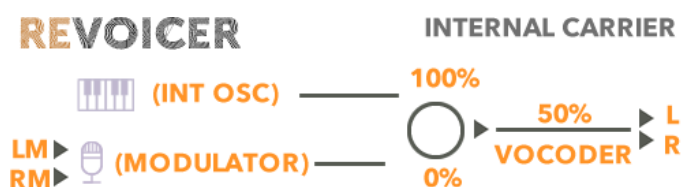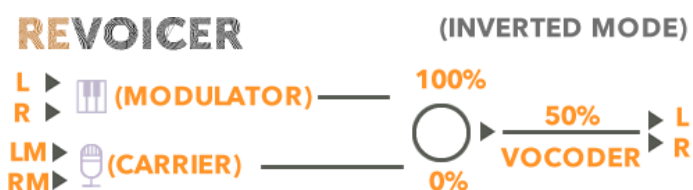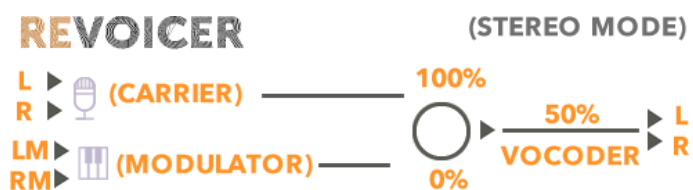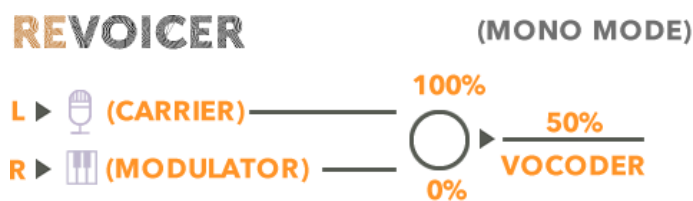
The **Classical mode** is a **Mono** Vocoder. This mode is available in **ReVoicer** when you choose Modulator source: Right Input. You can experiment with Carrier sounds with external signals by connecting your carrier signal to the Left channel. Alternatively, you can use the Internal Oscillator in ReVoicer.

In Stereo mode, the Vocoder uses a stereo Modulator source via the RM/LM Inputs. The internal oscillator with its various waveforms can be used as the carrier, or external signals can be used when connected via the L/R channels. A Stereo Vocoder is more practical to use with stereo signals as a Carrier.

The **Inverted Vocoder** mode is the same as the Stereo mode, but the connections of L/R are now used as the Modulator and the LM/RM inputs are now used as the Carrier signal. If you have connections set up as per the Stereo mode, but choose this Inverted mode, ReVoicer will work more as an EQ mode. The sound will not be pitched, but frequency changes can be made.

The **Internal Carrier** is an internal Oscillator with a few basic waveforms (Pulse, Tri, Saw, Sub and Noise). When using this mode the Revoicer only uses the LM/RM modulator inputs (voice) as the modulator signal and uses the internal oscillator as the carrier. Optionally, you can connect additional External L/R Carrier inputs.

FRONT PANEL

VOCODER / Main parameters	
Freq Bands	Number of frequency bands (up to 24) in the filter bank. Frequency resolution of the Vocoder
Bands Shaper	Resonant bell shape mode / Flat top mode
Low Freq	Center frequency of the lowest band
High Freq	Center frequency of the highest band
Width	Adjusts the Resonance of each band
ModEnv Speed	How fast the envelope of the Modulator signal is tracked
Alt. Pan	Stereo spread / Alternate Pan band outputs (L and R)
Modulator Source	- RIGHT INPUT: Right input channel works as the Modulator, Left as the Carrier; - STEREO MODE: L/R stereo input works as an external stereo Carrier input, LM/RM works as the stereo Modulator input; - INVERTED MODE: L/R stereo input works as the Modulator, LM/RM works as an external Carrier input. With STEREO connections and Inverted mode, frequency can be changed like an EQ
Vocoder Gain	Level control of the Vocoded (processed) signal
Blend	Output control: mix between Modulator (0%), Vocoded signal (50%) and Carrier signal (100%)

ReVoicer Internal Osc - is sensitive to PitchBend and ModWheel

MW controls	
MW Amt	ModWheel amount for the selected destination parameter
MW Dest	ModWheel destination: LowFreq / High Freq / Width / ModEnv Speed / Alt.Pan / Voc.Gain / Blend
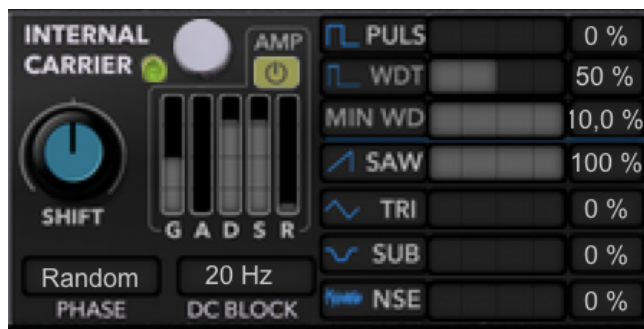
The **Internal Carrier** is an internal Oscillator with a few basic waveforms (Pulse, Tri, Saw, Sub and Noise). When using this mode the Revoicer only uses the LM/RM modulator inputs (voice) as the modulator signal and uses the internal oscillator as the carrier. Optionally, you can connect additional External L/R Carrier inputs at same time, or just turn off this osc.

Internal Carrier (Osc)	
Int. Carrier On/Off	On/off internal oscillator (carrier).
Amp Envelope	On/Off activity of Amp Envelope
Shift Tune	Tune oscillator waveforms
Gain	Gain volume of internal oscillator
ADSR	Attack, Decay, Sustain and Release controls of Amp Envelope
Phase Mode	Start phase of oscillator waveform for each note: reset to zero, free-running, or random
DC Blocking	Highpass filter to avoid a DC offset, especially when modulating pulse width. Adjust to taste

| Internal Carrier (Osc) waveforms:	
- PULSE	- Pulse: Level of Pulse waveform, - Pulse Width: Width of the pulse wave. Square when set to 50%. - Min. Width: Min. allowed widthfor pulse wave, to avoid the sound getting too thin
- SAW	Level of the Sawtooth waveform
- TRIANGLE	Level of the Triangle waveform
- SUB	Level of the quared sub-oscillator waveform (-1 oct)
- NOISE	Level of the White Noise waveform
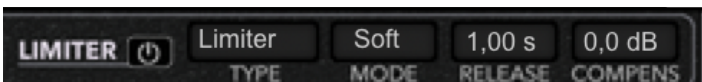
Limiter	
Limiter On/Off	Limiter on/off.
Type	Select Limiter / Maximizer mode. Maximizer boost and compress input to the limiter
Mode	Soft knee / hard knee / hard clipping
Release	Recovery time
Gain Compensate	Maximize input level (when Type of limiter = Maximizer)

Other Controls	
Patch Browser	Load ReVoicer patches (Vocoded and just RAW Osc) and save your own patches. Dont forget about up to 70+ Combi patches!
Soft Bypass	Bypass with fades of Vocoder effect activity (without glitches)

BACK SIDE PANEL
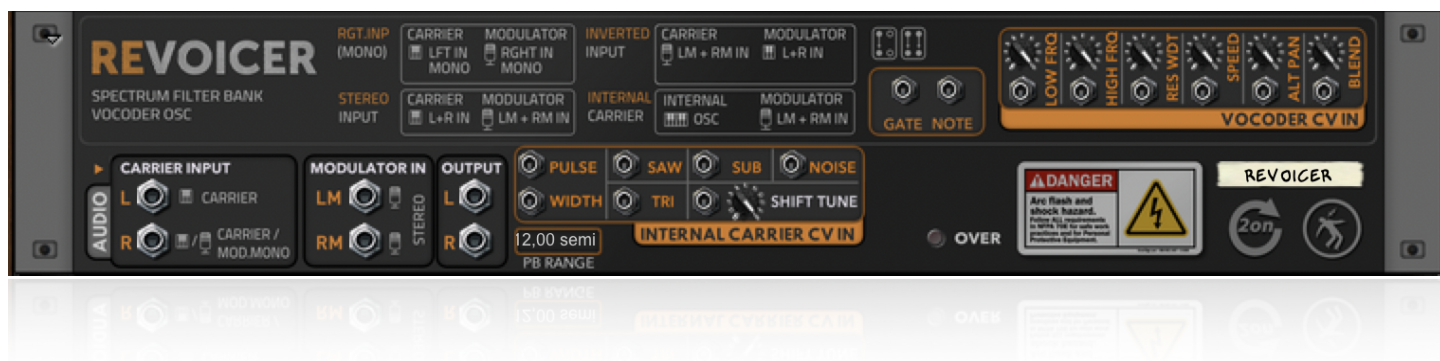
CARRIER/MODULATOR INPUT

L/R inputs work with selected Modulator Mode. If MONO: L input is a mono carrier input, R mono input is a Modulator (voice) input.
If STEREO mode selected: L/R is a stereo Carrier Input. LM/RM is a stereo Modulator input.

AUDIO OUTPUT

Mono or Stereo connections for output of audio signals

PitchBend Range:

PitchBend Range control (0-12 semi octave). Placed on rear panel. PitchBend works with the Internal Oscillator.

CV INPUTS

Use these CV inputs to control main parameters

CONNECTIONS:
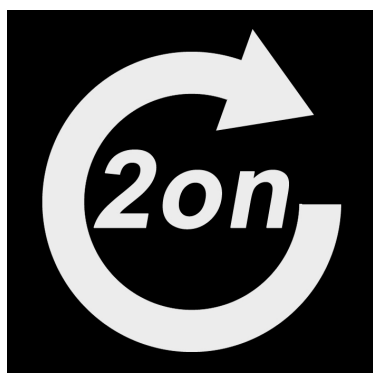
Device is a True-Stereo effect.
For Mono input, the device produces stereo output (Spreading).
For Stereo input, the device sums the Left and Right channels before applying the effect. The output is in Stereo.

REVOICER
Spectrum Filter-bank Vocoder Oscillator

SPECTRUM FILTER BANK
VOCODER OSC

Re
Rack Extension

AVAILABLE IN THE
propellerhead
shop

Turn2on

Rack Extension Developer

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Special thanks to all beta-testers