REASONATOR

Acoustic Resonance Emulation

[RACK EXTENSION] v. 2

PRODUCT OF TURN2ON

Re Rack Extension

MANUAL

2021

FX device by Turn2on Software

A Resonator is one of the many underrated and esoteric effects that can sound fantastic. Once you use it - you will want use it over and over again. It is a very musical sounding natural effect which can be used with any audio signal source.

A resonator effect duplicates and modifies your audio signal, which can have a nice stereo effect. It is used quite frequently in electronic music to create "that sound". And now you can make it too!

If you use it with acoustic instruments like guitars, pianos, or strings, you will understand why this effect is what you need for your productions.

The **REASONATOR** Rack Extension is a utility to create a perfect acoustic resonance emulation. **Reasonator** is a Classical Resonator effect with Decay controls, but with the addition of high frequency controls, LFO and Curve modulations. Device also include stereo width, pre and post Multi-mode filters. The structure of Reasonator allows for morphing between two resonators that have their own individual settings. Morphing between these two resonators helps to create new and interesting audio experiments.

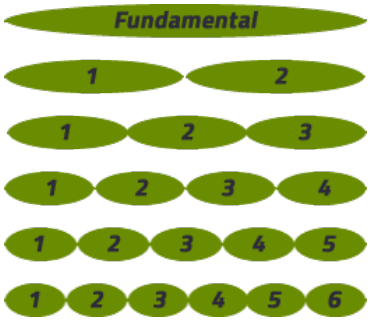
Try the **REASONATOR** perfect acoustic resonance emulation effect in your Reason rack today!

Visit us: turn2on.com

ACOUSTIC RESONANCE EMULATION

All physical objects resonate. Some have simple uniform resonance while others have complex resonance. When you play any acoustic instrument, you get a natural Acoustic Resonance effect. This sound is what you finally hear from your instrument when any sound source at its fundamental frequency is triggered. Acoustical instruments can have multiple harmonics. Higher harmonics correspond to integer multiples of the fundamental frequency. Acoustic resonance effects are a type of phase shift, but is better known as a Comb Filter with a wide range. A Resonator is more of a special effect with its own character than the classical Comb Filter. Some resonators may generate sound by exciting adjacent air particles in the surrounding medium.

The term **"Acoustic Resonance"** is sometimes used to refer to mechanical resonance in the frequency range of human hearing, but since acoustics is defined in general terms concerning vibrational waves in matter, acoustic resonance can occur at frequencies outside the range of human hearing.



HARMONICS Nodes

When we refer to sound waves in air, we are talking about pressure differentials in the air, which are locations where air compresses or expands.

For example, a guitar string has a constant characteristic resonance pattern within the physical properties of the string, but the string is only the starting point of the final sound. When a string is vibrating in air, the resulting sound waves in the air have frequency patterns related to the frequency patterns of the vibrating string. The guitar string collides with the surrounding air molecules and generates longitudinal pressure waves in that medium.

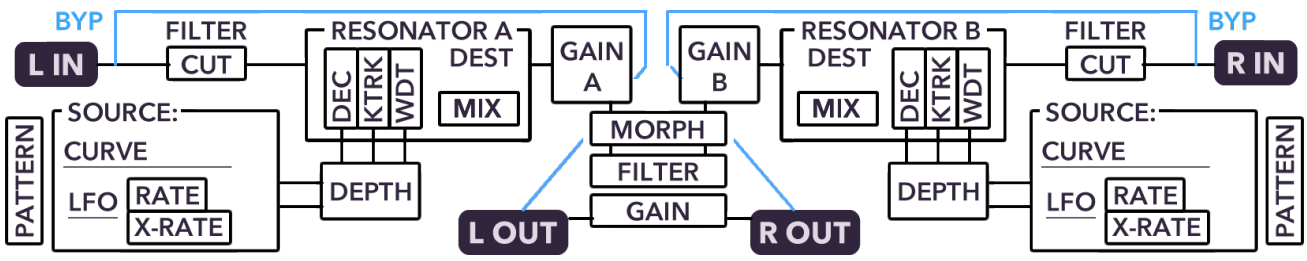
Any cylinder resonates at multiple frequencies, producing multiple musical pitches. The lowest frequency is called the fundamental frequency, or the first harmonic. Many cylinders are used as musical instruments, such as flutes, or organ pipes.

In a typical resonating medium, waves may be passing randomly in every direction in complex three dimensional patterns. While these waves may temporarily interfere with each other, they also pass through each other intact. Some patterns of constructive and destructive interference are preferred by a resonating medium over other patterns. The preferred patterns of interference are related to the resonant characteristics of the medium. Waves also interfere with themselves. This occurs when a wave is reflected off of a surface, or some other obstruction, so that the reflected wave pattern interferes with the original (unreflected) wave pattern. Acoustic resonance is important for instrument builders and also for hearing.

Resonators help to create additional accents to any type of signal source by using a resonance decay effect. This can add some resonance and reverb of new modulated frequencies created from the fundamental frequency. Resonators interact with human ears and with the environment. Resonators isolate and emphasise matching frequency components of incoming signals. For example, any room with walls and air can be a Resonator.

A Resonator is one of the many underrated and esoteric effects that can sound fantastic. Once you use it - you will want use it over and over again. It is a very musical-sounding, natural effect with any audio signal source. It is perfect for electronic and acoustic instruments, such as guitars, organ tubes, and strings.

SCHEME OF REASONATOR



FRONT PANEL

RESONATOR A / B	
Resonance Decay	Resonance Decay Time
Keytrack	Faster decay at higher frequencies
Width	Stereo spread of individual resonators
Mix	Mix between dry and wet signal
Depth	Depth of modulation of selected source and destination
Destination	Destination of modulation: - Decay - Keytrack - Spread
Source	**CURVE**: Use pattern bank of curves as source of modulation. **LFO**: Use pattern bank of LFO waveforms as source of modulation
Pattern	Bank of waveforms for using as Curve or LFO modulation. Includes 23 waveforms
LFO	LFO - RATE: Duration of 1 cycle of the LFO * If you modulate Resonance Decay - smaller number of parameter range is faster, bigger number is slower (more seconds)
Multi-Mode Filter	**Types:** LP12 / LP24 / LP-BRICKWALL / BP6 / HP12 / HP-BRICKWALL **Cutoff:** Cutoff frequency

MAIN PARAMETERS	
Morph A/B	Morphing A/B Resonator sections with their own individual settings
Gain A / Gain B	Input Gain level
Post Filter	Post Multimode filter with filter types: LP12 / LP24 / LP-BRICKWALL / BP6 / HP12 / HPBRICKWALL **Cutoff**: Cutoff frequency **Resonance**: Strength of resonant peak at the cutoff frequency
Gain	Gain level of the Master Output
Soft Bypass	Bypass variant with fades for Resonators A / B

PATTERN
Pattern is a bank of waveforms used for Curve / LFO source modulation

PATTERN BANK	
UNIFORM	
FLAT MIDDLE	
EARLY COMB	
FIBONACCI	
FLAT COMB	
LATE COMB	
REV. FIBONAC	
ESS COMB	
RND UNIFRM	
RND MIDDLE	
RND EARLY	
RND FIBONAC	
RND FLAT	
RND LATE	
RND RV FIBON	
RND ESS CMB	
SINE	
TRIANGLE	
SQUARE	
PULSE	
SAW	
SAW REVERS	

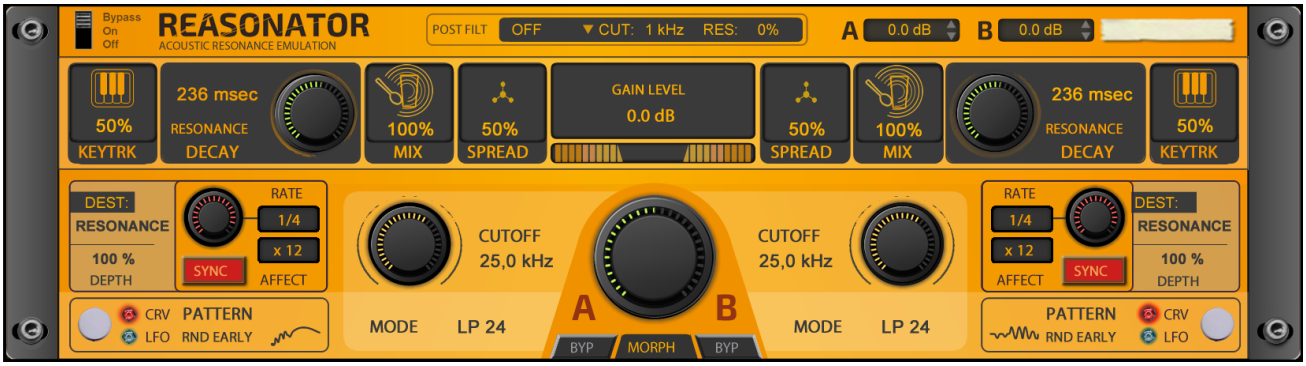
Bypass/On/Off
Reason standard switch to Bypass/Enable/Disable connected sound source to device (without clicks)

SKINS

SILVER / GOLDEN SKINS

Reasonator effect support selectable skins. Selection of the skin colour avaliable at the rear panel

GOLDEN SKIN



SILVER SKIN

BACK SIDE PANEL

AUDIO INPUT
Mono or Stereo connections for input of audio signals.
AUDIO OUTPUT
Mono or Stereo connections for output of audio signals

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.

REASONATOR

PERFECT ACOUSTIC

RESONANCE EMULATION

Reason Studios Add-on Shop

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Re
Rack Extension

PRODUCT OF
TURN2ON

2on

Turn2on

Rack Extension Developer

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Special thanks to all beta-testers

Please support us, set product stars in the ReasonStudios Add-on Shop rating.