

## 1 Introduction

Baz is a VST virtual effect for Windows. It requires a VST compatible host to run. VST and Windows are trademarks of the respective owners.

## 2 General description

Baz is a bass saturator, compressor and exciter.

It has one input and one output. A stereo version (two inputs and two outputs) will be available with next release.

The interface has been kept as simple as possible, with an "analog" feel, by means of parameter pre-setting, but it is a very powerful and deep effect.

It includes several stages:

- spectral compressor (compresses each single frequency band separately)
- frequency splitter (a "FIR" design, splits the incoming audio in "lows" and "highs" for separate processing) with continuous cross frequency selection
- full band compressor on low band
- low band saturation and exciter (introduces mid-low harmonics)
- lows (plus harmonics) and highs mixer
- full band, full signal RMS compressor (a slow, transparent one, levels the output)
- signal enhancer (phase based, slightly enhances perceived audio)

An "analog-feeling" VU meter (showing input level and compression) completes the interface.

## 3 Installation

Copy the dll file to your host's plugins directory.

No authorization procedure is needed. The software is custom licensed per customer (reference on the right-lower part of the interface).

## 4 Interface

The interface is subdivided in:

- Controls. Five knobs and one button.



- 3D meter



Interface and settings are very simple, while complex algorithms work behind them.

Controls are:

- Spectral button. Activates the spectral compressor.
- Cross frequency knob. Sets the cross frequency for the frequency splitter.
- Boost knob. Sets the gain at the input and an opposite attenuation at the output. Introduces more compression while compensating for the increased level at the output.
- Drive knob. Sets the drive (and harmonics) amount for the low band (while the high band passes untouched).
- Basses level knob. Sets the bass frequencies (and harmonics) output level (before RMS full signal compressor and enhancer).
- Highs level knob. Sets the high frequencies output level (before RMS full signal compressor and enhancer).



## 5 Details

### 5.1 Spectral compressor

The input is split in hundreds of frequencies. Each frequency is separately compressed when it trespasses a fixed threshold. This is very useful for "flattening" the spectrum when there is a strong resonance.

Switch on the button to activate the spectral compressor.

### 5.2 Frequency splitter

Base on a "FIR" design (finite impulse response, linear phase), splits the audio input in two bands: lows and highs.

The cross frequency can be set in a continuous range by the "cross frequency" knob.

The lows go to the next stage, while the highs pass untouched.

### 5.3 Lows compressor

It is a peak compressor. It compresses the bass band when it trespasses a fixed threshold. Use the "boost" knob to increase the input level and get more compression.

The "boost" is compensated for at the output, so only little level variation can be heard, while the effect is on the bass compression.

### 5.4 Low band saturation and exciter

This introduces harmonics on the bass frequency band.

It can be used for:

- change the overall sound to taste
- introduce mid-low harmonics for the psycho acoustic "missing-fundamental" effect (more in "Tips" section)

### 5.5 Lows, harmonics and highs mixer

The "bass level" knob sets the output level for low band and harmonics.

The "high level" knob sets the output level for high band.

### 5.6 Full band RMS compressor

After the whole signal is mixed back together, it passes through a slow RMS compressor for a slight leveling.



## 5.7 *Enhancer*

The enhancer is fixed. It enhances a bit the signal by means of some phase modification.

## 5.8 *Meter*

The meter shows:

- White: input level (dB)
- Red: gain reduction for the first stage, low band, fast compressor (dB)

## 6 **Tips**

- For the classic "missing fundamental" effect (to make bass audible on cheap stereo or headphones): add drive, adjust the cross frequency and mix back the signal. Apply an highpass EQ at the output (after Baz) to remove the original very low frequencies.
- On real recorded bass, switch on the spectral compressor and adjust boost to remove excessive peak resonances.
- For a complex equalization of the bass: use bass level, high level, drive and cross frequency.

## 7 **Feedback and assistance**

Please refer to [www.sknote.it](http://www.sknote.it).

