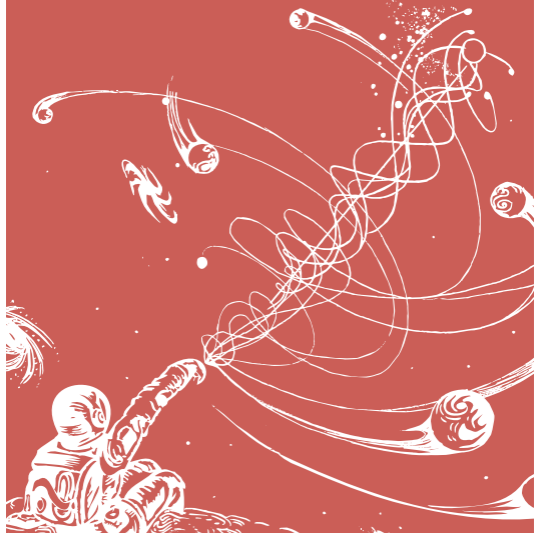# ORBITAL

ALABS® PEDAL

ADAM ADVENTURES SERIES
ORBITAL PITCH EFFECTS PEDAL

Thank you for choosing the ORBITAL PITCH by ALABS Audio. This stereo digital effects pedal, powered by our exclusive Wizard Audio Virtual Engine, offers a range of pitch-shifting effects including Pitch Shifter, Octave, Micropitch, Harmonizer, Whammy Sound, and more. It provides features such as Differential True Stereo mode, analog dry-through, and two selectable bypass modes. The footswitch also controls the Momentary operation and the unique ∞ Explore mode exclusive to this series.

CONTENTS

I OVERVIEW

- 9 Pitch Shifting Effects: Upward shifts include major 3rd (4 semitones), 4th (5 semitones), 5th (7 semitones), and Octave (12 semitones). Downward shifts include minor 3rd (3 semitones), 4th (5 semitones), 5th (7 semitones), and Octave (12 semitones).Unison shifts within a microtonal pitch.
- Microtonal Pitch Modulation: Allows for a maximum range of +/- 100 cents and 10Hz frequency modulation on the target pitch.
- Microtonal True Stereo: Adds upward and downward pitch variations to the left and right channels respectively, creating a wide and immersive stereo field.
- Advanced Audio Algorithm Engine: Powered by ALABS' Wizard Audio Virtual Engine, utilizing high-precision dynamic forward virtual circuit modeling technology, running on a high-performance 32-bit floating-point digital signal processor (DSP).
- Analog dry-through: Features a controllable independent analog dry-through buffer amplification circuit, preserving the unaffected, zero-latency, pure dry signal without AD / DA conversion.
- Selectable Bypass Modes: Provides high-quality relay-based true bypass and transparent analog buffer bypass options for selection.
- Momentary operation: Allows for instant pitch bending, either upwards or downwards, to the selected target pitch using the footswitch.
- Creative ∞ Explore Mode: Achieve dynamic variations and complex creative effects by simply holding down the footswitch to unleash multiple parameter transformations.

II KNOBS and SWITCHES

RATE
Controls the oscillation frequency of the low-frequency oscillator (LFO) that modulates the pitch. When the knob is positioned at 12 o'clock, the frequency is 2Hz, and the maximum value is 10Hz.

DETUNE

Controls the stereo deviation of the differential pitch, with a maximum value of 100 cents. When RATE is nonzero, the pitch will modulate up and down around the target pitch within the range of the deviation. When RATE is set to zero, the left channel output will increase the deviation above the target pitch, while the right channel output will decrease the deviation below the target pitch.

MIX

Controls the volume balance between the dry and wet signals. The dry signal is the analog dry through signal, while the wet signal is the pitch signal generated by DSP.

We provide two mix curves (transition and constant) to meet different scenarios, such as timbre modification or harmony stacking. See *VI MIX MODE* for details.

- At 12 o'clock, the dry/wet ratio is 50/50 in both modes .
- When in transition mode, rotated clockwise before the 12 o'clock position, the volume of the dry signal remains unchanged, and the volume of the wet signal gradually increases. After 12 o'clock, the dry signal gradually decreases to 0 while the wet signal remains unchanged.
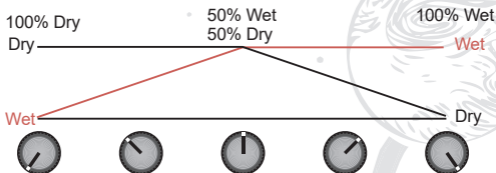
- When in constant mode, clockwise rotation, the dry signal gradually decreases to 0,and the wet signal gradually increases from 0.The total volume remains constant.

100% Dry / Dry — 50% Wet 50% Dry — 100% Wet / Wet — Dry
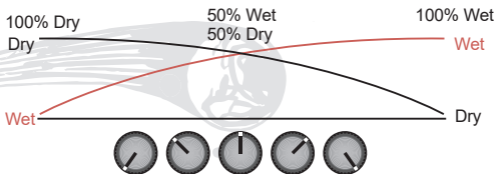
PITCH

POSITION	INTERVAL
Oct	Up 12 Semitone
5th	Up 7 Semitone
4th	Up 5 Semitone
3rd	Up 4 Semitone
Root	Unison
-3rd	Down 3 Semitone
-4th	Down 5 Semitone
-5th	Down 7 Semitone
-Oct	Down 12 Semitone

GLIDE

Controls the attack time and release time of pitch glide when using the 🖋 function. As the knob is rotated clockwise, the attack time of the glide increases gradually. If rotated clockwise while **pressing and holding the footswitch**, the release time of the glide increases gradually.

See the 🖋 function description below for more details.

TONE

Controls the timbre of the wet signal, ranging from a dark tone at the minimum setting to a bright tone at the maximum setting.

SWITCH

Determines the control target of the left knob and the function triggered by a long press of the footswitch.

- When set to 🖉 the knob controls the GLIDE parameter (The GLIDE parameter still maintains the value stored by the system last time, unless the knob is turned), and trigger a system storage of TONE parameter. Now the footswitch changes to momentary operation, triggering the 🖉 function (see 🖉 function description below).

- When set to ∞ the knob controls the TONE parameter (The TONE parameter still maintains the value stored by the system last time, unless the knob is turned), and trigger a system storage of GLIDE parameter. Now the footswitch changes to latched operation. When held down, it activates the ∞ function (see ∞ function description below).

FOOTSWITCH

Used to turn the effect on or off.

- When the white LED light is illuminated, it indicates that the effect is turned on. When the effect is turned off, you can choose between true bypass or analog buffer bypass modes, see BYPASS MODE for more details.

- If the footswitch is set to momentary operation, only analog buffer bypass mode is supported, see 🖉 function for more details.

- If the footswitch is set to latched operation, holding down the footswitch will activate the ∞ function. Refer to ∞ FUNCTION for specific functionalities.

4

9V DC

Connect to 9VDC, center negative power supply, 250mA minimum.

Note: If the power supply is insufficient, it may cause malfunction.

IN（mono）

1/4" mono（TS）unbalanced left input for mono setup.

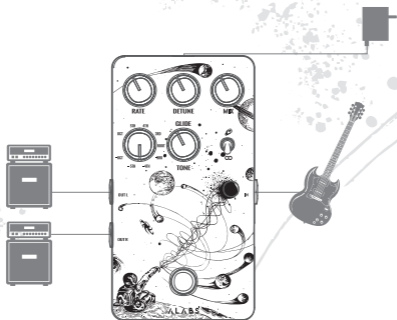*Note:The pedal should be the first pedal in your effect pedals chain.*

Placing any effect in front of it may impact its pitch shifting performance.

OUT L（mono）

1/4" mono （TS）unbalanced left output for mono setup.

OUT R

1/4" mono（TS） unbalanced right output for stereo setup.

IV ✐ FUNCTIONS

- When the switch is set to ✐ the footswitch will be in momentary operation mode. When the LED light is on, the pitch shifting function is activated, and when the LED light is off, the pitch shifting function is deactivated. The transition between the dry signal and the target pitch will occur gradually, and the speed of the transition depends on the setting of the GLIDE parameter. There are two available directions for momentary operation.

- When the effect is turned on, switch the toggle from ∞ to ✐ , pressing the footswitch will turn off the effect, and releasing the footswitch will turn on the effect again. When the effect is turned off, switch the toggle from ∞ to ✐ , pressing the footswitch will turn on the effect, and releasing the footswitch will turn off the effect.

- In this mode, the bypass mode will always be analog buffer bypass.

V ∞ FUNCTIONS

This function is similar to automated expression parameter control and can memorize the variation curves of the RATE / DETUNE /MIX and TONE parameters within a 5 second timeframe for playback. It allows you to create rich dynamic modulation effects.

To activate ∞ mode

Set the toggle switch to the ∞ position while the effect is active. Press and hold the footswitch until the indicator light turns purple.

To exit ∞ mode

Release the footswitch, and the indicator light will return to white. All parameters will return to their current knob positions.

Memorization

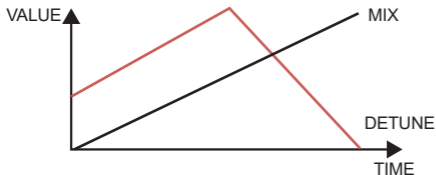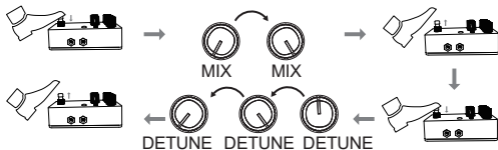While holding down the footswitch, the parameters that have been memorized will vary according to the memorized curves. Memorized curves shorter than 5 seconds will remain at their end positions once they reach the end.

Memorization process

While holding down the footswitch, rotate any of the RATE / DETUNE / MIX / TONE parameters.
The indicator light will start flashing purple, indicating that the changes to that parameter are being recorded.
After five flashes (5 seconds), the memorization mode will be exited. Releasing the footswitch within the 5 second period will also exit the memorization mode. It can store up to four memory curves（RATE / DETUNE / MIX / TONE）and be recalled together.The memorized curves of different parameters are aligned automatically and have no specific chronological order.

Overwriting

When setting new memorization for parameters that have already been memorized, the new variation curves will overwrite the previous ones.

Clearing

While holding down the footswitch, set the toggle switch to the
🖋 position to clear all memorized curves.

VI MIX MODE

We offer two mix curve modes of the MIX knob for users to choose.
1. Cut off the power supply,than press and hold the footswitch while powering up the pedal. Once the LED light flashes, release the footswitch , and enter the power-up system mode.
2. Turn the MIX parameter to the far left, and when the LED flashes appearing blue sometime, which means it is TRANSITION MODE at this time; turn the MIX parameter to the far right, and when the LED flashes appearing yellow sometime, which means it is CONSTANT MODE at this time.
3. Press the footswitch to exit the power-on system mode and start to work normally.

VII BYPASS MODE

We offer two bypass modes for users to choose from:

1. Cut off the power supply,than press and hold the footswitch while powering up the pedal. Once the LED light flashes, release the footswitch , and enter the power-up system mode.
2. When the switch is pointing up to 🖋 , the LED flashes red, which means it is buffer bypass mode at this time; when the switch is pointing down to ∞ , the LED flashes green, which means it is True bypass mode at this time.

3. Press the footswitch to exit the power-on system mode and start to work normally.

True Bypass with signal relay: Compared to traditional mechanical switch circuits, the use of a signal relay effectively reduces pop and click noise.

Analog Buffer Bypass: By bypassing the AD / DA conversion, the analog dry-through circuit preserves the advantages of a buffer circuit while retaining more of the original signal characteristics, reducing quantization noise and frequency response coloration.

VIII SPECIFICATIONS

Power	9VDC, center negative, 250mA minimum
Input Impedance	1 Meg Ohm
Output Impedance	100 Ohm
Max Input Level	+6 dBu
Universal Bypass	electromechanical relay-base true bypass, and analog buffer bypass
Dimensions	4.83" deep x 2.57" wide x 1.40" tall

Orbital

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