

PIGTRONIX

ECHOLUTION 3

User's Guide



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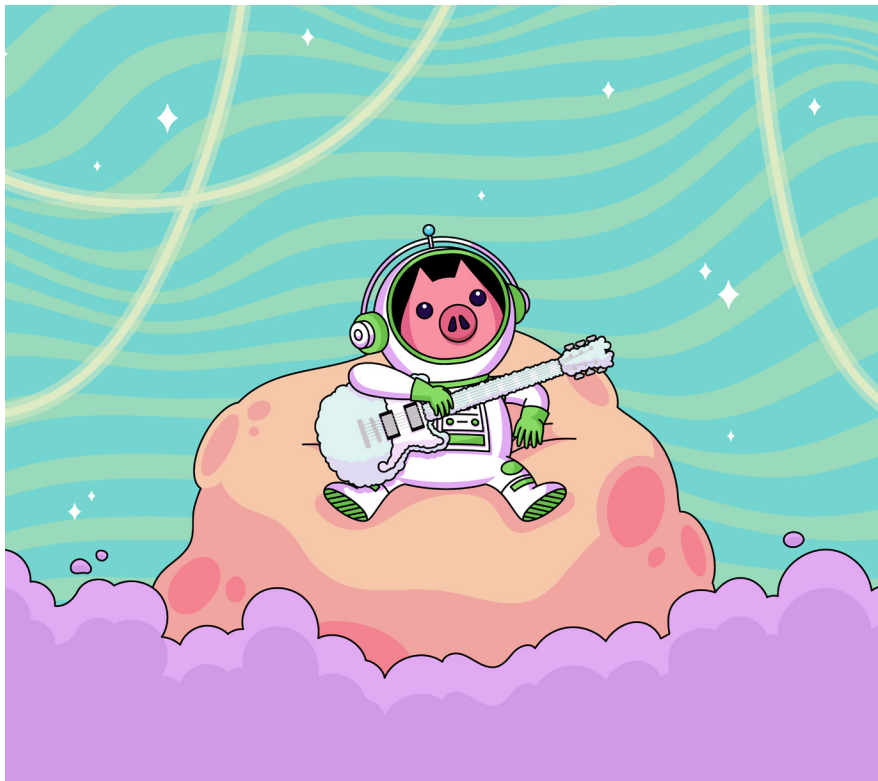
Contact Information

A DIMENSION WORTH GETTING LOST IN.

Echolution 3 is a multi-tap stereo modulation delay offering a myriad of sound design options including reverse, jump, pong, modulation tempo sync, variable low pass filter, flexible signal routing and comprehensive MIDI control. Delay times ranging from 100ms to 5 seconds can be dialed in using the Time knob or via Tap Tempo using the left footswitch. A second delay tap can be set to the same length or a fraction of the main delay time to create rhythmic echoes. The $\frac{3}{4}$ fraction creates a dotted eighth note delay, while the Golden fraction uses the sacred geometry of the Golden Ratio (.382) as the multiplier for the second tap.

The multi-tap settings can be even further enhanced by the stereo ping pong effect, which causes the different delay taps to switch sides on each repeat. Store up to 4 presets, unlock hidden features with the Universal Remote footswitch, and design yet unheard delay lines.

Runs on standard 9VDC.



EXPLANATION OF CONTROLS



Knobs

1 Time

Sets the length of the delay line. Turning the Time knob overrides the tap tempo setting. Pressing Tap overrides the Time knob setting.

Sub-divisions of the delay time can be selected using a small push button located to the left of the Time knob. Sub-division values are indicated by three LEDs located above the Time knob. The three selections are: 1, $\frac{3}{4}$ and golden ratio (.382) subdivision settings. Pushing and holding the small push button switch will turn on a second delay tap that can be set to any of the three sub-division values. The second tap is indicated by a blinking LED. Once the second tap is activated, press the small push button switch to advance the second tap to a different sub-division. It is possible to have both taps overlap. Push and hold the switch again to turn off the second tap.

2 Mix

Sets the volume level of the delay signal.

3 Repeats

Sets the amount of regeneration in the delay line. Turning this knob fully clockwise will cause the delay line to self-oscillate.

4 Mod

The function of the Mod knob is selectable with a small push button located above the Mod knob. The three selections provide control of Speed, Depth, and Tone. Speed sets the rate of LFO modulation of the delay line. Depth sets the amount of LFO modulation in the delay line. Tone sets the cutoff frequency of the low pass filter in the delay line. When toggling between these three functions, the selected parameter will not change in value until the knob is turned. Pushing and holding the small push button switch will synchronize the LFO speed to the tap tempo value. The default is 1:1. Adjusting the Speed knob when the LFO is synced will change the ratio between the LFO speed and tap tempo. Available ratios are: 1:4, 1:3, 1:2, 1:1 (noon), 2:1, 3:1, 4:1. Push and hold the switch again to turn LFO sync off. The Speed function does not have to be selected in order to turn LFO tempo sync on and off.

5 Engage Footswitch

Pressing the Engage footswitch toggles between bypass and effect on.

6 Tempo Footswitch

The primary function of the left footswitch is tap tempo. Pressing Tap sets the length of the delay and overrides the current Time knob setting. Turning the Time knob overrides the tap tempo setting.

7 Preset Select

A long press of the Tempo switch enters Preset Select mode. Once you have entered the Preset Select mode, the currently selected red preset LED will blink. A short press on the Tap Tempo switch will move up one preset and a long press will move down one preset. Once the desired preset is queued, pressing the Engage foot switch will activate it. When the footswitch is used to load a preset, the bypass status of the effect will not change.

Presets:

The 4 LEDs above the Engage footswitch indicate which preset is currently selected. Pressing the push button switch above the Engage switch cycles through the 4 available presets. When a new preset is selected, the corresponding LED will blink. Press and hold the push button switch (or hit the Engage footswitch) to load the selected preset. To save a preset after making changes, press and hold the push button switch. This action will cause the current preset LED to double-blink. If you want to save to over the current preset, press and hold the push button switch to save. If you want to save to a different preset, press the push button switch until the desired LED is double blinking. Then press and hold the push button switch to save. If you want to exit the preset save without saving anything, press either the Engage footswitch or Tempo footswitch.

8 Special FX

The Tempo footswitch can be assigned to perform alternate, Special FX functions by pressing the push button switch located above the Tempo footswitch. Pressing the small push button switch will cycle through the alternate footswitch functions. Once the desired function is selected, pressing the Tempo footswitch will turn this function on and off. When a Special FX function is activated, the corresponding LED will flash. Once a Special FX function is activated, you can still change the functionality of the Tempo footswitch by pressing the push button switch.

Reverse makes the delay line go backwards.

Jump makes the delay line jump up 1 octave. When Jump is activated, only the first tap will change pitch. If the second tap is turned on, it will remain at the normal pitch.

Pong is activated independently with a push and hold on the small push button switch. Pong causes the echoes to alternate between the left and right channels and is meant to be used with a stereo, two amp setup. The Pong function can be turned on and off regardless of which function is selected for the Tempo footswitch. Pong cannot be activated by the Tempo footswitch.

Rear Panel I/O

9 In 1

Use this input for mono sound sources.

10 In 2

Use this input for the second input of a stereo signal. When nothing is connected to Input 2, the signal from Input 1 is automatically passed to Input 2.

11 Out 1

Main audio output. This jack expects a standard [TS] ¼" instrument cable. Amp, mixer, or DI goes here.

12 Out 2

Second audio output. Use Out 2 for stereo instruments or when you want to split a mono signal so that it can be output to two separate destinations.

13 TRS / MIDI

This ¼" TRS input allows for remote control via a passive TRS remote switch or MIDI. The slider switch located above this jack determines the functionality of the jack.

14 Power

Echolution 3 runs on 9VDC at 150mA power using a standard 2.1mm negative tip power supply.

15 USB

Connect a micro USB cable here to perform firmware updates (if available) to the Echolution 3 using the firmware update tool available from pigtronix.com.

Remote Switch

The Echolution 3 is compatible with a single, dual, or triple footswitch momentary remote using a TRS (balanced 1/4") cable. The Remote switch can be used to toggle Reverse (tip to sleeve) and Jump (ring to sleeve) as well as a Freeze (tip and ring to sleeve) functions.

The Freeze function in the Echolution 3 is a true "non-destructive" recycling of the delayed audio. It freezes what is in the buffer. When a chunk of audio is captured, it does not degrade over time. It is truly looped in the digital domain. However, changing the delay time will manipulate the pitch of the looped audio signal as one would expect.

The Remote switch can also be made to control Preset Select by pushing and holding the preset selector switch during boot up. See the complete list of boot options below.

SKU	Button #1 (RING)	Button #2 (TIP + RING)	Button #3 (TIP)
Echolution 3 (fx mode)	JUMP	FREEZE	REVERSE
Echolution 3 (preset mode)	PRESET 3 / PRESET 4	-	PRESET 1 / PRESET 2

Boot Options

Engage Switch = Trails - Disconnects delay line input but leaves delay line output connected in bypass.

Tap Switch = Global Rap - Tempo does not change when selecting a new preset.

Reverse Switch = Wet / Dry - Sums both inputs and routes them to one output while routing the delay line to the other output. *Note - This mode overrides Dry Kill and Phase Invert.

Modulation Switch = Phase Invert - Inverts the phase of the delay line in one channel only.

Subdivisions Switch = Dry Kill - Eliminates clean pass through audio. Delay line only.

Preset = Remote Switch control mode - Toggles remote switch functionality between Preset Selection and Special FX (Reverse, Jump, Freeze).

Special FX Mode:

Tip = Reverse

Ring = Jump

Both = Freeze. This creates a static loop from whatever material is in the delay line.

Preset Mode:

Tip = Preset 1 / 2

Ring = Preset 3 / 4

MIDI:

The Echolution 3 is compatible with ¼" MIDI input. Echolution 3 will automatically follow MIDI clock signals as a means of setting the delay time. Echolution 3 will also obey MIDI preset change commands. MIDI CC control of every onboard function is available, along with several "hidden" features, not available on the face of the unit.

The E3 offers multiple "boot options" that allow you to change the pedal's behavior in a variety of different ways. To turn on any given boot option, simply hold down the associated switch when powering up the unit. The boot options are "sticky" meaning that you do not need to perform this action every time you turn on the pedal. Once a boot option is turned on, it will remain on, even if you power cycle the pedal. To turn off a boot option, simply hold down the associated switch when powering up the unit. There is no LED indication for the various boot options, so you will have to use your ears to determine what state the pedal is in. To return all boot options to the factory defaults, power up the pedal while holding down both footswitches.

MIDI and Hidden Features

List of Hidden Features only accessible via MIDI:

- Bit Crusher
- ⅔ Tap
- ½ Tap
- Halo
- Square Wave LFO
- Saw Wave LFO
- Sample + Hold LFO
- Super Square Wave LFO
- Super Saw Wave LFO
- Super Sample + Hold LFO

Setting the Echolution 3 MIDI Channel:

To set the MIDI channel on the Echolution 3, Press and Hold the Preset and Special FX buttons during boot up. The LED in the top left corner will blink, indicating that the Echolution 3 is set to receive MIDI on Channel 1. Press the Tap footswitch to advance the channel number. The total number of LEDs lit will indicate the MIDI channel that is selected. Press the Engage footswitch to select the appropriate MIDI channel. The unit will then finish booting up.

MIDI Preset Change:

To load a particular preset, simply send a program change command with the desired preset number. Echolution 3 will load that number plus one as the preset.

MIDI Quantization:

When MIDI Synced, tapping a new delay length will quantize the new length to an integer number of MIDI quarter notes (i.e. you can change the delay time while remaining MIDI Synced). To get back to the original delay time, double tap the Tempo switch.

MIDI CC Map:

12	Repeats Knob
13	Time Knob
14	Mix Knob
15	LFO Speed Knob
16	Modulation Depth Knob
17	Time Button Special Values: 3 = Short 4 = Med 5 = Long
18	SFX Button Special Values: 3 = Off 4 = Pong 5 = Halo 6 = Pong and Halo
19	Taps Button Special Values: 3 = First Tap Off 4 = First Tap 1 5 = First Tap 3/4 6 = First Tap 2/3 7 = First Tap 1/2 8 = First Tap PHI 9 = Second Tap Off 10 = Second Tap 1 11 = Second Tap 3/4 12 = Second Tap 2/3 13 = Second Tap 1/2 14 = Second Tap PHI 20 = Bit Crusher 9 = Crush Off 10 = Crush On

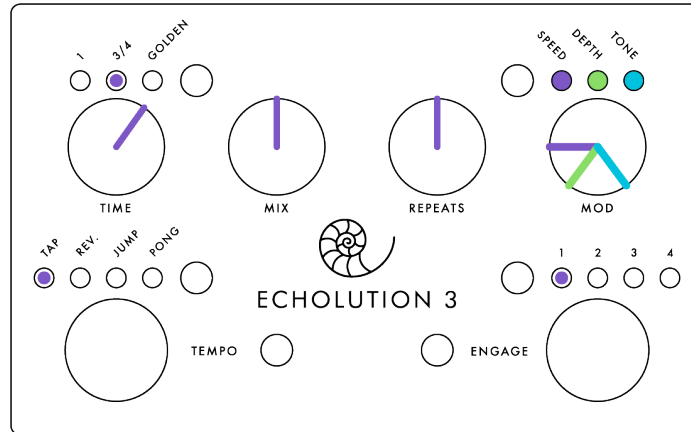
21	Bypass Button Special Values: 3 = None
24	LFO Mod Button Special Values: 3 = Triangle 4 = Square 5 = Saw 6 = Random 7 = Super Triangle 8 = Super Square 9 = Super Saw 10 = Super Random
25	Tap Tempo Footswitch
27	Engage Footswitch Special Values: 3 = Explicitly Engaged 4 = Explicitly Not Engaged
29	Jump Footswitch / Preset 1/2
30	Freeze Footswitch / Preset 3/4

31	Loop Open Close (1 = open; 1 = close). Send a momentary 1 to CC#31 to start a loop, then send another to close that loop.
76	Second Tap Volume (mapped 0-127) Second Tap Volume: Send the desired value (0-127) to MIDI CC#76 to change the volume of the second tap.
79	Enable MIDI Clock In (0=off; 1=on)

Saving: After using other midi commands to change parameters, MIDI Preset Save Command can be used to save a preset.

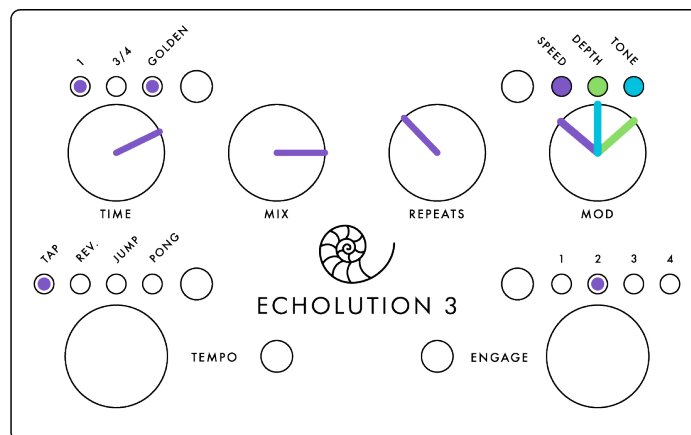
PRESETS

Echolution 3 comes pre-loaded with four diverse presets designed to illustrate the breadth of the pedal's sound design capabilities. These can be manipulated or replaced at any time by using the Preset Select button.



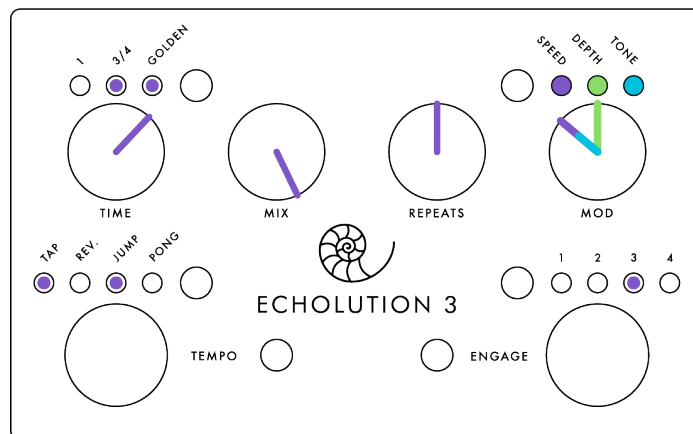
Dotted Eighth Rhythm

This classic echo effect has been used on countless hit records to create a bouncing rhythm that keeps one's self in time. Tap tempo quarter notes and enjoy the syncopation. Turn the Mod knob clockwise for additional syrup. Tone is turned all the way up for maximum fidelity on the echos.



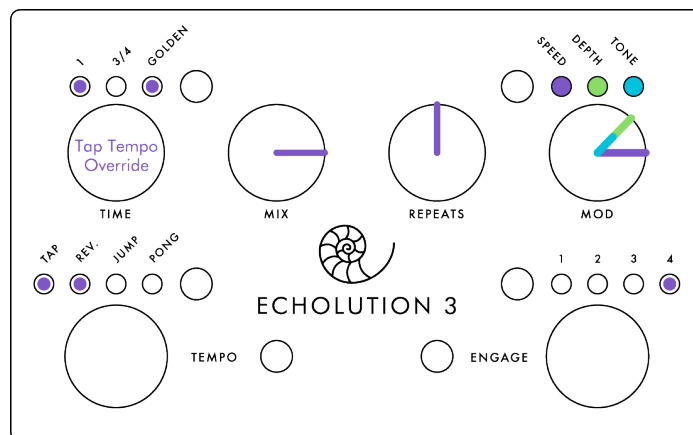
Golden Ratio Modulation

This is the original Pigtronix Echolution sound, using two delay taps set up to create a rhythmic clave pattern based on the Golden Ratio. Modulation speed is synchronized to the delay time and the Tone is dialed back to 1-o'clock to capture the lo-fi magic of an analog delay pedal. Try Ping Pong mode for stereo motion.



Pitch Shifting Multi-Tap

This hyper-active dual delay features the E3's unique Jump effect which sends one of the delay taps cascading up in octaves on every repeat. The Tone control is rolled back to 11-o'clock to smooth out the top end, adding velvety ambience to this rhythmic, double-time effect.



Reverse Vibrato Swell

This psychedelic tape-reverse sound uses a heavy dose of high-speed LFO modulation to wobble the pitch of the delay signal as it plays backwards. Use tap tempo to achieve long reverse delays up to 4 seconds.

PIGTRONIX LIMITED WARRANTY

Your new Pigtronix product is warranted to be free from defects in materials and workmanship for 1 year from the original date of purchase. Warranty applies only to the original retail purchaser of a registered Pigtronix product, subject to the limitations contained in this warranty.

THIS WARRANTY IS EXTENDED TO THE ORIGINAL RETAIL PURCHASER OF PIGTRONIX PRODUCTS BOUGHT ON OR AFTER JANUARY 1, 2020 ONLY AND MAY NOT BE TRANSFERRED OR ASSIGNED TO SUBSEQUENT OWNERS. IN ORDER TO VALIDATE YOUR WARRANTY, AND AS A CONDITION PRECEDENT TO WARRANTY COVERAGE HEREUNDER, YOU MUST REGISTER YOUR PRODUCT WITHIN THIRTY (30) DAYS FOLLOWING THE ORIGINAL DATE OF PURCHASE. YOUR PROOF OF PURCHASE OR SALES RECEIPT MUST ACCOMPANY ALL REQUESTS FOR WARRANTY COVERAGE— YOU MAY SUBMIT YOUR RECEIPT ON THE REGISTRATION FORM. IF YOU DO NOT REGISTER THE PRODUCT WITHIN 30 DAYS OF PURCHASE, YOUR PRODUCT WILL NOT BE SERVICED UNDER WARRANTY.

If your product is destroyed, lost or damaged beyond repair while in the possession of Pigtronix for repair, Pigtronix will replace that product with one of the same or most similar style of a value not in excess of the original purchase price of your pedal. Any insurance covering the pedal, including but not limited to collector's value insurance, must be carried by you at your expense.

This warranty covers the cost of both labor and materials on repairs deemed necessary by our Customer Service Representative.

THIS WARRANTY DOES NOT COVER:

- Any product that has been altered or modified in any way or upon which the serial number has been tampered with or altered.
- Any product whose warranty has been altered or upon which false information has been given.
- Any product that has been damaged due to misuse, negligence, accident, or improper operation.
- The subjective issue of tonal characteristics.
- Shipping damages of any kind.
- Any product that has been subjected to extremes of humidity or temperature
- Normal wear and tear
- Any product that has been purchased from an unauthorized dealer, or upon which unauthorized repair or service has been performed.

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Steps To File for Warranty Coverage:

1. Register your new guitar at **<http://pigtronix.com/warranty>**
2. Complete the warranty request form available at **<http://pigtronix.com/support>** and we will handle it from there!

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