PIGTRONIX

FUTURISTIC AUDIO TECHNOLOGY

Echolution 2
User's Guide

EVOLUTION OF ECHO

ECHOLUTION 2 ULTRA PRO

ECHOLUTION 2 FILTER PRO

ECHOLUTION 2 DELUXE

ECHOLUTION 2

Dedicated Echolution 2 site
www.pigtronix.com/echolution

To validate your one-year, limited warranty
www.pigtronix.com/warranty

How to contact us for warranty service
Email: tech@pigtronix.com
Phone: 631-331-PIGS (7447)

youtube.com/pigtronix

www.pigtronix.com

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Echolution 2 is the most powerful effects pedal that we've ever created. This massively flexible multi-tap stereo modulation delay features an entire array of customizable filter, LFO and pitch shifting options along with expression pedal and envelope control of every knob as well as complete MIDI control of every function.

Pigtronix Echolution 2 Filter PRO provides all the processing power and flexibility of the E2 Ultra PRO while presenting a streamlined user interface for use on stage. The E2 Filter Pro's clean user interface provides front panel access to the critical multi-tap and filter options that have become essential tools for crafting a modern delay sound as well as onboard access to the all-new Pigtronix pitch shifter algorithms

Accessing and navigating the vast palette of sounds available within the Echolution 2 is easy. Since the pedal is completely programmable, any sound that has been designed using the Echolution 2 pedal can be saved to the unit itself and exported for sharing with friends and other musicians. A dedicated PC/MAC application handles preset management and provides E2 users with even deeper customization. Please take a moment to download this application from: www. pigtronix. com/E2application

www.pigtronix.com/E2application

JACKS AND FOOTSWITCHES

JACKS AND FOOTSWITCHES

EXP
TRS expression pedal goes here. Use a low-impedance foot controller.

REMOTE
E2R or compatible TRS momentary remote switch goes here.

MIDI IN
Accepts MIDI preset change, MIDI CC inputs (see MIDI map) for all functions as well as MIDI beat clock to set the delay time.

MIDI OUT
Sends out MIDI beat clock that is eitherrelated to the delay time or based on the signal present at the MIDI IN jack along with MIDI Thru signals.

MIDI LED
When a MIDI clock at the MIDI IN jack is present, the red MIDI LED in the upper left corner will illuminate.

Power
18VDC (2.1mm neg. tip) 100mA or higher is required.

Output 1
Connect amplifier, mixer, DAW here.

Input 1
Connect instrument here

Output 2
Connect amplifier, mixer, DAW here.

Input 2
Connect instrument here

Note: When only one of the two audio inputs is connected, that single input will be processed in stereo through both outputs

TAP TEMPO
Tap on this switch to set the delay time. When a new delay time is set by the Tap Tempo switch, it will override the manual delay time knob.

ENGAGE
Turns the effect on and off.

PRESET SELECTION

A LONG PRESS of the Tap Tempo switch enters PRESET SELECT mode. Once you have entered the PRESET SELECT mode, the green preset digit 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.

Note: The Engage footswitch is also used to load presets once you have loaded PRESET SELECT mode. When the Engage footswitch is used to load a preset, the bypass status of the effect will not change

KNOBS AND TOUCH SWITCHES

KNOBS AND TOUCH SWITCHES

MIX
Sets the audio output level of the delay line.

PRESET SELECTOR
Allows you to save and load presets.

EXPRESSION CONTROL
SHORT PRESS cycles between Repeats, Time, Mix, Speed, and Depth control.
LONG PRESS turns on ENV map to EXP.

LFO WAVEFORMS
SHORT PRESS cycles between Triangle, Square, Ramp, and Random waveforms.
LONG PRESS turns on LFO Sync.

REPEATS
Sets the amount of feedback in the delay line.

DEPTH
Sets the amount of LFO modulation that is fed to the delay line.

TIME
Sets the delay time within the current delay time range setting. When the time knob is turned, it takes over from the tap tempo within the delay time range as set by the last tap tempo value.

SPEED
Sets the LFO speed.

DELAY TIME RANGES
SHORT PRESS cycles between Short, Medium, and Long delay times.
LONG PRESS turns off the delay line.

DELAY LINE I/O
SHORT PRESS cycles between Trails, Listen and Normal.
LONG PRESS turns on Dry Kill.

SPECIAL FX
SHORT PRESS turns on Pong.
LONG PRESS turns on Halo.

SPECIAL FUNCTIONS
SHORT PRESS turns on Reverse.
LONG PRESS turns on Duck.

MULTI-TAPS
SHORT PRESS cycles between 1, 3/4, 2/3, 1/12, and PHI.
LONG PRESS creates a Second Tap.

FILTERS CONTROL
SHORT PRESS cycles between Low Pass, Tape, Comb, and Sweep filters.
LONG PRESS turns on Crush.

ADVANCED BOOT OPTIONS

INPUT MIDI CLOCK
Enables MIDI Clock in

ADVANCED BOOT OPTIONS
Specialty global settings that can be toggled during power up These settings are "sticky" and will remain set even after removing power from the E2.

MIDI THRU
Enable MIDI Thru signals

6DB BOOST
Increases the MAX value of the MIX knob to +6dB above the input signal.

PHASE INVERSION
Controls stereo output phase inversion

NON-PITCHED MIDI TRACKING Allows the MIDI beat clock to change without pitch shifting

DRY KILL DURING BYPASS
Enables Dry Kill when Engage is off

COPY MIDI CLOCK Copies MIDI Clock In to MIDI Clock Out

GENERATE MIDI CLOCK
Allows the E2 to generate its own MIDI Clock

FIRMWARE VERSION
After the E2 initializes, it will display a sequence of three digits; this is its firmware version. For example, after the "-" you will see a sequence '1', '0', '0'. This denotes firmware version 100.

GLOBAL TAP
Allows the user to change presets while maintaining the same Tap Tempo

FACTORY RESET
Restores all 60 original Echolution 2 presets.

WARNING: Performing a factory reset will erase all custom preset data stored to the Echolution 2.

REMOTE SWITCH SETTING
Switches between Jump/Freeze and Preset Select Mode

TOGGLING these buttons must be held during power up to toggle the given sticky flag.

CURRENT STATUS of the sticky flag is displayed during power up by the LEDs that the buttons used to toggle them controls.

TOUCH SWITCHES — FILTERS

TOUCH SWITCHES — MULTI-TAPS

SHORT PRESS cycles between:

LP (Low Pass Filter)
TAPE (Analog Tape emulator)
COMB (All Pass Comb Filter)
SWEEP (Resonant Sweep)
LP + SWEEP
TAPE + SWEEP
COMB + SWEEP
NO FILTER

When COMB or SWEEP is active, those filters are animated at a rate determined by the LFO SPEED knob. Try using the LFO SYNC to TAP function for some incredible synchronized filter and delay effects (See Touch Switches: LFO Waveforms for more).

LONG PRESS turns on the CRUSH filter. This is a proprietary bitcrusher/destruction filter that smashes the audio in the delay line according to how loud the input signal is.

Note: On the E2 FILTER PRO, CRUSH is replaced by HALO.

PHASE INVERSION controls the phase of stereo output. It can be toggled by HOLDING the FILTER switch during the boot-up process.

SHORT PRESS cycles between:

1 - delay output matches the tap tempo / delay time
¾ - delay output is ¾ of the tap tempo / delay time value
$^{2/3}$ - delay output is $^{2/3}$ of the tap tempo / delay time value
½ - delay output is ½ of the tap tempo / delay time value
PHI - delay output is 0.382 of the tap tempo / delay time value… this signature feature creates rhythmic echo patterns based on the mathematics of the Golden Ratio.

LONG PRESS 'locks' the currently selected tap option and adds a second tap. The locked tap remains at the previously chosen value and the second tap will now move with each SHORT PRESS, cycling through the available remaining options.

When two taps are active a LONG PRESS gets rid of the second tap and 'unlocks' the first tap.

DELAY OUTPUT BOOST increases the MAX value of the MIX knob to +6dB above the input signal. This can be toggled by HOLDING the TAPS switch during the power-up procedure of the E2.

TOUCH SWITCHES — DELAY LINE I/O

UPPER BUTTON

SHORT PRESS cycles between:

TRAILS - old echos "spill over" after bypass for smooth transitions.

LISTEN - echo material is recorded (although not heard) while in bypass.

NORMAL- normal bypass (no LEDs lit up).

LONG PRESS turns on DRY KILL - this cuts out the analog clean signal from the mix. DRY KILL is useful for special effects or when using a parallel effects loop on an amp or when adding delay to a full mix

DRY KILL DURING BYPASS - enables Dry Kill when Engage is off. This can be toggled by HOLDING the DELAY LINE I/O switch during the power-up procedure of the E2.

TOUCH SWITCHES — SPECIAL FUNCTIONS
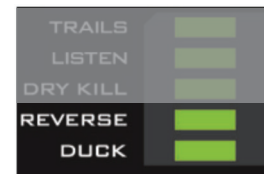
LOWER BUTTON

SHORT PRESS turns on **REVERSE** – reverses tape in delay mix

LONG PRESS turns on **DUCK** – lowers delay mix with higher input signal

ADJUSTABLE FILTER CUTOFF FREQUENCY
The default filter, LP filter, and Tape filter can have different settings for each preset. To change the corner frequency of the currently enabled filter, Press and hold both the Filter Selection and Bypass Selection Touch Switches, and turn the Speed knob while still holding down the switches.

Factory Settings : Default Filter = Fully CW
LP Filter = 11 o'clock
Tape Filter = 9 o'clock

Any changes made to these settings can be saved to the current Preset using the Preset Encoder (See 'Preset Saving' in the 'Presets' section).

GENERATE MIDI CLOCK - Allows the E2 to generate its own MIDI Clock. This can be toggled by HOLDING the SPECIAL FUNCTIONS switch during the power-up procedure of the E2.

TOUCH SWITCHES — LFO WAVEFORMS

SHORT PRESS cycles between:

Triangle
Square
Ramp
Random (Sample & Hold)
Super Triangle
Super Square
Super Ramp
Super Random

The "Super" version of each waveform has 4 additional LFOs superimposed onto the original LFO waveform.

LONG PRESS turns on **LFO SYNC** - this synchronizes the LFO to the Delay Time as set by the delay time knob, tap tempo or MIDI beat clock. When LFO Sync is turned on, the LFO SPEED knob determines the LFO Speed to Delay Time ratio with minimum being 1 LFO Oscillation:8 Delay Cycles and maximum being 8 LFO Oscillations:1 Delay Cycle for fifteen possible values (1:8, 1:7, 1:6, 1:5, 1:4, 1;3, 1:2, 1:1, 2:1, 3:1, 4:1, 5:1, 6:1, 7:1, 8:1)

MIDI THRU - Enable MIDI Thru signals. This can be toggled by HOLDING the LFO WAVEFORMS switch during the power-up procedure of the E2.

TOUCH SWITCHES — EXPRESSION CONTROL

SHORT PRESS cycles between EXP control of:

R - Delay Repeats
T - Delay Time
M - Delay Mix
S - LFO speed
D - LFO depth

Note: The Heel setting is fully counterclockwise by default, and the knob position determines the toe setting.

LONG PRESS turns on ENV MAP to EXP - this sums the internal envelope follower with the current expression pedal or on-board knob value for the chosen parameter, allowing touch sensitive control over every knob.

When using the **ENV MAP** to EXP function, the position of the expression pedal or onboard knob will be summed with the envelope voltage.

ADVANCED MAPPING : The expression pedal and/or envelope can be used to control any combination of the knobs on the E2. See 'Echolution 2 Application' Section for more details on how to implement this setting.

INPUT MIDI CLOCK - Enables MIDI Clock in. This can be toggled by HOLDING the EXPRESSION CONTROL switch during the power-up procedure of the E2.

TOUCH SWITCHES — DELAY TIME RANGES

UPPER BUTTON

SHORT PRESS cycles between:

Short - 10ms → 100ms
Medium - 100ms → 1sec
Long - 1sec → 10sec.

LONG PRESS turns **OFF** the delay line. This allows the filters and modulation sections to be used with no delay

NON-PITCHED MIDI TRACKING - allows the MIDI beat clock to change without pitch shifting. This can be toggled by HOLDING the DELAY TIME RANGES switch during the power-up procedure of the E2.

TOUCH SWITCHES — SPECIAL EFFECTS

LOWER BUTTON

SHORT PRESS turns on **PING PONG**. With one tap running, the echo bounces from left to right. With two taps running, each tap is assigned to one side and they swap sides on every repeat. We recommend that **PING PONG** be used only when both outputs are used in stereo.

LONG PRESS turns on **HALO**. This causes the echoes to cascade up in octaves on each repeat.

COPY MIDI CLOCK - Copies MIDI Clock In to MIDI Clock Out. This can be toggled by HOLDING the SPECIAL EFFECTS switch during the power-up procedure of the E2.

PRESETS

The PRESET knob is a rotary push button encoder that facilitates saving and loading of presets. A complete list of all 60 default presets can be found at the end of this manual.

On power up, the unit will load preset 0 in Bank 0. Turning the preset encoder clockwise scrolls through preset numbers 1-9 in Bank 0. Going beyond preset 9 in Bank 0 takes you into preset 0-9 of Bank 1 and so forth. The current Bank is indicated by the upper right light bar, where no lights indicates Bank 0, one light indicates Bank 1, two lights indicates Bank 2 etc…

PRESET LOADING

To Load a preset, turn the preset knob to select the desired number, the digit will flash. When you have arrived at the desired destination, push down the preset knob to load that preset.

Note: Upon switching presets, a new Tap Tempo will be loaded, associated with that preset. In order to bypass this to keep a constant Global Tap, engage Global Tap. See 'Footswitches' for more information.

PRESET SAVING

To Save a preset you have created, push and HOLD the preset knob for 1 second, until the digit begins flashing. Turn the preset knob to select the preset number where you want to save the sound and then push down and HOLD the preset knob for 1 second to finalize the save.

The decimal point will illuminate to indicate that preset is present in any given number/bank. When changes have been made but not saved, the decimal point will flash. If you want to keep your changes, simply follow the save process explained above without changing the selected bank.

PRESET COPY

To Copy a preset from one bank to another simply initiate the save process as explained above and save to any slot you wish.

PRESET SELECT USING THE ON-BOARD FOOTSWITCHES

Hold TAP TEMPO to enter PRESET SELECT mode. The preset digit will begin blinking. A SHORT PRESS on the Tap Tempo switch moves up one preset. A LONG PRESS moves down one preset. Pressing ENGAGE activates the chosen preset. When pressing the ENGAGE switch to activate a new preset, the BYPASS status will not change.

Note: When switching between vastly different sounds, the Echolution 2 will automatically "teleport" taps, making a seamless transition, instantly changing the Tap Tempo without pitch changes.

FACTORY RESET

Holding down both footswitches during power up will result in a factory reset, restoring all 60 original Echolution 2 presets.

WARNING: Performing a factory reset will erase all custom preset data stored to the Echolution 2.

E2R REMOTE SWITCH

The Echolution 2 remote switch port can be set up to work in two different ways. When it is shipped from the factory, the Echolution 2 is programmed so that the Remote instantly switches between the top four presets in each bank as detailed above, regardless of the ENGAGE status.

Preset Load using the optional E2R Remote Switch

SHORT PRESS on the left footswitch of the E2R will instantly load preset 1 in the current bank.

SHORT PRESS on the left footswitch again will instantly load preset 2 in the current bank.

LONG PRESS on the left footswitch moves up one bank (indicated by upper right light bar).

SHORT PRESS on the right footswitch of the E2R will instantly load preset 3 in the current bank.

SHORT PRESS on the right footswitch again will instantly load preset 4 in the current bank.

LONG PRESS on the right footswitch moves down bank (indicated by upper right light bar).

E2 REMOTE SWITCH

JUMP and **FREEZE** using the optional E2R Remote Switch

JUMP modulates the delay line one octave each delay time by default. In order to access other intervals or set a second delay line, see the 'Pitch Shifting' section. JUMP can be toggled without the remote switch as well (see 'Touch Switches: Delay Time Ranges')

FREEZE creates a loop of the length of one delay time, by setting the delay gain to unison with the input. This can be toggled on and off by pressing the **FREEZE** footswitch. This loop can be added to by DISABLING FREEZE by pressing the footswitch once. Playing over one delay time, then ENABLING 1¬¬ by pressing the footswitch again.

To enable the **JUMP** and **FREEZE** functions of the Remote, power up the Echolution 2 pedal while holding the **ENGAGE** footswitch.

Once the **JUMP** and **FREEZE** remote functions are enabled, the Echolution 2 will remember this preference after it is powered down. To disable **JUMP** and **FREEZE** and restore the preference for instant preset access, simply power power up the Echolution 2 while holding the **ENGAGE** switch.

PITCH SHIFTING

JUMP can be used individually on one or two taps. Once a Tap's Max Pitch has been moved from the default "-", **JUMP** will automatically be enabled. The pitch can be changed to any interval between an octave up and an octave down. Turning the Preset Encoder clockwise indicates a pitch **UP** and counterclockwise indicates a pitch **DOWN**. Changing this pitch can be done for the first Tap by pressing the Delay Time (Short, Medium, Long) Touch Switch and the Multi-Taps Touch Switch, and while still holding at least one down, turning the Preset rotary switch to the desired interval. For the second Tap, press the Special FX (Pong, Halo) Touch Switch and the Multi-Taps Touch Switch, and while still holding at least one down, turning the Preset rotary switch to the desired interval. The **VOLUME** of the second tap can be changed by changing the MIX knob while in this menu, holding down the Special FX and Multi-Taps Touch Switch.

With one Tap enabled, and its pitch set to a non-default Pitch, it will jump exactly as expected.

With one Tap enabled, and both taps set to a non-default Pitch, the first Tap will alternate between the two assigned pitches (First Tap pitch for one cycle, Second Tap pitch for one cycle, etc). The second tap will not be heard.

With Two Taps enabled, and only one Tap set to a non-default Pitch, the Non-default tap will jump as expected and the default tap will continue playing as normal, without jumping.

With Two Taps Enabled and both set to a non-default Pitch, both Taps will jump by their associated Pitch Settings.
These pitches can be saved with Presets by the normal Preset saving procedure.

MIDI

Every function of the Echolution 2 can be controlled via MIDI.

SETTING THE E2 MIDI CHANNEL:

1. Power up the E2 while holding down the **PRESET** rotary switch.

2. After the firmware version number has been displayed, a 'C' will appear. This indicates that the E2 will enter the MIDI Channel Selection Menu upon release of the Preset rotary switch

3. Once in this menu, the user can see the current MIDI channel and change it, if necessary, by turning the Preset Rotary Switch. *Possible MIDI Channels are 1-16, with tens indicated by an illuminated decimal point, to the lower right of the number. i.e. 9 = 9, 0. = 10, 1. = 11

4. To select a channel, **PRESS** the Preset rotary switch. The E2 will continue its boot process.

SUPPORTED MIDI COMMANDS

To load a particular preset, simply send a program change command with the desired preset number. The E2 will load that number plus one as the preset. This is because many MIDI controllers send "**PROGRAM CHANGE** x-1" when you select program x. ie. The foot controller will send "**PROGRAM CHANGE 00**" when you select the footswitch corresponding to preset 1. If you want preset 00, send 127 as the program.

MIDI CLOCK OPTIONS

Non-pitched MIDI Tracking: Taps teleport when a new MIDI Tempo is received. The new MIDI clock will only jump if the change in tempo is greater than 10 ms. This can be switched on and off during the boot-up process by holding the Delay Time button.

Enable MIDI Clock In: This allows the E2 to adjust its delay time in accordance with a MIDI clock connected to the MIDI IN port. By switching this off, the E2 will ignore the MIDI clock received in the input and replaces it with its own clock. To toggle the Enable MIDI Clock setting, press and hold EXP button during power up.

Note: 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 Tap Tempo switch.

Enable MIDI Clock Out: This allows the E2 to output its own MIDI clock taken from its Delay Time knob and pass it out of its MIDI OUT port. To toggle the Enable MIDI Clock Out setting, press and hold Special Functions button during power up.

Copy MIDI Clock: This passes the MIDI Clock In, to the MIDI Clock Out. Even if the E2 is ignoring the MIDI Clock In and operating on its own delay time, it will still output the MIDI Clock In. This allows the user to control multiple E2's via MIDI CC's with different delay lengths. To toggle the Copy MIDI Clock setting, press and hold Special Effects button during power up.

MIDI CC MAP

 4 - Exp pedal input
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 - Filter Button
      Special Values : 3 = FILTER OFF
                         4 = LP ON
                         5 = TAPE ON
                         6 = COMB ON
                         7 = SWEEP OFF
                         8 = SWEEP ON
                         9 = CRUSH OFF
                         10 = CRUSH ON

MIDI CC MAP

21 - Bypass Button
      Special Values : 3 = NONE
                         4 = TRAILS ON
                            5 = LISTEN ON
                         6 = DRY KILL OFF
                         7 = DRY KILL OFF
22 - Ducking Button
      Special Values : 3 = DUCKING OFF
                         4 = REVERSE ONLY
                         5 = DUCK ONLY
23 - EXP Button
      Special Values : 3 = NONE
                         4 = REPEATS
                         5 = TIME
                         6 = MIX
                         7 = SPEED
                         8 = DEPTH
                         9 = ENVELOPE SELECTOR ON
                         10 = ENVELOPE SELECTOR OFF
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
28 - Preset Save
29 - Jump Footswitch / Preset 1/2
30 - Freeze Footswitch / Preset 3/4
31 - Loop Open Close (1 = Open; 1 = Close)
74 - Adjust Filter Cutoff Frequency (mapped 0-127)
76 - Second Tap Volume (mapped 0-127)
77 - Set Jump interval for First Tap (shown on table below)
77 - Set Jump interval for Second Tap (shown on table below)
79 – Enable MIDI Clock In (0=off; 1=on)
80 – Enable MIDI Clock Out (0=off; 1=on)
81 – Copy MIDI Clock (0=off; 1=on)

MIDI CC MAP

MIDI CC MAP

ADJUSTABLE FILTER CUTOFF FREQUENCY : Send the desired value (0-127) to MIDI CC#74 to change the corner frequency of the currently enabled filter

SECOND TAP VOLUME : Send the desired value (0-127) to MIDI CC#76 to change the volume of the second tap.

SETTING JUMP INVTERVALS: MIDI CC#77 & 78 Sending a 1 will decrement the pitch, sending a 2 will increment the pitch.

To set the intervals of the first and second taps explicitly, follow this table (send to CC#77 for First Tap and CC#78 for Second Tap:

DOWN	UP
3 -Default pitch	16- Default pitch
4- MINOR 2nd	17- MINOR 2nd
5- MAJOR 2nd	18- MAJOR 2nd
6- MINOR 3rd	19- MINOR 3rd
7- MAJOR 3rd	20- MAJOR 3rd
8- PERFECT 4th	21- PERFECT 4th
9- TRITONE	22- TRITONE
10- PERFECT 5th	23- PERFECT 5th
11- MINOR 6th	24- MINOR 6th
12- MAJOR 6th	25- MAJOR 6th
13- MINOR 7th	26- MINOR 7th
14- MAJOR 7th	27- MAJOR 7th
15- Octave	28- Octave

LOOPING : Send a momentary 1 to CC#31 to Start a Loop, then send another to Close that Loop.

The Preset Save Command can be used to save a preset, after using other midi commands to change parameters.

Buttons can be controlled in two ways, to allow automated patches and also real time manual control.

BUTTON PATCH CONTROL
Set the button value to "1" for a **SHORT PRESS**.
Set the button value to "2" for a **LONG PRESS**

This allows commands to be sent quickly to the E2 without worrying about timing, which makes automated control easy.

MANUAL BUTTON CONTROL VIA MIDI
This is convenient for manual control of the E2 through something like a foot controller, but would be very inconvenient for automated control. Set the button to "127" to indicate that the button should change state from "unpressed" to "pressed". Set the button to "0" to indicate that the button should change state from "pressed" to "unpressed". The time between the above two messages decides if the press is a long or short press. This means that the controlling button on the MIDI controller behaves exactly as the equivalent button would on the E2 front panel. Manual and Patch controls can be mixed as necessary.

APPLICATION

A PC/MAC application has been developed to enable users to control every function of the Echolution 2 via USB.

The application also enables firmware updates and extensive preset management including the ability to import, export and audition presets.

PLEASE take a moment to download the E2 Application from our website at:

www.pigtronix.com/E2application

Starting the Application: To load and change presets on the E2, connect the via USB. To change preset parameters without connecting the E2, Create a Virtual E2.

If you would like, you can change the view of the application to either the Filter Pro or the Ultra Pro by the Display Type drop menu.
Note: The functionality does not differ with each view, and both are compatible with any Echolution pedal.

Presets List: On the left of the screen, there is a list of all of the current presets stored in the E2. This list is ordered in the same way of that at the end of this manual. By **DOUBLE-CLICKING**, the selected preset loads on the E2. Once a preset is selected, it will be displayed in bold in the Presets List.

APPLICATION

Buttons for several options are displayed **UNDER** the Presets List: Save To: This allows the user to save to currently displayed settings to any preset. When Save To is clicked, a window will pop up, addressing the user to highlight the preset from the Preset List which he would like to overwrite these settings to. When the desired preset is highlighted, click save. Save Preset/Bank to File: This saves an individual preset or bank to a file Load Preset/Bank to File: This loads an individual preset or bank to a file
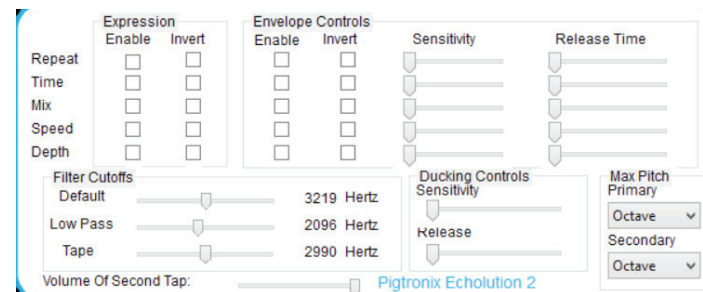
ADVANCED OPTIONS

To access this feature, click the 'Show Advanced Options' button, located under the Echolution 2 logo on the application.

Each row represents a knob on the E2, named accordingly. The first and second columns control parameters for the expression pedal, and the last four columns control parameters for the envelope.

By clicking a box in an **ENABLE** column allow either the expression pedal or the envelope to control the designated knob.
When a parameter is assigned expression pedal control, pointers for the heel and toe become visible around that parameters associated control knob, moving these pointers set the range of control.

Note: When a parameter has any of these advanced mapping features enabled for the **EXPRESSION** pedal, the LED for that parameter dimly illuminates to indicate the expression or envelope control; dimly lit LED's indicate Secondary Controls. The brightly lit LED indicates the Primary Control. The Primary Control

APPLICATION

is NOT subject to the range of control set by the pointers, but utilizes the **FULL RANGE** of the knob. If NO Primary Control is desired, press the **EXP** button until there is not brightly lit LED.

By clicking a box in an **INVERT** column (second and fourth columns), this 'inverts' the range. On an expression pedal, the HEEL setting becomes the TOE setting and vice versa. Similarly, the envelope's range inverts.

The **ENV SENSITIVITY** slider adjusts the sensitivity of the envelope, left being the least sensitive, and right being the most. If playing with a guitar with a strong output, a lower sensitivity is favored. If playing with a guitar with a weaker output, a higher sensitivity is favored.

The **ENV RELEASE** slider lists increases the release time of the envelope in seconds when moved right.

DUCKING SENSITIVITY and **DUCKING RELEASE TIME** are controls for the **DUCK** option (see the 'Delay Line i/o' section for more details). The **DUCKING SENSITIVITY** slider adjusts the sensitivity of ducking, left being the least sensitive, and right being the most. The **DUCKING RELEASE** TIME slider lists increases the release time of the envelope in seconds when moved right.

The **FILTER CUTOFFS** adjust the cutoff frequency of each filter. See more in the **TOUCH SWITCHES** : **FILTERS** section.

MAX PITCH adjusts the pitches of the **JUMP** function. Select an interval from the drop menu in order to change the setting. See **E2 REMOTE SWITCH** section.

PRESET BLENDING : By utilizing the above mentioned features, the application can automatically set the advanced settings to blend between 2 two presets. This can be accessed by clicking Edit->Blend Presets or by clicking command-B on Mac or Ctrl-B on PC.

Note : When using **PRESET BLENDING**, the **TOUCH SWITCH** settings are inherited from the HEEL setting and do not change when in the TOE setting

DEVICE SETS : **A DEVICE SET** is a file which holds all of the presets. This

file can be uploaded to the E2 using **LOAD DEVICE SET** and saved to the computer using **SAVE DEVICE SET**. This allows device sets to be shareable and for more than 60 presets to be created. This can be accessed through the FILE tab in the application. This is also available through right-clicking any of the presets on the left of the screen and selecting the desired action. **MIDI CHANNEL** : This can be set by pressing **EDIT**-> **MIDI CHANNEL**, and selecting a channel in the drop menu from 0-16.

REMOTE SWITCH : The **REMOTE SWITCH** mode can be toggled by pressing **EDIT**->**REMOTE SWITCH MENU**, and selecting a setting from the drop menu.

GLOBAL SETTINGS is a set of options that accommodates a variety of musical requirements. To read more about these settings and how to turn them on and off manually, see the **BOOT OPTIONS** section on page 8.

The only setting that cannot be toggled manually is the position and cutoff frequency of the **FEEDBACK FILTER**. This is a specially designed saturation stage that is largely responsible for the nuance and texture of the echo as it regenerates. The position of the Feedback Filter can be toggled between "On Delay Line Output" and "In Feedback Path Only." Additionally, the Corner Frequency can be adjusted by the slider or by manually entering a frequency from 43 Hz to 11008 Hz.

Note for E2 Deluxe ONLY – The Display Bank Number Instead of LFO option allows the 5 LFO Waveform LEDs in the upper right hand corner to display the Preset Bank by default. In order to toggle the LFO Waveform, press the FLO Waveform button once to display the current Waveform. Then press to cycle through the LFO Waveform options. After 3 seconds of inactivity the LEDs will display the current preset bank.

Reset Global Settings to Defaults allows the user to override any local changes to **GLOBAL SETTINGS** by replacing them with the **FACTORY DEFAULT** settings without performing a full **FACTORY RESET**.
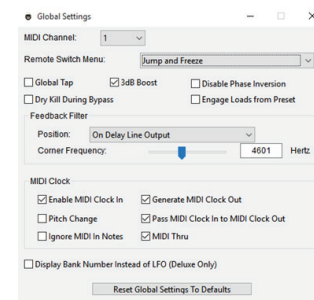
FACTORY PRESETS

BANK #0 - Echolution 2 Core Sounds
0) Echolution 2 Basic
1) Tape Slap
2) Dotted Eigth Mod
3) Golden Stereo Wash
4) Sample and Hold
5) Halo Sync
6) Angels
7) DUB WARS
8) hey you... DUCK
9) tape REVERSE

BANK #1 - Echolution 2 Signature Sounds
10) Dark Mod Delay
11) Tape Warble
12) Comb Filter
13) Sync Sweep Filter
14) LP Sweep Sync
15) Stereo Tape Sweep
16) Comb Saw Sweep
17) 4 Lou (Reed)
18) Loveless Heart
19) Stereo Strobe

BANK #2 - Classic Delays
20) Memory Mod Delay
21) PCM42 Sq. Mod
22) Space Echo
23) 2290 Duck Pong
24) DL4 Sweep
25) SDD3000
26) Big Green Analogue
27) Echoplex
28) Shimmer
29) Crystal

BANK #3 - Modulation Effects
30) Super LFO Chorus
31) DynaFlanger
32) Doubler
33) Dimension Chorus
34) Vibrato
35) Flanger
36) ResoFlange
37) Sweeper Mod
38) Envelope Rotary Chirp
39) Halo Chorus Sweep

BANK #4 - Special Effects
40) LP Halo
41) Stereo Halo Sweep
42) Swell
43) Pure Crush
44) DynaCrush
45) Acid Head
46) LFO Low Pass
47) Phaser
48) Feedback Synth
49) ResoSynth

BANK #5 - Multi-Tap Rhythms
50) 1 + 3/4
51) 1 +2/3
52) 1 + PHI
53) 3/4 + 2/3
54) 3/4 + 1/2
55) 1/2 + PHI
56) 1 + 1/2 PONG
57) 1 + 3/4 PONG
58) 1/2 + PHI PONG
59) 1 + PHI PONG

CREDITS

The Pigtronix design team spent 5 years working on the Echolution 2 pedal. We believe it is the best pedal Pigtronix has ever created. We would like to thank the following people for their help along the way:

Ray Heasman, Howard Davis, Ben Artes, Steve Turnidge, Sean Eisenheim, Trevor Henderson, Alex Nodeland and Daniel Fisher as well as Lisa Rickmers, Megan Leary, the Bethke and Koltai families, Aaron Reed, Dan Pavone, Kevin Griffin, Sean Fitzsimons, Brett Perdie, Thomas Elliot, Bruce Zinky, Stu Suchit and B-Dawg.

Ray Heasman, Ben Artes, Howard "Mick" Davis, Steve Turnidge and David Koltai designed the Pigtronix Echolution 2 during 2010 – 2015 in Port Jefferson, NY and Seattle, WA.

We hope you enjoy your new Echolution 2 pedal! As always, we welcome your input, and value customer feedback.

Contact us at (631) 331-PIGS (7447) or email: Pigtronix@gmail.com. Please check our website, www.pigtronix.com for the latest information on new Pigtronix gear.

Dave Koltai

President

PIGTRONIX LIMITED WARRANTY

Your Pigtronix effect pedal comes with a 1-year limited warranty on parts and workmanship. During the warranty period we will repair or replace, at our option, defective parts or pedals free of charge, and return them to the owner. Warranty service does not include damaged, modified, or misused pedals and such pedals will be subject to a standard repair charge.

What you must do: First, contact us directly via email and describe the problem to us. If the problem cannot be resolved we will have you send the pedal directly to us for servicing.

How to contact us for warranty service:
Email: tech@pigtronix.com
Phone: 631-331-PIGS (7447)

Warranty Limitations: This warranty does not cover defects resulting from improper or unreasonable use, accident, unauthorized tampering or modifications.

To validate your 1-year, limited warranty, please register your Echolution 2, within 30 days of purchase, on the web at: www.pigtronix.com/warranty

THE PIGTRONIX STORY

Pigtronix is the rising star of a second generation of American boutique pedal makers that are redefining the stompbox for today's musicians. Striving to push the dialog of musical effects forward, Pigtronix recognizes the value and relevance of classic vintage sounds as we focus on taking tone a step further. Based in Long Island, NY; Pigtronix is one of the fastest growing companies in the MI industry, with self contained design, manufacturing and distribution all under one roof. Our consistent growth is evident in the ever increasing number of Pigtronix products in the rigs of session musicians, touring professionals, and weekend warriors around the world.

Like the musicians who use them, each Pigtronix pedal has a unique personality. A number of design accomplishments have led to multiple Guitar Player Editor's Pick awards as well as endorsements from legendary bands and musicians such as Andy Summers of The Police (Philosopher's Tone), Los Lobos (Aria), The Mars Volta (PolySaturator), Buddy Miller (Echolution), Bootsy Collins (Envelope Phaser), Tony Levin (Disnortion), Primus (Keymaster), The Roots (Tremvelope) and many more. A consistent emphasis on tonal clarity and touch responsiveness combined with tour grade build quality, limitless versatility and unequaled value make Pigtronix pedals an attractive option for players of all styles.

Pigtronix provides musicians with a high end, USA made effects option that takes their music in new, creative directions. Forward thinking design concepts, attractive artwork and informative packaging are all geared towards the growing market of sophisticated consumers who want to get significant mileage out of their pedal purchase. Pigtronix has a reputation for accessibility and top notch customer service, aiding musicians everyday in their quest for unique sounds and sonic stimulation. Get Pigtronix, get F.A.T. – Futuristic Analog Technology.

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