



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
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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

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.

EXP

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

REMOTE

E2R or compatible TRS momentary remote switch goes here.

MIDI OUT

Sends out MIDI beat clock that is either related 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.

Output 2

Connect amplifier, mixer, DAW here.

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

Input 1

Connect instrument here

Input 2

Connect instrument here

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

MIX

Sets the audio output level of the delay line.

EXPRESSION CONTROL

SHORT PRESS cycles between Repeats, Time, Mix, Speed, and Depth control.

LONG PRESS turns on ENV map to EXP.

REPEATS

Sets the amount of feedback in 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.

DELAY TIME RANGES

SHORT PRESS cycles between Short, Medium, and Long delay times.

LONG PRESS turns off the delay line.

SPECIAL FX

SHORT PRESS turns on Pong.

LONG PRESS turns on Halo.

MULTI-TAPS

SHORT PRESS cycles between 1, 3/4, 2/3, 1/12, and PHI.

LONG PRESS creates a Second Tap.

PRESET SELECTOR

Allows you to save and load presets.

LFO WAVEFORMS

SHORT PRESS cycles between Triangle, Square, Ramp, and Random waveforms.

LONG PRESS turns on LFO Sync.

DEPTH

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

SPEED

Sets the LFO speed.

DELAY LINE I/O

SHORT PRESS cycles between Trails, Listen and Normal.

LONG PRESS turns on Dry Kill.

SPECIAL FUNCTIONS

SHORT PRESS turns on Reverse.

LONG PRESS turns on Duck.

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

6DB BOOST

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

NON-PITCHED MIDI TRACKING

Allows the MIDI beat clock to change the delay time without causing pitch shift.

COPY MIDI CLOCK

Copies MIDI Clock In to MIDI Clock Out

ADVANCED BOOT OPTIONS

Specialty global settings that can be turned on and off by *holding down the appropriate button* during power up. These settings will remain set even after removing power from the E2. The current status of each boot option is displayed during power up by the corresponding LEDs.

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.

ADVANCED BOOT OPTIONS

MIDI THRU

Enable MIDI Thru signals

PHASE INVERSION

Controls stereo output phase inversion

DRY KILL DURING BYPASS

Enables Dry Kill when Engage is off

GENERATE MIDI CLOCK

Allows the E2 to generate its own MIDI Clock

GLOBAL TAP

Allows the user to change presets without changing the Tap Tempo delay time.

FACTORY RESET

Restores all 60 original Echolution 2 presets.

REMOTE SWITCH SETTING

Changes remote switch functionality between between Jump/Freeze and Preset Select.



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

TOUCH SWITCHES — FILTERS



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.

BOOT OPTION: PHASE INVERSION of the delay signal at Output 2 can be toggled by HOLDING the FILTER switch during the boot-up process.

TOUCH SWITCHES — MULTI-TAPS



SHORT PRESS cycles between:

1 - delay output matches the tap tempo / delay time
 $\frac{3}{4}$ - delay output is $\frac{3}{4}$ of the tap tempo / delay time value
 $\frac{2}{3}$ - delay output is $\frac{2}{3}$ of the tap tempo / delay time value
 $\frac{1}{2}$ - delay output is $\frac{1}{2}$ 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.

BOOT OPTION: 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

BOOT OPTION: 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).

BOOT OPTION: 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)

BOOT OPTION: 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.

BOOT OPTION: 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

BOOT OPTION: NON-PITCHED MIDI TRACKING - allows the MIDI beat clock to change without causing the delay to pitch shift. 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.

BOOT OPTION: 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



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

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

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 out of the material that is present in the delay line. This can be toggled on and off by pressing the **FREEZE** footswitch.

When FREEZE is active, the Tap footswitch becomes Loop Record. When FREEZE is turned on, pressing the TAP footswitch begin recording a new loop. A second press (within 10 seconds) will close the loop and begin playback. To overdub, turn off FREEZE to add new material and turn FREEZE back on when done. Hitting the TAP switch will clear any currently looped audio. To record a new loop, make sure FREEZE is turned on and then hit the TAP 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.

JUMP

Each delay tap can be assigned a different pitch shift interval. The pitch shifting can be turned on and off at any point using the remote switch JUMP function or via MIDI.

Once a pitch shift value has been selected JUMP is automatically enabled, so that users without the remote switch can enjoy pitch shift effects. When a pitch shift value has been selected, the JUMP function "latches" and the JUMP switch must pressed again to turn the pitch shifting off. Pitch Shift values can be assigned, saved and recalled in any of the 60 presets.

E2 REMOTE SWITCH

To change the pitch shift value for the first delay tap, hold down both the Delay Time (Short / Med / Long) and Taps buttons and turn the Preset Encoder to select the desired pitch shift value. After simultaneously pressing Delay Time and Taps, (while at least one of them is still held down), the 7-segment display will show a number or "-". This number represents the Pitch change, The intervals are displayed as a number and decimal point; each number represents a corresponding scale degree (5 = perfect fifth) with the decimal point indicating whether that interval is flatted (5. = flat five).

To change the pitch shift value for the second delay tap, hold down the Special FX (Pong / Halo) and Taps buttons and turn the preset encoder.

To change the VOLUME of the second delay tap, hold down the Special FX (Pong / Halo) and Taps buttons and turn the mix knob.

When one delay tap is turned on and a pitch shift value has been selected, JUMP will cause the delay to pitch shift.

When one delay tap is turned on and a pitch shift value has been selected for both taps, JUMP will cause the delay to 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 delay taps turned on, and a pitch shift value has been selected for only one of the taps, one delay will pitch shift and one will not.

With two delay taps turned on, and a pitch shift value has been selected for both of the taps, each delay will pitch shift according to the selected intervals.

When FREEZE is activated, JUMP will only remain active for a single cycle, allowing material to change pitch one interval at a time.

When FREEZE is activated with a single tap but a pitch shift value has been set for both taps, the pitch shift value of the frozen delay will alternate with each press of the JUMP footswitch.

PITCH SHIFTING & SPECIAL FUNCTIONS

SPECIAL FUNCTIONS

Simultaneously pressing certain combinations of two soft touch buttons provides access to deep editing of pitch shifting, envelope sensitivity, filter cutoff, and secondary delay tap volume options. These features are essential for getting the most creative sound design potential out of the E2

PITCH SHIFTING & SPECIAL FUNCTIONS

ENVELOPE SENSITIVITY

Hold down the EXP and LFO buttons while turning the Preset Encoder to adjust the Global Envelope Sensitivity.

PRIMARY DELAY TAP PITCH SHIFT

Hold down the Delay Time Range and Taps buttons while turning the Preset Encoder to adjust the pitch shift value by semitone increments. Turn clockwise to pitch up and turn counterclockwise to pitch down.

SECONDARY DELAY TAP PITCH SHIFT

Hold down the Special FX and Taps buttons while turning the Preset Encoder to adjust the pitch shift value by semitone increments. Turn clockwise to pitch up and turn counterclockwise to pitch down.

SECONDARY DELAY TAP VOLUME

Turn the Mix knob while holding down the secondary tap buttons to reduce the volume of the second delay tap.

CURRENT FILTER CUTOFF

Hold the Filters and Delay Line I/O buttons while turning the Speed knob to adjust the cutoff frequency of the Default, Low Pass, or Tape filter.



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

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 Sync'd, 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 Sync'd). 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

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 INTERVALS: 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	CLASSIC	UP
3- Octave	15- Non-latching Jump	16- MINOR 2nd
4- MAJOR 7th		17- MAJOR 2nd
5- MINOR 7th		18- MINOR 3rd
6- MAJOR 6th		19- MAJOR 3rd
7- MINOR 6th		20- PERFECT 4th
8- PERFECT 5th		21- TRITONE
9- TRITONE		22- PERFECT 5th
10- PERFECT 4th		23- MINOR 6th
11- MAJOR 3rd		24- MAJOR 6th
12- MINOR 3rd		25- MINOR 7th
13- MAJOR 2nd		26- MAJOR 7th
14- MINOR 2nd		27- Octave

MIDI CC MAP

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.

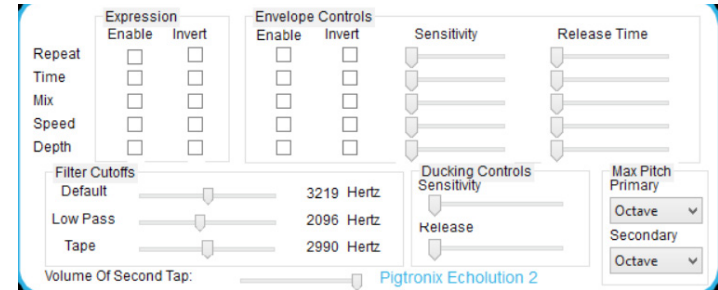
Presets List: On the left of the screen, there is a list of all of the current presets stored in the E2. This list is ordered in the same way of that at the end of this manual. By **DOUBLE-CLICKING**, the selected preset loads on the E2. Once a preset is selected, it will be displayed in bold in the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

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

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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 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.

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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

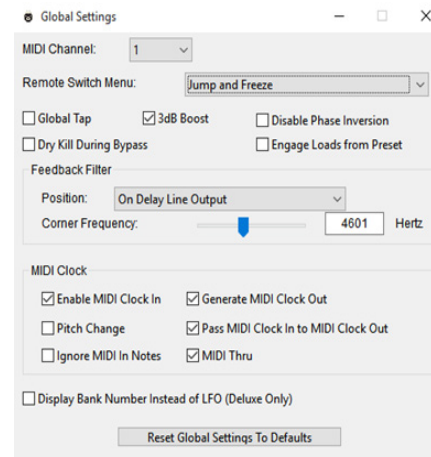
DEVICE SETS : A DEVICE SET is a file which holds all of the presets. This file can be uploaded to the E2 using **LOAD DEVICE SET** and saved to the computer using **SAVE DEVICE SET**. This allows device sets to be shareable and for more than 60 presets to be created. This can be accessed through the 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.

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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.



Note: These are the factory default Global Boot Options.

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 Eighth 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

FACTORY PRESETS

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 Perdrie, Thomas Elliot, Bruce Zinky, Stu Suchit, Dan Bouza 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





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