Echoes T7E

(VST, AU, AAX)
produced by Luca Capozzi (Audiority), November 2017.

Current Manual version: v1.2 (updated October 2018)

Echoes T7E is a faithful recreation of a vintage tube magnetic echo made in Italy in the early '60s. This echo effect unit is based on a magnetic spinning drum with both record and playback heads arranged around a recording wire wound around the drum circumference. This solution provides better stability over the usual tape transport with reduced wow and flutter.

Since the main "core" of this effect is based on the above mechanism, we modelled both the mechanics and the electronics. **Echoes T7E** also provides 3 different playback modes allowing you to set different spinning speed or ever synchronize it to your host tempo extending the original delay length from ~310ms up to ~1100ms.

Please, read carefully both product specifications and system requirements **before** purchasing any **Audiority** products.

Echoes T7E

produced by Audiority, November 2017.

Credits

Code & DSP: Luca Capozzi (Progsounds / Audiority), November 2017.
GUI Design: Luca Capozzi
Published under Audiority brand by Progsounds by Luca Capozzi

Specifications

- 3 Playback Modes: Classic, Varispeed and Sync
- 4 Playback Heads (equally spaced)
- EM81 "Magic Eye" Tube Level Indicator
- 3 Echo Modes: Echo, Repeat and Swell
- 12 Heads combinations
- Tone, Error and Volume controls for each head
- Independent panning for each head
- Stereo Spread
- Magnetic Drum Age and Speed settings
- Internal hum noise (for increased realism and self oscillation)
- Input Tube Low Cut

System Requirements

PC

- Windows XP SP3 or later
- Intel Core 2 Duo 2GHz / AMD Athlon 64 or equivalent
- 2 GB RAM
- Screen resolution: 1024×768
- VST2, AAX 32-bit or 64-bit host

MAC

- OSX 10.7.5 or later
- Core Duo 2GHz
- 2 GB RAM
- Screen resolution: 1024×768
- VST2, AU, AAX 32-bit or 64-bit host

Upgrading from v1.0.2 or lower

Please, read carefully if you are upgrading from any v1.0.2 or lower version of this plugin.

This version will replace your current Echoes T7E installation. Please, backup your presets and license file before continuing.

Old presets, licenses and settings files were located to

<u>Mac</u>

     ~/Music/Audio Music Apps/Audiority

<u>PC</u>

     Documents\Audiority

New Paths

<u>Mac</u>

     All presets, license files and settings will be now located in:
     /Users/Shared/Audiority/

     AAX and VST plugins will be placed in their own Audiority sub-folder located in:

     AAX: /Library/Application Support/Avid/Audio/Plug-Ins/Audiority
     VST: /Library/Audio/Plug-Ins/VST/Audiority
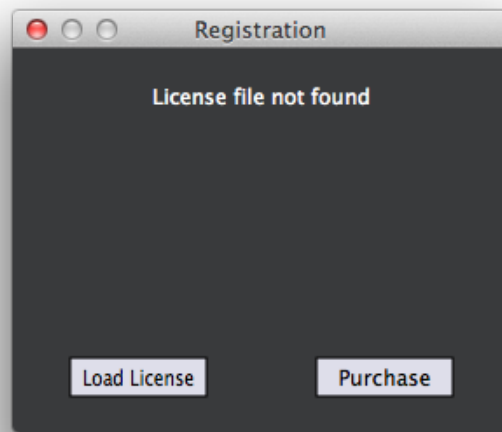
<u>PC</u>

     All presets, license files and settings will be now located to:
     C:\Users\Public\Public Documents\Audiority

     AAX and VST plugins will be placed in their own Audiority sub-folder, usually located in:

     AAX: C:\Program Files\Avid\Audio\Plug-Ins\Audiority
     VST: {Your VST Path}\Audiority

If you are upgrading from a previous version, please remove the old plugin from their related folders.
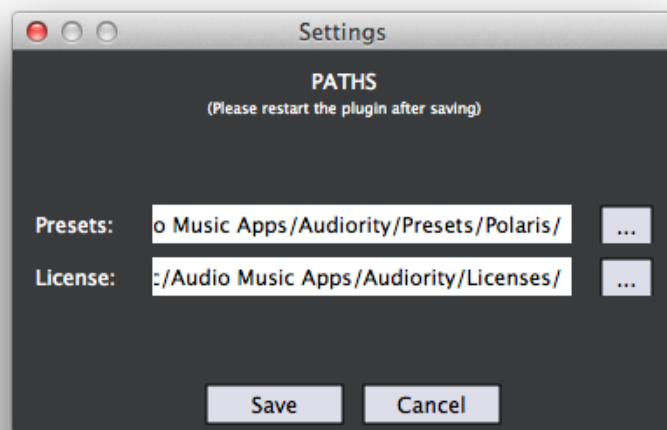
Product Activation

Once you install and open the plugin for the first time, it will be in **Demo Mode** until a license file is loaded. In Demo Mode the plugin will output 3 seconds of silence every minute.

Save the license file you got with your purchase email (or via our User Area) anywhere on your computer.

Then, to activate the plugin, click on the **Audiority** logo and select "**Register**". The Registration window will pop up allowing you to load the license file you got while purchasing the plugin.

User Paths Setting

By selecting "**Settings**" from the logo menu, you can change the path for **Presets** and **License** folders.
Note: Please do not move the **Settings** folder from its default location.

Echoes T7E – Main Parameters

PLEASE NOTE: The following parameters will **ONLY** affect the wet signal, like the original unit.

PLAY MODES

CLASSIC	Original unit's playback with fixed magnetic drum speed.
VARI	Allows to change the magnetic drum speed changing the heads delay time at the price of reduced speed stability at lower RPMs. (See **SPEED** parameter in the next page)
SYNC	Locks the magnetic drum speed to the host tempo in RPM (Rounds Per Minute). If the host tempo is above 100 BPM, the resulting RPM will be half the BPM to keep the delay musica.

DELAY CONTROLS

INPUT CONTROL	Controls the level of the input to the delay line. High levels will overdrive the input tube.
LENGTH OF SWELL	Controls the amount of feedback (number of repeats). High settings will make the unit self oscillate.
VOLUME	Sets the delay volume.
BASS / TREBLE	Controls the tone of the signal.
SELECTOR	The selector has 3 modes: - Echo: one repetition, no feedback - Rep: standard delay with feedback - Swell: like "Rep", but with overlaps from all the heads. Feedback is applied only on the heads selected with the "Switch" knob.
SWITCH	Selects different combinations between the playback heads.
EXTRA SETTINGS	The little triangle in the bottom right corner of the interface will open/close the extra settings page. See next page for more information.

PARAMETER LOCKING: Each one of the knobs can be locked so it won't change its value. This is very useful when you load the plugin on an AUX/SEND channel. To lock a knob, simply **RIGHT CLICK** it and select **LOCK PARAMETER**.

> **TIP**
> A spinning metal thing… what would ever happen if I put my fingers on it? ;)

Echoes T7E – Extra Settings

PLEASE NOTE: The following parameters will **ONLY** affect the wet signal, like the original unit.

HEAD 1 ~ 4

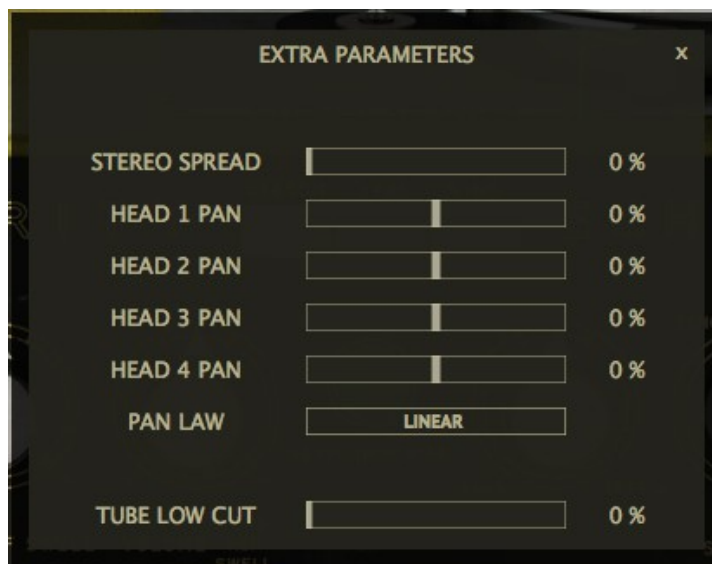|	
TONE	Sets the tone of the head.
ERROR	Controls the position error of the head along the magnetic drum.
VOL	Sets the volume of the head.

GLOBAL

FBK	Sets the minimum amount of signal that will be fed back and adjusted by "Length of Swell" knob.
SPEED	In **VARI** mode only, controls the rotation speed of the magnetic drum. Slower speed will provide longer delay times, at the expense of speed precision.
AGE	Controls the brightness and speed precision of the unit. At 100% the machine is like brand new.
NOISE	Controls the level of the hum noise. This is useful to increase realism and to get the unit to self oscillate without having any other signal passing through. This feature has been extensively used during the '70s to get some serious psychedelic effects.
MIX	Controls the balance between the dry and wet signal.

PARAMETER LOCKING: Each one of the knobs can be locked so it won't change its value. This is very useful when you load the plugin on an AUX/SEND channel. To lock a knob, simply **RIGHT CLICK** it and select **LOCK PARAMETER**.

Echoes T7E – Extra Parameters

The **EXTRA PARAMETERS** panel can be accessed by clicking the gear icon in the bottom left corner of the main Echoes T7E panel, just behind the I**NPUT CONTROL** knob.

<u>EXTRA PARAMETERS</u>

STEREO SPREAD	Spreads each head apart in the stereo field by few milliseconds. Best used with single heads.
HEAD 1-4 PAN	Controls the position of each head in the stereo field.
PAN LAW	Changes the panning behaviour by switching between Linear (0 dB at center) and Pan (-3dB at center). This selection will also impact how much feedback you will get in the circuit. Use Linear keep the traditional high feedback of Echoes, or Pan (-3dB) for a shorter and more "traditional" feedback.
TUBE LOW CUT	Sets the bias in the input tube high-pass filter circuit, cutting off the low end of the incoming signal.

Echoes T7E – Memory System and Switching Circuitry

Echoes T7E memory system is based on the same concept as the original unit. A metal wheel, with an aluminium threadedß ring, features a very thin recording-grade stainless steel wire wound around the threaded ring circumference. Record and playback heads are arranged around the edge of the drum. This concept provides greater stability over the usual tape transport, with reduced wow and flutter. In the picture above you can see that heads arrangement: R and E are, respectively, the Record and Erase heads, while the other one (numbered from 1 to 4) are the playback heads.

The **SELECTOR** and **SWITCH** knobs form the switching circuitry. The **SELECTOR** knob allows selection between **ECHO**, **REPEAT** and **SWELL**. **ECHO** is just one repeat; **REPEAT** is multiple repetitions, depending on the "**LENGTH OF SWELL**" knob; **SWELL** is pretty much like **REPEAT**, but introduces a little signal from all four playback heads in the mix. That's very useful to reproduce reverb type effects.

The **REPEAT** setting is the one to use to replicate those classic progressive psychedelic early '70s rock sound.

Position	Head 1	Head 2	Head 3	Head 4
1	●			
2		●		
3			●	
4				●
5	●	●		
6		●	●	
7			●	●
8	●		●	
9		●		●
10	●	●	●	
11		●	●	●
12	●	●	●	●

The **SWITCH** knob enable the selection of different heads and combination of heads for single and multi-tap delay. This chart shows the actual combinations available with the 12 positions **SWITCH** knob.

CHANGELOG

v1.2 (October 2018)
- FIX: Wrong feedback strength
- NEW: Pan Law (Extra Parameters)

v1.1 (September 2018)
- FIX: Buttons not automating
- FIX: Output volume still too low
- NEW: Framework update with new paths
- NEW: Drum Stop as parameter
- NEW: Stereo Spread
- NEW: Panning for each head
- NEW: Input Tube Low Cut

v1.0.2 (December 2017)
– FIX: Harsh noise when bypassed (mono to stereo)
– FIX: Dry signal passing on wet channel when the magnetic drum stops

v1.0.1 (November 2017)
– FIX: Right channel not working as stereo send
– FIX: Click while changing SWITCH value
– FIX: Output volume too low
– FIX: Extra parameters panel disabled by default
– FIX: Installer detecting wrong home folder on Mac
– IMP: Better CPU performance

v1.0 (November 2017)
– Original release

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Last updated on August 1, 2018

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or checkout our site at www.audiority.com

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Luca

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