



ECHOLEFFE TAPE DELAY

user manual ETD 1.0

KORNEFF
the other side of sound



Echoleffe Tape Delay

The Echoleffe Tape Delay (ETD) is a vintage style tape delay unit based on an obscure, German-made tape echo from the early 1960s. Featuring an all-tube signal path, multiple record and playback heads, the “Golden Box,” (it was finished in a metallic gold tone) was a superb sounding device, beautifully built, and with a lot of control and sound options.

To make our Echoleffe, we precisely modeled a vintage unit from 1961, added enhancements to make our plug-in even more flexible and fun. Users have control of almost everything—from delay time and level to the age and wear of the tape and the electronics, tape formulation, saturation, bias and more.

But our ETD is much more than a tape delay. It can also be used as a tape saturator, which gives you the vintage sounds of an analog tape deck (without any delays) or an all-tube preamp (without delays or tape saturation).

The original Golden Box was not an intuitive device to use, and since we retained its original front panel control layout and labeling, and added functionality to it, our ETD requires a bit of explanation to use effectively. We'll try to make learning it as painless as possible...

Minimum System Requirements

Quad Core i5 Processor
4GB of RAM
Mac OS X 10.14 or Later
Windows 7 & Above

Supported Plug-in Formats

Intel Mac 64bit: VST3, AU, AAX
Windows 64bit: VST3, AAX



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WHAT'S A TAPE DELAY?

Tape delays came into being in 1950, thanks to Mr. Les Paul. Until the 1970s, tape delay was about the only way to get an echo effect in a recording studio or at a live gig, unless you brought some huge reflective cliffs or buildings with you.

On an analog tape deck, there are three different tape heads which are on the path of the tape. The first head the tape hits is the erase head, which erases the tape of previous recordings. Next is the record head, which "prints" sounds onto the tape, and last is the play head, which "reads" the sounds off the tape so the recording can be heard.

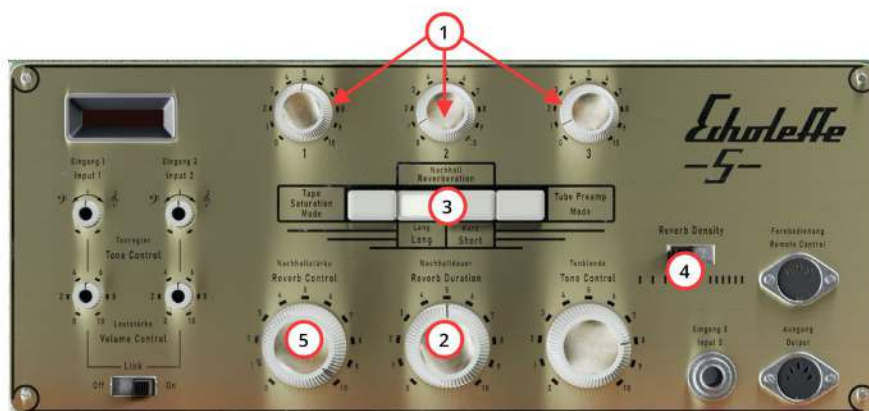
The record head and play head are spread apart, so there is a time delay between what the record head prints onto the tape and what the play head plays back. The time delay increases if the two heads are spaced further apart, or if the speed of the tape deck is slowed down. Likewise, the time delay is shorter if the two heads are closer together or the tape deck runs at a faster speed. If some of the signal from the play head is routed back to the record head, then there will be multiple iterations of the signal printed on the tape, which the play head will read again and feed to the record head again, over and over... And that is how a tape delay makes multiple echos.

Some tape delays, like the Maestro Echoplex, used a sliding play head to adjust delay time. Other units adjusted delay by changing the motor speed. Eventually, engineers figured out that if you had multiple record heads, or multiple playback heads, a tape delay could generate a lot more echos at different intervals, based on the spacing of the various tape heads.

When it was introduced in the early 1960s, the inspiration for our plug-in was truly innovative. It had three record heads that were mathematically spaced to give musically related echos based on subdivisions of the tape speed. There were two playback heads, one of which was always in operation, and again, positioned such that the echos produced were musical. A second playback head could be switched in to effectively double the amount of echos produced. The result was the Golden Box was incredibly versatile, able to produce from a single slapback, to multiple echos mathematically related to each other, to a veritable swirling fog of echos. There is no tape delay like it.

And that is why we decided to build this plug-in, our Echolleffe Tape Delay, around an actual physical specimen, which Dan spent hours taking apart, fixing, measuring, metering, and finally designing and programming. The result is the best sounding, most versatile and utterly unique tape delay simulation available.

And it is waiting for you to play with it!



QUICK START

I personally hate quick starts, but honestly, do this right now and your life will be easier. Do the Quick Start and then read the rest of the manual, or just go make noise.

Instantiate the ETD on the insert of a stereo vocal track, or a guitar part, etc. Press play on your DAW.

1) Adjust the three panel knobs at the top of the unit. You'll notice that these knobs are controlling the levels of the three different panned delays you're hearing.

2) Next, adjust **REVERB DURATION** (which is Delay Feedback) to increase or decrease the number of echo returns you hear.

3) Click on the white **LONG** button at center. You'll notice the delay times of all the echos get longer. Click it back to **SHORT** and unit reverts back to its original delay times.

4) Switch **REVERB DENSITY** to the right and the amount of echos you hear will double.

5) Turn **REVERB CONTROL** (this is Dry/Wet Balance) fully clockwise and you'll hear 100% wet - the echoed signal. Turn REVERB CONTROL fully counterclockwise and you'll hear 100% dry signal. Adjust the knob back to 75% wet for now.

6) Turn the **TONE CONTROL** counterclockwise and you'll hear the delay signal high end roll off, but the dry signal will remain unaffected.

Press the Piece of Tape that says ECHOLLEFFE in Sharpie at the bottom of the ETD to load in different presets. Read on to learn everything you've ever wanted to know.

OVERVIEW

The Echoleffe (we will usually call it the ETD to make things simple) has three modes of operation, one front panel, and three rear panels. It is basically comprised of three pieces: a Delay module, a Saturation module, and a Tube Preamp module.



FRONT PANEL

When the ETD initially loads, it is in **TAPE DELAY MODE**. In this mode, all three modules (delay, saturation and tube preamp) are operable.

Please note that the original unit used the word "reverb" rather than "echo." The ETD is a tape echo/delay unit, but it can sound a lot like a reverb unit as well. When used as a tape delay, the ETD has three independent delay lines, with individual level and pan, each of which can be set from 1ms to 4000ms of delay time. Additionally, the ETD can sync to your DAW so delay settings can be precisely in time with your music.

Pressing **TAPE SATURATION MODE** disables the delay module and gives you access to analog tape and tube preamp emulations. Throw this on your mix bus to quickly add that familiar warm analog tape vibe, or crank up the preamp for an almost fuzzbox like distortion.

Pressing **TUBE PREAMP MODE** disables both the tape emulation AND delay. Use it in combination with the input tone controls for a vintage channel strip with tons of character. No delay, no tape saturation, just the warm and creamy all-tube preamp circuit for you to play with. The original unit was famed for the quality of its preamp, which formed the heart of a series of guitar amps in the 1960s.

Click on the **KORNEFF NAMEPLATE** at the top to go to the rear panel of the plug-in.

REAR PANEL



There are actually four possible rear panels for the ETD.

The first panel is the **HEADS** Panel, which allows adjustment of delay times, pan, equalization and tape bias.

The second panel is the **TAPE** Panel, which allows tweaking of the tape saturation characteristics of the ETD. Clicking the **HEAD/TAPE SELECTOR** switches between the HEAD and TAPE panels.

The third panel is active when the ETD is switched into **TAPE SATURATION MODE**. This contains a simplified HEADS Panel and a specialized TAPE panel.

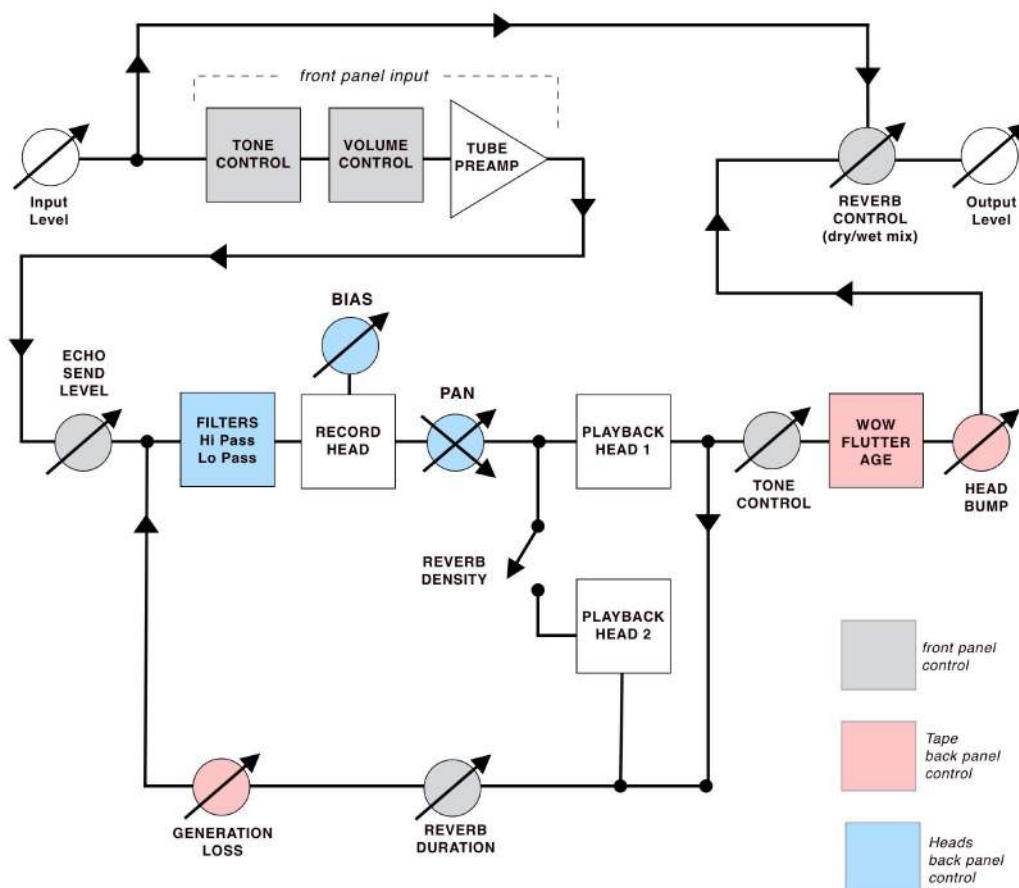
The fourth panel is active when the ETD is switched into **TUBE PREAMP MODE**. This contains controls for tube gain and bias, as well as HPF and LPF.

We'll go into detail on all of this later in the manual.

Click on the **KORNEFF NAMEPLATE** at the top to go to the front panel of the plug-in.

BLOCK DIAGRAM

Before we go any further, here's a simplified block diagram of the ETD. As you can see, it has a complicated signal path, which is why we had to write this novel length manual.

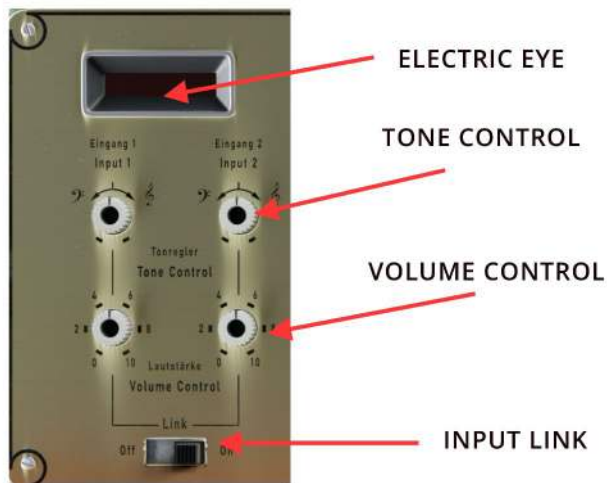


INPUT and OUTPUT CONTROLS

TUBE PREAMP INPUT SECTION



OUTPUT CONTROLS



These are the input controls that let you adjust the tube preamp.

I'm trying not to bore you. It's still early in the manual, though.

This section allows adjustment of the input levels to the tube preamp and it is **ALWAYS** active when you use the ETD. It all starts here. Note that the preamp **ONLY** effects the wet signal—the signal that is being processed by the ETD.



The tube preamp has two inputs, left and right. They are normally linked together, but you can unlink them to fine tune your levels or stereo effect.

ELECTRIC EYE is an input levels meter, left input is to the left, right input is to the right (I feel dumb having written that sentence). In any case the levels should be moving towards each other and meeting somewhere in the middle. This is right off the original unit!

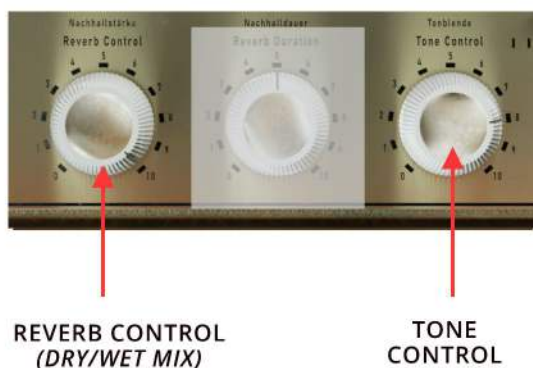
TONE CONTROL is a tilt style EQ. The tilt point is at 1kHz. At 12:00 the EQ is flat. Turn it towards the right and everything above 1kHz gets louder, and everything below 1kHz gets quieter. Turn it to the left and the opposite happens. There is +/- 5dB of gain available. So, if you turn it all the way right, you'll add 5dB of shelving EQ to the highs, and cut 5dB of shelving EQ to the lows. The TONE CONTROL is really effective for quickly dialing in a warmer or brighter tone.

VOLUME CONTROL is the output level of the tube preamp. It provides a 10dB boost at 100% clockwise. Turn it all the way to the left to reduce the level by -100dB. The VOLUME CONTROL is useful for fine tuning saturation and distortion.

LINK connects the two input channel controls together, as mentioned above. Switch it to OFF to adjust left and right level and EQ independently of each other.

OUTPUT CONTROLS

REVERB CONTROL is a DRY/WET blend or mix control. Turn it to 0 for 100% dry, unaffected signal. Turn it to 10 for 100% wet delayed signal. Note that if you're using the ETD in Preamp mode or TAPE SATURATION MODE, you'll probably set this to 100% wet.



The Output Controls.

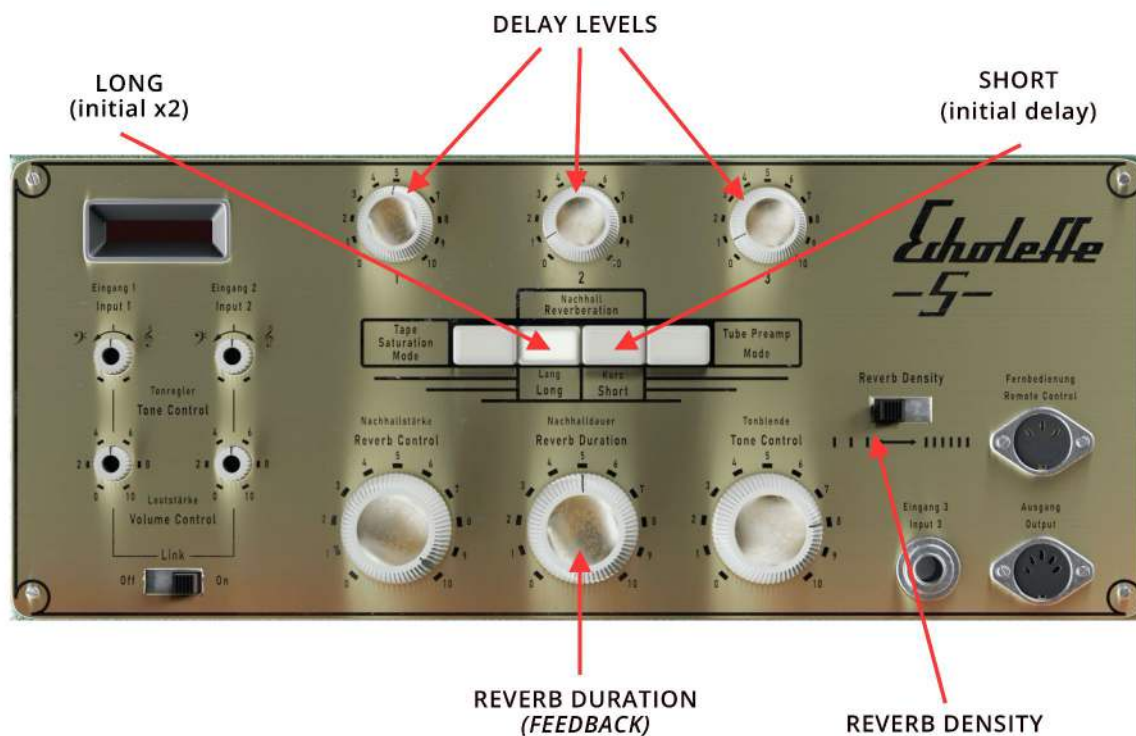
Gee. Look at all this empty space.

TONE CONTROL is an EQ that's across WET SIGNAL OUTPUT ONLY. It doesn't have any effect on the dry signal passing through the ETD. This is a low pass filter which steadily rolls off the highs of the delay (wet) signal. It does not affect the dry (original) signal.

TAPE DELAY MODE

The default mode of the ETD is Tape Delay Mode. The front panel controls let you set the level of the three independent delay lines, switch delay times, and adjust amount of echos produced.

DELAY LEVELS are the 3 knobs at the top, labelled 1, 2 and 3. These set the levels of the three independent delay lines. What is actually happening is these adjust the levels feeding the three different record heads of the delay, so if you crank these up to 10 you might get some distortion, which is totally cool and highly recommended. Obviously, the knob marked 1 controls the level of Delay Line #1 and don't make me explain this, I'll be very disappointed.



DELAY TIME CONTROLS

SHORT is the base time delay of the ETD. It simulates the tape transport running fast—at 30cm/sec.



LONG doubles the delay times of the unit by simulating running the unit at 15cm/sec.

REVERB DURATION is the echo feedback control. At 0 you'll hear 1 slap, as you turn it clockwise you'll hear more slaps and echos. At some settings, turning this all the way up will result in "runaway" delay, which is a really cool effect! You can pretend you're King Tubby!

REVERB DENSITY basically doubles the number of echos, but it isn't the same as turning up REVERB DURATION. On the original physical unit, throwing this switch would engage a second playback head, so that the signal recorded on the tape would play back twice. Our unit simulates this same effect. Think of it as adding additional echos in between the echos you're already hearing. If REVERB DENSITY is pushed to the left, the ETD sounds like a traditional tape echo unit. If you push it to the right, it produces TONS of echos and sounds a lot like a reverb.

Remember, you can also adjust the output section's **REVERB CONTROL** to vary the DRY/WET blend, and use the **TONE CONTROL** to roll off the highs of the echo signal.

SETTING DELAY TIMES

Although there are delay time controls on the front of the ETD, you'll usually be using the HEAD Rear Panel to set delay times.

The ETD has two delay modes.

The first is HOST, in which the delay times of the three delay lines are slaved to the BPM of your DAW. Delay times are set to subdivisions of the BPM reading, and each of the three delay lines can have a different setting. This allows for very complex intermixes of delay times, which vary with the tempo of your music. This is very in keeping with the philosophy of the original, which was designed to sound musical.

The second delay mode is MANUAL. A delay line set to manual is no longer slaved to the DAW and the delay time is manually set from 1ms to 4000ms (4 seconds). The original unit from 1961 couldn't get anywhere near 4 seconds of delay—no tape delay could unless you figured out a way to get the tape heads several feet apart from each other.

Manual delay settings are useful in many instances, and the ETD also lets you set the individual delay lines to either, so you can use combinations of delays synched to the host along with manually-set delay times

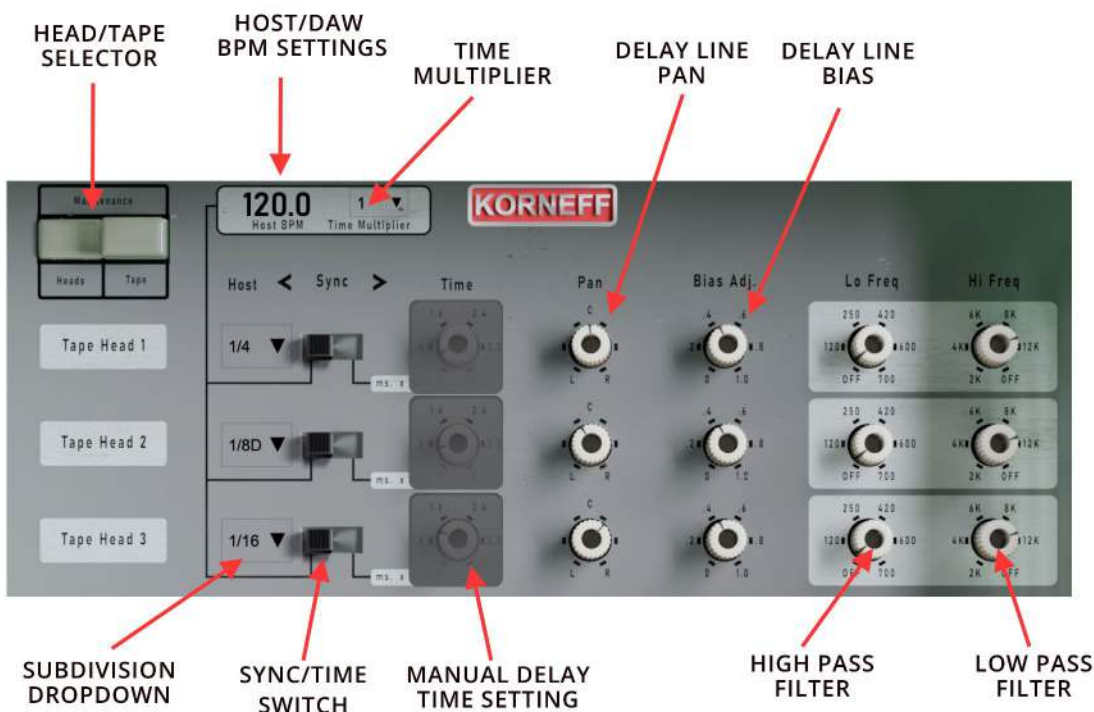


To adjust delay times, you need to switch around to the HEADS Rear Panel. Click on the **KORNEFF NAMEPLATE** to switch to the rear of the unit and depress the HEADS control at top left if the HEADS Panel isn't showing (get it to look like the diagram below...).

HEADS REAR PANEL

The default state of the ETD syncs the delay time to the BPM setting of your DAW.

HOST BPM SETTINGS shows you the current tempo of your DAW. The ETD automatically finds this and spaces itself to it.



TIME MULTIPLIER is a drop down that basically does math to the BPM setting and changes the delays. At a setting of 1, any delays that are set to HOST are slaved to the exact BPM setting. So a delay set to 1/4 will produce echos on quarter notes exactly on beat with the BPM reading. Setting the multiplier to 2 effectively HALVES the BPMs feeding the delays—the HOST BPM SETTING won't change, but the delay time will effectively double, and now those 1/4 note delays will sound like 1/2 note delays. 3 divides the HOST BPM by three and further changes the subdivision, and 4 lowers the subdivision even further, such that a delay setting of 1/4 will produce delays once every four beats.



This sounds complicated, but in use, it's pretty easy. Set it to 1 and leave it alone, or play with it and experiment and see what you get. Don't get hung up on the math.

SYNC/TIME switches can be set independently for each delay line. When it's set to the left, HOST, the delay line gets its setting from the BPM and the SUBDIVISION DROP DOWN. When it's set to the right, the delay line's time is set by the MANUAL DELAY TIME SETTING knob.

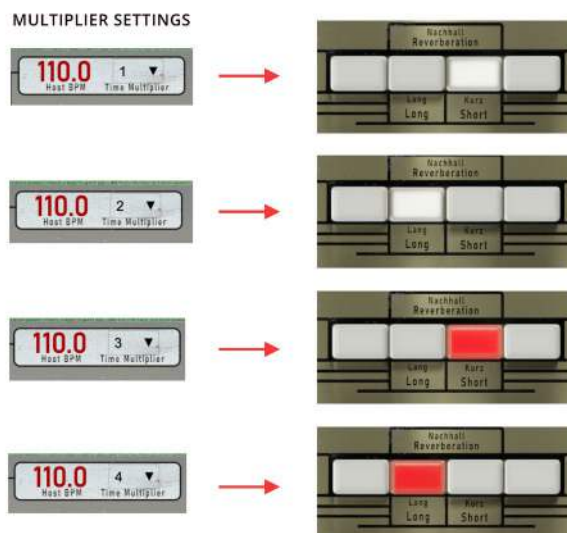
SUBDIVISION DROP DOWN sets the subdivision of the beat. Click on it to get a drop down menu with subdivision setting from 1/1 all the way down to 1/64. There are also dotted and triplet settings to allow you to program swing and feel into your delays. Confused as to what all this is? Don't worry! Pick out a preset that sounds good or mess around 'til you like what you're hearing. It's all good.

MANUAL DELAY TIME SETTING adjusts delay time from 1ms to 4000ms, as I've said now like 20 times. Hold down the COMMAND KEY on a MAC or the CONTROL on a PC to fine tune the setting. SHIFT CLICKING on the knob allows you to type in a delay time.

HOW THIS RELATES TO THE FRONT PANEL

The **TIME MULTIPLIER** on the rear panel is related to the **SHORT** and **LONG** buttons on the front panel. A multiple setting of 1 is equal to SHORT, a multiple setting of 2 is equal to LONG. Double click SHORT to get a delay multiplier of 3. Double click LONG to get a delay multiplier of 4.

Here's more confusion for ya: a TIME MULTIPLIER setting of three will cause the SHORT button to glow red and... you guessed it, a TIME MULTIPLIER setting of 4 will cause the LONG button to glow red. Here is a handy dandy diagram:



MORE DELAY ADJUSTMENTS

The fun never stops. Here are some more things for you to play with.

PAN adjusts the position of the particular delay in the stereo field. Use pan to widen the delay effect out, or tighten it for a mono output. Wider panning generally makes delay effects more noticeable.

BIAS on a tape deck sets how efficiently it records, and how much harmonic distortion occurs. Bias is a compromise setting —increasing record efficiency can increase harmonic distortion. Bias is usually pre-set at the factory, or adjusted by a technician, but it drifts as time goes on and as units age. Don't touch BIAS if you want the ETD to sound as pristine and distortion free as possible. Feel free to turn it up or down to simulate age or to add distortion and non-linearities to your delays.

FILTERS are a low pass and high pass, and allow you to roll off the highs and lows of each of the three delays. These are handy for cleaning up the bottom end of delays, or reducing the highs to tuck delays into the mix more. Turn them both up to get really Lo-Fi "telephone" sounds out of the ETD. By the way, these filters are in the feedback path of the delay, which means the more repeats you have, the more of an effect the filters will have. As an example, if you roll off some highs, each successive echo will sound duller and duller. Fun stuff! Be creative!

Oh... and one more thing, because we like having too much stuff to play with, on the UTILITY PANEL is a button that looks like this:

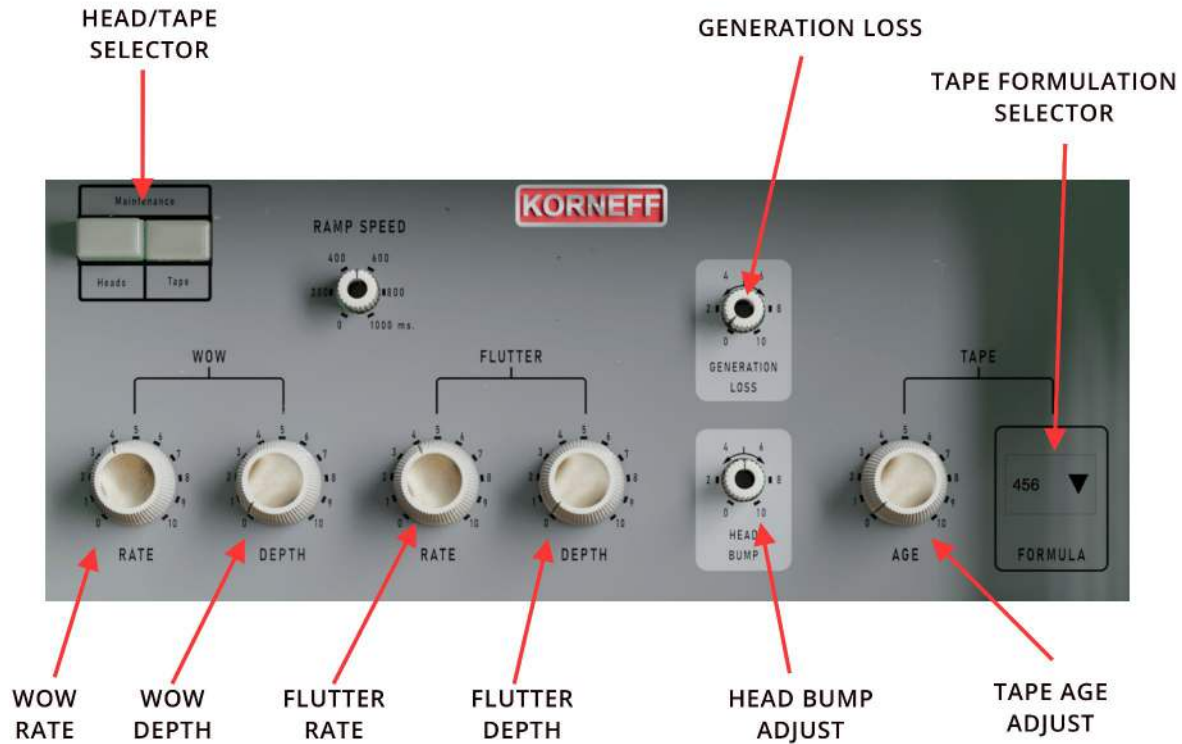


Click it and it will RANDOMIZE every setting of the unit. It only works in TAPE DELAY MODE, and it doesn't change your REVERB CONTROL (the Dry/Wet mix).

My hands hurt from writing all this. Onward!

CONTROLLING TAPE SATURATION AND AGING

Ok... this is the really fun stuff! Press on TAPE on the HEAD/TAPE SELECTOR to access the analog tape emulation controls you see below:



What makes a tape delay so unique sounding is the tape itself. It wears out, breaks, and changes as everything ages. Back in the day, studios might constantly change the tapes in their delays and keep everything clean. But artists, like some guitar player, might never change the tape and never clean the machine, and all the accumulated wear and tear and dirt and lack of maintenance would become a signature part of that player's sound. The ETD lets you mess around with all of that stuff.

This is where it gets really really cool.

WOW and **FLUTTER** are variation in tape speed, and therefore the pitch of whatever is recorded on it.

Wow happens at a slow rate and on tape decks is caused typically by tape stretching, inconsistencies in motors, deformed capstans, etc. Flutter happens at a higher rate and is



principally caused by friction as the tape crosses over the record and playback heads. So, they are sort of the same thing, but one happens at a faster rate. The audible effect of wow and flutter ranges from tiny, hardly noticeable changes, to extreme changes in time and pitch that sound like flanging or pitch shifting.

AMOUNT adjusts how much pitch bend and time changes wow and flutter generate. On a flanger, AMOUNT is equivalent to Depth.

RATE adjusts how frequently the wow and flutter changes occur. On a flanger, this is the same as setting the flange rate.

As tape delays age and wear, wow and flutter worsen and become more noticeable, so to get the sound of an old, worn out tape delay, turn up the AMOUNT and RATE.

To get really interesting flanging effects that DO NOT sound like typical guitar pedals or digital delays in studios, you are totally encouraged to crank up DEPTH and mess with RATE. The Echolleffe is a SUPERB noise making machine.

GENERATION LOSS adjusts how much noise and distortion happen as the delays decay. This effect gets more pronounced with higher settings of REVERB DURATION on the front panel.

Generation loss initially affects the high frequencies, but the more repeats there are, the more frequency loss there is overall, and the more noise and hiss builds up. This is another simulator of age and wear: older tape delays or delays with worn out tape, have more generation loss.

Set this minimally to get a more modern, pristine sound.. Crank it up to get the sound of a worn out unit or something with lower fidelity like a Binson or a Tel-Ray Oil Can delay.

HEAD BUMP is a simulation of irregularities in the low frequencies of a recording caused by the physics of the way the playback head and the tape interact.

We like to think of the response of audio equipment to be flat at all frequencies, but that isn't true at all regarding analog tape decks. Depending on the tape deck speed, the tape formulation, the geometry of the way the tape goes over the heads, etc., head bump can range from unnoticeable to a 2 or 3dB increase somewhere below 100Hz. The bump can be enough that some engineers prefer certain tape speeds and tape formulations because bass and kicks sound better.

Our HEAD BUMP control isn't something normally found on any tape deck — head bump isn't manually adjustable, but on the ETD it is. As you turn up HEAD BUMP, the low end frequency irregularities will become more and more exaggerated. Setting the formulation



to 456 will shift those anomalies up into the 100 - 200Hz range, and you'll probably hear them a bit better. If the formulation is set to 499 the irregularities will happen down more in the 40 - 50Hz region.

TAPE AGE simulates the loss of frequency response and the increase in noise, distortion and print-through that occur as a piece of magnetic tape wears out.

As tape wears, it becomes harder to erase — the magnetic particles become resistant to being re-magnetized. As a result, the frequency response starts becoming non-linear (starting in the high end), distortion increases, and bits of previous recordings don't fully erase and "peek through."

At low settings, TAPE AGE can give your recordings a bit more of a vintage vibe. At high setting the TAPE AGE algorithm is severely exaggerated to allow for some "over the top" effects," which make the EDF sound like a strange reverb or a keyboard pad generator rather than a delay.

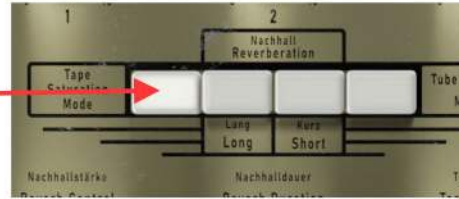
FORMULATION switches between the response curves of two very common analog tapes, **Ampex 456**, which was used throughout the 1970s - 80s, and **Ampex 499**, which was basically a quieter and higher output version of 456 that became popular in studios in the early 1990s.

456 has a bit more bottom end warmth than 499, and 499 tends to sound a tiny bit "airier" and tighter. It's really hard to describe how these things sound. As you increase gain and tape age, 456 will crunch up more and lose transient response, while 499 holds together a bit better. We recommend you switch between the two and experiment. There will be times when the difference is very audible, and other times you'll barely hear it.

Clicking RANDOMIZE will affect these settings. Fun!

TAPE SATURATOR MODE

Press this guy for
TAPE SATURATION MODE!



TAPE SATURATOR MODE switches off all the delays and just uses the tape deck modeling of the ETD to simulate what happens to an audio signal when it is pushed hard into analog tape. To get to TAPE SATURATOR MODE, press the TAPE SATURATOR MODE button on the front panel and then press HEAD on the HEAD/TAPE SELECTOR to get the diagram below:

TAPE REAR PANEL in SATURATION MODE





Vas ist Das Tape Saturation?

Simply put, the more energy you push into a magnetic tape, the more it magnetizes, until it gets to a point where it can't magnetize any further, hence it's saturated. Once tape is saturated, it starts losing its ability to record in a linear fashion, and what you get is harmonic and waveform distortion.

Tape saturation acts like a soft knee compressor with an infinitely fast attack. One of the first things you'll notice as you push into tape is that transients round out a bit. This is especially noticeable on drums. Cymbals no longer "ting," they sort of "pwfishhh." Snares and kicks round out as well. Saturation usually sounds good. A tape saturated vocal tends to sit better in a mix and require less gain riding. Guitars, bass and keyboards become thicker and increase in sustain.

As saturation increases, harmonic distortion increases, and when you really hit tape hard, things become fuzzy and buzzy. Guitars slammed into tape sound awesome. With vocals, we used to try to get them to tape distort when the singer was at full volume — it would add an emotional "grind" to things.

GAIN controls the level of the signal being recorded to tape. The more you turn up GAIN, the more tape saturation you'll get. At settings over 7 you'll start hearing harmonic distortion quite clearly. It's a wonderful thing.

BIAS we've previously discussed. Setting it extremely high or low will definitely cause sonic trouble!

LOW FILTER and **HIGH FILTER** are pass filters that you can use to either roll off undesirable high or low end. The filters are also great for Lo-Fi effects. Setting these in weird ways can make the ETD sound like a distorted AM radio, or a broken telephone.

A QUICK NOTE

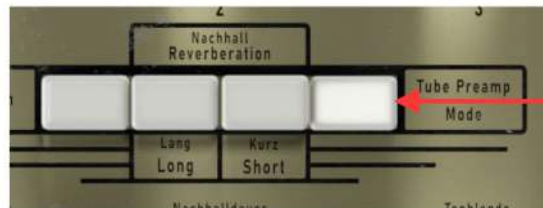
Analog tape recording is very technically complex, and I've simplified many of the concepts in this manual for clarity and brevity. If you want to really dig in to this stuff, try this for starters: <https://www.scribd.com/document/34584596/Ampex-Tape-Recording-Basics>.

If this manual already has your head spinning, just forget reading and just play with your ETD!



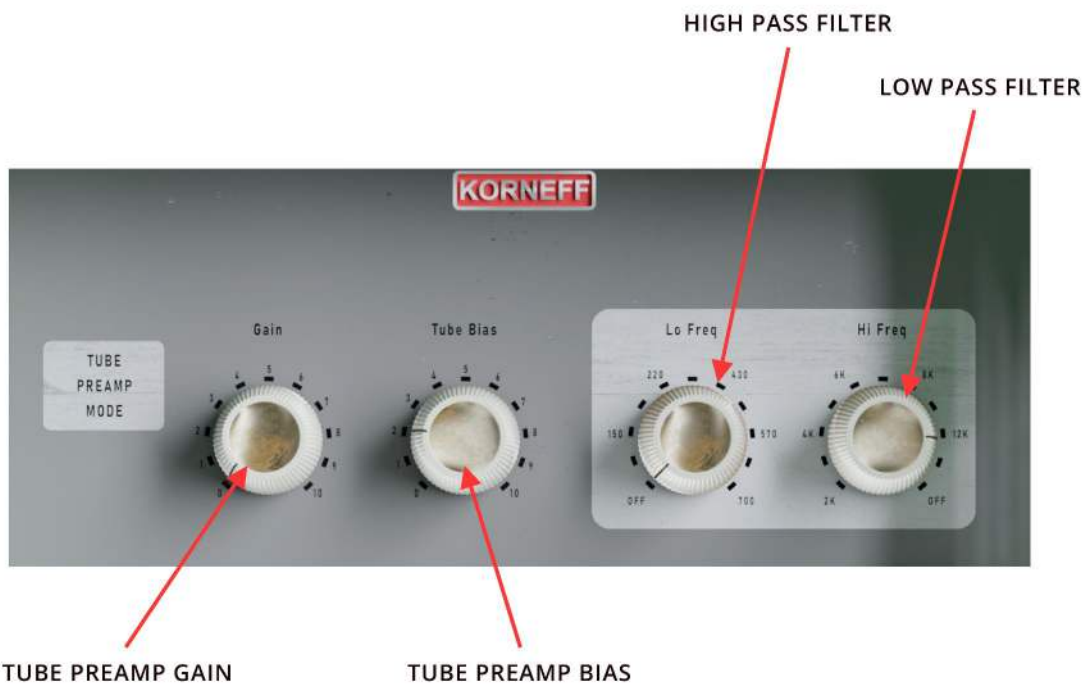
TUBE PREAMP MODE

Press **TUBE PREAMP MODE** on the front panel to switch the ETD into—you guessed it—TUBE PREAMP MODE.



Press this guy for
TUBE PREAMP MODE!

REAR PANEL in TUBE PREAMP MODE





TUBE PREAMP MODE sounds great and doesn't have a ton of controls. Used gently, it can provide a vintage tube console like warmth and roundness. At more extreme settings, it can mimic a tube guitar amp blowing up. Fun!

GAIN - at 0 (fully counterclockwise) the gain is set to unity (no additional gain is added). Turning GAIN clockwise increases the preamp's gain by up to +10dB at full clockwise (10).

TUBE BIAS - adjusts the linearity of the preamp circuit. The default setting—a properly biased tube—is at 2. Turning BIAS up or down from there introduces additional distortion and noise into the preamp. At high settings all hell breaks loose!

LO FREQ - this is a High Pass Filter, and it will roll off the low end of the signal. Use it to knock out rumble or thin out an overly thud bottom end.

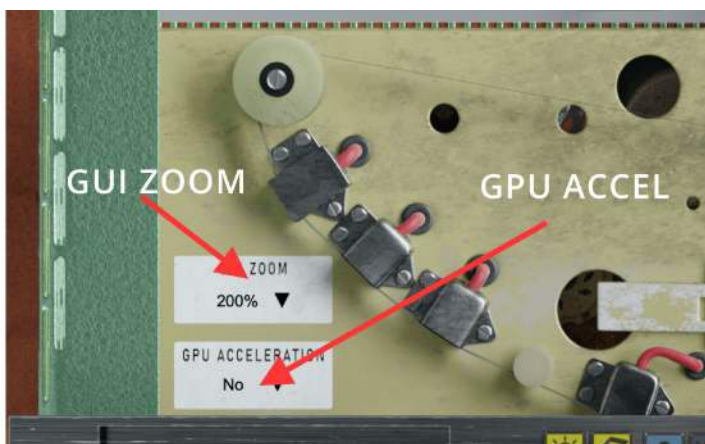
HI FREQ - this is a Low Pass Filter and it rolls off the high end. The default is 15kHz, which gives the EDT a high end frequency response similar to that of the original unit. Turning this clockwise lets more high end pass through; turning it counterclockwise rolls more high end off.

By turning up LO FREQ and turning down HI FREQ, you get a band pass filter effect, which is useful for getting lo-fi sounds like old telephones, cheap radios, etc.

Of course, mess with the **REVERB CONTROL** to adjust the Dry/Wet signal blend, and don't forget that output **TONE CONTROL**. The EDT's preamp is very smooth and lovely sounding, but feel free to crank it up and make it rough and ugly. It's your world—distort it all you want.

INTERFACE CONTROLS

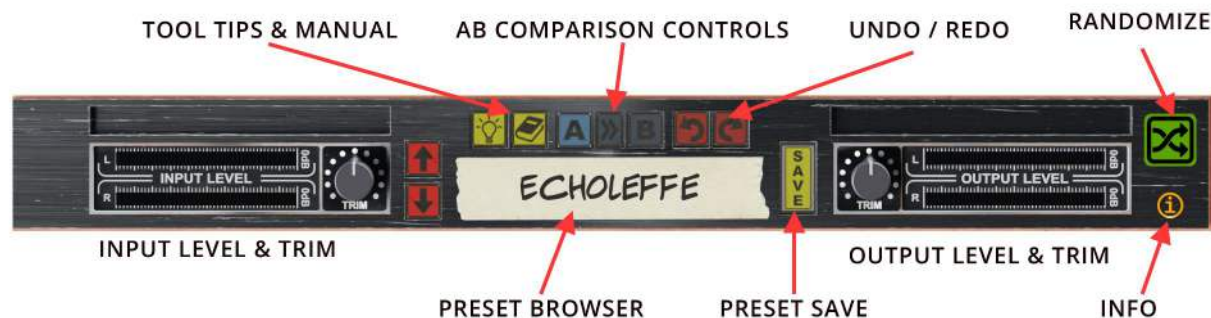
Click on the KORNEFF AUDIO Nameplate to go 'round back to the interface controls.



GUI ZOOM - allows you to change the size of the plug-in's interface on your screen. Because of the weird ass DIN font we copied from the original unit (DIN stands for Deutsches Institut für Normung e.V. , not Dan Is Knitting), I like to set the GUI ZOOM to 150%.

GPU ACCELERATION- Enables OpenGL processing for compatible graphics cards. This is on by default, and will keep your DAW's graphics running without any lagging. However, certain hardware configurations will lag and jerk with this switched in. In those cases, which are rare, switch **GPU ACCELERATION** off. As a rule of thumb, leave this alone and go make noise...

UTILITY PANEL



TOOL TIPS/USER MANUAL: The **LIGHTBULB** brings up the tool tips, and the **BOOK** opens the user manual, which you are currently reading.

A/B COMPARISON: The comparison tools are very cool. **A** and **B** are two independent snapshots of the ETD's settings. Click A and make a few adjustments to the ETD's controls. Click B and make some different adjustments. Click back on A and you'll see all the adjustments you made for A. Click back on B and you'll see all the adjustments you made on B. The >> key copies whatever setting you have in A over to B.

UNDO/REDO: **UNDO**, to the left, reverses all the damage mankind has done to the planet. **REDO**, to the right, restores all the damage mankind has done to the planet, starting with the latest control you tweaked on the ETD. There are unlimited levels of Undo, so feel free to go back to the Cretaceous Period.

PRESET BROWSER: Click on the piece of tape with the Sharpie text on it at the bottom of the unit to access the preset browser and load and save presets. The **RED ARROWS** to the left of the tape allow you to step through and audition presets. The yellow **SAVE** button saves the current setting of the ETD to the preset library.



The PRESET BROWSER has three columns. The column to the far left shows the name of the preset's designer, the middle column shows categories of presets to make it easier to find a sound you want, and the third column shows the specific preset that will load.

RANDOMIZE: This ONLY works in TAPE DELAY MODE, and what it does is it randomizes every single setting on the unit with the exception of REVERB CONTROL (the poorly named DRY/WET control). This is the equivalent to throwing a vintage tape delay down the stairs except it won't be broken. It will totally scramble everything. If you're out of ideas, click this button a few times and hear what happens.

If you're in TUBE PREAMP MODE or TAPE SATURATOR MODE and you click on this button, it will switch the EDT into TAPE DELAY MODE.

INFO: Click this to see the version number of the plug-in, a list of who did what to make it happen, tips for how to behave around naked people, etc.

INPUT TRIM lets you adjust the level of the signal feeding into the EDT. **OUTPUT TRIM** adjusts the signal level feeding out of the EDT. Use the trims to properly gain stage the signal path.

You can crank up the INPUT TRIM to get additional overload and distortion effects from the EDT. Like all Korneff plug-ins, the EDT has a lot of gain potential, and in some cases, too much gain can cause unpleasant digital "crackle." Generally, try to avoid driving the levels over 0dB on the meters.



USAGE IDEAS

Frankly, I don't know where to begin with usage ideas for you all. The Echoplex Tape Delay has virtually unlimited options to it. It has its own distinctive sound, and it's tweakable to the point that it can sound like virtually any tape delay unit that was ever made. Hell, it can sound like a fuzz box!

Some guidelines...

Simple Delays: Turn down two of the DELAY LEVEL controls on the front panel— I usually turn down 2 and 3. Flip around to the HEADS Panel, set SYNC to MANUAL TIME and adjust away. For rockabilly, country and slapback sorts of sounds, set this anywhere from 50 to 200ms. Below 40ms you really can't hear the delay clearly. Adjust REVERB DURATION to get the number of slaps you want, and REVERB CONTROL to adjust the balance of wet to dry.

Tape delays back in the '50s, '60s and '70s generally couldn't be synched easily to the tempo of the music. The engineer would sort of tweak it in as close as possible by ear. I still often set delays manually because I think they stand out a bit better if they aren't dead on the rhythm and tempo of the song I'm working on.

To simulate the sound of a beat up, older delay, like Jimmy Page's famed Echoplex, switch to the HEADS Rear Panel and dial in some Wow and Flutter, and a little AGE and GENERATION LOSS.

Musical Delays: Setting the delay lines to HOST slaves them to the tempo set by your DAW. Turn up DELAY LEVEL for 1, 2 and 3 — set them all equal, maybe at 7, to start with. Flip around to the back. Set 1 to 1/4, 2 to 1/8 and 3 to 1/8D (dotted). Pan 1 to center, pan 2 and 3 pretty hard left and right. Make sure you're doing this on a stereo channel!

Adjust the REVERB DURATION for the number of echos you want. Fine tune the DELAY LEVEL controls to get a balance to the delays. These can all be automated in your mix, by the way.

Press LONG on the front panel, or play with the TIME MULTIPLIER on the rear panel to increase the delay time but maintain a rhythmic relationship with your song.

Reverb: As an experiment, when you're using a musical delay setting, switch REVERB DENSITY to the right. You'll immediately get a huge, lush, and probably overpowering swell of delays, and you'll probably have to adjust REVERB DURATION and REVERB CONTROL to lessen the effect. You can lessen the effect by turning the big white front panel TONE CONTROL to the left a bit. I love the way the ETD sounds as a reverb unit.



The ETD can get a bit thick and cloudy in the bottom end when you've got REVERB DENSITY switched on. Use the Input TONE CONTROL to lift the highs a bit and roll off some of the lows. Alternatively, go to the HEADS Rear Panel and use the FILTERS to the right to roll off some of the low end. The more you pan things to center, the more you'll have to clean up the bottom to keep the bottom end tightness of your mix.

Flanging: Set the SYNC on the three delay lines to MANUAL, and then adjust them to very short delay times in the neighborhood of one to eight milliseconds (1-8ms). I usually set them all differently.

Switch over to TAPE Rear Panel and get busy with them wow and flutter knobs! Remember that DEPTH settings will really affect the tuning — things will sound way out of pitch, but that can be cool, too. I also like to turn up AGE as it increases the thickness of the effect and adds a lot of random noise and mud.

On the front, remember to play with REVERB DURATION and REVERB DENSITY.

Tape Saturation Effects: The best way to get a handle on tape saturation is by playing around with it on drums. So, start off by inserting the ETD across a drum bus.

Click on REVERB OFF to disable the delays. Set REVERB CONTROL to 10. Press the KORNEFF NAMEPLATE to go 'round to the back, get on the HEADS Real Panel and crank up the GAIN.

The first thing you'll notice is a gentle squashing of the transients. Saturation has a compression effect and it reduces the dynamic range of your signal.

The drum sounds will seem to get "longer." You might find they have more weight and presence in your mix. If you keep pushing up the GAIN, the tape saturation will turn into a very gentle clipping—sort of like a soft buzzing sound. On a kick, it will sound a bit like the kick mic is being overloaded, and it will make snares sound hulking and aggressive. It might get a bit ugly on cymbals.

Tape saturation is a great way to warm up synth tracks. Bass and guitars usually get extra badass mushed into tape—that is the sound of rock records for most of recorded history.

Tape saturation is wonderful on vocals, and makes them easier to mix. This is, of course, caused by the compression effect of saturation, and also by the generation of additional harmonics that give the vocals a bit more oomph.

I find the Ampex 456 FORMULATION setting breaks up and saturates more easily than the 499 setting, which makes sense since 499 was specifically designed to not break up as easily as 456. Set FORMULATION to 499 if you want the compression of tape saturation without the audible artifacts you get with 456.



For not knowing where to begin, I've written quite a bunch. Eek!

I hope you have a lot of fun with our Echoleffe Tape Delay. Spend a few hours with a guitar plugged into it, or a vocal mic, or some synths, and play with all the controls. I cannot begin to cover everything this insane puppy can do sonically. There are so many song ideas locked up in the ETD, waiting for you to let them out.

Thanks for being a Korneff Audio Customer. We love you guys.