USER MANUAL

Ambient Delay

Dual Feedback Modulated Delay for Scope and Xite

1. Introduction:

Thank you very much for your interest with SpaceF-Devices.

Ambient Delay is a great delay for electronic music production. It derives from Aux Delay from the BlackBox II, with improvements taken from Echo 35 and from 10 years of using delays in my productions and for other people. I never found a convincing equivalent in the vst world. I needed something that allowed me to quickly get something amazing, ever changing, alive, and using all the capabilities of scope, such as inserts and external modulators.

This effect is 100% compatible with Modular Mixer Mono and Stereo channels and busses, but can also be used in any insert slot of any device in Scope.

Please note that the device always outputs in stereo. It should be used in a stereo Aux insert slot, or in Modular Mixer (any slot).

Generalities

Mono or Stereo?

The installation installs two devices, but both are strictly the same. The one in the Mono folder has been renamed "…Mono to Stereo.dev" in order to avoid confusion on the part of Scope in the case it has to search for the plugin. It also makes the plugin directly available from Mono Inserts, for a more comfortable use with SpaceF Modular Mixer.

Ambient Delay is a Stereo or "Mono to Stereo" effect unit. It can be loaded into stereo or mono insert slots, and will always output in stereo. It will always load by default in a "mono to stereo" setup. This ensures maximum compatibility with all insert-slots, including Modular Mixer V2 mono and stereo channels, which can be modulated and are also "Stereo or Mono to Stereo" insert slots.

Choosing the mono or stereo setup is done by selecting the desired configuration in the input setup at the top right:

a. **When it is set to mono (L/Mono (R=Mod))**
   - Audio is taken from the *Left* Input as usual.
   - Any audio signal on the *Right* Input is treated as a modulator (called "External").
   - The device still outputs a stereo signal

b. **When it is set to Stereo (L/R Stereo)**
   - Audio is taken from the *Left* and Right inputs as expected,
   - Any audio signal on the *Right* Input continues to be a possible source of the Envelope Follower (see modulators below)

- WARNING: if the signal on the right input is a modulator, and the device is set to stereo, then the modulator will be heard in the audio chain, which is generally not desired. Therefore, set the device to stereo only when you don't use an external modulator.

I. USING THE DEVICES

Ambient Delay and Echo 4 allow to create delay that evolve over time, generating frequencies and sounds that you would not have expected.

The rule of the game is to set long feedbacks without distorting the sound. More exactly, we generally want a little bit of distortion, but we also want to keep this under control. What we want to avoid are distortions and levels of feedback that are not useable or that are not easily controllable.

In general long feedbacks distort the sound because you feed the same sound (level+frequencies) over and over again, which at the end piles up until it distorts.

So, Spacef delays (since 2003) modulate the feedback to avoid having the same levels and frequencies over and over again, which greatly minimizes the risk of overly-distorted-and-unusable feedbacks, while keeping the natural degradation of the sound over time which is what makes those devices interesting and powerful.

This is achieved by creating filter modulations that change often, and as a consequence avoid that the sound stays the same too long. That way, distorting feedbacks are avoided because it is not the same sound that is fed over and over again in the dlay/feedback units.

You can still distort, for example with modulations that are too slow or too fast, causing the same frequency/level to be too much present, and so it is fed again and again and finally creates distortion because it piles up over time.

AUDIO PATH

Input→ Delay Input level → Eq→ Feedback line 1 & 2 (with Filters, Level & Squat controls) → Output section

Filters, Level Modulators, and Squat Controls are on the Feedback 2 line, but will also feed the main feedback line.

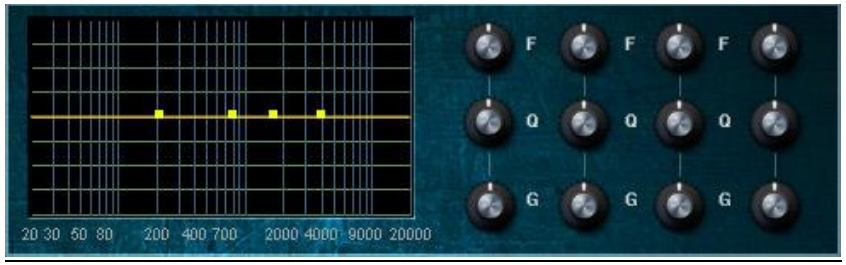
An insert effect is available at the output, but you can set it to be "pre" , before the equalizer.

1. INPUT SECTION

Input Gain: Its default position is -6dB (center / 12'oclock position) and you can add a few dB but not much to keep headroom inside the delay feedback loop. It is made to lower the levels before the Eq, to avoid distortion inside the Equalizer. Moreover, it gives a sufficient headroom for the best experience with the filters and long feedbacks.

Input Setup: it serves the same purpose as the classic **mono/stereo input** button on most Scope Effects. **In Modular Mixer V2, allows to** use a modulation signal on the Right Channel.

2. PRE-EQ



This is a classic 4 bands parametric equalizer which is placed before the delay unit.

It allows creating delay sounds with a lot of contrast compared to the incoming dry sound.
It can also enhance the sound of the filter on the chosen frequencies, for example to make the high frequencies more or less apparent.

It can also be used to "model" vintage frequencies or resonances.

3. DELAY PARAMETERS

You can set the delay-time as synced (relative to BPM) or not synced values (in mililseconds, from 20 to 3000 ms).

- **In Sync mode,** you can move the knobs or click-n-drag on the displays to change the delay time.

In Sync mode, the delay-time also depends on the tempo of the device. *Please note that tempo is not saved inside presets, only in projects, in order to facilitate preset audition at the tempo you need. Therefore, if important to the preset, save a preset and mark the BPM in the preset name!*

- **In "Free" mode**, move the knobs to adjust delay-time.

Both modes are affected by the DIV parameter (see below).

	The actual delay time is shown *at the bottom of the Delay Time section*. This value is affected by the DIV parameter, and then it is available in both sync and free mode. When DIV is at "1/1", then this "ms-vu-meter" can be used as a reference for the free mode. For example, on the picture, I know that a delay of 1/8 is 239.96 ms at the current tempo. I can input this value in Free mode, with small variations to give it less precision, to simulate the manual settings of a hardware pedal. Please note that the maximum internal delay time is around 5 seconds. The values showing the actual delay time ("ms-vu-meter" under the dlay time knobs) may show greater values, but in any case, the maximum delay time is around 5 seconds whatever is the displayed value. This helps knowing when the DIV parameter should be reduced.
	**Drift** Adds a small delay of 3 / 4 / 6 or 12 milliseconds inside the feedback lines, allowing the delay to be slightly out of time, like if it was set imperfectly on an effect pedal. **Div:** allows multiplying the delay time. 1/1 is normal (off). ½ is twice as fast. Then you can choose values from 3 to 6.
	This is the Feedback or number of "repeats". Blue Button: You can "unlink" the feedback to show 2 feedback parameters for each Left and Right. Red Button: act as a "panic" button that kills all audio in all feedback lines. There are other "sub-feedbacks" which are the levels at the right end of the Filter Feedback section, and which level will influence the overall feedback of this section.

	**Squat** is a volume modulators that is applied to the Filter Feedback Line and which interacts with the main feedback line. Squat is like bending your knees very fast and getting back up. That's what it does. It is not a ducking compressor because it is not directly on the wet delay signal. - **Th. = Threshold:** sets the level that will trigger the Squat functions. The middle position is generally the best for most situations. The minimum position will trigger the Squat at lower levels while the maximum position will trigger the Squat when levels reach 0dB. - **Rel. = Release:** is the time it will take for the Squat to go back to its neutral position. A long release let the level stay at lower levels longer, while a short release will allow the level to go back to normal faster.

4. FEEDBACK FILTERS

- **Main Feedback line** = is generally "dry". You can add an insert effect to it. It goes directly to the output section, as well as feeding the Filtered feedback line.

- **Filtered feedback line** = goes to the Filters, then to the "Level Modulators", then to the "Squat" section, then back to the feedback loop where it feeds itself as well as the main feedback line.

- Frequency: the "offset" or center around which frequencies modulate.
- Resonance 'Rez creates a peak at frequency offset. It can 'self-resonate' at higher position. Default position is the middle position.
- Modulation amount: amount of modulation applied to the filter offset.
- Modulation Source: Input (Left) /// External (external modulator or Right channel audio) /// Envelope Follower (Env.Fol.) /// LFO 1 //LFO 1 Inverted // LFO 2 // LFO 2 inverted // LFO 3 /// LFO 3 & Mix.

Filter Mix

This is a crucial part of the feedback filters. These are the parameters that have to be set carefully, because they make your sound.

They are the levels of the filters, but can also be seen as "feedback levels inside the feedback loop" (sub-elements of the main feedback parameter).

Main Feedback Line Level: ***default = max position***. Generally don't go below "3pm" or 12 o'clock position. Lower than this generally cuts this feedback line. This parameter is an attenuator of the sound (makes it lower only, no added gain at max position).

Filter Level 1 and 2 : sets the level of each secondary filter individually. It is a gain parameter.

The balance of all filters + Main is crucial to make your own sound. Sometimes, you will need to put the level of a filter way down in order to set the right level for the other filter, and then add a bit of level to the filter in order to find the right balance.

TIP: If you have used "Aux Delay" from SpaceF-Devices in the past, you can replicate it by putting the Main and first filter levels to the maximum, and the 2nd filter to the minimum. Then choose "Envelope Follower" as a modulator, with a little bit of smoothing and a gain of 12dB).

5. FEEDBACK LEVEL MODULATORS

Allows modulating the volume inside the feedback loop.

It allows having different feedback amounts that change over time, and can help a lot in avoiding distortion in feedback loops.

The **"Curve"** parameter is a modifier that makes the modulation more or less "spiky" or more exactly, transform the curve exponentially. Leave it at its minimum position to keep the modulation "as it is", and add more curve to change radically the way the modulator will sound.

The final **gain** is like a modulation amount.

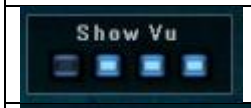
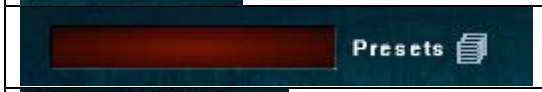
The 2 vu-leds show the output of the sound after the led modulator.

6. POST INSERT FX AND OUTPUT

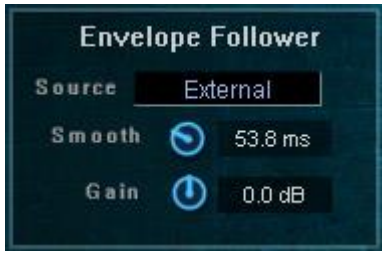
	**The insert Fx:** The **arrow below the insert slot is a button** that can change the position of the insert: **either after the Eq (before delay), or <u>after</u> the output section**. When in its default position, the insert Fx is AFTER the output section, including the primary "dry" signal if any .
	**Output:** balance the wet and dry signals. The **"Dry/Eq" button** allows to apply the equalizer to the dry signal. Otherwise, the Eq is applied only to the "pre-delay" signal. Pan buttons allow to place each of the L/R signal at any position in the stereo field. You can reverse the stereo of the delay by panning each pan pot to R/L instead of L/R. Left= min position (full left) Right = Max position (full right). Center=Middle. The button near the Vus is a **"margin reset" button.**

7. GLOBAL PARAMETERS

	The BPM is the tempo that is used for the delay timing as well as LFOs. The "retrig" button allows to re-trigger the LFO starts on-press.
	This section replaces the "**effect bypass**" button that is found on many effects. The advantage is that you can set the volume of the dry/bypass signal, making comparison smoother: you

	don't need to bear excessive level difference. You can crossfade between the **wet (Effect ON)** and **dry (EFFECT BYPASS)**. The "dry" in this section is not the same as in the output section,it gives the fully bypassed sound. However, it can be used as a secondary level of "dry/wet".
	Allows to show/hide the leds individually, or the frequency displays of the modulated filters.
	The display shows the preset name. Save presets often, and save the preset list on the disk.
	Allows showing the insert slot host name (if any).

8. MODULATORS

	Takes an audio signal from the outside world and uses it as a modulator. This section provides a simple "led" as a vu meter allowing to know when a signal is routed to this modulator. In the insert devices (Ambient Delay and Echo 4 i) the modulation is taken from the Right Input. Modular Mixer V2 provides the connections necessary to use an external modulation and to send it to an insert slot. Refer to the manual of that device to understand how it works. You can also connect any "audio-rate-modulator" to the Right Input, such as an LFO or step sequencer or gater or anything you have that outputs audio as modulator.
	This is a very classic envelope follower. Its setting are especially tailored to use in delays, and whatever is not useful has not been included. - Source; select from Input / External Modulator (R or Ext) / Feedback loop Left or Right, LFO 1, 2 and 3. - Smooth: modifies the transition time between transients. The smooth parameter act on both attack and release. - Gain: allows modifying the gain of the Env.Fol. signal, for more or less modulation. - Please note that some LFOs will not sound the same in the envelope follower, especially the saw up and down that will sound just as a sin wave LFO. You will get good results *with Sine, Triangle, Random.*

	Classic Scope LFO with various shapes (sin, square, saw up, saw down, triangle, random). - Drag the blue rectangle displays up and down to change values. - Click the “BPM” parameter to switch between beat-timed values and manual speed values. - The beat-timed speed/rates go from 32/1 to 1/16. This is read like this: • 32/1 = 32 loops per measure. • 1/16 = 1 loop every 16 measures - Speed 32/1 , the fastest, is good for the Random LFO shape.
	You can mix 2 modulators and use the result as a single modulator. The levels of each modulator will be crucial to create the modulation you want. The knobs are levels, and the buttons allow inverting the signal.

LAST TIPS:

- **Hoover** over a button or knob and wait 2 second: you should see relevant info about that parameter (name, and sometimes the value).

Thanks for your attention!

Enjoy Ambient Delay !

Credits:

- Device and Graphic Design by SpaceF-Devices / Mehdi Touzani 2017
- Special thanks to “Fernando Hood” (Hoodart Art) for beta-testing and for re-designing the big feedback knob and its smaller versions.
- Special thanks to Holger Drenkelfort (Sonic Core) and Yaron Eshkar “Faxi Nadu” (Ocean Swift Synthesis).