



SpaceF Dubby 3
Dub Delay

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GENERAL STRUCTURE

Dubby 3 contains 3 columns :

1. Inputs, Midi and Modulators
2. Amp VCA modulator and Tri-Delay
3. Delay II, Delays Mixer, Post filters and outputs.

DIFFERENCES WITH OTHER SPACEF DELAYS

Dubby 3 is built upon “Tri-Delay” found in The BlackBox package, and was refined to enjoy more powerful modulators and sophisticated signal routine. Dubby 3 uses 5 delay lines in 2 delays. The first delay (“Tri-Delay”) has 3 “heads” and Pre-Filters to sculpt the input sound with or without modulations, all being loosely inspired by vintage oilcan delays sound. Then it goes to a second delay (Delay II) which has a filter and an “auto-pitch” circuit that may be used to simulate wobbling of the delay frequencies.

Dubby 3 is very different from Echo 4 and Ambient Delays. The latter use 2 delay lines, different kind of filters and VCA implementation. Dubby 3 also differs from BB2’s Echo 2 and 3 which include 2 cascading stereo delays (chained one after the other but the original dry signal can be sent to delay II directly). The pitch and filters in Dubby 3 and Echo 3 and 4 are also in completely different places. Dubby 3 does not have sophisticated filters or VCAs in the feedback loops, but it has a pitch shifter in one of the feedback loop (which Echo 3 does not have).

Dubby 3 is less “ambient” and more “delay” than the other Echo/Ambient delays. All these delays cannot produce the sounds that the other are made to do easily. They are all perfect to use an auxiliary effect for VST tracks, on many sounds at once. Dubby 3 is also closer to “vintage” or classic delay sounds, with all the goods of a modulated modernity.

SOUND FLOW

The sounds flows from the upper left (**Inputs, Pre Fx, VCA**), then goes down through the **Pre-Filters and Tri-Delay**. Then it goes to a **ducker** before being routed to **Delay II** and to the **delay mixer**. Then it goes to the **post-filter, post-insert Fx**, and **outputs**.

Delay II includes filters and auto-pitch. The filters are made to damp whatever comes out from Tri-Delay. **The Delay II filters** are 6dB low-pass placed in the feedback loop (In FB) and after delay II (Post). You can activate either filters or both. They are made to darken the sound a bit, without destring the modulations from the Tri-Delay.

The Pitch adds a pitch shifter effect in Delay II feedback loop. The pitch modulates “automatically” in proportion to the feedback signal. You generally need high levels of feedback to create a strong pitch effect. However, subtle pitch effects can also be achieved with less feedback.

The delay mixer is a little bit like a dry/wet of Delay II, but the “dry” is the signal from Tri-Delay, and the “wet” is the signal from Delay II.

The Post Filter allows to use 4 types of filters on the final delay mix, and to **blend** it with the un-filtered signal. If you want a strongly filtered sound, put the “Blend” control at full left. The filter is bypassed when the “Blend” control is set full right on “Thru”.

You can then add a stereo effect of your choice (**Wet Fx**), **boost** the signal, mix it with the original **dry** sound, and boost the **final output**. A common dub technic would be to use a phaser here, but you can also use compressors, flangers, or other delays.

DUBBY 3 TIPS

LEVELS

The **dry & wet** levels are not stored in presets because it is more practical that way. You may want to use the delay as an aux or as an effect on a track. The dry/wet balance is a setting for the current project, not stored in presets. At the same time, Input level acts on the amount of feedback and filter sound, and the output on the global presence of the effect. SO, sometimes you want them in presets.

The **Input and Output gain levels** can be stored in presets when the Lock icon is “Off”. Usually, you would like to set the levels in consideration of the current sound input, but other times, you want to be able to store the levels in presets because of the particular way a sound is better with in and out level set precisely.



Lock Off: value stored in presets is restored.

Lock On: Value is locked to the current settings. Value from preset is bypassed.

The input value in preset is useful when ADSR or Envelope Follower (E.F, or Env.F.) are in use as VCA modulators. In that case, the Input gain may support +6 to +12dB of gain.

INPUT'S "AMP VCA"

You can modulate the input levels with various modulators.

It was basically made to create an automation of the input level with an ADSR triggered by midi notes, in order to replace an automation of the "send levels" in your daw.

- The selector menu at the left is the chosen modulator (which can also be "-Off-").
- The horizontal vu meter shows the VCA modulation (when "-Off-", the value is at Max).
- The VU-meter in the middle shows the resulting levels that will be sent to the filters and delays.
- It is normal that Vu-meters do not match the shape of the modulation, because your tracks/sounds have completely different shapes, transients or silences. Moreover, the resulting sound has to go through the delays before you can hear something. So it is not necessarily a modulation that you can hear immediately.



When Unipolar sources such as Envelope Follower (EF) or ADSR are used to modulate the VCA, you may find yourself wanting to change the offset of the levels. Instead, use the input gain. Lowering the input gain has a similar effect as moving the VCA offset down.

ADSR TRIGGERS

You can trigger the ADSR envelope with MIDI Notes-On, but also with various LFOs such as the Ramp or Sine LFOs. It works like this:

- LFOs are bipolar modulators and they will trigger the ADSR at every cycle, during half a cycle, when the signal is above 0.
- After ½ cycle, the ADSR is stopped because the LFO signal goes below zero. That's when the "Release" parameter can be used.

The Ramp modulator was specifically made to trigger the ADSR. It is like a "Saw Up" LFO. At 180°, its range is [-max, 0, +max]. The trigger will last during the positive part (0 to + max). The ADSR is released when the ramps goes back to -max. Therefore, with the Ramp modulator, the phase start is as follow:

- 0° : ADSR is triggered at the beginning of a cycle
- -180°: ADSR is triggered after ½ cycle
- -90°: ADSR is triggered after ¼ cycle.

With the Sine modulator, the Values are reversed for the same phase values (180°=beginning, 0°= after ½ cycle)

MODULATORS

Modulators consist of a Menu to select a modulation source, an horizontal vu-meter, and a bipolar modulation amount.

The modulation can either be positive toward the “+” sign, or negative toward the “-” sign. At zero (middle) value, there is no modulation (modulation level = zero).

The horizontal vu meter shows the modulation at the selected Frequency value and it is linked to the Hz numerical display.

On the Post Filter, the modulation can be reversed on one side to create a stereo effect (works best with bipolar modulators such as LFOs).



THE “ALLPRE.F” MODULATOR

The “AllPre.F” calculates an “average” of the frequencies and modulations of the 3 pre-filters.

This modulator may not seem to modulate a lot, which is normal if that’s what the average is. In such cases, use it like a “fixed value that can slightly move”.

The effect will really depend on the modulators in use, and its relevance as a modulator will depend on your project. In general, it is a matter of finding the right frequency offset and adding a little amount of modulation to make the Frequency move just a bit.



TRI-DELAY LINKS

On Tri-Delay, you can link the Pre-Filters Frequencies (**F**), Resonance (**Q**), and **Feedback** of each delay. Resonance is labelled “Q” to save space (but it is a resonance, not a Q like on Equalizers).

You can only link **[1+2]** or **[1+2+3]**.

The button to link channel 3 appears only when 1 and 2 are already linked.

Linking is not destructive: the “unlinked” value of the control is still available if you unlink: linked and unlinked controls are independent from each other.

Linking always mirror the values of channel 1. For controlling with midi CC, you only need to assign the controls of channel 1 (Frequency 1, Resonance 1, and Feedback 1). It is this value which is used to control the other linked channels.

You can also link each group of control independently. On the pics, F 1+2 are always linked, while Qs are either “not linked” or “all linked”.



DELAY MIXER

The levels of delay 1 and 2 play a great role in the sophistication and feel of the final result. With the levels, you can mute/solo any delay unit to sculpt each sound precisely and Pan Delay II differently.

DELAY TIME PRESETS

The delay time of each delay can be stored in and loaded from 3 preset lists.

1. Tri-delay times (Delay1Times)
2. Delay II times (Delay2Times)
3. All delay times (DelayAllTimes)

NB: Program Changes: only the main preset list can be used with Program Change.

PRE-FILTERS INPUT SOURCE

Each pre-filter can be applied to the left “L” or right “R” channels.

Changing the source of a pre-filter can completely change the character of the delay sound.

This trick is helpful to change the volume or frequency response. It can help a lot bringing a “finish touch”. Just try and listen to the effect for each pre-filter. Some combinations can be better than others. Listen to how volumes and frequencies are affected in the stereo field.



LIVE CONTROLS

Some potentiometers are placed in a white circle to show their importance in term of editing, and this indication can also be used to have an idea of the main parameters to assign to MIDI CCs.

The “D1-Time-D2” faders allow to quickly change the delay time of either delay unit (twice or half the length). Playing with both faders is a fun way to add life to a performance.

The “Grain” parameter of the Pitch is also nice to control live, especially with high coarse values (e.g., +12). It is the menu at the top-right of the pitch section, controllable with a potentiometer.

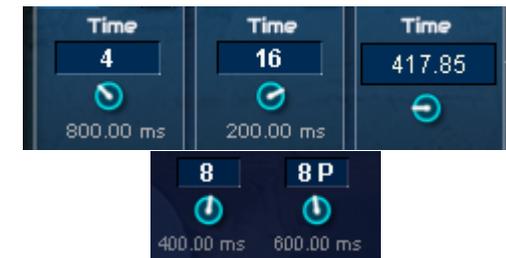


SYNCED DELAYS

Delay Times can be synced to BPM, or set in milliseconds.

Synced delay times also display the value in milliseconds. It makes it easier to input ms delay times that are slightly out of time, not in perfect sync.

You can set each of the Tri-Delay lines independently. But the sync/ms of Delay II acts on both L and R delays at once.



DUCKERS

Duckers are compressors placed after each delay. They allow avoiding saturations at further stages of the signal. They play a big role in getting “infinite feedback”, and in all cases, they allow bringing sophistication to the delay sound by modulating the levels of each delay.

Both duckers should be used to control the feedback levels when needed. Even though they are capable of extremes, they will sound better when used gently tame a few peaks.

Attack and Release are generally set fast (less than 100 ms) and Ratio should be left around 5.1.1 or less.

Instead of changing the ratio parameter (“r”), play with the Threshold levels (“Trsh”) to add more or less compression. Good ratio values are around 4 or 5 with a Threshold of -24 / -30 dB. Lower threshold result in more compression (just as if the ratio was higher).

Playing with the Ducker 1 compression has an effect of Delay II feedback and pitch, as more or less signal go into Delay II depending on the compression amount.



MOD.MIX2'S PURPLE SELECTOR

Mod Mixers allow mixing several modulations together. Mod Mixer 1 can mix 3 modulators and

Mod Mixer 2 can mix 2 of them. The range of the levels is -inf to 0 dB.

The 12 o'clock position is -12 dB. The little button at the right of each selector is a Reverse button (inverts the min/max values).

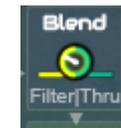
Mod Mix 2 includes an extra modulator that can be found in the second selector menu (the purple one): it is the output from Mod Mixer 1.



SETTING FILTERS' FREQUENCIES PRECISELY

You can hear precisely the sound of each filter by using the various Level controls as mutes/solo controls.

- Solo **Filter of Delay II**: put the “Del 1” level knob to zero.
- Solo **each Pre-Filter**: put Del.2 level at zero on the delay mixer. Then adjust the levels of the Tri-delay channel(s) you want to hear.
- Solo **Post-Filter**: put the “Blend” level to full left (Filter).



AUTO-PITCH

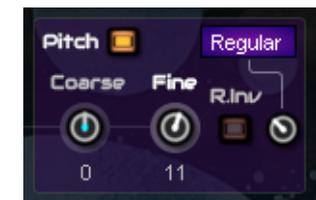
Delay II has a Pitch Shifter in the feedback loop. The pitch shifting effect is highly dependent on the signal levels and Feedback amounts: if levels are too low, the pitch shifting will be too subtle to hear.

The more feedback/level, and the quicker the pitch will rise up, but this also depends on the Delay Times in the whole device. For example, fast delays rise smoothly while slow delays will rise with more obvious “stages”.

A typical effect is a lot of Feedback, and then play with the “Fine” value between +99 and -99, with main delay times around 1/8. “Coarse” is for extreme effects or when “Fine” has too little effect due to lower feedback, even though Coarse does not sound the same as “Fine”.

“R.Inv” inverts the signal on the right channel. As “Coarse” and “Fine” are bipolar, positive and negative values will have an effect on which side is actually “reversed” (one is low when the other is high).

The last control is unlabeled: it is the “Grain Type” which sets the internal delays of the pitch shifter. It changes the resonant frequencies that add harmonics to a sound. The effect is easy to hear with a coarse of +12, especially with the “Short” and “Tight” settings. Please note that when Coarse values are used, it is better to set the “fine” at zero (middle position).



The filter of Delay II also has an effect on the pitch when “In.FB” is engaged. It places a filter in the feedback loop, just before the Pitch Shifter. Heavy filtering will have the same effect as lowering the feedback, and pitched sound may not be heard easily. It can become a technique where a modulated filter is used to make the pitch shifted sound more or less apparent depending on the amount of modulation.

POST FILTER

The post filter acts on the final delay sound. If you cannot hear the Post-Filter, set the “blend” to full left (“Filter”).

It is interesting to blend the post filter with the dry delay tail, even though the filtered signal may disappear if there is too much “dry” (“Thru”) added to it.

In general, blending the Post Filter with a bit of Thru adds stereo movements. This is generally achieved when the Blend is set around 9 o’clock and the modulator is an LFO, and the reverse button is active (see pic on the right).



LFO RETRIGGER: NOTE-ON / MANUAL

LFOs can be retriggered with MIDI Notes, or on the press of a button which appears when “Manual” is selected. This button can be pressed with the mouse or with a midi CC from your DAW or hardware controller.



LFOs should be retriggered each time that you:

- *Change the shape*
- *Change the phase*

Otherwise, they are not synced anymore.

TEMPO EXT

This allows the Tempo to be synced to an external hardware clock. In theory, a software clock is possible, but in general it is quite bad and works well only with hardware that includes a “clock out” setting. Hardware clocks drift much less than VST clocks.



KRON SYNC (KS)

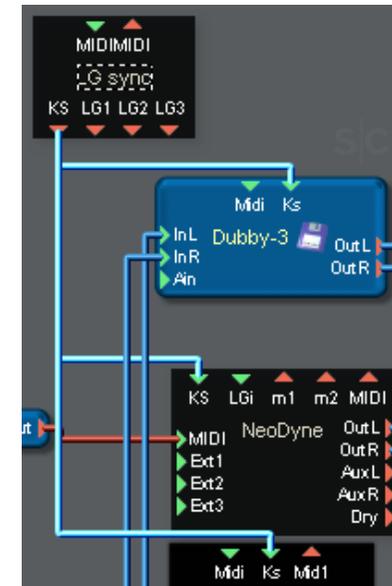
KrOn Sync allows setting the tempo on one “master” device, and it will be updated on all receiving devices in the project. It does not “drift” like a “clock”, because it is a native Scope “BPM/Frequency” value that is recognized by any scope device.

A free KrOn Sync “master” is available on the “LG Sync” device available here: <https://spacef-devices.com/downloads/lg-sync-pro/> .

Simply connect the Ks pads source and destination, then activate “KrOn Sync” on the receiving device.

On Dubby 3, the received tempo is shown when KrOn sync is active.

Note that only the “coarse” tempo value is shown (Ks decimals are not displayed).



Have fun with Dubby-3 !

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<https://spacef-devices.com>