BIONIC DELAY 2

Dub Delay Plug-in

64bit VST3 for Windows

Version 2.0.0

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http://www.interruptor.ch

VST
COMPATIBLE

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1 Introduction

Bionic Delay 2 is a VST3 plug-in for the Windows platform which is specialized in vintage type delay effects. Version 2 adds new features while sticking to the straight forward user interface and dubby sound that made the original version popular since it's first release back in 2003.

New features:
- **CHARACTER Dial** allows to morph the delay sound between classic bionic delay, clean digital delay and lo-fi analog or digital tones.
- **FREEZE** button captures the delay in a static endless loop.
- **SWING** creates a swing time feel by applying a longer (or shorter) delay time to every second delay iteration.
- **MANUAL Mode** to bypass the note buttons and enter a delay time up to 3 seconds manually or using a midi controller. MANUAL mode also allows to bypass the delay completely and use the CHARACTER and MODULATION sections alone. This opens the door to modulation effects like Chorus, Flanger, Vibrato as well as Tape Saturation, Lo-Fi Digital Crunch or Tape Degradation.
- **BALANCE** shifts the effect in the stereo field to the left or right.
- **LINK** button to quickly adjust left and right delay times at once.
- **PANIC** button immediatley stop feedback loops getting out of hand
- **BYPASS** button to disable the effect completely
- Display and entry of delay times in **Milliseconds**
- Display and entry of low/high cut frequencies in **Hertz**

2 System Requirements

- 64bit version of WIN8, WIN10, WIN11
- A host software (DAW) capable of running 64bit VST3 plug-ins

3 License Information

- By acquiring the full version you are granted the right to use this software on all of your computers for as long as you want.
- You are not allowed to make this plug-in available to others in any form or to reverse-engineer it.
- Legal Disclaimer: This software is provided "as is" and no guarantee is given that it will perform in the desired way. The Interruptor is not liable for any problems resulting from it's use.
- VST® is a trademark of Steinberg Media Technologies GmbH, registered in Europe and other countries.

4 Demo Version

- Please install and test the demo version on your system before buying the full version.
- Demo limitation: Noise is faded in occasionally. Otherwise the demo version has the complete functionality of the full version.

5 Installation

1. Download the installer to a temporary location and start it via double-click.

2. Select installation for all users (default setting)

3. Windows will ask you to confirm that you actually want to install a new program. Click yes to agree.

4. Follow the instructions of the installer. Preferably don't change the default settings.

5. Re-start your VST-host/DAW

6. If needed, manually start a re-scan of the VST plug-ins

7. Load the plug-in "Bionic Delay v2_0_0" by manufacturer "The Interruptor"

In case you wonder what the installer is actually doing, it's only two things:
- The plug-in files are copied to your VST3 folder:
  C:\Program Files\Common Files\VST3\The Interruptor
- The preset files are copied to your personal documents folder:
  C:\Users*YourName*\Documents\VST3 Presets\The Interruptor

6 Plug-in Activation

- Click on the words "Demo Version" in the bottom left corner of the GUI.

- Enter your credentials:
  - Username: **...**
  - Serial No: **...**

- Click on the "Close" button.

7 General Operation

7.1 Preset browsing

The preset controls are located in the top row of the GUI. There are three different ways to select presets:
- Use the left (‹) and right (›) arrow buttons to flip trough presets
- Click **BROWSE** then select a preset from the drop-down menu
- Click **LOAD/SAVE** then select **LOAD PRESET** from the drop-down menu to choose a preset from the file browser

7.2 Saving a Preset

- Click **LOAD/SAVE** then select **SAVE PRESET** from the drop-down menu.
- Type a name for the preset and press **ENTER**.

7.3 Manual Entry of Values

- Below or at the side of each knob/slider the parameter value is displayed as a number. Instead of moving the control with the mouse you can manually enter the value via your PC keyboard by clicking on the number, writing the value and then pressing the ENTER key or selecting another parameter value with the mouse.

7.4 Reset a Parameter to it's Default Value

- Click on any parameter name (e.g. ″**MIX**″, ″**FEEDBACK**″,..) to reset the parameter to it's default value.

7.5 Fine Adjustment of a Control

- To make fine adjustments press the CTRL key while moving a control with the mouse.

7.6 Midi Learn

- Each control can be automated via MIDI controllers.
- To assign a new/different MIDI controller right-click on a

control then choose "Learn" from the pop-up menu and tweak the hardware controller you want to assign. Alternatively choose "Unlearn" or "Edit.." to assign a controller from a list.

8 Control Reference

8.1 Main Panel

MIX	• Adjusts the mix between the untreated input signal (position 0) and the effect signal (position 100).
FEEDBACK	• Sets the amount of signal that is fed from the output to the input of the delay line. • The minimum value (0) results in a single echo (or slap back delay). • High values beyond ca. 60 will result in an endless feedback loop.
PANIC	• Mutes the feedback while the button is pressed. This stops endless feedback loops immediately. • Resets the FEEDBACK control to it's

	default value.
DELAY TIME for LEFT and RIGHT side	• **NOTE BUTTONS**: Click one of the four note value buttons to set the delay time based on the song tempo in your host software: Half note, quarter note, eighth note, sixteenth note • **FINE**: Use the fine control to increase the note value up to a dotted note or to shorten it down to a triplet note. • The resulting delay time in milliseconds is displayed in gray type above the left and right time selection controls. If you want to directly type in the milliseconds switch to MANUAL mode (explained below).
LINK	• As longs as the LINK button is engaged the delay times for the left and the right channel are identical. • Disable LINK to set different delay times for the left and right channel
SWING	• Increases or decreases the delay time of every second echo in an ongoing echo trail. This results in a swing time feel of the echoes.
SMOOTH	• Increase this value to achieve slow transitions between delay time settings. This results in gradual pitch changes when the delay time is changed during an ongoing delay trail. Note: This control also has an impact on the FLUTTER controls in the modulation panel. See section 8.4
FREEZE	• Captures the current content of the delay line and repeats it endlessly.
HI CUT LO CUT	• These controls removes high / low frequencies from the delay signal. Since the filters are located within the feedback loop each consecutive echo is shaped more than the previous one.
PING PONG	• Creates echoes alternating between the

	left and right channel. Behind the scenes this is achieved by crossing the feedback paths between the right / left channels and additionally muting the right input signal.
BALANCE	• Tilts the effect to the left or to the right in the stereo image
WIDTH	• Sets the stereo width of the effect signal. 0 = mono 100 = full stereo.
DRIFT	• Allows to send more feedback to the left or to the right channel. This results in delays that continuously wander to the left or to the right.
MANUAL	• Activates manual mode for delay time selection. See the next chapter for details.

8.2 Main Panel in Manual Mode

In manual mode the delay time selection controls are replaced with one single dial "**TIME**" for each channel.

This serves two purposes:
1. The delay time is easily adjusted manually over the full time range using one single control. This control can be automated by the host or routed to a midi controller.
   You can also enter the delay time by clicking the milliseconds display below the TIME dial and type in the milliseconds on the keyboard.
2. The delay effect can be bypassed by turning the TIME dial fully counterclockwise and setting FEEDBACK to 0. In this configuration the CHARACTER and MODULATION sections can be used on their own, thus turning BIONIC DELAY into a Chorus, Flanger, Crusher or Saturation effect. See the following chapters for the details about the CHARACTER and MODULATION sections.

<u>Note</u>: You might be surprised that the delay time cannot be reduced to 0 ms. The reason is that the displayed delay time is the round trip delay including the feedback path (which is inaudible as long as FEEDBACK is 0). When the TIME dial is turned fully counterclockwise the forward delay time is actually 0 ms. But there still is a delay of a few milliseconds which is introduced into the feedback path by the VST-technology and the software framework Synthedit which was used to build this plug-in. The length of the feedback delay is dependent on your PC and soundcard hardware, hence you might observe different minimal feedback delay times when running the plug-in on different computers.

8.3 CHARACTER PANEL

CHARACTER DIAL	• Move this dial between the values -5 and +5 to morph the character of the delay line between five different stages. You can also directly click on the words "NEW", "CRUNCH", "BIONIC", "OLD DIGITAL" and "OLD ANALOG" to jump to these stages quickly. • **NEW**: A clean delay line without any imperfections. • **BIONIC**: This is the default setting, corresponding to the original version of BIONIC DELAY. It is meant to simulate a tape delay showing some tape saturation but no signs of degradation on the tape or transport mechanics • **OLD ANALOG**: The same as BIONIC but with notable wear on the transport mechanics and the tape itself • **CRUNCH**: A digital delay line from the early days. • **OLD DIGITAL**: The same as CRUNCH but with very low bit resolution and frequency bandwidth as well as a dose of digital glitches. Note: You can use the **HI CUT** control to reduce aliasing noise according to taste.

CUSTOMIZATION	• When the CHARACTER dial is moved into the extreme ranges beyond "CRUNCH" and "BIONIC" four additional buttons appear which allow to customize the additional signal degradation which is applied in these ranges only:

	• **NOISE**
	Enables noise which comes in two different varieties:
	  ○ Analog side: Tape hiss of a RE-301 tape delay unit.
	  ○ Digital side: White noise.
	  Notice that adding white noise to a bit-reduced signal helps to mask the digital quantization noise. Hence the effect signal can actually appear smoother when noise is engaged.

	• **WONKY**
	  ○ Analog side: Simulates aged tape transport mechanics causing tape speed variations
	  ○ Digital side: Randomly inserts digital drop-outs which are audible as short noise bursts.

	• **STEREO** Enables separate mechanics and electronics for the left and right channels resulting in a wide stereo image.
	• **LOFI** Exacerbates all signal degrading discussed above. For the analog side also occasional amplitude drops are introduced which are typical for the inevitable tape splice on a tape loop (and also appear on tapes which have previously been chewed up in a tape cassette mechanism..)

8.4 MODULATION PANEL

FLUTTER	FLUTTER creates random delay time changes at a fast pace. • **RATE**: Sets the pace at which the delay time changes occur. • **INT**: Controls the modulation intensity <u>Note</u>: The delay time steps are smoothed out according to the **SMOOTH** setting in the main panel. This has an impact on how FLUTTER sounds: Very low **SMOOTH** settings result in sudden delay time changes or glitches. Very high **SMOOTH** settings on the other hand will even out the delay time steps almost completely, meaning that you have to increase the Flutter intensity **INT** and lower the Flutter **RATE** to actually hear an effect.
LFO	LFO applies a slow sine shaped delay time modulation. • **RATE**: Controls the LFO frequency • **INT**: Controls the modulation intensity

9 Program History

- **v.2.0.0** – 2025-07-30, 64bit VST3
  - release version

- **v.1.982 BETA** – 2025-04-04, 64bit VST3
  - new features:
    - automated installer
    - The delay time displays at the top of the main panel now reflect the actual delay times in real time. Thus they reflect gradual delay time changes caused by the SMOOTH parameter as well as delay modulations from the CHARACTER or MODULATION sections.
  - bug fixes
    - eliminated clicks which sometimes occured with higher settings of the SMOOTH control

- **v.1.97 BETA** – 2025-01-04, 64bit VST3
  - new features:
    - manual mode
    - delay time displays in milliseconds
    - hi cut / lo cut frequency display in hertz
    - bypass switch on GUI, necessary for Cubase users
    - panic button
  - bug fixes
    - redesigned tape saturation section from scratch
    - relabeled character dial for clarity: "new", "old digital", "old analog"

- **v.1.96 BETA** – 2024-03-24, 64bit VST3
  - initial 64bit VST3 version
  - new features:
    - character dial
    - freeze
    - swing

- **v.1.3** – 2013-01-04, 32bit VST2
  - recompiled with latest version of Synthedit

- **v.1.2** – 2006-04-19, 32bit VST2
  - added new control "stereo width"

- **v.1.1** – 2006-02-05, 32bit VST2
  - recompiled with latest version of Synthedit

- **v.1.0** – 2003-12-26, 32bit VST2
  - initial release

10 Credits

- This Plug-in was built with Synthedit by Jeff Mc Clintock
  http://www.synthedit.com

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