

BOBPERRY AUDIO

Ducker Pro 2 Manual

Preface

Thank you for purchasing Bob Perry Ducker Pro 2. To be able to get the best out of this product, we recommend you carefully read these instructions.

Firstly we will describe the user interface and will give a brief introduction to the control elements. After that we will provide a quick guide to show some typical use cases for the plug-in.

System Requirements

To use Bob Perry Ducker Pro 2, a Digital Audio Workstation (DAW) with support for AU (Mac), VST2 (PC, Mac), VST3 (PC, Mac) or AAX 64 bit (PC, MAC) is required. We thoroughly tested the plug-in with various versions of the following DAWs:

Steinberg Cubase (Mac, PC)
Steinberg Nuendo (Mac, PC)
PreSonus Studio One (Mac, PC)
Image-Line FL Studio (PC)
Adobe Audition (Mac, PC)

Reaper (Mac, PC)
Logic Pro X (Mac)
Avid Pro Tools (Mac, PC)
Harrison Mixbus (Mac, PC)
Cakewalk Sonar (PC)

Installation – macOS

Extract the downloaded .zip file, if it hasn't been extracted automatically. Then simply open the .pkg file and follow the installer's instructions.

Installation – Windows

Extract the downloaded .zip file, then open the installer file and follow the instructions.

The first installation path you will be prompted for will be the location of the manuals and the uninstaller.

Then you will be asked for your VST2 paths. If you want to install the VST2 plug-ins, select the VST2 path of your preferred DAW. If you don't want to install the VST2 plug-ins, you will be able to deselect the VST2 components after clicking 'Next'.

What does a Ducker do?

Since you already have purchased the Bob Perry Ducker Pro 2, you probably already know what it's good for.

Nevertheless, here is a quick summary:

A Ducker reduces one signal's volume when a second signal's volume surpasses a set threshold.

Sounds legit.

But why should I not use a compressor for this?

Using a compressor will give you a result that is similar to a Ducker but will give you less control. Some people say that „Side Chain Compressing“ is ducking but that is somewhat wrong. A compressor will not only lower the volume but compress the signal. The whole character of the sound is likely to change. Additionally you cannot control the level of volume reduction as it always depends on the side chain signal. The resulting sound might become imbalanced. Bob Perry Ducker Pro 2 solves these problems: it lowers the volume evenly and without any unwanted compression, giving you full control over your production.

What's new in Bob Perry Ducker Pro 2

Bob Perry Ducker Pro 2 comes with several improvements compared to Ducker Pro 1:

GUI scaling and global saving of preferences

You now have the ability to resize the plug-in window. This and other preferences can be saved globally, so that new instances of the plug-in appear pre-configured to your taste.

Visual Waveform Display with Threshold Lines

The new four-way Waveform Display visualises Input, Output and Aux Signals, and also your Gain Reduction. Additionally, we added mouse-draggable Threshold and Hysteresis lines that help with visualisation and ease-of-use.

Spectrogram Display with Filter Curves

We also added a Spectrogram Display to visualise your Aux signal's frequency spectrum. This is helpful for setting your Lo Cut and Hi Cut Filters, which are drawn on top of the Spectrogram. We also made the filter curves mouse-draggable for ease of use.

Hysteresis, Filter Resonance, Lookahead/Attack-Link, Undo/Redo, Presets, MIDI Trigger

We have come up with a handful of great additions to making a great sounding plug-in even more versatile.

Pro Tools AAX support*

Bob Perry Ducker Pro 2 now comes with AAX support.

- *) due to limitations with the AAX platform,
 - only mono aux signals are supported
 - the maximum lookahead value may be lower.

User Interface



The user interface mainly consists of dials and buttons. The numeric values under the dials can be clicked to enter a numeric value. Some dials feature context menus accessible via right-click. See below.

THRESHOLD

Serves for the adjustment of the threshold. If the level of the side chain exceeds the threshold, the ducking process will be triggered. A threshold below the side chain signal's amplitude should be chosen, otherwise the Ducker won't alter your signal.

ThresPass LED: The white ring on the Threshold dial lights up whenever the gain of the signal in the Aux chain surpasses the Threshold.

While setting the Threshold, the AUX waveform (white) will be displayed in front of the other waveforms in the waveform display. Additionally, the Threshold Line will appear to visualise the Threshold in relation to your signal.

LEARN

Click and hold the LEARN button to automatically set the Threshold value.

While this button is pressed, Ducker Pro 2 will analyse the Aux Signal and set the Threshold to the sum of the Aux Signal and the THRESHOLD LEARN OFFSET. (see below)

For best results, click and hold the LEARN button in pauses between segments you want the Ducker be triggered by. For voice-overs, that could be a pause between two sentences.

HYSTERESIS

Sets the Hysteresis Threshold. While “Threshold” is the threshold for the “beginning” of the Ducking process, “Hysteresis” is the threshold for the “end” of the Ducking process.

This means that, when your Aux signal has surpassed the Threshold and the Ducker is ducking, it will remain ducked, even if the signal does not surpass the Threshold any more, until the Hysteresis threshold is reached. Only then will the release phase kick in.

When setting a Hysteresis value, the HOLD function will be disabled by default.

ALLOW HYSTERESIS+HOLD



Right-click the HYSTERESIS dial for a context menu. Select “Allow Hysteresis+Hold” if you want to use Hysteresis in conjunction with an additional HOLD time.

REDUCTION

Sets the gain reduction or boost in dB. Negative values result in gain reduction, positive values result in boost. For subtle effects we recommend using a range of up to ± 3 dB. For pumping club / house music sound go down to -10dB.

Use boost for special effects – it’s all up to your creativity.

CURVE

The CURVE switch lets you choose between linear (LIN), logarithmic (LOG) and S-CURVE volume curves for attack and release of the ducking process. The decision which one to take will solely be based on your signal and personal taste.

AUX SRC

Select the source for your Aux Signal with the AUX SRC switch.

When working without a side chain, select MAIN.

For normal side chain behaviour, select S/C.

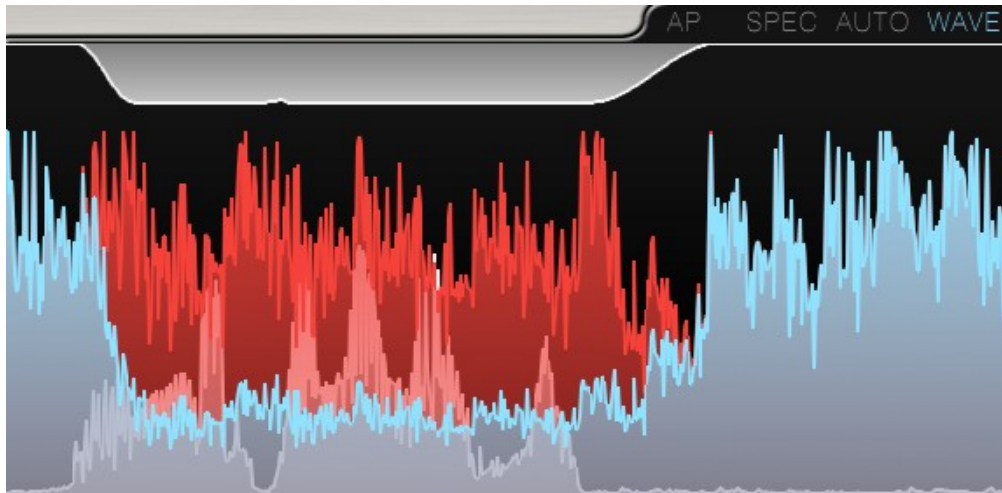
If you want your Main signal to trigger the start of the ducking phase, but you want your Aux signal to trigger the ending of the ducking phase, select MAIN ATTACK, S/C RELEASE.

You can invert the special mode by enabling S/C ATTACK, MAIN RELEASE in the ADVANCED CONTROLS drawer.

SPECTROGRAM AND WAVEFORM DISPLAY

The Ducker Pro 2 Display has three modes: SPEC, AUTO and WAVE.

Display WAVE Mode



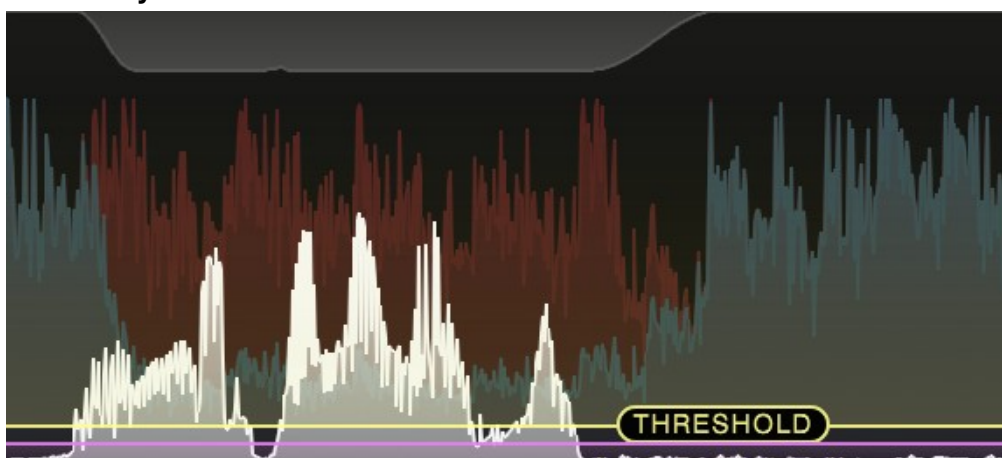
Click WAVE to enable WAVE mode. In this mode, the Display always shows the Waveform Display, displaying the following signals:

- ● Red: Main Input
- ● Blue: Main Output
- ● White: Aux Input
- ● Top White: Gain Reduction

The white Aux Input waveform will be displayed in front of the other waveforms when setting the Threshold or Hysteresis, and when in FILTER LISTEN mode.

You can use your mouse wheel or trackpad scroll function to zoom in and out.

Threshold and Hysteresis Lines



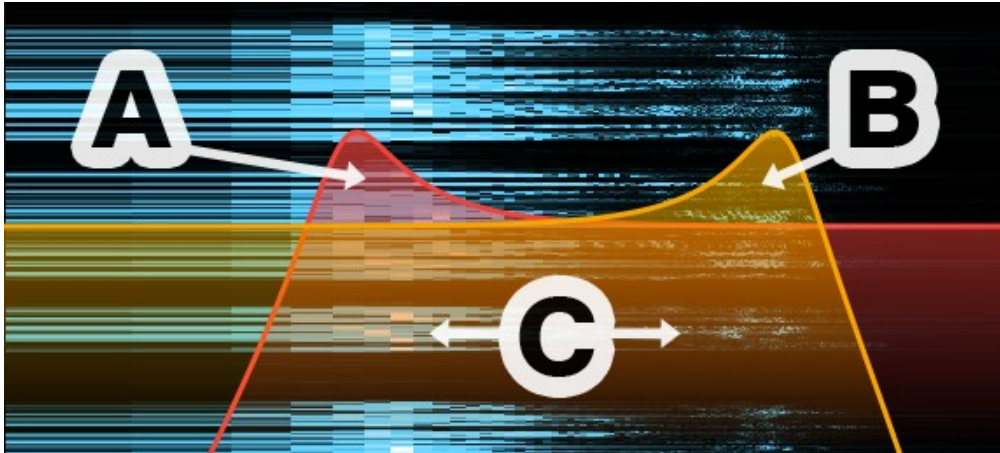
Whenever hovering over the Threshold or Hysteresis dials, or over the Waveform Display itself, these lines are displayed. You can use your mouse or trackpad to set Threshold and Hysteresis directly on the Display.

Display SPEC Mode

Click SPEC to enable SPEC mode. In this mode, the Display shows the Spectrogram Display, which always displays the Aux signal.

When either LO CUT or HI CUT filter is set, the corresponding filter curves are shown.

● Red: Low Cut Filter, ● Orange: High Cut Filter.



You can use your mouse or trackpad to move the filter curves right on the display:

- Use Area A to change the LO CUT value
- Use Area B to change the HI CUT value
- Use Area C to change both LO CUT and HI CUT values

You can also:

- Double-click Area A or Area B to disable the corresponding filter
- Double-click Area C to synchronize LO CUT and HI CUT frequencies.
- Use your mouse wheel on any area to change the FILTER RESONANCE. See below for details.

Area C does not exist when the filter frequencies are too far apart.

Display AUTO Mode

Click AUTO to enable AUTO mode. In this mode, the Display automatically switches between WAVE and SPEC modes, defaulting to WAVE mode.

SPEC mode will be enabled whenever FILTER LISTEN is on.

With AUTO FILTER LISTEN enabled, the Display will also be in SPEC mode when using the LO CUT or HI CUT dials.

The filter curves are not mouse-draggable in AUTO mode.

ATTACK

Time the Ducker will take to reach the set gain reduction value after being triggered by the Aux Signal signal exceeding the threshold. The higher the attack value, the longer it takes the Ducker to reach the final gain reduction.



Right-click the ATTACK dial to display a menu that lets you set the Attack time to a specific note value.

HOLD

Time the Ducker will keep its full gain reduction even when the threshold is not exceeded anymore. When the threshold gets exceeded again during hold time, the hold duration will be extended accordingly.

When using Hysteresis, the HOLD function is disabled by default and will light up red.

To use HOLD in conjunction with Hysteresis, enable “Allow Hysteresis+Hold” by right-clicking the HYSTERESIS dial and selecting the according option.



Right-click the HOLD dial to display a menu that lets you set the Hold time to a specific note value.

RELEASE

Time the Ducker takes to revert back to its original state. When One Shot mode is enabled, this is also the time until the Ducker starts to “listen” to the aux signal again.

Please note: Very short Attack and Release times might cause distortion when working with low frequencies. This might happen when the Attack and/or Release are shorter than the frequencies' oscillating period.



Right-click the RELEASE dial to display a menu that lets you set the Release time to a specific note value.

DIFF LISTEN

Enable DIFF LISTEN to make Ducker Pro 2 output only the difference between the altered and unaltered signal.

Using this mode can help you fine-tune your settings by hearing exactly when the Ducker is working. Whenever the plug-in outputs anything in DIFF LISTEN mode, Ducker Pro 2 is altering your signal.

Tip: Set your track to SOLO when using DIFF LISTEN.

LIVE

Enabling LIVE mode temporarily disables LOOKAHEAD and DIFF LISTEN modes for minimising latency.

LOOKAHEAD / DELAY

Turn this dial to the left to increase Lookahead. Ducker Pro 2 will then react to your Aux signal

sooner.

A typical use of Lookahead is if you want the Ducker to be already fully ducked when your Aux signal kicks in: in a voice-over situation, you can use Lookahead to make sure your music volume is already reduced when the speaker begins speaking.

Turn the dial to the right to DELAY the Ducker's response.
You can use this for creative pumping effects.

Advice: Lookahead may increase the overall latency of your DAW. Not suitable for live applications.

ATTACK LINK



Right-click the LOOKAHEAD / DELAY dial for a context menu. Select "Attack Link Absolute/Proportional" to link the ATTACK value to the LOOKAHEAD value. The minimum LOOKAHEAD time will be your ATTACK value. You can add more LOOKAHEAD by twisting the LOOKAHEAD / DELAY dial to the left. While Attack Link is enabled, the pointers of the ATTACK and LOOKAHEAD / DELAY dials will glow red. It is not possible to use DELAY with Attack Link enabled.

Bottom Right Corner (Window Grabber)

Use the bottom right corner of the window to resize it.
Double-click it to reset the plug-in window to its default size.
The window size can be saved for this instance or globally, depending on the settings SAVE WINDOW SIZE and SAVE PREFS GLOBALLY. (See below)

Side chain button (window of your DAW)

Activates the side chain. Enabling the side chain is mandatory for using Ducker Pro 2 with two signals. Please refer to your DAW's manual for details.

When enabling the side chain for the first time, Ducker Pro 2 will automatically set AUX SRC to S/C. (Due to the way Audio Units work, this behaviour is disabled for the AU version of Ducker Pro 2)

SHOW ADVANCED CONTROLS

Extends the Advanced Controls Drawer to reveal the following additional controls:



INPUT GAIN + Input Meter

Adjusts the main input signal's level if a plug-in in the signal chain has a high or low output. Most of the time you won't need to use it. It will take a very high level (> 1500 dB) to create distortion within the Ducker.

The meter to the left of the INPUT GAIN dial displays the plug-in's main input volume.

I/O GAIN LINK

If you want to alter the gain for use inside the plug-in, but want to revert the gain change by the plug-in's output, you can enable I/O GAIN LINK. This will link INPUT GAIN and OUTPUT GAIN, so that the OUTPUT GAIN will always represent the negative / inverted value of INPUT GAIN, and vice versa.

ATTACK/HOLD/RELEASE X10

Multiplies the corresponding time parameter by 10. This allows you to set time values of up to 10 seconds.

Tip: You can use high values for triggering fadeouts.

M/S MATRIX

Switches Mid/Side modes (NORM (Stereo) / MID / SIDE) for the Main and Aux signals.

AUX M/S Switch: Sets which signal shall trigger the ducker.

MAIN M/S Switch: Sets which signal shall be modified by the ducker.

Examples: You can duck only the mid signal in a stereo track by switching the Main switch to MID. If you want only the side signal of your side chain to be your trigger signal, switch the Aux-Signal to SIDE.

Advice: Don't use the M/S Matrix if you only have mono signals or stereo signals with the same signal on the left and right channels, as mono signals don't have a side signal.

Hint: "Side Signal" and "Side Chain" are two completely different things.

ONE SHOT

Enables the special “One shot mode”. In this mode, Ducker Pro 2 will duck only once with each Attack, Hold/Hysteresis and Release period. It will only restart to listen to the Aux signal once the previous Release period is over.

Use this mode for Effects like Pumping Beats. If for example your Side-Chain Signal (i.e. Bass Drum) varies in duration, the Bass Drum length won't extend the Ducking period when One Shot mode is enabled.

Pro Tip: You can use the One Shot mode to effectively act as a tremolo effect if you set the threshold to a very low value, thus always re-triggering the Ducker after each Release period.

S/C ATTACK, MAIN RELEASE

When your AUX SRC is set to MAIN ATTACK, S/C RELEASE, this toggle switch allows you to reverse

OUTPUT GAIN + Output Meter

Adjusts the plug-in's output level. Although the plug-in itself won't distort even with very high signal levels, we recommend setting a value that won't saturate the output meter on the right of the OUTPUT GAIN dial.

Undo and Redo Buttons

Click the undo button to quickly revert to the plug-ins state before you last changed a parameter.

Once you have undone something, the Redo button will come alive. Click the Redo button to get back to the plug-in's state before you clicked undo.

You can undo + redo multiple steps.

Note: If you undo something, and then change a parameter manually, you won't be able to redo.

Preferences

Click the gear icon to display the plug-in's Preferences. You will be greeted with the Preferences window:



THRESHOLD LEARN OFFSET

This is the value that will be added to the new Threshold when using THRESHOLD LEARN. With a value of 2dB, the Threshold will be set to a value 2dB **higher** than what has been detected while pressing THRESHOLD LEARN.

FILTER RESONANCE

Sets the Resonance of the LO CUT and HI CUT filters. You can see a preview of the filter curves below the dial.

MORE SETTINGS

AUTO FILTER LISTEN

When enabled, FILTER LISTEN will be activated when hovering over or using the LO CUT or HI CUT controls. This lets you quickly check your Aux signal. If the Display Mode switch is set to AUTO, the display will switch to the spectrogram view accordingly when doing so.

MIDI TRIGGER

Enables MIDI TRIGGER mode: Ducker Pro 2 now responds to MIDI inputs, instead of audio signals.

Refer to your DAW's manual for information on how to make a plug-in receive MIDI data.

In Logic Pro X, to use MIDI TRIGGER, create a Software Instrument track and insert a Bob Perry Ducker Pro 2 instance **as an instrument** (not as an insert FX!). Then use Logic's Side Chain menu to "grab" your audio signal from your audio track. You will then want to mute your audio track's output and only have the Software Instrument track output your signal.

In the main window, instead of the THRESHOLD dial, you will be greeted with the MIDI NOTE dial. Use MIDI NOTE to set the note which shall trigger the Ducker.

In OMNI mode, all notes will trigger the Ducker.

You can use the LEARN button to quickly set a note:

Click and hold the LEARN button, then press a note on your MIDI keyboard.

While MIDI TRIGGER is enabled, the following controls will be disabled:

HYSTERESIS, LO CUT, HI CUT, FILTER LISTEN, AUX SRC, AUX M/S, SPEC (display), THRESHOLD LEARN OFFSET, FILTER RESONANCE

DRAW WAVEFORM

You can disable Waveform drawing if you have performance issues.

DRAW WF WHEN STOPPED

When using Ducker Pro 2 with live sources, you can enable this setting to force the waveform display to draw even when your DAW is not playing or recording.

PREFERENCES

SAVE WINDOW SIZE

Saves the window size of the plug-in. When SAVE PREFS GLOBALLY is enabled, all Ducker Pro 2 instances will open with the same window size.

SAVE PREFS GLOBALLY

When enabled, the following settings will be stored globally:

AUTO FILTER LISTEN, TOOLTIP MODE, DRAW WAVEFORM, DRAW WF WHEN STOPPED, THRESHOLD LEARN OFFSET, SAVE WINDOW SIZE, your window size, Display Auto Pause (AP), Display Select (SPEC/AUTO/WAVE)

DEFAULTS

These toggles allow you to set default settings for new plug-in instances, and are always saved globally. Changing these settings won't affect existing plug-in instances.

OPEN DRAWER

New plug-in instances will always open with the ADVANCED CONTROLS drawer extended.

LINK LOOK/ATT

New plug-in instances will always open with LOOKAHEAD and ATTACK linked.

ALLOW HYS+HOLD

New plug-in instances will always open with “Allow Hysteresis+Hold” setting enabled.

I/O GAIN LINK

New plug-in instances will always open with I/O GAIN LINK enabled.

TOOLTIP MODE

Every control can show you a tooltip when hovering your mouse cursor over it for a couple of seconds. TOOLTIP MODE lets you choose between three tooltip modes:

EXPLANATORY: Shows you an extended, elaborate tooltip to explain the function of the current control.

NORMAL: Shows you a normal, quick tooltip.

DISABLED: Disables all tooltips. Select this if you don't want to be bothered by tooltips.

OPEN MANUAL

If you have selected the manual option when installing the plug-in, you can click **OPEN MANUAL** to open this manual.

CHECK FOR UPDATES

This will open a browser window with the Bob Perry Audio Update Checker. Click to see if there is a new version available to download.

WWW.BOBPERRY-AUDIO.COM

Click to visit our website.

APPENDIX

How do I work with the Ducker?

First of all, you need to think about what signal you want to duck in dependence of which trigger signal (side chain). Then proceed as follows:

- 1) Load Ducker Pro 2 into the channel of the signal that you want to be ducked. (Main Signal)
- 2) Enable the side chain. (refer to DAW's manual for details)
- 2a) In the channel that provides the trigger signal (side chain), use an Aux Send to route the channel's signal onto the Ducker's side chain.
Beware: If you route the output to the side chain directly, you won't hear it any more.
- 3) Within the plug-in:
 - a) Adjust the Threshold
 - b) Adjust the Range
 - c) Adjust Attack, Hold and Release
- 4) Listen to the effect and tweak it until it sounds as you please.

If you want to use Ducker Pro 2 for M/S ducking without sidechaining, just skip points 2 and 2a and adjust the M/S functions as required.

Typical Use Cases

We will now provide some examples for typical use cases of our Ducker.

1) Clean Up the Basement

Sometimes you may run into trouble when you have a bass drum and the bass competing in the same range of frequencies. In most cases, you certainly don't want muddy low frequencies, but cleanly separated instruments.

To clean things up a bit, the Ducker can lower the volume of the bass each time the bass drum kicks in. To do this, we firstly need to find out the average length of the bass drum signal. We assume the length to be around 60ms. Therefore, the whole ducking (including attack, hold and release) should not take longer than 60ms. As the bass drum's volume will decline in the end, the hold time may be a little shorter.

For tweaking the ducking effect, start with a high range value. It will make you able to easily hear the results of your adjustments. Afterwards, the range should not exceed 3dB as otherwise it might begin to sound unnatural. Of course it all depends on your taste.

Pro Tip: Carefully adjust the threshold as otherwise the ducking might be prolonged by the fading bass drum!

2) Pumping Beats

You are into electronic music and want to get this cool contemporary pumping bass? No problem with Ducker Pro 2. Try ducking everything in the mix but your bass drum. The ducking process should be triggered after the length of an eighth note in a four-four time. Thus, the Ducker needs to do its work in this short period of time.

With this easy formula you can calculate the length of a quarter note:

$$60\,000 / \text{tempo in bpm} = \text{time in ms}$$

As an example with a tempo of 120 bpm:

$$\frac{60000}{120} = 500 \text{ ms for a quarter note.}$$

Divide this by 2 to get the value for an eighth note (250ms).

The attack should be short, but beware of distortions. 10 to 30 ms will mostly do the trick. Adjust hold and release to place the pumping effect on the right spot. In our example having 120 bpm it should be 250ms. Find your balance between hold and release to get the desired result.

3) Voice over / Voice over Guitar

Sometimes you want to lower the volume of the music while singing or talking. To get this done do the following:

- 1) Assign the plug-in to a channel or a channel group.
- 2) Send your vocal track's signal into the Ducker's side chain.
- 3) You might want to choose relatively high values for hold and release to achieve smooth blending of phases.

4) De-esser

If you have vocal recordings with too strong sibilance you can use Ducker Pro 2 as a perfect de-esser. Unlike the usual compressor based de-essers the reduction of the sibilance is proportional to the main signal and not inverse proportional.

The advantage is achieving a constant s-reduction regardless of high or low input levels.

- 1) Assign the plug-in to a channel (Voice Channel)
- 2) Switch the Source to Main.
Now you are using the same signal as Main and Aux Signal.
- 3) Activate the Lo Cut and Listen Switch. Turn the Lo Cut to 6000-9000 Hz until you only hear the sibilance. This is important, otherwise you will duck more than just the sibilance.
- 4) Lower the Threshold until the ThresPass LED (white ring on Threshold dial) lights up. Make sure that the LED is on only when you hear a sibilance.

5) Set Attack, Hold and Release to very short values. (around 5 ms)

6) You can use the Lookahead for values shorter than your Attack time to make sure you catch every sibilance.

7) Adjust the Range. Values between -3 and -6 dB are “normal”. Sometimes you have to use higher values if you are using a cheap condenser mic with a lot of high frequencies.

Note: If you have a Stereo track with mixed music you can do de-essing but it's a little bit less straight-forward. Try the M/S feature:

Usually the Vocals are in the center (Mid) of the mix. Switch the M/S modes of the Main and Aux to “MID”. Now you only process the center of the mix without touching the side signal.

5) Pumping Remix of a mixed Stereo Track

For a very quick solution of a pumping remix you can use the M/S Matrix and filters to detect only the Bass Drum hits of a stereo track to trigger the Ducker.

Set up the Ducker Pro 2 like we described for de-essing. But instead of filtering the low frequencies, filter the high frequencies.

Use the Hi Cut and set it to around 50-80 Hz. Now you have only very deep Bass Signals. Try to isolate the Bass Drum from the Bass (Instrument) and set the Threshold and other parameters.

Appendix

Common plug-in installation paths

Windows

32-bit VST3 plug-ins in 32-bit environments

C:\Program Files\Common Files\VST3

32-bit VST3 plug-ins in 64-bit environments

C:\Program Files (x86)\Common Files\VST3

64-bit VST3 plug-ins in 64-bit environments

C:\Program Files\Common Files\VST3

VST2 plug-ins are usually installed into a subfolder of your DAW, called “VSTplugins” or “plug-ins”. Examples are:

C:\Program Files\Steinberg\Cubase\VSTPlugins (64-bit)

C:\Program Files (x86)\Steinberg\Cubase\VSTPlugins (32-bit)

AAX plug-ins in 64-bit environments

C:\Program Files\Common Files\Avid\Audio\Plug-Ins

MacOS

VST3 plug-ins

/Library/Audio/Plug-Ins/VST3/

VST2 plug-ins

/Library/Audio/Plug-Ins/VST2/

Audio Unit plug-in components

/Library/Audio/Plug-Ins/Components/

AAX plug-ins

/Library/Application Support/Avid/Audio/Plug-Ins

You cannot use the Windows 64-bit version in a Windows 32-bit environment / DAW!

The macOS versions are 64-bit only.

Technical Notes

Signal processing

floating point

Headroom

theoretically over 1500dB, depending on your DAW. But more than enough.

We hope this manual leaves no questions unanswered.
If you still have questions, feel free to contact us:

support@bobperry-audio.com