PEEL STEMS

User Manual
Version 1.0 / June 2024

zplane

Contents

Introduction

PEEL STEMS splits mixed audio into 4 different stems in real-time and has parameters for isolation and volume control. With PEEL STEMS you can isolate instruments or rebalance mixes at the turn of a knob!

In addition, the unique Soundfield Display visualizes audio, with each stem in its own color. So you can instantly see a stem's placement in the frequency spectrum and stereo field, making PEEL STEMS a great tool in mixing situations.

But there's more: You can process the audio further with the Focus EQ. This spectral EQ lets you select parts of the signal for soloing, muting, or routing it for external processing. Use it to further refine your separated audio and mute or solo a single instrument in the stem: For example, you could isolate just the snare drum inside the drum stem and send it to external effects. This way you can get creative with your audio recordings in a whole new way!

Key Features

- Real-time stem separation of mixed audio into Drums, Bass, Vocals and Other
- Adjustable stem volume and separation precision
- PEEL STEMS spectral processing filter
- Visually identify single instruments in a mix
- Mute problematic instruments
- Rebalance mixes
- Route filtered audio to external processing
- See your entire mix visually to help identify mix problems
- VST3/AU/AAX formats.

Naming Conventions

In this documentation, the names of on-screen buttons, sliders, and indicators will be written in bold font between brackets, such as **[✻]** and **[Processing]**. Selectable menu options will be written in bold font between quotes, such as **"Mute inverted output"** and **"InvOut"**.
References to numbered pointers in images will be written in bold font between parenthesis, such as **(1)** and **(2)**.

Installation & Activation

In order to download the PEEL STEMS installer, you first need to **register the serial number** you've received when you purchased the product: log in to your account at the zplane website (please create a new account if you don't have one already). Select the **[REGISTER] tab** and paste your serial number in as shown below:
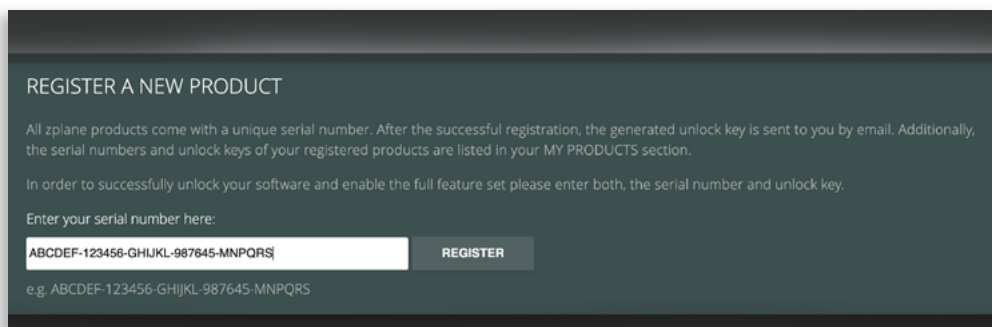
Click on **[REGISTER]** to confirm. PEEL STEMS is protected by both, a serial number and a **corresponding unlock key**. So you need both to activate it. The unlock key appears right after successful registration.

The product installer, serial number and unlock key are always available in your user account in the **[MY PRODUCTS]** section. Here's a step-by-step description of the installation and activation procedure:

Windows

- Download the PEEL STEMS Windows Installer application **(.exe)**

- Double-click on the file to launch the Installer an click **[Next]** in the installer window

- Read the End User License Agreement and click **[Next]**, if you agree.
  Otherwise, click **[CANCEL]** to abort installation

- Follow the installer's on-screen instructions to proceed. Complete installation and close the installer

macOS

- Download the PEEL STEMS macOS Installer **(.zip)**

- Double-click on the downloaded **.zip** to unpack the installers.
  Pick the correct **.pkg installer version** for your Intel (x86_64) or Arm Mac (arm64) and run it

- Click **[Continue]** in the installer window, read the End User License Agreement and click **[Continue]** to open the confirmation dialog.
  If you agree, confirm by clicking on **[Agree]** otherwise click **[Disagree]** to abort installation

- Follow the installer's on-screen instructions and click **[Close]** to quit when installation is complete

Activation

- After successful installation, **run your DAW** (make sure the DAW has scanned the new plugin)

- Now create a track,
  load the PEEL STEMS plugin and open the UI

- You will be presented with the **activation dialog**: In this final step, please paste the serial number **(1)** and unlock key **(2)** into the coresponding fields, confirm by pressing
  [Activate] (3)

- You are ready to use PEEL STEMS!
  This activation process is only required for a fresh install, not when updating PEEL STEMS.

The PEEL STEMS Interface

The PEEL STEMS interface is separated into two main parts: The **Soundfield Display (1)** at the top and the **Stem Controls (2)** at the bottom. The **[?]** and **[✱]** icons **(3)** give you access to help and settings.

Soundfield Display

The Soundfield Display visualizes audio in real-time, so you can identify each Stem's placement in a mix. The audio is represented by glowing circles on an X/Y plane, with each stem having its own unique colour. This makes it instantly visible, where each stem is placed: The vertical position of a circle corresponds to an audible frequency while the horizontal position indicates its placement in the stereo panorama; the size of the circle indicates the energy or loudness of that frequency. By clicking and dragging with the mouse in the display area, you create the **Focus EQ window** to specifiy areas for isolation with the spectral filter, which we'll get to on the next page.
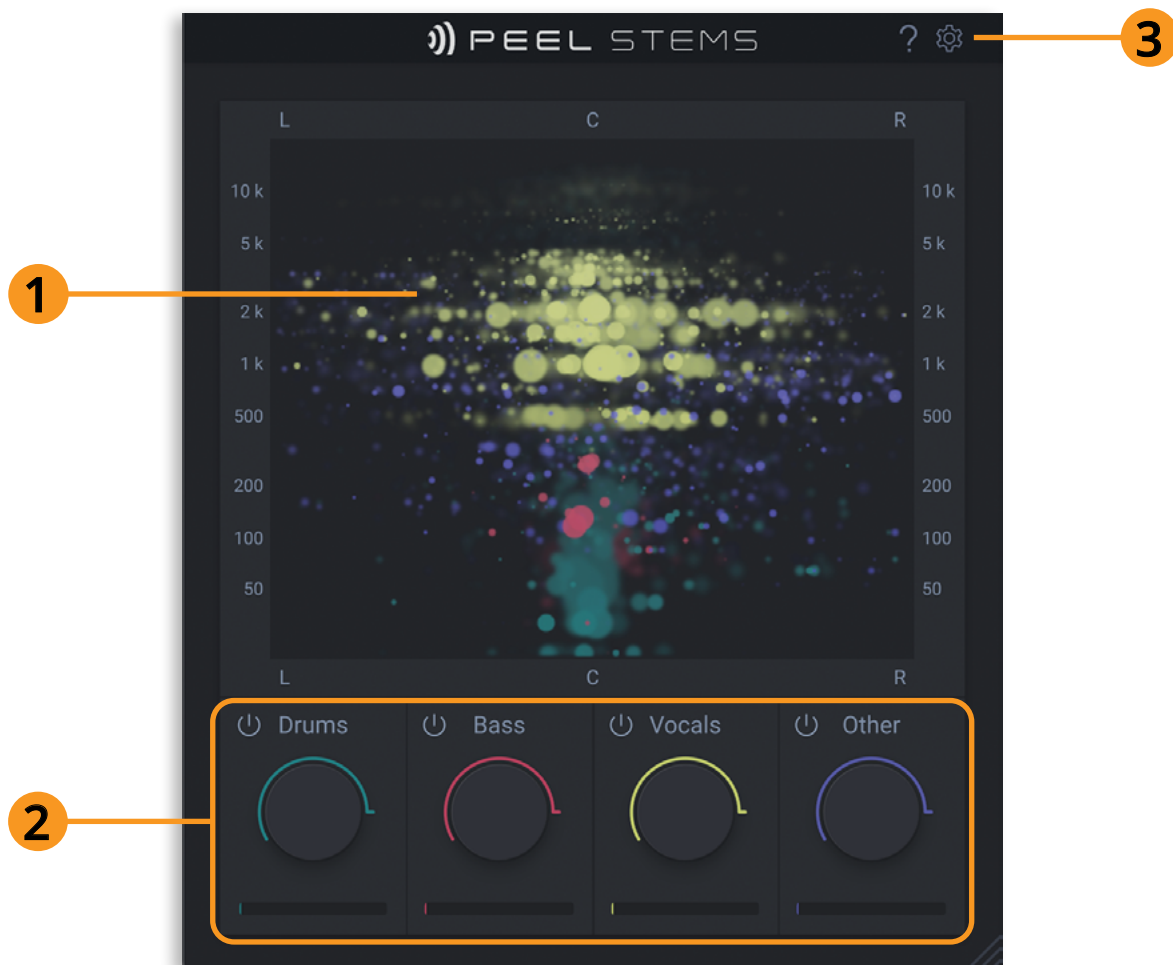
Stem Controls

PEEL STEMS separates audio into 4 Stems in real-time: "Drums", "Bass", "Vocals" and "Other" (which is a mix of what's left, eg. guitar, keyboards, brass, etc.).

Power Switch	- Switch a Stem on/off. [Shift] + Click = Solo Stem / Second [Shift] + Click = All on
Volume Knob	- Adjust volume of Stem. Range -120 - +6 dB. Double-Click Knob = Reset to default (0 dB)
Isolation Fader	- Finetune separation strength. Range 0 - 100. Double-Click Fader = Reset to default (0) Even if all Stems are active, this parameter has an effect.

NOTE: *The separation quality is dependent on your material's density, and how much the different stems' frequencies overlap — and potentially mask each other. So if you experience effects such as phasing in the drums at the beginning of eg. a chorus, where lots of other instruments set in — that's why (if you require even higher quality separation, you will have to use an offline stem separation tool).*

Focus Frame - the Spectral Filter

The **Focus Frame (1)** provides quick and intuitive access to PEEL STEMS' spectral filter. In the signal chain, the Focus filter is applied after stem separation. Frame size and position represent the frequency range and stereo panorama position of the selected signal. It also splits the filter output into two separate streams: the audio inside the Focus Frame vs. the audio outside. These two audio streams are then sent to the Plugin's two independent audio outputs (allowing you to process them differently in the host application).
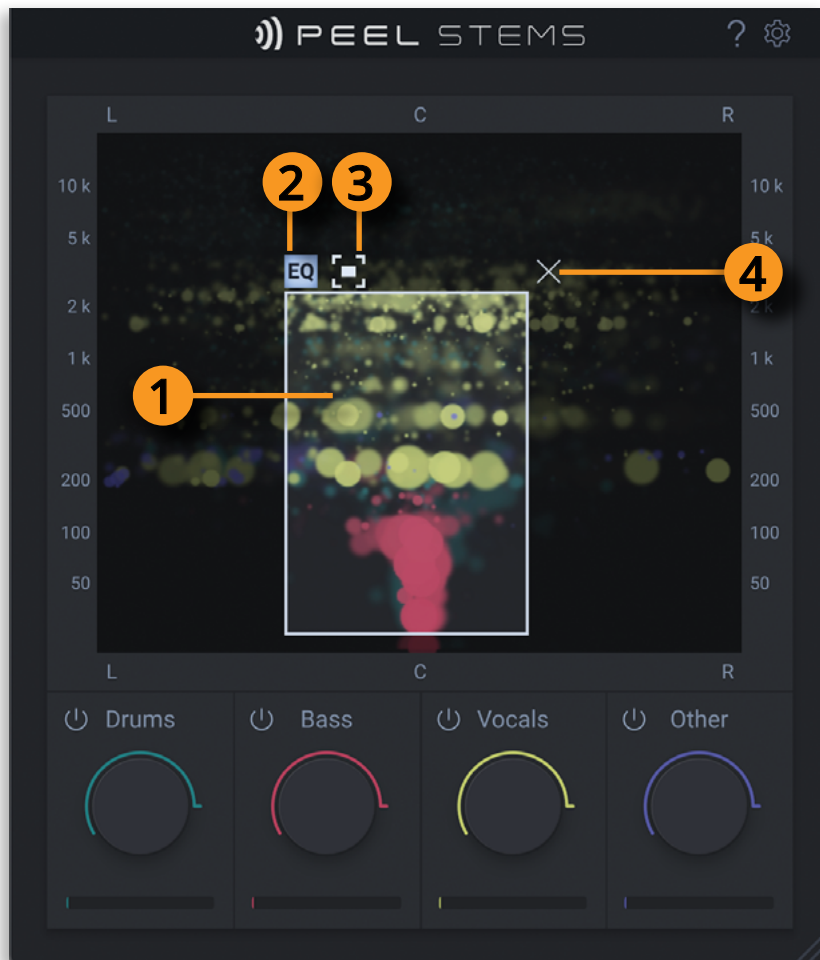

Create Focus Frame:	Click and drag a rectangle across the Soundfield Display. The first corner is set when you press the mouse button, the opposite corner will be set on release.
Move Focus Frame:	Position the mouse inside or outside the Frame, then click & drag: Now you can move the Frame window around within the Soundfield Display. *Tip:* This parameter can also be automated for really cool filter sweeps.
Change Frame size:	Hover with the mouse over any of the Frame's edges or corners, then click and start dragging: this will change the Focus Frame's shape and capture selected frequencies accordingly.
Bypass [EQ] (2):	To temporarily disable the Focus Frame filter without deleting it, click on the **[EQ] button (2)**. Click the **[EQ]** button again to re-enable it.
Invert Output [⬛] (3):	The button **Invert Output (3)** swaps the signal sent to the Plugin's two outputs: By default, the audio inside the Focus Frame is routed to the first stereo out and the audio outside is sent to the second out. If you click on the **[⬛]** button to enable it, the pairs are swapped. Learn more about output routing here.
Remove Frame (4):	Click the **[X] button (4)** in the Frame's upper-right corner.

NOTE: When only the first stereo pair of PEEL STEMS is being used in the DAW, the [⬛] button provides a quick way to mask out the sound within the Focus Frame.

Settings Page

The Settings Page is opened via the gear **[⚙] button (1)** in the header. It provides access to the activation mechanism as well as settings that affect the behavior of PEEL STEMS **(2)**. Installation & Activation are explained on page 5.
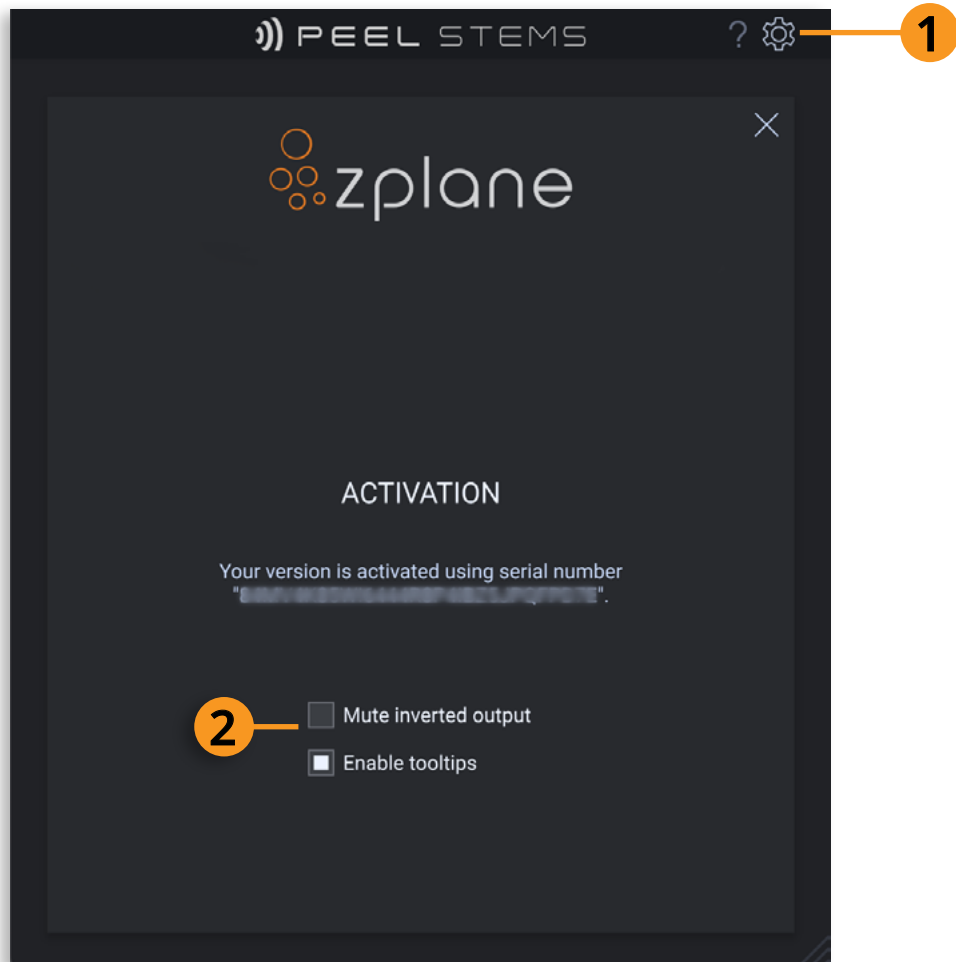
Mute inverted output: Some DAWs can't handle PEEL STEMS' two stereo outputs correctly, or mix the two outputs together by default. When the two outputs are mixed together, you get the original audio back—it will sound like PEEL STEMS doesn't work when you use the Focus Frame. In this case, activate "Mute inverted output".By default, this parameter is set to off.

Enable tooltips: We have included tooltips that pop up when you hover over controls in the PEEL STEMS user interface: They give you brief explanations and tips. If you don't want that, switch tooltips off. By default, this parameter is set to on.

Help Page

By clicking the **[?] button** in the upper-right corner of PEEL STEMS, you will gain access to the Help Page which provides access to numerous tutorial videos. Click on any of these videos to launch them in your web browser.

Using PEEL STEMS

PEEL STEMS can be used for a variety of applications beyond separating mixed audio into 4 discrete stems:

1. Isolating or masking sounds based on their frequency range and stereo position

2. Applying processing to only a selected portion of audio based on its frequency range and stereo position

3. Visualizing the frequency and stereo content when mixing audio.

But before diving into the details, you should understand how PEEL STEMS works in terms of audio routing.

Input and Output Routing

PEEL STEMS is designed to be loaded as an **insert audio effect on a track in your DAW**.

However, unlike most insert effects which just have one stereo in- and output, PEEL STEMS has one stereo in- and **two stereo outputs**.
When using the Focus Frame EQ, PEEL STEMS can split the incoming audio into two separate streams: The signal inside the Focus Frame is output from the first stereo out, and the signal outside the Focus Frame is sent to the second out. This way you can treat the two streams differently in your DAW.

In order to take advantage of this feature, **your DAW <u>must</u> be able to access and route these two stereo outputs in some way**. Unfortunately, not all DAWs are created equal—some DAWs allow easy access to PEEL STEMS' two outputs while other DAWs have a complicated process for accessing the outputs. And some simply don't provide any access at all (but don't fret: you will be able separate the signal, using a simple work-around).

The exact method for accessing PEEL STEMS' outputs differs depending on your DAW. On the next pages you will find setup examples for some popular DAWs. If your DAW is not listed there, you will need to consult the documentation or user forums to find out how - and if - your DAW can correctly access and route PEEL STEMS' outputs.

If your DAW cannot access the outputs and mixes them together, use the Settings option "Mute inverted output".

NOTE: *The I/O handling is the same as in our PEEL plugin, so all of those tutorials also apply to PEEL STEMS!*

Routing in Ableton Live

Ableton Live has exceptional routing abilities and makes accessing PEEL STEMS' secondary output easy.
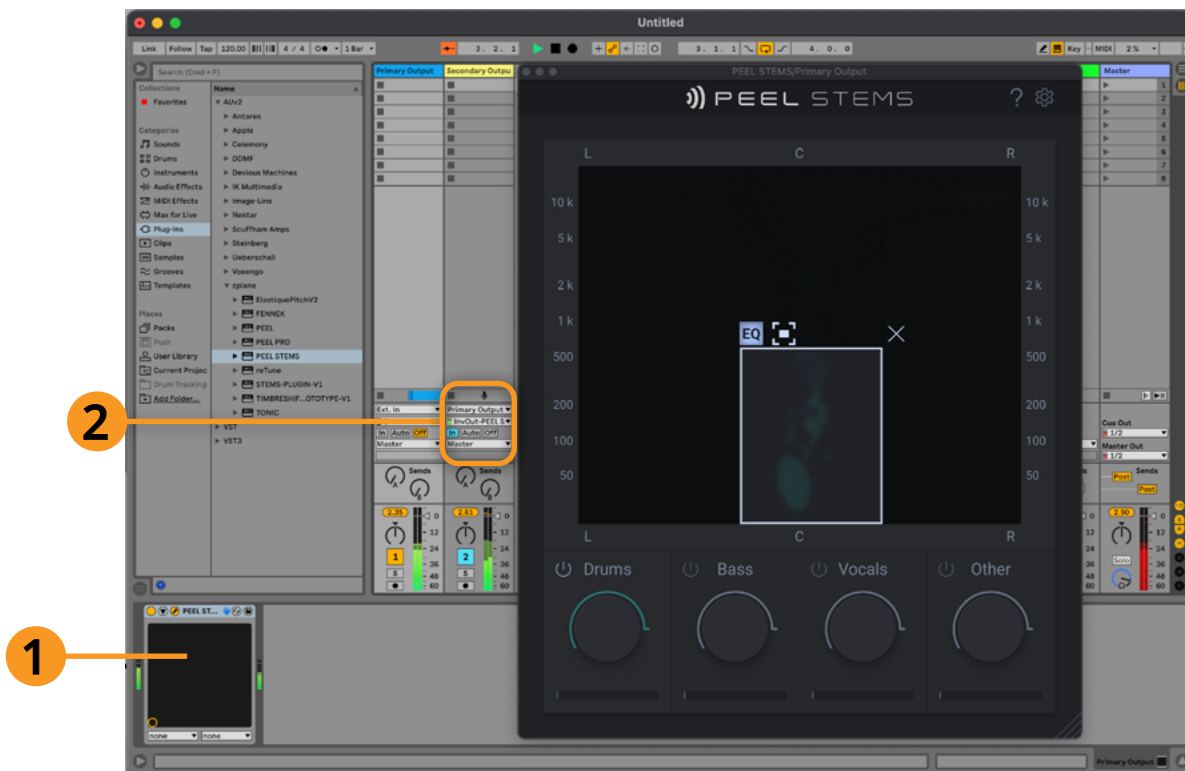
When you insert PEEL STEMS on the first track in Ableton Live **(1)**, PEEL STEMS' first output will be routed to the output of the track while the second output will have no destination. You will therefore need to create a new track and assign PEEL STEMS's secondary output to the input of that track as shown **(2)**.

Routing in Reaper

Insert PEEL STEMS on the track with audio **(1)**. Now create a second track. Next, create a new send on the first track **(2)**. From the send configuration, select channels "3/4" of the first track to send to the second track **(3)**. This setup looks like this:
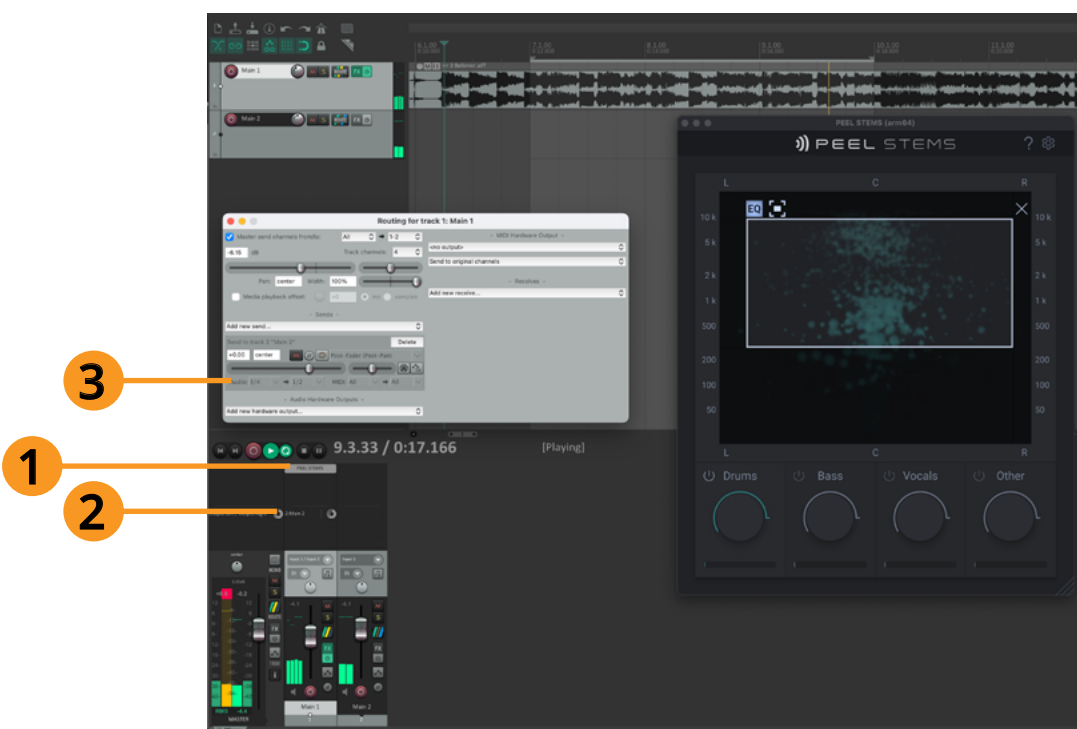
Routing in Pro Tools

To set up PEEL STEMS's secondary output, you need to first insert PEEL STEMS on a track **(1)**. Now create a second audio track and select the PEEL STEMS "InvOut" from the Input menu for that track **(2)**. Lastly, enable the input monitor on the second track to hear the output (3). The full setup looks as follows:

Routing in FL Studio

This DAW, by default, **mixes PEEL STEMS' two stereo outputs together**. So setting the [Focus Frame](#) in PEEL STEMS seems to do nothing—you will not hear any isolation or masking. You have two choices how to proceed, depending on what you intend to achieve:

- If you wish to just **isolate a sound**, enable the "Mute inverted output" option ["Mute inverted output" option](#) in PEEL STEMS' Settings.
- If you want to **process audio separately**, reconfigure the InvOut destination following the ["Using separate outputs with FL Studio 20" video](#) on PEEL STEMS' Help page. The final setup will look something like this:
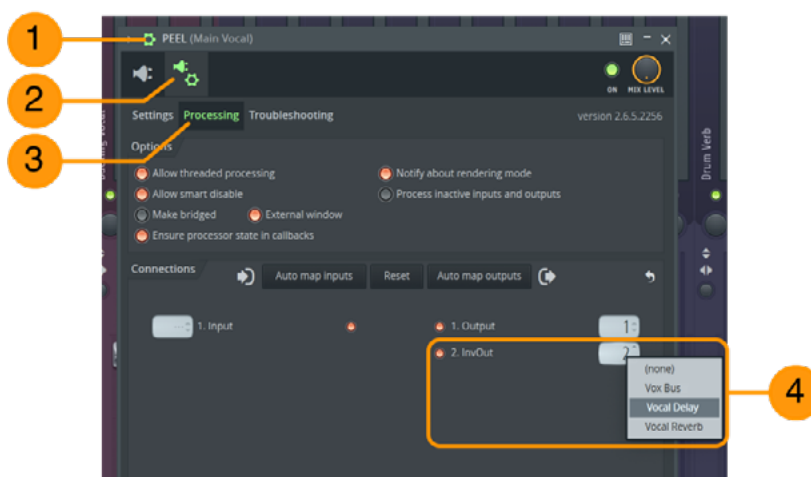
Begin by clicking the **[✱]** button at the top of the PEEL STEMS VST frame **(1)**.
Then click the second button in the header that appears **(2)**.
On the new display that appears, click the **[Processing]** tab **(3)**. In the lower-right area of this window, you will see the two outputs from PEEL STEMS listed as **"1. Output"** and **"2. InvOut"** where you'll need to ensure the second output is enabled but routed to a different channel in the display on the right—you can right-click this display to bring up a list of channel names **(4)**.

Using PEEL STEMS in Cubase, Logic Pro & Studio One

Unfortunately, these DAWs **don't allow any access to the plugin's secondary output**—you will only hear the first stereo output.

While this still allows for easy isolation or masking of sounds, this fact adds a couple of steps and requires two instances of the plugin. Here's the workaround:

- Load PEEL STEMS as an insert on the track you want to process **(1)**.
- Set the Focus window up to your liking **(2)**.
- Now duplicate this track, including the instance of PEEL STEMS you've just set up **(3)**.
- Engage the Invert **[ꞏ]** Invert button of the Focus Frame on one of the tracks **(4)**.

You'll also find a video tutorial in the PEEL STEMS Help Page—the video uses Logic Pro as an example, but the same principle applies to Cubase and Studio One.

Isolating Sounds

PEEL STEMS can isolate or mask a portion of audio inside a mixed track. This can be useful if you want to extract a bassline from a music loop or if you want to block out a portion (like blocking that bassline and leaving only the other instruments in place). To do this, you do not need to set up the secondary outputs as described above. Rather, you'll want to use just one pair of the PEEL STEMS outputs.

In many cases, this means simply loading PEEL STEMS as an insert on a track and then creating a Focus Frame. Now you'll hear only the audio inside the Focus Frame, or enable the **Invert [ ]** button to mask the audio inside the Frame.

If you do the above, but find that you're not hearing any change in audio, this means your DAW is mixing both of PEEL STEMS's outputs together, and the fastest solution is to open the PEEL STEMS Settings and enable the "Mute inverted output" option.

Splitting Audio for Individual Processing

PEEL STEMS' secondary output comes into play, if you want to apply unique processing to only a portion of the audio. This output needs to be set up and routed in your DAW first, so PEEL STEMS can output the audio to two tracks. You'll find setup examples for a variety of DAWs in the [Input and Output Routing section](#) (as well as workarounds for the DAWs that don't directly support this).

Once you have configured your DAW, so that PEEL STEMS' main output is audible on one track and the secondary "inverted" output on another track, you can create a Focus Frame. Now PEEL STEMS splits the audio going into the Plugin to the two output tracks in real-time: The audio inside the Focus Frame is sent to the first track and the audio outside the frame will output to the second track.

When working on drum loops, this is a great way to quickly isolate a sound for dedicated processing, such as focusing on a snare drum for adding effects such as distortion and reverb.
By putting the Focus Frame around the snare, it will be singled out and sent to the first track, while the rest of the audio goes to the second track.

Now you can apply additional effects by either loading more insert effects on the first track and/or using effect sends on the first track to send the snare to some global effects. In this example, the second track would have no additional effects applied to it, so that the rest of the drums remain unchanged. Of course, if you wanted to, you could now also apply separate effects to the second track.

Visualizing Audio

The Soundfield Display in PEEL STEMS can also serve as a visual reference when mixing. It can be quite powerful to just load PEEL STEMS onto your master track to gain a visualization of the mix. You can also load instances of PEEL STEMS onto individual tracks to see how they might be contributing to the overall mix.

In the example above, PEEL STEMS has been inserted on the master and is visualizing the mix:
Clearly visible are the reverb tail on the snare hit and its expansion in the stereo-field (green)—as well as the frequency-overlap of kick drum and bass sound (red largely underneath the green). They are both placed at the center, indicating they are quite "mono". Currently there are no vocals present - they would be indicated in yellow. The purple color represents the "Other" stem, in this case pad synths and a guitar, coccupying the space from 500 Hz upwards, also pretty broad in the stereo-field.

Technical Specifications

Operating Systems	• macOS 12, 13, 14+
	• Windows 10 & 11
CPU Architecture	• Windows: 64-bit
	• macOS: Intel & Apple Silicon 64-bit
Audio Formats	• 1-2 channels (I/O)
	• 32kHz - 192kHz sample rate
Plugin Formats	• VST3
	• AU (macOS only)
	• AAX
Audio Latency	• 482ms @44.1kHz

Feedback & Support

Our website products.zplane.de always provides the latest information and news about our products. Any issues you encounter may either be addressed in the FAQ section of the appropriate product or reported directly to us via post or email.

Before contacting us directly, please ensure you are using the latest version of the product.

Please also make sure that your issue is not covered in the manual, the forum, the FAQ or elsewhere on our website.

If you cannot find answers using the methods described above, and need to contact us directly, please provide the following details to enable us to help you as fast as possible:

> - Your registration information (such as the name of your User Account or your login e-mail)

> - Your system specifications (hardware, operating system, host software)

> - The exact version number of the plugin
> (displayed on the **Help [?]** & **Settings [⚹]** pages located at the upper-right of the PEEL STEMS interface)

Include a detailed description of your problem with a step-by-step description of what led up to it so we can try to reproduce the issue

Please use the following contact methods:

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Goerzallee 311
D-14167 Berlin
Germany

💻 products.zplane.de/support

@ support@zplane.de