



**SOUND
PARTICLES**



Energy Panner

Reference Manual

December 2020
v 1.0.0



Welcome Note

Welcome to “Energy Panner”

As you know, at Sound Particles we love to explore sound and space. And yes, you can use traditional panners to move sounds around, but we are always trying to think about crazy ideas for new ways of handling space, and “Energy Panner” is one of those strange ideas – a panner which is controlled by the intensity of the sound.

One day I was listening to music in the car after leaving the kids at school, and I started to imagine the drums moving according to the beat, and that was the beginning of “Energy Panner”.

Enjoy! And if you have any question or suggestion, don’t hesitate to contact us. We REALLY love to receive feedback from our users.

Nuno Fonseca, PhD

CEO

nuno.fonseca@soundparticles.com

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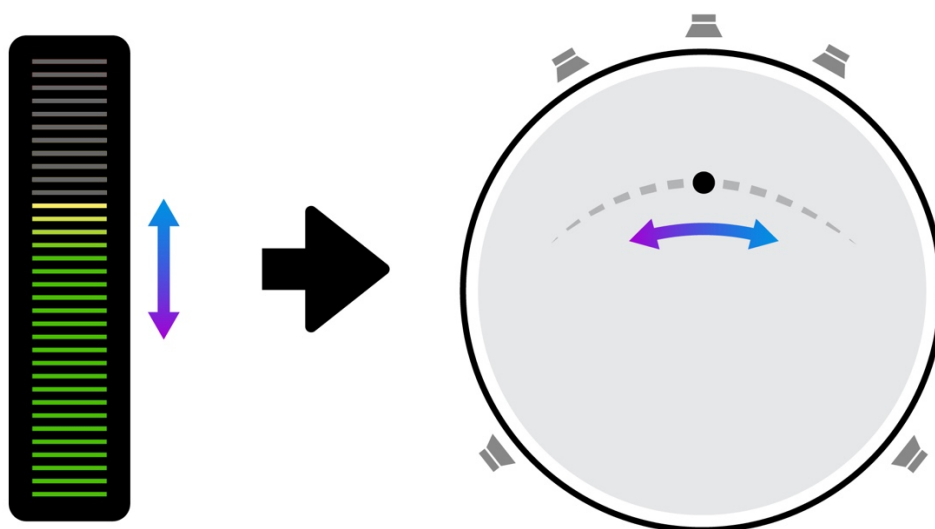
Energy Panner

Thank you very much for downloading the Energy Panner audio plugin from Sound Particles. Energy Panner is committed to change the way you use sound in space, enriching your mixes by spreading sound around you. This unique audio plugin makes panning easier than ever, by applying movement to your sounds using compressor-type parameters to the level of the audio signal.

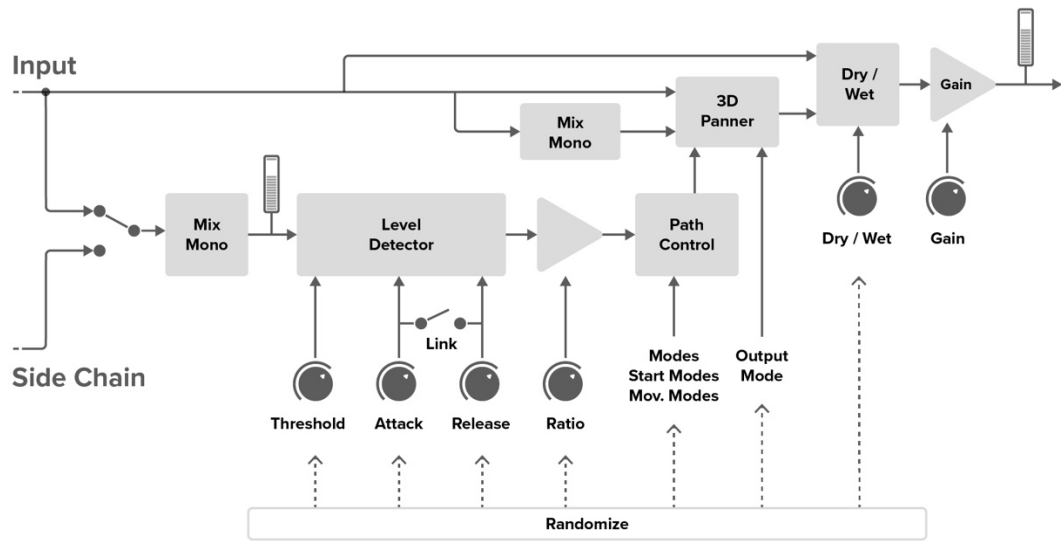
Designed to be simple and quick to use, Energy Panner has two different modes of operation — Pan and Sliding — enabling sound designers and music producers to use this new approach to panning in several different ways. Whether to add motion to sound effects or to creatively mix instruments, this audio plugin will change the way you think about the sound around you.

Energy Panner brings the most innovative panning solution to your DAW. Allows you to move your sound around dynamically in a variety of reproduction formats — from stereo to surround 5.1 and 7.1, to Dolby Atmos 7.1.2, Ambisonics up to 3rd order, and Binaural.

Go through this manual and get the best out of Energy Panner!



Energy Panner Signal Flow



Interface

The interface of Energy Panner is designed to be easy-to-use and straightforward while providing all information and controls you need to attain the best out of the plugin.

Energy Panner has a key element centered on the interface, the dome. Here, you will probably carry out the largest proportion of your actions, since it's here you can define the outstanding effects Energy Panner applies to your sounds.

In addition to the dome, there are a whole set of parameters around it that will help you to hit the sound you want. Above the dome are the two modes of operation: Pan and Sliding. Switching between these two modes will completely change the way Energy Panner works as well as changing the dominant colors on the interface. From the left side, you define basic components related to your sound effect position and its behavior.

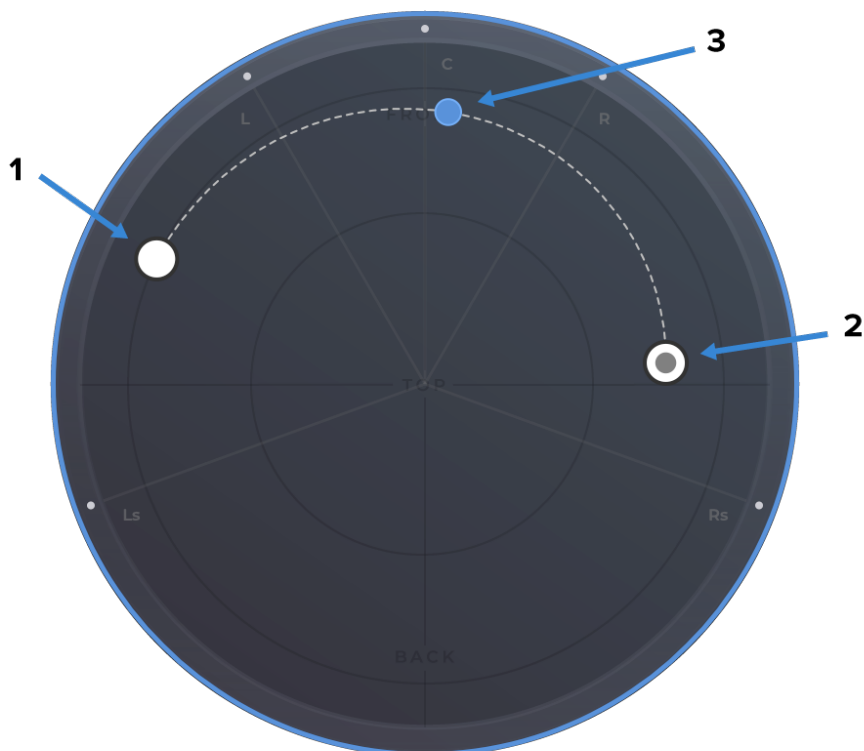


Understanding the Dome

The dome is a key element on the interface and fundamental to get the best out of Energy Panner. It is where users can define and view:

- 1) the Start handle** - start position of the audio source;
- 2) End/Movement handle** - sets the target position of the audio source; and
- 3) the Position indicator** - displays the current position of the audio source.

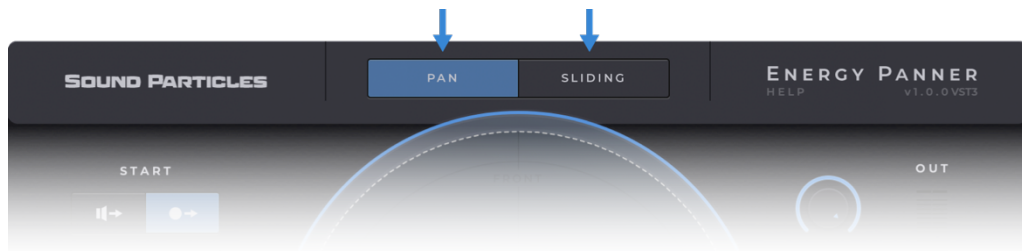
When moving these handles in the circle space you are outlining a panning trajectory of your sounds in a cupola-like space, being the output processed as if you were centered in this space. For example, a sound source initially positioned in the center of the dome will be perceived as being above us. If you define its trajectory to go back point, the final result will be a sound initially coming from above to behind us.



The dome is the main playground of Energy Panner. Using our set of parameters, you can add complex movements and trajectories to sound sources that you simply cannot achieve with traditional automation.

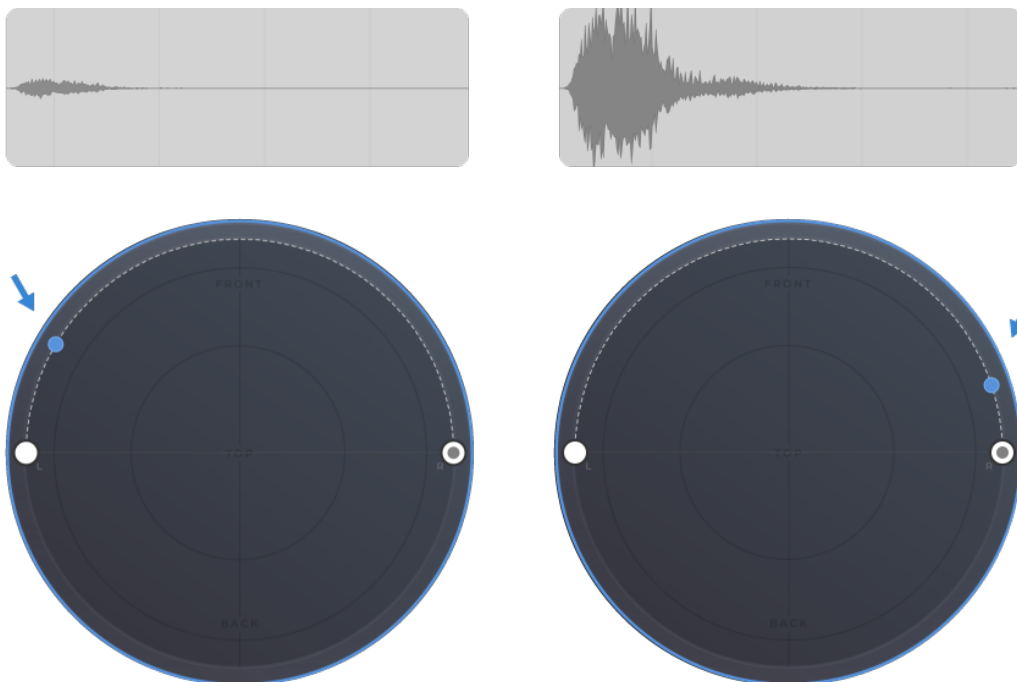
Panning Modes

The Energy Panner plugin has two panning modes — Pan and Sliding — that will help you in creating a greater variety of trajectories. These two modes will use the energy of your sound source and use it differently to distribute them around you.



Pan

The Pan mode is essentially a normal end-to-end particle-based panning. This type of panning effect changes the position of the sound source between two points (start point -> end point) previously defined by you. Therefore, the greater the energy of the input signal the greater the shift from the starting point to the end point. The example below demonstrates how pan mode works on the Energy Panner plugin.



Sliding Mode

The sliding mode works in its essence as continuous particle sliding/rotation-based panning. Whenever the audio signal reaches a certain level (threshold value), the sound source moves on a trajectory that you define. As opposed to pan mode, the sound source does not return to the starting point as soon as the signal level drops. The sound source will freeze that position until the audio signal exceeds the threshold value again, leading to a new shift of the sound source in the dome space. It's almost as if we had a sound source "walking" around the dome.



Effect Modes

Start Location

The effect modes in the Energy Panner refer to a set of factors able to modify the trajectory of the sound source, allowing to create a greater variety of sonic results. Basically, the Energy Panner effects section defines the essence of the effect we want to create.

Initially, you start by defining the start point's form and location. We can define the starting point form by:

- 1) **Start in Speakers Mode** - Sets the panning effect to start in the original input channel(s) position(s).
- 2) **Start in Point Mode** - Sets the panning effect to start in a given point. In this mode, the plugin output starts as a mono downmixed signal.

When the users select the start location in point mode, there is an option to choose from a list of selectable predefined positions for the start point.

Movement Type

Once you have selected the mode and starting position, Energy Panner lets you choose a type of movement for the sound source. The options are:

- 3) **To Speakers Movement** - Sets the panning effect to move towards the original input channel(s) position(s).
- 4) **To Point Movement** - Sets the panning effect to move towards a destination point.
- 5) **Clockwise Movement** - Sets the effect to rotate in a clockwise direction.
- 6) **Counter-clockwise Movement** - Sets the effect to rotate in a counter-clockwise direction.

Energy Panner has an invert Pan button that lets you invert the current panning motion of the sound source.



Main Parameters



Threshold

The **Threshold** knob sets the minimum level needed for the panning effect to be activated. The Energy Panner panning effect will open faster with a smaller threshold. It always depends on your audio to find a good setting, and the input VU meter right next to the knob will help you set the right level.

The starting color of the threshold knob is blue/orange, depending on the mode you're working on. However, once the audio signal exceeds the threshold value, the color of the button will turn green. Also, the input VU meter starts to show green lines.

Ratio

The Ratio knob sets the amount of panning that occurs when the input level surpasses the threshold value. The higher the ratio value, the higher the amount of panning to the sound source. For example, there is no movement if you shift the knob absolutely to the left (1:1). On the other hand, if you move it completely to the right (100:1), the result will be a higher amount of movement.

Attack

The Attack knob sets the speed at which the sound source moves when the signal level exceeds the threshold value, ranging from 1ms (very fast) to 5000ms (very slow). This wider range of attack time makes Energy Panner capable of dealing with a great variety of sound sources, from percussive to drone sounds.

Release

The Release knob sets the amount of time that takes for the decreasing panning effect to occur, ranging from 1ms (very fast) to 5000ms (very slow). Just like the attack parameter, the behavior is very dependent on the case scenario, heavily relying on the audio you are processing.

Link Option

Energy Panner has an option called Link that allows the attack and release parameters to be equal. This means that attack and release times can be controlled together or separately (link On/Off).

Output Options

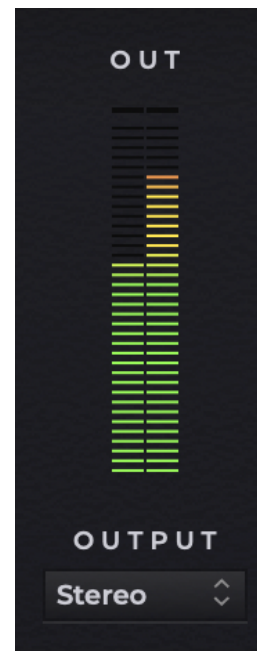
The Energy Panner has an output section dedicated to the parameters that change the already processed audio. These parameters are the Dry/Wet, Gain, and the output popup for the render formats.

The **Dry/Wet** knob controls the amount of dry (without movement) input signal that is added to the output. This is essentially the ratio between the input and processed signal.

The Gain Knob controls the gain of the output signal.

Output Render Formats

- **Stereo** - A stereo render made of gains based in the channel particle position.
- **Stereo(XY)** - A stereo render made with a virtual XY microphone.
- **Stereo(MS)** - A stereo render made with a virtual MS microphone.
- **Stereo(Blumlein)** - A stereo render made with a virtual Blumlein microphone.
- **Binaural** - A binaural render based on the SADIE MINP KU100 dataset.
- **Ambisonics** - An ambisonics render based on the ambisonics input.
- **5.0** - A 5.0 VBAP multichannel render
- **5.1** - A 5.1 VBAP multichannel render.
- **7.0** - A 7.0 VBAP multichannel render.
- **7.1** - A 7.1 VBAP multichannel render.
- **7.0.2** - A 7.1.2 VBAP multichannel render.
- **7.1.2** - A 7.1.2 VBAP multichannel render.



Tips

Knobs:

- Double click or Alt-click resets to the default value;
- Command, Ctrl or Shift while dragging enables fine-tune;

VU meter:

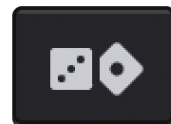
- Click on one channel clears its clipping led;
- Double click clears all clipping LEDs;

Dome:

- Shift while dragging a handle to give it a negative elevation;
- Use Ctrl or Command while dragging a handle to give it rounded values (snaps to a 5° grid).

Randomize:

- This button will set new random values to the parameters and the plugin effect mode buttons/popups.



Additional Notes

Avid S6 Support

Energy Panner (AAX) can have its parameters controlled through various control surfaces, including AVID S6.

Check for updates

If the plug-in is running on a computer with internet access, it is able to detect if a newer update is available, informing the user of the existence of a new update, by showing a blinking phrase on the top of the display.

To achieve that, Sound Particles Doppler tries to access a simple XML file located at <https://www.soundparticles.com>.

SOUND PARTICLES ENERGY PANNER DOES NOT SEND ANY INFORMATION FROM THE USER ONTO THE INTERNET.

Support

If you detect a bug, if you got a crash, if you believe something is not perfect, or even if you have ideas for future versions, don't hesitate, and email us at support@soundparticles.com. We REALLY want to hear from you. Sometimes a bug lives on for too much time, simply because we haven't detected ourselves and we didn't receive any feedback from the affected users. Besides that, your feedback is very important for us.

"Help us help you"

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SOUND PARTICLES ENERGY PANNER

START
 [Mute] [Solo] [Start] [Stop]
 Custom Point

MOVEMENT
 [Move] [Reset] [Refresh] [Undo]

THRESHOLD -33.9 dB
RATIO 2.49

OUT
 100.0 % DRY / WET
 0.0 dB GAIN
 OUTPUT 7.0

5000 ms ATTACK
 3107 ms RELEASE

SIDE CHAIN

The interface features a central circular energy panner with 12 nodes (L, C, R, Ls, Cs, Rs, Lrs, Csrs, Rrs) and a central 'DRY' node. Dashed lines show movement paths between nodes. The background shows a woman with headphones and a colorful particle visualization.

