



Spectral Coherence Control[®] Master Users Guide

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This Users Guide provides a detailed look at operation of the tool

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Spectral Coherence Control[®] Master Users Guide

A mastering tool reimaged: **Spectral Coherence Control[®]**

With Spectral Coherence Control[®] you can accurately and adaptively target unwanted remnants of the audio recording or playback processes. By altering these irritating artifacts, listening to music no longer has to be taxing on our ears. Create compelling, dynamic mixes, or smoothly organic audio like never before possible.

Welcome to the Spectral Coherence Control[®] Master **Users Guide**. This short set of instructions is designed to inform the user where to start when opening the tool for the first time. With the information contained here, the user will be able to learn how to begin using the tool to process audio and be able to hear results quickly. With some additional experimentation the user will be able to tune the quality of their sound to please the most critical listener, or the casual audio buff. Let's get started.

- What is Spectral Coherence Control[®] *designed to do*?
 - *It allows you to modify and refine the subtle non-musical elements in recordings or live sound to your liking, while keeping the music intact*
 - You can adjust the audio's Coherence by adding or subtracting subtle detail to either enhance the clarity or to add a more blended sound nature to your audio
 - Increasing Coherence brings desired sounds to the foreground and creates a clearer sounding audio, increasing the transient attacks and perceived dynamics, like being in a seat close to the stage at a concert performance
 - Reducing Coherence pushes detailed sounds to the background, creating a more blended audio with reduced perceived dynamics and softer attacks, like being in a balcony seat at a concert performance
 - Clearer audio creates a more precise sound, Blended audio creates the effect of organic gentle sound
- What does Spectral Coherence Control[®] allow you to do?
 - Tune the overall sound quality of your music to the type or style of sound quality you prefer, on your desired target playback environment: headphones, earbuds, or speakers

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- By adjusting the coherence multiple ways on the same music, you can also choose to prepare audio to your desired playback qualities on different playback systems, or adjust for the best balance of desired clarity across any set of playback environments
 - Tune your audio for playback through equipment such as headphones, earbuds, or speakers – each has different playback characteristics, but you can get a consistent sound for each type of equipment with different settings for each. You can also select a set of Presets that are not optimized for headphones or speakers, but will work reasonably well for either. Many samples of Preset files are included with the Spectral Coherence Control[®] Installer and can be accessed from a pull-down menu in the DAW control window above the Spectral Coherence Control[®] GUI
 - Play the music in real time, then listen while you adjust the parameters. You will be able to hear the difference in unwanted sonic artifacts using the Processed Button (item 7 in Figure 1 below).
 - Spectral Coherence Control[®] can be applied to each track individually or on the combined Master bus output

- What is the easiest way to begin using Spectral Coherence Control[®]?
 - Take a look at the Master QuickStart Guide to give you an overview of the tool, the layout of the GUI, and how to begin. After reading through the Master QuickStart Guide, load Spectral Coherence Control[®] onto your track or Master bus, then simply load each of the Preset files, one at a time, and listen to the result. The sound heard depends on the color of each button in the GUI that controls the output sound that is heard: Original, Processed, or the Removed sound. By simply using your mouse, you can select each button, and you will see a change of color of the button, and the plot shown on the GUI will reflect the color of the button. The following text explains what each button color means. With the ‘Removed’ button showing Yellow, you will usually also see the ‘Processed’ button is Green. This setting allows the user to hear the audio that has been removed (for a more Coherent sound), or has been added (for a more blended, smooth sound). The white FFT plot top-most on the GUI changes color based on the Removed button setting:
 - With the Removed button White, the top-most plot shows the FFT of the original unprocessed audio in the white plot
 - With the Removed button Yellow, the top-most plot shows the FFT of the audio that Spectral Coherence Control[®] is removing in the yellow plot
 - Once you have listened to all of the Preset files with the ‘Removed’ button showing Yellow, select the one Preset file that results in letting you hear the largest amount of program material / distortion that you would like to remove, or add, then uncheck the

Removed button so the color of the button changes back to white / light grey. You will then be able to see the Processed button turn Green; this means you will hear the 'end result' of what Spectral Coherence Control® can do for you to clean up your audio, or to make it a more smooth and less dynamic.

- The Master QuickStart Guide is designed to give you the basics of Spectral Coherence Control® operation. The Master Users Guide will fill in the details and help you work through the GUI to identify the parameters that are adjustable, and be able to manipulate the them to get the most out of you new capability.

Getting started

- What plug-in formats does Spectral Coherence Control® support?
 - The Spectral Coherence Control® plug-in is available in AU, AAX & VST3 formats. It has been tested in Pro Tools, Reaper, and Logic Pro X, and has been found to work with most other DAW programs, although some features may not be completely implemented. It has been tested on Mac OS versions High Sierra, Mojave, Catalina, Big Sur, Monterey, Ventura (with the new Mac M1 Max and Pro processors), and Sonoma (with a Mac M3 Pro processor). It also works on M2 processor computers as well as all Intel based Macs.
- What is the easiest work flow?
 - Instantiate Spectral Coherence Control® on a track or the stereo output. Learning how to use it is probably easier when it is used on the final stereo output because that is where all of the music comes together, and the various sounds interact with each other to provide the listener experience.
 - Once you have opened the Spectral Coherence Control® GUI, select any Preset parameter set to get started. There are about 15 Preset parameter sets installed with Spectral Coherence Control® and the best way to proceed with tuning your audio is to engage Spectral Coherence Control®, and all of the Bands, and start listening. The Preset parameter sets has been refined to attack different recording byproducts. Presets have been tuned to work best with different types of playback equipment, speakers, headphones, and earbuds. All will provide some amount of processing on any playback system, on all types of music, so select a Preset and get started.
 - The easiest way to begin working with your audio is to listen to the 'removed audio' first. This is done by toggling the Removed button from light grey/white to Yellow with the Processed button also set to Green. This setting means you are listening to the distortion removed by Spectral Coherence Control® if you have the Coherence control set to positive numbers, or the distortion being added (if you have the Coherence

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control set to negative numbers). You should try toggling the Removed button back to light grey / white, with the Processed button Green, to hear the end result on the original music, this is the repaired audio. Then try adjusting each of the 5 Global parameters (items 1 through 5 in Figure 1 below) under the GUI to hear their effect on the audio. Work your way back and forth between them until you hear the sound quality you like. If there is a slight loss of volume after processing, which is possible in some cases, simply boost the gain back up using the GAIN control found just next to the Coherence button (item 5 in Figure 1 below).

- What are the available adjustments in the Spectral Coherence Control® Mastering version?
 - There are 5 Global parameters available for tuning the sound. These can be seen as items 1 through 5 in the pictorial below, Figure 1: Spectral Coherence Control® Graphical User Interface window.



Figure 1 Spectral Coherence Control® Graphical User Interface window

Spectral Coherence Control® Master version is shown, it allows adjustment of all of the white text parameters in the table region below the frequency domain plot area in addition to the 5 Global parameters under the GUI, and the selection of the desired audio output (items 6, 7, and 8 in Figure 1).

- The 5 Global parameters that control the overall sound quality are:
 - Item 1: Separation parameter: controls the distinctness of the sounds in the program material one from the other. Lower values provide more distinctness, while larger values reduce the distinctness of the sound
 - Item 2: Resolution parameter: controls the low-level information, with lower values offering less sonic resolution, and higher values provide higher resolution of fine details in the sound
 - Item 3: Reference Level parameter: controls at what level the processing occurs, with lower levels of Reference level offering more processing effect while higher levels offer less processing effect
 - Item 4: Coherence parameter: controls the amount of clarity or blend applied to the program material. Positive values of Coherence provide more clarity while negative values provide a more blended effect
 - Item 5: Gain parameter: controls the amount of audio gain that the user desires to apply to the processed audio output to compensate for a perceived loss of program material volume after the distortion has been removed
 - Item 6: Original button: When the Original button is Red, the Spectral Coherence Control® algorithm is bypassed and the user is hearing the original, unprocessed, audio, and seeing the frequency content of the unprocessed audio in the red top plot. When the Original button is light grey/white (as in the Figure 1 above) the user sees the top plot turn White, and hears the result of Spectral Coherence Control® processing, which can be seen in the Green FFT plot in the GUI, if the Processed button shows Green and Removed button is not Yellow.
 - Item 7: Processed button: When the Processed button is Green, and the Removed button is light grey/white, the user is hearing the good/repaired audio that results from Spectral Coherence Control® processing. In this setup, the bottom plot turns Green and shows the FFT of the repaired program material.

- Item 8: Removed button: When the user wants to hear the music program material that has been processed and removed, the Processed button should be toggled to turn it Green, and the Removed button should be Yellow. In this configuration the user can listen to the result of Spectral Coherence Control® processing and hears the program material that has been removed or added.



o **Figure 2** Spectral Coherence Control® Graphical User Interface window

Spectral Coherence Control® Master version allows the same Global adjustments as the Essentials version plus the user is allowed two more adjustable items, 9 and 10, in each Band that allow fine tuning of the sound. Additionally, the user has the ability to turn Spectral Coherence Control® processing Off, selectively by Band, using the light blue ‘power’ button in each Band, item 11. Further, the user may highlight a single Band’s processing by ‘option-clicking’ each Band during auditioning program material to turn some Band’s processing off, or to enable isolation of processing by band.

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- Items 9, 10, 11, and the capability to isolate each Band’s processing for audition, are the extra adjustments in the Spectral Coherence Control® Master version that are unavailable in the Essentials version. In Figure 2 above, these items can be seen in the 6 columns of numbers below the GUI and Globally adjustable parameters, this is called the Table entry area
 - The Span and Coherence in each Band can be different than the values in other Bands via the ‘table entry’ area below the GUI. They are seen as items 9 and 10 in Figure 2 above.
 - Spectral Span defines the amount of extra processing that happens in each band; how deeply into the music the processing is applied. Essentially the Reference level value can be independently set inside each Band
 - The Spectral Span adjustment, item 9, controls how deeply the algorithm works within each band, in addition to the Reference level, and is adjustable by Band
 - The Global Reference level, item 3 in Figure 2, provides the same type of adjustment as the Span control in each Band, but applies the Reference value globally across all bands.
 - Coherence defines the amount of clarity available in the processed sound
 - The Coherence adjustment, item 10 in Figure 2, allows the user to select more Coherent sound in parts of the spectrum and less Coherent sound in other parts of the spectrum: so the user can control it by Band in addition to the overall Global Coherence
 - The Master version also allows the user to turn Spectral Coherence Control® processing off, Band by Band, by using the light blue ‘power’ button, in each Band, item 11 in Figure 2 above.
 - The ability to selectively hear the processing individually, or in groups, allows the user to better tune for the sound quality they desire, usually by listening to the audio being removed. The user can toggle the Removed button to Yellow to hear the audio being removed by Spectral Coherence Control® processing
 - The user can also choose to hear only the audio processed in any band by using the ‘Option click’ buttons together to toggle any band processing off and back on again.
- **Products**
 - The Spectral Coherence Control® digital audio workstation plug-in is available as the Master version and The Essentials version. Both offer the same processing engine, but the Essentials version does not include the tabular entry area to fine tune the Preset parameters. The Essentials version installs with the same Preset files as the Master version, and simply allows the user to select between the various presets, as some users prefer to select from different options but not adjust parameters on their own.

- The Spectral Coherence Control® Master version is offered as a Perpetual license at product launch, a monthly license option may be offered later
- Spectral Coherence Control® Essential version is also available as a Perpetual license, and may be followed later as a monthly license option
- Each version of Spectral Coherence Control® is compatible with the 3 major formats of DAW plug-in
 - AU
 - VST3
 - AAX

Support

If you are having issues using one of our Spectral Coherence Control® tools, please email us with your system configuration and Spectral Coherence Control® version so that we can help get you on track. We will respond as soon as we can. Please include:

- Operating system and version
- Digital audio workstation and version
- A description of what is not working or how you are using the tool, and what is happening
- Email us at: support@planetvenusaudiotech.com