



Spectral Coherence Control® 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[®] 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[®] **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 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 all types of Preset files are included with the Spectral Coherence Control[®] Installer and can be accessed from a pull-down menu in 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 Preview Button (item 6 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 QuickStart Guide to give you an overview of the tool, the layout of the GUI, and how to begin. After reading through the 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 with the ‘Preview’ button showing Yellow, and the ‘Bypass’ button is light grey. 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 based on the Preview button setting:
 - With the Preview button White, the top-most plot shows the FFT of the original unprocessed audio
 - With the Preview button Yellow, the top-most plot shows the FFT of the audio that Spectral Coherence Control[®] is removing
 - Once you have listened to all of the Preset files with the ‘Preview’ 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 Preview button so the color of the button changes back to white / light grey. You will then be able to listen to the ‘end result’ of what Spectral Coherence Control[®] can do to clean up your audio, or to make is a more smooth and less dynamic.
 - The QuickStart Guide is designed to give you the basics of Spectral Coherence Control[®] operation. This Users Guide will fill in the details and help you work through the GUI to

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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 will work on M2 processors 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. Each of the Preset parameter sets has been refined to work best with various types of playback equipment, speakers, headphones, and earbuds, but all will provide some amount of processing on any playback system so select one and get started.
 - The easiest way to begin working with your audio is to listen to the 'removed audio'. This is done by toggling the Preview button from light grey/white to Yellow with the Bypass button also set to light grey/white. This setting means you are listening to the Spectral Coherence Control[®] processed audio (Bypass button is White), and with the Preview button as Yellow you will now hear the distortion being removed (if you have the Coherence control set to positive numbers) or the distortion being added (if you have the Coherence control set to negative numbers). You should try adjusting each of the 4 Global parameters under the GUI to hear their effect on the audio, and 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 underneath the Bypass and Preview buttons.

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- What are the available adjustments in the Spectral Coherence Control® Mastering and Essentials versions?
 - There are 4 Global parameters available for tuning the sound. These can be seen as items 1 through 4 in the pictorial below, Figure 1: Spectral Coherence Control® Graphical User Interface window. The Spectral Coherence Control® Essentials version has items 1 through 4 as adjustable and items 5 through 7 as selectable items from a pull-down menu or adjustable value



Figure 1 Spectral Coherence Control® Graphical User Interface window

Spectral Coherence Control[®] Master version is shown here, and it allows adjustment of all of the white text parameters in the table region below the frequency domain plot area in addition to the 4 Global parameters under the GUI. When the Essentials version of Spectral Coherence Control[®] becomes available, it will have items 1 through 4 as adjustable, and items 5 through 7 as selectable items, but the values in the table area under the GUI will be fixed at the stored Preset values.

- The 4 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: When the Bypass 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 white plot. When the Bypass button is light grey/white (as in the Figure 1 above) the user will hear the result of Spectral Coherence Control[®] processing, which can be seen in the Red FFT plot in the GUI, if the Preview button is not Yellow.
 - Item 6: When the Preview button is Yellow, and the Bypass button is light grey/white, the user is hearing the audio that is being removed from the program material, and the top white plot is displaying the frequency content of the removed audio. So, the White FFT plot shows either the original unprocessed audio or the removed / added audio as provided by Spectral Coherence Control[®] processing (dependent on the settings of the Bypass and Preview buttons). Listening to this audio is very useful when tuning the Global

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parameters because the user can tune for the sound to include just the amount of the distortions that are desired to be either removed or added. When the user wants to hear the music program material that has been processed, the Preview button should be toggled to turn it light grey/white, and with the Bypass button also light grey/white, the user can listen to the result of Spectral Coherence Control® processing on the desired audio program material.

- Item 7: There are two places where the user may select from preinstalled parameter Preset files, and items 7 in the Figure show the two places (in Logic Pro X) where these files can be selected. There is a similar selection pulldown in Reaper, Pro Tools, and other Digital Audio Workstations.



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- **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, 8 and 9, in each Band; the ability to turn Spectral Coherence Control[®] processing Off, selectively by Band, using the light blue ‘power’ button in each Band, item 10, and/or highlight a single Band’s processing by ‘option-clicking’ each Band during auditioning program material, and the ability to adjust the Spectral Coherence Control[®] post processing Gain, item 11, to compensate for perceived reduced gain after distortion removal has been accomplished

- What are the available extra adjustments in the Spectral Coherence Control[®] Master version?
 - With the Master version of the Spectral Coherence Control[®] tool all of the parameters that are adjustable in the Essentials version are available with the addition of the parameters Span and Coherence, which are inside each Band and are also adjustable, seen as items 8 and 9 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 altered more to alter the level inside each Band
 - Coherence defines the amount of clarity available in the processed sound
 - The Master version allows the user to adjust Span and Coherence in each Band to be different than other Bands via the ‘table entry’ area below the GUI
 - In Figure 2 above, see the 6 columns of numbers below the GUI and Globally adjustable parameters, this is called the Table entry area
 - The Spectral Span adjustment, item 8, 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 the Figure, provides the same type of adjustment as the Span control in each Band, but applies the Reference value globally across all bands.
 - The Coherence adjustment, item 9, allows the user to select more Coherent sound in parts of the spectrum and less Coherent sound in other parts of the spectrum: you control it by Band in addition to the overall Global Coherence
 - The Master version allows the user to turn Spectral Coherence Control[®] processing off, Band by Band, by using the light blue ‘power’ button, in each Band, item 10, 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 Preview 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.
 - The Master version allows the user to adjust the audio gain of the track, or section of music, that Spectral Coherence Control[®] is processing, using the Gain parameter, item 11 in Figure 2 above.
 - The Gain adjustment allows the user to compensate for any perceived loss of volume for those tracks having higher levels of distortion being removed after Spectral Coherence Control[®] processing
- **Products**
 - The Spectral Coherence Control[®] digital audio workstation plug-in is available as the Master version initially. The Essentials version will follow, and offer the same processing engine, with fewer adjustable parameters (only the 4 Global values, and Gain)
 - The Spectral Coherence Control[®] Master version is offered as a Perpetual license at product launch, a monthly license option will be offered later
 - Spectral Coherence Control[®] Essential version will become available in 2024, initially as a Perpetual license, and 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