OZONE 6

Help Documentation

iZotope

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Authorization

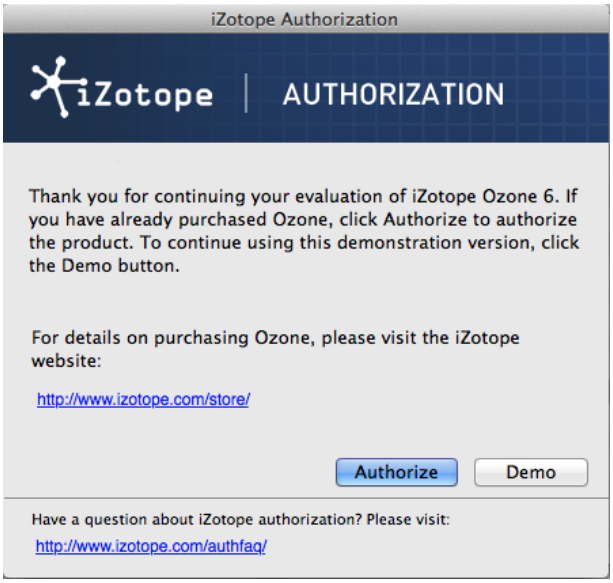
Each purchased copy of Ozone 6 contains a unique serial number printed on a card that is included within the box.

If Ozone 6 has been downloaded directly from iZotope or another reseller, the serial number will be e-mailed to you, along with the link to download the product.

The serial number should resemble:
SN-OZONE6-XXXX-XXXX-XXXX-XXXX

Launching the Authorization Wizard

The first time you open Ozone 6, the Authorization Wizard will appear. You can choose to either authorize Ozone, or instead use it in “trial mode” for evaluation purposes. Please use your supplied Ozone 6 serial number to fully authorize your product.



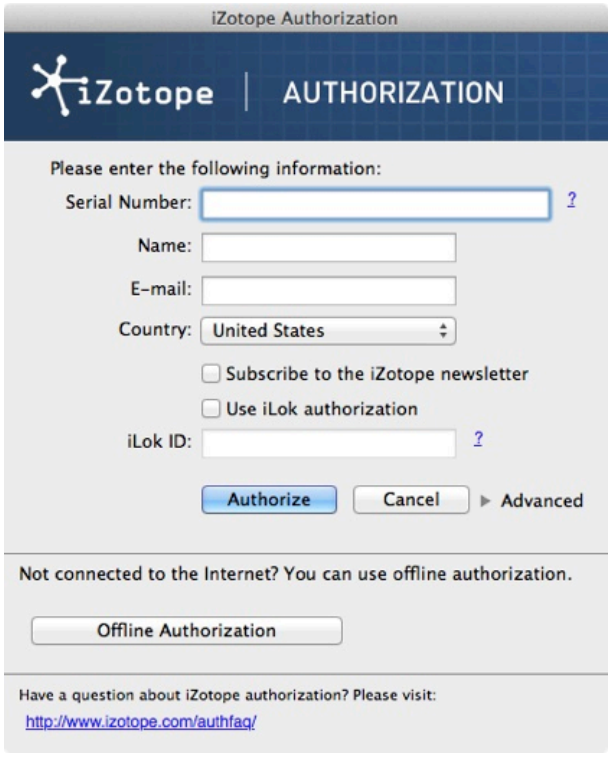
Trial vs. Demo Mode

For 10 days after Ozone is first opened or instantiated, Ozone will run in Trial mode. Trial mode offers full functionality of the Ozone plug-ins and application.

After 10 days, Ozone will revert to Demo mode. In the plug-ins and application, Demo mode will intermittently mute audio output. Additionally, exporting and saving is disabled in the Ozone application

Authorizing Your Copy of Ozone 6 Online

After opening Ozone 6 and launching the Authorization Wizard, perform the following steps to complete the authorization process online:



1. Click on “Authorize.”
2. Enter the serial number, using all capital letters, as it is shown on the included card or purchase confirmation e-mail.

   SN-OZONE6-XXXX-XXXX-XXXX-XXXX
3. You must also enter your name and a valid e-mail address.

   Note: Clicking the Advanced button reveals a set of options that allow you to store your Ozone authorization on a portable hard drive or flash drive. Click here or go to the Knowledgebase on iZotope.com for more information on these options.

   Please make note of the e-mail address you use to authorize your license, as your license and iZotope account will be linked directly to this e-mail address.
4. When you have confirmed that your serial number and e-mail information is accurate, click once more on “Authorize.”
5. Click on “Submit” to send your authorization information to iZotope.
6. Once the authorization is accepted, click on the Finish button to complete the authorization.

Authorizing Your Copy of Ozone 6 Offline

Some customers choose to keep their audio workstations offline; for these instances, a simple offline authorization option has been included.

After opening Ozone 6 and launching the Authorization Wizard, the following steps will complete the authorization process offline:

1. When first prompted to authorize Ozone 6, click on “Authorize.”
2. Click on the option for “Offline Authorization” at the bottom of the authorization window.
3. You will be given a unique Challenge Code that is specific to your computer only.
   Write down or make a copy of the exact Challenge Code. It will look like this:
   IZ-OZONE6-XXXXXXXX-XXXX-XXXX
4. Next, using a system with Internet access, login to your customer account at the iZotope website.
   https://www.izotope.com/en/account/log-in/
5. Click on “Activate Software with a Serial Number,” enter your full serial number, then click “Submit.”

6. Select the “Challenge/Response option and click on “Submit.”
7. Enter your full Challenge Code copied in step 3.
8. After submitting your Challenge Code, you will receive a unique authorization file named “Ozone_6.izotopelicense.xml.” Copy this file to your offline computer.
9. Once the authorization file is copied to your offline computer using a network, hard drive, or USB thumb drive, click the Choose File... button in your authorization wizard.
10. Navigate and select the authorization file and click “Next” to authorize your machine.
11. You should now receive a message that your authorization has been successful, you may click “Finish” to begin using Ozone 6.

iLok Support

Ozone 6 supports the iLok copy protection system. Our plug-ins will be able to detect iLok keys and assets if you already use iLok and PACE software on your system.

If you don't already have PACE or iLok, we will not install any PACE or iLok software to your system, and iLok authorizations will be unavailable.

Authorizing Ozone with iLok

1. When first prompted to authorize Ozone 6, click on "Authorize."
2. Next, enter the serial number in all capital letters as it is shown on the included card or purchase confirmation e-mail.

   SN-OZONE6-XXXX-XXXX-XXXX-XXXX
3. You must also enter your name and a valid e-mail address. Make note of the e-mail address you use to authorize your license. Your license and iZotope account will be linked directly to this e-mail address.
4. Select "Use iLok Authorization" and enter your iLok ID.
5. When you have confirmed that all your information is accurate, click once more on "Authorize."
6. Lastly, click on "Submit" in order to send your authorization message to the iZotope servers.
7. You will now be instructed to log in to your iLok account and transfer your Ozone 6 license to your iLok.
8. When you have completed this step and have your iLok connected to the computer on which you want to use Ozone, click "Next."
9. You should now receive a message that your authorization has been successful and may click "Finish" to begin using Ozone 6.

Online Help

We have created an online article to help with common questions about our authorization system.

Removing Your Current Authorization

Use the authorization menu in Ozone's General Options panel to remove your current Ozone authorization (for example, if you have upgraded to Ozone 6 Advanced and have already authorized Ozone 6 Standard).

After removing your authorization, Ozone's authorization screen will pop up when you restart the program. Now you can re-authorize the application using a new serial number. You may also remove your Standard authorization at any time, in order to run Ozone 6 Advanced in Trial or Demo mode.

Note: If you have downloaded Ozone 6 Standard and then purchased an upgrade to Ozone 6 Advanced, you will need to, download Ozone 6 Advanced from our website, here, and reinstall first.

What is Ozone 6?

Get ready for an entirely new mastering experience...

Ozone 6, the latest version of iZotope's complete mastering system, has a workflow centered around creativity: a redesigned, modern interface guides and inspires users of all experience levels at every step, so you can freely experiment with ease.

Reinvent timeless sounds by harnessing the sonic texture of classic analog gear, then tweak with the surgical precision of digital software. An intuitive display and robust visual feedback let you dial in your signature sound in just a few clicks.

Whether you're a professional engineer or a home studio producer, Ozone 6 gives you everything you need to effortlessly produce professional-sounding masters in one elegant package.

Key Features in Ozone 6

- ✓ Complete audio mastering system available in a single plug-in, as well as a standalone application
- ✓ Seven essential mastering tools:
  - Maximizer
  - Equalizer
  - Dynamic Equalizer (Ozone 6 Advanced only)
  - Dynamics
  - Imager
  - Exciter
  - Dithering
- ✓ Analog-modeled processing combined with linear-phase precision
- ✓ Elegant, highly efficient user interface
- ✓ Extensive metering and visual analysis tools help you get better results
- ✓ Comprehensive preset system with large number of professionally designed presets
- ✓ Module presets: Mix and match settings between modules
- ✓ Integrated undo history with comparison tools
- ✓ Visually intuitive, user-definable signal routing
- ✓ Extensive automation support
- ✓ CPU-efficient/optimized for low-latency DAW environments
- ✓ Supports sampling rates up to 192 kHz

Highest Audio Quality

Ozone uses highly optimized audio signal processing to achieve the highest resolution and sound quality possible.

All of the mastering modules in Ozone are specifically designed to work together; the sound quality and characteristics of each of the mastering modules is tuned to complement the others, providing consistent and high quality results.

Ozone uses analog modeling to give each of the mastering modules a smooth, natural sound. For example, the Equalizer can recreate the soft limiting exhibited by a vintage valve Equalizer, while the Exciter mimics the musically pleasing harmonic saturation of a vacuum tube component.

Whenever there was a choice between CPU power and sound quality, we chose sound quality. There are less CPU-intensive ways of doing some of the processing that Ozone does, but the sound quality can suffer. Since Ozone is intended for mastering, you would typically only have one instance of Ozone running on the main bus of a DAW session, or used in a two-track editor application, which should allow you to utilize Ozone even on computers using lower-powered CPUs.

Powerful Audio and Visual Feedback

We wanted to provide useful visual feedback wherever possible. Your ears and your eyes can be a powerful combination when you're mastering, and each processing module is complemented with useful spectrums, phase meters, and level histograms. Each module also employs switchable views that highlight different aspects of how your mix is affected throughout the mastering process.

We also wanted to make it easy to get comparative audio feedback by providing extensive solo and bypass controls as well as histories with functions for A/B comparisons. Wherever possible, we wanted to give you new ways to really hear what you are doing.

Intuitive, Easy-to-Use Design

We made Ozone as intuitive as possible, from including a complete set of mastering modules in a single plug-in system, to the little things like mouse-wheel support.

While there is a lot of power in Ozone, we think that in no time at all you'll be making the most of it and getting great results with ease. Whether you're a seasoned professional, or simply ready to take your productions to the next level, Ozone is the complete solution you need. Your mix isn't finished until you put it through Ozone.

This user's manual is a quick reference for basic Ozone functions and controls. We have written a separate Ozone Mastering Guide that provides tips and techniques for mastering with Ozone.

New Features in Ozone 6

If you're moving up from Ozone 5 to Ozone 6, we thank you for your continued support! Here are details of some of the changes and new features that you'll find in Ozone 6:

Standalone Application
In versions 5 and earlier, Ozone was only available as a cross-platform DAW plug-in. While this is still the case with version 6, you can now also use Ozone 6 as a standalone application, with the following features:

- In and Out Fading and Trimming
- File Exporting with automatic Dither and Sample Rate Conversion
- Third-party plug-in support

Dynamic EQ (Ozone Advanced Only)
Ozone 6 has a new Dynamic EQ module. This versatile new processor works similarly to a regular EQ, but allows you to set a compression threshold; when a specified frequency range passes over that threshold, it is reduced or boosted.

This processor can be very useful in toning down any specific frequencies in your mix that are too loud, with a degree of precision not possible with a normal EQ.

Completely Redesigned User Interface
We've redone the entire workflow and user interface of the program to make it easier to use and understand. Improvements include:

- New visual placement of key features and commonly used features
- Removal of less-commonly used features
- Arrangement of processing modules in signal chain at bottom of interface
- Visual icons next to parameter sliders, offering an intuitive sense of how adjusting a control will affect your audio
- Larger text size for many parameter readouts
- Color improvements

Ozone 6 Standard vs. Ozone 6 Advanced

Ozone 6 comes in two separate versions:

- **A standard version with the most commonly used tools**

- **An advanced version that includes an extra set of tools used in the most high-end, professional settings. These include:**
  - The separate Insight plug-in
  - The Dynamic EQ processing module
  - Individual component plug-ins for each Ozone 6 module

Standalone vs. Plug-In Version

If you wish to process your audio material within your DAW or two-track editor software of choice, use Ozone 6 in its plug-in form.

If you wish to take an existing audio file and process it without using a DAW or two-track editor, use Ozone in its standalone form. In this mode, you can:

- Launch Ozone as its own executable application
- Load existing audio files into the application
- Apply Ozone's processing tools to the loaded files, as desired, while monitoring their effects in real time
- Export the separate processed audio files, saved with all of the processing applied

Using Mastering Presets in Ozone 6

Ozone's presets are designed to give you a quick starting point for mastering your own projects.

Every mix is different, so no preset can perfectly master your project. However, we have attempted to provide a wide range of presets that will help you find a good starting point for mastering your own material. By starting with a preset, you'll be able to tweak these presets to make them more closely fit the session you're working on.

We recommend you download the Ozone Mastering Guide, to learn the basic principles of mastering with Ozone. Presets can take you a long way, but learning how each of Ozone's mastering modules works is key to getting the best results. You won't regret it; your masters will sound better than ever before!

Setting Your Input Level

Setting the input level in Ozone can make a huge difference in how the Dynamics modules in Ozone behave. Setting your input level is also important when selecting presets, as the presets will sound drastically different if your input level is too loud or quiet.

As a starting point, try setting Ozone's input level so that the input meter is peaking upper half to upper quarter of the meter. It is OK if the input meter peaks close to the top when Ozone's Maximizer module is enabled, since it will keep the audio from clipping.

Choosing a Starting Point

Start by listening through several of Ozone's presets. The presets contain helpful descriptions based on the outcome they will produce on your audio. Alternatively, you can start with a genre-based mastering preset, or simply use the general-purpose mastering presets.

Because every mix is different, we've aimed to give you a lot of starting points so that you can choose the best one for your project. When you've found one that sounds like it has what your mix needs, you can start tweaking that preset to your liking.

Getting to Know the Ozone Interface

1. **Transport Bar:** This set of controls allows you to navigate playback of the audio files that are loaded into the Ozone program.
2. **Audio File Tabs:** Click on any tab to switch to its corresponding audio file, where you can play it back and adjust the controls of Ozone's processor modules to affect the sound of the audio file.
3. **Waveform:** The waveform display shows a graphical representation of the currently selected audio file. Click on any spot in the waveform, with its accompanying timeline counter, to play back the file from that location.
4. **Processor Module Display:** This main part of the Ozone 6 interface contains all the controls and displays for the currently selected processor module.
5. **Processor Module Browser:** Click on any of the modules in this section to view and adjust the controls for that module, in the processor module display.
6. **Presets:** Click here to load a signal chain preset, giving you a head start in processing your audio for a wide variety of situations.
7. **Master Input/Output Section:** This section contains detailed input/output meters, as well as handy master controls such as master bypass, mono check, L/R stereo swap, and a full-featured dither processor.

Ozone 6's standalone version allows you to use its mastering tools as a standalone application; no external DAW or two-track editor is required.

This approach can be advantageous when your un-mastered audio already exists as a standalone audio file, and you wish to process it in as straightforward a manner as possible, without the complexity or CPU overhead of running a separate DAW or two-track editor.

The following is an explanation of the commands and workflows that are unique to the standalone version of Ozone 6, that are not present when using it as a plug-in with your DAW software.

File Menu

Ozone's file menu contains the different commands you use to perform functions such as:

- Loading audio files into an Ozone project for processing
- Saving the project
- Exporting the processed audio files

The file menu's different commands are detailed below, in the context of describing the workflow of loading, processing, and saving audio files.

Loading Files

Upon launching the standalone Ozone application, a new project will automatically be created. The first step is to import an audio file into the new project.

To do so, you can:

- Click on the File menu at the top of the screen, then "Import Audio Files."
- Click on the "plus" icon at the top-left area of the interface.
- Use keyboard shortcut Cmd+I or Ctrl+I

A standard dialog box will appear where you can navigate to the desired file, then click "Open" to import it into the project.

Supported file formats that can be loaded include:

- ✓ .wav
- ✓ .aiff
- ✓ .mp3
- ✓ .flac

Supported bit depths include:

- ✓ 16-bit
- ✓ 20-bit
- ✓ 24-bit

Supported sample rates include:

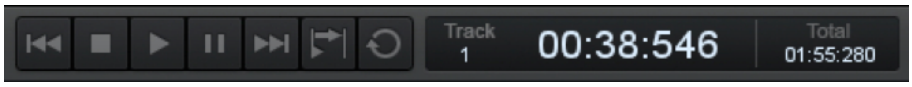
- ✓ 11,250
- ✓ 22,050
- ✓ 44,100
- ✓ 48,000
- ✓ 88,200
- ✓ 96,000
- ✓ 176,400
- ✓ 192,000

You can also import an audio file by dragging and dropping the audio file from your computer desktop/folder onto the Ozone window.

The imported audio file displays as a tab in the upper portion of the screen, with the title of the imported file. Each audio file tab, when clicked on, will display its audio file as a waveform, with an accompanying timeline displayed in minutes/seconds/milliseconds.

Playing Back Audio Files: The Transport Bar

Ozone provides a handy transport bar, located at the top of the screen, that allows you to easily navigate the playback functions of an imported audio file.



The transport bar includes the following functions:

Play
Click the Play button to play back the currently imported audio file.
Playback can also be initiated by pressing the space bar.

Playback will begin and you will see a playhead cursor move from left to right across the waveform.

To play back the file from a spot in the middle of the song, simply click on any desired spot of the waveform, then press the Play button.

Stop
Click the Stop button to stop playback. The cursor will always return to the last insertion point.

Return to Zero/Skip Back
Clicking on this button has two different functions, depending on the current position of the playhead within the audio file:

- If the playhead is located more than two seconds into the audio file, clicking the button invokes a “return to Zero” function, moving the playhead back to the beginning of the current file.
- If the playhead is near the very beginning of the file, clicking the button acts as a “skip back” button, skipping back to the previous audio file (if there is one loaded).

Skip Forward
Click this button to skip to the next audio file that has been loaded into the software. If no other files have been loaded, the button will have no function.

Playhead Follows Playback
Clicking this button toggles the ‘stop’ behavior for the space bar and Play button. When unselected, and playback is stopped using the space bar or Play button, the play head will return to the last selected position. When selected, and playback is stopped using the space bar or Play button, the playhead will retain the current position.

Loop
To loop playback of a specific section of audio, click and drag on the mouse and highlight a portion of the audio file; the section will highlight in blue and the “loop” icon in the transport bar will also highlight.

When you next press Play, the transport will loop playback repeatedly for the highlighted section only.

To stop looping audio, click on the Loop button again. The button will de-illuminate and looping will no longer be active, even though the area of the waveform will remain highlighted. The Loop button can be manually clicked again if you wish to again loop the audio.

Ozone’s transport bar also contains three helpful displays, as follows:

Track Number
This number displays the track number of the currently selected track.

Time Counter
This counter will display the current time position within the audio file, displaying in minutes/seconds/milliseconds.

Total Time
This smaller display shows you the total length of all songs in the session.

To play back the imported audio file, press the space bar or click on the Play button. The audio file will be played back, with a moving playhead indicating the current position in the file.

- Press the space bar again or click on the Stop button to stop playback.

This function is very useful when dialing in the desired processing for a particular section of your audio file.

Multiple File Workflow

You can load multiple files into the same project. To do so, simply repeat the Import File process; each newly imported file will display in its own separate tab on the top of the screen.

To play back audio from any given file, simply click on its corresponding tab. The waveform file will change to display that tab's audio, and the playback controls will control playback for that audio file.

Note that any audio processing that is applied for an imported file, affects the audio for that file only; it does not affect the audio of the other files represented by the other tabs. This allows you to apply separate audio processing settings to each separate audio file in a session.

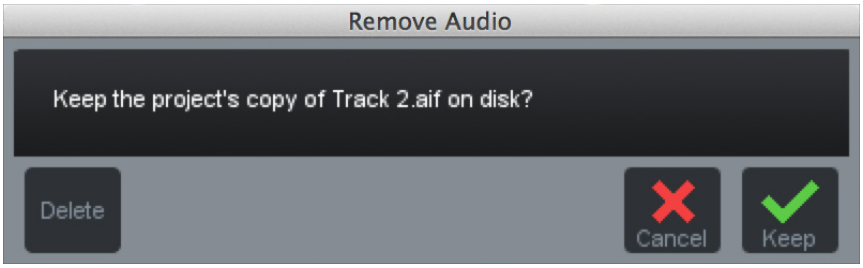
This is crucial in a mastering session, since you will apply different processing to each song within a larger collection of work, unique to the needs of that specific song. This also allows for the different songs to all fit together nicely as a cohesive album.

To re-order the layout of the audio files tab within a session, simply click and hold on any tab in a project, then drag it to the left or right.

To delete an imported audio file in a session, you can either:

- Right-click on the audio file's tab and select "Remove Track."
- Click on a tab to highlight it, then click on the "X" button.

When deleting a file, a dialog box will appear offering you three different options:



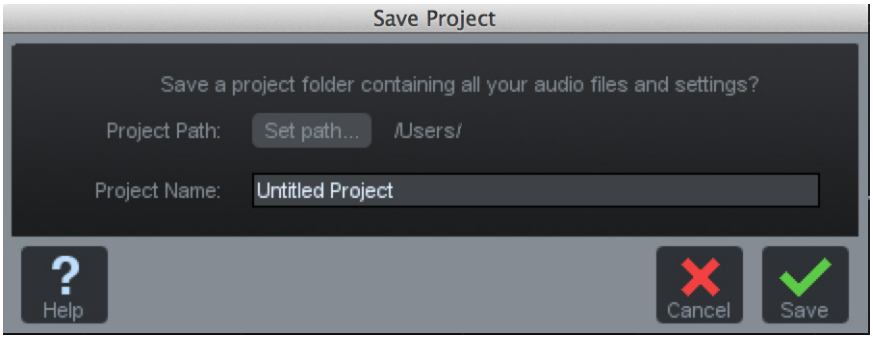
- Click the Cancel button to cancel out of the delete operation.
- Click the Delete button to delete the original file that was loaded into the session. You would normally not want to do this, since you would be deleting your original audio file.
- Click the "Keep" button to delete the track from the session, but keep the file in the Imported Audio Files folder.

Using Ozone's preset system, you can also copy and paste processing settings from one imported song to another, using the following steps:

- Effect the first track with your desired settings.
- Save these settings as a preset.
- Click the tab of the next track you wish to apply the preset to.
- Load the previous preset you have just saved.
- Continue working from there as a starting point.

Ozone Projects

An Ozone project is the overlying "master project file" that encompasses:



- The data of all of the one or more audio files that have been imported into the project.
- The specific audio processor settings that have been separately applied to each imported file in the project.

By saving the above as a project, you can always re-open a project at a later time, and perform functions such as re-ordering the audio files within a project, or adjusting the audio processing of any audio file within the project.

Exporting Audio

Once you have applied the specific audio processing to your imported audio file(s), it is time to export the files. A new copy of the audio file will be saved, with all of the processing from the Ozone modules permanently applied to the exported file.

Click on the File menu, and then select "Export Audio Files." A dialog box will appear, offering various options for the files you are about to export. These choices include:

Current Track vs. All Tracks:

- Click on "Current Track" to only export the audio file in the currently highlighted tab.
- Click on "All Tracks" to export separate audio files for each audio file loaded into the current project.

Filename (Available on Current Track Only)
Type the desired name into this field; the exported file will be labeled with the name you have typed.

Append Text (Available on All Tracks Only)
Type in the desired text into the field; it will be automatically added to each of the exported tracks. You can also select whether to add the text before or after the file name.

This function is useful for "tagging" the titles of a group of audio files with a common label; for example, you could append a group of files with a label such as "January 18th 2014 session."

Automatic Track Numbering on Export (Available on All Tracks Only)
You can add track numbers to your exports in the "All Tracks" section of the Export dialog. Select the "Add Track Numbers" checkbox and your exported files will be numbered in the order they appear in your Ozone project.

Save Path
Click on the Set Path button to select, through the resulting dialog box, where your exported audio file(s) will be saved.

- If the project is unsaved, the default save path is your Documents folder.
- If the project has already been saved, the default save path is an Exported Audio Files folder in the same location as the project.

Sample Rate
Select the sample rate with which you wish to export your audio file. If you select a sample rate that differs from the original sample rate of the imported file, Ozone will apply high-quality sample rate conversion to the file.

- The project sample rate defaults to the sample rate of the first file that is loaded.
- If a file is loaded after with a different or higher sample rate, it is converted to the original sampling rate set for the project by the first file, or manually set before the second file is loaded.
- The conversion process will not convert previously converted/processed files (which are copied as working files upon load); Ozone will simply go back to the original files, create new copies, and then convert all files to the new sample rate for their new working copies.

Bit Depth
Select the bit depth you want to export your file to. If you select a bit depth other than 32-bit, you may want to apply dither to your export. Ozone processes files at 32-bit so dither is desirable for files being exported to values lower than 32-bit.

Dither settings will default to ideal settings for 16 bit exports (CD quality bit depth). Checking the Dither on export box will apply these default settings or any custom settings you choose in the Dither module.

Enable Dither
When exporting to a bit depth lower than 32-bit, checking this box will apply high-quality dithering to the exported file.

This allows you to preserve the sound quality and dynamic range of a higher bit depth, when exporting the audio file to a lower bit depth.

For example, a common workflow is to record audio at 24-bit resolution, then import and process the audio, in an application such as Ozone, which will process at a higher resolution of 32-bits.

However, if you are releasing the audio material on a commercial CD, the audio content must, at some point, be converted to 16-bit audio, since that is the required bit-depth of the “Red Book” CD audio format.

By applying iZotope’s dithering to a 24-bit file, you can preserve the sound quality of the 24-bit file, when exporting it to a 16-bit file that can be burned to an audio CD.

Help
Click this button to launch the help documentation for Ozone 6.

Cancel
Click this button to cancel out of the export process and return to the main interface.

Export
Click this button to begin the export process. A dialog box will appear that shows the progress of the export operation, which occurs in faster than real time.

Saving

The standalone version of Ozone 6 offers three separate save commands, located within the file menu. They work as follows:

Save Project
Click on File/“Save Project” to save the Ozone project to your computer.

A dialog box will appear, allowing you to specify the save path of the project, as well as the project name.

Once the project has been initially saved, you can click on the Save Project command again at any time, and it will automatically update your changes, saving over the previous version.

A saved Ozone project contains the following three components, all placed in an automatically created folder named after the project:

- An Imported Audio Files folder, that contains a copy of the imported audio files, in their original state.
- An Exported Audio Files folder, that contains a copy of the exported audio files, in their processed state.
- A session file (with the file extension “.ozn”) that contains all parameter values that have been applied to the imported audio files.

This file uses the project name specified by the user.

This is the file you would click on to launch and reload the session, if you wished to make further adjustments to the audio files and then perform a new export.

Save Project As
Clicking the Save Project As command will always bring up the save dialog box, where you can give a new name and save the project as a new, separate file from the previously saved version.

This is very useful if you wish to save different mastering versions of the same project, and do not wish to overwrite the old version with new changes you have made.

For example, you could create a mastering session with a very loud, bright mix, intended for radio and then save that project using the save command. You could then create an alternate mastering, that is quieter and with more dynamic range, intended for a vinyl release. By using the Save As command, both versions of your mastering have been saved and preserved.

Note that when using the Save As command, only a new version of the project file (the file containing the mastering settings) is created. No new version of the actual audio files is created.

Other File Menu Commands

Close Project
Click this menu item to close the currently loaded project.

Ozone will present a dialog box asking you what you wish to do with the currently loaded project; options include:

- **Cancel:** Cancels out of the close operation; the current project will stay loaded.
- **Don't Save:** The current project will be closed and no changes will be saved since the last save operation.
- **Save:** All of the latest changes will be saved before closing the project.

Create New Project
Click this menu item to create a new Ozone project.

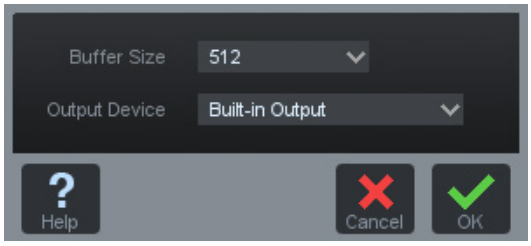
If a different project is currently loaded, Ozone will close out the current project, offering the options described above.

Open Project

Click this menu item to open up a previously saved Ozone project. A dialog box will appear, allowing you to navigate to the saved project you wish to open.

Edit Menu

Ozone's edit menu contains different menus that allow you to configure the audio aspects of the Ozone 6 standalone application. These menus include:



Audio Devices
Click this menu to select which audio hardware device you wish to monitor Ozone's audio playback from, as well as the buffer size of the device.

Options will include:

- The onboard sound circuitry of your Windows or OS X computer.
- Any CoreAudio compatible audio hardware (OS X).
- Any ASIO compatible audio hardware (Windows).

If working in sample rates or bit depths higher than CD quality, make sure you have selected audio hardware that supports it.

Sessions
The saved .ozn files are referred to as an Ozone "session," and its hierarchy is similar to that of other audio DAW programs. It contains:

- A project folder that contains all files that are relevant to that project.
- The session file references audio in the "Imported Audio Files" folder.

Initially each project has only one session, but you could have many sessions in one project.

Ozone Processing Modules

Ozone offers its six processing modules in a horizontal signal chain at the bottom of the screen.

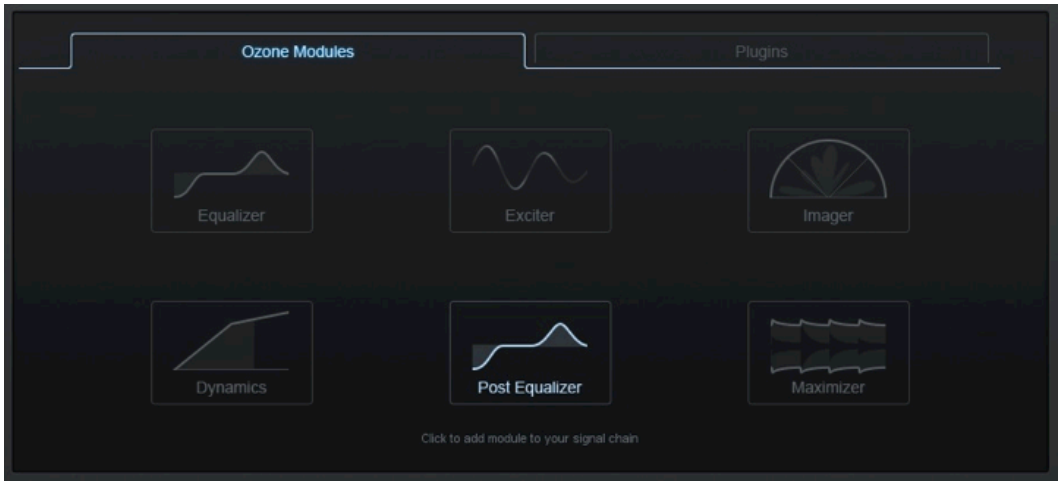
By default, the order of processing in Ozone is as follows:

- Equalizer
- Dynamics
- Maximizer

The visual phase and spectrum meters that display information about the audio level and spectrum are based on the final output signal, after all processing from the modules has occurred.

Module Browser

The module browser displays the available Ozone modules. To open the module browser screen, click the “Click to insert module” button at the end of the signal chain. Then click on any one of the available Ozone modules to add it to the chain.
To change the order of the processing, simply click and drag any of the modules, moving them left or right to a different order.



To add a third-party plug-in to the signal chain, click on the Plug-ins tab in the module browser. From there you can select any third-party plug-in you have installed.

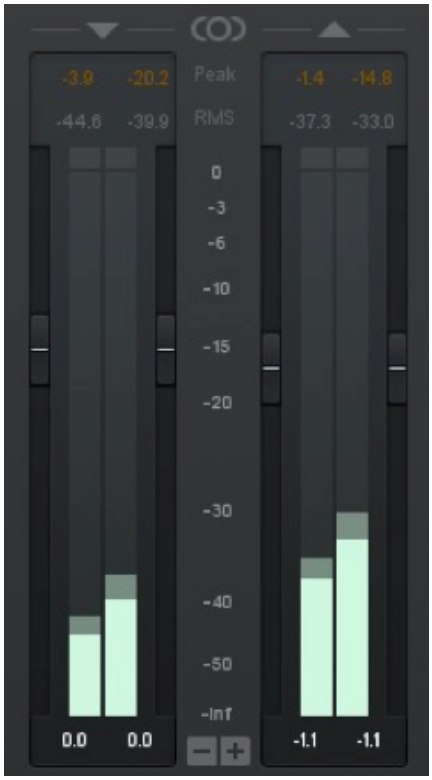
Ozone 6 supports VST and AudioUnit (AU) plug-in formats.

Input/Output Gain

The panel on the right side of the Ozone interface is the main input/output section for Ozone. This is used for setting and monitoring gain levels going in and coming out.

Setting Input and Output Gain

You can adjust the input or output gain by sliding the faders with the mouse, as well as clicking and using the mouse wheel.



Adjusting the Left and Right Channels Independently

By default, the left and right gain levels are linked; moving one moves the other. You can adjust left and right gain independently by clicking on the “lock” icon. You can also offset the two channels and then “relock” them, so that later adjustments move both channels by the same amount.

The faders will remember their offset, even if they are temporarily turned up or down all the way, so that when you bring the faders back to the middle the offset will be preserved.

Double-Click to Reset Faders

If the left and right faders are locked, double-clicking on either fader will reset both of them to 0 dB. If the left and right faders are unlocked and set at different levels, double-clicking a specific fader will reset it to 0 dB.

If the left and right faders are locked but had been previously been set to different levels, double-clicking on a fader will reset it to match the level of the other fader. Another double-click will reset both faders to 0 dB.

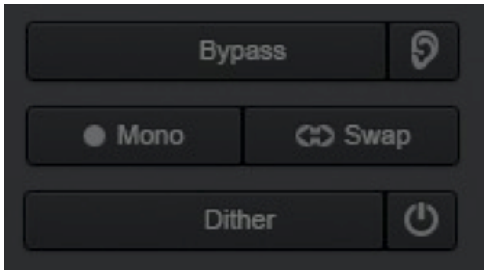
Setting the Scale of the Meters

You can further customize your metering by adjusting the scale of the input and output meters.

- Clicking the “(+)” sign below the meters will increase the zoom or resolution of the metering scale.
- Clicking the “(-)” sign will decrease or zoom out the resolution of the metering scale.

Audio Audition Section

Ozone's audition section is located underneath the master stereo meters on the right-hand side of the screen.



It provides a useful set of tools for monitoring the master stereo signal, and works as follows:

Stereo

When none of the controls in the audition section are activated, the program material operates in normal stereo mode.

Swap Button

Click this button to swap the left and right sides of the stereo signal, allowing you to monitor the signal in reverse.

Mono

Click on the Mono button to have Ozone collapse the stereo signal to mono, allowing you to check your song for mono compatibility.

It is always important to check any stereo material for mono compatibility, and make sure that any processing you have done does not cause any elements of your mix to "cancel out" and disappear when listening in mono.

Bypass

Click this button to bypass all processing, from all modules, on the audio signal. The graphical interface for the modules will turn a light grey as a reminder that these modules are not in the signal path.

The bypass control provides a handy "one-click comparison" tool, where you can quickly compare how your song sounds with and without the processing that you have added using Ozone. You can always make sure, with a single click, that the processing you have added is improving your audio as desired.

Dither

Click this button to bring up the dither window and its various settings. See the Dither section for more details.

Auto-Match Gain

Clicking on the "ear" icon underneath the master I/O meters activates the Automatically Match Effective Gain When Bypassed feature.

When Ozone is on there are many modules such as the multiband dynamics and loudness maximizer that can affect the overall or perceived loudness of the mix. This makes it very hard to compare “Ozone on” to “Ozone bypassed.”

The “Automatically Match Effective Gain When Bypassed” feature solves this problem. Ozone determines how much perceived gain is being added by all of the active Ozone modules and then automatically adds this amount of gain when Ozone is put into bypass mode. You can bypass Ozone, and the gain is automatically adjusted so that when you A/B Ozone on and off, the apparent volume is the same.

This gain processing is the only processing that is applied when Ozone is bypassed, and it is of course only applied when Ozone is actually bypassed.

Note: In the plug-in version of Ozone, this may not work if you use the host application to bypass Ozone. If the host application reports that it is bypassed, it will work and the Bypass button in Ozone will automatically depress accordingly.

If the host does not report that it is bypassed, Ozone doesn’t know and therefore cannot apply the “gain when bypassed.”

Undo History Window

The Undo History window is a unique and powerful feature for comparing settings in Ozone. To access the History list, click on the History button in the lower right-hand corner of the interface.

As you tweak controls, each movement is captured and displayed in the History list.

To go back and hear a previous setting, simply click on the list at the point you want to audition. The changes that you've undone will show up in a lighter color.

Clear button

Press the Clear button to clear the history list at any time.

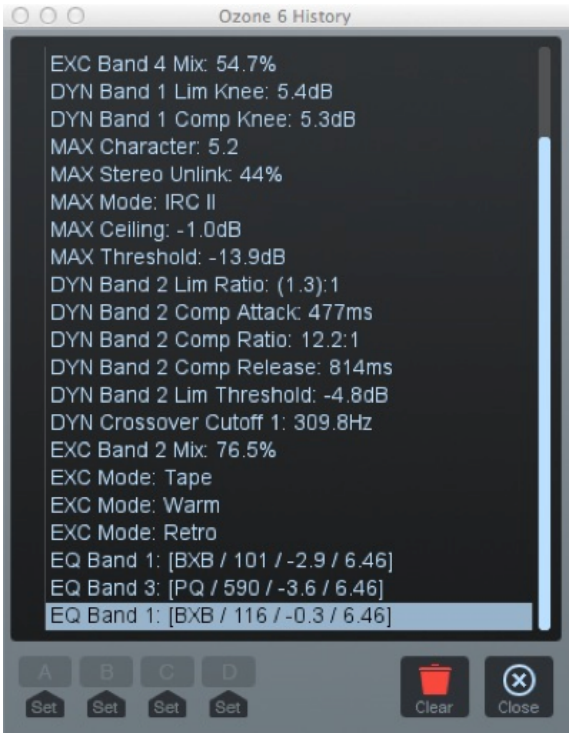
Close button

Press the Close button to close the History window; processing resumes from the point you had last selected, so you can continue building on the History list from an earlier point.

A, B, C, and D Buttons

You can assign up to four points in the History list to A, B, C, and D buttons. To do so:

- Select the point in the list you want to capture
- Click on the Set button below the A, B, C, or D button.
- Clicking on the appropriate button will then recall the setting assigned to that button.



History Depth

The history list has a depth setting which controls how many edits it remembers. You can change this setting in the General Options tab. For the plug-ins, the history is saved at the system level, while for the standalone the history is saved in the Project file.

While using Ozone, you can press Ctrl+Z repeatedly to undo edits you've made, and Ctrl+Shift+Z to redo edits (CMD+Z and CMD+Shift+Z on Mac OSX). See Shortcut Keys and Mouse Support for more keyboard shortcuts.

Buffer Size

The Buffer Size Viewer dialog lets you inspect the buffer sizes that your host uses.

If you are using Ozone at low latencies, you may experience unusually high CPU usage. Ozone allows you to tweak several buffer sizes in order to optimize CPU usage for your host application settings.

Some host applications make it very easy to see what your buffer sizes are, but it can be more difficult to determine in others. For that reason, Ozone provides this dialog to let you find out exactly what buffer sizes are being sent to the plug-in.

To use this dialog, simply launch it by clicking the View Buffers button on the General tab of the Options screen. Then use the following controls:

Captured Buffer Sizes

This list-box shows the buffers you have captured thus far. The number on the left is the input buffer size, and the number on the right is the output buffer size.

Note that the input and output buffer sizes will be equal in Pro Tools, VST, AU, and MAS versions of Ozone, but in the DirectX version if delay compensation is enabled then the sizes may differ. When tweaking buffer sizes, you're interested in the number on the left, which is the host application's buffer size.

Start/Stop

Push "Start" to begin capturing buffer sizes. Now each time a buffer is sent to the plug-in, it will be added to the list of captured buffer sizes for you to see. Push "Stop" to stop capturing buffer sizes.

Note that buffers are sent in very rapid succession to the plug-in, and after 100 buffer sizes are captured, the capturing will automatically be stopped.

Clear

Clears the list of captured buffer sizes.

Copy

Copies the list of gathered buffer sizes to the Windows/OS X clipboard, useful for pasting into a support e-mail if necessary. See Buffer Sizes for more info.

Preset System

Ozone features a preset manager that allows you to quickly and easily work with presets.

Note that User Presets are the same as Global Presets, as users can save to the factory presets folders.

Preset Manager

By default the preset manager will open automatically at startup. If you do not wish for this to occur, uncheck the “show at startup” box at the bottom of the presets window.

To open or close the Preset Manager, click the Browse button in the lower left-hand corner of the screen, or press the keyboard shortcut P.

Ozone 6 presets are organized into three folders, based on their level of processing:

- **Balanced:** These are the standard set of Ozone 6 mastering presets.
- **Light:** These are based in the balanced set, but are more transparent, applying less processing to the audio. Best suited for louder mixes.
- **Heavy:** These are based on the balanced set, but are more aggressive, applying more processing to the audio. Best suited for quieter mixes.

Selecting Presets

Loading Presets in Ozone

You can select and audition any preset by simply clicking on the name in the list. This will activate the relevant selected Ozone modules, and you will hear the effect of the preset when you play back your audio. You can easily compare several different presets just by picking a different name on the list.

Working with Presets in Ozone

Once you have selected a preset from the list, you may choose to change the original settings within a specific module. When you change any of the original settings within a preset you will see an asterisk (*) added to the beginning of the preset’s name. This means that the preset has been altered. If you want to keep these settings you need to “Add” a new preset or “Save” the existing preset in the Preset Manager.

Working Settings

If you modify a preset’s settings, then these modified settings become your “Working Settings.” Your Working Settings will always be at the top of the preset list within the preset manager.

This allows you to freely preview and compare different preset options. When you are done, you can return to your Working Settings by selecting the item at the top of the Preset Manager labeled <Working Settings>.

To select a preset and have it replace your Working Settings, just select the name of the new preset.

Renaming Presets

In the Preset Manager you can double click on a preset to edit its name.

Custom Default:
You can set your current settings as the default state by right-clicking on <Default> and selecting "Set current state as <Default>". If you have an existing preset that you would like to use as the default state, you can right-click on that preset's name and select "Set 'Preset Name' as <Default>". To revert the default state to factory settings, right-click on any preset and select "Reset <Default> to factory default". The application and plug-ins all have unique custom default settings and need to be set individually.

Adding and Removing Presets

Add
Clicking this button adds the current Ozone settings as a new preset. You can type a name and optionally add comments for the preset. Note that a few characters such as * or / cannot be used as preset names. If you try to type these characters in the name they will be ignored.

Note: This is because presets are stored as xml files (for easy backup and transferring). Their file names are the same as the name you give the preset (for easy reference) and therefore characters that are not allowed in Windows file names are not allowed in preset names.

Delete
To permanently delete a preset, select the preset from the list and click the Delete button.

New
Click this button to create a new folder. The New Folder option allows you to easily add custom named folders to the Ozone preset manager.

Change
Click this button to change the location of where the presets are stored on your computer. See next section for details.

Save
When you click the Save button, your current settings are assigned to the selected (highlighted) preset.

This is useful for selecting a preset, tweaking it, then coming back to the preset system and clicking "Save" to save your changes to the existing preset.

The save function will only appear after a preset is adjusted, and the asterisk (*) flag appears in the preset title. The save button will overwrite this preset with the new settings.

Show at Startup
This allows you to set whether or not the preset manager will open automatically when starting Ozone.

Close
The Close button simply closes the Preset Manager window.
Note: You cannot "Cancel" an update of a preset. That is, adding, removing, and updating presets are done "in place" and are not reverted when you close the preset system dialog.

Preset Storage Location
By default, the data files for the presets are stored in a folder located at the following locations:

Windows Users
C:\Users\<username>\Documents\iZotope\Ozone 6\

Mac OS X Users
Users/<username>/Documents/iZotope/Ozone 6/

Change Folder
It is not necessary to store all of your presets in the default folder(s). You can create custom folders of presets for different projects, archive presets, etc.

To change the folder that Ozone looks to for presets, click the Change button in the Preset Manager, then browse to the folder that contains the presets you want to use.

Migrating Presets from Ozone 5

Ozone 5 Preset Loading
Presets that were created in Ozone 5 can be loaded into Ozone 6. You can access your Ozone 5 presets by changing the preset manager folder path to your Ozone 5 preset folder, or by manually copying your Ozone 5 presets into the Ozone 6 preset folder.

Changing Preset Manager file path
Open Ozone 6 and navigate to the Preset Manager. In the Preset Manager, select the “Change” button and navigate to your Ozone 5 preset folder in the OS window that appears, select “Open” to set the new path.

Copying Ozone 5 presets into your Ozone 6 preset folder
Navigate to your Ozone 5 preset folder (file paths listed below). Copy the presets you wish to use within Ozone 6, navigate to the Ozone 6 preset folder and paste the presets into a folder of your choosing.

Notes on Legacy Preset loading
Updating an Ozone 5 preset from within the Ozone 6 preset manager will update the file to work with Ozone 6 and will not be backwards compatible.

Presets saved in the Ozone 5 Advanced component plug-ins will not load in the Ozone 6 module preset system. Presets that were saved in the Ozone 5 module preset system will load properly. To workaround component plug-in presets not loading in the Ozone 6 module preset system, load the preset in the Ozone 5 module preset system and add a new preset. Loading the new preset you created will work properly in the Ozone 6 module preset system.

Module Preset System

Ozone 6.1 brings back the module preset system from Ozone 5. You can now load and save presets for individual modules, allowing you to mix and match settings for various modules. The module preset system works in a similar way to the global preset system but with a simplified interface that is more tailored to to working with individual modules.

Module presets allow you to easily save and load settings in individual modules without affecting other modules in the signal chain. Ozone 6 module and component plug-in presets are interchangeable, so Ozone 6 Advanced users can make use of their module presets within the component plug-ins and vice versa.

Opening the Module Preset System
The Module Preset system is easily accessible from the Ozone signal chain. Clicking on the button directly above a module's Solo button will open the Module Preset window.

Loading Module Presets
Selecting a preset in the list will load their settings and related comments will be displayed in the bottom of the module preset window.

Saving Module Presets
To add a new module preset that includes a module's current settings, click the "Add" button. After clicking "Add" you will be prompted to name the preset, once you are happy with the name, hit Enter or Return to save the name.

You can modify a preset comment by clicking on the text in the comment area, typing in the comment and hitting Return or Enter to save the new comment.

The Module Preset system does not include the update functionality that the global preset manager has. In order to save changes to a module preset, you will need to add a new preset rather than simply updating an existing one.

Deleting Module Presets
To delete existing module preset files, select them in the module preset window and click on the "Delete" button. You will be prompted after attempting to delete a preset, select 'Yes' to delete and 'No' to cancel. Note that using the Delete button in the preset manager will remove that preset from your preset folder on disk and move it to the Trash/Recycle Bin for permanent deletion.

Changing the Module Presets Folder
Like the Global Preset System, the Module Preset system allows you to specify where module presets are stored on your hard disk. Simply open the Module Preset menu and click the Change Folder button. A file window will open in which you may specify the location of module preset files.

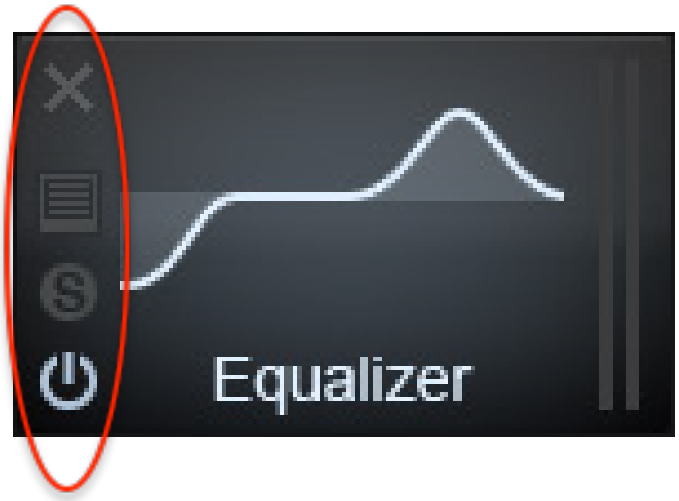
By default, each module's presets are stored in a folder located at the following locations:

Windows Module Preset file paths
C:\Users\<username>\Documents\iZotope\Ozone 6\Dynamic EQ Presets
C:\Users\<username>\Documents\iZotope\Ozone 6\Dynamics Presets
C:\Users\<username>\Documents\iZotope\Ozone 6\EQ Presets
C:\Users\<username>\Documents\iZotope\Ozone 6\Exciter Presets
C:\Users\<username>\Documents\iZotope\Ozone 6\Imager Presets
C:\Users\<username>\Documents\iZotope\Ozone 6\Maximizer Presets

OS X Module Preset file paths
Users/<username>/Documents/iZotope/Ozone 6/Dynamic EQ Presets
Users/<username>/Documents/iZotope/Ozone 6/Dynamics Presets
Users/<username>/Documents/iZotope/Ozone 6/EQ Presets
Users/<username>/Documents/iZotope/Ozone 6/Exciter Presets
Users/<username>/Documents/iZotope/Ozone 6/Imager Presets
Users/<username>/Documents/iZotope/Ozone 6/Maximizer Presets

Standard Module Controls

Each processing module contains various buttons and controls that allow you to modify the behavior of the module. The function of these controls is the same regardless of which module you are using.



These controls include the following:

Module Preset
Opens module preset system. (see Module Preset System)

Solo
Clicking the Solo ("S") button turns off (bypasses) all the mastering modules except the one currently displayed. This allows you to audition the effect of one module without hearing the effect of the others.

Bypass
Clicking the Bypass button (which visually looks like a "power" button) turns off the processing within the currently displayed module.
This allows you to compare the sound with or without the currently displayed module.

You can also bypass more than one module at a time, by clicking on the bypass control for each module you wish to bypass the processing for.

Delete
Click on the "X" icon to delete a module from the processing chain. You can also delete a module by right clicking and selecting "Remove Module."

Add
If a module slot is empty, click on the area that says "Click to Insert Module." This will bring up Ozone's module browser, where you can add an Ozone module or a third-party plug-in.

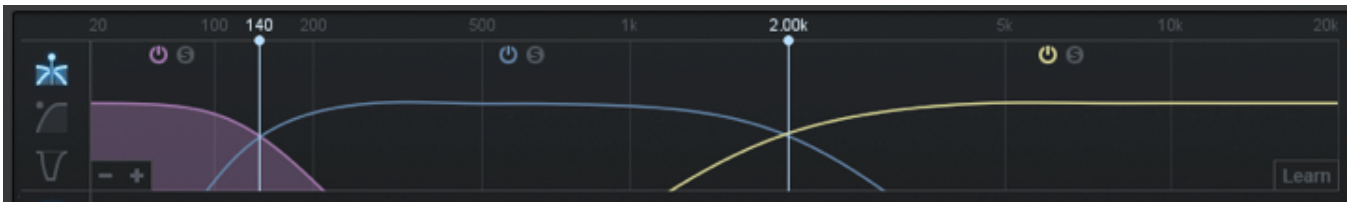
Slider Compare Feature
You can Shift+Click on any slider in Ozone to quickly A/B the changes that have been made to that slider.

Using Multiband Modules

The Dynamics, Exciter, and Imager modules in Ozone default to a multiband configuration; this means they allow you to apply processing independently to up to four separate frequency ranges of the program material passing through them.

The ranges (or cutoffs) of these four bands are shown at the top of the multiband modules with up to three vertical light blue lines. You can adjust the frequency cutoffs of the crossover points, by dragging the cutoff lines to the left or right with the mouse.

Bypassing a Band



You can bypass the processing for a specific band (or bands) by clicking on the bypass button that appears above the center of that band. The bypass button is similar in appearance to the bypass button used by the mastering modules.

When you bypass a band of the crossover, you will hear the audio within that band, but without any processing for that band.

Soloing a Band

You can Solo a band by clicking on the box labeled “S” above the center of the band. This allows you to adjust multiband processing more easily, by hearing only the audio within the selected band.

Change the Number of Bands

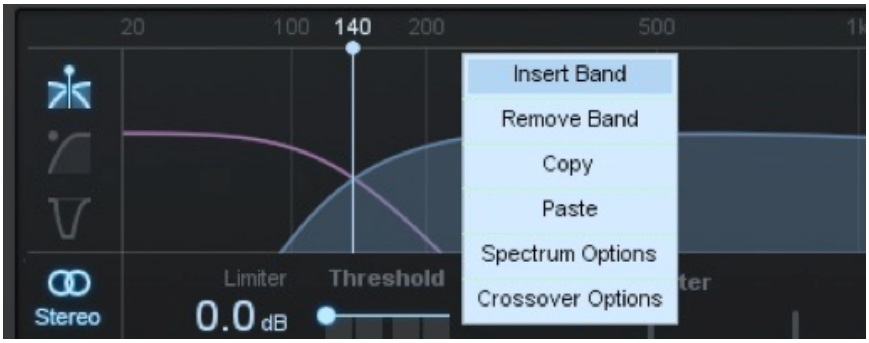
To add or remove bands, click in the “plus” and “minus” signs in the lower left-hand corner of the crossover display.

- Clicking “+” will add a band
- Clicking “–” will subtract a band.
- You can choose to split the audio into one, two, three, or four bands.

For subtle compression or when working with solo instruments, less bands can sound smoother as there is less processing required for the audio. The other benefit is that less CPU is required when working with fewer bands.

Other Band Controls

Right-clicking on a band brings up a contextual menu with the following additional commands:



Insert Band
Inserts a new band, same as if you click on the "+" button. If all four bands are already added, this control will be automatically hidden.

Remove Band
Removes an existing band, same as if you click on the "-" button.

Copy
Clicking on "Copy" will copy all of the settings used for that band of the processor into the copy buffer, where they can be pasted into a different band.

Paste
Clicking on the Paste command will take the band settings that have been copied into the copy buffer, and will apply them to the band that is currently being right-clicked.
Copying and pasting can be helpful, for example, for duplicating settings across bands in the multiband Dynamics module.

Spectrum Options
Navigates to the options tab for Ozone's spectrum analyzer.

Crossover Options
Navigates to the crossover options tab for the module you are right-clicking on.

Each multiband module can have its own independent crossover options, including Analog, Digital, and Hybrid.

- **Analog Crossover:** The analog crossover option provides a natural character reminiscent of filter slopes in analog equipment.
- **Digital Crossover:** Ozone 3 first introduced the option of digital linear-phase crossovers. These provide a more accurate and transparent sound.
- **Hybrid Crossover:** This perfect reconstruction IIR analog crossover is designed to reduce phase distortion and frequency distortion found in other analog crossovers while maintaining precise crossover points and the warm characteristics of analog crossovers.

Crossover Buffer Size
Sets the buffer size for the digital crossover. See Buffer Sizes for more info.

Crossover Q
You can adjust the bandwidth, or Q, of the crossover filters with this control. A higher Q results in tighter crossovers, while a lower Q provides a more gradual transition from one band to the next. This is only available for the digital crossover.

Note: The above two controls are available when a digital crossover is selected.

Automatic Crossover
Ozone 6 includes an innovative Learn function, which intelligently searches for a natural place to set your crossover cutoffs.

To use this, click the Learn button in the bottom-right corner of the crossover display, then stream audio through the plug-in.

Ozone will search for natural crossover cutoff points using a few criteria, including minima in the spectrum. Once Ozone has found a stable place for the cutoffs, the Learn function will disable automatically.

You can also tell it to stop learning by clicking the Learn button again.

Mid/Side Processing

Most of the modules in Ozone (EQ, Dynamics, Exciter, and Dynamic EQ) include an optional "mid/side" processing option, letting you process the center and edges of the stereo soundstage separately.

What is Mid/Side Processing?
At the mastering stage, Mid/Side processing separates an ordinary stereo recording into its center (mid) and side elements.

- You can think of the Mid channel as the phantom image between your two speakers, or center channel of your audio. This is often composed of low-frequency material and lead instruments (drums, bass, lead vocal, horns, etc.).
- The Side channel will contain the remaining elements of your mix that exist at the edges of your soundstage (reverberation and/or instruments that are panned to one extreme side).

With Mid/Side processing, Ozone can process separate areas of your soundstage independently. When your mix is divided into it's Mid and Side components, you can easily hear the separate elements that make up your soundstage.

Mid/Side Processing Examples

Example using Mid Processing in Ozone EQ
Select Mid/Side mode in the EQ module and click "Mid" to reveal the Mid EQ curve. Then click the small "s" to solo the Mid channel.

When you play an audio file in this mode, you will only hear the content assigned to the center of your soundstage, which is typically your lead vocal, other lead instruments, etc.

Now select an EQ node around 1 kHz and boost the orange EQ curve about 6 dB. This frequency specific boost at 1 kHz will only be applied to the center of your soundstage and can bring up the lead vocal in the mix without affecting the other instruments or the stereo separation of the entire frequency range.

Example Using Side Processing in Ozone EQ
Select Mid/Side mode in the EQ module and click "Side" to reveal the Side EQ curve. Click the small "s" to solo the Side channel.

When you play an audio file in this mode, you will only hear the content at the edges of your soundstage which is typically reverb tails or instruments that are panned to an extreme side.

Now select an EQ node around 6 kHz and boost the blue EQ curve about 6 dB. This frequency specific boost at 6 kHz will only be applied to the edges of your soundstage. The effect when applied will result in greater stereo widening and a richer, fuller sound.

Example Using Mid/Side Processing in Exciter Module
Using the Side channel in the Harmonic Exciter module, try selecting the upper frequency bands for your mix. By increasing the amount sliders for the upper frequencies you will be applying the exciter to the extreme edges of your mix only and leaving the Mid (center) channel as-is.

Example Using Mid/Side Processing in Ozone's Dynamics Module
When dealing with multiband compression on a stereo mix, it is sometimes difficult to apply processing to a specific instrument or vocal if they are too close in frequency.

In these cases, Mid/Side processing reveals more refined control by allowing you to separate a specific frequency range into its Mid and Side components and apply compression separately to the Mid (center) channel, or the Sides of your mix.

There are many uses for Mid/Side processing using compression. For example, this can help prevent other instruments from being affected by compression on the lead vocal, since the vocal is usually in the center of your mix and other instruments are typically found at the sides of your mix.

Mid/Side Processing with Ozone Modules

On the three Ozone modules that offer Mid/Side processing, you can choose between normal stereo operation or Mid/Side processing by clicking on the Stereo or M-S labels, on the left-hand side of the module's interface. The chosen option will illuminate in blue.

•When "Stereo" is selected, the Ozone module will perform basic stereo signal processing.

Note: When the audio file is mono, the Stereo button will be labeled "mono" and Mid/Side controls will be disabled.

•When "Mid/Side" is selected, all Mid/Side features become available, and an additional vertical set of Mid/Side controls appear in the left-hand side of the interface, allowing you to customize certain aspects of the Mid/Side operation.

The Mid/Side controls work as follows:

Mid
When the Mid button is selected, processing of the module is applied only to the center of your soundstage. The more you boost the volume level of the Mid channel, the more centered (mono) the audio will be.

Side
When the Side button is selected, processing is applied to the edges (sides) of your soundstage. The more you boost the volume level of the Side channel, the more spacious and full the audio will be.

Mid/Side Link
Click on the chain link icon to link the Mid and Sides together. This allows you to make changes to both the Mid and Side channels at the same time. This tool helps improve workflow; because you can make changes to both channels simultaneously, you don't need to switch back and forth between modes.

Solo
Click on the small "s" to the left of the Mid or Side icons, to solo either the Mid or Side of the audio

Bypass
Click on the power icon to the left of the Mid or Side icons, to bypass the audio for the Mid or Sidebands.

Mid/Side Metering

By default, the I/O meters will display the stereo mix of your audio. However, when working with Mid/Side processing, it is often very helpful to have a clear meter indication of the overall Mid and Side levels individually.

To change your meters to display the Mid/Side information of your master, you can either:

- Click on the Mid/Side icon at the top of the meters.
- In I/O Options, set Source to Mid/Side.

When the I/O meters are in Mid/Side mode, they will no longer display your signal in terms of stereo left and right. Instead, the middle of the meter will be the level of the entire Mid channel, and on the right left meters will be the overall level of the Side channel. The left and right gain sliders will still control the left and right gain of your signal. The Mid/Side meters will still adhere to the same Type and Scale settings defined in the I/O options menu.

Equalizer

Ozone's versatile Equalizer allows you to add warmth and character with analog-matched filters, or precisely boost and cut frequencies with digital linear-phase filters.

Ozone offers different types of versatile EQs for placement within the signal chain, and includes a wide variety of filter shapes, including Flat (Butterworth) low- and high-pass, Brickwall low- and high-pass, and vintage shelf filters.

New in version 6 of Ozone is a larger parameter readout and larger controls, making it easier than ever to adjust settings to your liking.

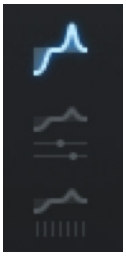
Key Features

- Eight bands of bell, high-pass, low-pass, high-shelf, low-shelf, or Baxandall filters.
- Fully configurable spectrum analyzer with the ability to highlight Mid/Side and stereo spectrums.
- Matching Mode lets you use spectrum snapshots of recordings to create automatic EQ curves, with an intuitive interface.
- Powerful Mid/Side and Left/Right processing modes give you unprecedented control over the stereo soundstage.

EQ Display Options

Ozone's EQ module contains three different user interface modes for working with the EQ; each mode offers a different way of interacting with the module and what parameters you can control.

The three modes work as follows:



- Spectrum View
- Main View
- All Bands View

To view a given display type, click on its icon on the left side of the display.

Spectrum View

This view offers a simple overview of all eight bands of EQ, allowing you to work with key parameters of all eight bands at the same time, including frequency, gain, bandwidth (Q), and individual band bypass.

The node circles on the EQ display mark each of the eight EQ bands. You can adjust an EQ band by clicking on a node and dragging the crosshairs:

- Horizontally to change the frequency of the band.
- Vertically to change the gain of the band.

Move the mouse over the "handles" on each side of the band to adjust the bandwidth (Q) of the EQ band, by dragging with the mouse and widening the band.

You can also use your mouse or trackpad's scroll action to widen/narrow a selected band.

As you adjust the nodes you will see multiple EQ curves. The white curve is the composite of all EQ bands while the selected band shows as a thin line in the band's specific color.

Main View

In this view, you select an individual band to adjust by selecting that band's tab in the interface window; the rest of the interface then displays a deeper set of parameters to adjust for that band including the parameters above, but also the specific filter type, as well as the matching function. This view contains the following controls:

Analog/Digital
Click on the Analog or Digital labels to select which type of EQ algorithm you wish to use for the currently selected band. The Analog choice emulates classic analog EQ sounds with added coloring, while the Digital choice used more precise, clinical-sounding EQ models.

When selecting Digital mode, two additional parameters become available:

- Phase: When using the Equalizer in Digital mode, you have access to a phase slider for each of the EQ bands. When the Phase slider is set to 0%, the currently selected band will have a Linear phase response. When the Phase slider is set to 100%, the currently selected band will have a Minimum phase response.
- Surgical Mode: Enabling Surgical Mode changes the filter curves to less musical, but far more precise shapes.

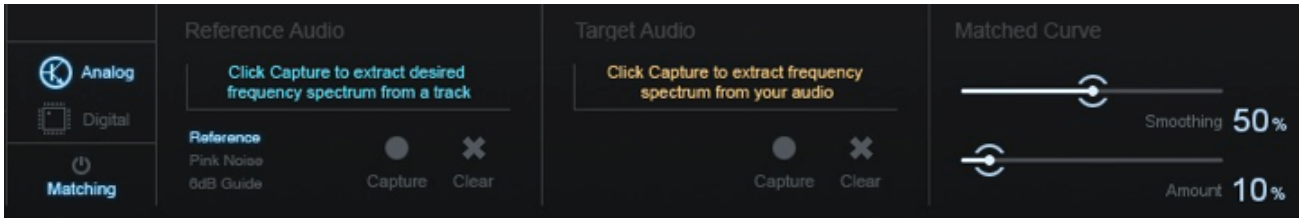
Selecting Filter Shapes
In both Analog and Digital modes, Ozone provides the ability to set the type or shape of any of the eight EQ nodes. Any node can be set to any of the following types of EQ filter types:

Highpass Filters	Low-Shelf Filters	Bell Filters	High-Shelf Filters	Lowpass Filters
Flat	Analog	Peak	Analog	Flat
Resonant	Vintage	Proportional Q	Vintage	Resonant
Brickwall	Baxandall	Band Shelf	Baxandall	Brickwall
	Resonant		Resonant	

- The Low-Pass and High-Pass filters are Butterworth filters; optimized for maximum flatness without ripple or resonance in the passband or stopband.
- The Brickwall Low-Pass/High-Pass filters are elliptic filters; optimized for steepness with minimal ripple in the passband and stopband.
- The Vintage-type filters exhibit a complimentary frequency dip, modeled after the renowned Pultec analog Equalizer, creating a complex slope with one node.

Frequency/Gain/Bandwidth
Individual parameter adjust mode also lets you adjust the frequency, gain, and bandwidth for the currently selected band. You can adjust them graphically, as with the Spectrum View, but in this view you can also adjust them by clicking and dragging on the numerical parameters (frequency/gain) and the numerical parameter (bandwidth, aka Q).

Matching EQ



While in the main view, click on the Matching button to switch the interface panel to Matching EQ mode. Ozone's Matching EQ feature allows you to automatically equalize a mix based on the spectrum or frequency response of another recording.

The Matching EQ is a digital linear-phase EQ, with the ability to use over 8,000 bands of frequencies for very precise matching.

Operating Matching EQ Mode
The Matching EQ works hand in hand with spectrum snapshots to "borrow" the spectrum of an audio clip and apply it to another. Therefore, the first step is to take snapshots of two spectrums: the reference audio that has the spectrum you want to match, and the target audio you want to apply the matched EQ to.

Reference Audio
Reference audio refers to the audio signal that contains a sonic reference fingerprint that you wish to capture and emulate. To work with your reference audio signal, follow the steps below:

- Click on the graphical "record" button to record the audio passing through Ozone
- Click the graphical "stop" button when you have captured it.

Note that at any time, you can click on "clear" to clear out the recorded signal from the target audio buffer.

Instead of capturing your own reference, you can select "Pink Noise" or "6 dB Guide".

These snapshots represent the high-frequency decay found in many commercial recordings. You can use this as a guide to compare to your own spectrum.

In general, many recordings follow the 6 dB slope, while some newer recordings are tending towards a brighter Pink Noise spectrum.

Note: You cannot adjust the overall level or position of these guides, but instead use it as a representative slope for your spectrum. It is the slope of the spectrum (as opposed to the absolute level of the mix) that defines the tonal balance.

Target Audio
Target audio refers to the audio signal that you wish to apply the reference audio fingerprint onto. To do so:

- Click on the graphical “record” button to record the audio passing through Ozone
- Click the graphical “stop” button when you have captured it.

To apply the resulting EQ curve to your audio, click the graphical “power” button on the Matching tab.

Matched Curve/Amount Settings
As you increase the Matched Curve amount, you’ll notice a light blue EQ curve appearing. Most likely, the more you increase the Matching amount the more jagged this Matching EQ curve will become, with increasing peaks and valleys.

A Matched Curve amount of 100% and a Smoothing amount of 0% might be technically the closest match to your “Reference” mix, but in reality it’s probably not the most effective combination of settings. Those settings will try to capture every peak, valley, and level, which can result in extreme, unnatural EQs.

We suggest working with the Matched Curve amount under 50%. If your Matching EQ curve has narrow peaks and valleys, increase the Smoothing parameter to smooth them out. Your goal is to capture the overall tonal shape of the Reference as opposed to an exact match.

Click on the Analog or Digital buttons to go back to the Main View. You’ll notice that you can still use the EQ nodes to further adjust the equalization. It may not be necessary, but feel free to further “season to taste” manually.

Matching settings are universal for both of Ozone 6’s Equalizers so you may only perform matching with one EQ in the signal chain. However, each instance of Ozone 6 or Ozone 6 Advanced’s Component EQ may load and save its own snapshot sets.

All Bands View

This view allows you to view the numerical parameters (frequency/gain/Q) for all eight bands at the same time, and adjust them by clicking and dragging on the numerical entries, or highlighting the field and typing in the desired numerical value.

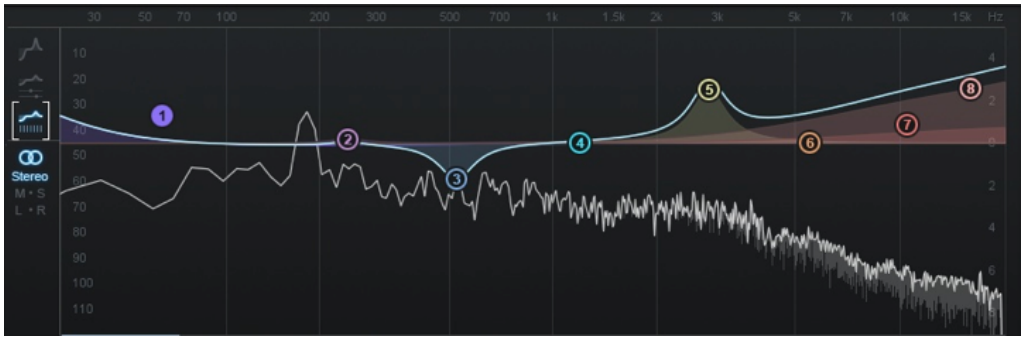
In this view you can also bypass any band of the EQ by clicking on the graphical “power” button at the top of each parameter column.

Mid/Side Controls

The Equalizer module can operate in either stereo or Mid/Side operation. See the “Mid/Side Processing” section for more details.

Spectrum Overlay

By default, a spectrum is overlaid on the EQ module for visual feedback of the mix. You can turn off the spectrum to conserve CPU, or if you simply just don’t want to see, it using the Options screen.



In the background you’ll see the gain scale for the EQ, displayed on the right. This will change as you zoom the EQ in or out. You’ll see the scale for the spectrum along the left in gray.

Note: The scales for the EQ and spectrum are different, by design. If they were made to match, you wouldn’t see enough of the spectrum for it to be useful. The frequency scale in grey applies to both the EQ and the spectrum.

The spectrum provides a real-time display of the frequencies of the mix. This display helps with EQ'ing and adjusting the band cutoffs for multiband dynamics.

Spectrum Analyzer Options
You can set options for the spectrum by accessing the Spectrum Options tab or right-clicking the spectrum and selecting "Spectrum Options" from the context menu.

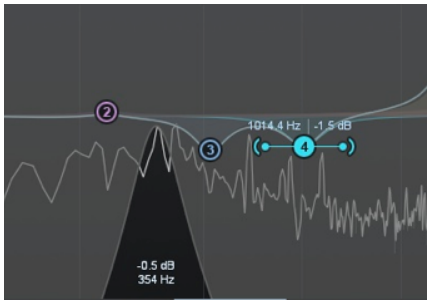
Post Equalizer

Ozone includes a second Equalizer, available for placement anywhere in your signal chain.

You can use this post Equalizer to balance frequencies after multiband processing, or perform Stereo and Mid/Side or Left/Right EQ processing simultaneously all from within Ozone.

The Alt-Solo Feature

If you hold down the Alt key and click on the spectrum, you have an "audio magnifying glass" that lets you hear only the frequencies that are under the mouse cursor, without affecting your actual EQ settings.



This is useful for pinpointing the location of a frequency in the mix without changing your actual EQ bands. Releasing the mouse button returns the sound to the actual EQ. You can set the default bandwidth of this filter in the EQ Options screen under "Alt-Solo Filter Q."

Once you've pinpointed a particular frequency using the Alt-Solo feature, you can double-click that area to activate a new node in that exact location.

Component Equalizer Plug-In

If you are using Ozone 6 Advanced you will also have the ability to instantiate Ozone 6's Equalizer module as an individual component plug-in.

Ozone 6 Advanced includes component plug-ins for all six of Ozone's modules complete with all the same features as the module within Ozone.

Dynamic EQ

Ozone's Dynamic EQ module works similarly to a regular EQ, but allows you to set a compression threshold; when a specified frequency range passes over that threshold, it is reduced or boosted.

This processor can be very useful in toning down any specific frequencies in your mix that are too loud, with a degree of precision not possible with a normal EQ.

The circles on the display mark each of the four nodes for the dynamic Equalizer. You can set the frequency, gain, and bandwidth (Q) for each of four nodes, and then apply an individual level of compression to each of the four selected frequencies.

Analog/Digital

Click on the Analog or Digital labels to select which type of processing you wish to use for the Dynamic EQ module.

- The analog algorithm imparts a classic analog flavor to the processing.
- The digital algorithm offers a more clinical, transparent processing to the signal.

Filter Type

Click the label to select the type of filter you wish to use for the currently selected band. The filter choices are the same as the bell shapes in the regular EQ module, with the addition of a Baxandall shelf shapes.

Adjustment for Frequency/Gain

You can adjust an EQ band by clicking on a node and dragging it horizontally to change the frequency, and vertically to change the gain of the band.

Adjustment for Q/Bandwidth

You can adjust the Q or bandwidth of any band by dragging the "handles" on the side of the node. If you have a wheel mouse, you can use the mouse wheel to widen/narrow a selected band while hovering over the node.

Threshold

Drag the threshold to adjust the amount of compression applied to the specific EQ band you have selected.

Inverse Mode
Click this control to activate the Dynamic EQ's Inverse Mode. Normally, Dynamic EQ acts like a multiband compressor, in that as audio exceeds the threshold, boosts are reduced and cuts are increased, thus compressing the dynamic range of the affected frequencies.

However, you can also invert this behavior, so that the filters respond more like an expander. In expansion mode, boosts and cuts occur as signals exceed the threshold, increasing them further.

For example, if you wanted to bring out the snare in a mix, you could adjust a filter to boost at the appropriate frequency and set the dynamic settings to respond to the level of the snare hits. This boosting filter will only activate when the snare is present, thus expanding the dynamic range of these frequencies. Conversely, a cutting filter in the same scenario would only attenuate these frequencies when the snare was not present, acting much like a gate.

Attack
Click on this number and drag the mouse to adjust the attack time for the Compressor's attack time.

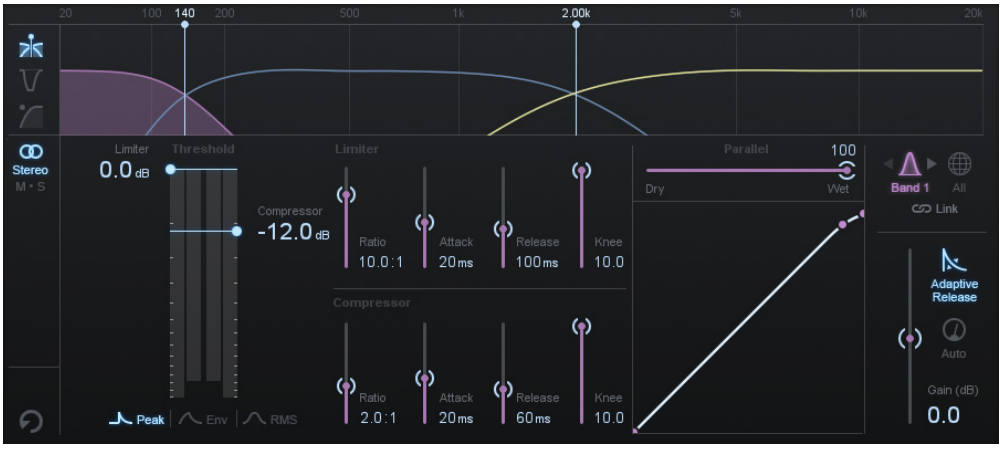
Release
Click on this number and drag the mouse to adjust the release time for the Compressor's attack time.

Auto Scale
When auto scale is enabled, Ozone automatically scales attack and release times based on frequency.

When auto scale is disabled, the attack and release of each band will not scale with frequency, as with a conventional compressor.

Dynamics

One of the most powerful modules in Ozone is the Dynamics section. You can use this module to shape the dynamics of your mix, with up to four bands of analog-modeled compression, limiting, and expansion.



Key Features

- Apply dynamics processors selectively to different frequency ranges, and even to the center and edges of the sound stage with Mid/Side processing.
- Automatic gain compensation (only available when all bands are selected) provides automatic makeup gain, and also allows you to easily compare your mix with and without dynamics processing applied.
- Metering features including interactive threshold control with input/output gain reduction and histogram options, as well as the Gain Reduction Trace Meter.
- Detection Filter with high-pass and tilt modes, for fine control over how the Dynamics module responds to incoming audio (especially useful for single-band operation).
- Advanced detection circuit modes with Peak, RMS, and True Envelope detection as well as variable Look-ahead time.
- Variable knee for detailed control over hardness or smoothness of gain reduction.
- Adaptive Release automatically and intelligently adjusts compressor release times based on the peak factor of the incoming signal.

How to Use Ozone Multiband Dynamics

Each band has its own controls for controlling the dynamics. There can be up to four bands, as shown by the sections in the multiband display at the top of the module.

To select a band, click on its corresponding section in the multiband spectrum or its corresponding band number in the top right of the window.

When you click on a specific band, the settings for the controls, as well as the dynamics meters, will be updated to display the currently selected band.

As a reminder of which band they are currently controlling, the color of the controls will switch to match the color of the selected band.

Each band of dynamics is capable of three types of dynamics processing:

- Limiting
- Compression
- Expansion

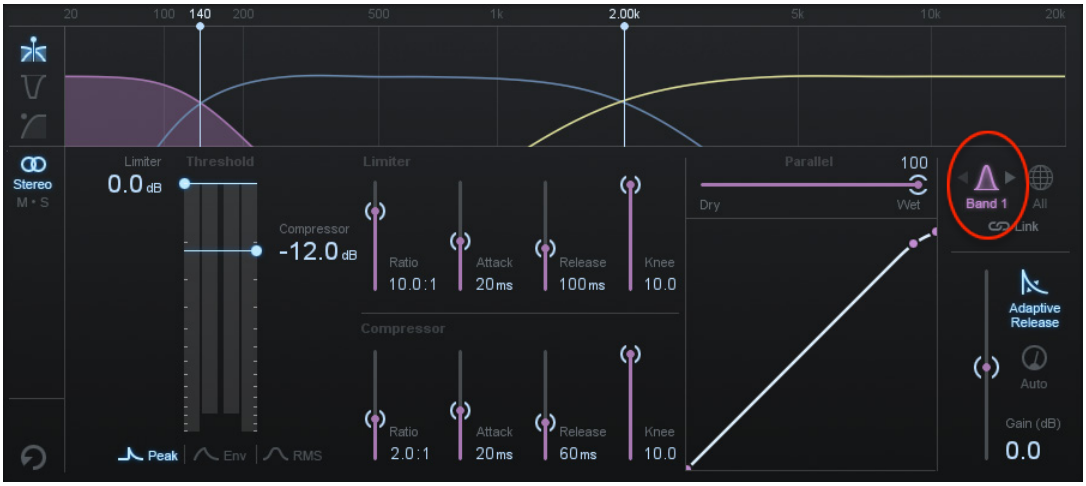
This type of versatility allows you, for example, to aggressively limit high level signals, apply more gentle compression to medium level signals, or boost (expand) the level of soft signals.

The combination is such that you can tighten the dynamic range by compressing from the top, by expanding from the bottom, or a combination of both.

Global Dynamics Controls

Click on the Band or All labels to choose between:

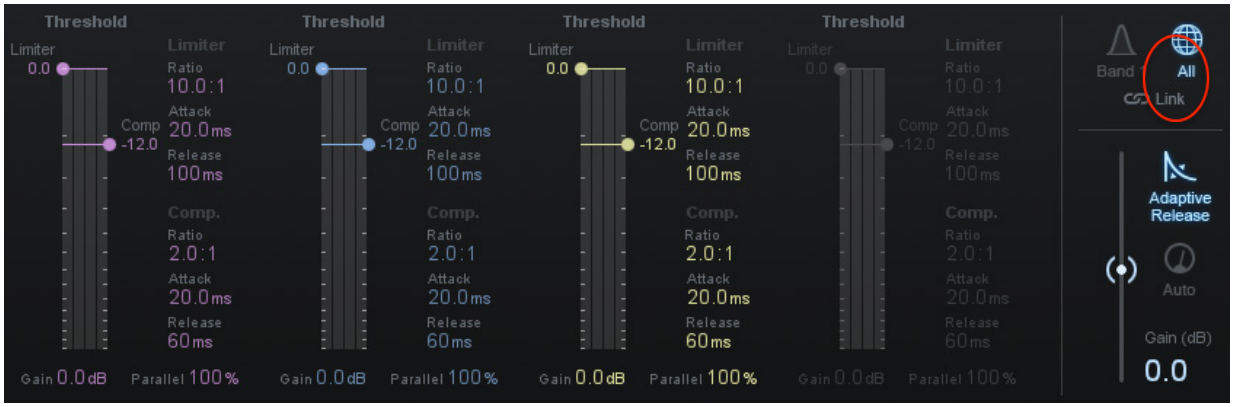
Band Display:



Displays controls for one band at a time, and uses the rest of the module's display for comprehensive metering. In this mode, you can switch which band to adjust by:

- Tapping on the desired band region in the display at the top of the module.
- Using the left/right arrows, on either side of the band label, to toggle which band's controls are displayed.

All Display
Displays controls and meters, in a condensed mode, for all four bands at the same time.



Link
Click the Link label to link the controls for all four bands. When doing so, adjustments made to any band will affect all four frequency bands.

Adaptive Release
When Adaptive Release is On in the Dynamics module, it will automatically adjust the Release time of the Compressor based on the Peak factor of a signal. If a transient signal is detected, the Release time is scaled to be shorter for less pumping. If a sustained note is detected, the Release time is scaled to be longer for lower distortion.

The Release time is scaled in relation to the Release value set by the user. For example:if you are using the Compressor with the Release time set to 100 ms, the Release time will be automatically adjusted to a value within a range of 20 ms to 200 ms, depending on the type of signal that is being processed.

Gain
The gain slider adjusts the output gain of the entire Dynamics module. This is useful, for example, after compressing or limiting to makeup the decrease in volume.

Auto Gain Compensation
When you click the auto button, automatic gain control calculates the RMS levels of both the input and output signals of the Compressor for each crossover band, and then applies the appropriate gain to the output signal to compensate for the difference.

This automatically brings audio levels to a level comparable to the unprocessed audio, and acts as a smart “make-up gain” control that adapts to the mix over time.
This is also a useful tool for A/B’ing various settings in the multiband Dynamics module without having gain changes affect your perception.

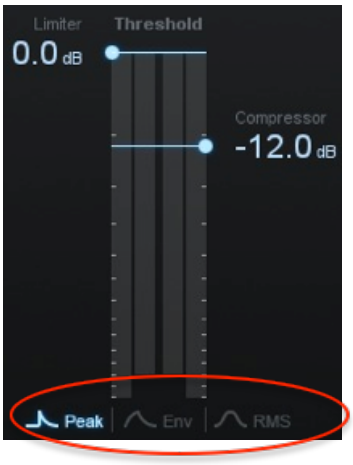
Parallel
Adjust this slider to control the dry/wet mix of direct, unprocessed signal to the processed signal for the module.
This slider is very useful for applying the technique called “parallel compression” where you can mix in a desired amount of unprocessed signal.

Compressor/Limiter Controls

The Compressor and Limiter sections of the module each contain their own discrete set of controls, per band, that work as follows:

Detection Mode

Three buttons at the bottom of the Threshold Control allow you to adjust which level detection mode the Compressor uses, as follows:



Peak: When this option is enabled Ozone's detection circuit looks at peak levels of the incoming signal. In general, this setting is useful when you are trying to even out sudden peaks in your music.

RMS: When this option is enabled, Ozone looks at the average level of the incoming signal. RMS detection is useful when you are trying to increase the overall volume level without changing the character of the sound.

Envelope: Envelope mode behaves much like RMS mode, but with some key advantages. Unlike RMS, Envelope mode produces even levels across all frequencies. Additionally, Envelope mode will not produce the aliasing or artifacts that RMS detection can cause.

Threshold

Adjust the threshold of the limiter and compressor to set the point where the dynamics processing takes place.

Ratio

Both the Limiter and Compressor have their own ratio control. Higher ratios will result in more extreme compression.

When the Compressor or Limter's ratio is set to a negative number, they act as expanders.

Attack and Release

Adjust the attack and release controls to set how quickly the dynamics processor reacts to audio that crosses the threshold.

- Attack determines how quickly the dynamic processor reacts when the threshold is reached.
- Release determines the amount of time before the dynamics processor returns the level to normal once the signal is no longer above the threshold.

Note: Each section (Compressor and Limiter) of each band can have its own attack and release settings.

Knee

Adjust this control to set the desired character of the compression.

- Higher settings result in a "soft knee" setting with a subtler, natural sounding compression.
- Lower settings result in a "hard knee" setting with a more aggressive sounding compression, often used as an intended effect on individual tracks such as kick and snare drum.

Mid/Side Controls

The Dynamics module can operate in either stereo or Mid/Side operation. See the Mid/Side Processing section for more details.

Visuals

The display at the top of the Dynamics module offers three separate displays:

- Crossover View
- Detection Filter
- Gain Reduction Trace

To view a given display type, click on its icon on the left side of the display

Crossover View

This view displays the multiband information and crossover points for the module. For more information, see the Using Multiband Modules section.

Detection Filter View

This view allows you to specify the frequency response of the detection circuit used by the dynamics processor, so that it is less sensitive to lower frequencies. This is particularly useful when using the Dynamics module in single-band mode.

You can choose between the following modes:

None: No filter is applied to the module. The detection circuit is equally sensitive across all frequencies.

High-pass: A high-pass filter is applied to the module. You can make the following adjustments to the filter:

- Click the “slope” label to cycle through filter slopes (6, 12, 24, and 48 dB).
- Click and drag the frequency node, on the high-pass filter display to select the frequency of the high-pass filter.

Tilt: Similar to the THRUST circuit found on API compressors, Tilt mode preserves low frequencies using a high-frequency weighted filter curve. You may adjust the amount of slope in the filter curve by adjusting the Amount value.

For all three of the detection filter modes, click on the small “S” icon to solo the filtered frequency, allowing you to monitor only the signal that the detection circuit is using to trigger the Dynamics module.

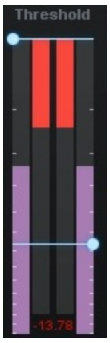
Gain Reduction Trace View

This view offers a scrolling meter that displays the incoming signal’s waveform with a superimposed curve that illustrates the amount of gain reduction taking place in real time.

When using multiband processing, the current selected band’s gain reduction is drawn imposed on a waveform of only that band’s signal. The Gain Reduction Trace can help you to set attack and release controls appropriately and monitor the envelope of gain reduction.

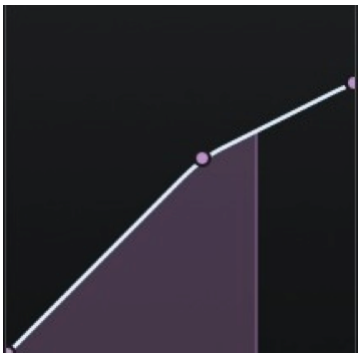
Note: You can adjust the scale on the left by hovering over it and using your mouse wheel. You can also slide the scale by clicking and dragging.

Threshold Meter
The Threshold meter displays gain reduction as it is taking place with level meters.



Two meters display the levels of the incoming signal, and as gain reduction begins to
take place, a gain reduction meter appears in red between the two level bars.

Dynamic Curve Meter
This meter shows the input signal (x axis) plotted against the output (processed) signal (y axis). More horizontal compression curves mean the signal is being flattened (compressed) more.



You can zoom in and out on the meter by clicking the "+" and "-" buttons in the bottom right.

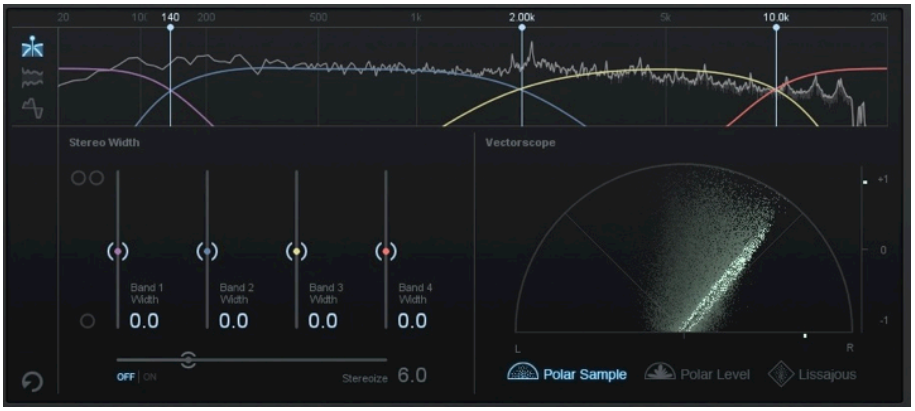
The meter features individual nodes for the Limiter (L) and Compressor (C). These nodes are linked to the Threshold and Ratio controls, and can be used to adjust the curve in a visual way, rather than setting them with the standard controls.

Component Dynamics Plug-in

If you are using Ozone 6 Advanced you will also have the ability to instantiate Ozone 6's Dynamics module as an individual component plug-in. Ozone 6 Advanced includes component plug-ins for all six of Ozone's modules complete with all the same features as the module within Ozone.

Imager

Ozone's Imager module allows you to adjust the stereo width of your mix, using a multiband stereo imaging module.



As with the other multiband modules in Ozone (Dynamics and Exciter), the module is split up into four bands determined by the multiband crossover points displayed on the spectrum.

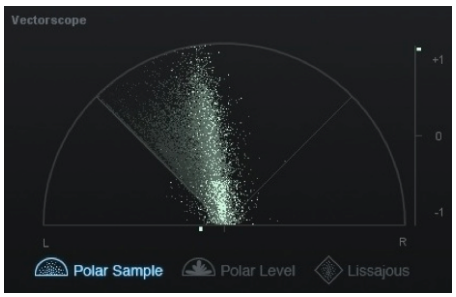
Key Features

- Provides up to four bands of widening, perfect for adding space to your mix.
- Visualize the stereo image with Vectorscope and Correlation meters, Width Spectrum View, and Correlation Trace View, helping you troubleshoot potential phase problems.

The Imager module contains the following controls and displays:

Vectorscope

The Vectorscope provides a view of the stereo image of the signal. Note that it monitors Ozone's final output, regardless of the Imager's place in the signal chain.
You can check mixes for stereo separation, while using the module's controls to provide more or less separation. The vectorscope provides three different views, each of which you can select by clicking on the display type label below the scope:

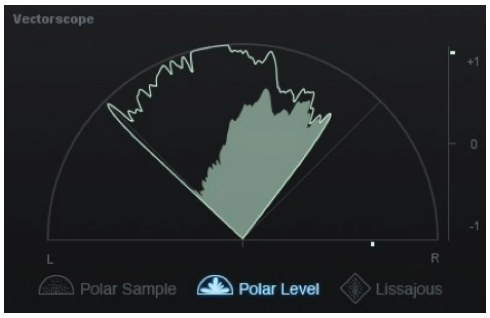


Polar Sample Vectorscope

The Polar Sample Vectorscope plots dots per sample, but uses a polar coordinate display that is more useful in highlighting the stereo image of the incoming signal.

Patterns that appear within the 45-degree safe lines represent in-phase signals while patterns outside these lines represent out-of-phase audio.

The history of the Polar Sample Vectorscope also fades out slowly. The last few seconds are displayed as slowly fading data points. You can reset the display by clicking on the meter.



Polar Level Vectorscope
The stereo energy of a recording is clearly represented by the Polar Level Vectorscope, which plots rays on a polar coordinate display that represent sample averages.

The length of the rays represents amplitude while the angle of the rays represents their position in the stereo image.

Rays within the 45-degree safe lines represent in-phase audio while anything beyond these lines represents audio that is out of phase.

History is represented on the Polar Level Vectorscope with the shrinking of the plotted rays slowly over time. The rays shrink towards the center of the vectorscope leaving the outer portion of the display for real-time analysis.

Lissajous Vectorscope
Like the Polar Sample vectorscope, the Lissajous Vectorscope plots per-sample dots on a traditional oscilloscope display.

Typically, stereo recordings produce a random pattern on a Lissajous Vectorscope that is taller than it is wide. Vertical patterns mean left and right channels are similar (approaching mono, which is a vertical line).

Horizontal patterns mean the two channels are very different, which could result in mono compatibility problems.

Correlation Meter

The correlation meter indicates the degree of similarity (or correlation) between the left and right channels, displayed a +1/0/-1 vertical meter.

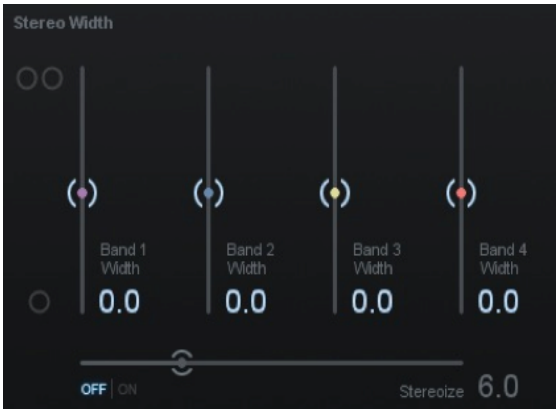
When the audio in the left and right channels is similar, the meter draws towards the top. The extreme case is when the left and right channels are exactly the same, in which case the correlation is +1 and the meter would be positioned all the way at the top.

When the left and right channels are different, the meter draws towards the bottom. The extreme case here would be for the left and right to be exactly out of phase, in which case the correlation is -1 and the meter would be positioned all the way at the bottom.

In general, most recordings have phase correlations in the 0 to +1 region. A brief readout towards the bottom half of the meter is not necessarily a problem but could represent a possible mono compatibility issue.

Note: As you apply greater multiband stereo widening to your audio, the phase correlation will tend to draw more towards the bottom half of the meter, as the left and right channels will become "wider" and less similar.

Stereo Width Controls



Band Width
These sliders set the amount of stereo widening for each band; there is one slider for each of the four bands. Higher amounts provide more widening: -100 (mono) to 100 (full widening).

Enable Stereoizer
Toggle this option on to use stereo synthesis to add natural-sounding stereo width to mono or narrow-sounding recordings.

Stereoizer Amount
By adjusting the amount control in conjunction with the width sliders, you can control the character of the stereo effect.
The Stereoize effect is completely mono compatible; even if you add width to audio, it can still be played back in mono without producing unpleasant artifacts.

Visuals

The display at the top of the Imager module offers three separate displays:

- Crossover View
- Stereo Width Spectrum
- Correlation Trace

To view a given display type, click on its icon on the left side of the display.

Crossover View
This view displays the multiband information and crossover points for the module. For more information, see the Using Multiband Modules section

Stereo Width Spectrum
This view shows a mirrored spectrum display of the signal's stereo width, using the same frequency range as the multiband crossover display.

Correlation View Trace
This view displays a scrolling history of the incoming signal's stereo correlation drawn in real-time. Positive (in phase) values are drawn in light blue while negative (out of phase) values are drawn in red.

Clipping
The Vectorscope will draw any clipped samples in red.

Component Stereo Imaging Plug-in

If you are using Ozone 6 Advanced you will also have the ability to instantiate Ozone 6's Imager module as an individual component plug-in. Ozone 6 Advanced includes component plug-ins for all six of Ozone's modules complete with all the same features as the module within Ozone.

Exciter

The Exciter module can give a sparkle or shine to the upper frequencies of a mix. It can also be used in mid and even low frequencies to add a boost or presence, as well as add warmth, sparkle, and shine using four separate bands of excitation.

Key Features

- Choose from six different saturation types: Warm, Retro, Tape, Tube, Triode, and Dual Triode.
- Adjustable amount and mix controls for each band.
- Mid/Side processing lets you add color to different parts of the soundstage separately.
- Saturation meter highlights affected frequencies and a post filter sculpts the frequency output of the Exciter.

Exciter Modes

The Exciter module has six separate modes available to it. To select the desired mode, click on the corresponding mode label underneath the module's crossover display. Each mode has a unique sonic character:

- **Warm:** Warm mode generates only even harmonics that decay quickly.
- **Retro:** Retro mode is based on characteristics of transistors, with a slowly decaying row of odd harmonics.
- **Tape:** Tape mode can be recognized as a brighter sound, due to the odd harmonics found when saturating analog tape.
- **Tube:** Tube modeling is characterized by its clear "tonal" excitation with an emphasis on dynamic or transient attacks.
- **Triode:** Triode mode is accurately modeled after a tube circuit for realistic analog warmth. It uses one half of a tube circuit for a subtler overdrive than the Dual Triode mode.
- **Dual Triode:** The Dual Triode mode models a full circuit using a vacuum tube, introducing more pronounced overdrive with a warmer tone.

Oversampling

Click this control to turn on the oversampling option. It utilizes more processing power to increase the quality level of the Exciter module, by increasing the sampling rate of the applied distortion to reduce aliasing.

Multiband Controls

Like other multiband modules in Ozone, the controls for the Exciter can individually process each of four frequency bands separately.

To access these controls, click the Crossover View icon on the upper left-hand side of the module interface. The upper portion of the module interface will display the crossover points and frequency bands, and the following controls will be accessible:

Selecting Crossover Points

Click and drag any of the three vertical white lines in the crossover display to select the frequency range for each of the four bands.

Soloing a Band

Click on the "S" button on any of the frequency bands to hear that specific band only.

Bypassing a Band

Click on the graphical "power" button on any frequency bands to bypass the Exciter processing on that specific band only. Processing for the other bands will remain enabled.

Post Filter View

Click the Post Filter View icon on the upper left-hand side of the module interface to switch to the post filter view. The upper portion of the module interface will switch to a display showing a single high-shelf filter.

Drag the filter node to adjust the frequency and gain of the high-shelf filter. This filter will be applied to the entire Exciter module, allowing you to further adjust any high frequencies that have been generated by the Exciter module.

Not only does the post filter view display the spectrum of the incoming signal, but it additionally highlights particular frequencies being affected by the Exciter.

Exciter Controls

These controls are available for each band of the Exciter.

Amount: This slider controls the amount of the harmonic excitation for the corresponding frequency band.

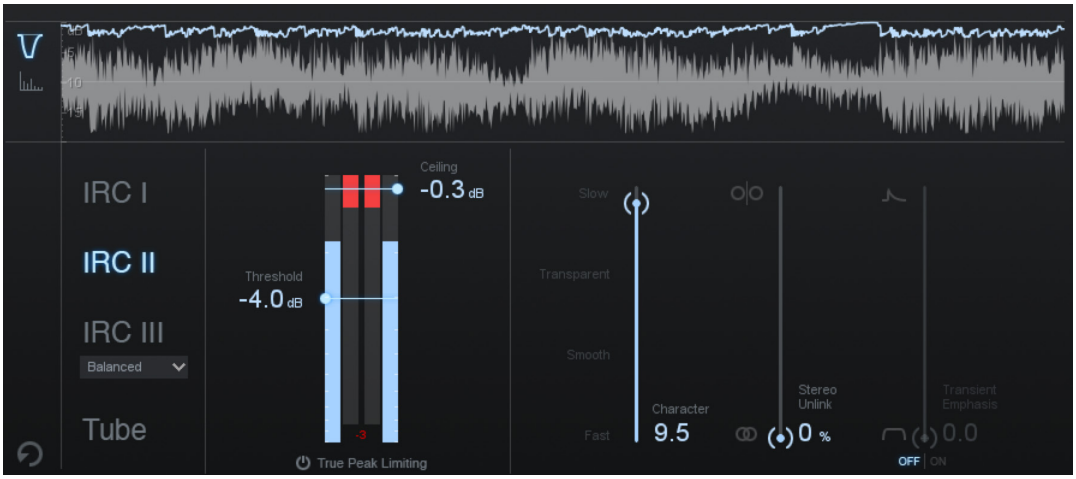
Mix: This slider controls the mix of the excited signal with the original mix.

Mid/Side Controls

The Exciter module can operate in either stereo or Mid/Side operation. See the Mid/Side Processing section for more details.

Maximizer

The Maximizer allows you to create an overall louder or fuller master by limiting the dynamic range and boosting the perceived overall level of the mix.



Ozone's acclaimed IRC (Intelligent Release Control) lets you boost the overall level of your mixes without sacrificing dynamics and clarity. The Maximizer applies to the entire bandwidth of the mix; it is not a multiband effect.

Key Features

- Intelligent limiting modes provide amazing results, greatly reducing pumping on transients and letting you get louder, fuller mixes without unwanted artifacts.
- Character control helps you fine-tune the Maximizer's response perfectly to your source material.
- Gain Reduction display provides valuable visual feedback of gain reduction.
- Interactive Threshold/Ceiling control allows you to adjust the amount of limiting in visual relation to the level of the incoming signal.
- Stereo Unlink feature allows you to limit the left and right channels independently.
- Transient Emphasis feature allows you to preserve transients through the limiting process.

Limiting Modes

Four separate limiting modes are available; they work as follows:

IRC I

This mode provides intelligent digital loudness maximization of the signal. Unlike the analog-modeled limiters (Soft or Brickwall), the digital processor is designed for neutral and transparent limiting.

It does this by analyzing the source material and applying limiting in a psychoacoustically pleasing manner, reacting quickly to transients (to prevent pumping) and reacting more slowly to steady bass tones (to prevent distortion).

IRC II
Similar to Intelligent mode (above), but this mode is optimized to preserve transients even more, so they sound sharper and clearer in the output signal, even when aggressive limiting is taking place.

IRC III
Allows for the most aggressive limiting by using an advanced psychoacoustic model to intelligently determine the amount of limiting that can be done to the incoming signal, before producing distortion that is detectable to the human ear.

The IRC III mode is very CPU-intensive, and produces a high latency, especially at higher sampling rates. You may find that, at sampling rates greater than 48 kHz, you are unable to use Intelligent III mode in real-time.

The IRC modes provide intelligent release control (the release time is automatically varied depending on the audio material). However, when the Maximizer is set to IRCIII mode you may choose between four different character "styles," which will help you manage the Limiter's final sound by constraining its release behavior.

To achieve the best results, start with the style set to balanced, then try the various styles to see which best suits your mix. The style choices include:

- **Clipping:** This is the most aggressive style setting of IRCIII and may be used if you wish to slightly colorize your mix with distortion or achieve the highest degree of loudness with the greatest risk of clipping.
- **Crisp:** This setting aggressively constrains the Limiter's release behavior and will favor distortion over any pumping.
- **Balanced:** This setting constrains the release behavior of the Limiter in a generally transparent way and should be suitable for most material.
- **Pumping:** This is the least aggressive style setting for IRCIII and does not constrain the Limiter's release behavior. It can tend toward a slower release behavior and may result in pumping. This is the "legacy" setting and is the behavior used in Ozone version 5.01 and earlier.

Tube
The Tube algorithm provides a warmer, more analog sounding final stage limiting while retaining the ease and precision of digital maximizing.

This is loosely modeled after the Fairchild 670, a feedback-based compressor limiter with a soft knee. The attack and release envelopes are slightly different due its feedback topology. An IRC I limiter follows the tube processing to transparently prevent clipping. The character slider controls attack and release time of Tube mode, similar to its behavior in the IRC modes.

Threshold Controls

Threshold
This slider determines the point that the maximizer will begin limiting. Turning down the threshold limits more of the signal, which in turn will create an overall louder mix.

In other words, by turning down the threshold, you limit the dynamic range of the mix, and the maximizer automatically adds gain proportionally to maximize the output level.

Ceiling
Formerly called “Margin,” the ceiling sets the maximum level output by the Maximizer.

It is generally recommended to use a setting of -0.3 when dithering, or a more dramatic setting (-0.6 to -0.8) when mastering audio to be converted to .mp3 later, in order to prevent clipping in the future.

Other Controls

True Peak Limiting
Enables “True Peak” limiting by examining not just the levels of each digital sample, but the levels of the analog signal that will eventually be produced by D/A conversion. This is sometimes necessary, since an analog signal’s peak level can exceed its corresponding digital signal’s peak level by more than 3 dB! This option will increase CPU usage slightly, but if your mixes are running very hot you may want to enable it to ensure that absolutely no distortion is introduced when your audio is finally run through a D/A converter.

Character
Adjust the character slider to customize the overall response time, and thus the sound, of the maximizer process. The slider allows a continuous range through the following four characters:

- Slow
- Transparent
- Smooth
- Fast

Stereo Unlink
The Ozone Limiter defaults to 0% stereo unlinking, which imposes one limiter across the stereo image. With the Stereo Unlink fader, you can control the amount that the left and right channels are limited independently.

At values from 1 to 100%, a gain envelope generated by a ratio of the individual channel and the entire stereo image triggers two independent channel limiters.

Values less than 50% favor the stereo image’s channels’ gain and values higher than 50% favor the individual channel’s gain.

Transient Emphasis
Click the “Transient Emphasis” button to fine-tune the shaping of transients before limiting takes place; this helps to preserve sharper sounds like drums, while still optimizing loudness.

The higher the amount of transient recovery you dial in using the fader, the more pronounced the transients will be after the limiting process.

Visuals

Threshold Meter
The Threshold meter displays gain reduction as it is taking place with level meters.
The outer two meters display the levels of the incoming signal; as gain reduction begins to take place, a gain reduction meter appears in red between the two level bars.

Mini-Spectrum Window
The horizontal window at the top of the module can display two different types of metering:

Gain Reduction Trace
Also found in the Dynamics module, the Gain Reduction Trace is a scrolling meter that displays the incoming signal’s waveform with a superimposed tracing that illustrates the amount of gain reduction taking place in real-time. The Gain Reduction Trace can help you to set attack and release controls appropriately and monitor the envelope of gain reduction.

Spectrum Analyzer Graph:
This displays the incoming signal’s waveform as a detailed spectrum analyzer.

Note: For both types of metering, you can adjust the vertical scale on the left side of the meter by hovering over it and using your mouse wheel.

Component Maximizer Plug-in

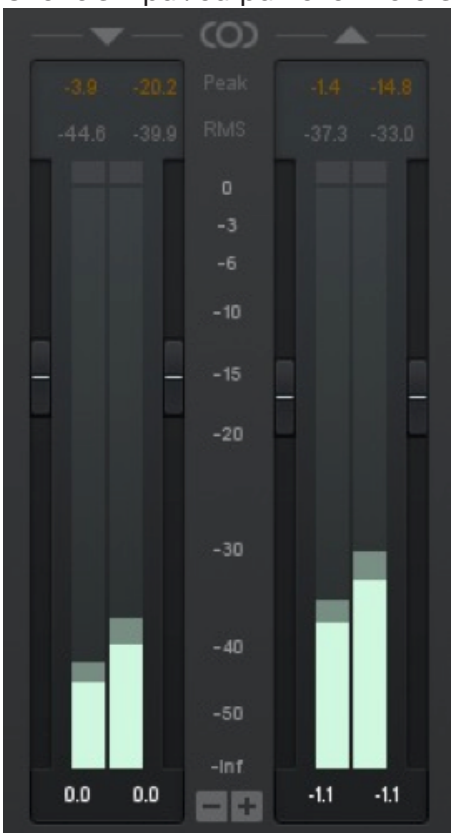
If you are using Ozone 6 Advanced you will also have the ability to instantiate Ozone 6’s Maximizer module as an individual component plug-in.

Ozone 6 Advanced includes component plug-ins for all six of Ozone’s modules complete with all the same features as the module within Ozone.

Master Section

Input/Output Meters

Ozone's input/output level meters display the input and output level for the left and right channels.



Several metering options are available; you can select which metering method you wish to use by clicking the Settings button, then selecting the I/O settings tab.

Alternatively, you can right-click on the meters themselves to go straight to the I/O settings tab as well. See the I/O Settings section for details on the different available metering scales.

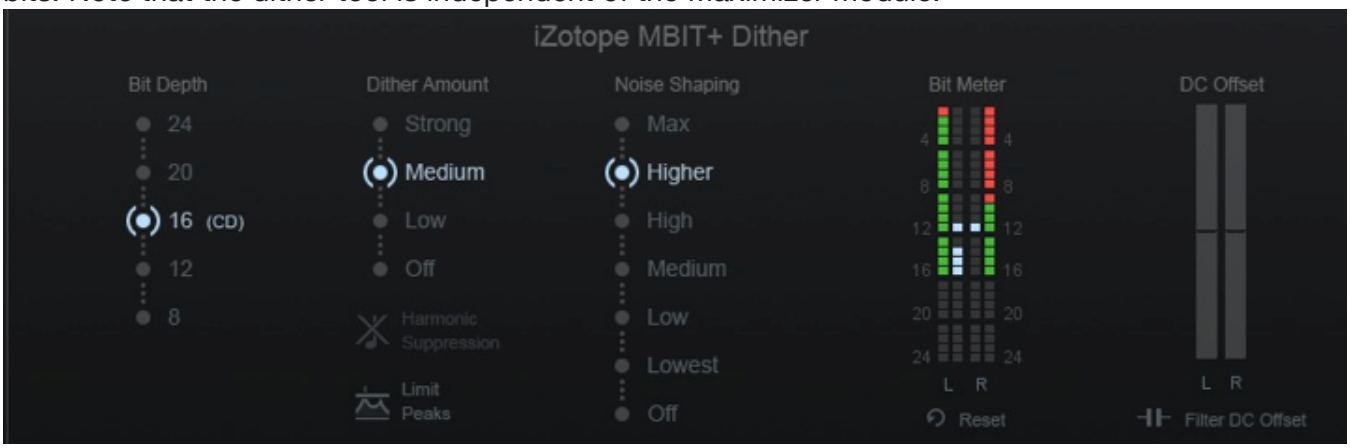
Options

You can set the I/O meter options by opening the Options Dialog and selecting the I/O Options tab.

You can also right-click (under OS X you can also Ctrl-click) the I/O meters to bring up these options directly.

Dithering

Ozone contains a comprehensive set of dithering tools that allows you to prepare studio-quality audio for CD and other formats by effectively converting and dithering audio to 24, 20, 16, 12, or 8 bits. Note that the dither tool is independent of the Maximizer module.



Key Features

- Includes iZotope MBIT+ Dither for exceptionally transparent conversion to different bit depths.

  This is a proprietary iZotope word length reduction technology that reduces quantization distortion with minimal perceived noise. While this might sound like a paradox, MBIT+ is a very smooth, quiet, and almost “analog sounding” technology.
- Unique set of bit meters and DC offset (direct current offset) meters provides a complete view of the digital bitstream and conversion process.

To enable/disable the feathering algorithm and compare its effect on the audio signal, click on the Dither button underneath the master I/O meters. The dither power button will illuminate when dithering is active and affecting the audio.

To access the settings for the dithering section, click on the Dither button in the lower right-hand corner of the interface. The dithering section contains the following controls:

Noise Shaping Curve:
This graph shows the noise-shaping profile curve, as displayed across the frequency spectrum. The graph displays the general frequency curve of the specific dither noise profile that is used, depending on the algorithm.

Bit Depth
This control allows you to set the target bit depth for the audio. When mastering for a CD, for example, you would want this set to 16 bit.

Dither Amount
This sets the number of bits or amount of dither that will be used. The dithering amount can be varied among Off, Medium, and Strong.

The Off and Low settings can leave some non-linear quantization distortion or dither noise modulation, while the strong setting completely eliminates the non-linear distortion at the expense of a slightly increased noise floor. In general, the medium dither amount is a good choice.

Harmonic Suppression
If, for some reason, any dithering noise is undesirable, simple truncation remains the only option. Truncation results in harmonic quantization distortion that adds overtones to the signal and distorts the timbre.

In this case you can click the Harmonic Suppression button to slightly alter the truncation rules, moving the harmonic quantization distortion away from overtones of audible frequencies.

This option doesn't create any random dithering noise floor. Instead it works more like truncation, but with better tonal quality in the resulting signal.

Limit Peaks
Dither noise is random in nature, and has a very low amplitude. However, after noise shaping, especially in aggressive dithering modes, the high-frequency dither noise is significantly amplified, and the overall dither signal can show spurious peaks (up to -60 dB FS for a 16-bit quantization).

If such high peaks are undesirable, you can click the Limit Peaks button to effectively suppress the spurious peaks in the noise-shaped dither.

Auto-blanking
Selecting this option will completely mute dither output (i.e. dither noise) when the input signal is completely silent (0 bits of audio) for at least 0.7 seconds.

Noise Shaping
Click here to choose the amount of noise shaping that is applied during the dithering process. Noise shaping pushes the noise necessary for dithering into less audible frequency ranges, allowing for greater dithering with less perceived noise.

You can control the aggressiveness of this shaping, ranging from Off (no shaping) through Max (roughly 14 dB of audible noise suppression).

Different amounts of noise shaping will have subtle effects on the sound quality of the dither process, so experiment with the different settings with your particular program material.

Bit Meter
This can be an invaluable resource for monitoring the digital activity of your program material, including viewing:

- Whether the full range of bits (dynamic range) is being used.
- The output word length.
- Faulty A/D converters.
- Sub-par plug-in processing (detecting a plug-in that's only processing at 16 bit, using fixed integer math, etc.).

The bit meter monitors the state of bits in a digital signal.

- The inner two columns show the real-time activity of the bits of audio, for the left and right channels.
- The outer two columns remember the real-time activity in a sort of “peak hold” way.
- If the inner columns toggle a bit (i.e. “light up”) the outer columns will show that bit as being used.

In general, you want to see activity on each of the bits (except the top one, see below for explanation), meaning that over a period of a few seconds each of the bits in the outside columns should be lit. You should also click on the meter periodically to reset the peak hold of the outside columns, as something like DC offset would toggle a lower bit once (lighting the outside column), but would never toggle it after that since the bit is being held.

If you’re dithering down, you only want to see 16, 12, or 8 bits lit (corresponding to the output bit depth of the dither).

Note that the bit meter is not a level meter. Instead, it shows which bits are being used. If a bit is used (goes from 1 to 0 or vice versa), the position for that bit is lit.

The main use of the bit meter is to look for problems or discontinuities in the digital signal. Some examples of problems are shown below:

- **Headroom:** You may have a 24 bit audio file, but aren’t using all of the bits.
- **16 Bits:** In a more extreme case, you are only using 16 bits. If you’re dithering to 16 bits, this is what you want to see. However, if you’re not dithering, this would suggest there is a problem somewhere, either an A/D converter that is only putting out 16 bits, a plug-in that’s truncating the signal down to 16 bits, etc.
- **Stuck Bit:** One bit in the middle of the signal isn’t being exercised, possibly due to a faulty A/D converter or bug with a software plug-in.

Why the Top Bit Will Never Light Up

When samples are stored as a binary number, negative samples are specially encoded. Since the binary representation of negative numbers is not intuitive, Ozone takes the absolute value of each sample before plotting it on the bit meter.

Since the most significant bit is only set when a sample is negative, this bit will never light up. We simply included the top bit as placeholder for completeness.

Bit Meter Reset

Click here to reset the bit meter and start its display over with the program material’s current playback point.

Filter DC Offset
DC offset (direct current offset) is a defect in the recording when the waveform's average voltage is above or below zero. Audio signals are normally represented by an alternating current whose average value is zero. Some malfunctions in the recording equipment can result in a direct current leaking into the signal. Thus, the recorded waveform appears to be above or below the zero line. In FFT (Fast Fourier Transform) analyzers, the DC offset is represented with energy at zero frequency (0 Hz). A DC offset can be removed with a high-pass filter. Ozone's DC Offset button activates a high-pass filter with a 1 Hz cutoff frequency.

It is important to distinguish DC offset from waveform asymmetry. Asymmetry skews the waveform shape towards positive or negative levels, but the average current stays at zero. Unlike DC offset, asymmetry has no particular energy near 0 Hz and can be reduced using phase rotation filters.

Note: The Filter DC Offset runs in real-time before the Maximizer. The Maximizer module must be in signal chain to enable DC offset filtering.

DC Offset Meter
When the DC Offset Filter is on, the DC Offset meter shows the amount of the DC that is being removed.

Dithering Guide
If you are interested in getting some practical tips for using dithering, as well as some of the theory behind it, please check out the Ozone Dithering Guide.

Note that with the purchase of Ozone 6 Advanced, you also get the comprehensive Insight metering plug-in included. For more information about Insight, click here.

Dithering Tips When Using the Plug-In Version of Ozone 6:

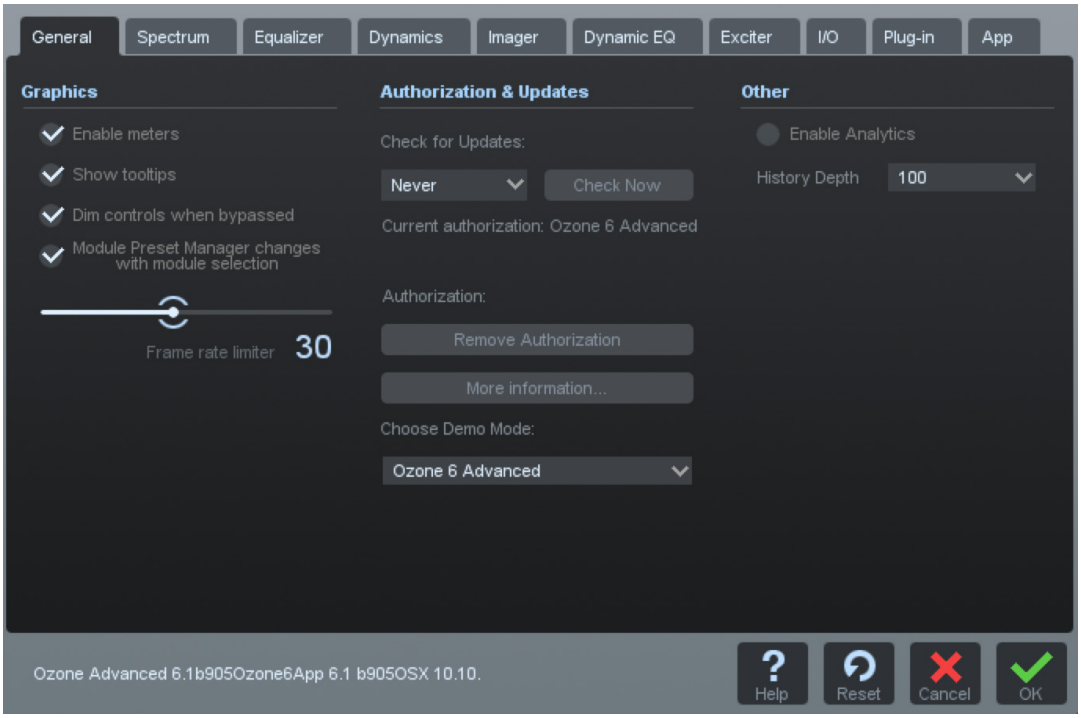
- Do not perform any processing to the audio after it has been dithered with Ozone. You may perform level adjustment with the output gain sliders in Ozone (those come before the dither) but do not change any levels in the host app or with other plug-ins.
- Almost all host apps have their master faders after the effects slot, so any level adjustment in the host app will destroy the dither.
- Do not put any plug-ins after Ozone if you are dithering with Ozone. The dither must be the last thing that touches the audio.
- Turn off dithering in the host app. Basically, you just want to truncate (throw away) the bits, because they're just zero anyhow.

Options

Ozone contains a comprehensive user settings section that allows you to configure various settings for the program.
The options page, which can be reached by clicking the Options button in the lower right-hand corner, contains separate tabs for the following nine areas of the program:

- General
- Spectrum
- Equalizer
- Dynamics
- Imager
- Dynamic EQ
- Exciter
- I/O (Input/Output)
- Plug-in (standalone only)
- App (standalone only)

General Options



Graphics

Enable Meters

Although each module's meter has its own options, this option allows you to quickly turn on/off all meters.

Show Tooltips

When enabled this allows informational notes to appear when the cursor/pointer is hovering on top of the features' controls.

Frame Rate Limiter

Allows you to set the speed (frames per second) that Ozone should use to display and update meters. In most cases the default will provide smooth displays while still allowing adequate processing time for audio.
If your PC hardware allows it, you can increase the frame rate for smoother animation. On the other hand, if you are running Ozone on slower hardware or notice graphics performance problems in your host application, you can set the FPS value lower to limit the amount of CPU Ozone uses.

Dim Controls When Bypassed
When this option is enabled, each module's controls will be dimmed when the module is bypassed. This feature helps to remind you when a module is bypassed, so that you don't make adjustments to a bypassed module unintentionally.

Module Preset Manager Changes with Module selection
When this option is enabled, the Module Preset manager will display the presets for the currently selected module. If disabled, the currently displayed Module Preset manager will not change when different modules are clicked on.

General

Enable Analytics
Click this box to allow Ozone to upload data on your usage patterns of the application to iZotope's servers.
This info is completely anonymous, and allows us to better understand how users use the application, in order to provide the best updates possible in the future.

History Depth
Lets you set how many levels or steps are remembered in the Undo History module, in order to control the size of the history log file.

Keyboard Support
Available options include:

- Full (full keyboard support)
- Minimal (only TAB, arrow keys, and ENTER)
- None (Keyboard shortcuts turned off)

The keyboard support option must be set to "full" for all keyboard shortcuts to be available.

Authorizations and Updates

Check for Updates
Selects the frequency with which Ozone 6 looks for version updates. You may choose between:

- Daily
- Weekly
- Monthly
- Never

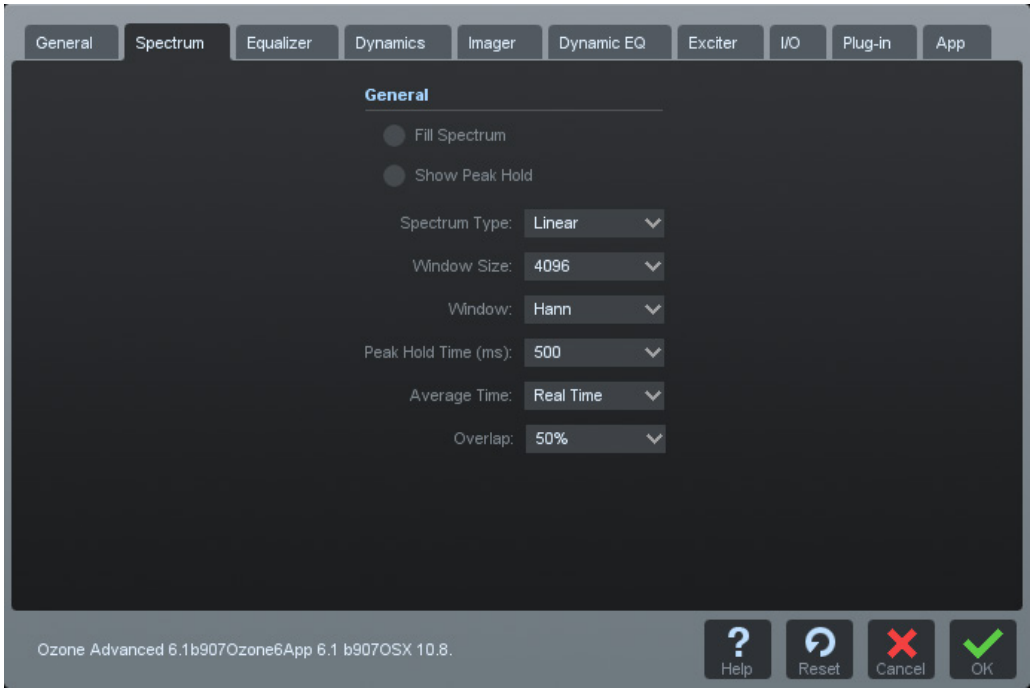
Check Now
Instantly checks if your version of Ozone is currently up to date.

Authorize
Click this button to run the authorization wizard, allowing you to authorize your copy of Ozone if you have not already done so.

More Information
Click this button to learn more information about the Ozone version and its legal information.

Spectrum Options

The Spectrum options tab lets you control various properties for Ozone's spectrum analyzer meters.



Fill Spectrum

Allows you to display the real-time spectrum as a solid graph as opposed to a line graph. This option can be used to differentiate the real-time spectrum from the peak hold spectrum.

Show Peak Hold

Toggles whether Ozone displays and holds the peaks of the spectrum.

Spectrum Type

Lets you select between four types of spectrums:

- **Linear:** A continuous line connecting the calculated points of the spectrum.
- **1/3 Octave:** Splits the spectrum into bars with a width of 1/3 of an octave. Although the spectrum is split into discrete bands, this option can provide excellent resolution at lower frequencies.
- **Critical:** Splits the spectrum into bands that correspond to how we hear, or more specifically how we differentiate between sounds of different frequencies. Each band represents sounds that are considered "similar" in frequency.
- **Full Octave:** Splits the spectrum into bars with a width of one full octave.

Window Size

Controls the size of the spectrum analyzer, allowing you to optimize it for different sized monitors.

Window

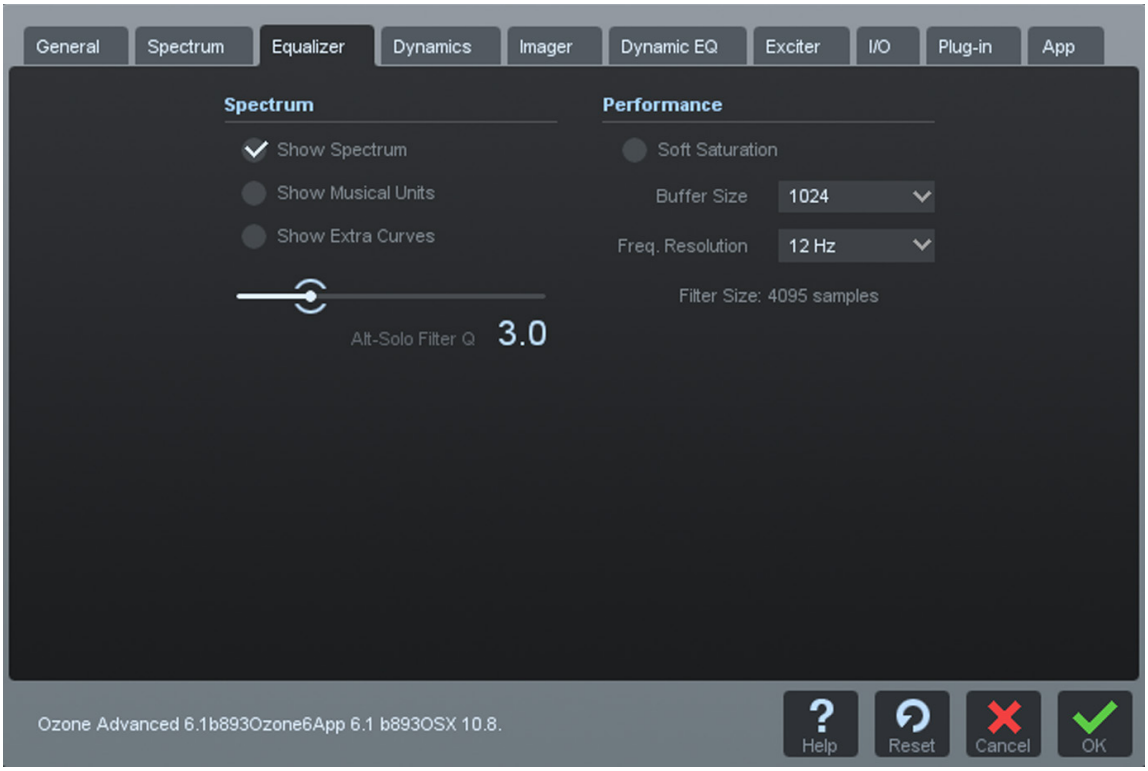
Selects a window type for the spectrum. In most cases the default window type will work well, but you can choose from a variety of window types. Each window type has different amplitude and frequency resolution characteristics.

Peak Hold Time
You can click on Peak Hold Time to select between specific hold times in milliseconds or Infinite, where the peak is held indefinitely. You can reset the peaks by clicking on the spectrum.

Average Time
Averages the spectrum according to this setting. Higher average times can be useful for viewing the overall tonal balance of a mix, while shorter average times provide a more real-time display.

Overlap
Controls how often the spectrum updates. More overlap will cause the spectrum to update more frequently, at the expense of increased CPU usage.

Equalizer Options



Show Spectrum
Check this box to display a real-time spectrum analyzer signal underneath the Equalizer curve.

This can be very useful in showing the frequency balance of your mix and how it is changed as you apply equalization.

Show Musical Units
When this setting is checked, it allows you to display frequency labels as notes (for example, A4) in addition to the conventional EQ measurement of Hz.

Show Extra Curves
Click on this setting to display Phase Delay, Phase Response, and Group Delay

Soft Saturation
Checking this button allows the audio material, when booted to the point of overloading, to saturate in a more forgiving, analog-type mater, as opposed to harsh, digital-style overloads.

Buffer Size
Adjusts how large of a memory buffer, measured in samples, Ozone uses when applying equalization to the signal.

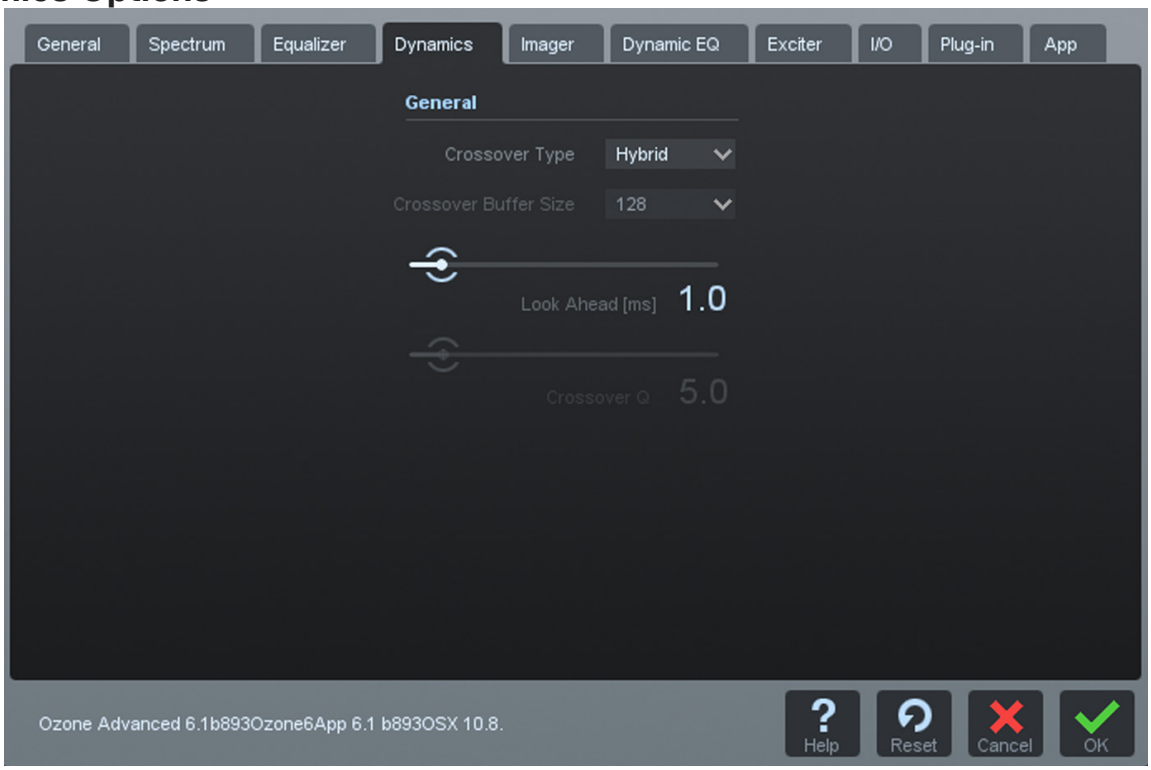
Frequency Resolution
Selects the minimum resolution, in Hz, the Equalizer can be adjusted in. Choices include:

- 48 Hz
- 24 Hz
- 12 Hz
- 6 Hz
- 3 Hz

Filter Size
Adjusts the steepness of the filter setting used in the EQ module.

Alt-Solo Filter Q:
Sets the bandwidth (Q) of the Alt-Solo Feature.

Dynamics Options



Crossover Type
Selects between a digital linear-phase crossover, an analog crossover, and Ozone's Hybrid crossover.

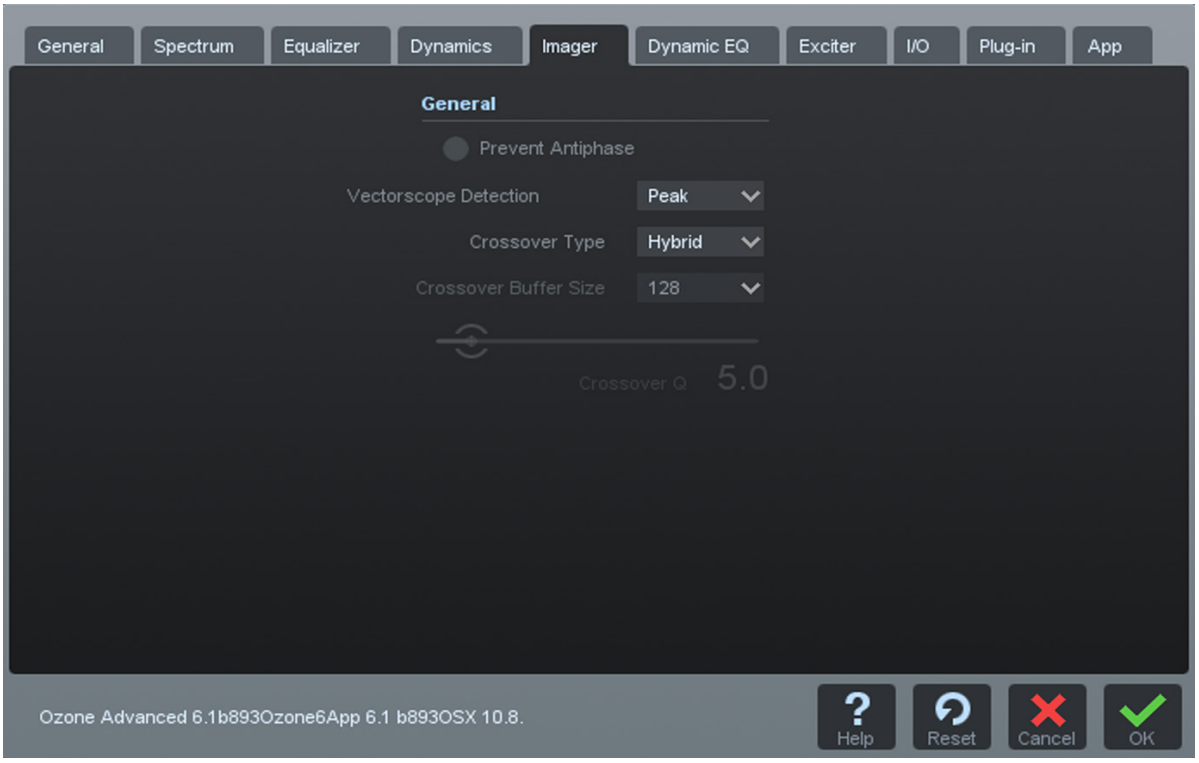
- The analog crossover option provides a natural analog character.
- The digital crossover option provides a more transparent sound.
- The Hybrid crossover is a perfect reconstruction IIR analog crossover designed to reduce phase distortion and frequency distortion found in other analog crossovers while maintaining precise crossover points and the warm characteristics of analog crossovers.

Crossover Buffer Size
Determines how large of a digital audio buffer is used in the Dynamics module's crossover section.

Look Ahead Time
Determines how far ahead the dynamics processor looks ahead, within the loaded digital audio file, in order to provide as transparent and effective dynamics controls as possible. The look ahead time ranges from 0 to 10 ms.

Crossover Q
Determines the bandwidth of the crossover points in the Dynamics module's crossover section. A higher Q results in tighter crossovers, while a lower Q provides a more gradual transition from one band to the next. This is only available for the digital crossover.

Imager Options



Prevent Antiphase
When checked, the Imager will automatically prevent any settings from being applied that would result in phase cancellation of the stereo signal, when summed to mono.

Vectorscope Detection Method
Chooses which type of amplitude detection method is used by the Vectorscope. Choices include:

- Peak: When this option is enabled, Ozone's detection circuit looks at peak levels of the incoming signal. In general this is useful when you're trying to even out sudden peaks in your music.
- RMS: When this option is enabled, Ozone looks at the average level of the incoming signal. RMS detection is useful when you're trying to increase the overall volume level without changing the character of the sound.
- Envelope: Envelope mode behaves much like RMS mode, but with some key advantages. Unlike RMS, True Envelope mode produces even levels across all frequencies.

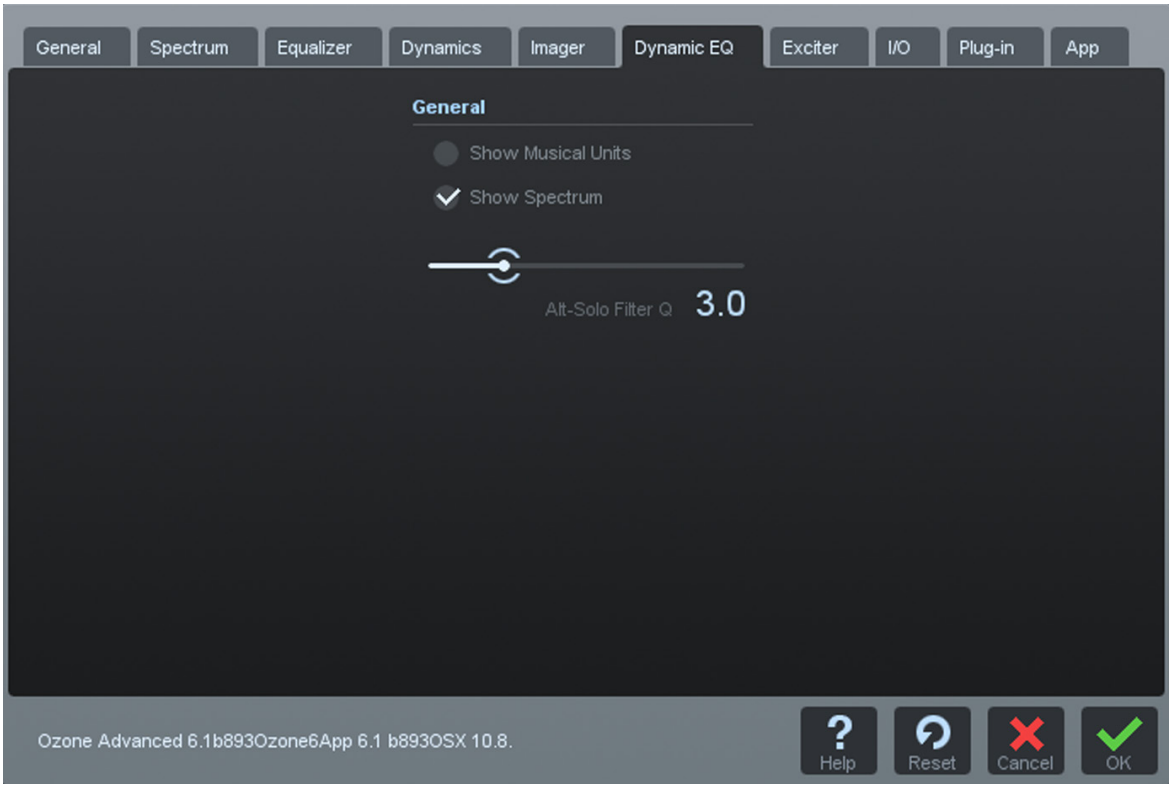
Crossover Type
Selects between a digital linear-phase crossover, an analog crossover, and Ozone's Hybrid crossover.

- The analog crossover option provides a natural analog character.
- The digital crossover provides a more transparent sound.
- The Hybrid crossover is a perfect reconstruction IIR analog crossover designed to reduce phase distortion and frequency distortion found in other analog crossovers while maintaining precise crossover points and the warm characteristics of analog crossovers.

Crossover Buffer Size
Determines how large of a digital audio buffer is used in the Imager module's crossover section.

Crossover Q
Determines the bandwidth of the crossover points in the Imager crossover section.

Dynamic EQ Options

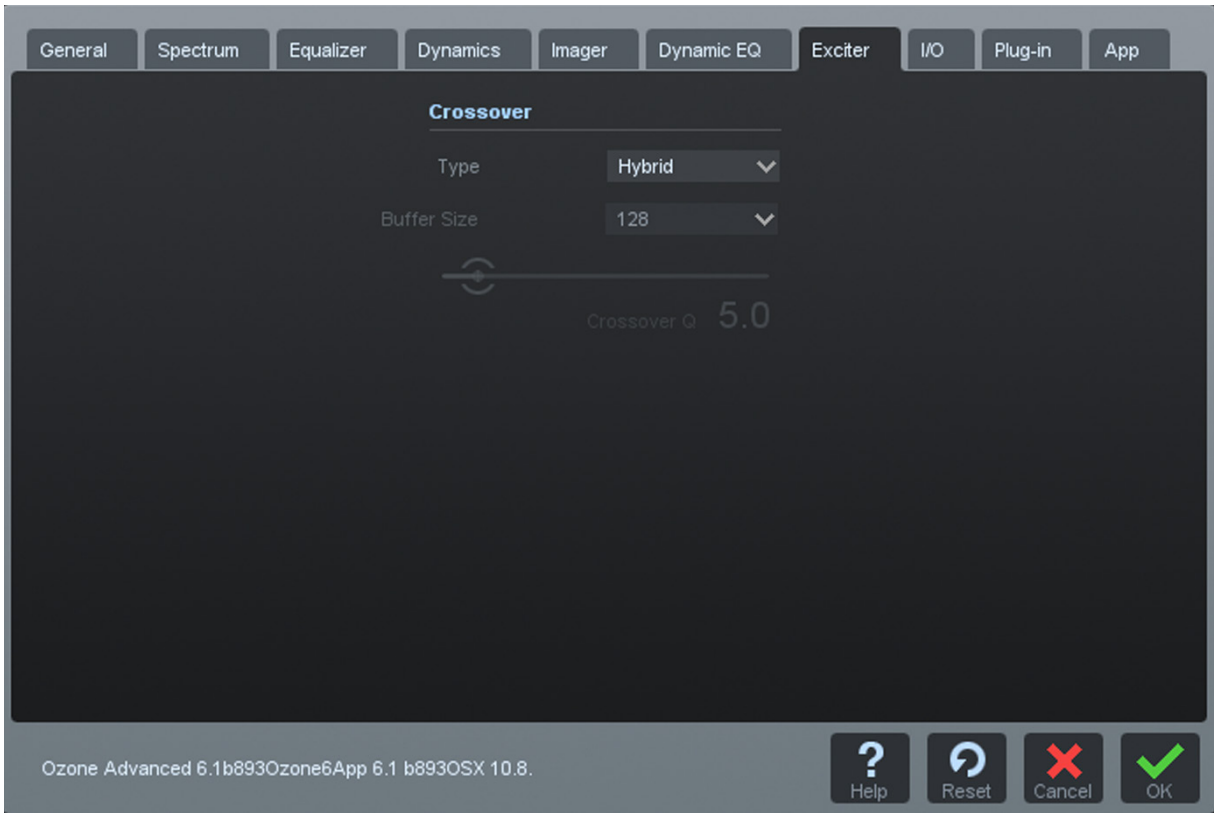


Show Musical Units
When checked, the Dynamic EQ will show its frequency points as musical notes (for example, A4) instead of measured in Hz.

Show Spectrum
When checked, a spectrum view of the program material will be available to view within the module, allowing you to see in real time how your settings affect the spectral balance of your audio.

Alt-Solo Filter Q
Controls the bandwidth (Q) of the filter used in the Dynamic EQ. The setting ranges from .2 to 12.

Exciter Options



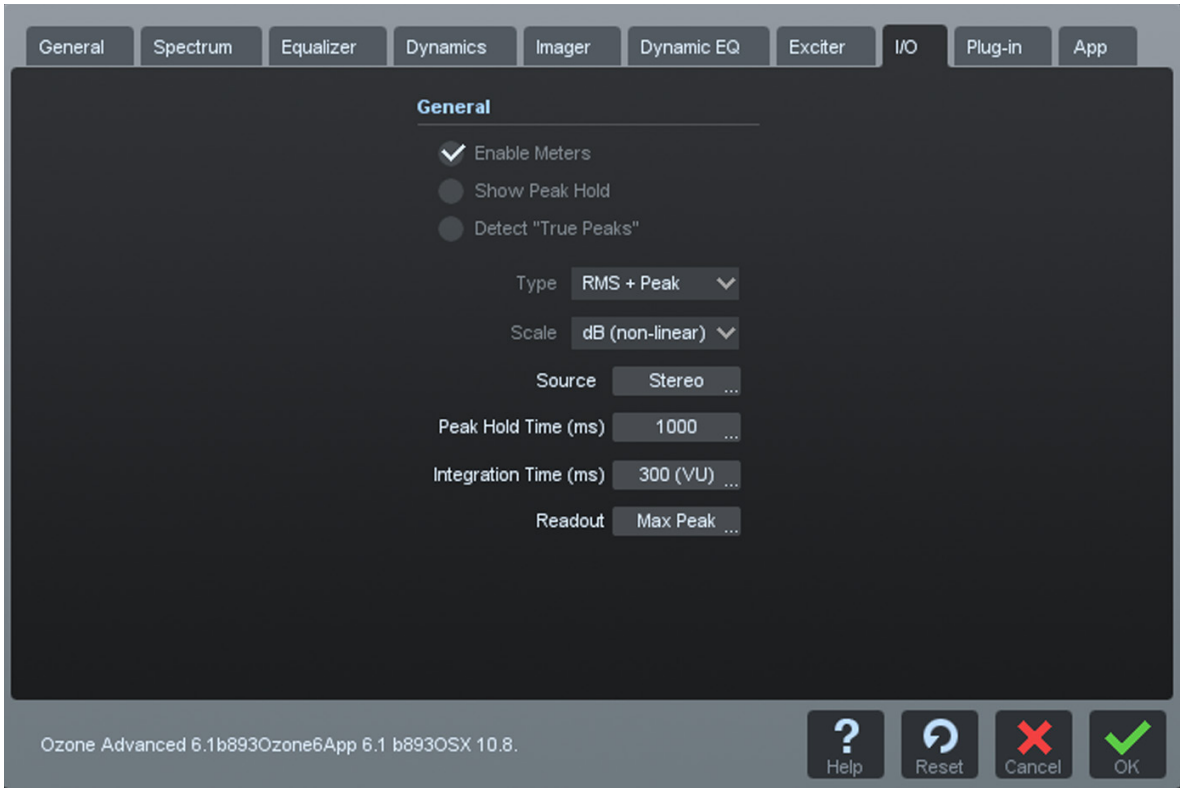
Crossover Type
Selects between a digital-linear phase crossover, an analog crossover, and Ozone's Hybrid crossover.

- The analog crossover option provides a natural analog character.
- The digital crossover provides a more transparent sound.
- The Hybrid crossover is a perfect reconstruction IIR analog crossover designed to reduce phase distortion and frequency distortion found in other analog crossovers while maintaining precise crossover points and the warm characteristics of analog crossovers.

Crossover Buffer Size
Determines how large of a digital audio buffer is used in the Exciter module's crossover section.

Crossover Q
When in Digital mode, you can manually set the bandwidth of the crossover points in the dynamics exciter crossover section.

I/O Options



Enable Meters
Check this setting to enable the meters in Ozone's master I/O section. When unchecked, the meters will not appear.

Show Peak Hold
Check this setting to allow the master I/O meters to visually display a peak hold, whenever peaks occur in the loaded audio file.

Detect True Peaks
By default the Input/Output meters will only indicate clipping which occurs within the digital domain. To accurately measure the signal that will result from digital to analog conversion, select Detect "True Peaks."

Meter Type
Ozone 6 allows the I/O meters to display peaks according to several different audio monitoring types, including:

- **RMS:** RMS (Root Mean Square) is a software-based implementation of an analog-style level meter. Using different integration times, you can model popular VU or PPM meters. The RMS meter displays the average level calculated over a short window of time. The RMS meter readout will typically be lower than an equivalent PPM meter (Digital/Analog), since it is averaging peaks into the overall loudness.
- **Peak:** The Peak meter is a fast meter that measures instantaneous maximum sample value or peak analog waveform values, depending on the "detect inter-sample peaks" checkbox. If you are tracking the peaks for possible clipping, the Peak meter is appropriate.
- **RMS + Peak:** This is a combined RMS and Peak meter. This meter displays a lower bright bar representing the average level (RMS) and a higher dimmer bar representing peak level. There is also a moving line above the bar representing the most recent peak level or peak hold.
- **K-System:** Ozone 6 supports Bob Katz's K-System metering with simultaneous peak and RMS displays.
- **Momentary:** This measurement is a calculation of loudness over the course of 400ms.
- **Short Term:** This measurement is a calculation of loudness over the course of 3 seconds.
- **Integrated:** This measurement is a calculation of loudness over the course of an indefinite period of time.

Scale
This sets the range and scale of the I/O Meters.

- **dB (Linear)**: Decibel scale presented linearly from -60 dB to 0
- **dB (Non-linear)**: Full decibel scale (dBfs) presented non-linearly
- **BS.1771:** Loudness scale recommended by the ITU that spans from -45 LUFS to -14.0 LUFS
- **EBU +9:** Loudness scale recommended as a default by the EBU that spans from -41.0 LUFS to -14.0 LUFS
- **EBU +18**: Loudness scale recommended for material with a wide Loudness Range by the EBU that spans from -59.0 LUFS to -5.0 LUFS.

  Note: LUFS is Loudness Units Full Scale and 1 LUFS = 1 dB.

Source
Selects the audio source feeding the meters. Choices include:

- Stereo
- Mid/Side

By default, the I/O meters will display the Stereo mix of your audio. However, when working with Mid/Side processing, it is often very helpful to have a clear meter indication of the overall Mid and Side levels individually.

When the I/O meters are in Mid/Side mode, they will no longer display your signal in terms of Stereo Left and Right. Instead, on the left side of the meter will be the level of the entire Mid signal, and on the right will be the overall level of the side signal.
The Left and Right Gain sliders will still control the Left and right Gain of your signal however.
The Mid/Side meters will still adhere to the same Type and Scale settings defined in the I/O options menu.

Peak Hold Time
Selects how many consecutive samples of audio must exceed digital full scale, before registering as a peak. Choices include:

- 5
- 250
- 500
- 1,000
- 5,000
- Infinite

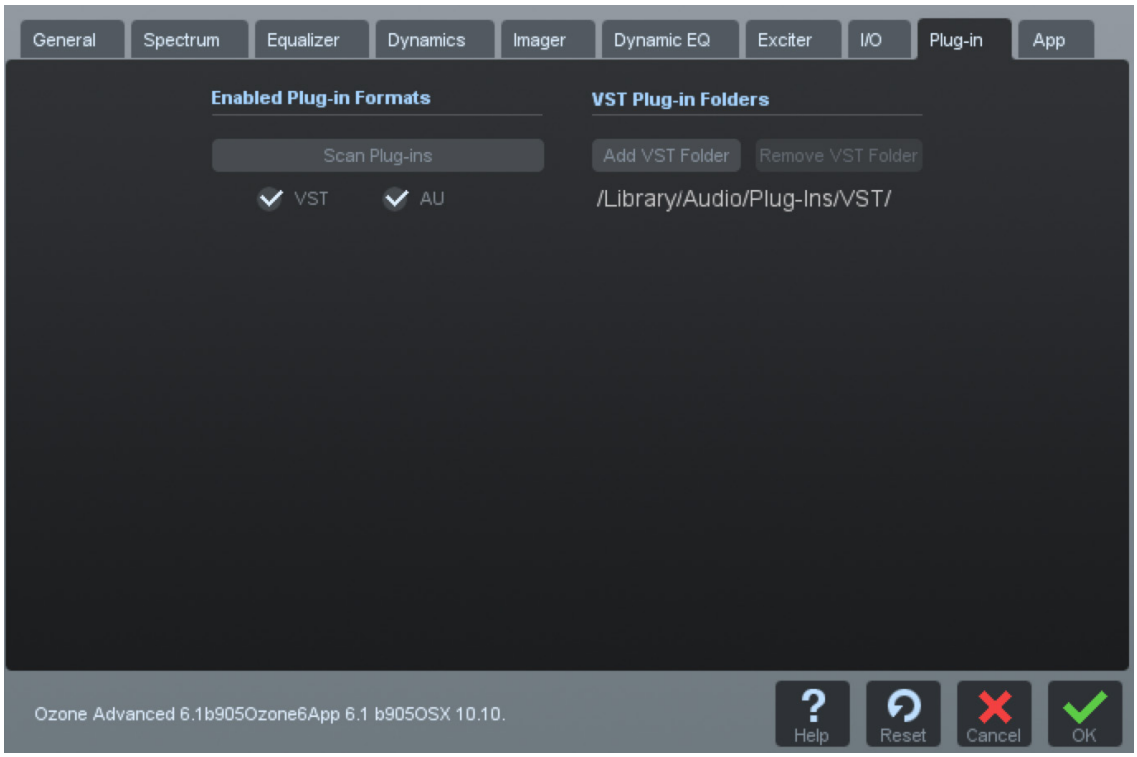
Integration Time
This setting lets you specify the integration time for the RMS calculation. In most RMS meters, the integration time is set to around 300 ms.

- 10 mms
- 50 ms
- 300 ms (vu)
- 1,475 ms
- 2,650 ms
- 3,825 ms
- 5,000 ms

Readout
Selects whether the peak hold section of the meters displays the current peak status (current) or instead displays the highest peak that has occurred in the audio file (max peak).

App Options

Plug-in Tab



Enabled Plug-in Formats
Allows you to individually select which plug-in formats (VST and AudioUnit) will be automatically loaded into Ozone's "Plug-ins" section.

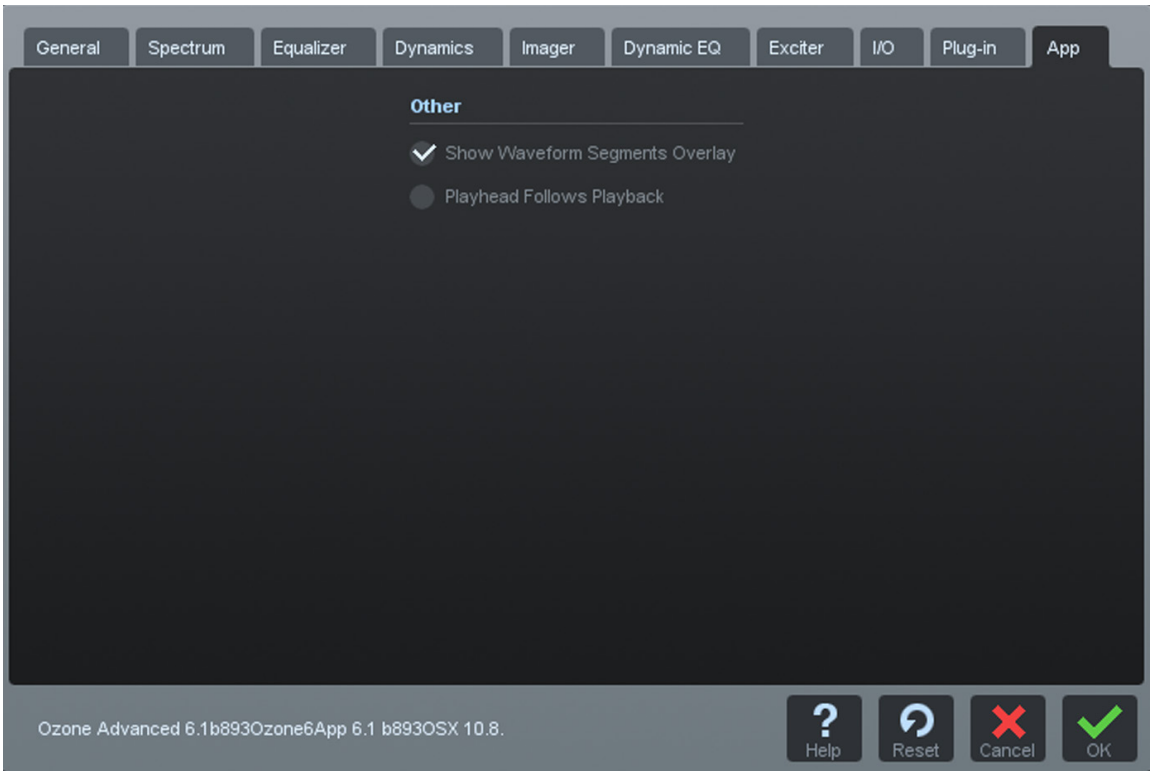
Scan Plug-ins
Click this button to re-scan the selected plug-in locations and load in any newly installed plug-ins.

VST Plug-In Folders
Displays the currently monitored folder path of where your VST plug-ins reside that are loaded into the "Plug-ins" section of Ozone.

Use in conjunction with the "Add VST Folder" to add a new location, or the "Delete VST Folder" to delete a currently displayed folder path.

Note that for AudioUnit plugins (OS X only), no folder selection is needed. AudioUnit plug-ins are always automatically installed to a standard folder location on OS X, and Ozone always monitors that specific folder path for any installed AudioUnit plug-ins.

App Tab



Enable Waveform Segments Overlay
Click to enable the Waveform Segmentation overlay, which is the multicolored bar located just below the waveform.

In Ozone 6, every imported audio file is scanned for matching “segments,” which are displayed as colored bars. This display acts as a helpful color coding of the sections of a song.

A mastering engineer can use this display to quickly check every transition, or alternatively A/B the chorus of one song with the chorus of another.

The corresponding audio can be selected by clicking on the colored segment, this allows you to easily select a loop region or quickly jump to different sections of a file.

Playhead Follows Playback
When this control is checked, the playhead will always stop at the location that the stop button is pressed, as opposed to returning to the start position.

Tips and Shortcuts

CPU Optimization

Unlike many single task plug-ins, Ozone 6 harnesses the power of six plug-ins in one, and performs a significant number of calculations when running. The combination of multiple DSP modules performing analog modeling and a half dozen real-time meters dictates that it requires more CPU processing than a typical plug-in.

While continuing to push the limits of high-quality audio signal processing, Ozone 6 offers significant improvements concerning CPU optimization, allowing your sessions to run more efficiently.

If you do start to reach the limits of your particular machine, here are some tips for optimizing your CPU:

- If you're not using modules for processing, be sure to bypass them in order to conserve CPU power.
- If using Ozone's Digital EQ or crossover, adjust your buffer sizes for optimal performance. See Buffer Sizes for details.
- Try changing the buffer size and/or latency setting in your host application (plug-in version). When buffers are too high (latencies are too large), meters will update very slowly and performance may suffer. As buffers become very small (latencies are very low), the EQ and crossover will consume more CPU power.
- You can disable meters in their option screens. Right-click on any meter to bring up the options screen for that meter.
- Using fewer crossover bands can save significant CPU power. Try using one- or two-band dynamics, for example, instead of all four bands. See Using Multiband Modules for instructions on how to change the number of crossover bands.
- If you are using Ozone 6 Advanced and are using less than four modules, try using the modules as individual component plug-ins to reduce CPU power.

Buffer Sizes

Ozone 6 contains advanced controls to help you get the optimal performance for your setup. Since Ozone contains several modules within its internal DSP chain, there are several places where you can control its internal buffer sizes.

In general, the default values should give good performance on most systems; however, there are some aspects of host applications that are not detectable by plug-ins. Read this section for instructions on how to optimize Ozone for your particular setup.

Setting Buffer Sizes for Independent Modules

Ozone's Equalizer requires fixed buffers when set to certain modes. You can set its buffer size independently using its options tab. These buffer sizes default to reasonable values, and most users should be able to use Ozone right away without tweaking them.

How to Decrease CPU Usage
If you experience unusually high CPU usage, you can try changing the EQ module to Analog mode. You can also try increasing your host application's buffer size to decrease CPU usage. We understand that these solutions might not be adequate for many users, so we've also designed Ozone to be optimized for any host application setup.

If you are using Ozone at low latencies and rely heavily on these DSP modules, you will want to adjust the buffer sizes to get Ozone's CPU consumption as low as possible. At first it may seem unintuitive, but if you follow the tips here then you should be able to tweak your buffers very quickly and easily.

Optimizing Ozone
To get the best buffer settings for your setup, first you should have an idea of what kinds of buffers your host application is sending. You can use Ozone's Buffer Size Viewer to do this, in the plug-in version of Ozone (but not the standalone version).

To do so in the plug-in version, navigate to Settings -> General -> Host -> View Buffers.

Once you know what size buffers your host application is sending, try the following:

- Place Ozone's Equalizer in digital mode, and bypass all modules except for the Equalizer. Set the EQ filter size to the size you most commonly use.
- Set the EQ buffer size to the number that's closest to your host application buffer size.
- Open a CPU meter. Many host applications have a CPU meter built in, but if you're running Windows you can also press Ctrl+Shift+ESC and select the Performance tab. Note that CPU meters are usually somewhat inaccurate, but we're just looking for relative changes in CPU usage.
- Open an audio file with typical settings (sampling rate, bit depth, number of channels) for your use and play it through Ozone. If you usually use Ozone in a multitrack environment then be sure to do the same here. As the audio plays, try adjusting the EQ buffer size, and see what effect it has on CPU consumption. Buffer sizes near the host application buffer size are a good starting point, but the best choice depends on many aspects of your system and host application, which are beyond Ozone's control.

Ozone's CPU consumption for this setup should now be optimized. If you change the way you use Ozone, for example if you move from 44.1 kHz to 96 kHz, or you move from a single-track setup to a multitrack setup, then you may want to repeat these steps to make sure your buffer settings are still optimal.

We've gone to great lengths to optimize Ozone's internal DSP without compromising sound quality. We hope these steps help make Ozone useful in a wide variety of setups. These steps should help you address those variables which are beyond our control and quite often very different for different users.

Automation (Plug-In Version Only)

Automation allows you to specify changes to parameters over the duration of a mix, such as stereo widening during a chorus or boosting an EQ during a solo. You can automate hundreds of parameters in Ozone, using any host application that supports effects automation.

Using Automation in Ozone

The implementation and specifics of automation are dependent on the host application; please refer to the documentation of your host app for setting up an automated mix. In general, you insert Ozone as an ordinary effect on a track, and then in the track view of the host app assign automation envelopes to it.

These envelopes control how Ozone parameters are changed over the course of the mix. In this case, most of your tweaking is done in the track view of the host app, dragging curves and envelopes as opposed to changing controls in Ozone.

Notes Specific to Ozone Automation

We have done our best to provide the controls with intelligent names, but it can be overwhelming when you initially see the very large list of automatable parameters in Ozone.

When scrolling through the list, remember that each multiband module has up to 4 bands per parameter.

So, for example, “Dynamics: Comp Thresh Band 1” corresponds to the Compressor Threshold setting in Band 1 of the Dynamics module.

When automating parameters in the EQ module, it is important to note that Stereo/Mid/Left parameters are labeled with the “St/M/L” prefix, and Side/Right parameters are labeled with the “S/R” prefix.

When automating a control from the track view, you can see the control on the Ozone interface move, under the control of the host application. We purposely do not update the position of the control as often as we could, as it takes CPU power to redraw controls, power that is ideally reserved for processing audio. So we update the drawing of the control less frequently. It may look like the control is moving in steps, but rest assured that the audio is being processed smoothly.

When automating in a track view with envelopes, but working mainly with the Ozone interface, we found it helpful to be able to “see through” Ozone so you can monitor Ozone meters and controls, but see the track view and automation curves behind Ozone. Thus, we have provided an Opacity slider in the main options dialog (plug-in version only, available at Settings -> General -> Graphics -> Opacity).

This allows you to see through Ozone to monitor both what Ozone is doing and what is happening with the automation curves.

Note that this is not available in all host applications, and it does require more CPU power than a standard “opaque” plug-in if you set the Opacity to less than 100%.

Shortcut Keys and Mouse Support

Turn Keyboard Support On or Off
You can turn Keyboard Shortcuts on or off from the General Options menu. Keyboard support must be set to Full for all keyboard shortcuts to be available.

Available options include Full (full keyboard support), Minimal (only TAB, arrow keys, and ENTER), or None (Keyboard shortcuts turned off).

Using the Scroll Function of your Mouse or Trackpad
You can use the scroll function of your mouse or trackpad to adjust most controls (I/O gain, sliders, etc.) by simply positioning the cursor over the control and scrolling.

- Hold Ctrl (Windows) or Command (OS X) to move in smaller increments.
- Hold Shift to move in larger increments.

If the scrolling action has no effect, try clicking on the plug-in to make sure Ozone has keyboard focus.

- In the numerical readout of the EQ bands, you can adjust a value by holding the pointer over the value and then scrolling.
- In the Undo History screen, you can use the wheel to scroll through the History list.

Copy/Paste Support
Right-click on any slider to bring up a context menu, allowing you to copy and paste its value. You can copy/paste between sliders, even if the sliders are in different instances of the plugin. You can also copy/paste between a slider and a text editor (such as Notepad or TextEdit), in order to see the slider's value at a much higher precision than the plug-in displays.

Mouse and Meters
You can zoom in and out on level meters and level histograms by holding down the Ctrl key (Windows) or the Command key (OS X) and clicking with the left mouse button to zoom in or the right mouse button to zoom out. Under OS X you can also Command-Ctrl-click to zoom out.

You can reset the peaks or averaging of the spectrum by clicking on the spectrum.

You can reset a meter's peak indication by clicking on it. You can also reset a level meter's clipping indicator by clicking on the clipping indicator (the red "over" light at the top).

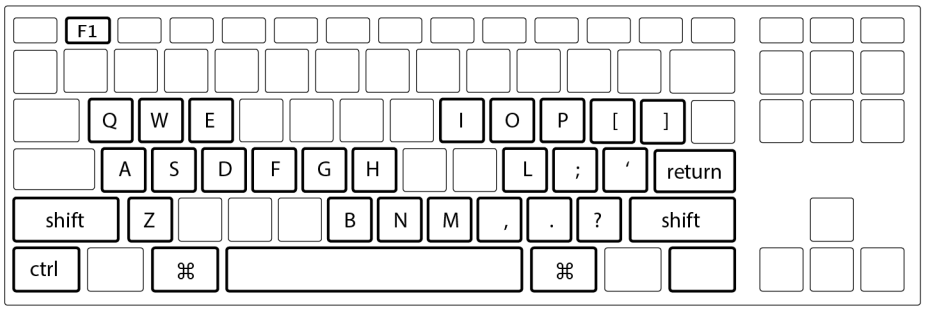
KEYBOARD SHORTCUTS

FILE OPERATIONS

	OSX	WIN
Create New Project	⌘N	ctrl+N
Open Project	⌘O	ctrl+O
Save Project	⌘S	ctrl+S
Save Project As	⇧⌘S	ctrl+shift+S
Import Audio Files	⌘I	ctrl+I
Export Audio Files	⌘E	ctrl+E
Close Project	⌘W	ctrl+W
Quit Ozone	⌘Q	ctrl+Q

TRANSPORT

	OSX + WIN
Start/Stop Playback	Spacebar
Return Playhead to Zero	Return
Go To Previous Track	[
Go To Next Track	]
Toggle Loop Selection Playback	L
Toggle Playhead Follows Playback	N



PROJECT SETTINGS

	OSX	WIN
Toggle Options Window	O	O
Open Project Settings Dialog	⌘,	ctrl+,
Open Audio Devices Dialog	⌘.	ctrl+.
Toggle History List	H	H

AUDITIONING

	OSX	WIN
Toggle Dither Enable	D	D
Toggle Dither Panel View	⌘D	ctrl+D
Toggle Global Bypass	B	B
Toggle Auto-Match Effective Gain	G	G
Toggle Sum to Mono	M	M
Toggle Swap Left/Right	F	F

PRESETS

	OSX + WIN
Select Previous Preset	,
Select Next Preset	.
Toggle Preset Manager	P

MISC

	OSX	WIN
Undo	⌘Z	ctrl+Z
Redo	⇧⌘Z	ctrl+shift+Z
Help	F1	F1

iZotope Customer Support

How to Purchase the Full Version of Ozone 6
If you are using the demo version of Ozone and would like the full version, you can purchase Ozone direct from the iZotope online store, located at:
https://www.izotope.com/en/products/mixing-mastering/ozone

Once your purchase is complete, you will be sent an e-mail confirmation and a full version serial number that can be used to fully authorize your current installation of Ozone.

iZotope Customer Support Policy
iZotope is happy to provide professional technical support to all registered users absolutely free of charge.

https://www.izotope.com/support/contact/index.php

We also offer valuable pre-sales technical support to customers who may be interested in purchasing an iZotope product. Before contacting iZotope support, you can search our Product Knowledgebase to see if the solution to your problem has already been published.

How to Contact iZotope for Technical Support
For additional help with Ozone:

- Check out the support pages on our web site at http://www.izotope.com/support
- Contact our customer support department at support@izotope.com.

iZotope's highly trained support team is committed to responding to all requests within one (1) business day and frequently respond faster. Please try to explain your problem with as much detail and clarity as possible. This will ensure our ability to solve your problem accurately, the first time around. Please include all system specs and the build/version of Ozone that you are using.

Once your support request is submitted, you should automatically receive a confirmation email from iZotope support. If you do not receive this email within a few minutes please check your spam folder and make sure our responses are not getting blocked. To prevent this from happening please add support@izotope.com to your list of allowed email addresses.

International Distribution

Support is also available from our international distributors worldwide, for any customers who purchased their iZotope products through a certified iZotope distributor.

Check with your local distributor for their availability. If you would like help locating your local distributor please contact iZotope support.

http://www.izotope.com/support
Thanks for using Ozone!

-The iZotope Team