ReaClassical Manual

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Welcome!

> Thank you for your interest in ReaClassical. This project is driven by a passion to create a flexible tool for musicians, composers, and sound engineers. Your support and feedback are essential for its improvement.
>
> Whether you're new to ReaClassical or have used it from the start, your trust inspires continued innovation. I hope it enhances your classical music production and supports your creative vision.
>
> *Chmaha*

Preliminaries

It is important to note that if you already own REAPER then the world of classical editing including source-destination editing (aka 2-, 3-, and-4-point editing), crossfade editing and more are available at no extra cost to you via the freely available ReaClassical system. There's no need to spend any of your hard-earned money on Sequoia, Pyramix or SaDiE in order to make editing precise and efficient. As a classical engineer myself, I can say with certainty that what I am about to share with you covers all my recording, editing and mastering needs. Indeed, I couldn't return to the old way of working at this point. Your mileage may vary and I'd love to hear from you if there are functions that you feel might be missing.

Compatibility

ReaClassical runs on any system that is compatible with REAPER (nine architectures!). This includes 64-bit and 32-bit versions of Windows, MacOS and Linux (including Raspberry Pi).

Quick Start Guide

For first-time users, the quick start guide website is a great place to learn the basics about ReaClassical. Each section covers major workflow areas and contains simple step-by-step instructions with an accompanying short YouTube video for demonstration (no audio).

This Manual

This online manual, located at https://reaclassical.org/manual, serves as the official documentation for ReaClassical. It is also available as an offline PDF from within ReaClassical by pressing H (for *help*). The benefit of the offline version is that it is always in sync with the version of the tools you are using. The structure of the manual is designed to take the user through preliminary remarks, install and update procedures for both ReaClassical and REAPER then a detailed look at workflows from creating a project through to final render. After some brief closing remarks, there follows the

appendices (descriptions of all the ReaClassical functions, keyboard shortcut guide, recommended free mastering-grade plugins, system tweaks for all three major OSes, and, finally, a manual install guide mainly for academic purposes). I highly recommend doing a complete read of the manual and becoming very familiar with appendices A and B.

This manual is released under the GNU Free Documentation License v1.3. See https://www.gnu.org/licenses/fdl-1.3-standalone.html.

Website

The website reaclassical.org serves as the entry point for new users. From here you can read about key features, donate to the cause, read this manual, installation instructions, navigate to the ReaClassical community thread and more.

REAPER Community

The community thread plays an important role in the development of ReaClassical. Not only is it a place for users to suggest feature requests and point out bugs but also discuss more general classical music recording, mixing and mastering techniques. It also serves as something of a development blog as I not only announce the regular releases but also document the under-the-surface details for those that are interested.

Relatively new is the ReaClassical Discord server. This is a great place for live support, general chat, proposing feature requests, workflow discussion, and letting the community know about albums or individual pieces you have created with the help of ReaClassical.

Ways to Contribute

The most important way users can contribute to the development of ReaClassical is to actually use the tools! It makes me happy to know that engineers can make whole professional-sounding and technically accurate masters from ReaClassical. Another is to suggest features or let me know about bugs. You can either do this on the thread or via the Issues page on the ReaClassical GitHub. Finally, I'd be glad of any monetary donations. You can use PayPal to do so.

Spread the Word!

If you've enjoyed using ReaClassical in your projects, I'd be incredibly grateful if you could mention it in your album booklets, social media video descriptions, or anywhere you typically include session details. A simple acknowledgment alongside your usual credits helps spread the word and supports the continued development of the tool.

Buy ReaClassical Merch

Get print-on-demand ReaClassical merch like shirts, mugs, totes, pins, stickers and more through my TeePublic store!

Source Code

The source code for ReaClassical, the mastering grade ReaClassical plugins, this manual and the website can all be found here. ReaClassical is GPL-3.0 licensed.

Development Style

Due to working on GitHub and releasing the functions via ReaPack, I have the ability to push bugfixes and new features very quickly into an existing ReaClassical install. Often bugfixes happen within minutes or hours of receiving the report. When I dream up new features, the development often happens in rapid fashion over the course of a few days. However, now that ReaClassical has what I consider a mature feature set, I foresee maintenance and occasional bugfixes becoming more central to the process. This will give me more opportunity to work on this documentation, a complete video tutorial series etc. Part of development is also ensuring that ReaClassical continues to operate as expected with the latest REAPER versions. That's not to say there won't be new features appearing! As the REAPER developers add more new features, I will always check to see what might be useful for ReaClassical.

Versioning Style

ReaClassical currently uses YY.M.MICRO versioning (where M is a non-padded month) to accurately reflect how current the software is. For example, 25.6.2 would indicate a June 2025 release with 2 further updates which might include new features, improvements to existing functions, or bugfixes.

Tools and Languages

ReaClassical works on top of REAPER, the digital audio workstation and utilizes ReaPack and SWS Extensions. ReaClassical functions are coded using Lua. The installers for MacOS and Linux are shell scripts. The Windows installers are coded in Go. The ReaClassical and Quick Start Guide websites use Skeleton. All coding is done either in REAPER's ReaScript Development Environment, vscode or kate on Linux. The online manual is written in AsciiDoc. The ReaClassical splash screen and banner are created in GIMP.

Keyboard Shortcuts

When providing keyboard shortcuts, this manual assumes Windows or Linux as the operating system when modifier keys are used. MacOS users should use the typical standard substitutions. If in doubt, open up the actions menu via keyboard shortcut ? or by navigating to **Actions › Show action list...** to see the current assignments. For reference (from REAPER's own user guide), here is a table of equivalent modifier keys:

Table 1. Shortcut Equivalents

PC (Windows or Linux) Key	Mac (MacOS) Key Equivalent
Shift	Shift

Control (Ctrl)	Command (Cmd)
Alt	Option
Windows	Control

Changelog

The changelog for ReaClassical functions can be found by double-clicking on the ReaClassical package in ReaPack and navigating to the `History` tab. Whenever you sync ReaPack via **Extensions › ReaPack › Synchronize packages** or the *ReaClassical Updater* function, this information should also appear automatically. For all updates including those not related to the functions themselves, a changelog can be found in the release notes.

Installation & Updates

Install

Easy Complete Portable Installation (official method)

1. Follow the installation instructions here or in the *Installation & Update* section of the Quick Start Guide. Simply run where you would like the ReaClassical folder to be created.

2. Start REAPER/ReaClassical.

3. Follow the update instructions on the following page to get the latest and greatest versions of the ReaClassical functions, toolbar and keymap.

Note that if the ReaClassical folder already exists, the installer will automatically add a unique suffix to ensure nothing is overwritten.

Just The S-D Editing Scripts and Plugins?

Install both ReaPack and latest SWS Extensions if you haven't already. Import my index.xml into ReaPack (see the ReaPack user guide if you are unsure how) and search for `ReaClassical Core` for the S-D editing metapackage and `RCPlugs` for the classical jsfx plugins. Note that out of the box this does not give you the full benefits of ReaClassical which include keyboard shortcuts, custom toolbar etc. However, it's an easy way to start if you are already familiar with ReaPack and SWS and want to check out source-destination editing in your existing REAPER install. Note that you do need SWS installed for the functions to work as expected.

Important: If you enjoy ReaClassical Core and want to move to a full ReaClassical experience, please use the portable install instructions. It is the only approved installation method.

Update

Updating an Existing ReaClassical Portable Install

To update just the functions, use **Extensions › ReaPack › Synchronize packages**. To update the functions and also update/reset the custom toolbar and keymaps to be in line with a standard ReaClassical portable install, run the handy *ReaClassical Updater* function via `Shift` + `U`. This will sync ReaPack to get the latest ReaClassical functions then offer to overwrite your toolbars and keymaps with ReaClassical portable install defaults.

CAUTION	Don't do this if you have your own custom toolbars or keyboard shortcuts as they will be overwritten! However, as of 24.8.7 any files will first be backed up (e.g. reaper-kb.ini.backup). Obviously if you run the updater twice before recovering them you will lose your original files.

Updating REAPER

Simply use the shortcut `Ctrl` + `U` to open the REAPER updater. If you are already on the recommended version, a wrapper will notify you and offer to exit. If your version is either below or above the recommended one, you'll see a message alerting you, and the REAPER utility will then open so you can manually upgrade or downgrade.
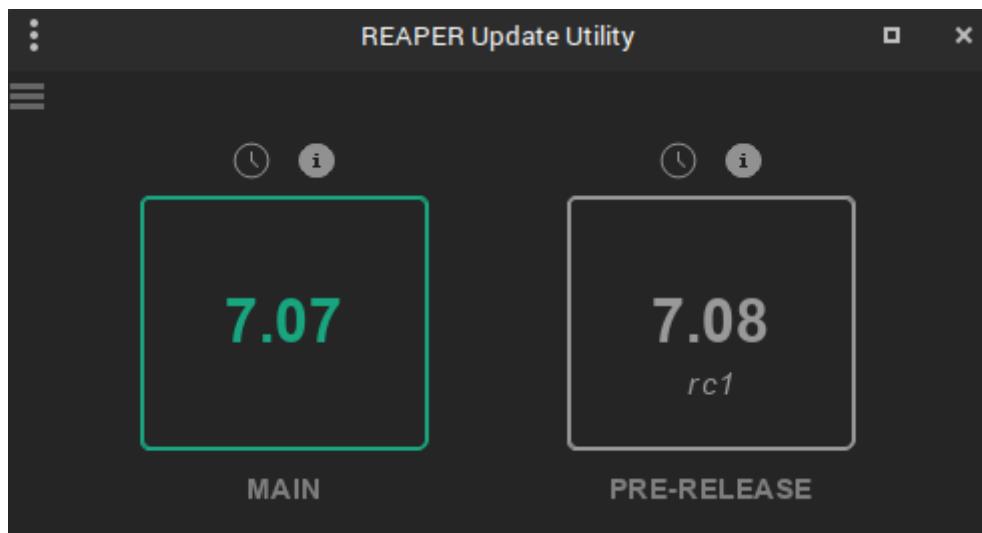
Figure 1. Reaper Update Utility by Ilias-Timon Poulakis (FeedTheCat)

Either click on the main or pre-release version you are interested in or click on one of the clock icons to select from previous releases. Despite the REAPER developers having a track record of excellent compatibility across even major versions, I recommend sticking with the tested version of REAPER noted here to minimize any issues of compatibility.

ReaClassical Workflows

Creating & Setting Up a Project

When you start REAPER/ReaClassical from a default portable install, you'll see an empty project with ReaClassical project defaults. The first thing you should do is save it via `Ctrl` + `S`.

Theme

The ReaClassical theme is loaded by default. It looks almost exactly like the default REAPER theme.

If you'd like to switch to one of several other custom themes, you can do so via **Options › Themes**. 'ReaClassical Light' is similar to the default but uses lighter waveforms and peak edging. The two 'WaveColors' themes apply coloring only to the waveforms with option for dark or light item backgrounds.

Project Settings

You can open the project settings by pressing `P` (for 'Project Settings') You shouldn't need to change any settings here. By default, render resampling is set to the highest quality using r8brain free. Media is saved to a `media` subfolder. The default recording format is 24-bit wave files but you can set to 32-bit float if using a portable recorder with that capability. Video frame rate is set to 75 to align with the number of frames per second for an audio CD. You can, of course, fill in the *notes* section with a title, author and notes as desired.
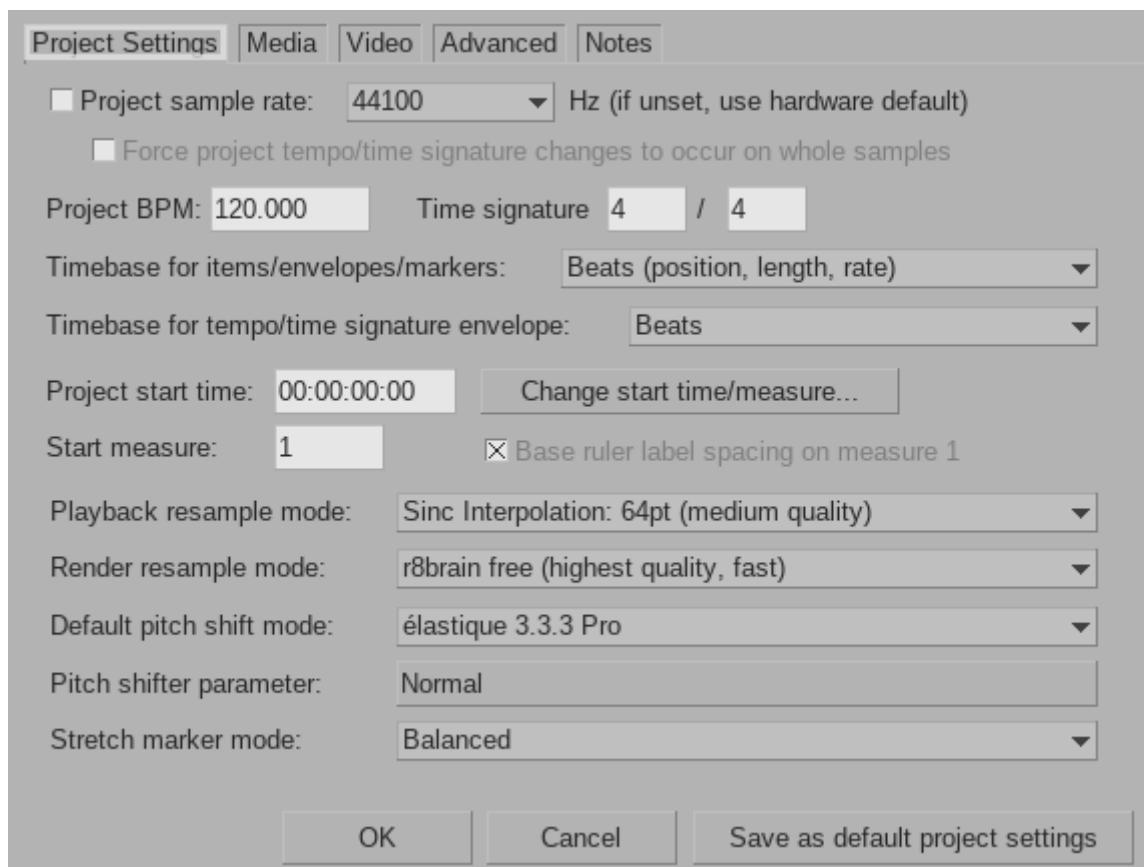
Figure 2. REAPER Project Preferences

Audio Settings

Click on the audio information in the top right of the window or via `0` (for 'options') navigating to **Audio › Device**. These settings are operating system dependent. Choice of blocksize etc is also dependent on need and how modern and/or optimized your system is. For general microphone setup, device and recording settings specifically for classical music etc I recommend referring to one or more of the following:

- *Classical Recording: A Practical Guide in the Decca Tradition* by Haigh, Dunkerley & Rogers

- *Recording Orchestra and Other Classical Music Ensembles* by Richard King

- *Recording Classical Music* by Robert Toft

- For a more detailed look at mastering (for any genre of music), I highly recommend *Mastering Audio: The Art and the Science* by Bob Katz.

ReaClassical Project Preferences

Pressing `F5` brings up the ReaClassical Project Preferences dialog. The first line sets the crossfade length in milliseconds for all source-destination editing. The next three lines are for DDP creation. The defaults are for a 200ms track offset (to account for older CD players that couldn't play audio immediately after a track search), the INDEX0 length in seconds for when to start a CD player *countdown* display to the next track (a fun visual trick that is, of course, completely irrelevant for purely digital releases) and, finally, the album lead-out time in seconds (essentially the time on a car CD player before the disc returns to the beginning again). There is a setting for the Prepare Takes function to either use the old random coloring method or the newer color scheme that uses blues for destination material and greens for source material. The user can change the checking range (distance beyond an item edge/fade or crossfade) when placing destination IN and OUT markers. Setting to 0 would just check if the marker would be placed *inside* a item fade or crossfade. If the reference track is set as overdub guide, it will be audible during classical take recording and auditioning which is extremely useful for overdub recording of material after the main session such as a symphonic organ part or narration. Next, you can set `1`,`2`,`3`, and `4` to add markers at the mouse hover position vs edit cursor. In this mode, you can also enter the fade editor by hovering of the right-hand items of a crossfaded pair and pressing `F`. You can set the custom playback rate when auditioning via `Shift` + `A`. Next there are two settings associated with CUE file production – year of production and audio file type. Finally, you can enable a floating destintion group which shifts position based on the active source group. There will be more on these settings in subsequent sections of the manual. If you are unfamiliar with these concepts, I recommend a quick internet search! If in doubt, just use the default values. It is worth noting that these preferences are set per project.
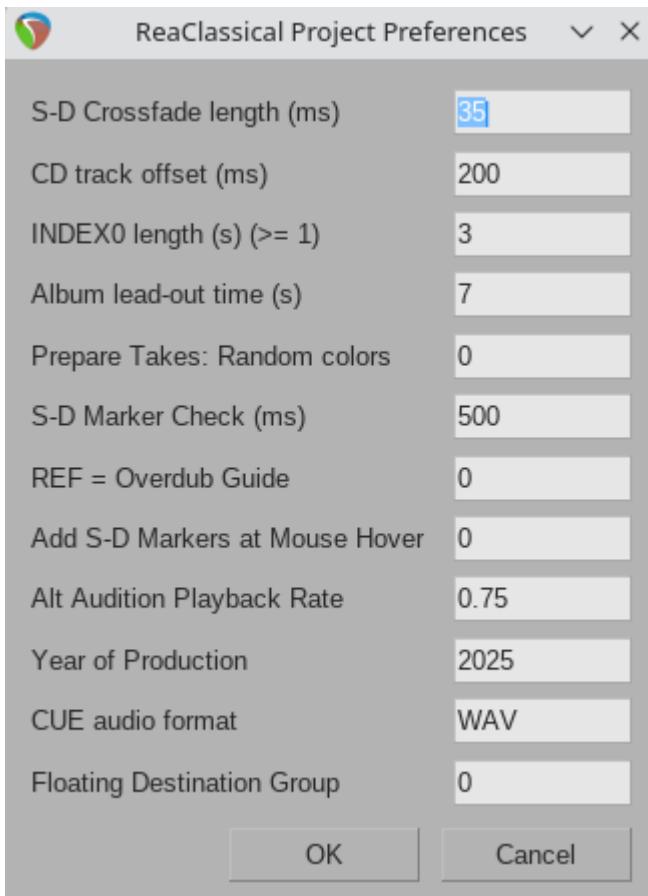
Figure 3. ReaClassical Project Preferences

Choice of Workflow

The choice between what I refer to as *vertical* or *horizontal* workflows will depend somewhat on the complexity of the project. For a quick editing session of, say, a choral piece or short self-standing orchestral piece, a horizontal approach will suffice. For a well-drilled ensemble recording session, I can recommend using the vertical approach. Many classical engineers enjoy using a horizontal approach for recording (potentially the least disruptive and making use of the Take Counter window `Ctrl` + `Enter`) and then either sticking with that for editing (also taking advantage of the extremely useful Find Take `Enter` and Jump to Time `Tab` functions) or, depending on the number of takes, converting to a vertical workflow. Frankly, there are benefits to both routes, and in the end, it simply comes down to personal preference.
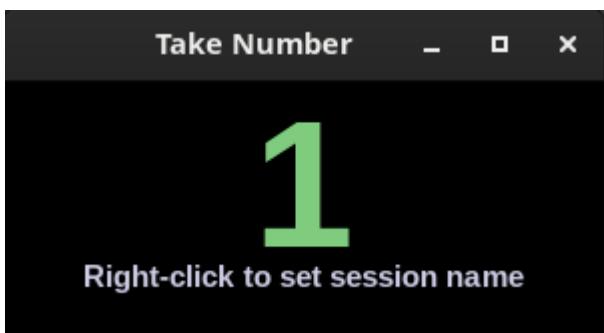
Figure 4. Take Counter Window
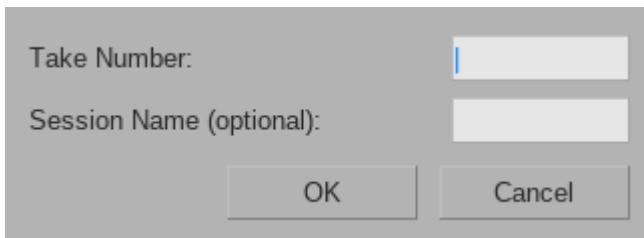
Figure 5. Find Take Dialog

Vertical Workflow

In this approach, the source and destination track groups are aligned vertically so that the user doesn't have to shuttle back and forth in the arrange window for placing source-destination markers.

When Recording material: To begin with a vertical workflow, you could actually use a horizontal workflow approach `F7` to set up just a single group and record left to right. After recording is complete, and you are ready for editing, you could convert to a vertical workflow via `F8`. Alternatively, you can press `F8` for project creation and start immediately with a vertical setup with one *destination* group and six *source* groups. In either setup, and whether recording or importing, simply type in the total number of stereo and mono microphone inputs you need, enter track names and optionally auto set recording inputs based on track names. I highly recommend using the first track for the main stereo pair.

When importing material: To begin with a vertical workflow, press `F8` to set up a destination track group and six source groups (don't worry, it's easy to add more if you need them!). Simply type in the number of stereo and mono microphone inputs you need, enter track names and then answer **[No]** to auto setting recording inputs. I highly recommend using the first track for the main stereo pair.

As mentioned above, the `F8` function creates six source groups based off the destination track group, and creates a single set of mixer tracks that are shared by the groups. Use these to control volume, panning, polarity, sends and FX across all takes. The function also sets up media item and razor editing grouped by folder. If you need more than the six source groups, simply create them on the fly with the `\` shortcut, but note that using `F9` (Classical Take Record) creates a new source group as needed after each recording.

A typical scenario: You have vertically recorded, or vertically prepared, multiple takes of a concerto movement with 10 channels. You realize halfway through editing that you want the soloist's microphone to be brought up in volume a little and also panned slightly more to the right to match the position in the main stereo pair. Simply make the change once on the equivalent mixer track!

Horizontal Workflow

In this approach, there is a single track or single group of tracks with the source and destination material laid out from left to right. As mentioned above, for shorter pieces of music this is often a perfectly acceptable approach. With the introduction of the Find Take, Jump to Time and Take Counter functions, many might now prefer this workflow.

To begin a horizontal workflow, press `F7` to set up a track group also with mixer tracks (for making changes to volume, pan, polarity, sends and FX). Whether recording or importing, simply type in

the number of tracks or microphone inputs you need, enter the track names then optionally auto set recording inputs based on track names. I highly recommend using the first track for the main stereo pair. In the event you are making a simple stereo recording, just create a track group consisting of two tracks and leave the child track empty and hidden via pressing `E` on the parent track.

If you wish to convert to a vertical workflow, simply press `F8` to create six new source groups. If you accidentally switch to a vertical workflow via `F8`, `\`(duplicate folder) or similar, simply undo via `Ctrl` + `Z` and press `F7` to set the project to a horizontal workflow again.

Auto Set Recording Inputs / Add Special Tracks

As part of initial workflow setup, you are asked if you'd like to auto set recording inputs based on track names. Essentially, if you'd like your track to have a stereo input use words like *pair* or *stereo* (in your own language if you wish!) as part of the name. Otherwise, it will be treated as a mono input. For example, *ORTF Pair*, *Violin Spot 2ch*, and *Omni Outrigger Stereo* will all be treated as needing a stereo input. If you add *left*,*l*, *right* or *r* (again, in your own language if you wish!), the channel will be auto-panned accordingly. For example, *Decca Tree L* will create a mono signal panned 100% left (note that the *L* has a necessary space preceding it and that it is also the final part of the name). The function uses the maximum available hardware inputs after which it disables recording input. You will see a report of assignments with the option to revert to previous settings. You can run this as a standalone function at any time via `Ctrl` + `F9`.

Also, as part of the initial workflow setup, you are asked if you'd like to add any special tracks (aux, submix, roomtone, reference). This is useful if you are setting up an editing/mastering project with pre-recorded material.

Manually Naming Tracks

If you didn't name tracks as part of the initial workflow setup, you only need to add track names to the mixer tracks in the mixer panel and then pressing `F7` or `F8` will auto-populate the same names to all regular track groups. While re-naming don't worry about keeping the `M:` prefix. On sync, it will be restored. ReaClassical automatically adds Source and Destination prefixes to your chosen track names and are auto-renumbered whenever functions affecting the number of source folders are run (Vertical Workflow `F8`, Duplicate Folder `\`, and Classical Take Record `F9`). Tip: Avoid using any colons in your track names and the auto prefixing will work as expected.

TIP	As you will discover, based on which workflow chosen, you can use `F7` or `F8` at any point during project work to (re)create project routing, propagate track-naming based on the mixer tracks, sync record inputs and track lock states. Various ReaClassical functions use the same synchronization under the hood.

The Single Mixer & RCMASTER bus

Whatever your workflow preference, as of 24.10, all audio is routed through a special dedicated mixer tracks leading to an RCMASTER bus. This allows for independent volume adjustments on the parent track which is generally used for the main microphone pair. Converting your projects made with an earlier version of ReaClassical is easy. Simply run `F7` for horizontal workflows or `F8` for vertical workflows. The new mixer tracks and bus will be created and all routing taken care of. Any

existing track panel settings (including sends and FX) from the first group are automatically transferred to the mixer tracks.

Any and all track setting changes (track naming, volume, pan, phase, FX, sends to @aux tracks, routing to #submixes etc) happen in the mixer tracks. This is identical to the way that Pyramix works with a single mixer being fed by all the source groups. The mixer tracks are always visible in the mixer panel and identified by track names that start with `M:`. Running `F7` or `F8` will synchronize the track names from the mixer tracks across the whole project.

Figure 6. A ReaClassical Mixer Panel

The basic rule is to not delete these special tracks. But, if you do by accident, don't worry. Try to undo via `Ctrl` + `Z`. In in the highly unlikely event that doesn't work, simply run `F7` or `F8` again and the mixer tracks will be restored (although any custom routing and automation will be lost). It is also worth noting that aux, submix and roomtone tracks now automatically route through RCMASTER on creation and are also automatically updated when older projects are *upgraded*.

Recording

Now that you have decided on a workflow, we can start recording!

Manually Setting Inputs

See above for the ReaClassical approach to auto setting recording inputs based on track names. There are also multiple ways to manually set recording inputs. First, you can left-click on the meter part of the track panel. Second, you can press `Alt` + `R` to open the routing matrix. Once you have set the inputs for the first group, and you chose a vertical approach, simply press `F8` to sync these settings to all source groups.

Headroom

Again, I refer you to the books on classical music production but in general I suggest aiming for around -12dB peaks on the meters. 24-bit recording allows for a lot of headroom so there's no need to push close to 0dB. Adjust the individual faders to balance. Note that in a vertical workflow

moving a fader will automatically move the corresponding fader in the other groups too making same-volume auditioning of different takes extremely easy. When using a 32-bit float device with dual AD converters as an interface (such as the Zoom F-series), ensure that the recording file format is switched to 32-bit float via project preferences `P`. The recorded levels might seem too low or too high during recording, but they can be easily adjusted afterward in ReaClassical without introducing any extra noise or distortion.

Classical Take Recording

Select the parent or child track of a track group and then press `F9` to begin *classical* take recording mode. If the track group isn't already record-armed (probably the case before you start your first recording of the session), the function will first simply record-arm the whole group so you can usefully monitor incoming signal. On a subsequent press of `F9` recording begins. To stop recording, press `F9` again. In horizontal workflow, the key press will maintain record arming and will begin recording on a subsequent press. In vertical workflow, this key press also automatically moves to, solos and arms the next available group so that recording can begin immediately on the next button press. ReaClassical will automatically create new groups as required. To manually add more destination groups when not recording, press `\`. Also in a vertical workflow, to move back to the first group in preparation for recording new material, press `Alt` + `F9` while transport is stopped. To pause and unpause a recording without starting a new take, toggle the pause button in the transport or use the shortcut `Ctrl` + `Spacebar`. To quickly increment the take number during recording use `Shift` + `F9` but note that this should only be used during moments of silence (i.e. inbetween quickfire session takes) as it creates a new recorded item. During this mode you should use the Takes Counter window `Ctrl` + `Enter` to track the upcoming take number (in green) and take number during recording (in red with recording circle). You can right-click on the window to optionally override the automatic numbering and set a take number to increment from in addition to optionally setting a session name to act as media subfolder (which is automatically recalled when the window is reopened). You can left-click to recalculate the track count if you have removed some unused files from the project path. The calculated upcoming take number factors in unused files in the project path so as to avoid any file-naming conflicts. With manual override off (=0), switching back to an existing session will also automatically set the correct incoming take number. Please read the description of the function in Appendix A for best practices.

Once recording is complete, you can briefly use the audition function `A` which will instantly remove all record-arming from tracks.

Take Ranking

During or after recording, you can rank one or more recorded takes. Use `Ctrl` + `=` to rank higher, `Ctrl` + `-` to rank lower, and `Ctrl` + `0` to remove any ranking. If no item is selected, the last recorded item (along with other items in the same group) are affected. Otherwise, you can select one or more parent items. The ranking system uses a series of colors and a scale system of plusses and minuses (+/-) added as a suffix to the item name up to a maximum of three symbols. This allows for seven different rankings. Positive rankings are 3 intensities of green (good, very good, excellent), negative rankings are yellow, orange, red (below average, poor, unusable), with neutral (no ranking) using the default item color.

Recording Safety

When using the take counter for recording (highly recommended!), there is increased safety when using classical take recording (`F9`) via the automatic switch to a restricted set of keyboard shortcuts. In addition to stopping the recording via `F9` and record-pausing, you can rank takes and use various zoom shortcuts. Note that you can still click on the transport buttons. In a future version of ReaClassical an even more robust recording safety feature will take the form of an optional unlock button.

Scheduled Recording

To start (and optionally end) a recording at specific times or manually start a recording to end at a certain time or after a certain duration, right-click on the take counter window and add the appropriate entry or entries in HH:MM format. After pressing **[OK]**, the take counter window will display information to the right of the take number. If you enter a start or end time earlier or equal to the current time, the function will assume a next day schedule and will annotate the time with an asterisk (*). Likewise, with both a start and end time, if the end time is earlier than or equal to start, it will assume a time 24 hours later. Don't forget to arm your tracks before walking away!

Overdub Recording

To record additional material after the fact (say a separate narration track or an organ part in a church after the main recording session in a concert hall), edit the orchestral material as usual and use a mixdown as a guide track in a new project (or new project tab). To achieve this, use a vertical workflow via `F8`, add a REF track `#` and set the ReaClassical Project Preferences option `REF = Overdub Guide` to *1* (`F5`). With this setting, audio on the guide track will be audible during take recording and auditioning of folders. Use Classical Take Recording `F9` and Take Counter window `Ctrl` + `Enter` as normal. You can then S-D edit and mix the overdub material to fit with the orchestral mixdown or, if further mixing and mastering work is required on the original multi-track material, bring the organ part into that project as a new track in the destination folder `Shift` + `T` (see below).

Manipulating Tracks During a Recording Session

Disabling Channels

In a typical recording session, the musicians with the least to record are often allowed to leave the session early once their work is completed. If they were individually recorded using a spot microphone, it wouldn't make sense to continue recording on that channel. In ReaClassical there are two main ways to disable a channel. In a horizontal workflow using a single folder, it is no hassle to simply un-arm the desired track(s). For a vertical workflow with multiple folders, the task could end up being time-consuming with potential for error. So, the recommended ReaClassical way, both easy and visually obvious, is to select the desired tracks in the destination group, right click and choose *lock track controls.* The tracks are then grayed out. Then sync using F8 and the same tracks are locked in every group. Whether or not the tracks were previously record-armed, those tracks will no longer be involved in the recording.

Adding a New Microphone Mid-Recording Session

As of ReaClassical 24.9 you can add a track to all folders in the project at once by using the shortcut `Shift` + `T`. It will prompt you for a name and then add a new track with that name to the end of each group. This also works for a single folder while working in a horizontal workflow.

Deleting tracks

In both horizontal and vertical workflows, you can use `Ctrl` + `Shift` + `Delete` on a selected mixer track to quickly delete associated child tracks from all the groups of the project.

Re-ordering tracks

In both horizontal and vertical workflows, you can re-order the mixer tracks by dragging followed by a `F7` or `F8` sync to quickly re-order all the associated tracks across groups at once. This includes all audio and assigned recording inputs.

Audio Calculator

To figure out required disk space for a duration of audio or vice versa to figure out maximum duration of audio you can record based on available disk space, use `Shift` + `H` to open a browser-based offline calculator. You can set units, channel count, samplerate, bit depth and format (WAV or MP3 at various bitrates).

Figure 7. ReaClassical Audio Calculator

Importing

Read this section if you recorded using a different DAW, portable recorder or are acting solely as editor and have the audio ready to import into ReaClassical.

Importing Media

Set up the horizontal or vertical workflow as desired. Then either drag the audio into the REAPER window or select **Insert › Media file....**

For classical music purposes, you can then choose whether to insert in the same time position on separate tracks or sequentially on a single track. For recordings with multiple takes using separate files, I recommend inserting/dragging one take at a time onto separate tracks on either the source group or first destination group. Once everything is imported you can then drag sets of tracks to the different source groups as desired. If you have a best take that will be the basis of the final edit, place this on the top destination group tracks.

Multi-Channel Audio Import

If you use a portable recorder such as a MixPre, you might have a multi-channel combined file. ReaClassical includes a special function for converting these into a stereo pair + mono track set. Import your multi-channel media using a single regular track (for a horizontal workflow) or multiple regular tracks (for a vertical workflow). Then, simply press `F10` (no need to select the items). Answer **[yes]** to the prompt that appears if the first two channels should be treated as stereo interleaved (i.e. they represent your main pair). Depending on the choice made, the number of tracks in the resulting folder(s) will adjust accordingly. Then you are given the opportunity to name your tracks. Obviously if you decide to move to a vertical workflow after exploding using a single track, you can always use `F8` to create your source folders then drag the media to where you want them. If you need to bring in new takes after running this function, simply open an empty project tab, import additional media then run the function there. Afterwards, copy or cut the exploded items into the original project tab to the desired locations.

Converting an existing REAPER project

ReaClassical has gained the ability to import any REAPER project with the ReaClassical_Convert REAPER project function (also available in the top ReaClassical menu via **Project Setup › Convert REAPER Project**). It was primarily intended to import simple ReaClassical Core editing projects (an entry point into ReaClassical-style S-D editing using a regular REAPER instance). However, because of the dizzying amount of custom routing and folder hierachy that is indeed possible inside a REAPER project, the following happens during conversion:

1. A new project tab is created and `_converted` suffix added to the RPP file

2. Any folders are flattened

3. Any empty tracks are deleted

4. A single folder is formed in preparation for a horizontal workflow

5. Any effects are moved to the relevant mixer tracks

6. Any custom routing is removed

At this point, a familiar horizontal workflow is set up and takes prepared automatically. All that is left for the engineer to do is recreate any custom routing using ReaClassical special tracks (`#`) and copy/paste any previous bus effects that would have been deleted due to being an empty track. For example, if the original REAPER project used folders to organize orchestral section microphone channels, this would be recreated by adding a `-` suffix to the relevant regular tracks then pressing `F7` (thereby removing a direct connection to RCMASTER) and routing them to one or more submixes.

Navigating a Project

In addition to built-in REAPER functions, ReaClassical uses a series of shortcuts to help you easily navigate your classical project. Important: I always make some dedicated time post-recording to get an overview of the recorded material, tidy up the digital notes I took during the session and perform a backup on an external drive as soon as possible.

Whole Project

Use `Ctrl` + `Alt` + `→` to see the whole project horizontally and/or `Ctrl` + `Alt` + `↓` to see everything vertically. I chose to separate these functions because one of the axes (often the vertical) is set exactly how you need for editing and it would be a pain to have the axis reset each time. You can also go to the start or end of the project by pressing the `Home` or `End` key respectively.

Finding Takes

Use `Enter` on the main keyboard or numpad if you have one to quickly search for a take based on the underlying filename of the media item. This will work for any file-naming system that uses numbers before the file extension such as *main_pair-T04.wav*, *cello-spot-take_23.flac* or even *ortf_pair(04).wav* such as created by Presonus Studio One. Note that if the imported or recorded files have zero-padding that is not a problem. If you have used an item to create an S-D edit, searching for a take will ignore these items and move directly to the original sources.

Jump to Time

Press `TAB` to jump to a specific absolute or relative time using right-aligned logic, similar to video editing applications. This can be an absolute time within the project or an relative position inside a selected item or a set of consecutive crossfaded items. Prefix with + or - to make relative jumps. Once you get the hang of using this input logic, moving to any position is extremely quick!

Some Right-Aligned Logic Examples:

Input	Meaning (based on project frame rate)
100524	Move to absolute position 10m 5s 24f
1141711	Move to absolute position 1h 14m 17s 11f
+8	Jump forward by 8 frames
-1015	Jump backward by 10s 15f
+23000	Jump forward by 2m 30s (and 0 frames)

Items & Markers

You can easily shuffle back and forth between item edges by using the `Q` and `W` keys. You can move between markers by using the `,` and `.` keys (by design given on my keyboard they are the same keys that have `<` and `>`).

Parents & Children

ReaClassical can hide or show children of track groups. This means that editing multi-track classical music can be as easy as editing a stereo track. When takes have been prepared (see below), all edits are automatically synchronized. Making an edit to the parent track automatically makes the same one to all the children too. To show hidden children select the parent track and press D (for *display*). To hide, select the parent track and press E (for *ensconce*). The other benefit is that a whole set of takes can be displayed vertically in the main editing window without too much effort.
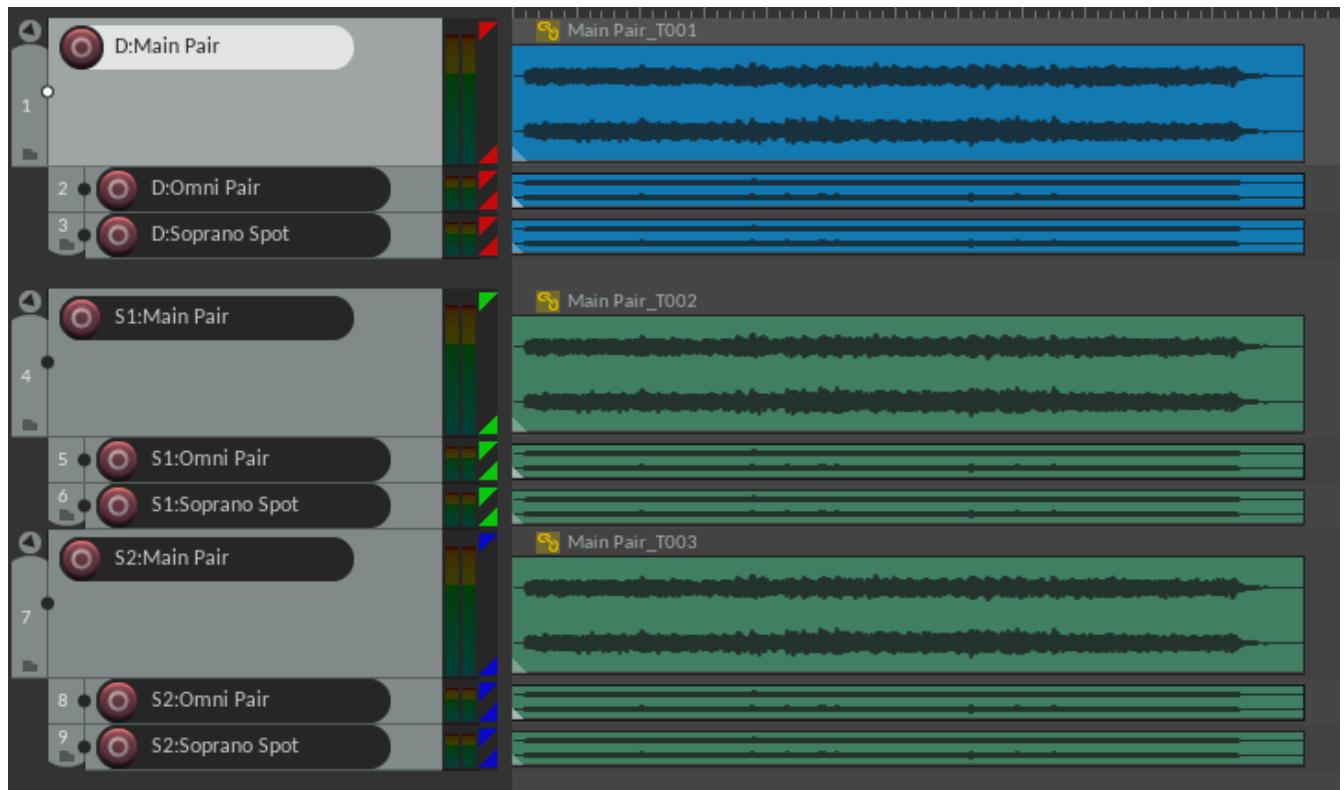
Figure 8. Uncollapsed Groups
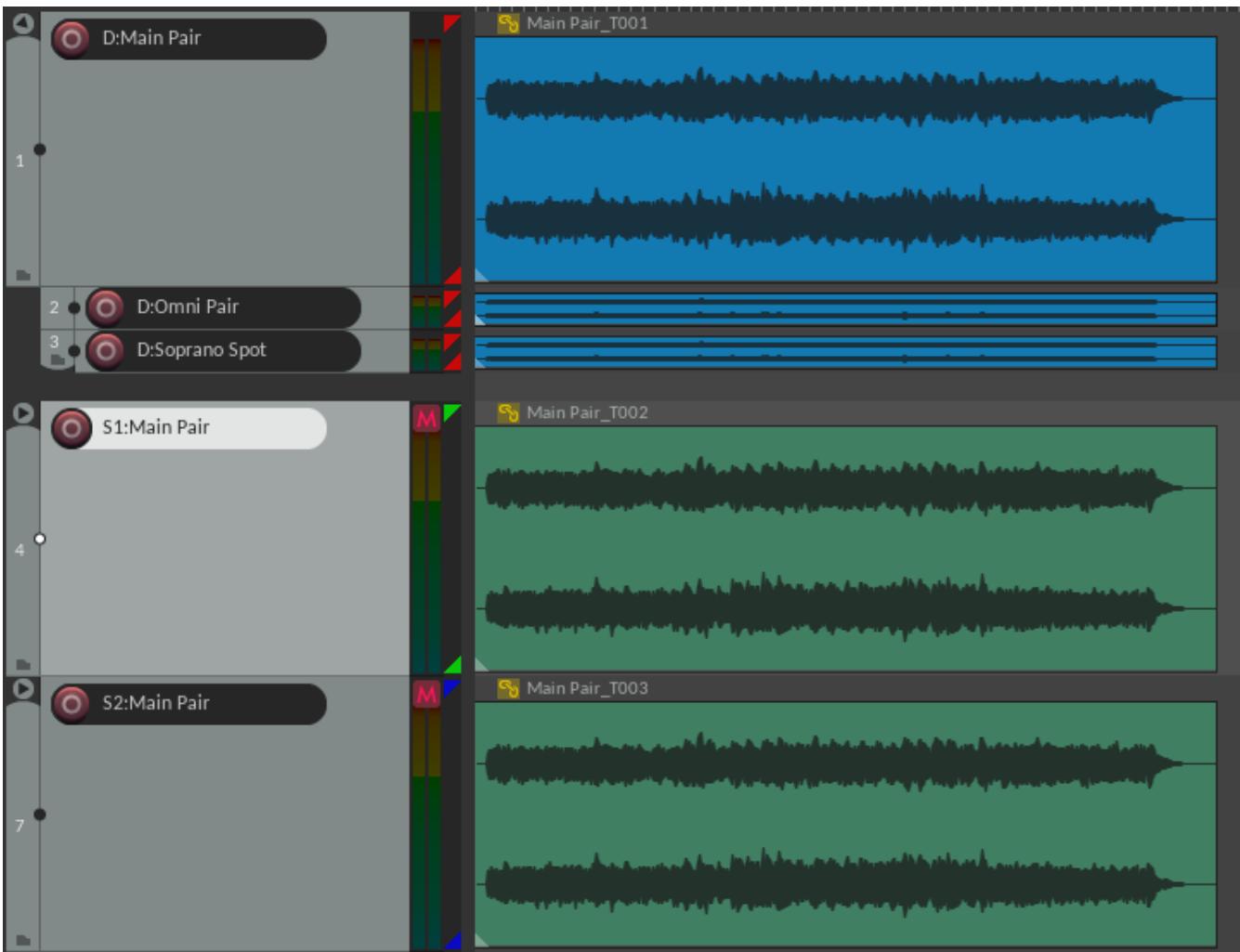
Figure 9. Collapsed Groups

Peaks Display

To adjust the visual zoom of wave peaks, use `Ctrl` + `↑` and `Ctrl` + `↓`. This is purely visual and allows for easier editing of quieter sections.

ReaClassical Toolbar

While I designed ReaClassical to be used efficiently with keyboard shortcuts, there is a custom S-D editing toolbar for those that prefer it. However I do highly recommend learning the key strokes as you will find your editing speeds improve dramatically. The floating toolbar is visible by default on a new portable install. To open or close, use the `F6` shortcut.

Figure 10. The ReaClassical Toolbar

From left to right, we have: Destination IN and OUT markers (`1`,`2`), Source IN and OUT markers (`3`,`4`), Delete S-D markers (`Ctrl` + `Delete`), S-D Edit (`5`), 3-point *Assembly Line* Edit (`F3`), Insert with Time-stretching (`F4`), Delete With Ripple (`Backspace`), Delete Leaving Silence (`Ctrl` + `Backspace`), Set Destination Tab Project Marker (`Ctrl` + `Alt` + `1` or `Ctrl` + `Alt` + `2`), Set Source Tab Project Marker (`Ctrl` + `Alt` + `3` or `Ctrl` + `Alt` + `4`),DeleteS-DProjectMarkers(`Shift` + `Delete`),CopyDestinationMaterial

to Source, Move Destination Material to Source, Reverse S-D Edit (`6`), and finally ReaClassical Help (`H`).

ReaClassical Top Menu

At the top of the arrange window, you will see a dedicated ReaClassical menu (in between `Options` and `Extensions`). While not intended to be used as the primary way of running ReaClassical functions, it is an organized way of discovering the individual available functions and learning the keyboard shortcuts.

Summary of Track Types in ReaClassical

While some of these will be covered later in the manual, it is useful to give a summary of track types you can currently use in ReaClassical. First, we have the *regular* group or groups of tracks shown in the arrange window. These are where you record or import takes. You can record-arm tracks and manually select inputs (if you didn't set during initial setup or via `Ctrl` + `F9`) here (a reminder that only locked tracks need only be set on the first group and then `F8` can be pressed to sync across all groups. Second, we have the mixer tracks designated via `M:` prefix. These tracks shown only in the mixer are where you adjust the usual track controls such as names, pan, volume, phase etc. and also add FX. Their names are synced across the project via `F7` or `F8`. Third, we have aux busses designated via `@` prefix. You can route mixer tracks to these to use as a reverb bus etc. Fourth, we have submix busses designated via # prefix. You can route mixer tracks to these as a way to collect together microphones from the same orchestral section etc. Fifth, we have a dedicated room tone track where you can place recorded or generated room tone (more on this in the mastering section). Sixth, we have the *RCMASTER* bus which leads directly to the master REAPER bus. Here you can gain stage into the master bus, add FX etc. Seventh, we have reference tracks which lie outside of the RCMASTER structure thereby allowing the user to quickly make comparisons with other imported material via the audition shortcuts. Finally, the master bus itself where again you can set final levels, add FX etc. As mentioned elsewhere, try not to delete the mixer tracks or RCMASTER. But, even if you do by accident, simply run `F7` or `F8` to recreate them depending on your chosen workflow.

IMPORTANT	Maintain the prefixes for the special tracks (`@`, `#` and `M:`) and retain the RoomTone, Reference and RCMASTER track names for audio routing and mixer visibility. However, if you accidentally make improper changes, simply re-sync via `F7` or `F8` to automatically add back missing prefixes and correct naming where appropriate.

Editing

Introduction to Editing Workflows

Once you have recorded or imported your classical music audio, you are ready to start editing the raw material! Here we talk about the meat and potatoes of the classical editing workflows. Workflows—plural—because I have included different approaches to suit as many tastes as possible within the confines of the REAPER application. I will explain each in detail after this brief introduction. As described previously, you have multiple ways of proceeding. First you can have all

your takes lined up in a row horizontally and you place your source in and out markers, destination in and out markers then press a keyboard shortcut to achieve your 2-, 3- or 4-point edit. The second way is to set up your takes vertically and then either use the same marker system to make your edits or use razor edits (my preferred method when working vertically). Whichever option you choose, you will then end up in the crossfade editor view which uses a two-lane view to make precise edits really easy in REAPER.

Marking Edits on your Scores

This is best done using a physical, photocopied score by the conductor or lead musician. I advocate for a "T" system where a large T is inserted into the score at the intended edit point. Either side of the T stem, and under the crossbar, the outgoing and incoming take numbers are written. A wavy crossbar indicates some leeway for where the edit point can be placed. Further notes can be attached underneath the T such as directions for tightening the gap etc.

Figure 11. Editing a physical score

Preparing Takes

Whether working horizontally or vertically, you can use the Prepare Takes function. It is intelligent enough to figure out which workflow you are using. Just press T (for *Takes*). Super simple! Every set of items comprising a take has changed color, is now grouped. In addition, source and destination groups are linked or (re-linked) for various types of editing.
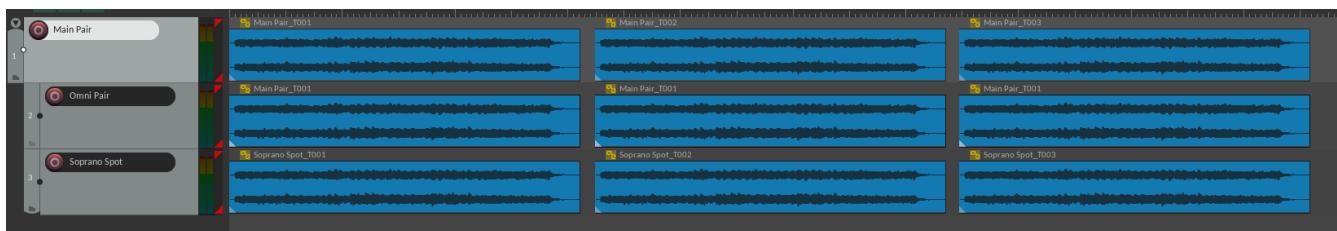

*Figure 12. Horizontally Prepared Takes*
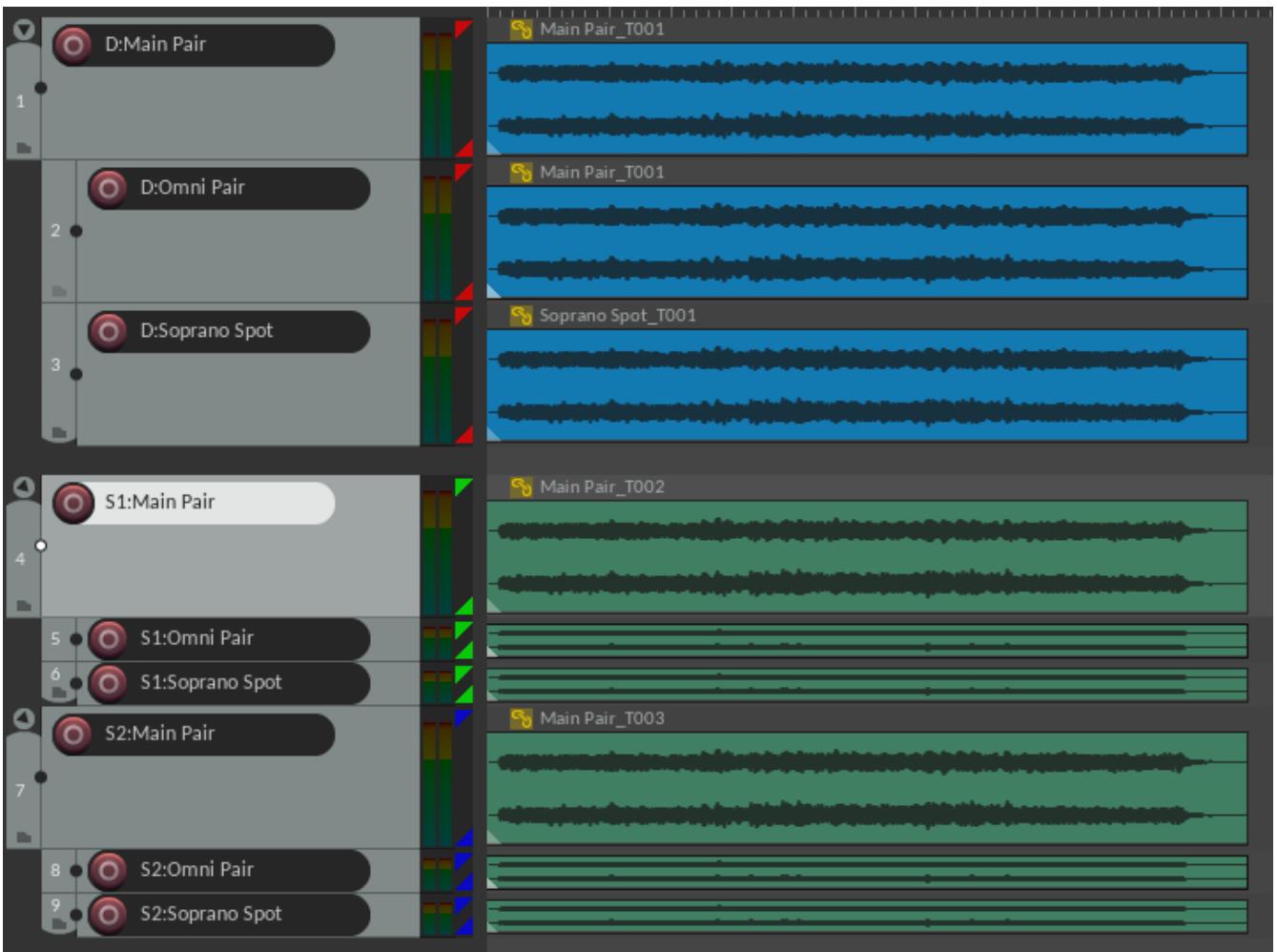
Figure 13. Vertically Prepared Takes

If Prepare the `Prepare Takes: Random colors` value is set to 0 in ReaClassical Preferences `F5` (the default), for horizontal workflows, two shades of blue are used which also helps show the user where edits happen. For vertical workflows, the destination group again uses two shades of blue and the source groups are colored green. In this way they match the colors of the associated S-D markers. If `Prepare Takes: Random colors` value is set to 1, for horizontally laid-out takes, each complete take is colored with a different random color. For vertically laid-out takes, each folder's items are given a different random color. This way, however you work, it's easy to see where edits have come from. Prepare Takes can be re-run at any point to re-sync colors and will preserve any custom colors set via the Colorize function `K`.

In the cases where you might use the function after editing has begun, the destination group will switch to using alternating colors for items so that you can easily tell where you have made edits.

Auditioning Takes

For horizontal editing, you could use the usual transport shortcuts (spacebar to start and stop playback, for example). However, for both horizontal and vertical editing, it is highly recommended to use the Audition function to quickly solo only the folder (or track) you are interested in hearing. Just hover the mouse over the parent for the full mix or a child to solo a spot microphone you want to hear and press `A`. This includes any @ aux or # submix track routing in the signal path. You can easily and quickly create your own custom audition mix by engaging solo or mute buttons on the mixer, aux and submix tracks (either with transport stopped or on the fly) and using hover + `A` on

the parent track. You can therefore listen to anything from the full mix down to examining just the woodwinds submix or a single reverb bus. To audition using a custom playback rate, use hover + `Shift` + `A`. The custom playback rate can be set via `F5`. Note that regular auditioning will automatically reset to the standard playback rate.

Don't forget that you can quickly jump to your various source takes using `Enter` and jump to a time within a selected item or crossfaded items using `Tab`.

Source-Destination Editing

You set your in and out points using special colored labeled markers via shortcuts `1` and `2` (Destination) and `3` and `4` (Source). Simply press `5` to make the 2-, 3- or 4-point edit. depending on how many markers you set. If you attempt to set one of the destination markers inside of an existing crossfade or within 500ms of a crossfade or item edge, the function will alert you (pressing **[OK]** places the marker anyway). This helps avoid awkward *sliver* edits that can happen especially if you are zoomed out and placing markers by ear. You can customize the check range via ReaClassical Preferences (`F5`). The check range (in milliseconds) is the distance beyond an item edge, fade or crossfade. For example, setting to 0 would only check for placement *inside* a fade or crossfade.

You'll also notice that because you prepared the various takes with colors (and grouping), it is really easy to see which takes compose your final edited tracks. It's worth pointing out that my S/D and classical crossfade functions place the crossfade immediately before the entry and exit points of the pasted audio. The crossfade length and other values can be set on a per-project basis via ReaClassical Project Preferences (`F5`). In practice this means that if you visually set a marker (or edit cursor in the case of the classical crossfade function) immediately before a transient, said transient will sound post-crossfade which is what we generally desire. Often, given this important detail, I don't even need to visit the crossfade editor view.

When using a vertical workflow, make sure you have the source folder selected before you create the source IN and OUT markers. You can do so by clicking on the item at the locations you want to set the markers. This adds the folder number as a prefix to the source marker labels. The various functions will then use this label to know which folder to copy from. This is really useful if you undo the edit in order to tweak the markers by dragging them. It doesn't matter if you then select other folders/tracks. In the event you use two different folders for the source IN and OUT markers, the functions will prefer the source IN label.

The downside to this workflow when using a vertical approach is that the source and destination markers can get in each other's way visually if the takes aren't somewhat staggered, however the process still works as expected. See below for a razor editing alternative.

TIP	If you are worried about accidentally moving markers and items during precise S-D or assembly editing, engage the padlock icon in the top-left of the ReaClassical window. By default with the latest ReaClassical project template, it should prevent manual left/right item movement and marker dragging (while still allowing for S-D editing with ripple). Even though you can't move S-D markers by dragging with this lock mode engaged, you can still use the shortcuts_ `1`, `2`, `3` and `4` to change marker location. Just remember to disengage lock mode when you enter the fade editor or else you won't be

> able to move the items of the crossfade!

Multi-Project Tab S-D Editing

If you'd like to S-D edit between various open project tabs you can set both the source and destination *project* markers via `Ctrl` + `Alt` + `1` (or `Ctrl` + `Alt` + `2`) for destination and `Ctrl` + `Alt` + `3` (or `Ctrl` + `Alt` + `4`) for source (essentially the same numbers associated with regular S-D markers). The markers can exist anywhere on the tab's timeline but perhaps the very beginning or end would be good to keep them out of the way. The S-D editing itself then works just as for a single tab other than any source markers that are set are not deleted to aid quickly undoing in the destination tab and being ready to reapply the edit. The only rule when using S-D project markers is to ensure that source or destination markers should be paired with the corresponding source or destination project marker. This workflow would, for example, allow you to have multiple project tabs (perhaps one for each symphony movement plus a final *destination* tab), allowing for both internal editing per tab but after setting the S-D project markers compiling the final edit in the *destination* tab. To delete all the S-D project markers press `Shift` + `Delete`. Also, in multi-tab S-D editing, when regular markers are placed, any other existing versions in other tabs are automatically deleted to ensure that only one version of the marker exists at a time across all open project tabs.

4-Point Editing

For this operation, set all four markers using `1`, `2`, `3` and `4`. Make the edit with `5`. This is the most useful edit when dealing with classical music or other acoustic music performed without a metronome.

3-Point Editing

For this operation, set any combination of three markers. Again, make the edit with `5`. The missing marker is placed according to the distance set by the existing complete pair.

2-Point Editing

For this operation, there are two possibilities: 1) Set one source marker and one destination marker. Make the edit with `5`. Any missing IN markers are set to the beginning of the timeline and any missing OUT markers are set to the end of the source or destination material. 2) Set both source markers and no destination markers. Make the edit with . Here, the destination markers are set at the exact same positions on the timeline as the source markers. Obviously this operation is only useful in a vertical editing workflow when you can select source material from a different track group. The usefulness of this second option is further reduced if the takes are not vertically aligned and not virtually identical in tempo. On the other hand, it could be an incredibly quick method for editing takes of a hybrid classical piece that is performed to a click track or other recorded steady beat.

Other SD Functions

Insert with Time-Stretching

Using the ReaClassical_Insert with time-stretching function `F4`, you can complete a 4-point edit where the material between the source markers is time-stretched to fit the length of time between

the destination markers. This is really useful when the source material has to fit the destination span exactly, for example when working with visual cues. The time-stretch algorithm used will be the one set in REAPER project settings. When there are multiple items in between the source markers, the function will glue the items together before time-stretching. Note that this function can also be used in multi-tab S-D editing mode (see above).

Assembly Line Editing

Sometimes you don't necessarily have a best overall take and it is desirable to build the perfect performance linearly, section by section, measure by measure. In this case, set the destination IN marker with `1` and set both source markers using `3` and `4`. Press the `F3` shortcut. A 3-point insert operation will occur and the destination IN marker will jump to the end of the pasted item, ready for the next edit. This means that in order to compile further sections, you now only need set the source markers. If you accidentally move the location of the destination IN marker in the middle of assembly line editing, the function will let you know and offer to move the marker back to the right edge of the latest item in the edit. This will even allow you to do some regular 3- or 4-point editing earlier in the sequence before continuing with the assembly line edits. Just place the destination IN marker anywhere in the project and answer **[No]** when the message box appears. Note that this function can also be used in multi-tab S-D editing mode (see above).

Delete / Delete with Ripple

While perhaps not used as often as 3- and 4-point edits, I have created two functions for deletion of material. Delete & Ripple `Backspace` will delete the material between source IN and OUT markers and ripple material to the right backwards with a short crossfade. Delete Leaving Silence `Ctrl` + `Backspace` will also delete but maintain the silence without rippling backwards.

Copy/Move Destination Material to Source

Run either the copy or move version of the function from the ReaClassical toolbar (no need to ensure the first track is selected) and the function will copy or move all items and edits from the destination group directly below to a newly created source group with Eastern Blue color for identification purposes. This allows for saving versions of finished edits either via iteration (*copying* so you can continue to make further edits) or fresh (*moving* so you can compile an alternate version of a best take from scratch). These different edits can then be easily auditioned via `A` the shortcut. This is similar to a Pyramix-style iterative editing method while still maintaining the destination group as the uppermost group.

Reverse S-D Edit

Place your destination markers using `1` and `2`, then set a source IN marker with `3`. Pressing `6` will copy or move the material between the destination IN and OUT markers to the selected source group, as determined by the `3` shortcut. Upon execution, you will be prompted to choose whether to copy or move the material. This function operates similarly to the **Copy/Move Destination Material to Source** functions but allows for precise selection using S-D markers. It is particularly useful for editing a single section like a *da capo*, where you may want to construct an edit using material from the first run-through without having to scroll back and forth along the timeline. For example:

- To use material from the first run, copy it to an existing empty *placeholder* source group using `6` (answering **[No]** when prompted to delete the destination material), then manually position it under the second run.

- If the da capo material serves as a strong foundation, you can leave it in place on the destination group. Alternatively, you can move the da capo material to a second empty source group using `6`, selecting **[yes]** when prompted to delete the destination material.

Add S-D Markers to Edges of Item(s) or Time Selection

Used in combination with Delete / Delete with Ripple (`Ctrl` + `Backspace`/`Backspace`), you can quickly set both source markers to the edges of one or more selected items on a parent track or time selection via `F12`. This is a time-saver when dealing with potential *sliver* edits i.e. small unneeded leftover edits as a result of multiple rounds of zoomed-out S-D editing. Note that the built-in checks when manually placing destination markers should go some way to alleviating this issue which can easily go unnoticed in other classical music DAWs. Likewise you can use `Ctrl` + `F12` to set destination markers (selected items must be in the destination folder). Note that if using time selection for placing source markers, as for S-D marker placement via `3` or `4`, make sure you first have the desired source folder track selected before pressing the shortcut (a good way to do this is to first click on the item involved). You may prefer to set both source and destination markers this way over the more traditional number key shortcuts acting as a sort of hybrid between S-D and razor editing. Also note that if both selected items and a time selection exist, the time selection takes precedence.

Move / Zoom to S-D markers

To move to any existing S-D markers use `Ctrl` + `1`, `Ctrl` + `2`, `Ctrl` + `3` or `Ctrl` + `4`. To zoom to any of the S-D markers for more fine-grained placement, use `Alt` + `1`, `Alt` + `2`, `Alt` + `3` or `Alt` + `4`. If you have multi-tab S-D editing set up, these shortcuts will also automatically move focus to the correct project tab.

Delete S-D markers

To delete all regular S-D markers, press `Ctrl` + `Delete`.

Floating Destination Group

The floating destination group feature enhances vertical workflow efficiency by dynamically positioning the destination group just above the selected source group. This reduces unnecessary vertical scrolling when setting IN and OUT markers for destination and source groups that are far apart in the project. Additionally, this feature is fully compatible with mouse hover S-D editing and when setting source markers to item edges (`F12`).

To enable the floating destination group, open ReaClassical Project Preferences (`F5`) and set the corresponding value to *1*.

For example, with floating destination enabled, place a source IN marker (via `3`) on any source group. The destination group will reposition itself just above the selected source group. Add the remaining S-D markers as required. Perform any S-D edits via `5`, `F4`, or `F3`. Select another source parent and place another marker (`3`). The destination group will continue adjusting dynamically. To temporarily reset the destination group position, run a sync via `F8`.

It is worth noting that if the destination group moves above a source group, the source marker track number correctly updates to reflect the new order.

To disable floating mode, re-open ReaClassical Project Preferences and set `Floating Destination Group` back to *0*. This will also automatically move the destination group back to the top of the project.

Razor Editing

Because of the potential for visual overlap of markers, I much prefer the REAPER razor edit functionality for vertical take work. It works a lot like the process shown in this Pyramix video.

While Pyramix also has additional source-destination marker workflows, I couldn't help but feel that for professional ensembles that manage a high degree of tempo regularity between takes, this method can be extremely efficient. This isn't the document to introduce REAPER razor edits as there are plenty of resources online if you do a simple search. Here we are only concerning ourselves with creation of the razor area across all our pairs and spot mics (REAPER's default shortcut is the rather uninspiring Alt+Right drag). Thankfully, it can become the default editing mode by selecting the razor edit mode on the main toolbar and left-click dragging.
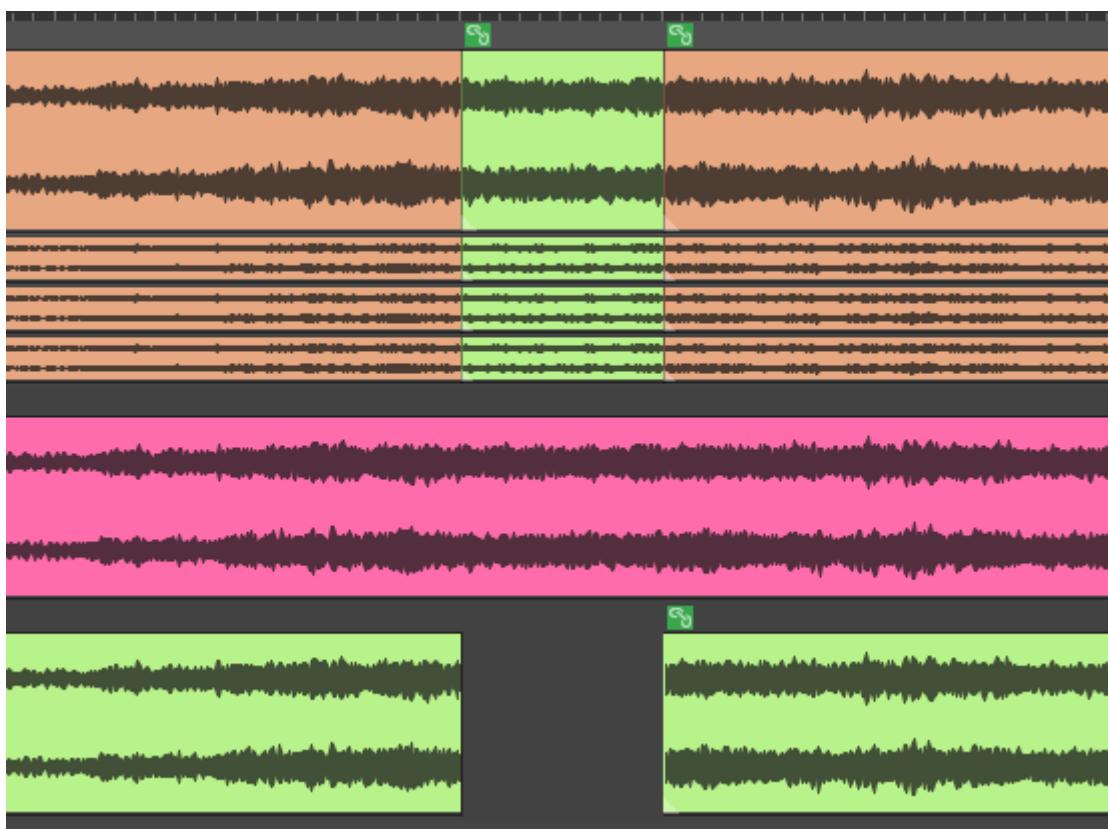

Figure 14. Razor editing in a vertical workflow

Crossfade Editor

Now that you've made your precise edits using S/D workflow or razor editing (no worries if it's a bit rough!), it's time to check things through with the help of the crossfade editor view.

Since v7.40, REAPER includes an excellent professional two-lane crossfade editor similar in nature to the specialist classical DAWs such as Sequoia and Pyramix. With the improved crossfade editor,

users can see the continued "ghost" waveforms of the items beyond the crossfade they enter and likewise the previous waveforms of the items that exit the crossfade. The ability to visually align transients and then position the crossfade just before it is absolutely critical (and fun when you have the tools to do it!). Select the right-hand item of a fade (or hover over the item if `Add S-D Markers at Mouse Hover` is set to 1 in ReaClassical Project Preferences `F5`), press `F` and you are moved into crossfade editor mode. Note also that you are automatically centered on the crossfade and can use the mouse wheel to zoom in and out. Press `F` again and you exit that mode.

So, now you are in the crossfade editor mode, my own preferred method of getting the perfect crossfade is to move the transient I want on the left (upper) item to just after the crossfade by dragging on the ghost waveform. Then I drag the "ghost" waveform of my right (lower) item so that the two transients align. That's it! Drag on the active part of the waveform to also move the location of the crossfade. You can just move or resize the crossfade by hovering directly over the lower portion of the crossfade and dragging either the edge or the shaded rectangle. Be aware that markers are not rippled in ripple-per-track mode (but with the introduction of the Create CD Markers, I highly recommend not bothering to create any markers at this point).
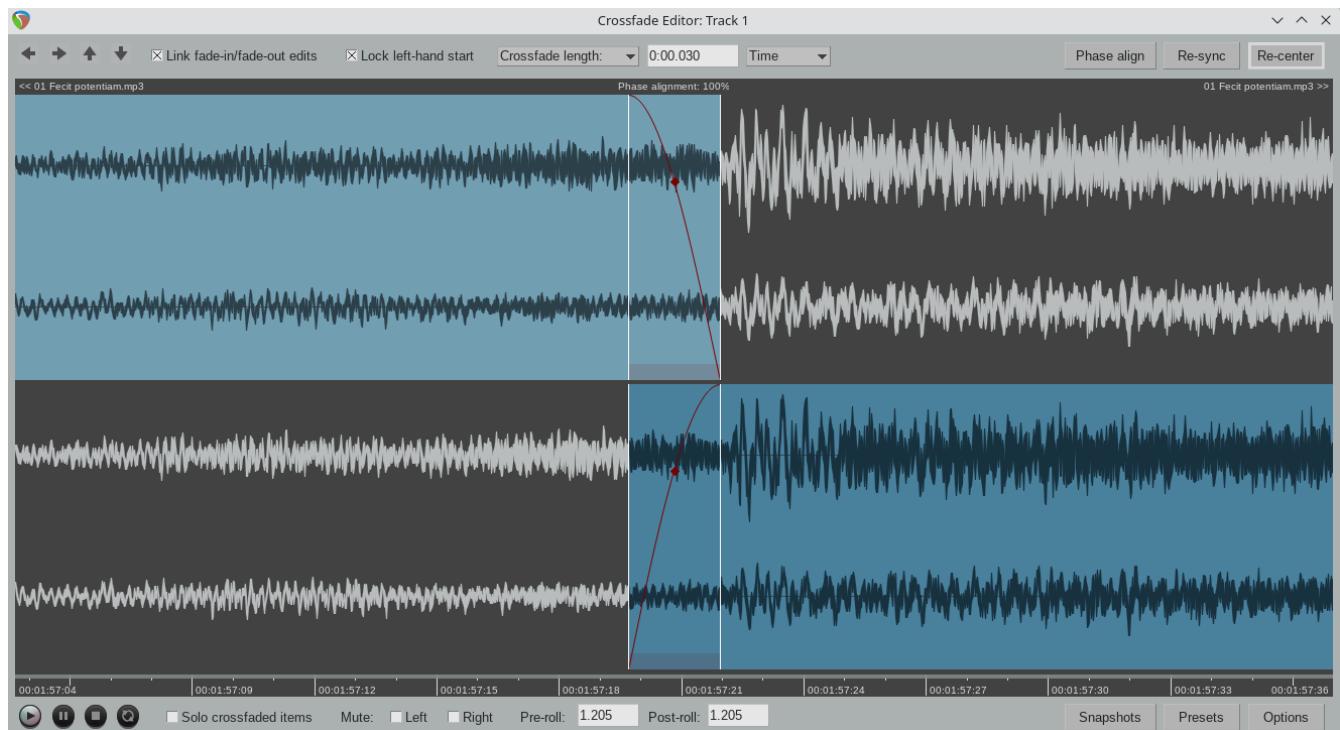

Figure 15. ReaClassical Crossfade Editor View

In reality, this process can be just a few seconds to achieve the perfect edit. To ensure that previous xfades are unaffected, make sure that *Lock left-hand start* is checked:
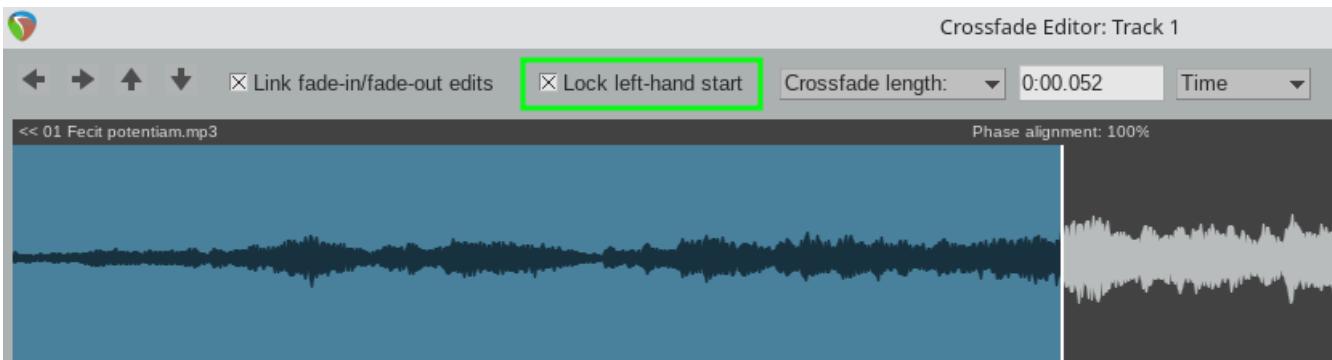
Figure 16. Locking start of left item

To audition material, hover the mouse inside the crossfade window and:

1. press `A` to audition the crossfade with mirrored pre/post roll based on mouse cursor location

2. press `S` to audition just the left item based on mouse cursor location or its mirrored position

3. press `D` to audition just the right item based on mouse cursor location or its mirrored position

Use `Shift` + `A`, `Shift` + `S` or `Shift` + `D` to do the equivalent but with a custom playrate as set in `F5` preferences.

You can shuttle between crossfades using the `Q` and `W` shortcuts. Please see the REAPER manual for more details of what is possible including phase alignment and various view options.

Other Editing Tips

In my key map, I include all sorts of useful shortcuts to use during editing. As mentioned above, in vertical editing workflows, the Audition function `A` is brilliant for listening to various takes before applying a razor or S/D edit. I can shuttle between items with `Q` and `W` (the same keys shuttle between crossfades in crossfade editor mode), shuttle between markers with `,` and `.` (the same keys with `<` and `>` on them on my UK keyboard), `S` for splitting a long recorded session into takes, `Ctrl` + `Alt` + `→` and `Ctrl` + `Alt` + `↓` for zooming out to the whole project both horizontally and vertically etc. There are plenty more for the mastering end of things so I encourage you to explore.

It is worth noting that all regular markers and regions are ripple edited appropriately when using my source-destination editing functions and crossfade editor. I also introduced the ReaClassical_Lock Toggle function which temporarily locks all source groups and engages ripple-all-tracks mode to enable you to drag destination items and simultaneously ripple markers and regions in the regular arrange view. This allows vertical source groups to retain their independence yet still give ripple-all-tracks behavior which is useful for destination album track spacing etc. However, I consider this function deprecated given I strongly feel that the Create CD Markers function is now the ultimate way to deal with CD tracks/markers.

Collaborating with Video Editors

When working on projects that combine audio and video, the audio engineer must ensure that high-resolution audio edits remain synchronized with the final assembled video.

Several approaches exist:

- **No audio edits required** – The simplest case. The video editor is free to select camera angles without concerns about audio sync.

- **Post-edited audio with playback** – The promotional video is recorded after the audio has been edited, with musicians miming or playing along to playback via loudspeaker. The video editor has complete freedom to cut between angles without sync issues. This method isn't always feasible.

- **Minor edits in live-recorded video** – When video and audio are recorded simultaneously and only minor edits are needed, the video editor can use a zoomed-out shot of the concert hall, a musician's face, or another visual to mask a slight time-stretch while preserving timecode accuracy.

- **Multiple synchronized takes** – The most complex scenario. Both video and audio are recorded in multiple takes and synchronized via a timeclock. This is the focus of the following discussion.

ReaClassical provides tools to generate an edit list for video editors. Rather than a file for direct import, this list serves as a manual reference. For all recordings, but especially those synchronized to a timeclock, REAPER/ReaClassical retains the timeline start position from the recording. This ensures that absolute in/out source positions can be retrieved even after extensive audio edits.

To create an edit list:

1. Perform source-destination edits as usual.

2. Set the desired project framerate in the video tab of Project Settings via P .

3. Export the edit list via **ReaClassical › Utilities › Build Edit List**:

    a. Select *using BWF start offset* for timeclock-synced projects.

    b. Choose *using source file timing* to reference internal source audio positions. In this case, the audio engineer should provide a a single channel of audio to help the video editor locate edit points.

The resulting HTML table includes a Done column for tracking progress. Additionally, when using *Build Edit List (using BWF Start Offset),* an optional offset can be applied to correct slight constant audio-video misalignment.

Edit List (using BWF Start Offset)

Project Name: BeethovenSongs.RPP

Date: 25-03-21 13:25:34

Frame Rate: 25

Start: Absolute timeline location for building the edit
Source In and Source Out: Absolute timecode references for source material
End: A reference check for where the inserted material ends on the timeline after the 3-point edit
Playback rate: Only shown if not equal to 1

Time is in the format HH:MM:SS:FF

Done	Edit	Start	Source In	Source Out	End Check	Playback Rate
☐	1	00:00:02:05	00:00:00:00	00:00:10:05	00:00:12:10	
☐	2	00:00:12:10	00:02:00:19	00:02:11:16	00:00:23:07	
☐	3	00:00:23:07	00:00:23:02	00:00:30:20	00:00:31:00	
☐	4	00:00:31:00	00:00:30:20	00:00:38:14	00:00:38:19	

Figure 17. An example edit list

Mixing

FX Plugins

ReaClassical is shipped with various mastering-grade JSFX plugins to cover typical needs although obviously REAPER allows for any 3rd party plugins. For a list of recommended free plugins see Appendix C. In ReaClassical, you should add plugins to the dedicated mixer tracks.

Aux & Submix

Users have the ability to create aux and/or submix tracks that stay visible (and stay after the mixer tracks). To set up, simply create a single folder via Horizontal Workflow F7 and/or Vertical Workflow F8 then create as many aux/submix tracks after the mixer tracks as you like via #. It is important to keep the @ or # at the beginning of the track but you can add any name you'd like e.g. *@hall-verb*, *#strings*. To route, click-drag from a mixer track's routing stripes to the desired @ or # track. When using any of the ReaClassical functions such as auditioning, these tracks will remain visible.

For # submix tracks, simply add a hyphen (-) at the end of desired track names in the mixer tracks and sync via F7 or F8. Now those related mixer tracks will not route directly to RCMASTER. As an example, say mixer tracks 3-6 are all string section microphones and you'd like to sum them all to a string submix track called *#strings*. Just add a hyphen to the end of the names for mixer tracks 3-6, sync and then create the routing to #strings via click-dragging from the routing stripes. This routing is maintained during F7 or F8 syncs.

Roomtone

In a live concert recording that contains audience noise in between movements and applause at the end of a complete piece, it is often desirable to give the impression of a clean recording with no audience present. Recorded or generated room tone then becomes very important as an alternative

to audio fading to complete digital silence which destroys the illusion of listening back to a live concert. ReaClassical includes a dedicated room tone track for this purpose. This way, the auditioning tool will keep the track displayed in both track and mixer panels. Add via `#`. Once added, you can add clean recorded noise captured before or after the concert or generate endless roomtone the length of your project from a very small portion of clean silence from the concert itself (hint: try using a white noise generator into a convolver such as ReaVerb that uses a few seconds of clean room tone as the impulse! See Appendix D for the method...). As of ReaClassical 24.12, the Create CD Markers function automatically generates precise volume automation at the track level to seamlessly fade in and out of room tone! See the mastering section for more details. Please not that there is a limit of one reference track per project.

Reference Track

Add a reference track via `#` to allow for importing a commercial album track or similar to help achieve the desired loudness levels, EQing etc for your own material. The reference track is deliberately placed outside of the RCMASTER structure and can therefore be quickly auditioned independent of any effects you have on the mixer and RCMASTER tracks.

Maintaining/Breaking Connections to RCMASTER

When adding special tracks via `#`, set Maintain Mixer ⇒ RCMASTER to 0 to add a hyphen (-) to the end of every mixer (`M:`) track thereby removing the direct connection to RCMASTER allowing for all sorts of custom routing via submixes etc. By default, the final option is always set to 1 to maintain the current routing.

Mastering

Mastering in ReaClassical is game-changing. Many features described here are not available in any other classical DAW. I hope that the *ReaClassical* way saves you much time and helps you look forward to the mastering phase of the project. While automatic DDP generation, automatic room tone function, and professional album reports are the main features here, you will probably find the revolutionary automation mode is an extremely efficient way to add static mixer scenes across your production as well enjoying the ability to quickly reorder album tracks via a simple keyboard shortcuts.

Mastering Mode

Change to mastering mode via the shortcut `Ctrl` + `M`. In addition to making the mixer tracks, busses and RCMASTER available in the arrange window for setting static mixer scenes via envelope points, it also serves to de-clutter by hiding any source group audio. The hide and show child tracks shortcuts still work on the destination folder but in mastering mode also works on automation lanes. Simply select the relevant track connected to the lane and use the usual `E` and `D` keys to hide and show automation lanes. Look out for more *mastering* mode features in the future.
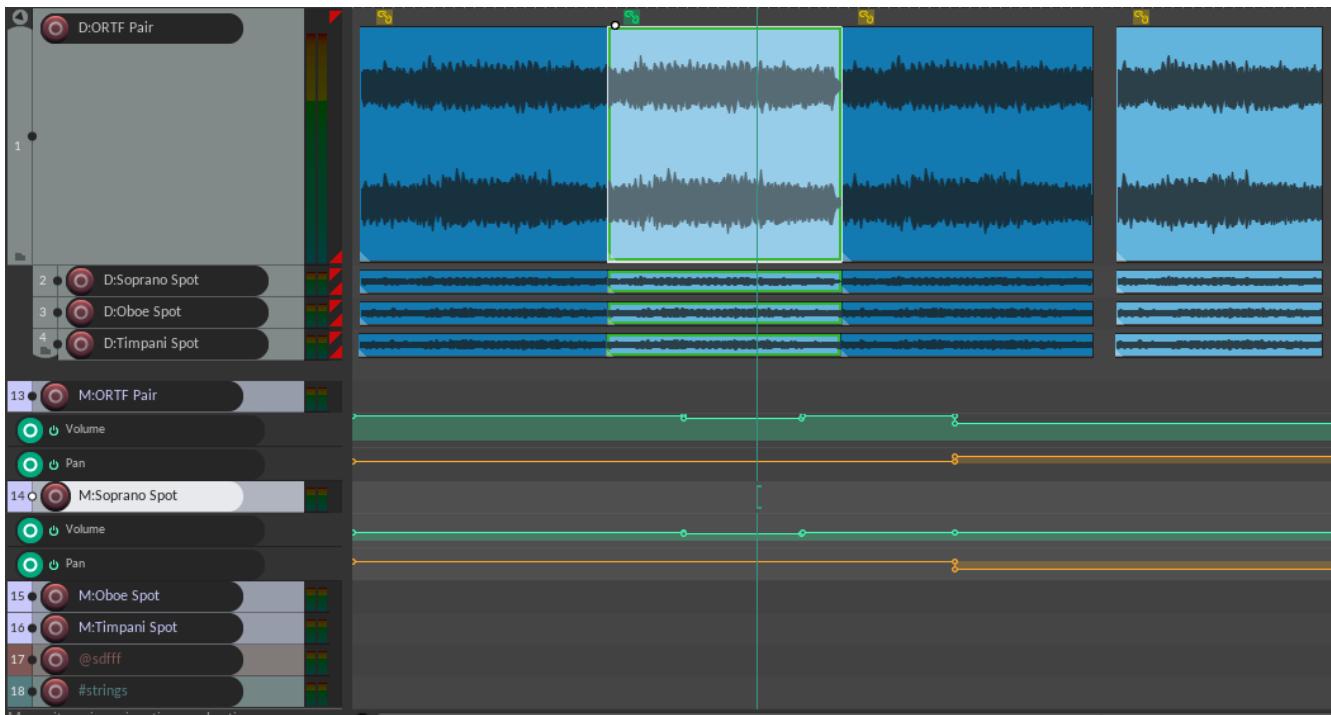
Figure 18. ReaClassical Mastering Mode

Automation

Given ReaClassical is built on top of REAPER, it allows for same high-quality automation workflow with a ReaClassical twist. Beyond the following workflow descriptions, it is recommended to read the relevant REAPER manual section as there are far more features than can be described here. For example, you can add static mixer and FX *scenes* to automation lanes (very useful for quickly setting up different settings for the various pieces on an album) . It makes most sense to leave any automation work until the destination group editing is largely complete. Start automation mode via `Ctrl` + `I`. Mastering mode will be enabled automatically as needed. All the envelope buttons will turn blue (*latched preview*) and you will see a message box with instructions. Simply set any desired mixer controls or parameters in an open FX window) on one or more tracks and press `I` to enter the values as points on the automation lanes at the edit cursor position or, if one exists, within the time selection. Continue to add, edit or audition and once completed, exit *automation* mode via `Ctrl` + `I`. The envelope buttons will then turn green (*read* mode). Hopefully this *ReaClassical* way can make things faster and easier at the same time. Once multiple static mixes have been set up, you can then, of course, use more detailed automation via the pencil tool or riding the fader to, for example, temporarily bring up spot microphones.

In addition, there are also take envelopes that you can access via right-clicking on an item and going to **Take › Take Volume Envelope**. This is incredibly useful for transparently reducing very short stray peaks versus using a limiter. Simply create a selection over the problematic area by left-click-dragging and then `Ctrl` + `Shift` and drag up or down to just affect that portion of the envelope without needing to add in individual points. It's such a time-saver! The benefit here is that you can also see how the item waveform is affected in real time.

If you want to exit both automation and mastering modes, press `Ctrl` + `M`.

Repositioning Tracks in an Album

There are two functions which help with reordering or repositioning tracks. First, and perhaps most useful for producing a classical album, is if you decide that you need to reorder one or tracks. Simply select the track you want to move and press either `Ctrl` + `←` or `Ctrl` + `→` to switch with the track immediately to the left or right. Note that gaps are preserved too.

The other situation is when you want to start with uniform gaps between a series of short separate pieces. Use the `Ctrl` + `Y` shortcut and enter a value in seconds. Your pieces are then automatically spaced and items crossfaded are left intact.

Loudness

In terms of loudness, I personally aim for about -18 LUFS Integrated for my classical albums though it can be as high as -16 LUFS and as low as -20 LUFS. The new loudness JSFX meter in REAPER along with the normalization of loudness and true-peak limiting in the render dialog are priceless. It's another reason I couldn't go back to the big classical DAWs at this point.

Creating DDP filesets

I have introduced a workflow to automatically add the CD/DDP markers, regions and room tone automation via `Y` (track and region names and all metadata are pulled from item take names, markers/regions auto-snap to CD frames, initial 2-second pre-gap, silent roll out and album metadata also added!). It is smart in the sense that if there's no take name, no marker or region will be created. In other words, press `F2` with an item selected to enter track names where markers/regions need to be created. It's perfect for classical releases where a crossfaded item is likely an internal source-destination edit versus a new track. For CD tracks that you want to have a visual CD player countdown, simply start the item name with an exclamation (!). Preferences such as CD marker offset, pre-gap length and album lead-out can be set via ReaClassical Project Preferences `F5`. So it's now very quick to export a DDP set!

TIP	If working in horizontal workflow, ensure that there is over a minute's worth of empty timeline between the end of the proposed album and any other source material. Instead, you can also choose to drag any source material to a new group by first creating an empty duplicate folder via `\`.

Further, you can add audio to the initial pre-gap (an *easter egg* track) by not giving the first item (or crossfaded items) a take name. The function will assume that this is supposed to be hidden and generate the initial pre-gap length accordingly.

If a room tone track is present in the project, the function will also generate precise track-level volume automation that creates perfectly-matching fades at points where items fade into and out of silence on the first destination track. In other words, slicing and dicing room tone audio to fill in digital silence is no longer necessary in ReaClassical!

After the DDP structure has been generated, open the Render dialog via `R` and select the ReaClassical DDP option under **Presets › All Settings › DDP**.

For more information read the description of the DDP function in appendix A.

Preparation for Metadata Entry

See Metadata Entry Method 2 for the new preferred way to edit metadata in ReaClassical. Using either method, to quickly remove all the current take names on the destination parent track, run `Ctrl` + `T`. Track titles and other DDP metadata are then added to the individual items on the destination parent track by double-clicking on the item or selecting and pressing `F2`. Note that only items that start CD tracks should be named. The only exception is using the final item of the first track to store album-wide data starting with @.

Metadata Entry Method 1

Press F2 on a first-track item that starts a CD track An example item name and track metadata (aside from ISRC) could be:

```
Allegro|COMPOSER=Beethoven|PERFORMER=Jones
```

For the album-wide metadata, to the final item on the first track of your album add an item name starting with @ and add the album title and any other metadata you desire aside from catalog number (see below). An example item name for album metadata could be:

```
@Between Fire and
Moonlight|COMPOSER=Beethoven|PERFORMER=Jones|GENRE=Classical|LANGUAGE=English
```

The UPC/EAN and/or ISRC are then added via the Create CD Markers function `Y`. On later runs of the function, you can choose to automatically re-use existing Catalog and ISRC values which can save even more time when making last-minute S-D edits, altering album spacing, switching album track order, or renaming a CD track start.
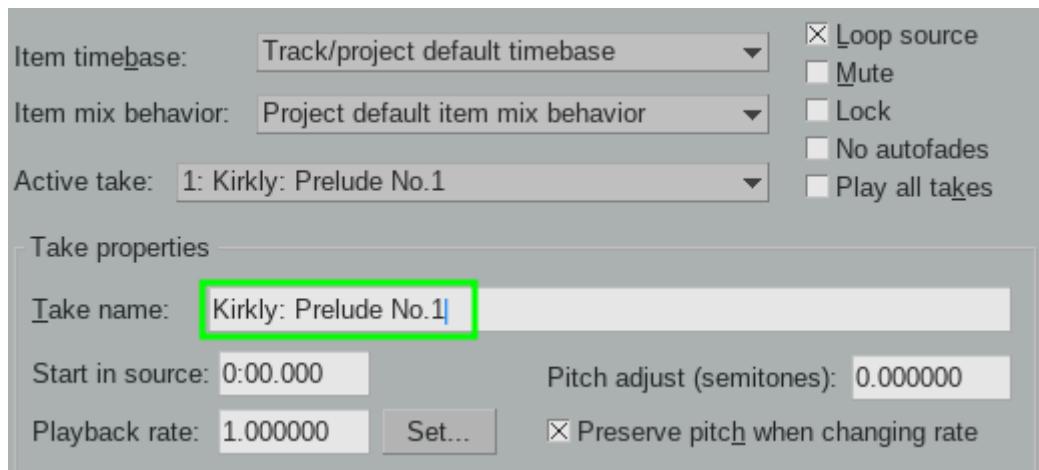
*Figure 19. Editing the item name*

Metadata Entry Method 2 (recommended)

Since ReaClassical 25.3.19, as part of running Create CD Markers function `Y`, a `metadata.txt` file is created in the project folder. You can edit this file by adding or modifying metadata entries using a basic text editor. This is now the recommended way to enter metadata given you can be as detailed

as you wish and not have to worry about entering keys (for example PERFORMER=) or pipes (kbd[|]) which can be tiresome to enter on certain keyboards. All you have to do to get started with metadata with this method is create a very basic DDP structure of just the track titles on first-track items that start CD tracks and an album-wide title (e.g. @MyAlbumTitle) on the last first-track item of your album. Then press Y , have the function generate the `metadata.txt` file and open it in a text editor like Notepad or TextEdit. Save your modifications and on re-running Y , the function will check for changes and offer to use them.

TIP	If your final item on the first track is also the final CD track start, just find another non-track-start item on the first track to add the @name. Location doesn't matter and is merely an attempt at a convention - the DDP marker itself is always added at the correct position just before the =END marker. If your album contains no internal edits, just add a transparent crossfade split to the final item via S and enter the album title there.

Metadata Reporting

This function runs automatically as the final part of the Create CD Markers function but can also be run separately via **ReaClassical › Mastering › Show Metadata Report**.

```
CD Text Information
===================
  Language      : English
  Tracks        : 1-4
  Title
    Disk  : Fire and Moonlight
    Trk 01: Sonata No.28
    Trk 02: Sonata No.29
    Trk 03: Sonata No.30
    Trk 04: Sonata No.31
  Performer
    Disk  : Jones
    Trk 01: Jones
    Trk 02: Jones
    Trk 03: Jones
    Trk 04: Jones
  Composer
    Disk  : Scarlatti
    Trk 01: Scarlatti
    Trk 02: Scarlatti
    Trk 03: Scarlatti
    Trk 04: Scarlatti
  Message
    Disk  : Created with ReaClassical
  Genre
    Detail: Classical
```

Figure 20. Example Metadata Report

This is a great way to see all album metadata clearly in one window and could be copied and pasted into a report to send to the factory for checking against the metadata found in the DDP image itself. The function will also alert the user if some track metadata labels (COMPOSER=, PEFORMER=, SONGWRITER=, ARRANGER=) have been used without also using them album-wide via the @ item

name. For more information about DDP metadata see here (also available via the Render dialog via **Format › DDP** and clicking on **[Help]**).

Creating CUE Files

A CUE file is automatically generated as part of the Create CD Markers function (Y). You can change the production year of the project as well as the CUE audio format in ReaClassical Project Preferences. The high-resolution audio portion can be generated separately in the render dialog via the preset. The naming defaults to that set by the CUE file which is the project filename followed by the audio extension set via F5.

BIN+CUE set

Create a BIN/CUE pair (either select `regions define tracks` and render the whole project or select `use only # markers` and render by time selection if you don't want the first pre-gap as actual silence at the start of track 1).

Album Reports

When using the shortcut Y, ReaClassical also generates both a plain text and HTML album report in the project folder including details such as pre-gaps, track title, start time, track length, UPC/EAN and ISRC (if present), total running time etc. This is a fantastic and automatic way to send information to clients or a duplication/replication factory.

Generated by ReaClassical (17/12/2023 10:06pm)

Album: Fall Recital 2023
Album Performer: Kirkly
UPC/EAN: 1234567890123
Total Running Time: 34:06:15

Track	Start	Length	Title	ISRC
p	00:00:00	00:02:00		
01	00:02:00	04:04:24	Kirkly: Prelude No.1	GBR3C2300019
02	04:06:24	04:28:26	Kirkly: Prelude No.2	GBR3C2300020
03	08:34:50	07:03:09	Kirkly: Prelude No.3	GBR3C2300021
04	15:37:59	04:53:62	Wollenberg: 'Midnight' Etude	GBR3C2300022
05	20:31:46	05:27:41	Tarrasch: Little Fugue	GBR3C2300023
06	25:59:12	02:29:64	Whittaker: 'Lyrica' Prelude	GBR3C2300024
p	28:29:01	00:03:00		
07	28:32:01	05:34:14	Whittaker: 'Lyrica' Fugue	GBR3C2300025

Figure 21. A example of a ReaClassical HTML album report

Rendering

Presets

ReaClassical includes various rendering presets to make rendering extremely quick and easy. In the Render dialog `R`, click on the presets button then `All Settings`. The preset names are self-explanatory. The first four entries are for exporting a whole album as a single audio file. The remaining use the automatically created regions after using the Create CD Markers function `Y` to create automatically named folders of audio files, one per CD track. After selecting a preset, you should feel free to change any render settings and perhaps save as a new preset for future use. By default, the presets use the built-in REAPER standard triangular dither.



```
Audio for CUE export
BIN+CUE
DDP
Export for External Resampling
FLAC 44.1k 16-bit
FLAC 44.1k 24-bit
FLAC 48k 16-bit
FLAC 48k 24-bit
MP3 192kbps
MP3 320kbps
WAV 44.1k 16-bit
WAV 44.1k 24-bit
WAV 48k 16-bit
WAV 48k 24-bit
```
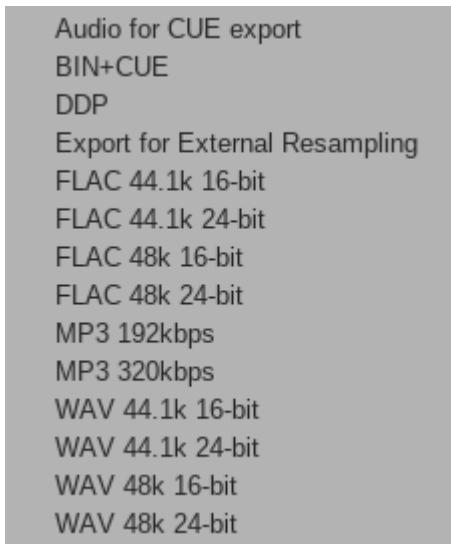
Figure 22. ReaClassical render presets

Samplerate

Now that r8brain free has been introduced as the best quality resampler available in REAPER (I highly recommend double-checking that it is selected when resampling at render time) I feel I can do everything, including DDP creation, without leaving my favorite DAW. However, generating a CUE file via the Create CD Markers function is still useful for all sorts of things and I often create FLAC + CUE for album playback in my media player or WAV + CUE to easily burn a CD at home.

Dither

Use either the built-in REAPER dither options or RCDither as the last plugin on the master chain. If using RCDither or any other 3rd-party dither be sure to keep the master fader at unity and disable all REAPER dither checkboxes.

Loudness & Limiting

REAPER has a fantastic rendering feature which allows the user to set a desired loudness and peak / true peak setting. For quick exports that need to meet certain targets (i.e. streaming) this makes things extremely efficient and is very transparent when not set to extreme values.

Dry-run Rendering

Another REAPER feature that is outstanding is the dry-run render function which allows for very quick offline loudness and peak checks and much faster than using REAPER's included realtime loudness meter. It is therefore extremely easy to set up compressors, limiters etc in the project and make small adjustments based on the dry-run values and maintain complete control over the process.

Other Rendering Tips

Not necessarily obvious to new REAPER users are the special =START and =END markers (make your markers in the usual way and label them accordingly) that constrain the length of the project. Rather than rely on extended silence at the end of items or time selections, the =END marker is a great way to ensure you have the exact amount of lead-out you want at the end of the disc. Positioning both special markers is great way to generate files for multi-disc releases without having to rely on multiple projects.

You will hopefully notice I have included various shortcuts for manually creating regions (single or multiple) from items and time selection (great for quickly generating demo snippets). Also worth noting is that you can still do some (or all!) of your source-destination editing with your track markers in place as the S/D markers have IDs far higher than any classical CD would have and are automatically deleted after a successful edit. As long as you have your ripple-per-track mode engaged, all your existing marker placements and carefully crafted edits will remain intact. But, again, don't manually create CD markers at this point as I include a very powerful tool to make light work of that side of mastering.

Project Management

Statistics

For a complete set of statistics on the ReaClassical project, either for your own information or to assist with billing a client, go to **ReaClassical › Utilities › Show Statistics** or use the shortcut `F1`. For example, you might have a billing system that charges clients based on number of source-destination edits, or mixing/mastering based on the final length of the album. Information includes: final album length, number of CD markers, project age, total project length, total length of source material, total number of items, number of track folders, number of tracks per group, number of *special* tracks, number of regions, number of destination S-D edits, number of destination item splits, FX count and number of automation lanes.

Typing Notes

Document your takes either using the built-in REAPER project notes or SWS Notes (for *Notes*) which can be attached to items, tracks, markers etc. I personally prefer item notes on the main microphone pair. It's a very useful tool to have docked at the bottom of the screen.

Folder Structure

ReaClassical defaults to placing media and exports into appropriately subfolders making project file

navigation easier. Also, ReaClassical defaults to separate folders for automatic backups and auto-saves. These settings are subject to change and can be modified by going to the REAPER preferences `O` (for *Options*).

Automatic Backups

REAPER allows for powerful and complex backup routines. As referenced above, ReaClassical defaults to 10 time-stamped backups and 10 auto-saves every 15 minutes when not recording. Feel free to modify for your own way of working including switching to backups and auto saves for a number of unique days.

Cleaning

If in doubt, keep everything! Otherwise, the **File › Clean currrent project directory** is an excellent way to reduce the size of your projects. Note that when assigning a session name via the Take Counter Window, currently the above REAPER menu item doesn't search recursively. In a way, this reduces the chances of accidentally deleting precious takes. You can always manually delete but, from experience, it is *much* better to simply keep everything.

Archiving

There are various ways to archive classical music projects. First, you can access the Project Bay by `Ctrl` + `B` shortcut. You can then ensure that all media used in the project is contained within the project folder itself. If not, you can select as many as necessary, right click and move/copy into the project folder. After this, you can simply compress the folder as a zip and store on an external drive. A further step to guaranteeing ability to open in the future is to freeze tracks so that plugin effects are baked in (with ability to unfreeze later if possible). Alternatively you can save a copy of the project via **File › Save project as...**, converting to a format like FLAC and trimming the media as you wish. Finally, one to look out for in the future is Project Archiver. However, I don't believe it is quite ready for prime-time yet and recommend using one of the other methods for now.

End Matter

Thanks

I am appreciative of the collective contributions of the REAPER community with regards the early source-destination actions (Pelleke, in particular), MPL, X-Raym, BirdBird, RCJacH, Sai'ke, Meo-Ada Mespotine, cfillion and many more. Finally, many thanks to Justin and Schwa for such an amazingly versatile DAW.

Closing Thoughts

I hope you enjoy the ability to do serious classical editing with ReaClassical on REAPER and that my efforts go some way to making things better, easier and more efficient. Remember that if you find any oddities with the functions or have a bright idea for something new and shiny, please add your thoughts to the dedicated thread on the forums and/or create an issue or start a discussion on my

Appendices

A: Description of ReaClassical Functions

Preliminary Note: These proceed in a quasi-workflow order. I include the default shortcut keys if using my portable install or resource folder base. You can also use the custom toolbar via the mouse.

Create/Sync Horizontal Workflow `F7`

Description: The way to create a horizontal workflow with a single folder group with as many tracks as you need. It can also be used with an single existing folder group to re-sync track names and re-build project routing.

Notes: Use on a completely empty project. I would use this if you are planning to use a horizontal approach to source-destination editing (i.e. the various takes are laid out from left to right) or if you want a quick way to set up a mixing/mastering track set with a single take. The function automatically sets up the tracks for group media and razor-editing along with dedicated mixer tracks. These mixer tracks should be used for all track settings (names, volume, pan, polarity, sends and FX).

Create/Sync Vertical Workflow `F8`

Description: A multi-use function to 1) set up a vertical workflow with destination and source groups with as many tracks as you need, 2) to create source groups from an existing destination folder group (for example, created with `F7` shortcut) and, for in the middle of editing, 3) to (re)create project routing and sync track-naming, record inputs and lock states. Note that for 3), all folders should contain the same number of tracks.

Notes: For all track settings (names, volume, pan, polarity, sends and FX) you should use the dedicated mixer tracks.

Explode multi-channel item `F10`

Description: Explode multi-channel item(s) to either all mono or stereo-interleaved + mono

Notes: Import your multi-channel media using a single regular track (for a horizontal workflow) or multiple regular tracks (for a vertical workflow). Then, simply press (no need to select the items). Answer **[yes]** to the prompt that appears if the first two channels should be treated as stereo interleaved (i.e. they represent your main pair). Depending on the choice made, the number of tracks in the resulting folder(s) will adjust accordingly. Then you are given the opportunity to name your tracks. Obviously if you decide to move to a vertical workflow after exploding using a single track, you can always use `F8` to create your source folders then drag the media to where you want them. If you need to bring in new takes after editing has started, simply use the function on an empty project tab then copy or cut them into the original project tab into the desired folder on the timeline.

Add special track(s) #

Description: Adds one or more special tracks (aux, submix, roomtone, reference)

Notes: ReaClassical projects can have any number of special tracks but are limited to a single roomtone track. See below for details of each kind of track.

Aux send: Add a rosewood-colored aux track prefixed with an ampersand (@) to the end of the track list but is only visible in the mixer. This allows the user to keep assigned aux tracks visible in the intelligent mixer. Create any connections to the aux in the destination group (including child tracks) and then push to the source groups via the Vertical Workflow function F8 . This routing is maintained during subsequent or F8 syncs. Set Maintain Mixer ⇒ RCMASTER to 0 to add a hyphen (-) to the end of every mixer track thereby removing the direct connection to RCMASTER allowing for all sorts of nice custom routing. By default the final option is always set to 1 to maintain whatever routing you currently have.

Submix: Add a teal-colored aux track prefixed with an hash (#) to the end of the track list but is only visible in the mixer. This allows the user to keep assigned submix tracks visible in the intelligent mixer. Create any connections to the submix in the destination group (including child tracks) and then push to the source groups via the Vertical Workflow function F8 . For correct routing to a submix (versus a send), simply add a hyphen (-) at the end of desired track names in the mixer tracks and sync via F7 or F8 . Now those related mixer tracks will not route directly to RCMASTER. As an example, say tracks 3-6 are all string section microphones and you'd like to first sum them all to a string submix track called *#strings*. Just add a hyphen to the end of the names for tracks 3-6, sync and then create the routing to #strings via click-dragging from the routing stripes. This routing is maintained during subsequent F7 or F8 syncs.

Room tone: Add a burnt sienna-colored aux/submix track labeled *RoomTone* to the end of the track list that is visible in both the track and mixer panels. The track will be included in the signal path via the regular audition function A . If present when creating CD/DDP via the function will also generate volume automation to create perfect crossfades with the items on the first destination track. Slicing and dicing room tone audio to fill in digital silence is now a thing of the past. Simply add a long recorded or convolution-generated room tone audio item before running the function. The ReaClassical way of dealing with room tone is non-destructive and instant!

Reference: Add a reference track labeled *REF* to the end of the track list that is visible in both the track and mixer panels. If you rename, a *REF:* is automatically added. The track will be placed outside of RCMASTER signal path and easily auditioned via A .

Hide and Show child tracks / automation lanes E and D

Description: Hide child tracks to save screen estate and for working with multi-channel takes as if working with just stereo. In *mastering* mode, the shortcuts also work for hiding and showing automation lanes.

Notes: Select a folder track and press E to hide the children or D to show them. All S-D and razor editing functions work perfectly while folder groups are collapsed. This recreates a popular way of working with classical music takes in Pyramix. In *mastering* mode, select a track containing automation lanes and press to E hide the automation lanes or D to show them.

Take Counter Window `Ctrl` + `Enter`

Description: Track take numbers and session name during recording sessions. Schedule recordings by start/end time or duration.

Notes: The window will also open automatically with Classical Take Record (`F9`) if not already running. It is advised to save your project and name your tracks before starting to record. This ensures that the recorded files have usefully unique names. You can right-click on the window to override automatic take numbering (0 = off (recommended), 1 = override), set a take number to increment from and optionally set a session name to act as media subfolder. You can left-click to recalculate the track count if you have removed some unused files from the project path. The calculated upcoming take number factors in unused files in the project path so as to avoid any file-naming conflicts. You should find this to be an extremely robust take system that rivals Pyramix, Sequoia etc. To schedule a recording or limit by duration, right-click on the take counter window and add the appropriate entry or entries in HH:MM format. After pressing **[OK]**, the take counter window will display information to the right of the take number. If you enter a start or end time earlier or equal to the current time, the function will assume a next day schedule and will annotate the time with an asterisk (*). Likewise, with both a start and end time, if the end time is earlier than or equal to start, it will assume a time 24 hours later. Don't forget to arm your tracks before walking away!

Classical Take Record `F9`

Description: A one-button shortcut for stopping and starting recording of takes.

Notes: To use, select a folder track, position the edit cursor if necessary and press `F9`. If the parent isn't already record-armed (probably the case before you start your first recording of the session), the function will first simply record-arm the group so you can usefully monitor incoming signal in addition to opening the take counter window. On a subsequent press of `F9` recording begins. Press again to stop the recording. To immediately start a new take, simply press `F9` again. To pause and unpause a recording without starting a new take, toggle the pause button in the transport or use the shortcut `Ctrl` + `Spacebar`. Note that in a vertical workflow, the next folder has already been selected, record-armed and that the cursor returns to the original position for easy lining up of takes. If you run out of source groups, the function will automatically create a new one.

Rank Take Higher `Ctrl` + `=`

Description: Rank higher the last recorded item or selected item(s) (and those in the same group)

Notes: During or after recording, you can rank one or more recorded takes. If no item is selected, the last recorded item (along with other items in the same group) are affected. Otherwise, you can select one or more parent items. The ranking system uses a series of colors and a scale system of plusses and minuses (+/-) added as a suffix to the item name up to a maximum of three symbols. This allows for seven different rankings. Positive rankings are 3 intensities of green (good, very good, excellent), negative rankings are yellow, orange, red (below average, poor, unusable), with neutral (no ranking) using the default item color.

Rank Take Lower `Ctrl` + `-`

Description: Rank lower the last recorded item or selected item(s) (and those in the same group)

Notes: See the notes above.

Remove Take Ranking `Ctrl` + `0`

Description: Remove any ranking from the last recorded item or selected item(s) (and those in the same group)

Notes: See the notes above.

Set New Recording Section (vertical) `Alt` + `F9`

Description: On transport stop, move back to, and record-arm, the first group. The edit cursor is placed 5 seconds after the end of the final item in the project.

Notes: This function can be used when you are ready to record a series of takes for new musical material. In combination with the standard `F9` behavior that automatically moves to the next available source group (creating extra as needed), it is very quick to organize your recording session with takes of the same material vertically aligned.

Increment Take Number `Shift` + `F9`

Description:

Notes:

Add Track To All Groups `Shift` + `T`

Description: Add a new microphone to all folders (or a single folder) mid-recording session.

Notes: The function will prompt for a track name and then a new track will appear at the end of every folder and mixer track set. You could follow up by moving the track using the function below.

Delete Track From All Groups `Ctrl` + `Shift` + `Delete`

Description: Delete the selected mixer track and associated child tracks from all groups in the project.

Notes: Available for both horizontal and vertical workflows, simply select a single mixer track and press the shortcut.

Prepare Takes `T`

Description: Intelligently prepares recorded or imported takes for source-destination editing. Coloring scheme is set in ReaClassical Project Preferences `F5`.

Notes: With a single folder group (or individual tracks), the shortcut will auto-color and group takes from left to right. With a vertical workflow consisting of a destination group and multiple source groups, the function will auto-color top to bottom and group folder items left to right. Essentially in either setup, takes are given different colors and all items associated with a take grouped for editing. The function also allows for takes that don't start or end exactly at the same time (this can happen if you receive pre-edited materials). The end result is if you drag one item of a take group, every other item will move in sync. NOTE: The function was designed for use after initial recording

or importing of media but as of 24.5.3 should work at any point during editing (for example to import a patch recording). In this case, the destination group items will switch to using alternating colors so that you can easily see where your edits are on the timeline. And, as of 24.8.5, the function uses the *Prepare Takes: Random colors* value from ReaClassical Project Preferences to use either the new color scheme (default, set to 0) or the old random color method (set to 1). A reminder that the new REAPER native grouping (when set up via Horizontal or Vertical Workflow functions) works for 99% of situations without Prepare Takes but for takes that don't start or end at quite the same point it is a must. Prepare Takes honors any custom colors set via the Colorize function `K`.

Duplicate Folder (no items) `\`

Description: Create a duplicate without media items of the highlighted folder.

Notes: Note that in a vertical workflow, Classical Take Record `F9` automatically creates new folders if needed, this function does not need to be used when recording material. However, if importing pre-recorded takes and you need more source groups to accommodate the material, this is still very useful.

Colorize `K`

Description: Add a identifying custom color to an item and those in the same group.

Notes: Useful for identifying where a S-D edit originated.

Audition `A`

Description: Mouse-driven auditioning of folders or individual tracks.

Notes: Simply hover the mouse over an area of the project and press `A` to begin auditioning the audio. With `A`, hover over a folder track to hear the complete mix or a single track within a folder for listening to individual instrument or sections. Note that the `A` function honors any aux or submix track routing. The main function respects soloed or muted @ aux, # submix and roomtone tracks so you can easily and quickly set up a custom audition mix including a full mix, just the string submix, a single reverb bus and anything else you can imagine!

Audition With Custom Playback Rate `Shift` + `A`

Description: Mouse-driven auditioning of folders or individual tracks but with a custom playback rate.

Notes: Works in the same fashion as regular ReaClassical auditioning but you can set the custom playback rate via `F5`. Note that regular auditioning will automatically use the standard playback rate.

Whole Project View Horizontal `Ctrl` + `Alt` + `→`

Description: Zoom to show the whole project horizontally.

Notes: Very useful for a birds-eye view of your project so you can navigate to another section. If there are multiple folders, the function collapses them. If fewer than two folders, the function respects the current folder view.

Whole Project View Vertical `Ctrl` + `Alt` + `↓`

Description: Zoom to show the whole project vertically.

Notes: Very useful for a birds-eye view of your project so you can see all vertical take folders. The function respects current child track visibility to allow for a typical editing situation of viewing all of the destination group but only the folder tracks of source groups.

Zoom Out to All Items* `` ` ``

Description: Zoom out to show all items in the project.

Notes: Only zooms out enough to show all items and not lower empty groups and tracks. Run again to return to the previous zoom level.

ReaClassical Project Preferences `F5`

Description: Set S-D crossfade length, CD track offset and INDEX0 pre-gap length (CD player countdown into next track), album lead-out time, Prepare Takes colors, S-D Destination Marker Check Range (ms), REF = Overdub Guide, Add S-D Markers at Mouse Hover.

Notes: These values are saved on a per-project basis. While the INDEX0 pre-gap length can be set lower than 1 second in the dialog box, the *Create CD Markers* function `Y` will ignore and use a value of 1 second as this is the lowest that makes any sense for displaying the countdown to the next track. Prepare Takes by default uses the new color scheme for items (`Prepare Takes: Random colors` set to 0) which is two shades of blue for horizontal workflows and blues and greens for vertical workflows thereby aligning closely with the colors of the S-D markers. The old coloring method (*Prepare Takes: Random colors* set to 1) uses random colors per item group. This can help see where edits have come from but because of the randomness may require several iterations until you avoid clashes or eye-sores! The user can change the checking range (distance beyond an item edge/fade or crossfade) when placing destination IN and OUT markers. Setting to 0 would just check if the marker would be placed *inside* a item fade or crossfade. If the reference track is set as overdub guide, it will be audible during classical take recording and auditioning which is extremely useful for overdub recording of material after the main session such as a symphonic organ part or narration. Finally, you can set `1`, `2`, `3`, and `4` to add markers at the mouse hover position vs edit cursor. In this mode, you can also enter the fade editor by hovering of the right-hand items of a crossfaded pair and pressing `F`.

Find Take (based on filename) `Enter`

Description: Enter a take number based on the numerical suffixes at the end of filenames and optional session name to quickly jump to that media item.

Notes: If the function can't find a media item with that take number and optional session name, it will let you know and offer to try again with a different number or session name. This will work for any file-naming system that uses numbers before the file extension such as *mvt1_main_pair-T04.wav* or *beethoven_cello-take_23.flac*. Note that if the imported or recorded files have zero-padding that is not a problem as the function strips these away. The session name search can be used to find any text in the filename and allows for partial searches. If you have used an item to create an S-D edit, searching for a take will ignore these items and move directly to the original

sources.

Jump To Time (Selected Item(s) or Project) `Tab`

Description: Press `TAB` to jump to a specific absolute or relative time using right-aligned logic, similar to video editing applications. This can be an absolute time within the project or an relative position inside a selected item or a set of consecutive crossfaded items.

Notes: Various use-cases include 1) a musician or producer giving you an exact time in draft exported audio of a heavily-edited symphony movement where they identified extraneous noise or a noticeable edit, 2) building S-D edits from a list or score which includes take number and timecode. Prefix with + or - to make relative jumps.

Source-Destination Markers `1`, `2`, `3`, `4`

Description: Add source-destination markers ready for making the edit.

Notes: `1`, `2` = destination IN/OUT; `3`, `4` = Source IN/OUT. In between the destination markers is where the edit will actually happen. In between the source markers is where the material is taken from. Use all four markers for 4-point editing. Use any combination of 3 markers for 3-point editing. Use either 1 source and 1 destination (more useful) or just the source markers for 2-point editing (less useful). By default, the markers are added at the edit cursor location. It is very important and useful to note is that the source marker labels reflect which source group was highlighted when the markers were placed. In other words, to create source markers at the edit cursor, first select the item in the chosen folder track and then use the `3` & `4` shortcuts. This means that when the actual edit is made (using `5`) it doesn't matter what is highlighted at the time. Obviously this is only useful if using a vertical take system approach. Additionally, you can set the placement of S-D markers at mouse hover position via ReaClassical Preferences (`F5`). The benefit, other than speed, is that you don't have to worry about making sure source tracks are selected by clicking on the item - simply hover over the desired item and add the source markers!

If you attempt to set one of the destination markers inside of an existing crossfade or within 500ms of a crossfade or item edge, the function will alert you (pressing **[OK]** places the marker anyway). This helps avoid awkward *sliver* edits that can happen especially if you are zoomed out and placing markers by ear. You can set the check range via `F5`. The check range (in milliseconds) is the distance beyond an item edge, fade or crossfade. For example, setting to 0 would only check for placement *inside* a fade or crossfade.

S-D Edit `5`

Description: Make the source-destination edit (2-, 3- and 4-point editing)

Notes: Once you have placed your S-D markers press `5` to make the edit. Whatever the number of markers you used, the edit will be crossfaded using a short equal power fade (you can change this in REAPER via **Preferences... › Media Item Defaults**) and when using 4 markers, the S-D markers removed ready for the next edit. The edits are perfectly crossfaded and the user only needs to focus on the selection of source material. For any S-D edit you can, of course, undo the action and return to the previous state. The desired crossfade length is set via ReaClassical Project Preferences `F5`. Note that this function can be used in multi-tab S-D editing mode (see below).

Reverse S-D Edit `6`

Description: Make a *reverse* source-destination edit (3-point edit)

Notes: Place your destination markers using `1` and `2`, then set a source IN marker with `3`. Pressing `6` will copy or move the material between the destination IN and OUT markers to the selected source group, as determined by the `3` shortcut. Upon execution, you will be prompted to choose whether to copy or move the material. This function operates similarly to the **Copy/Move Destination Material to Source** functions but allows for precise selection using S-D markers.

3-point *Assembly Line* Edit `F3`

Description: Uses both source markers and destination-IN marker to compile edits from start to finish.

Notes: The destination-IN marker is retained and placed at the end of the edit so that for subsequent operations the user only has to set the source markers. Worth repeating from the S-D edit notes:

_ _*...the source marker labels reflect which source group was highlighted when the markers were placed. In other words, to create source markers, first select the item in the chosen folder track and then use the* `3` *&* `4` *shortcuts. This means that when the actual edit is made (using* `5`*) it doesn't matter what is highlighted at the time.* __

If you accidentally move the location of the destination IN marker in the middle of assembly line editing, the function will let you know and offer to move the marker back to the right edge of the latest item in the edit. This will even allow you to do some regular 3- or 4-point editing earlier in the sequence before continuing with the assembly line edits. Just place the destination IN marker anywhere in the project and answer **[No]** when the message box appears. Note that this function can also be used in multi-tab S-D editing mode (see below).

Insert with Timestretching `F4`

Description: Makes the source material fit the the space in between the destination markers using time-stretching vs rippling later material.

Notes: Requires placing all four S-D markers. This is less useful for classical music editing but perhaps very useful for video work where replacement material has to fit exactly into the time used by the original. Crossfade length is set via ReaClassical Project Preferences `F5`. Note that this function can also be used in multi-tab S-D editing mode (see below).

Delete with Ripple `Backspace`

Description: Deletes material between the source markers, rippling all later material.

Notes: This only affects the folder group that was highlighted when the source markers were placed which will almost always be the destination group (the top folder in the project). Crossfade length is set via ReaClassical Project Preferences `F5`.

Delete Leaving Silence `Ctrl` + `Backspace`

Description: Deletes material between the source markers, no rippling of later material.

Notes: This is similar to *Delete with Ripple* but instead leaves a gap where the original source material existed.

Copy/Move Destination Material to Source

Description: Copies or movies the entire destination material from the destination group to a newly-created source group below.

Notes: Run either the copy or move version of the function from the ReaClassical toolbar (no need to ensure the first track is selected) and the function will copy or move all items and edits from the destination group directly below to a newly created source group with Eastern Blue color for identification purposes. This allows for saving versions of finished edits either via iteration (*copying* so you can continue to make further edits) or fresh (*moving* so you can compile an alternate version of a best take from scratch). These different edits can then be easily auditioned via the `A` shortcut. This is similar to a Pyramix-style iterative editing method while still maintaining the destination group as the uppermost group.

Add Source Project Marker `Ctrl` + `Alt` + `3` or `Ctrl` + `Alt` + `4`

Description: Enables multi-tab editing

Notes: To work in multi-tab S-D edit mode, the user is required to use the S-D project markers as a pair, one in the *destination* tab and the other in the *source* tab. In multi-tab S-D edit mode, any source makers placed by the user are not deleted in order to aid a quick undo in the destination tab ready to reapply a tweaked edit.

Add Destination Project Marker `Ctrl` + `Alt` + `1` or `Ctrl` + `Alt` + `2`

Description: Enables multi-tab editing

Notes: To work in multi-tab S-D edit mode, the user is required to use the S-D project markers as a pair, one in the *destination* tab and the other in the *source* tab. In multi-tab S-D edit mode, any source makers placed by the user are not deleted in order to aid a quick undo in the destination tab ready to reapply a tweaked edit.

Delete all S-D Markers `Ctrl` + `Delete`

Description: Deletes source and destination markers.

Notes: Useful if you want to abandon a S-D edit, however, there's also no problem leaving the markers for another time given that shortcuts `1`, `2`, `3` and `4` replace any existing version of the marker. Also when running *Create CD Markers* function all markers are deleted in any case.

Delete all S-D Project Markers `Shift` + `Delete`

Description: Deletes both source and destination project markers

Notes: In order to switch back to regular single-tab S-D editing, it is important to run this command otherwise the S-D edit functions will continue to attempt to find markers elsewhere.

Classical Crossfade Editor `F`

Description: Opens a two-line crossfade editor view for precise finessing of S-D edits.

Notes: Since v7.40, REAPER includes an excellent professional two-lane crossfade editor similar in nature to the specialist classical DAWs such as Sequoia and Pyramix. Drag on the "ghost" waveforms to align transients and drag on the lower area or edge of the crossfade to move or resize the crossfade itself. Please see the REAPER manual for more details of what is possible including phase alignment and various view options.

To audition material:

1. Hover to the left of the crossfade and press `A` to audition the crossfade from mouse cursor to mirrored position on the other side of the crossfade

2. Optionally check the mute left/right item boxes to only hear one side of the crossfade or check *Solo crossfaded items* to only hear the visible items.

You can shuttle between crossfades using the `Q` and `W` shortcuts.

Classical Crossfade `X`

Description: Create a *classical* crossfade in regular project view.

Notes: While in the project view, drag an item (or grouped items) over another, move the edit cursor where you want the edit to happen and press `X`. Given the availability of S-D edit functionality and group razor-editing, this function is less useful in this context. Crossfade length is set via ReaClassical Project Preferences `F5`.

Build Edit List

Description: Creates an edit list for use by video editors.

Notes: Choose the *BWF Start Offset* version when the audio and video was synchronized to a timeclock and *using source file timing* to use internal times of the audio sources. Export CSV data using the button below the table. Use the offset option to apply a constant value in frames to correct possible timeclock sync issues.

Mastering Mode `Ctrl` + `M`

Description: Allows for focused work on the destination group. Couple with *automation* mode, to add mixer and FX parameter values as envelope points

Notes: Enter *automation* mode via `Ctrl` + `I`. All the envelope buttons will turn blue (*latched preview*) and you will see a message box with instructions. You can then use the function below. Exit *automation* mode again via `Ctrl` + `I`. The envelope buttons will then turn green (*read* mode).

Automation Mode `Ctrl` + `I`

Description: Coupled with *mastering* mode, allows for adding mixer and FX parameter values as envelope points

Notes: Enter *automation* mode via `Ctrl` + `I`. All the envelope buttons will turn blue (*latched preview*) and you will see a message box with instructions. You can then use the function below. Exit *automation* mode again via `Ctrl` + `I`. The envelope buttons will then turn green (*read* mode).

Insert Automation `I`

Description: Insert mixer and FX values as envelope points into automation lanes

Notes: Simply set any desired mixer controls or parameters in an open FX window) on one or more tracks and press `I` to enter the values as points on the automation lanes at the edit cursor position or, if one exists, within the time selection.

Reposition CD Tracks `Ctrl` + `Y`

Description: Create uniform custom spacing between CD tracks.

Notes: Using the same system as *Create CD Markers* below, this function works intelligently based on whether items have a take name. If the take name is present, the desired silent gap is created. If not, the crossfade (or gap) is respected by shifting the item by the same amount as the previous one.

Shift CD track one track to the left/right `Ctrl` + `←` and `Ctrl` + `→`

Description: Shift CD tracks left and right along the timeline.

Notes: Select the start of a CD track and use the shortcuts to rearrange the order of your album. The function treats crossfaded CD track starts as part of the same group to cover instances where a movement follows on *attacca* to maintain the correct order. Then simply run or re-run the *Create CD Markers* function to create new markers that align with item starts.

Remove Take Names from Destination Parent `Ctrl` + `T`

Description: Run after source-destination editing is complete to remove recorded/imported take names from destination parent items in preparation for using the Create CD Markers function.

Notes: As mentioned below, add take names only to destination parent items that are to become CD track starts.

Create CD Markers `Y`

Description: Auto-generation of CD/DDP markers, UPC/ISRC codes, CUE file, metadata report, album reports, and room tone automation, for efficient DDP, bin/cue and individual file exporting. Checks against Redbook standards and returns warning messages if there are 1) more than 99 tracks, or 2) There are tracks shorter than 4 seconds, or 3) the total length of the project is greater than 79.57 minutes.

Notes: If working in horizontal workflow, ensure that there is over a minute's worth of empty timeline between the end of the proposed album and any other source material. Instead, you can also choose to drag any source material to new group by first creating an empty duplicate folder via `\`.

This might be the biggest time-saving function in the ReaClassical system. It works as follows: 1)

Edit gaps between items until you are happy 2) Add take names (and optionally other metadata) only to items that will become CD track starts 4) Add a take name starting with @ to the final item of the album and optionally add album-wide metadata 4) Run the function via shortcut `Y` and you will be asked to enter UPC/ISRC (optional). Done! Note that ISRC codes are auto-generated per track based on the numbers you enter.

You can add audio to the initial pre-gap (easter egg track) by not giving the first item (or crossfaded items) a take name. The function will assume that this is supposed to be hidden and generate the initial pre-gap length accordingly. All album metadata is placed towards the end of the album inside a default 7-second silent lead-out (so that CD players in cars don't immediately cycle back to the first track without a little breathing room). This value can be changed via the ReaClassical Project Preferences `F5`. In addition to markers, regions are also generated for easy exporting of individual tracks. If you need a countdown into a track, simply add a ! at the start of the take name (e.g. *!Allegro*). Then after running the function adjust the position as desired (it defaults to 3 seconds in length but this can easily be set in ReaClassical Project Preferences). It is worth repeating at this point that you should only give names to items that are track starts. If you skip an item, the function rightly assumes it is part of the previous track. Note that the markers snap to exact CD frames and if the media item start is in between CD frames, the function will always place the marker on the earlier of the two. By default, the function uses a 200ms offset for placement of the markers (as in, markers appear 200ms to the left of the media item start) but, again, this value can be set via ReaClassical Project Preferences.

If a room tone track exists in the project, the function will also generate volume automation to create perfect crossfades with the items on the first destination track. Slicing and dicing room tone audio to fill in digital silence is now a thing of the past. Simply add a long recorded or convolution-generated room tone audio item before running the function. The ReaClassical way of dealing with room tone is non-destructive and instant!

In addition, the function automatically generates a CUE file and album reports in both HTML and plain text formats. The year and audio format used by the CUE can be set via ReaClassical Project Preferences `F5`.

I feel that once you try this CD/DDP marker generation workflow, it is difficult to ever go back to other ways of working. The key thing to think about is that the markers and room tone fade-ins and outs are trivially easy to recreate if you change a gap between items or even rearrange the order of tracks. Just run the function again. The key is the workflow: all marker generation is automatically based on item positioning and naming. Plus, all metadata and ISRC is saved into the project file so once entered you don't have to ever type it in again unless you need to make changes. Room tone volume changes are made via auto-generated volume envelope points that precisely map REAPER's built-in fade curves.

Hopefully you agree that this way of working with CD/DDP layout is a game-changer, a real time-saver and simply a better way of thinking about this portion of the mastering process. For more information about DDP metadata see here (also available via the Render dialog via **Format › DDP** and clicking on **[Help]**).

Show Metadata Report

Description: Runs automatically as part of Create CD Markers function or separately via

ReaClassical › Mastering › Show Metadata Report. The function shows all proposed metadata that will end up as part of the rendered DDP fileset.

Notes: The function will alert the user if some track metadata labels (COMPOSER=, PEFORMER=, SONGWRITER=, ARRANGER=) have been used without also using them album-wide via the `@` item name.

Show Statistics `F1`

Description: For a complete set of statistics on the ReaClassical project, either for your own information or to assist with billing a client, use the shortcut or navigate to **ReaClassical › Utilities › Show Statistics**.

Notes: For determining project age, the project needs to have been created in ReaClassical 25.3 or higher. Otherwise, it will display *n/a*.

Lock Toggle (deprecated)

Description: Lock every source group (leaving the destination group free for editing in ripple-all mode)

Notes: This function is now deprecated but I will leave in place for now. It was useful before the new *Create CD Markers* function came into being as a way to engage ripple-all mode without disturbing source group items, thereby allowing moving of destination material along with CD markers in the final stages of the mastering process. There is no doubt that I much prefer working with the newer function. The lock toggle icon on the custom toolbar has now been replaced by a mug to represent the *Create CD Markers* action.

B: Shortcuts

Navigation

`Home` Project Start

`End` Project End

`Ctrl` + `Alt` + `→` Whole Project View (Horizontal)

`Ctrl` + `Alt` + `↓` Whole Project View (Vertical)

`` ` `` Zoom out to see all items in the project (toggle)

`Enter` Find Take (based on number found at the end of a filename and optional session name)

`Tab` Jump to Time (within selected item(s) or project)

`Ctrl` + `↑` Increase peaks display zoom for project

`Ctrl` + `↓` Decrease peaks display zoom for project

`Q` Previous Item edge

`W` Next Item edge

`,` Previous Marker

`.` Next Marker

Folder & Source Group Preparation

`F7` Create/Sync Horizontal Workflow (prompts for number of tracks) / Re-build routing etc

`F8` Create/Sync Vertical Workflow (from scratch or from single existing folder) / Re-build routing etc

`F10` Explode multi-channel items (polywavs)

`\` Duplicate Folder (no items)

`Shift` + `T` Add Track To All Groups

`Ctrl` + `Shift` + `Delete` Delete Track From All Groups

`#` Add one or more special tracks (aux, submix, roomtone, reference)

Recording & Take Management

`Ctrl` + `F9` Auto set recording inputs based on track names

`F9` Classical Take Record

`Ctrl` + `Spacebar` Record-pause

`Shift` + `F9` Increment take number while recording (use only during silence)

`Alt` + `F9` Set new recording section (in vertical workflow)

`Ctrl` + `=` Rank take higher

`Ctrl` + `-` Rank take lower

`Ctrl` + `0` Remove any take ranking

`Ctrl` + `Enter` Open Take Counter

`Alt` + `C` Open Big Clock

`T` Prepare Takes

`Ctrl` + `T` Remove Take Names From Destination Parent Track

`K` Colorize (add custom color to item group)

Editing

`A` Audition (full mix or child track) at mouse position (includes any unmuted `@` aux or `#` submix connections)

`Shift` + `A` Audition with custom playback rate (value set via)

`D` Display child tracks (plus display automation lanes in *mastering* mode)

`E` Ensconce (hide) child tracks (plus hide automation lanes in *mastering* mode)

`S` Split item

`J` Join (glue) item

`G` Group items

`U` Ungroup items

`F` Open ReaClassical Crossfade Editor

`X` Create a classical crossfade in arrange view

`V` Toggle per-track ripple editing

S-D Editing

`1` Add Destination IN marker

`2` Add Destination OUT marker

`3` Add Source IN marker

`4` Add Source OUT marker

`5` Make S/D Edit (2-, 3-, or 4-point cut)

`6` Make *reverse* S/D Edit (3-point cut)

`F3` 3-point *Assembly Line* edit

`F4` Insert with time-stretching (All 4 S-D markers)

`Backspace` Delete with ripple (between 2 source markers)

`Ctrl` + `Backspace` Delete Leaving Silence (between 2 source markers)

`Ctrl` + `Alt` + `1` Add Destination Project Marker (multi-tab S-D editing)

`Ctrl` + `Alt` + `3` Add Source Project Marker (multi-tab S-D editing)

`Ctrl` + `F12` Add Destination Markers to edges of selected item(s) or time selection (time selection takes precedence)

`F12` Add Source Markers to edges of selected item(s) or time selection (time selection takes precedence)

`Ctrl` + `1` Move to Destination IN marker

`Ctrl` + `2` Move to Destination OUT marker

`Ctrl` + `3` Move to Source IN marker

`Ctrl` + `4` Move to Source OUT marker

`Alt` + `1` Zoom to Destination IN marker

`Alt` + `2` Zoom to Destination OUT marker

`Alt` + `3` Zoom to Source IN marker

`Alt` + `4` Zoom to Source OUT marker

`Ctrl` + `Delete` Delete all S-D Markers

`Shift` + `Delete` Delete all S-D Project Markers

Crossfade Editor

Mouse hover + `A` Audition both sides of the crossfade

Mouse hover + `S` Audition just the left side of the crossfade

Mouse hover + `D` Audition just the right side of the crossfade

Mouse hover + `Shift` + `A` Audition both sides of the crossfade with custom playrate

Mouse hover + `Shift` + `S` Audition just the left side of the crossfade with custom playrate

Mouse hover + `Shift` + `D` Audition just the right side of the crossfade with custom playrate

`Q` Move to previous crossfade

`W` Move to next crossfade

Mastering

`Ctrl` + `M` Enter Mastering Mode

`Ctrl` + `I` Enter Automation Mode

`I` Insert Automation (mixer controls and FX parameters to envelope points)

`Y` Automatically generate a DDP set from items

`Ctrl` + `Y` Reposition CD tracks

`Ctrl` + `←` Shift CD track one track to the left

`Ctrl` + `→` Shift CD track one track to the right

`M` Add Marker

N Open/Close SWS Notes

L Region/Marker Manager

; Regions from items (SWS)

: Region from selection

/ Selection to item(s)

R Render

Miscellaneous

F5 ReaClassical Project Preferences (set crossfade length, CD track offset, INDEX0 pre-gap length, Album lead-out time)

F6 Open/Close ReaClassical custom toolbar

H Open ReaClassical help system (currently the PDF manual)

Shift + H Open ReaClassical audio calculator

F1 Show ReaClassical Project Statistics

O Options (Preferences)

P Project Settings

B Batch file converter

Shift + U Check for ReaClassical updates

Ctrl + U Check for REAPER updates (using REAPER update utility)

C: Recommended Free Mastering-Grade Plugins

First stop: *Reaplugs*, with particular mention of *ReaLimit* which I consider one of the best free transparent limiter available. You could easily mix and master a whole album using only these fine plugins. Others include:

EQ:

- **RCChannelEQ** (ReaClassical Channel EQ, included in the ReaClassical portable install and available in ReaPack via my repository). Uses DSP from airwindows *Baxandall* and Stillwell's RBJ Highpass/Lowpass Filters for broad-strokes EQing.

- **RCMasteringEQ** (ReaClassical Mastering EQ, included in the ReaClassical portable install and available in ReaPack via my repository). Uses DSP from airwindows *Hull2* with added *Range* drop-down (*Classical* or *Full*) for transparent, musical, broad-strokes EQing.

- **ReEQ** https://forum.cockos.com/showthread.php?t=213501. An amazing Fabfilter Pro-Q clone for detailed EQ work. Also comes with ReSpectrum which is an excellent analyzer. Both are

included with the ReaClassical install.

Compression:

- **RCCompressor** (ReaClassical compressor, included in the ReaClassical portable install and available in my repository). Uses DSP from Express Bus Compressor by Stillwell. Default settings and ranges tuned to classical music with auto release. Use as an insert.

- **RCParallelK** (ReaClassical parallel *Katz* compressor, included in the ReaClassical portable install and available in my repository). Also uses DSP from Express Bus Compressor by Stillwell to recreate the Bob Katz *transparent* parallel compression settings. There's only a make-up gain slider as everything else is baked in (-50dB threshold, 2.5:1 ratio, 1ms attack, peak detection mode). Use on a dedicated compressor bus and adjust the gain slider to taste (with the compressor signal somewhere between -15dB and -5dB lower than dry signal according to Katz).

Limiter:

- **RCLimiter** (ReaClassical limiter, included in the ReaClassical portable install and available in my repository). Uses DSP from Smooth Limiter by Geraint Luff to which I added 4x oversampling code. Defaults are tuned to classical music with true-peak and look-ahead functionality. Adjust the release to taste.

Reverb:

- **Convolution:** Convology XT (also runs perfectly at time of writing via yabridge on Linux) coupled with the Samplicity Bricasti M7 impulses. There are other free convolution plugins to use but, whatever the plugin choice, the Bricasti impulses in true stereo are fantastic and sound almost identical to the presets of the well-regarded Liquidsonics Seventh Heaven Professional.

- **Algorithmic:** For a free and open source option try my RCReverb (ReaClassical Hall reverb, included in the ReaClassical portable install as part of RCPlugs collection). For paid options, ValhallaDSP Room and Vintage Verb, Fabfilter Pro-R, Voxengo Sobor, Acon Digital Verberate 2 and Sonible smart:reverb are all excellent non-iLok options for classical music and work seamlessly via yabridge on Linux. Note that the Liquidsonics offerings no longer require a physical iLok so can also be used on Linux via yabridge and iLok Cloud activation if you are feeling brave.

Final mastering magic:

- *Sonnox Inflator*-**style wave-shaping:** Try **RCInflator Ultimate** (a clone of the Sonnox product) or **MagicFairyDust** on the final stereo bus. Both effects are included in the ReaClassical portable install.

- Or, for an easy complete console vibe, use the **RCConsoleChannel**, **RCConsoleBus**, and **RCConsoleFinalizer** at the end of regular tracks, busses and final 2-bus respectively. Note that RCConsoleChannel does not have any controls.
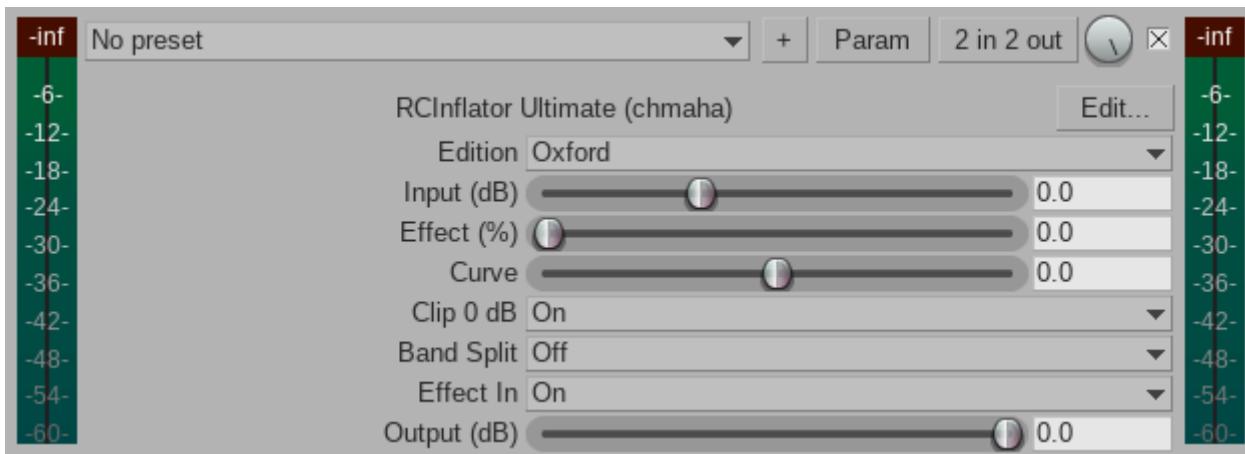
Figure 23. RCInflator Ultimate

Restoration:

- **Bertom Denoiser Classic** https://www.bertomaudio.com/. **Denoiser Pro** ($25) allows for individual per-band thresholds and includes an adaptive mode.

- **RCDeEss Standard** (ReaClassical de-esser, included in the ReaClassical portable install and available in my repository). Uses DSP from airwindows DeEss.

- **RCDeEss Advanced** (ReaClassical advanced de-esser, included in the ReaClassical portable install and available in my repository). Uses DSP from airwindows DeBess.

Utilities:

- **RCGain** (ReaClassical gain plugin, included in the ReaClassical portable install and available in my repository). Uses DSP from airwindows PurestGain. Useful before or after plugins in lieu of a native channel trim knob.

- **JS Loudness Meter Peak/RMS/LUFS** (Cockos) (included with REAPER).

- **RCTime&PhaseTool** (ReaClassical timing and phase tool, included in the ReaClassical portable install and available in my repository). Add to a spot microphone channel. Achieves something similar to Merging's PanNoir to correctly align spot microphone channels with the main pair based on a fundamental Euclidean geometric relation to create a more impactful stereo image.

- **RCMidSide** (ReaClassical mid-side encoder-decoder, included in the ReaClassical portable install and available in my repository). Use the default decoder mode if wanting to convert recorded mid-side to regular left-right stereo.

- **RCDither** (ReaClassical dither plugin, included in the ReaClassical portable install and available in my repository). Uses DSP from airwindows Not-Just-Another-Dither (Monitoring version) here called *Avant-garde*. This just might be the world's finest dither. There's a drop-down to select between 16-bit and 24-bit.

For descriptions of the other 100+ jsfx airwindows ports (covering dithers, compressors, console emulations, saturation/distortion, delays, bass-specific, brightness, hard and soft clippers, reverbs, tape/vinyl emulations, exciters, stereo wideners, monitoring utilities and more, please see the dedicated REAPER forums thread and import the airwindows JSFX ports repository into ReaPack.

D: Room Tone Generation

In **File › Project Templates** you will find a room tone generation template. The method is derived from here.

To create endless room tone based on the venue you recorded:

1. click **[Browse]** in ReaVerb and select your few seconds of recorded reverb.

2. Enable the FX on the first mixer track

3. Adjust the length of the included region to the length of your live album

4. Render using **Bounds › All project regions**

Then drop the resulting file into your ReaClassical album project on a dedicated Room Tone track (create via #) and run Create CD Markers via Y. You will see that automation-based fades are added to coincide with opposite fade types on the first track thereby creating perfect crossfades into room tone and back without any fuss.

E: System Tweaks

Windows

For a modern Windows 10/11 setup, required tweaks are minimal. Ensure that you are using 'High Performance' or ideally 'Ultimate Performance'. which, if not available, can be activated by opening a command prompt and typing:

```
powercfg -duplicatescheme e9a42b02-d5df-448d-aa00-03f14749eb61
```

You can then select it from the usual power plan dialog. For best device performance, remember to use the ASIO drivers that were included with your audio interface. Consider disabling your network card during mission-critical recording. For further tips see Microsoft's Unofficial Windows 10 and 11 Audio Workstation build and tweak guide. Of particular interest is Part 3 which discusses what *not* to do (including not setting your processor scheduling to 'background services').

MacOS

Performance should be excellent out of the box. Remember to disable energy saving (**System Preferences › Energy Saver**) so that sessions are not interrupted. Consider disabling your network card during mission-critical recording. If you are experiencing any audio issues while in your DAW, for tips see Focusrite's optimization page.

GNU/Linux

Linux users should visit my Arch Pro Audio Guide. Performance out of the box on Linux is getting better with every kernel release and is on par or better than Windows. As a starting point, ensure that your username is set up for realtime privileges (step 3) and that you set several kernel parameters to ensure you are running the performance governor, threadirqs and dynamic preempt

(step 4). To make things even easier, consider using a dedicated audio/video distro like AVLinux or Ubuntu Studio where everything is already set up for you.

Cross-platform

The good news is that REAPER and ReaClassical run on nine different architectures. You should always be able to open up a project on another machine even if it is running a different OS. Plus, ReaClassical includes various mastering-grade plugins in JSFX format that run on all architectures.