APU Harmonic DJ

User Manual

v1.2.9

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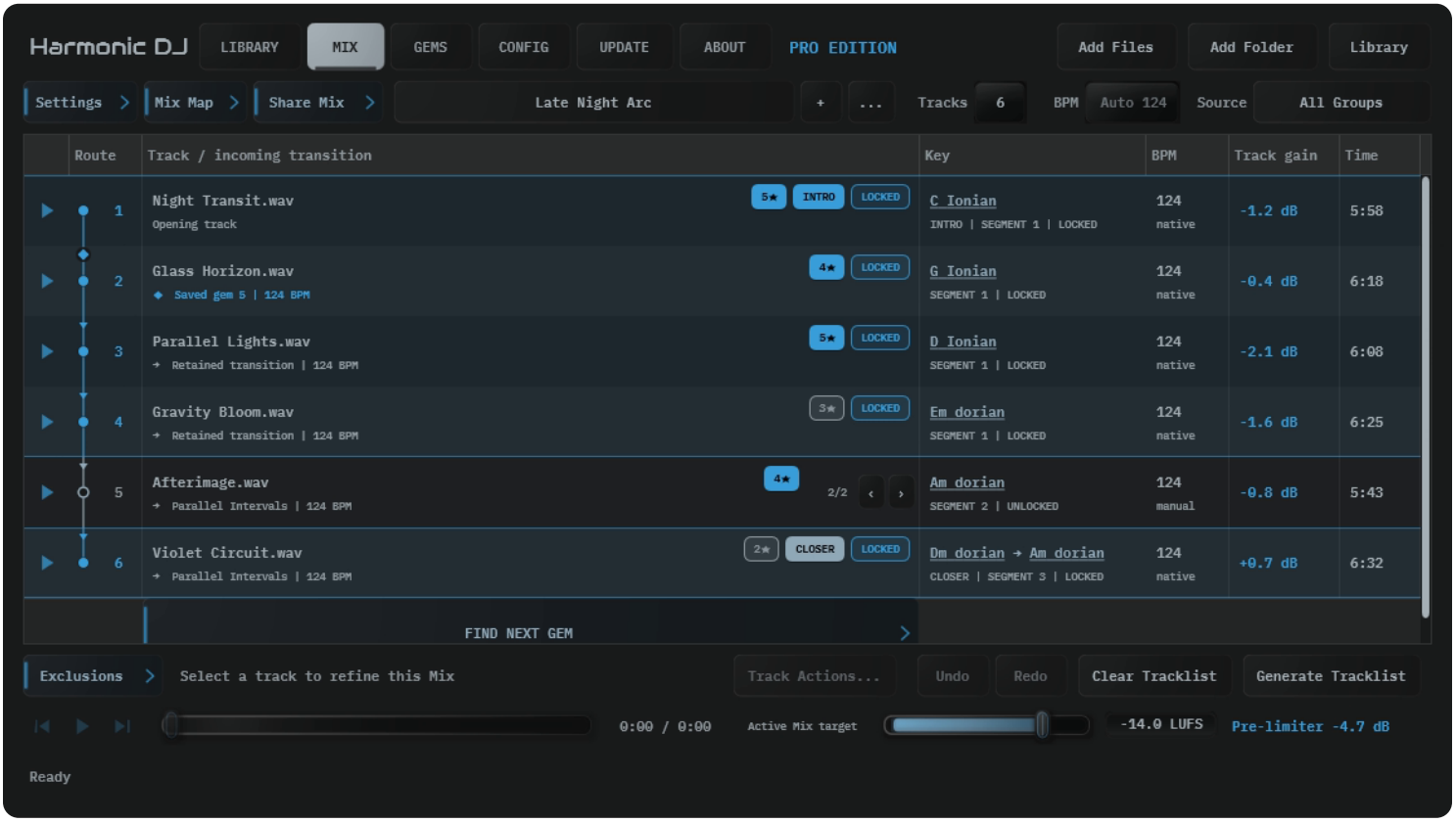
1. Introduction



APU Harmonic DJ analyzes a local music library and helps turn it into directed transitions and complete tracklists. It combines key and BPM detection with modal relationships, full harmonic evidence, gain guidance, and the transitions you personally save as Gems.

The basic workflow is simple: add music to the **Library**, create or generate a **Mix**, audition the transitions that matter, and save the strongest directed pairings as **Gems**. Harmonic DJ can do the routine searching while leaving the final musical decision where it belongs: with the listener.

Harmonic DJ is local-first. Audio analysis and audition happen on your computer. Shared collections contain path-free metadata and analysis rather than commercial audio, and a Mix document does not contain the audio files referenced by its tracklist.

Start with Getting Started for a first tracklist using the release defaults. The later sections explain how to refine a Mix, use Gem Finder, create custom transition profiles, and exchange metadata with another Harmonic DJ user.

2. Getting Started

A first useful result does not require any theory or custom configuration. Add a representative folder, let its tracks finish analyzing, and generate a Mix with the defaults. This gives us something musical to react to before changing the rules.

2.1. Install and Launch

Install Harmonic DJ using the package for your platform. The application and plug-ins are one matched installation and must use the same Harmonic DJ version.

- macOS includes the universal standalone application, VST3, Audio Unit, and AAX.
- Windows includes the standalone application, VST3, and AAX in both x64 and x86 packages.
- Linux x64 includes the standalone application and VST3. Linux plug-in host qualification is deferred; the current release-validation focus is macOS and Windows.

Keep the standalone application installed even if you primarily use a plug-in. It is a required installer component because it owns the shared Library database, scanning, and analysis work used by every plug-in instance. A host may scan the plug-in without opening the application; opening a plug-in editor connects to the Library and can start the application with its window hidden when necessary. Choose **Manage in App** to show that same application process for Library changes.

The application starts in Community unless a Pro trial or paid license is active. Community does not require an account or activation. Open **About** when you want to start a Pro trial or activate an existing license. Visit the APU Harmonic DJ product page to see current Pro pricing or purchase Pro.

On Windows N and KN editions, Harmonic DJ requires the Microsoft Media Feature Pack. The installer checks for the underlying Media Foundation components and can open Windows Optional Features when they are missing.

2.2. Use Harmonic DJ in a DAW

Add Harmonic DJ as an effect on a stereo audio track. The plug-in passes the host track through while its preview player is idle. Opening the editor connects it to the Library owned by the installed Harmonic DJ application; scanning or restoring a project without opening the editor does not need to show the application.

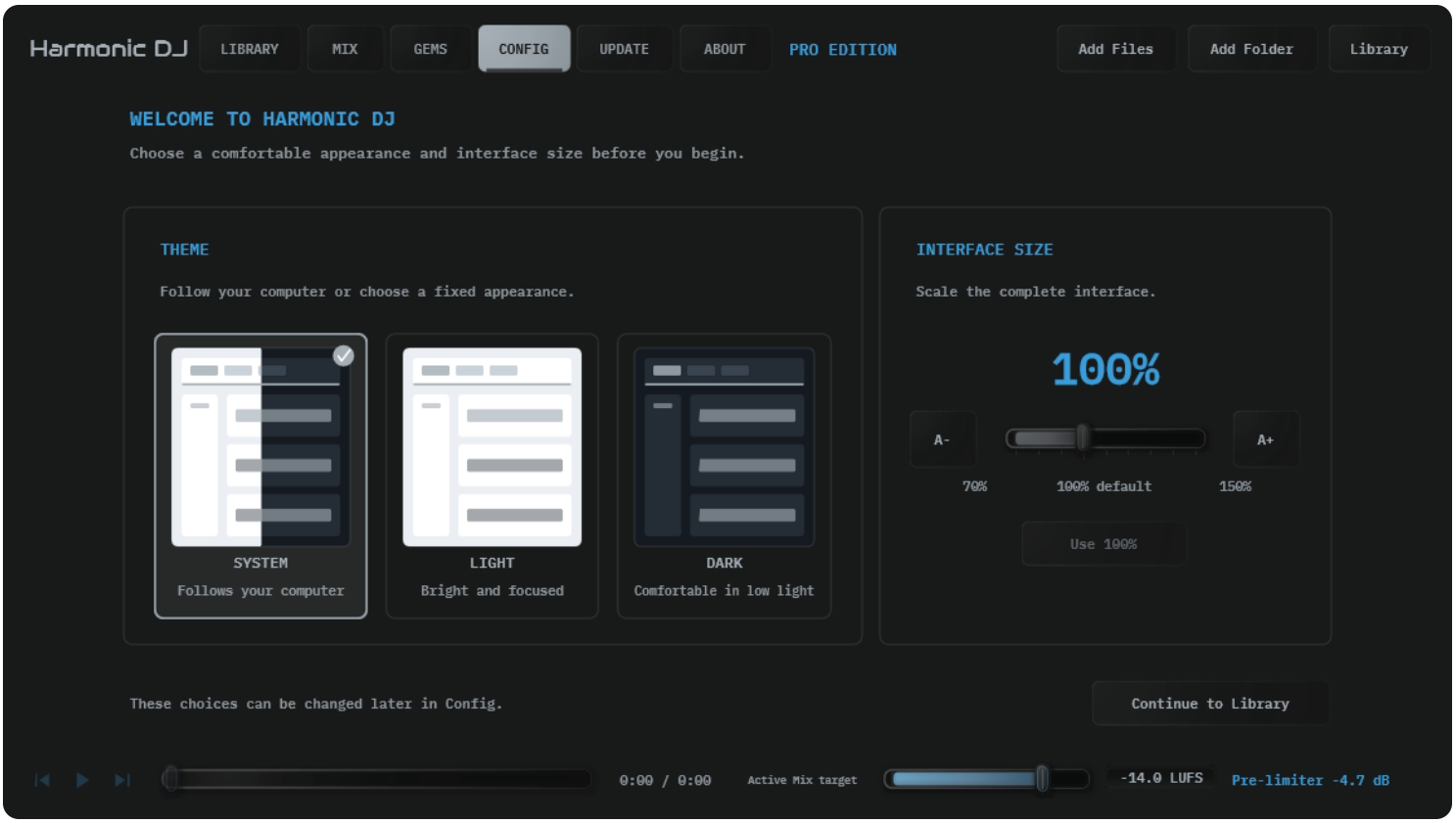
Each plug-in instance owns an independent Mix saved inside the DAW project. Closing and reopening the editor keeps that Mix alive, and reopening the DAW project restores its current revision. A plug-in Mix is not a live reference to whichever named Mix is open in the standalone application. Several instances can use the same shared Library while keeping their Mixes independent.

Library management remains in the application. Use **Manage in App** when you need to add, remove, rescan, or organize tracks. Library changes then become visible to connected plug-ins. If the application stops while a plug-in is open, the plug-in reconnects after the application returns. A version-mismatch message means the application and plug-ins came from different releases; update or reinstall the complete Harmonic DJ package together.

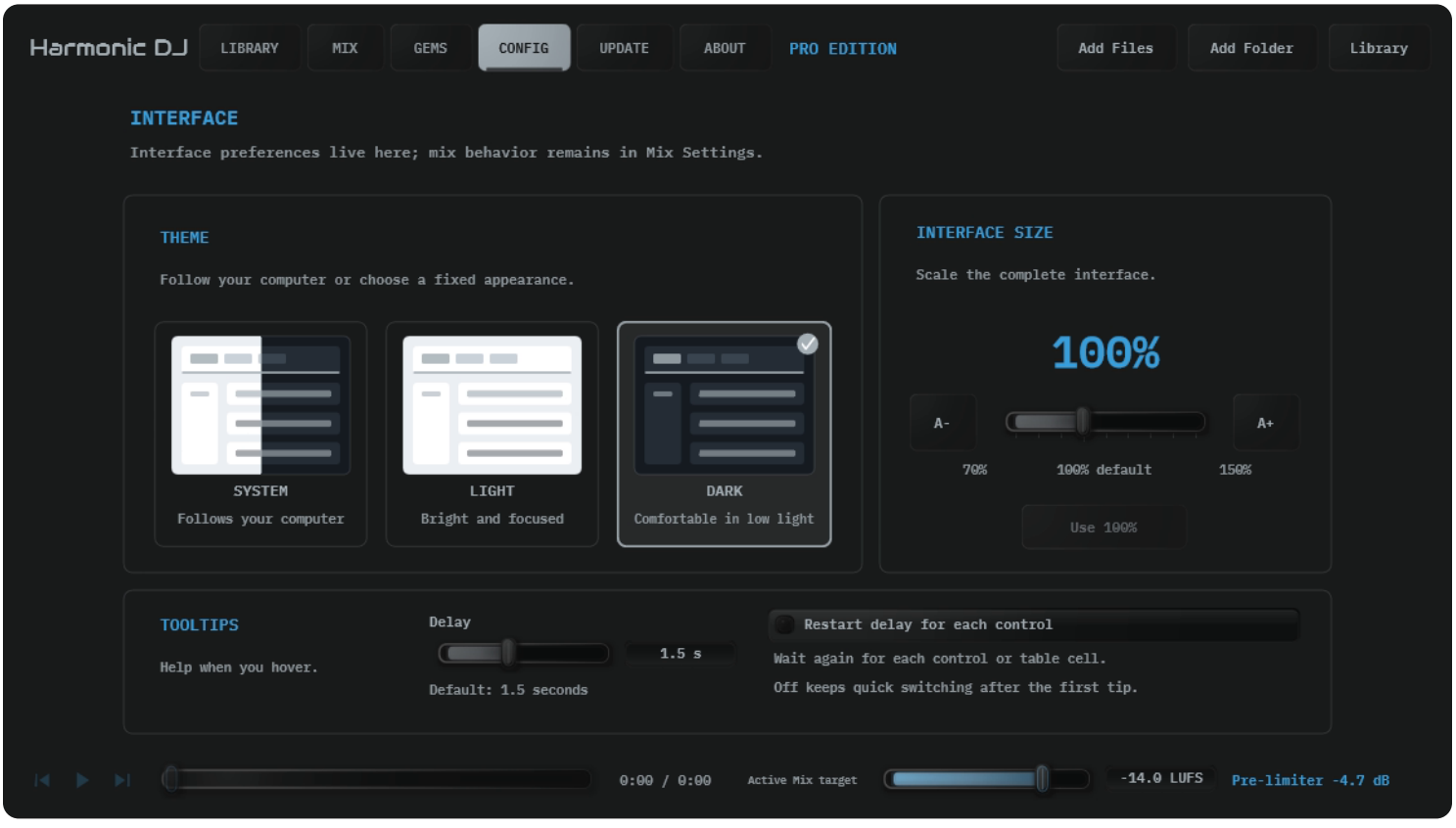
Preview plays through the plug-in's host output. Local tracks can be dragged from Harmonic DJ into a host arrangement.

When **Host BPM** is enabled and the host supplies tempo, Harmonic DJ uses that value for Mix planning and audition rate in the current instance. It falls back to the Mix BPM when host tempo is unavailable. Host BPM does not add a beat grid, quantized start, downbeat detection, phrase alignment, or time stretching.

2.3. Appearance and Interface Size



On first launch, Harmonic DJ opens a one-time appearance setup before the Library. Choose an appearance and a comfortable interface size, then select **Continue to Library**. You can change both choices later in **Config**. If an earlier Harmonic DJ version already saved a Light or Dark preference, setup selects that preference automatically so continuing performs the migration without changing how the application looks.



Open **Config**, immediately to the left of **About**, for application-wide appearance settings. Config is separate from Mix Settings: changing the theme or interface size affects the application, while Mix Settings contains the musical planning rules saved with one Mix.

Choose **System** to follow the operating system's current light or dark appearance. Harmonic DJ updates while it is open when the system setting changes. Choose **Light** or **Dark** for a fixed appearance that does not follow the operating system. The selection is saved globally and restored the next time Harmonic DJ opens.

Interface Size scales the complete application from 70% to 150% in 10% steps, preserving the layout instead of enlarging individual labels. Use **A-**, **A+**, the slider, or **Use 100%** to restore the original size. While you drag the slider, the percentage preview follows the selected value; Harmonic DJ resizes once when you release it.

2.4. Create Your First Library

1. Open the **Library** workspace.
2. Choose **Add Folder** and select a folder containing music, or use **Add Files** for a smaller first pass.
3. Leave Harmonic DJ open while it discovers and analyzes the supported files.
4. Use the **Ready to mix** filter when you only want to see tracks with completed key and BPM analysis.
5. Select a track and use the playback control to audition it.

Analysis can run across several tracks at once. The Library remains usable while work continues, and completed results survive cancellation. If a scan is interrupted, Harmonic DJ resumes the durable queue the next time the application opens.

A few dozen stylistically related tracks within a compatible BPM range are enough to learn the default workflow. Tracks spread across unrelated tempo ranges may not form a complete route with the default General Purpose profile and Same Mix BPM rule. Use Gem Finder to investigate individual pairs, or add more tracks near the BPM range you want to mix.

2.5. Create Your First Mix

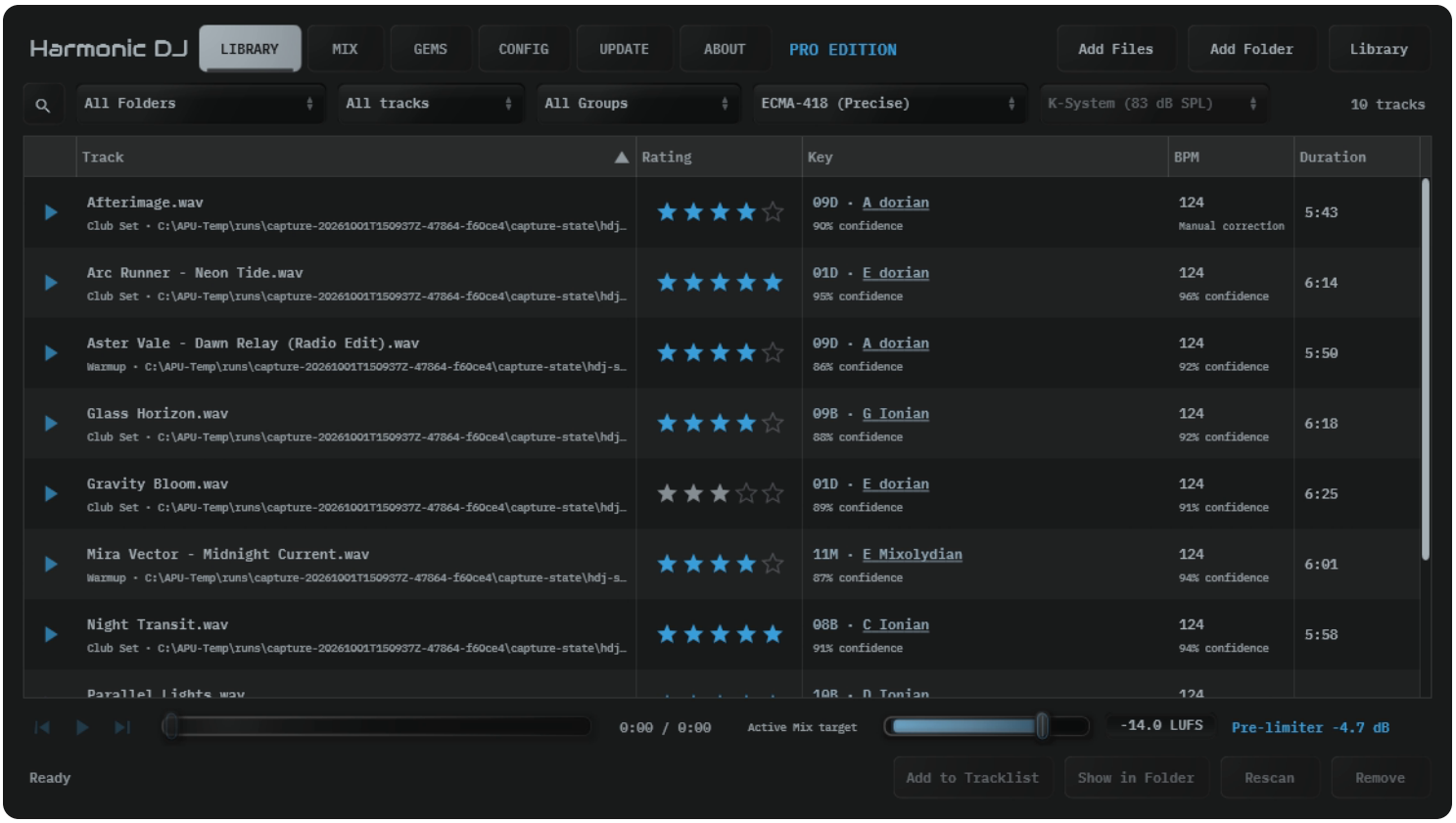
1. Open **Mix**.
2. Leave **Source** on **All Groups**, or choose the Library groups that should supply candidates. Library browsing filters do not change this selection.
3. Leave **Tracks** at five and **BPM** on Auto.
4. Open **Settings** within Mix and confirm the release defaults: **Benchmark-Guided Modal**, **Start / end keys**, **Prefer same start / end**, **General Purpose**, **Same Mix BPM**, **Auto** search quality, and harmonic detail enabled.
5. Return to the tracklist and choose **Generate Tracklist**.
6. Audition the result. Lock anything you want to keep, replace an alternative, or exclude a poor fit, then generate again.

See Building a Tracklist for reusable group and imported-playlist workflows.

Community uses the same named, auto-saved Mix workflow as Pro, with exact track counts from one through five. Pro adds larger Mixes, Gem Finder, and saved Gems.

The generated route is a starting point, not a claim that every transition is ready to perform unchanged. Rhythm, phrasing, energy, cue points, and transition treatment still need musical judgment.

3. Library



The Library is the analyzed source collection used by Mix, Gem Finder, and saved Gems. It keeps local file locations, track metadata, analysis results, groups, and track status in one local database. Removing a Library entry does not delete its audio file.

3.1. Adding and Analyzing Audio

Use **Add Files**, **Add Folder**, or drag supported audio into Harmonic DJ. Folder discovery includes supported files beneath the selected folder and adds them to a durable analysis queue.

One analysis pass collects file and tag metadata, BPM, integrated loudness, level information for gain matching, and harmonic evidence for every selectable key contour. Because the underlying evidence is retained, changing the active contour or reference SPL does not decode the audio again.

Cancel asks the active discovery, library operation, or analysis queue to stop cooperatively. The track currently being analyzed may restart later, while already completed tracks remain available.

The file chooser advertises the formats supported by the current platform. These normally include common WAV, AIFF, FLAC, Ogg Vorbis, and MP3 files. AAC and ALAC in M4A containers use Media Foundation on Windows and Core Audio on macOS, so M4A is only advertised where that native decoder is available.

3.2. Browsing and Auditioning

Search matches file information, identity metadata, and detected key labels. Add **bpm:128** or **bpm: 128** to find tracks that round to 128 BPM, **bpm:120-130** for an inclusive range of rounded tempos, or comparisons such as **bpm:>=128** and **bpm:<130**. Decimal places narrow the match: **bpm:128.0** matches values rounding to 128.0, and **bpm:128.25** narrows to two decimal places. The same precision rule applies to range endpoints and comparisons. BPM filters use the track's current BPM, including manual corrections, and omit tracks without a BPM. Combine text and filters, for example **Artist Name bpm:128**; multiple BPM filters must all match.

Click a column heading to sort, and use the filter beside the search field to focus on:

- **All tracks**
- **Ready to mix**
- **Excluded from mix**
- **Needs attention**
- **Missing files**
- **Favorites (4-5 stars)**

Select a local track to audition it. The transport at the bottom of the application is shared across Library, Mix, Gems, and Gem Finder, so playback continues to feel like one listening session while you move between workspaces.

Imported collection tracks can participate in metadata-only planning but do not have local audio. Harmonic DJ identifies them as shared tracks instead of presenting them as broken local files.

The sortable **Rating** column shows your private 1-5 star preference. Click a star to rate one track, click its current rating again to clear it, or use **Personal Rating** in the track menu to rate the complete selection.

Right-click a track for Mix placement actions, **Personal Rating**, **BPM Correction**, **Move to Group**, **Find Online**, **Show in Folder**, **Rescan**, and **Remove from Library**.

Choose **Insert After Selected Track and Lock** when a Mix track is selected, or **Add to End of Tracklist and Lock** otherwise. With one Library track and one Mix track selected, **Replace Selected Track and Lock** replaces that Mix track. These actions lock your choices so later generation keeps them. In the Mix track menu, choose **Unlock Track** or **Unlock Selected Tracks** to allow replacement.

3.3. Correcting BPM

Tempo detection is an estimate, and rhythmically ambiguous material can produce a half-time, double-time, or otherwise incorrect result. In the standalone APU Harmonic DJ application, double-click a local track's **BPM** cell or open **BPM Correction → Correct BPM** from its track menu. Enter a value from 40 through 300 BPM. The same menu offers **Halve BPM**, **Double BPM**, and **Reset to Detected BPM** when those actions apply. Half and double use each track's current BPM, including an existing correction.

To correct a batch, search for **bpm:128**, press Enter to focus the results, and use Ctrl+A on Windows or Command+A on macOS to select all matching rows. Right-click the selection and choose **BPM Correction → Correct BPM** to set every selected track to 64, or choose **Halve BPM**. The menu shows the selection count. All selected tracks must be analyzed local tracks, and half/double actions are disabled if any result would fall outside 40-300 BPM. A batch is saved together; cancellation or an invalid value leaves the whole batch unchanged. Tracks that no longer match the search disappear after the edit completes.

A correction does not overwrite the detector result. The BPM cell identifies a **Manual correction**, and its tooltip shows both the BPM Harmonic DJ uses and the original detected BPM with its confidence. Resetting removes the correction and immediately returns to the latest detector result.

The corrected value becomes the track's used BPM everywhere: Library search and sorting, readiness, Mix targeting and generation, Gem Finder, BPM-aware audition playback, saved-Gem evidence, shared collections, and published Mix data. Key and loudness analysis are unchanged.

Corrections are tied to the SHA-256 identity of the complete local file. They survive rescanning unchanged audio, moving an unambiguously matched byte-identical file, removing and later re-adding the same file content, and Library Metadata backup/restore. If any file bytes change-including tag edits or transcoding-the old correction no longer applies, so review the new detector result and correct it again if necessary. Shared collections and published Mixes carry the BPM used for planning, but do not expose the private correction record or stale detector confidence.

3.4. Personal Track Ratings

Track ratings express how much you want a song to recur in your own mixes. **5 stars** means you love it, **4 stars** marks another favorite, **3 stars** and **Unrated** are neutral, and **1-2 stars** ask Harmonic DJ to use the track less often without excluding it.

Ratings are a soft preference after the hard musical and Mix rules. They can choose a favorite when otherwise-eligible routes are close, and they refine same-key alternatives and Gem Finder ordering. They never override exclusions, Allowed Keys, BPM requirements, transition-rule priority, a stronger saved-Gem rating, or any other eligibility constraint.

Ratings are available in both Community and Pro. Local and imported shared tracks can both be rated, and their rating is visible read-only in Mix and Gem Finder. The preference survives rescanning and later reimport of the same track path. A byte-identical moved file also keeps its rating when Harmonic DJ can relink it as described in Library Maintenance.

Ratings are private. Your path-based **Library Metadata** backup includes them, but shared collections and published Mix pages do not. A recipient can assign an independent rating to a shared track after import.

3.5. Key Profiles and Key Guide

The contour and reference-SPL controls choose the active key profile. That choice belongs to the active Mix and is used consistently by Library, Mix, Gems, and Gem Finder.

ECMA-418 is the release default. **None** uses calibrated-flat evidence. **ISO 226:2003** and **ISO 226:2023** are phon-dependent profiles, so their result also depends on the selected reference SPL. Switching between these profiles is immediate because the scan already retained the required harmonic evidence.

Open **Key Guide** from a detected key to compare Major/minor character or the six supported advanced modes across all twelve tonic roots. The guide can preview matching local Library tracks and add or replace a Mix track. It is an exploration surface, not a second analysis mode.

3.6. Library Groups

Library groups are local organizational labels. Use the group selector to show **All Groups**, **Ungrouped**, one local group, or a group inside an imported shared collection.

Choose **Library → Manage Groups** to create, rename, reorder, or delete local groups. Deleting a group keeps its tracks and returns them to Ungrouped. Select one or more local tracks and use **Move to Group** to change their membership.

The Library group selector only changes what is visible in the Library. In Mix, **Source** independently chooses which groups can supply candidates for generation and alternative-track choices. Each Mix saves its own source, and applying a Mix Settings preset keeps that selection. See Building a Tracklist for a reusable group workflow.

Library → Import Playlist adds local audio referenced by an M3U or M3U8 file and asks which group to assign. Unchanged, successfully analyzed files reuse their analysis. **Export Selected Tracks as Playlist** and **Export Current View as Playlist** write the displayed track order to an M3U file. The current view includes its search, group, and other filters. See Playlist Exchange for the complete workflow.

3.7. Library Maintenance

Rescan analyzes the selected local tracks again. Use it after replacing an audio file, after a prior analysis error, or when a future detector revision specifically requires new analysis. A Correcting BPM value remains active when the complete file content is unchanged; changed bytes produce a new content identity and stop applying the old correction.

When a local file has moved and its old path no longer exists, add the byte-identical file from its new location. Harmonic DJ compares a SHA-256 hash of the complete file with missing Library records. One unambiguous match keeps the track's stable identity, earlier analysis while reanalysis runs, group, personal rating, and directed Gems. The open Mix replaces the old path and auto-saves; other saved Mixes keep working through the old-path alias and replace it when you open them. This works when the move happened while Harmonic DJ was closed because the missing Library record remains available as the matching anchor.

Matching is deliberately conservative. If the old file still exists, the second path is treated as a separate copy. If several missing records have identical content, Harmonic DJ does not guess which one moved. Editing tags, transcoding, or otherwise changing any file bytes creates a different hash and therefore does not auto-link.

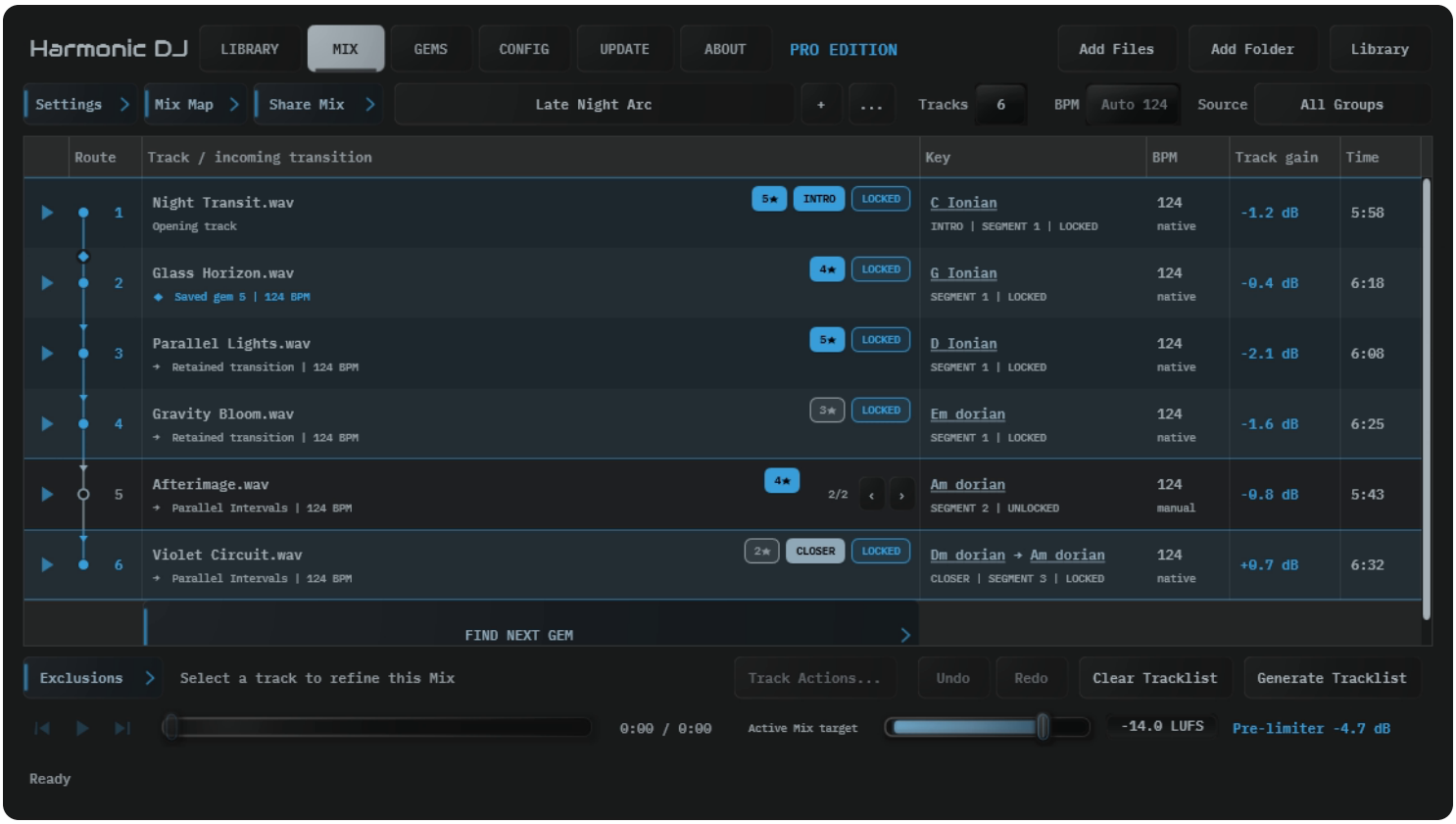
Pending discovery records file metadata without reading track contents. When a worker starts a track, it reads the complete file to establish its content identity, immediately analyzes the audio, then reads the complete file again to record the final identity. Each worker therefore performs hash, analysis, and final hash in per-track sequence instead of hashing a whole import before analysis. Ordinary browsing, opening saved Mixes, and application startup do not rescan file contents.

Remove from Library removes the selected local records without deleting audio. Personal ratings and saved directed Gems keep their old path context, so they reconnect if that same path is added again later. Removing the record also removes the content-matching anchor; add a moved file first if you want automatic relinking.

Remove Missing Files searches the local Library for paths that no longer exist and asks before removing those records. Re-add moved files from their new location before using this cleanup so Harmonic DJ can recognize them. Shared collection tracks are not treated as missing because they intentionally have no local path.

Export Library Metadata writes a local JSON backup containing file paths, analysis state, personal ratings, and manual BPM corrections. **Import Library Metadata** restores that path-based metadata on a compatible system. Use Shared Collections instead when sending analysis to another person.

4. Mix



A Mix combines a tracklist with the exact planning choices used to create it. The track order, locks, exclusions, target track count, BPM, group scope, key profile, transition profile, loudness target, and other Mix Settings travel together.

Harmonic DJ ranks complete routes by improving the weakest accepted transition first. This keeps several strong transitions from averaging away one poor connection. Your personal track ratings then provide a bounded preference among eligible choices without weakening the Mix constraints.

Open Mix Map from any non-empty Mix to see that ordered route across circle-of-fifths roots and all six supported modes.

4.1. Mix Documents

Mixes are named, auto-saved documents in both Community and Pro. Use the Mix browser to search and switch documents, + to start a blank Mix, and the **...** menu to duplicate, rename, delete, import, or export.

New Mix starts with an empty tracklist and the default selected in Mix Settings Presets. Factory Settings is the initial default. **Duplicate Mix** preserves the complete current document. Switching Mixes restores each document's own tracklist and strategy.

Undo and redo store complete, user-named document revisions. They remain available after a clean relaunch, and a new change after undo replaces the redo branch in the usual way.

Community can create and manage any number of Mix documents. A Mix containing more than five tracks stays readable and auditionable in Community, but it is read-only until Pro becomes active again. You can still create or open another Mix with five or fewer tracks.

4.2. Building a Tracklist

Choose the candidate pool with **Source**, set **Tracks** to the exact number of positions you want, choose a Mix BPM or leave it on Auto, then choose **Generate Tracklist**. Community accepts one through five tracks; Pro accepts larger counts too.

Two workflows help narrow the candidates:

- **Reusable Library groups:** In Library, use **Library → Manage Groups** to create a group. Select the tracks you want and choose **Move to Group**. Return to Mix, click **Source**, and choose that group or a combination of groups. **All Groups** includes grouped and ungrouped Library tracks. See Library Groups for group management.
- **Imported playlist:** Export your candidates as an M3U or M3U8 from DJ software, then choose **Mix → … → Import Playlist**. This creates a new Mix in playlist order, with unlocked tracks and **Source** set to **Imported Playlist**. Wait for new audio to finish analysis, adjust **Tracks** if needed, and generate. Removing a row keeps that track in the candidate pool. See Playlist Exchange for import and export details.

Library search, group, and readiness filters only affect browsing. Generation and alternative-track choices use the Mix's **Source**, plus explicitly locked tracks, and still apply the usual BPM, key, and exclusion rules. Each Mix saves its source independently; applying a Mix Settings preset keeps it. For an imported Mix, click **Source** to switch between **Imported Playlist** and **Library Groups** without losing the imported pool.

Auto BPM follows the marked intro track, falls back to the first track, or lets the first generated track establish the target for an empty Mix. A typed value fixes the Mix target between 40 and 300 BPM. All Same Mix BPM modes round that target for planning and display while retaining the entered value. Ignore BPM bypasses the target and both BPM allowances.

You can also build manually. Select ready tracks in Library and use **Add After** when a Mix track is selected, or **Add to Tracklist** otherwise. Library add, insert, and replace actions lock the chosen tracks so generation keeps them. Use **Unlock Track** or **Unlock Selected Tracks** in the Mix track menu to allow replacement. Manually extending a tracklist beyond the current target automatically raises the target so authored positions are not discarded. You can also drag local track rows out to a DAW.

Mark one track as the intro or closer when that role matters. Those roles constrain the corresponding position during later generation without turning musical duration into a route-length estimate.

4.3. Refining a Tracklist

Select or right-click Mix rows to refine a result:

- **Lock Track** or **Lock Selected Tracks** keeps your chosen tracks and their order within each locked sequence. Full generation may move the sequence; tracks marked as Intro or Closer stay pinned to the beginning or end.
- **Unlock Track** or **Unlock Selected Tracks** allows generation to replace those tracks. Unlocking also clears any Intro or Closer role on them.
- **Replace with Another Track** steps through compatible alternatives for one position.
- **Regenerate This Segment** searches the unlocked region around the selected position while keeping its locked boundaries.
- **Remove Without Excluding** removes a track but allows it to return later.
- **Exclude from This Position**, **This Segment**, or **Entire Mix** records where the track should not return.
- **Exclusions** reviews and removes those rules without changing the current tracklist.

Explicitly locked tracks remain authored choices even if a later settings change would not select them automatically. New generated positions still have to satisfy the current constraints.

Same-key alternatives put higher-rated tracks first. A compact star badge in the tracklist shows the current personal rating without turning it into Mix document state.

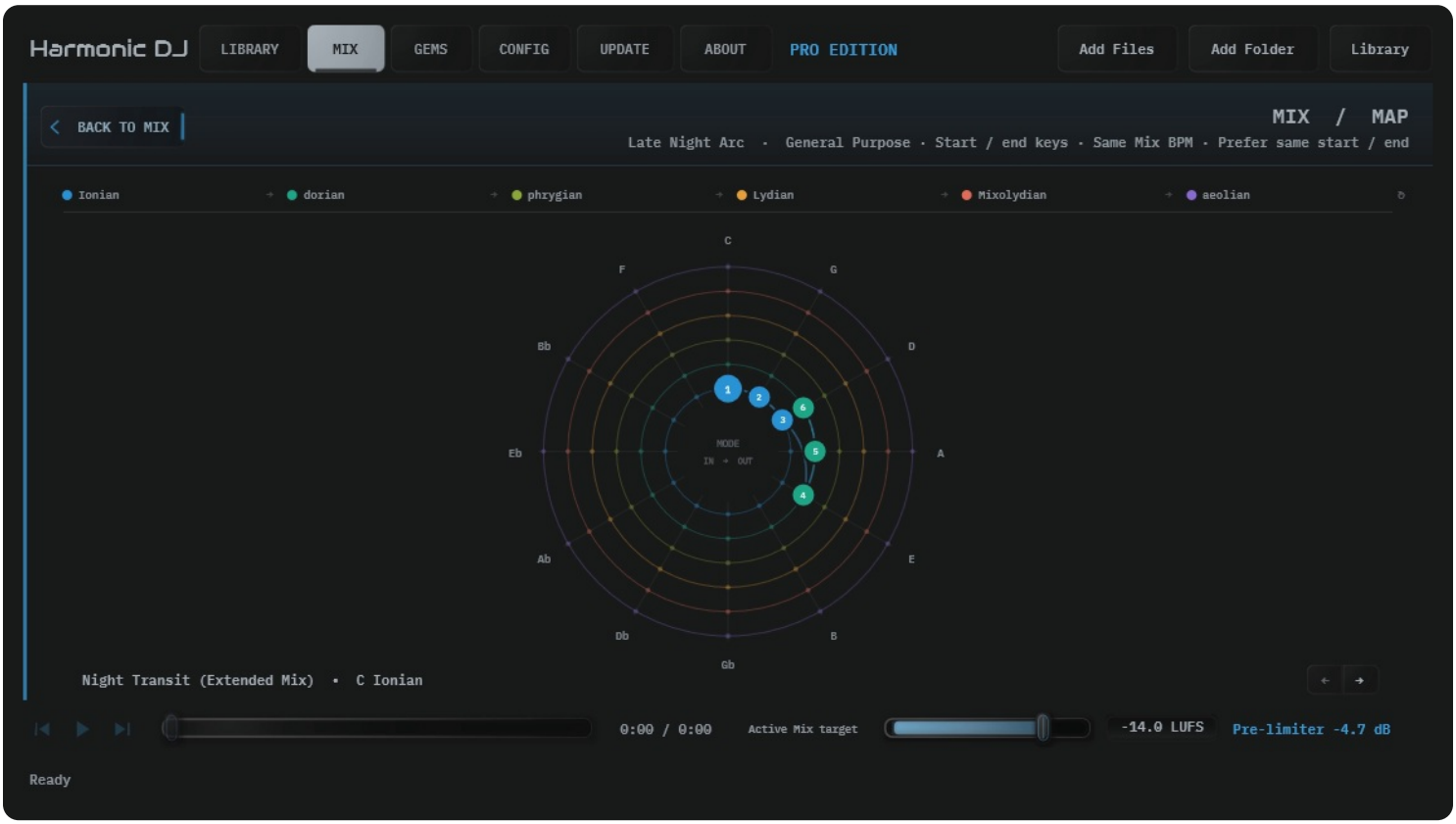
Each incoming transition keeps the explanation and settings context captured when that exact directed pair was authored. Changing the transition profile, key profile, key-matching scope, or BPM strategy therefore does not relabel earlier work. Hover a Mix row to review its origin and original context; if the current settings evaluate it differently, that comparison remains secondary tooltip detail. Replacing either endpoint creates a new edge, while moving an intact locked sequence keeps its existing explanations.

Open Mix Map after refining a route to inspect its complete harmonic trajectory without changing the tracklist.

Clear Tracklist removes the current tracklist, locks, and exclusions. It keeps the Mix name, target track count, planning settings, and audio Library.

4.4. Mix Map

Choose **Mix Map** from the Mix toolbar to open a read-only view of the current track order. It is available in Community and Pro whenever the current Mix is non-empty. Selecting anything in the map changes only the highlighted track and route; it never reorders tracks or changes Mix settings.



Read the map from angle, radius, and route:

- **Angle shows the root.** Roots advance clockwise around the circle of fifths, with C at the top.
- **Radius shows the mode.** The six lanes progress outward through Ionian, dorian, phrygian, Lydian, Mixolydian, and aeolian, then wrap from aeolian back to Ionian.
- **Numbered nodes show tracks.** Each number marks that track's incoming or start key. The selected track is drawn larger and its title and key appear along the bottom of the page.
- **Solid routes show transitions.** A solid segment connects the previous track's outgoing key to the next track's incoming key. The selected transition is emphasized and points toward its destination.
- **Dashed routes show movement within a track.** When a track starts and ends in different keys, its numbered start node connects to a small outlined end marker.

Tracks that share one start key fan out around a common hub so every track number remains selectable. Choose a numbered node directly, choose the hub to cycle through that shared-key group, or use the left and right buttons beside the title to move through the complete tracklist.

The Mix Map describes the authored route; it is not a transition score. Use it to recognize steady modal progressions, parallel movement, circle-of-fifths motion, repeated keys, and deliberate returns that are harder to see in a table. Return to the Mix tracklist when you want to edit, audition, regenerate, or share the result.

4.5. Audition and Gain Guidance

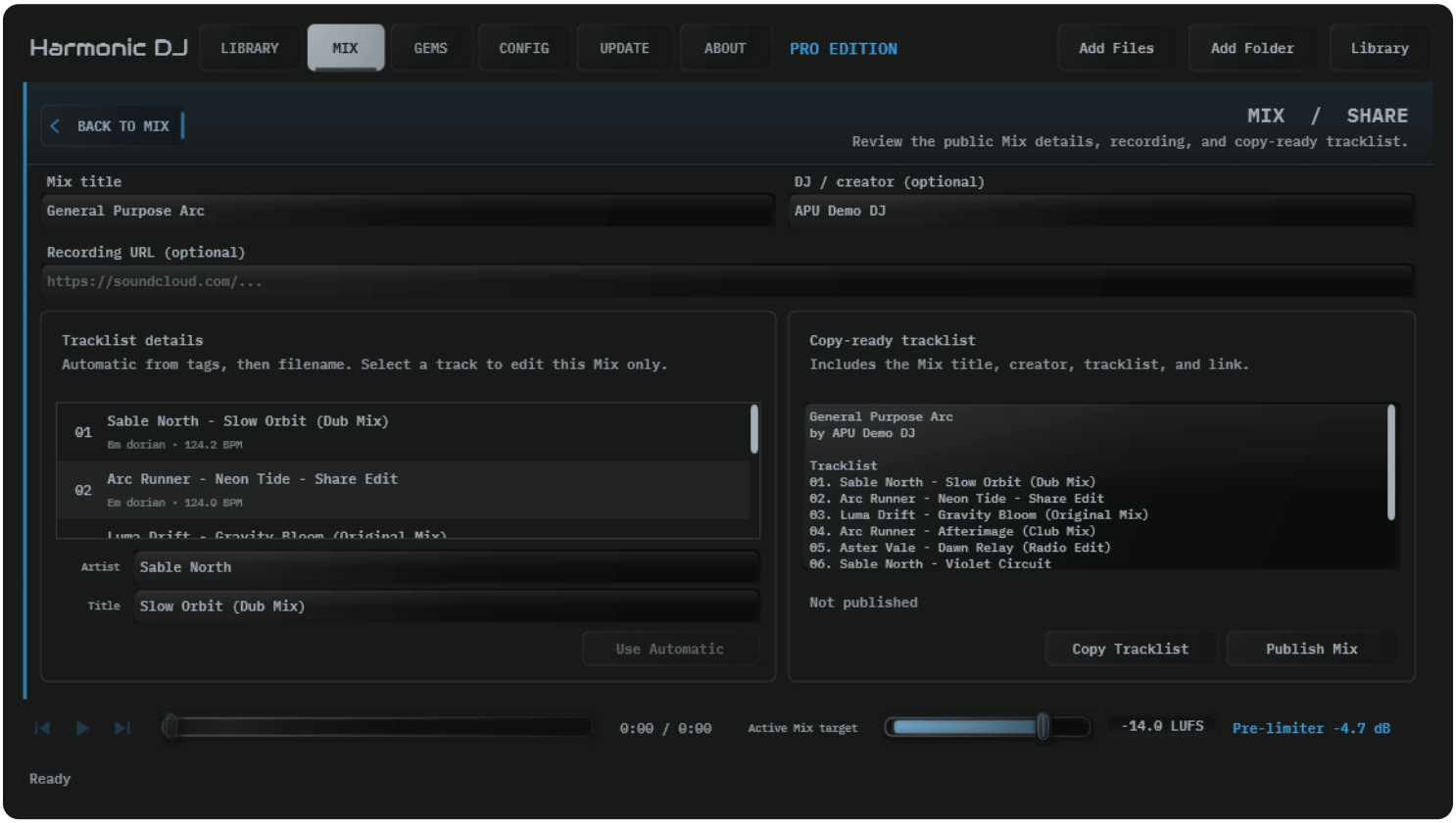
Each analyzed Mix row shows a signed track-gain recommendation. This matches the track to a fixed ECMA-based reference and does not change when other tracks are added or removed. That stability makes it practical to copy the individual values into a DAW.

The **Active Mix target** sets the desired integrated loudness for the complete Mix. Harmonic DJ calculates one common **pre-limiter gain** from the gain-adjusted track average. Changing the target or tracklist changes this common value without rewriting the individual track recommendations.

Harmonic DJ applies both values during audition so playback follows the active Mix target. It does not write processed audio, add a limiter, or make transition-treatment decisions for you.

> Track gain is post-planning advice. It never changes whether a route or transition is accepted.

4.6. Share Mix



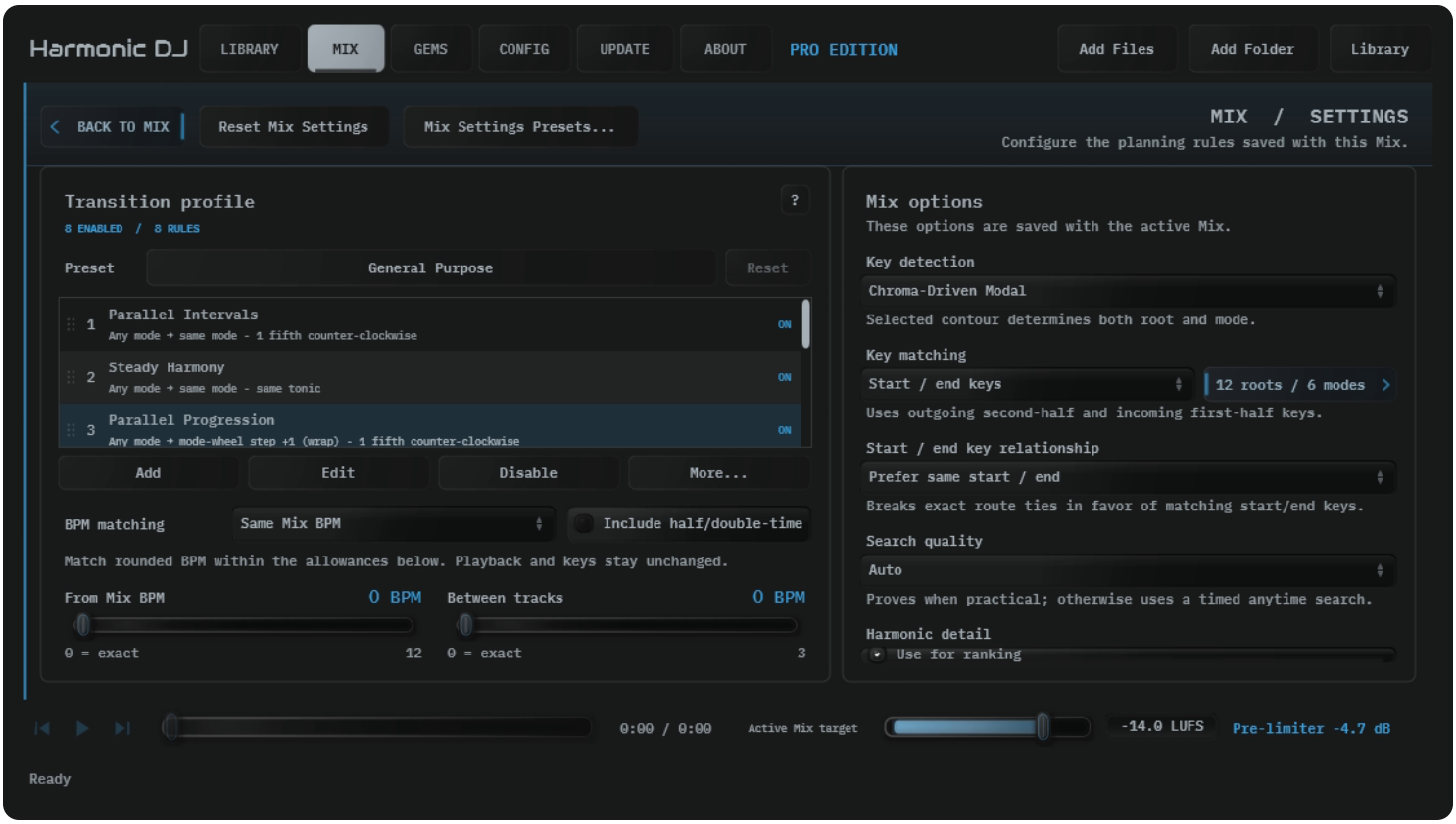
Share Mix prepares listener-facing details without changing the working tracklist. Enter a public Mix title and optional DJ or creator byline, then review the artist and title selected for each track.

Track display names start with embedded tags and fall back to conservative filename parsing. Corrections made here belong to this Mix only; they do not rewrite the audio file or global Library metadata.

Copy Tracklist copies the exact plaintext preview, including the Mix title, creator, ordered tracks, and appropriate link. Before publication the footer points to Harmonic DJ; once the current snapshot is published, it points to that Mix's permanent page. This workflow does not upload audio.

Copied and published transition explanations come from the settings that authored each edge, not whichever profile is currently selected. A tracklist completed under several transition profiles is labeled **Iterative** and names them; private current-settings comparisons are not published.

5. Mix Settings

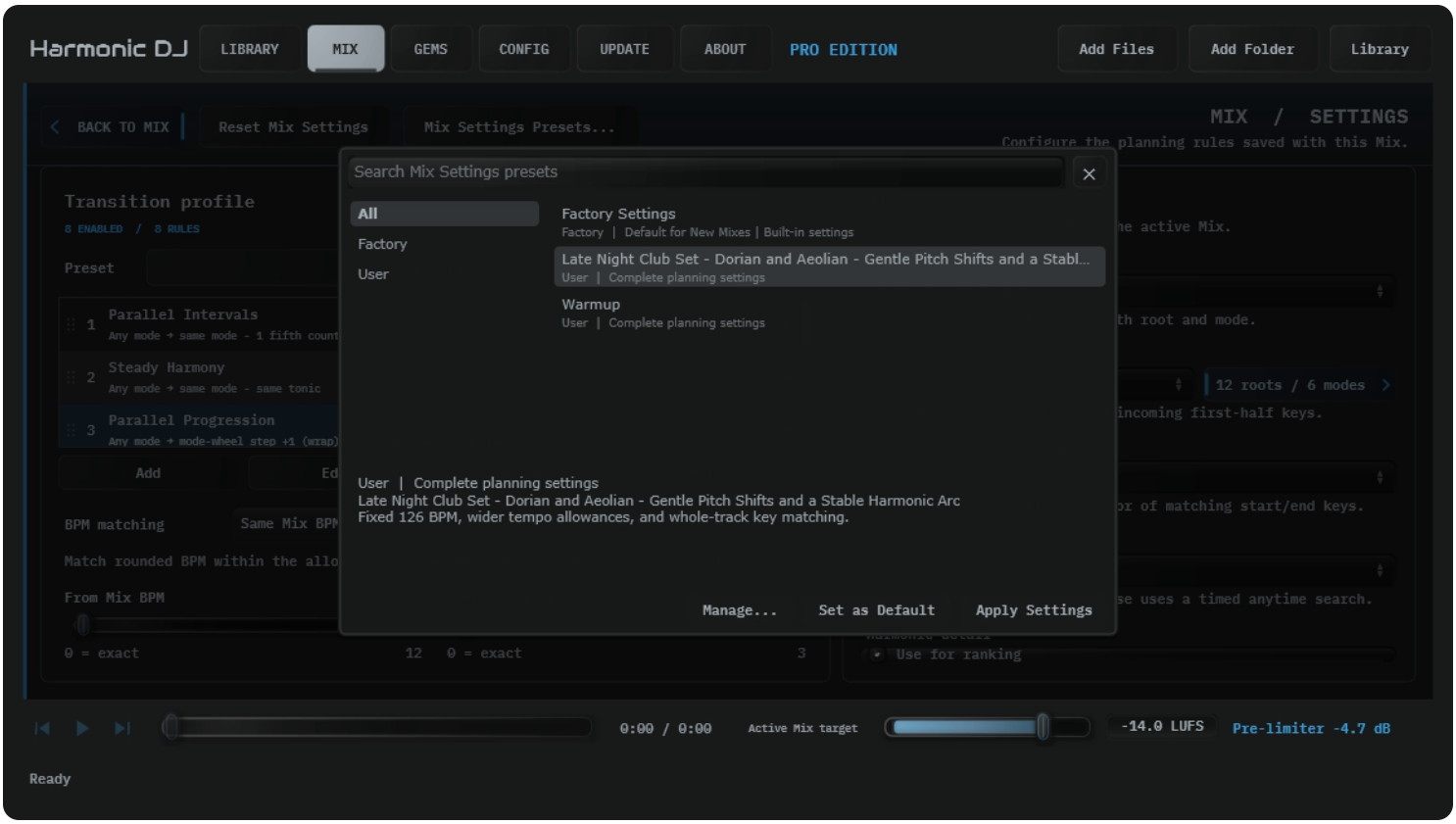


Mix Settings contains the planning rules saved with the active Mix. It is separate from the application-wide **Config** workspace, which controls theme and interface size. The example above uses Chroma-Driven Modal; detector choice belongs to the Mix, so another Mix can still use Benchmark-Guided Modal. **Reset Mix Settings** returns the whole page to the release defaults: Benchmark-Guided Modal detection, ECMA-418, the General Purpose transition preset, start/end matching, a preference for stable tracks, Same Mix BPM, Auto search quality, and harmonic-detail ranking.

Mix Settings Presets… opens the preset browser for complete planning setups. Save profiles for different situations, select one, and choose **Apply Settings** to copy it into the active Mix. Your candidate selection and tracklist stay with that Mix.

Change one idea at a time and listen to complete Mixes. A focused transition preset is much easier to understand when the other constraints remain steady.

5.1. Mix Settings Presets



Open **Mix Settings Presets…** at the top of Mix Settings. This browser uses the same search and management controls as Mixes and transition presets.

Under **Manage**, choose **Save Current Mix Settings As…**, then enter a name and optional description. A complete preset includes key detection and contour/reference settings, transition rules, allowed keys, key matching and start/end relationship, BPM strategy and allowances, Auto or fixed Mix BPM, search quality, harmonic detail, and the loudness target.

Select a preset and choose **Apply Settings** to copy those settings into the active Mix. This creates one undo step. The Mix keeps its name, target track count, selected groups, imported-playlist selection, tracklist, locks, exclusions, and sharing details. New generation uses the applied settings; existing track placements and their authored transition explanations remain intact.

Factory Settings restores the built-in planning setup while keeping that same Mix context. A transition preset in the Transitions panel copies only the transition profile; a complete Mix Settings preset also includes the other planning controls and targets.

Choose **Set as Default** beside **Apply Settings** to use the selected profile whenever you create a blank Mix or import a playlist. The browser marks it **Default for New Mixes**, and the choice survives relaunch. The button is disabled when the selected profile is already the default. Selecting Factory Settings with this action restores the built-in default. Setting a default leaves the active Mix and its undo history intact; use **Apply Settings** to change that Mix.

New Mixes copy the selected profile's latest saved settings. Updating the profile affects future Mixes, while deleting the default profile restores Factory Settings. The same default supplies a blank Mix when there are no saved Mixes or when you delete the final Mix. Duplicates and imported `.hdjmix` documents retain their own settings.

To replace a saved setup, select a user preset and choose **Update Selected User Preset**. **Edit Selected User Preset…** changes its name and description, and **Delete Selected User Preset…** removes it. Updating or deleting a preset leaves existing Mixes with their own copied settings. Factory Settings cannot be edited or deleted.

Preset application, saving, and updating follow the active Mix's editing access. Community Mixes with up to five tracks can use these controls; Pro also allows larger Mixes.

5.2. Transition Profiles and Presets

A **transition profile** is the ordered set of enabled relation rules used to accept directed harmonic edges. The first enabled rule that matches a transition supplies its priority and primary explanation.

General Purpose enables all eight release rules in priority order: Parallel Intervals, Steady Harmony, Parallel Progression, Steady Progression, Parallel Brightening, Steady Brightening, Parallel Darkening, and Steady Darkening. The first four remain the core relationships, the two non-wrapping Brightening rules are lower-priority fallbacks, and the two reverse-direction Darkening rules are the final fallbacks for constrained libraries. The factory catalog also includes a focused preset for each relationship.

Applying a transition preset copies its complete profile into the active Mix without changing the other planning settings or targets. The Mix keeps that snapshot, so later edits or deletion of a user preset cannot silently rewrite an older Mix. Use **Mix Settings Presets…** for a complete planning setup.

Factory presets are immutable. Pro users can save the active profile as a user preset, then update, rename, describe, import, export, or delete that reusable entry.

5.3. Relation Rules and Rule Builder

Each relation rule describes one or more accepted source-to-destination relationships. A rule can constrain source and destination modes, source and destination tonics, or a destination tonic movement relative to the source.

Use **Add** for a new rule, **Edit** to open Rule Builder, **Enable/Disable** to change the selected rules, and drag rows to set priority. **Reset** restores General Purpose. Duplicate and delete remain under **More**.

Rule Builder expresses alternatives rather than a hidden script. Common relationships take one alternative, for example, the same mode with a destination root five semitones higher. More specific ideas can enumerate modes or tonics, use steps from the source mode, or combine several alternatives inside one named rule.

Saving the rule applies its complete current definition to the Mix. Canceling a changed form asks before discarding edits. At least one relation rule must remain enabled so the profile always has a usable harmonic meaning.

5.4. Key Detection and Matching

Benchmark-Guided Modal is the default detector projection and supports Ionian, dorian, phrygian, Lydian, Mixolydian, and aeolian. **Benchmark Major / minor** provides a conventional two-mode view. **Chroma-Driven Modal** retains the earlier modal projection for comparison.

Start / end keys compares the detected second half of the source track with the first half of the destination. This is the default because a transition is directional: the outgoing part of one track meets the incoming part of another.

Whole-track key combines both analyzed halves in proportion to their duration, detects one key, and uses it at both boundaries. When whole-track matching is active, the separate start/end relationship control is not used.

With start/end matching, the relationship control can require, prefer, ignore, discourage, or require a key change within each track. Preferences are soft tie-breakers after transition quality; requirements filter newly selected tracks.

5.5. Allowed Keys

Allowed Keys filters roots and modes independently across the complete Mix. Every root and every supported mode is enabled by default.

A track is eligible only when both its effective start key and effective end key use an enabled root and mode. With pitch-shifted playback, the effective keys include the same target-relative semitone shift used for audition.

These are global membership constraints, not transition rules. Locked positions, Gem Finder placements, and saved Gems cannot bypass them. At least one root and one mode must remain enabled.

5.6. BPM Matching and Allowances

Same Mix BPM compares rounded whole BPMs within the allowances below. Tracks keep their original playback speed and keys. The Mix table displays the rounded BPM, with the detected decimal available in the tooltip.

Same Mix BPM + pitch shifts also allows speed changes in the selected semitone range. Choose **+/-1 semitone** or **+/-2 semitones** directly under **Pitch range**; the second choice includes one-semitone changes too. Each track uses the allowed adjustment that brings its rounded effective BPM closest to the Mix target; equally close choices prefer less pitch change. Rounded playback ratios must remain within five cents of the selected semitone step. Keys shift with playback before Allowed Keys and transition matching are evaluated.

Same Mix BPM + keylock uses the same two BPM allowances as Same Mix BPM, comparing each track's original rounded tempo before keylock. Eligible native-ratio tracks are planned for playback at the Mix BPM while preserving their original keys; half/double-time matches use the corresponding physical deck tempo shown in the tooltip. HDJ previews at the original speed and key, so you can judge harmonic flow before performing the tempo changes in your DJ software. The Mix table shows the authoritative BPM used to derive the comparison, with **keylock** underneath; its tooltip identifies the planned tempo.

Include half/double-time tracks is available with every Same Mix BPM strategy and is off by default. It also compares each authoritative rounded track BPM at twice and half its value, so a 61 BPM track can match a 122 BPM Mix as half-time and a 244 BPM track can match it as double-time. The selected relationship is contextual to this Mix target: Harmonic DJ does not relabel the track, rewrite its BPM, or change playback speed merely because of the ratio. With pitch shifts, only the independently selected semitone adjustment changes audition speed and key. With keylock, the tooltip shows both the physical planned tempo and its Mix-BPM equivalent.

Same Mix BPM and **Same Mix BPM + keylock** both apply the sliders to original rounded BPM after any enabled target-relative normalization. **Same Mix BPM + pitch shifts** applies them after normalization and the selected pitch shift: a 120 BPM track shifted to 127 BPM and an unshifted 127 BPM track have zero effective BPM difference. In keylock mode, those tracks retain their original 7 BPM gap for selection, so a Between tracks allowance of 3 rejects the pair even when both could eventually play at the Mix BPM.

From Mix BPM allows each track to sit above or below the Mix target by up to 12 BPM. **Between tracks** allows consecutive tracks to differ by up to 3 BPM. For example, at Mix BPM 128, an overall allowance of 4 admits effective tempos from 124 through 132, while a between-track allowance of 2 requires smaller steps through that range.

The sliders are linear and move in whole BPM steps. Both start at **0**, meaning an exact rounded match. Values stay in fixed positions with no decimal places. A drag creates one undoable change; double-clicking restores zero.

Ignore BPM leaves playback unchanged and matches keys without requiring detected BPM. The half/double-time toggle and both allowances are hidden and ignored in this mode; their saved values return when any Same Mix BPM mode is selected. The two Pitch range choices appear only in pitch-shift mode. Switching modes retains the selected half/double-time choice, pitch range, and both BPM allowances. **Reset Mix Settings** turns the ratio option off, and older Mix documents without the field load with it off.

Allowances include their boundaries and apply to generation, same-key replacements, and Gem Finder. Locks and saved Gems cannot bypass them during planning. Changing allowances keeps authored rows and their original transition explanations, while incompatible rows show **BPM limit** with details in their tooltips. Allowances, reset, undo, and redo are saved with the Mix.

For keylocked performance, enable keylock in your DJ software. An exported M3U playlist carries track order and audio paths; it does not set deck keylock or tempo. HDJ's keylock previews stay at the original tempo, while pitch-shift previews change speed and pitch together.

5.7. Search Quality and Harmonic Detail

Auto quickly supplies a good complete route, proves the best route when the remaining search is manageable, and otherwise continues as a bounded anytime search. The result reports whether it was proven optimal or was the best route found within that budget.

Optimal uses the same ordering and pruning but continues until the best route is proven or you cancel. It is most useful for a constrained Library or a final comparison where additional search time is acceptable.

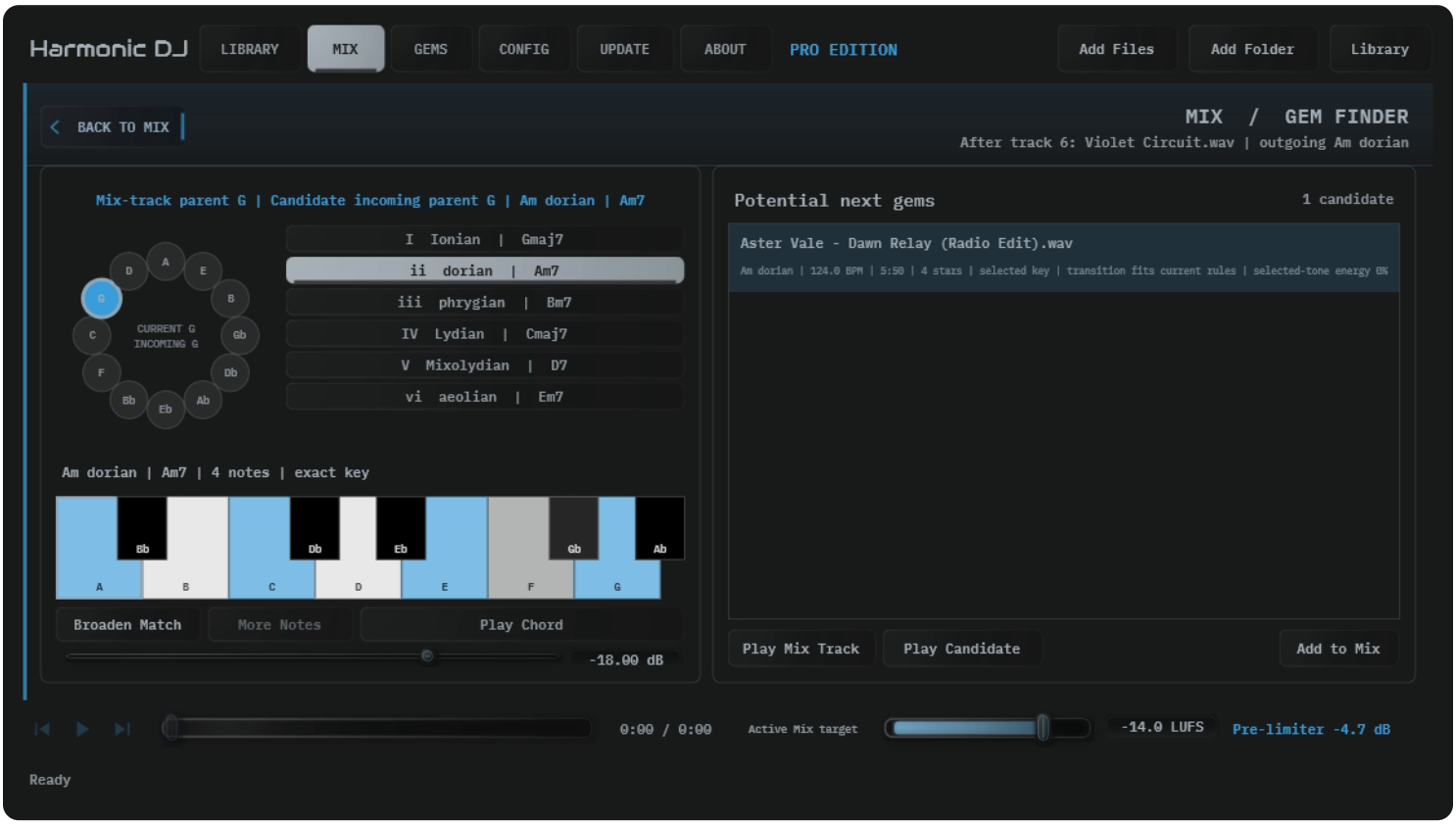
Harmonic detail reranks already accepted transitions using the fuller outgoing and incoming harmonic distributions. It does not make an otherwise rejected transition legal and is not presented as a probability that two songs will mix well.

Route comparison sorts transition quality from weakest to strongest. Harmonic DJ improves the weakest transition first, then the next weakest. Personal ratings contribute only a bounded preference below transition-rule and saved-Gem rating steps; track-level preferences, analysis confidence, and preservation of the current slot resolve the remaining ties.

6. Gem Finder and Saved Gems

Automatic generation searches a broad relationship. Gem Finder starts from one outgoing track and lets us ask a much more specific musical question. Saved Gems preserve the directed answers that remain useful after listening.

6.1. Finding a Next Gem



Select a Mix track and choose **Find Next Gem** from its context menu. The same action appears after the final track, where it naturally means “find something that could follow this.” Gem Finder requires Pro and a usable outgoing key for the selected track.

The circle of fifths marks the Mix track’s outgoing parent key separately from the incoming parent key you are exploring. Choose an incoming parent key and one of the six supported modes to define an exact modal key. The piano shows the tonic seventh chord associated with that selection.

Play Chord sustains those pitches while you alternate between the Mix track and candidate tracks. The chord is a harmonic probe: it helps teach the selected color without pretending that Harmonic DJ knows the correct cue point, phrase alignment, or transition treatment.

6.2. Candidate Selection and Placement

The first query requires the exact selected root and mode. **Fewer** broadens the search to same-root analyzed modes that contain the complete chord, then removes one non-root chord tone at a time. **More** reverses those steps and eventually restores exact root-and-mode matching.

Potential Gems include unused Library tracks that satisfy the active Mix BPM rule, Allowed Keys, matching scope, and start/end relationship requirement. Mix groups and exclusions do not hide Gem Finder candidates; this keeps the ear-led search broader than automatic generation.

Exact selected-key realizations rank first. Within otherwise-close results, higher personal ratings surface earlier and each rated row shows its star count. For relaxed results, selecting a candidate updates the displayed incoming mode while keeping the chord root and currently required pitches intact.

Place the candidate after the source track, or replace the existing next track. Placement locks both the source and candidate so generation keeps the directed pair together, and records its local harmonic approval for that Mix. It does not save a Gem, approve the reverse direction, or relax BPM and Allowed Keys.

To let generation replace either track, select both rows in Mix and choose **Unlock Selected Tracks**.

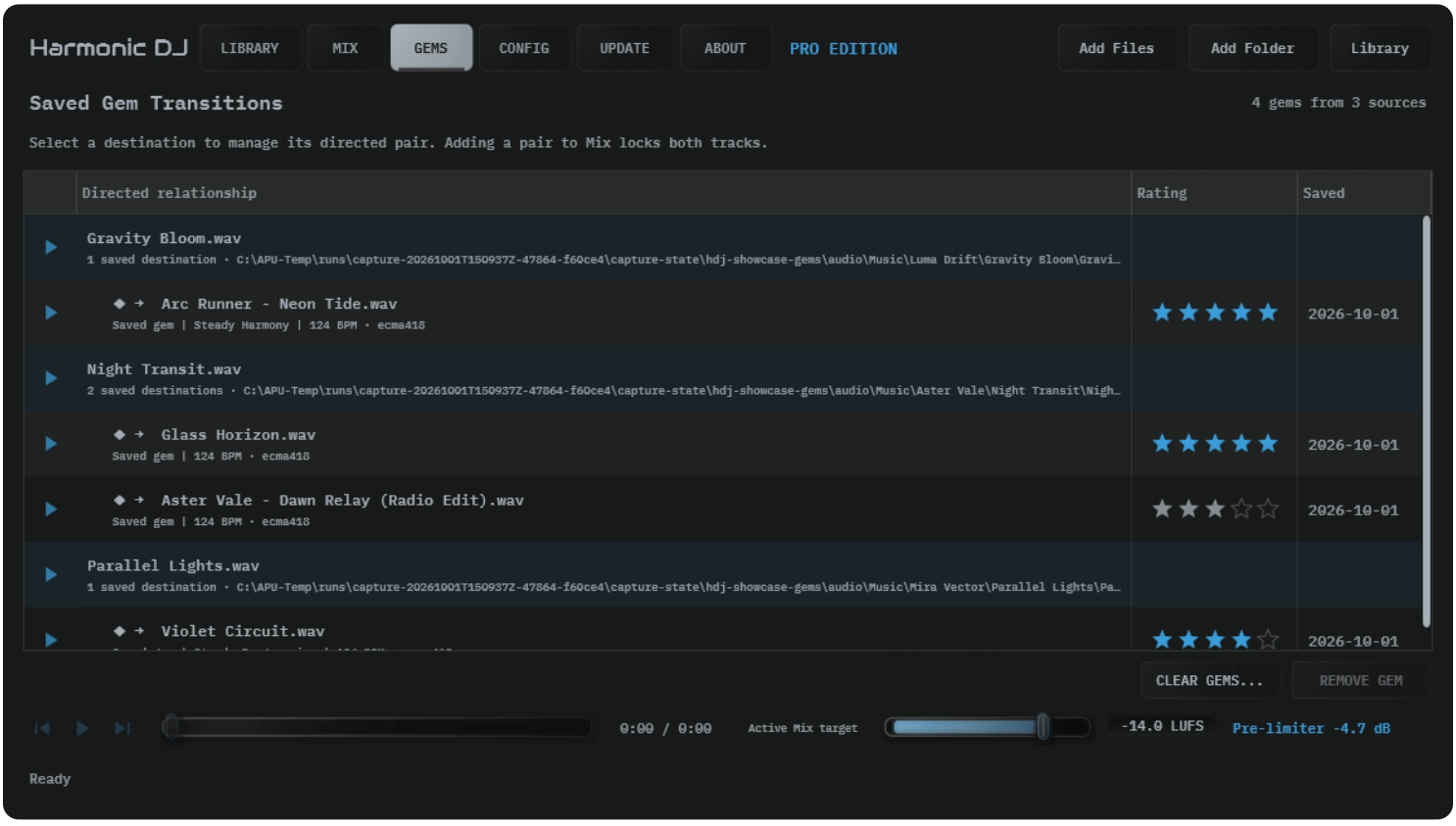
6.3. Saving and Rating Gems

After placing and auditioning a strong pair, right-click the destination Mix row and choose **Save Incoming Transition as Gem**. The saved direction is the preceding source track into that destination track.

A Gem explicitly authorizes that exact directed harmonic edge even when the general transition profile would reject it. BPM, Allowed Keys, uniqueness, and other non-harmonic constraints still apply. Saving source → destination never implies destination → source.

Gem ratings use the same 1-5 star language as track ratings. Click a star to set the personal rating, click the current star again to clear it, or choose **Unrated** from **Personal Rating**. A higher rating may increase preference between otherwise feasible choices, but it remains separate from detector evidence.

6.4. Browsing and Reusing Gems



The **GEMS** workspace groups destinations beneath each source track. Select a destination to inspect and manage the saved directed pair.

Pro can append the pair to Mix, insert it after the selected Mix track, or replace the complete Mix tracklist with the pair. Both tracks must still be available and satisfy the active Mix BPM and Allowed Keys.

Each placement locks both tracks so generation keeps the directed pair together. To allow replacement, select both rows in Mix and choose **Unlock Selected Tracks**. Unlocking the Mix tracks leaves the saved Gem in your collection.

Local rows can be dragged to a DAW. **Show Track in Library** and **Show Track in Folder** reconnect the saved evidence with its audio. Removing one Gem or clearing the complete collection never deletes audio, Library tracks, or Mix tracklists.

7. Concepts and Theory

Harmonic DJ exposes enough theory to explain and shape a result, but the theory is not the result. A detected relationship can make a pairing worth hearing; rhythm, phrasing, energy, arrangement, and taste still decide whether it becomes a useful transition.

7.1. Keys, Modes, and Parent Keys

A key label combines a tonic root with a mode. Benchmark-Guided Modal currently uses Ionian, dorian, phrygian, Lydian, Mixolydian, and aeolian. The minor-family mode locrian completes the traditional seven-mode pattern, but it is not part of detector-dependent planning in the initial release.

Each modal key can also be viewed through its parent Ionian pitch collection. Two modal keys may share a parent collection while emphasizing different tonics, or preserve one modal tonic while moving between parent collections. This is why one Major/minor or Camelot-style label cannot describe every relationship Harmonic DJ can express.

The guide below holds the pitch collection fixed to C Major's white keys and moves only the tonic. Start on the highlighted key, continue across the white keys, wrap at C when needed, and stop when the tonic returns an octave higher: C to C is Ionian, D to D is dorian, and so on.

Ionian 1st mode · starts on C

dorian 2nd mode · starts on D

phrygian 3rd mode · starts on E

Lydian 4th mode · starts on F

Mixolydian 5th mode · starts on G

aeolian 6th mode · starts on A

locrian 7th mode · starts on B THEORY ONLY

The circle of fifths in Gem Finder shows parent keys because it gives us a stable way to explore pitch collections while separately choosing the destination mode and modal tonic.

7.2. Incoming and Outgoing Evidence

Harmonic DJ analyzes the first and second complete halves of each track. In the default start/end matching scope, the first half supplies incoming evidence and the second half supplies outgoing evidence.

A directed transition therefore compares the source's outgoing key with the destination's incoming key. Reversing the tracks asks a different question and can produce a different result.

Whole-track matching recombines both halves by analyzed duration and classifies one key. It is useful when one stable summary is preferable, while start/end matching retains more information about how a track may enter and leave.

7.3. Directed Harmonic Relationships

A relation rule accepts a directed pair of modal states. It may preserve a root or mode, move a root by an interval or circle-of-fifths step, move between specific modes, or combine several alternatives.

The General Purpose profile prioritizes four useful corners: same or +5-semitone root movement crossed with same or next-mode movement. It then accepts Parallel and Steady Brightening as lower-priority fallbacks through phrygian → aeolian → dorian → Mixolydian → Ionian → Lydian without wrapping. Parallel and Steady Darkening follow last through that sequence in reverse, giving constrained libraries another chance to form a complete Mix.

These names describe harmonic policy, not an automatic emotional arc. Library coverage, track arrangement, and the available graph determine what a complete Mix actually becomes.

7.4. Contours and Confidence

The key contour changes how frequency evidence contributes to detection and harmonic-detail ranking. None is calibrated-flat, ECMA-418 is the release default, and the two ISO 226 profiles vary with reference SPL.

The selected profile can change a derived key without rescanning because Harmonic DJ retains the underlying calibrated harmonic evidence. Gain analysis is separate and remains fixed so changing the key contour cannot move previously copied gain recommendations.

Key confidence is an uncalibrated separation heuristic: it describes how strongly the selected category separated from nearby alternatives inside the current model. It is useful context, not a promise of musical certainty and not a rejection threshold.

7.5. BPM, Pitch, and Gain

BPM is a Mix constraint rather than a reward. A track either satisfies the selected BPM policy or it does not. This prevents a harmonically strong but tempo-incompatible edge from slipping into a route through a weighted average.

When a local track has a Correcting BPM value, that value-not the retained detector estimate-is the source tempo for these constraints, Mix targeting, Gem Finder, and audition-rate calculations. The Library and Mix tooltips identify the correction and keep the detector result available for comparison.

Pitch-shifted playback changes speed and pitch together. Harmonic DJ transposes the track's effective keys and harmonic evidence by the same integer-semitone step used to reach the Mix BPM.

Gain guidance is also independent from route selection. Per-track ECMA-relative gain helps neighboring tracks meet at a stable subjective level, while the common pre-limiter gain places the complete adjusted Mix near its integrated-LUFS target.

8. Sharing, Files, and Privacy

Harmonic DJ separates local user state from portable metadata. Audio stays local unless you independently move or publish it through some other service.

8.1. Shared Collections

Export Collection creates a versioned `.hdjcollection` file from the complete local Library, Ungrouped, or the currently selected local group. Name the collection before choosing its destination.

The file contains stable collection and track identifiers, sender-defined groups, structured identity, the BPM used for planning, key evidence and derived profiles, and loudness analysis. Detector confidence is included when that BPM is the detector result. A manual correction is exported as the used BPM without exposing the sender's private correction record or stale detector confidence. The file excludes local paths, audio, personal ratings, Gems, Mix documents, and other private Library state.

Import Shared Collection adds that path-free snapshot as a named remote collection. Reimporting a newer export with the same collection and track identifiers updates the existing records instead of creating duplicates. Sender groups remain scoped beneath their collection.

Manage Shared Collections removes imported metadata without changing local tracks. Imported collections cannot currently be re-exported as if they were your own local collection.

8.2. Library Metadata

Export Library Metadata writes a path-based JSON snapshot intended for your own backup or transfer between compatible file layouts. Unlike a shared collection, it includes local file paths, personal ratings, manual BPM corrections, and other private Library state.

Import Library Metadata validates those paths and restores compatible records into the local database. It does not contain the audio itself, so the referenced files still need to exist at the stored locations.

Use `.hdjcollection` for friend-to-friend sharing. Use the Library metadata JSON when preserving your own local analysis and paths is the purpose.

8.3. Mix and Preset Files

A `.hdjmix` file contains the current Mix document: its track references, order, roles, locks, exclusions, target values, key profile, transition-profile snapshot, rules, authored incoming-transition explanations and context, sharing details, and other planning state. It does not contain audio, private undo history, or the live association with a published Mix page. Importing the file creates a new local Mix identity, so it cannot update or advertise the source Mix's published page. **Duplicate Mix** follows the same rule.

Exported transition presets contain a reusable transition profile. Applying one copies that profile into the active Mix; the Mix does not depend on the preset file remaining available later.

Mix import and export, along with transition-preset management, are available in Community. Imported Mixes with five or fewer tracks are editable there. Larger imported Mixes remain readable and auditionable until Pro is active. Imported Mixes and presets are validated before replacing local state. Keep exports alongside normal project backups when a tracklist or custom relationship is important.

8.4. Playlist Exchange

Use playlists to bring a local track selection from DJ software into Harmonic DJ and return the finished track order. Import accepts UTF-8 `.m3u` and `.m3u8` files, including relative paths and local file URLs. Export writes a UTF-8 `.m3u` containing absolute paths to the original audio. The audio must remain accessible on the importing computer; foreign Windows/macOS paths require relocation before import. Native Traktor NML is not supported.

Library → Import Playlist adds or reuses the referenced audio and uses the selected Library group. Choosing a group explicitly assigns existing imported tracks to that group too. **Mix → … → Import Playlist** creates a new named Mix in the playlist's order using the default selected in Mix Settings Presets and keeps existing Library groups. Both queue analysis for new or changed audio and reuse successful analysis of unchanged files.

An imported Mix starts with unlocked tracks and retains the complete imported candidate pool when you remove or reorder rows. **Source** in the Mix toolbar displays **Imported Playlist**. Click it to switch to **Library Groups**, or return to the imported source later. Generation and alternative-track choices use the selected source; tracks you explicitly lock remain included. Library browsing filters do not change the Mix source. The usual BPM, key, and transition rules still apply. The source pool and selection are saved in the Mix document and its undo history. See Building a Tracklist for the candidate-selection workflows.

Mix → … → Export Playlist writes the current authored order. Library export offers either selected rows or the current filtered view, in displayed order. Exports retain authored repetitions and require every track to have an available local audio file; missing files and path-free shared collection entries block the export. Import keeps the first occurrence of each file and reports duplicates, missing files, and unsupported entries before asking whether to import the available tracks.

Playlist exchange transfers file references and order. It does not transfer cue points, beat grids, HDJ analysis, playback processing, or Mix settings. Keep a `.hdjmix` file when preserving HDJ planning state. Playlist import/export is available in Community. An imported playlist with more than five tracks opens as a read-only Mix until Pro is active. Playlist audio import runs in the standalone application, where the Library is managed.

In DJ software that supports M3U exchange, export a playlist, import it into HDJ, refine the Mix, then export an M3U for import into that software. Accepting M3U8 input in HDJ does not establish M3U8 support in another application.

8.5. Publishing a Mix

Community and Pro can copy or publish any editable saved Mix. Open **Share** to review the exact title, optional DJ / creator byline, and track display names that will be public. Corrections made here belong to this Mix only. **Copy Tracklist** works without publishing and uses the Harmonic DJ product link until the current snapshot has its own page.

Choose **Publish Mix** to create that page. The first time this installation publishes, enter an email address. Harmonic DJ sends a review link; opening it shows the pending tracklist, and **Publish and view Mix** performs the actual publication. Merely opening the email does not publish anything. If the Share page remains open, it notices the confirmation automatically; **View Mix** and **Unpublish** then appear as outlined secondary buttons beside the publication status.

Successful confirmation also establishes a publishing credential on this computer. Later Mixes normally publish immediately without another email. If the credential is missing or rejected, Harmonic DJ asks for email verification again.

Editing a Mix never changes its public page by itself. After the first publication, the primary action becomes **Update Mix**; choosing it replaces the snapshot at the same canonical URL. Harmonic DJ stores the publication association with that saved Mix, so switching Mixes or restarting the application retains its published state. If email verification is required again, the existing version stays public until the reviewed update is confirmed. The page remains public until explicitly unpublished, and the linked copy-ready tracklist contains its permanent URL. Unpublishing permanently retires that URL; publishing the same local Mix again is allowed and creates a new URL.

Published pages contain visible tracklist and strategy details only. They never contain audio, local file paths, private Mix history, Library groups, locks, exclusions, or raw analysis evidence. Anyone with a published URL can view it, and the page may be indexed like an ordinary public web page.

When every published track has supported key information, the page also shows an interactive Mix Map. Selecting a map node or its left and right buttons highlights the matching public tracklist row; pointing to, focusing, or choosing a tracklist row selects the same track in the map. This visualization uses the visible published key information and does not add private Library or analysis data.

Another Harmonic DJ user can choose **Library > Import Collection from Mix Link…** and paste the public URL to create a path-free shared collection from its public track information. This does not import the Mix itself, transfer publication ownership, or silently follow later updates.

8.6. Remote Tracks and Find Online

A shared track may appear as a planning candidate even when its audio is unavailable locally. Harmonic DJ keeps that state explicit instead of showing it as a missing file or silently removing it from discovery.

Choose **Library > Import Collection from Mix Link…** and paste a public Harmonic DJ Mix link to create a path-free shared collection from its public track information. This imports a collection, not the Mix itself. Importing the same link again explicitly refreshes that collection; Harmonic DJ does not follow later publication updates automatically. The public Mix page remains the reference for its authored order, transition explanations, and recording.

Imported Mix-link tracks use the key and BPM published with that Mix as discovery context for potential matches. This is not a substitute for analyzing the audio locally, so Harmonic DJ may report different keys after you obtain and add a track.

Find Online uses available identity metadata to open a MusicBrainz recording or search, a descriptive Beatport search, or a SoundCloud search. This is a lookup convenience rather than a purchasing, downloading, or matching service.

When you legally obtain the audio, add it through the ordinary Library workflow. The local track becomes the canonical playable record; there is no separate manual-link path that bypasses normal analysis.

8.7. Privacy

Commercial audio is not embedded in Library metadata, shared collections, Mix documents, transition presets, or published Mix pages. Harmonic DJ does not upload audio for license checks or proxy it between users.

Local Library paths remain local unless you deliberately use the path-based Library Metadata export. Shared collections are the path-free format intended for another person.

Share Mix corrections are stored with that Mix and do not rewrite source tags. Copying a tracklist places only the visible text on the clipboard. Publishing sends only the reviewed public snapshot. The email address is used to deliver verification and is not added to a newsletter or embedded in the page.

9. Community and Pro

Community and Pro use the same detector, key profiles, planner, saved Mix workflow, default ranking, and audio Library. Pro adds larger Mixes, Gem Finder, and reusable Gems.

9.1. Community

Community is free forever and does not require an account. It includes unlimited local analysis, Library search and management, personal track ratings, audition, key-profile selection, groups, local metadata, portable collection exchange, and the complete Settings surface.

It includes named, auto-saved Mix documents with exact track counts from one through five. You can create, rename, duplicate, import, export, undo, seed from Library, generate, lock positions, replace alternatives, remove tracks, apply exclusions, and regenerate.

Community can open the interactive Mix Map, manage transition presets, copy or publish editable Mixes, and drag playable local tracks from Mixes and Gems into other applications. It can also open and audition existing Pro Mixes and Gems. A Mix with more than five tracks is read-only until Pro is active again.

9.2. Pro

Pro removes the five-track Mix limit and unlocks Gem Finder plus saving, rating, and reusing directed Gems.

Visit the APU Harmonic DJ product page to see current Pro pricing or purchase Pro.

9.3. Trial and License Changes

Open **About** to start the standard APU Pro trial or activate a license. The trial unlocks the same local features as paid Pro and does not require a payment card.

When a trial expires or a license becomes inactive, Harmonic DJ returns to Community. The Library, Gems, shared collections, transition presets, and Mix documents remain stored. Mixes with five or fewer tracks stay editable. Larger Mixes stay readable and auditionable, and become editable again when Pro is active.

If Pro access changes during generation of a Mix longer than five tracks, Harmonic DJ leaves the existing saved Mix unchanged rather than committing a partial result. A Community-sized generation can finish normally.

10. Troubleshooting and Reference

Start with the status line at the top of Harmonic DJ. Long operations report their current phase, and most rejected actions explain the specific requirement that was not met.

10.1. Track States

Ready to mix means the local track has the analysis required for planning. **Needs attention** collects incomplete or failed local analysis. Select the track to inspect its status, then use **Rescan** after correcting the underlying file or decoder problem.

Missing files are local records whose stored path no longer exists. If a file moved, add it from the new location before cleanup; one byte-identical, unambiguous content match updates the Library and saved Mix paths automatically. **Show in Folder** opens the last known parent when possible, and **Remove Missing Files** permanently cleans up the remaining records after confirmation.

A shared track is intentionally metadata-only. It can support planning and online lookup but cannot be auditioned or dragged as a local audio file.

10.2. Generation and Candidate Problems

Mix generation targets the requested track count. If it cannot fill every position, it keeps the longest compatible route it found, preferring the stronger route when lengths tie, as long as every lock is preserved.

The requested track count stays unchanged so another Generate can retry the full target after you adjust the Library or constraints. If no compatible progress can preserve the locks, the current tracklist is left unchanged.

Common causes of a partial or unchanged result include:

- Too few ready and unique tracks in the selected groups
- A focused transition profile with too few compatible edges
- A strict BPM rule or narrow pitch-shift range
- Allowed roots or modes that exclude most of the Library
- Required stable or changing start/end keys
- Locked positions that cannot be connected
- Position, segment, or whole-Mix exclusions

Gem Finder intentionally ignores Mix groups and exclusions, but it still requires an unused track that passes BPM, Allowed Keys, key matching, and any start/end relationship requirement. A shared candidate can be planned but not auditioned until local audio is added normally.

10.3. Audio and M4A Playback

If a local track will not analyze or play, confirm that the file still exists and appears in the Add Files chooser for the current platform. Then rescan the track and read the status message.

On Windows, AAC and ALAC M4A decoding depends on Microsoft Media Foundation. Windows N and KN editions normally require the Media Feature Pack from **Settings → Apps → Optional Features** followed by a restart. The Harmonic DJ installer checks for the required components and offers to open that settings page.

On macOS, M4A uses Core Audio. Linux builds advertise only the formats available through their registered readers.

10.4. Cancellation and Recovery

Canceling discovery, analysis, metadata transfer, or generation is cooperative. The current unit of work may take a moment to stop cleanly.

Completed Library analysis is retained. An interrupted current track returns to the durable queue. Canceling Mix generation leaves the previous tracklist in place.

Mix documents are auto-saved and keep bounded revision history. If the current projection needs repair after an interrupted write, Harmonic DJ can recover it from the saved history manifest without placing that private history inside an exported `.hdjmix` file.

10.5. Glossary

Allowed Keys: Independent root and mode filters applied to both boundaries of every eligible Mix track.

Gem: A saved, directed source-to-destination transition approved by the listener.

Harmonic detail: Soft reranking evidence derived from fuller harmonic distributions after a transition is already accepted.

Incoming / outgoing key: The detected key used where a track enters or leaves under start/end matching.

Mix: A tracklist plus the complete planning and sharing state used to create and refine it.

Mix Map: A read-only trajectory of Mix roots, modes, within-track key movement, and directed transitions.

Parent key: The Ionian pitch collection associated with a modal key.

Pre-limiter gain: One common gain recommendation that places the gain-adjusted Mix near its integrated-loudness target before final limiting.

Relation rule: One named directed harmonic predicate inside a transition profile.

Shared collection: A path-free, audio-free snapshot of track identity and analysis metadata.

Transition profile: The ordered collection of enabled relation rules owned by a Mix.

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- JUCE (cross-platform audio and user interface framework)
- Boost (header-only algorithms)
- r8brain (sample rate conversion)
- PFFFT (FFT library)
- TagLib (audio metadata)
- utf8cpp (Unicode support used by TagLib)

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