Kouncil by K PRESTO Manual

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15. How it is built

Kouncil is a desktop analyzer for finished audio masters. It measures a track's loudness, dynamics, tone and stereo image, runs it through the codecs streaming services and Bluetooth actually use, and tells you what it found in plain language at four levels of expertise. Everything is judged against a streaming target and a profile built from real commercial masters, so a value is flagged when it is unusual for that kind of music and left alone when it isn't.

It runs entirely on your computer. No audio, results or usage data leave the machine.

This manual follows the order most sessions take. Load a track, add the ones you want to hold it against, choose a target and a profile, read the tabs, listen, ask the Kouncil, then export.

Quick start

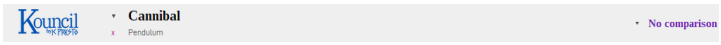
There is a lot in Kouncil, and none of it has to be learned before it is useful. These six steps are a whole session. Everything after this chapter is detail for when you want it.

The first time you open Kouncil, one of the characters says hello and asks for a track. Once your first track is analyzed, all four of them show you round the window in fifteen short steps, each pointing at the part it is about. Enter or the right arrow moves on, the left arrow goes back, and Esc ends the tour at any point. **Settings > About > Tour of Kouncil** plays it again.

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1 Load a track

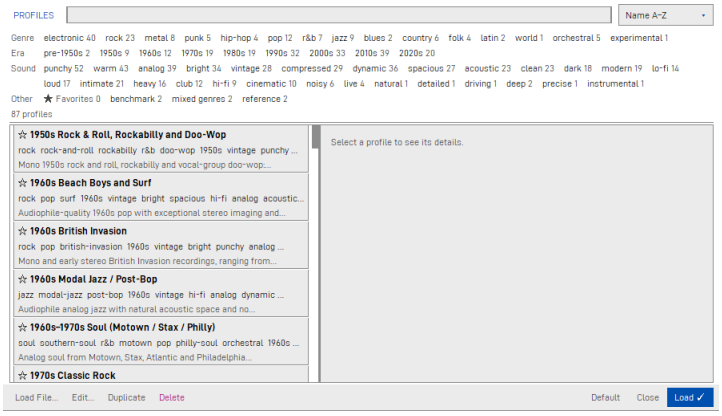
Drag an audio file onto the window, or press **Load** (Ctrl+O, or ⌘O on a Mac). WAV, FLAC, MP3, AIFF, OGG, M4A and Opus all open. The charts fill in as the analysis finishes, about 25 seconds for a whole track, and you can start reading before it is done.



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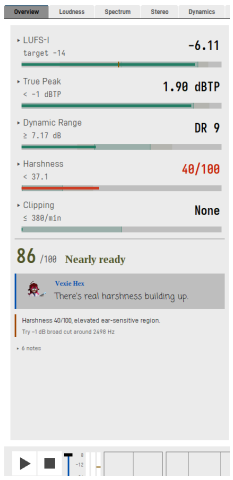
2 Say where it is going

Pick the **Target** in the header: the platform the master is for (Spotify, Apple Music, a club, broadcast). Then click the profile name next to it and choose the style of music closest to yours. Now the app knows what normal looks like for this track.



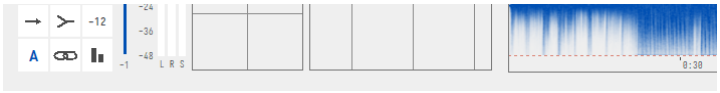
3 Read the Overview

The first tab answers one question: is this ready? Look at the **health score**, then read the findings under it. They are in order, worst first, and each says what to do about it. Yellow and red numbers are the only ones that need you.



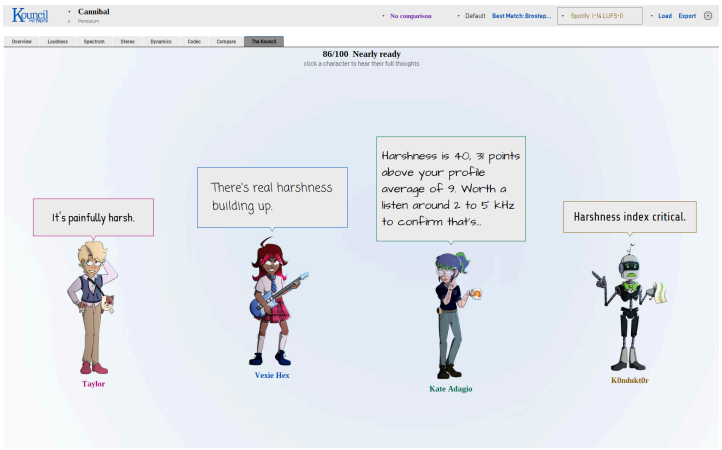
4 Listen

Press **Space** to play. Drag on any spectrum chart to hear just that band of frequencies, which turns "something sounds harsh around here" into a number. With a second track loaded, **M** flips between the two.



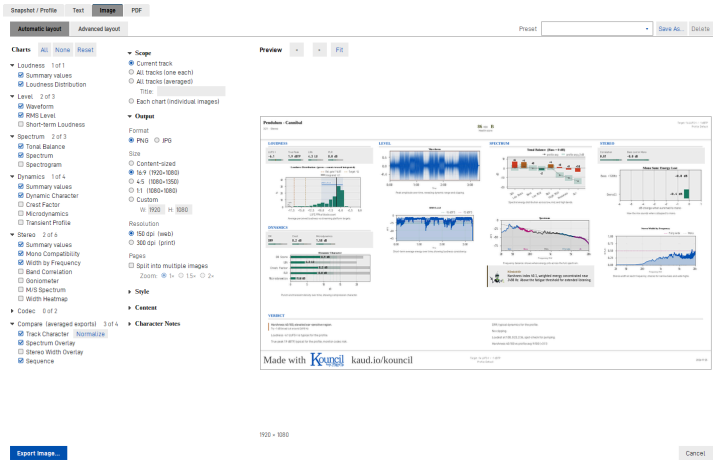
5 Ask the Kouncil

The last tab is four characters who explain what they found, from a listener's plain words to the engineering. Click one to hear them out. Hover over almost anything else in the app and your chosen character explains that too.



6 Save or share it

Press **Export** (Ctrl+S, ⌘S on a Mac) for a picture to post, a PDF report, a text report to paste into a message, or a snapshot that reopens the whole analysis later without the audio.





Taylor

Honestly? Load your song, look at the score, read the first red thing, fix it, load it again. That's most of it.

Kouncil Lite and the full version

Kouncil Lite is free and shows where a problem is: the health score against any of the genre profiles, every finding, every tab's main charts, render checks, A / B against one other track, and the codec simulation for Apple Music and for Spotify over Bluetooth, scored and playable. The full version adds the depth: each finding's fix, the charts marked "Locked" (a click on the word opens Settings > About), all eight codec paths with the Scorecard, DIFFERENCE and NORMALIZE, dragging on a spectrum to solo any range, several tracks at once (analysis, the Compare tab, averages, exports), the Advanced image editor, the PDF and text reports, snapshots and profiles of your own. The score is the same in both.

Anything locked offers a 14-day trial of the full version, once. A license key goes in **Settings > About**.

1. Loading tracks

Drop audio files on the window or press **Load** (Ctrl+O / ⌘O). WAV, FLAC, MP3, AIFF, OGG, M4A / AAC and Opus all open. The arrow beside Load lists recent files. Drop several at once and they are analyzed side by side, with the number running at once held back by how much memory is free.

Analysis takes about 25 seconds a track and arrives in stages. The waveform and level figures land first, the spectral, stereo and dynamics charts follow, and the codec simulation fills in last. Each chart appears as its part of the analysis finishes, so you can start reading and playing before the track is done.



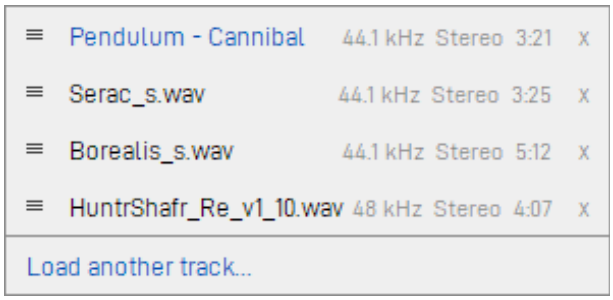
The header: the track, the target (gold), the profile, the compare source, Load, Export and settings.

Every loaded track stays in the **library** for the session. The title in the header names the current track (title over artist, read from the file's tags). Click it, or the arrow beside it, for the track list. Left and Right step through the

library. To remove a track, click the x on its row in the track list, right-click the row, or press Ctrl+R (⌘R on a Mac) for the current one. Undo brings it back. Hold the x in the header to remove every track.

Kouncil remembers the library between launches. The last session's tracks come back analyzed, with no waiting. If an audio file has moved since, the status row offers **Locate audio** so playback can find it again. Analysis results never depend on the file still being there.

A `.ksnap` snapshot (see Exporting) loads the same way as audio and opens instantly, which is how you look at a master someone else analyzed or one whose audio you no longer have.



The track list. Drag a row by its grip to reorder.

Render QC

Each file is also checked for problems that have nothing to do with taste. These are faults in the render itself, and they show up in the Overview's findings and in the text report.

CHECK	WHAT IT CATCHES
Sample rate	Below 44.1 kHz, or a non-standard rate
Bit depth	8-bit files, lossy sources passed off as masters
Head silence	More than 0.3 s before the music starts
Tail silence	More than 3 s of nothing after it ends
Premature cutoff	A render stopped while audio was still sounding
Render glitches	A buffer of silence, a held sample or a buffer played twice, from a buffer underrun. Needs a lossless file
Dropouts	50 to 500 ms of silence inside the music
DC offset spike	A sudden offset jump from a buffer error
Dead channel	One side of a stereo file is silent while the other plays, from routing or a pan



Taylor

These are the "something broke when the file got saved" checks. A click, a gap, the ending chopped off. Nothing to do with whether the song is good.

2. Target and profile

Two things decide what counts as a problem.

Target (header, in gold) is where the master is going. It sets the loudness target and the true-peak ceiling, and it is the gold line on the loudness charts and the gold mark on the output meter.

TARGET	LOUDNESS	TRUE PEAK CEILING
Spotify	-14 LUFS-I	-1.0 dBTP
Apple Music	-16 LUFS-I	-1.0 dBTP
YouTube	-14 LUFS-I	-1.0 dBTP
Tidal	-14 LUFS-I	-1.0 dBTP
Amazon Music	-14 LUFS-I	-2.0 dBTP
SoundCloud	-14 LUFS-I	-1.0 dBTP
Bandcamp	not normalized	-0.1 dBTP
Club / CD	-9 LUFS-I	-0.3 dBTP
Broadcast EBU	-23 LUFS-I	-1.0 dBTP
Broadcast US	-24 LUFS-I	-2.0 dBTP

A loudness target or ceiling of your own can replace the preset's in Settings > Analysis.



Taylor

The target is just which app your song is headed for. They all turn loud songs down to about the same level, so going louder than the target doesn't make you louder. It just gets turned back down.



Vexie Hex

The ceiling is your limiter's output setting. Leave about 1 dB up there, because turning a song into an MP3 or AAC pushes the peaks up a little and a master parked at 0 will clip afterwards.

A **profile** is what masters of one kind measure. For every metric it holds the range that a set of reference tracks falls in, plus their average spectrum. With a profile active, the Target column of every table shows the profile's range for that row, the spectrum chart draws the profile's curve behind yours, and a value is only marked when it falls outside what is normal for that style. A thrash metal master at DR6 is not a problem. A cool jazz master at DR6 is.



Taylor

A profile is "what songs like mine usually measure". So the app stops nagging you about things that are normal for your kind of music.



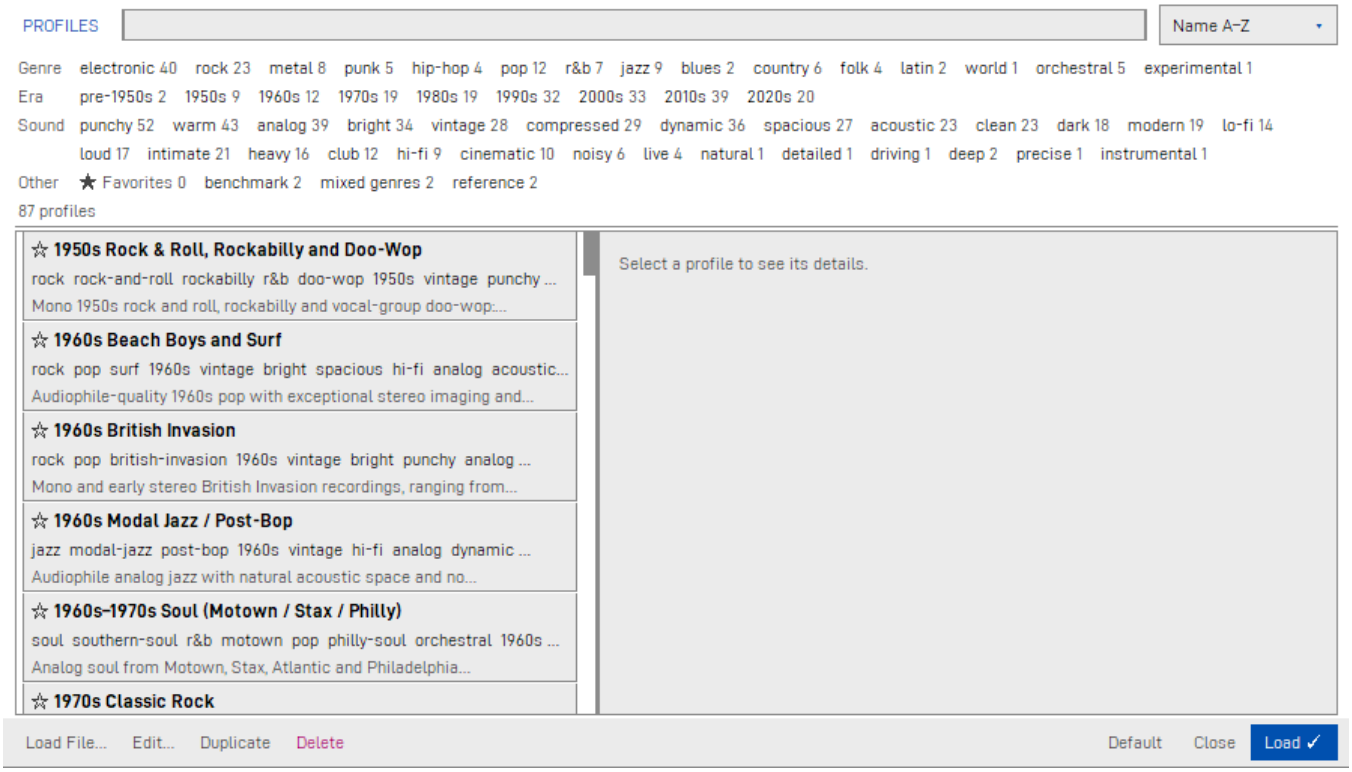
K0ndukt0r

Per metric a profile stores the reference set's mean, median, trimmed mean, standard deviation, quartiles, percentiles and extremes. Target and range are read from those by the methods chosen for that profile, mean ± 1σ by default. A value is flagged when it lies outside the range, and flagged harder past a second margin.

Kouncil ships with 85 genre profiles measured from 3,020 commercial masters, covering styles from 1930s big band swing through bebop, soul, classic rock, punk, thrash, hip hop, house and techno, jungle, trip hop and roots reggae to film scores, Latin pop, modern mainstream pop and K-pop. A record is in a profile only if a reputable third party praised its mix or master, and an era profile uses the original release, never a later remaster. Two more, **Benchmark: Modern** and **Benchmark: All-Time**, are built across genres from records engineers and critics hold up as references (see the scoring target in Settings).

Click the profile's name in the header for the **Profile Library**.

Beside the name, **Best Match:** names the genre profile whose tonal balance the track fits best. It shows under the Default profile, and under a genre profile when the track's tone is outside that profile's range. Click it to switch. Kouncil never switches for you, so the score doesn't change on its own.



The Profile Library: search and tags above the list, the selected profile and its targets at the right.

- Search by name, tag or a reference track's artist, and filter by Genre, Era and Sound. Picking a genre opens its subgenres. Tags in one row widen the list and tags in different rows narrow it. Favorites is in the last row, and Hidden joins it once a profile is hidden.
- Select a profile to see its description, the tracks it was built from, and its targets table. The table shows the headline metrics, or every metric behind "All metrics".
- The profiles Kouncil ships stay as they shipped. Edit makes a copy of one in **My Profiles** for you to change, and Delete hides it (Hidden brings it back). Your own profiles live in My Profiles and can be edited, renamed, duplicated and deleted.

The arrow beside the profile name lists recently used profiles, and **Default profile** at the end goes back to the default. There is always a profile: until you pick one, the default is it, a general baseline for music of any style.

3. Comparing tracks

Load more than one track and **Compare** (header) picks what the current track is held against.

- Another track from the library
- **Average** of the whole library
- **Average of others**, which is everything except the current track

The choice shows up everywhere at once. Charts draw the compare source as an overlay in the compare color, every table gains a CMP column, and the playback strip grows a second waveform so you can A/B by ear at the same moment in time (see Playback).



With a compare track: an overlay on every chart, a CMP column in every table, a second waveform on the strip.

Typical uses are a master against its reference, a new revision against the last one, and one song against the rest of the album it has to sit on.

The **Compare tab** shows the whole library together, and is where an album gets checked for cohesion. It is described under The tabs.

4. The tabs

Each tab has tables on the left and charts on the right. Keys 1 to 8 switch between them. The frequency axis on every spectrum chart can be log, mel or linear (Settings > Analysis).

In tables, a value in plain text is in range. Yellow and red mark a problem and are the only colored numbers, so a glance down a column finds what needs attention.



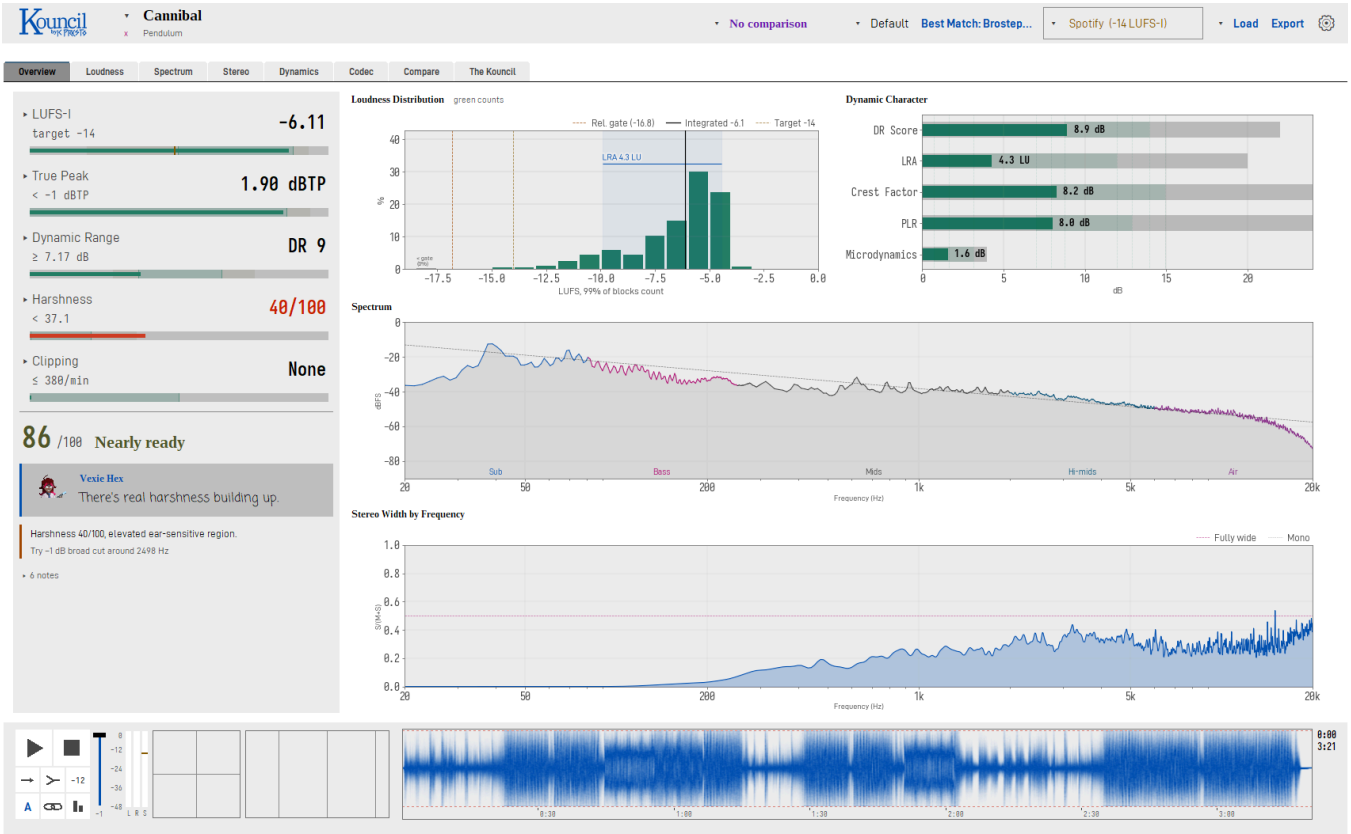
Taylor

White number, you're fine. Yellow, have a look. Red, fix this one.

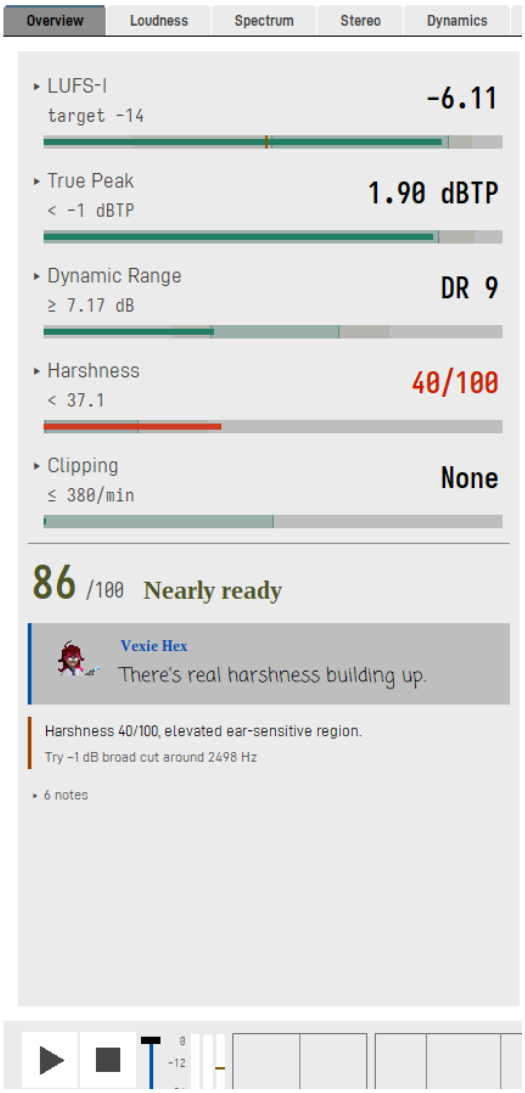
Right-click a table row to copy its value, its compare value or the whole table, which pastes into a spreadsheet as columns. Drag across any text to select it, then Ctrl+C (⌘C on a Mac).

Overview

Answers one question. Is this master ready, and if not, what should be fixed first?



The Overview: headline metrics and the conclusion at the left, the four charts that say the most at the right.



Headline metrics, then the score, the summary and the findings.

The left column is five headline metrics with their targets, then the conclusion. That is a **health score** out of 100 with a grade (Reference quality from 97, Release ready from 90, Nearly ready from 80, Needs another pass from 65, Not ready from 50, then Serious problems), a one-sentence summary from your chosen character, and the findings in order of severity. Each finding has a colored bar for how serious it is and a muted line underneath saying what to do about it.

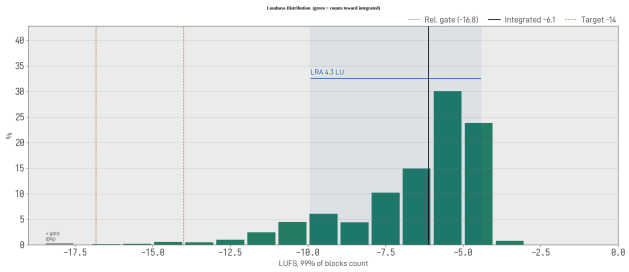
Click a headline metric's name to open the rest of its group under it.



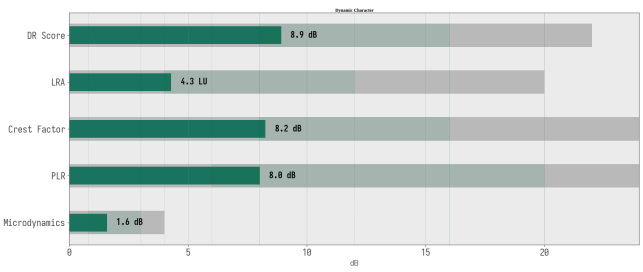
K0ndukt0r

The score starts at 100 and deducts: loudness error up to 25 (45 when it is 10 LU or more off target), true peak over the ceiling 5 per dB up to 20, DR under 8 or 6 costs 14 or 22, LRA under 5 or 3 costs 5 or 10, clipping 10, 25 or 40 above 250, 2,500 or 25,000 samples a minute, stereo correlation under 0.2 costs 10 and under 0 costs 40, mono bass loss over 4 dB 5 and over 12 dB 15, a tonal balance further from the profile's tracks than nearly all real releases go, in any band and either direction (too bright, dull, boomy, thin, muddy, harsh) up to 20, a render fault 5 each up to 10, and a track both quieter than the profile and with a higher PLR, the mark of an unmastered mix, 8 to 12. Smaller terms cover harshness, microdynamics, Low Volume Tilt and the worst codec's transient fidelity. Against a profile, a typical value costs nothing, an unusual one up to 5, and one outside every reference record the full amount. Clipping the profile's own references reach costs at most 5. Every measurement the profile holds also costs a little for its distance from where 100 sits (Settings > Analysis > Scoring target), up to 28 in all, so 90 to 96 is a very good master and 100 is rare. The parts are kept exact and the total rounded once.

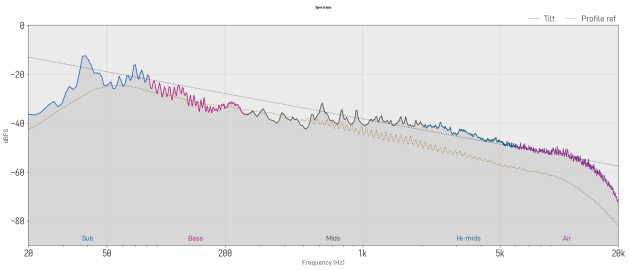
The right column is the four charts that say the most about a master at a glance.



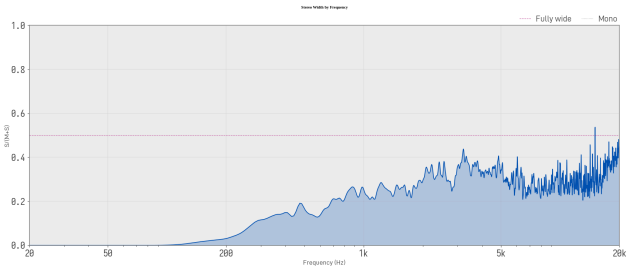
Loudness Distribution. Where the track spends its time, with the target and the integrated level marked.



Dynamic Character. DR, loudness range, crest factor, PLR and microdynamics against their healthy zones.



Spectrum. The average spectrum, colored by region from sub to air, with its tilt.



Stereo Width by Frequency. How wide each part of the spectrum is, from mono at the bottom.

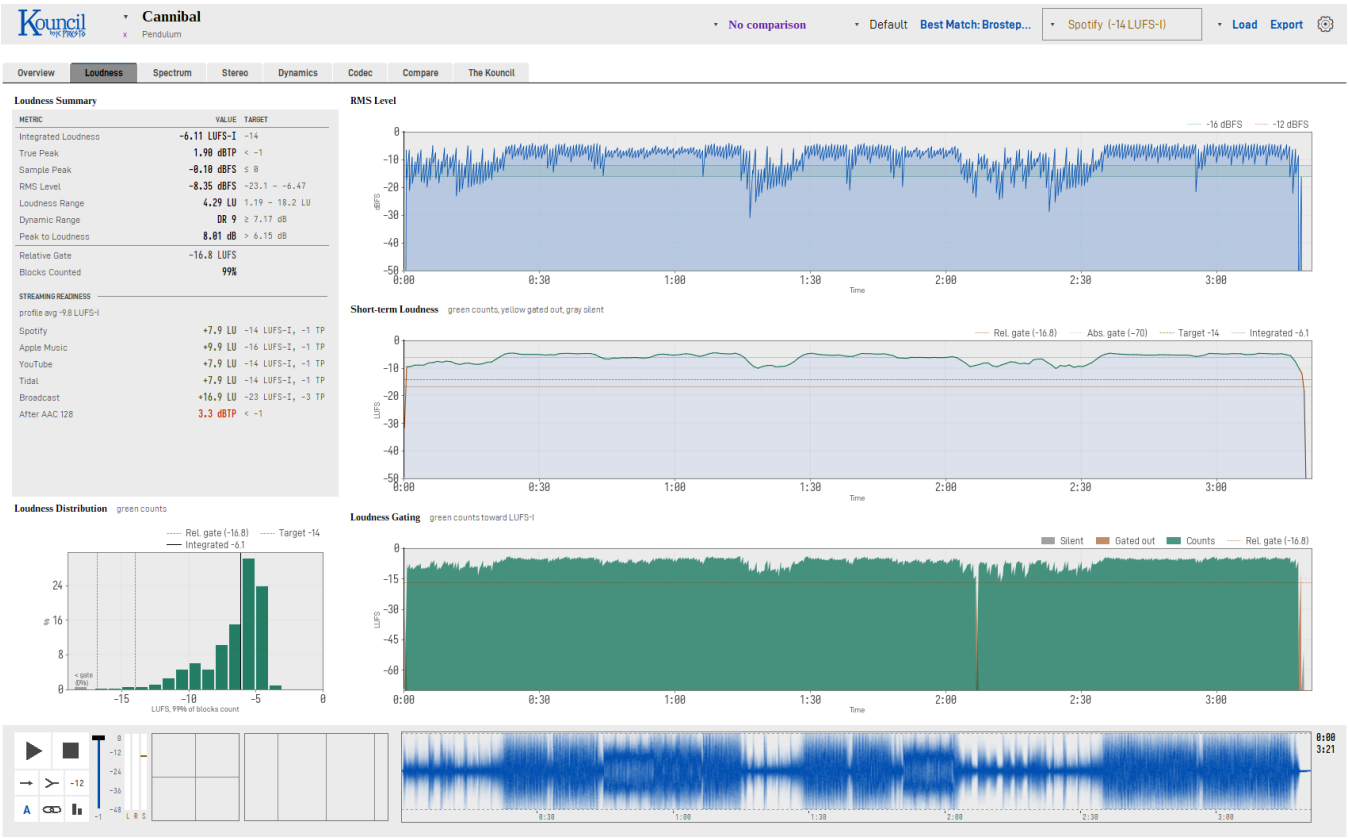
Loudness

Loudness follows ITU-R BS.1770 / EBU R128 and is tested against the EBU's reference signals.



Taylor

Loudness is different than volume. It's more like how smushed and loud your song FEELS. Two songs can peak at the same level and one still sounds way louder.



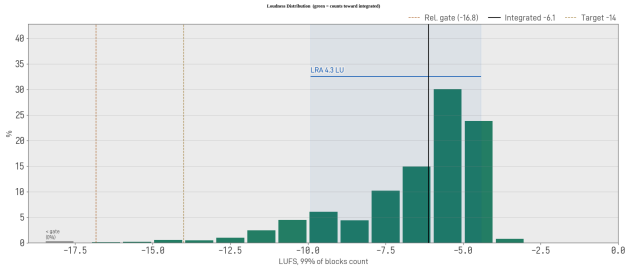
The Loudness tab.

- **Loudness Summary**. Integrated loudness (LUFS-I: Loudness Units relative to Full Scale, integrated over the whole track), true peak, RMS, loudness range (LRA), PLR, PSR and more, against target.
- **Streaming Readiness**. One row per platform showing how many LU the track is from that platform's target, which tells you how much each service will turn it down or up.

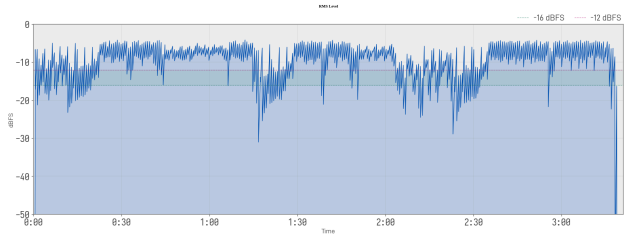


Vexie Hex

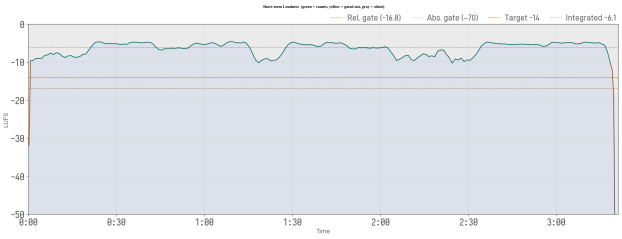
Read Streaming Readiness like this: +4 LU on Spotify means Spotify turns you down 4 dB. You keep the squashed sound and lose the loudness you squashed it for. That's the argument for backing the limiter off.



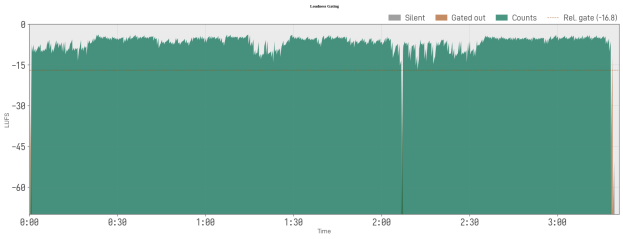
Loudness Distribution. A histogram of where the track spends its time. Green bars count toward the integrated figure.



RMS Level over time.



Short-term Loudness over time, with the target, the integrated level and both gates drawn in. Color shows which moments counted and which were gated out.



Loudness Gating. Exactly which blocks the BS.1770 gate kept.

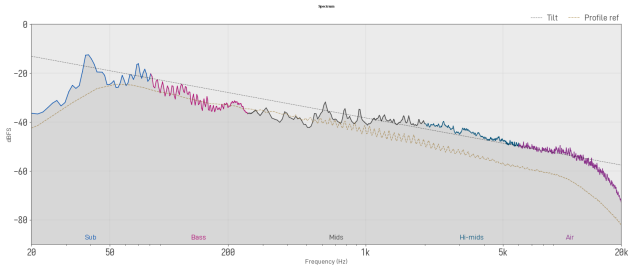
Level figures are always the delivered file's own. A -1 dBTP master reads -1 dBTP whatever level-matching is switched on for the spectra.

Spectrum

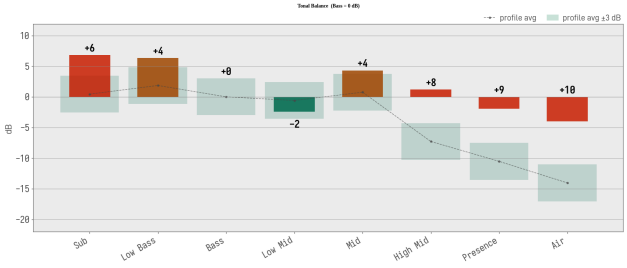


The Spectrum tab.

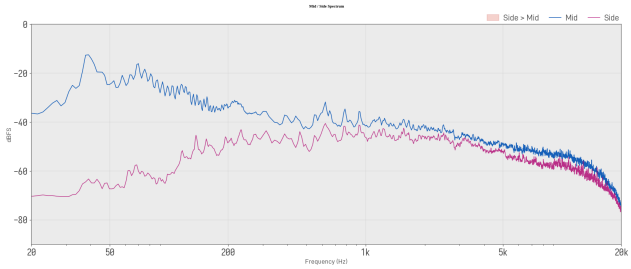
- **Spectrum Summary**. How the track sounds (harshness out of 100, Low Volume Tilt, which is how far the tonal balance shifts when the track plays quietly, and perceptual dynamic range) and the spectrum's shape (tilt, resonances). The perceptual figures are weighted by equal-loudness contours.



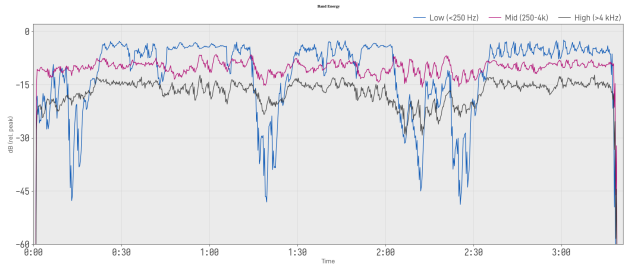
Spectrum. The average spectrum with the profile's curve behind it. Two switches beside the heading add an equal-loudness (FM) weighting and a LUFS-weighted view. Below about 200 Hz the curve comes from a much longer FFT (a bin every 1.35 Hz), so individual bass notes resolve.



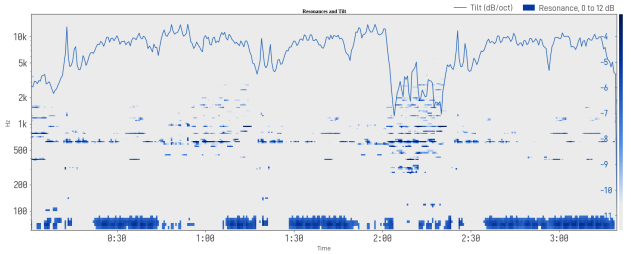
Tonal Balance. Energy per band against the profile.



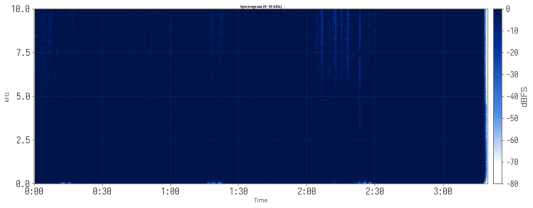
Mid / Side Spectrum. What sits in the center and what sits at the sides.



Band Energy. Low, mid and high over time.



Resonances and Tilt. Where narrow resonances appear over the track, with the spectral tilt traced on top.



Spectrogram. Frequency against time, available in exports.



Taylor

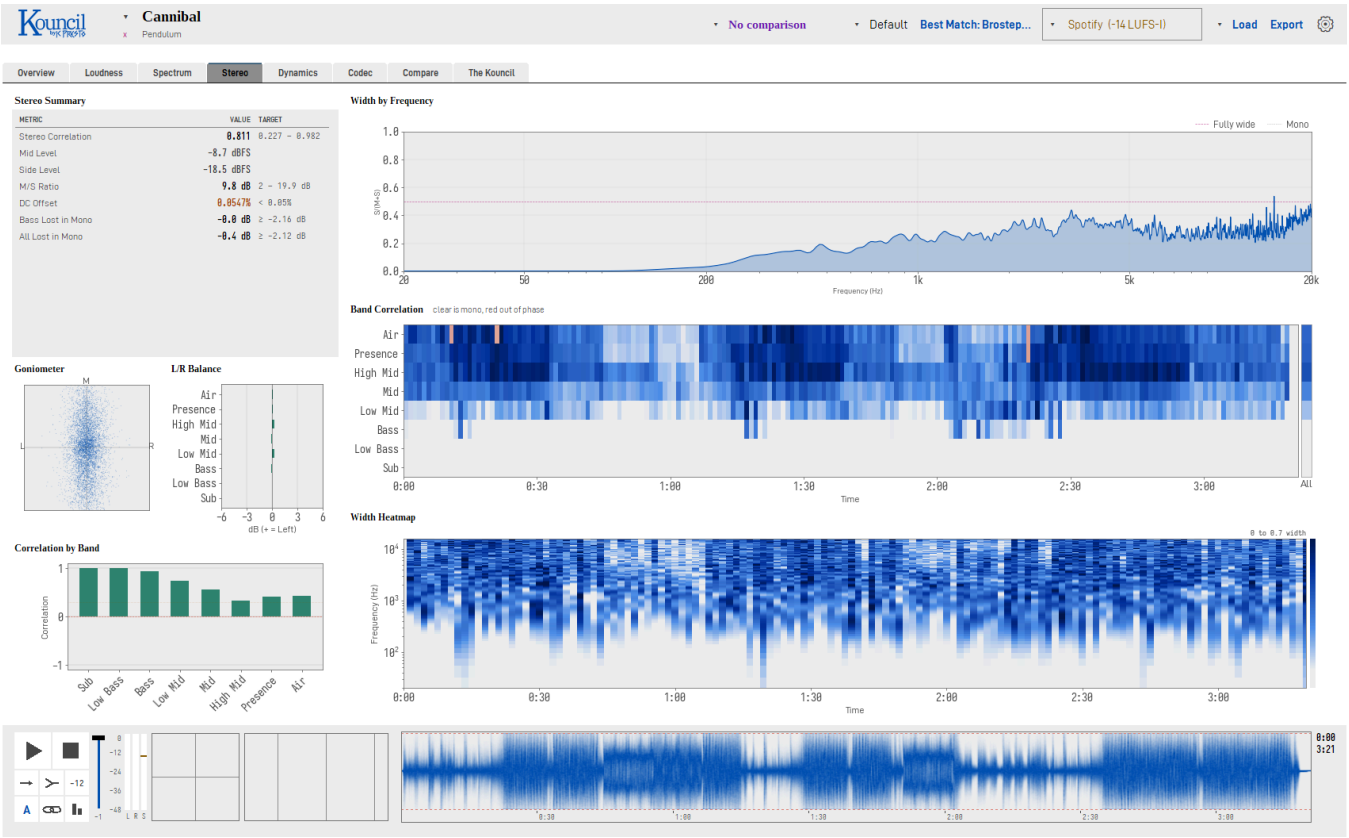
The spectrum is the bass-to-treble picture of your song. Left side is rumble, right side is sparkle. If it leans hard one way, the song sounds boomy or thin.



Kate Adagio

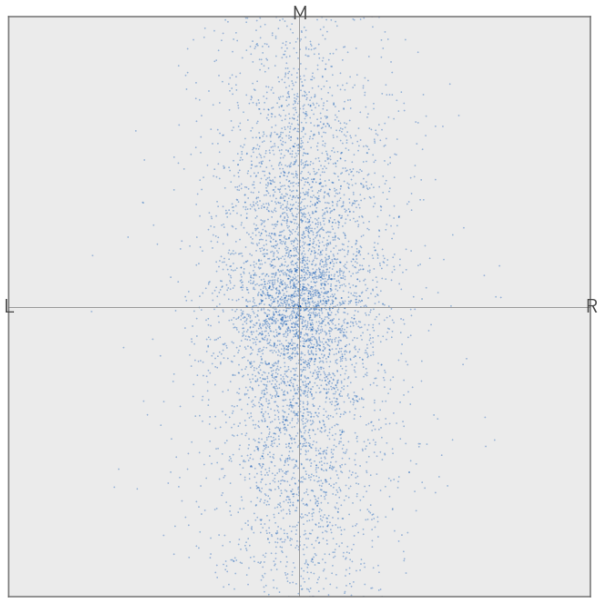
Tilt is the slope of the whole curve in dB per octave: steeper than the profile reads dark, flatter reads bright. Harshness is energy between 2 and 5 kHz weighted for the ear. When it's flagged, try a broad cut of a dB or so at the peak it names before reaching for anything narrow.

Stereo

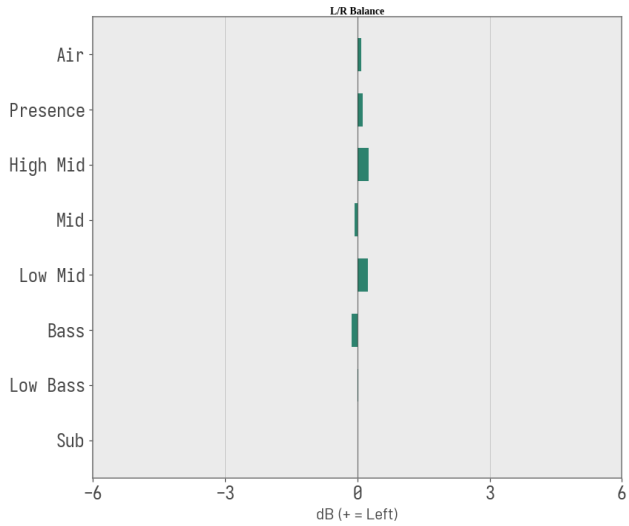


The Stereo tab.

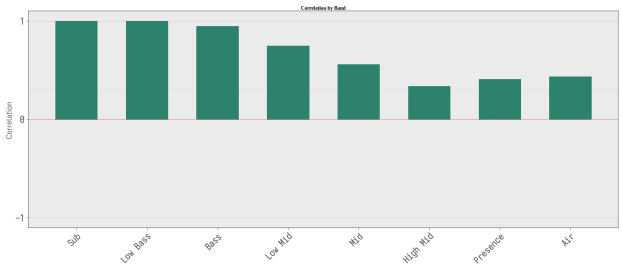
- **Stereo Summary**. Correlation, width, mono-bass loss, mid/side balance.



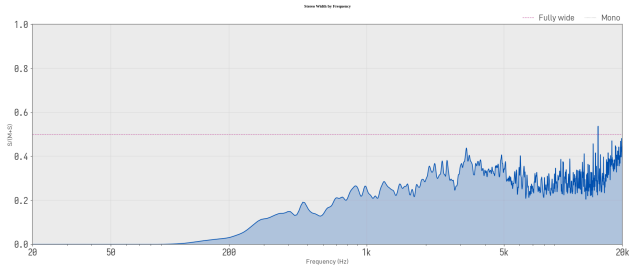
Goniometer. The classic vectorscope of the whole track: mono is the upright line, width spreads sideways.



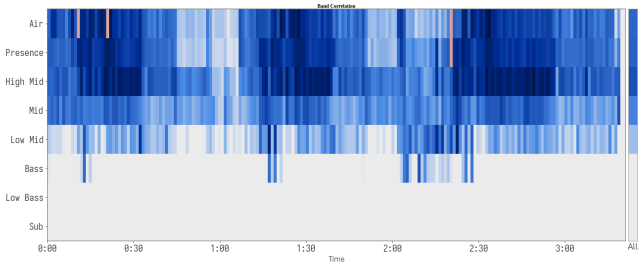
L/R Balance by band, on a fixed 6 dB scale so a 0.1 dB lean doesn't look like a hard pan.



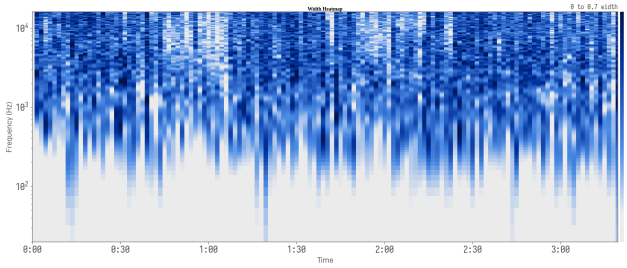
Correlation by Band. Phase correlation per band, which is where mono problems hide.



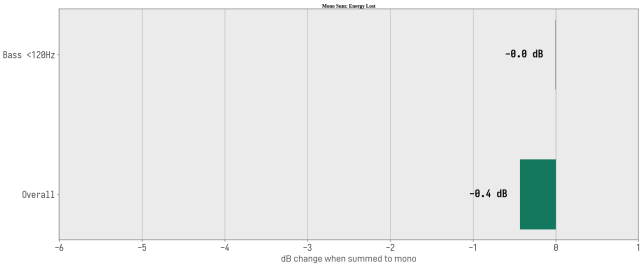
Width by Frequency.



Band Correlation. How alike left and right are in each band as the track plays, with the whole track in the last column. Clear is mono, brighter is wider, and red is out of phase: those moments in that band suffer in mono.



Width Heatmap. Width across frequency and time together.



Mono Compatibility. How much level the bass and the whole mix lose when summed to mono.



Taylor

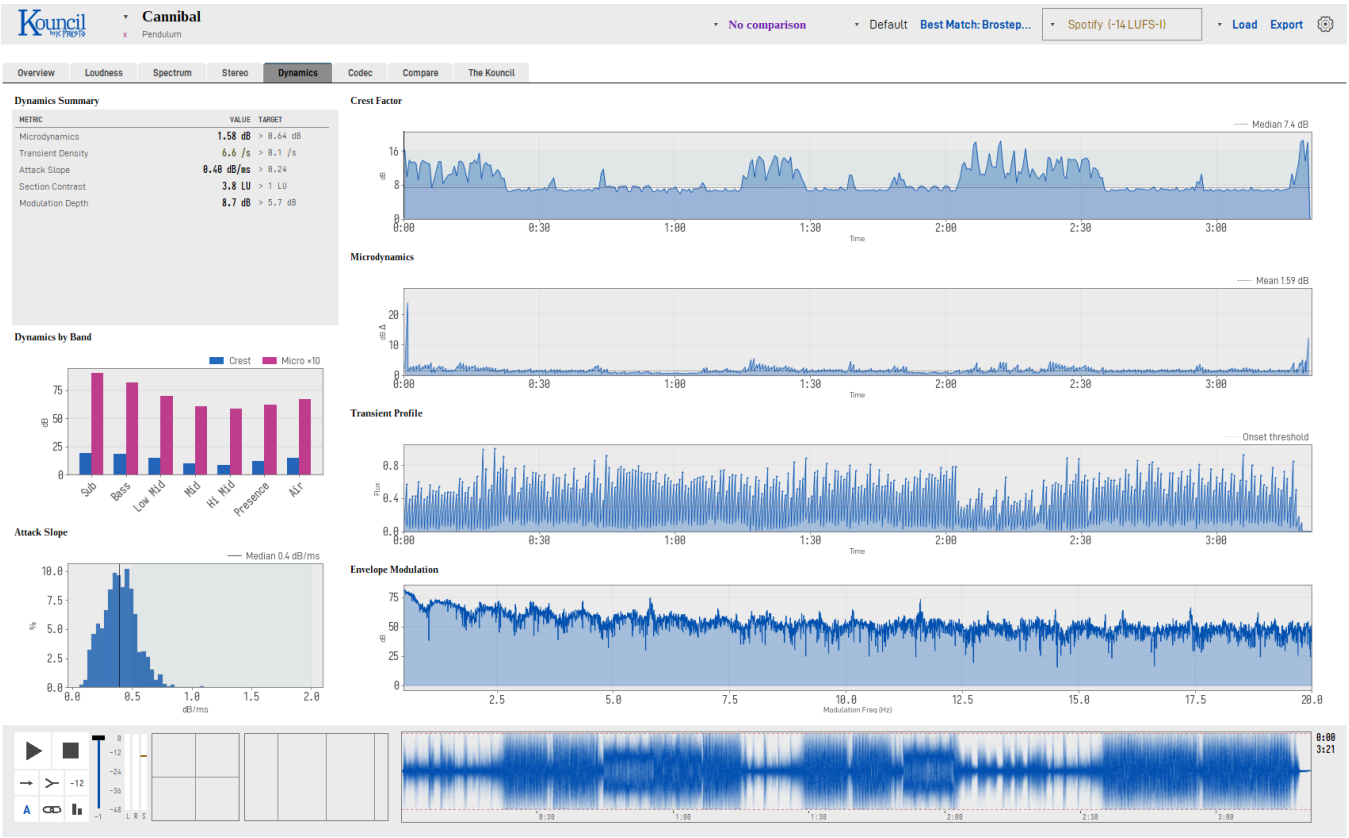
A phone speaker, a shop ceiling, a club system: lots of places squash left and right into one. Mono problems are the parts of your song that go quiet or vanish when that happens. Usually it's the bass.



Vexie Hex

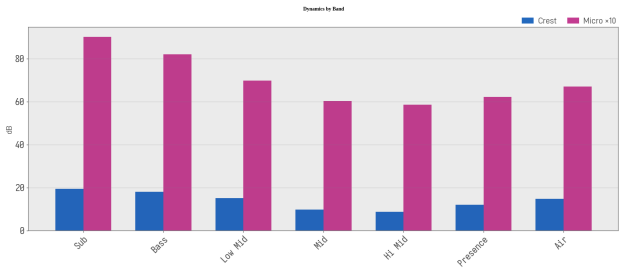
If Correlation by Band dips below zero in the low bands, something down there is out of phase between left and right, often a stereo widener or a chorus on the bass. Make everything under about 120 Hz mono and check again.

Dynamics

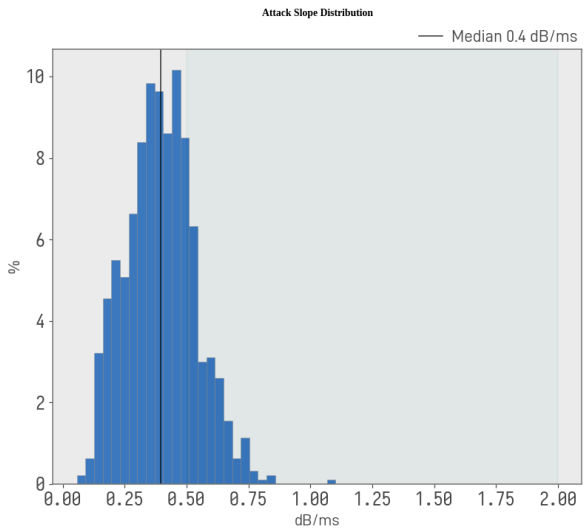


The Dynamics tab.

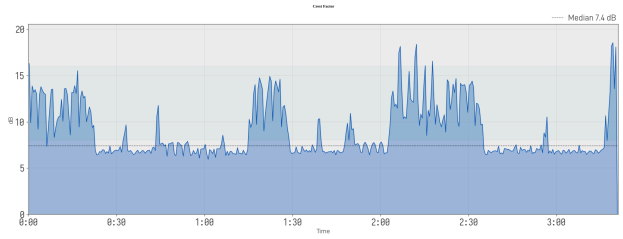
- **Dynamics Summary**. DR, crest factor, microdynamics, transient density, section contrast.



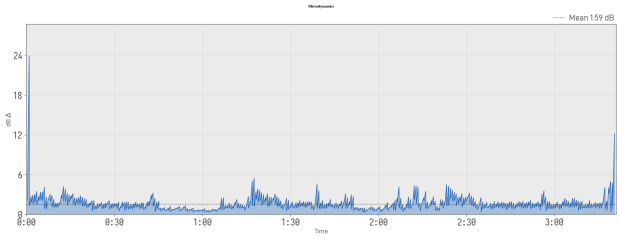
Dynamics by Band. How compressed each band is.



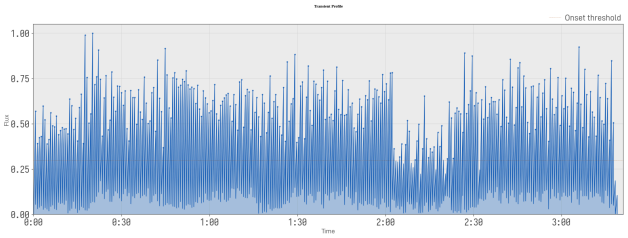
Attack Slope. The distribution of transient attack speeds.



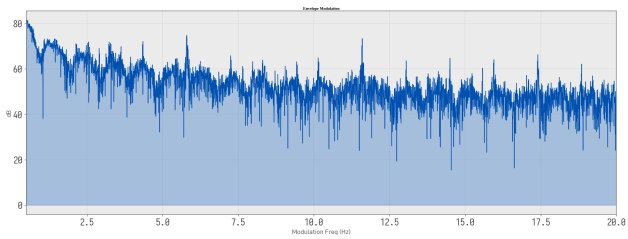
Crest Factor over time, with zones for over-limited, borderline and healthy.



Microdynamics over time.



Transient Profile. Each spike is a detected hit.



Envelope Modulation. The spectrum of the level envelope: the rhythm of the loudness, with the beat as its biggest peak.



Vexie Hex

Crest factor is how far your hits stand above the body of the sound. Under about 6 dB the limiter has flattened the drums and everything feels the same size. Pull the limiter's input back 2 or 3 dB and the punch comes back.

Codec

Kouncil does not estimate what a codec will do. It encodes and decodes the track through the real codecs with ffmpeg, aligns the result to the original to the sample, and analyzes the difference.



Taylor

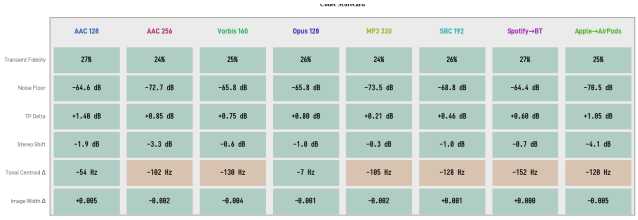
Streaming apps and Bluetooth headphones shrink your song to send it. This tab actually does the shrinking and shows you what got lost on the way.



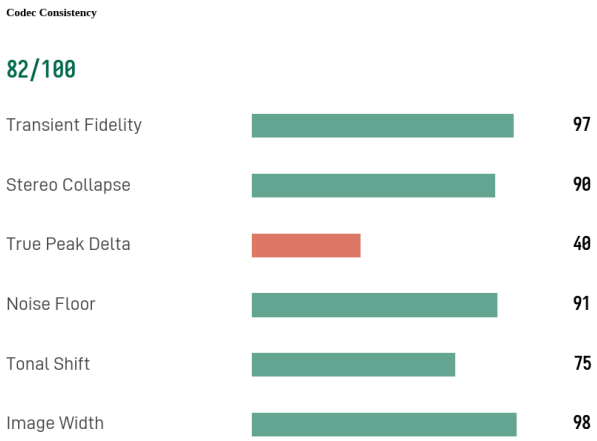
The Codec tab: tables at the left, graphs at the right, Listen under the tables.

VERSION	STANDS FOR
AAC 128	Web players, ad-supported tiers
AAC 256	Apple Music, Spotify Premium, YouTube Music
Vorbis 160	Spotify's apps at normal quality
Opus 128	YouTube, Discord
MP3 320	SoundCloud, DJ USB sticks, download promos
SBC 192	Baseline Bluetooth, which every device supports
Vorbis 160 → SBC 192	Spotify over worst-case Bluetooth
AAC 256 → AAC 256	Apple Music on AirPods

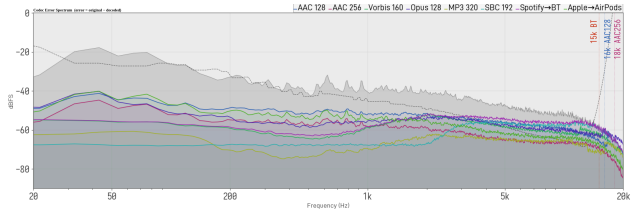
The left column holds the **Codec Summary** (Consistency first, then the codec that does worst on each measurement, then the master's own true and sample peaks), the Scorecard and Consistency. The right column holds the graphs.



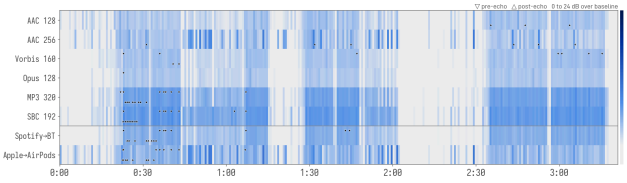
Scorecard. Every codec against every metric, colored by threshold.



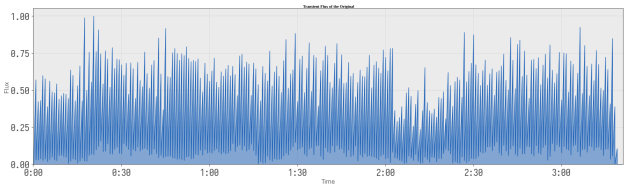
Consistency. How alike the codecs treat the track, counting only things a master can change.



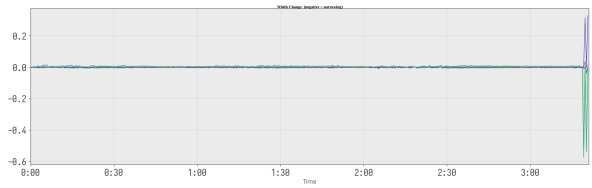
Error Spectrum. What each codec got wrong, by frequency, against a psychoacoustic masking threshold: error under the line is hidden by the music.



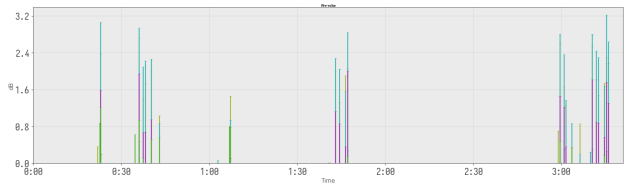
Artifact Timeline. A row per codec; bright cells are moments where its error rose above its own usual level.



Transient Flux. The original's hits, to line up with the two charts beside it.



Width Change. How each codec narrowed or widened the stereo image over time.



Pre-echo. Where a codec smeared sound ahead of a hit, and by how much.

Each codec has its own color across the whole tab. Tooltips on the Scorecard say what moves each figure and what to do in the master about it.



Kate Adagio

The two figures worth acting on are true peak change and transient fidelity. If a codec adds more than a dB of peak, lower your ceiling by that much. If transients score low, the hits are landing on dense, bright material and the encoder runs out of bits: ease the limiter and tame constant top end such as hats and distortion fizz.

Under the tables is **Listen**, covered in the next section.

Compare



The Compare tab: every track in the library in one table at the left, and on the same charts at the right.

- **Summary**. One row per metric, one column per track, with the average last. Track names head the columns in each track's own color and are the color key for the charts beside them. A metric's name turns yellow or red when the tracks are far apart on it (its tooltip gives the spread), and the line under the table names the track that stands out on loudness or dynamics. More tracks than fit scroll sideways.
- **Track Character**. A radar chart of every track. With **Normalize** on, each axis is scaled to the active profile's range, so a track that sits on the profile draws a circle and deviations stick out as dents and spikes.
- **Spectrum**. Every track's spectrum overlaid.
- **Stereo Width by Frequency**, overlaid.
- **Sequence**. The tracks end to end in album order with the loudness step at each join, which shows whether track 4 will jump out after track 3.



Taylor

On Track Character every song is a shape. Songs with the same shape sound like they belong on the same album. The one with the weird shape is the one that'll stick out.

To put an album in order, drag a track by its grip in the header's track list, drag a track's name sideways in the Summary, or drag a track along the Sequence chart. Click anywhere on Sequence to start playback from that point in that track, which makes auditioning the transitions quick.

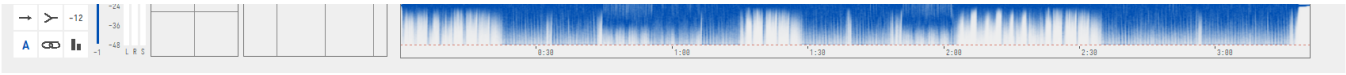
Tracks keep their color when the order changes.

---

5. Playback and listening tools

The strip along the bottom is the track's waveform with a transport on it. It is there on every tab except The Kouncil, and the waveform lines up with the time charts above it, so a moment in the track is at the same horizontal position everywhere. Every time chart carries a moving playhead.

The waveform is shaded by where the samples sit: brighter where more of them fall at that level. A squashed, limited passage fills up toward the ceiling, while a sparse one is a bright band near the middle with thin peaks above it, even when both peak as high. Settings > Appearance > Waveforms switches to the plain outline.



Left to right: the transport, the fader, the output meter, the live goniometer and spectrum, the waveform with its time at the right.

Transport

CONTROL	KEY	WHAT IT DOES
Play / pause	`Space`	
Stop	`Esc`	
Mode	`L`	Steps through FULL, RANGE and LOOP
A / B	`M`	Switches between the track and the compare source
Sync		Keeps both playheads at the same moment
Level match		Plays both sources at matched loudness, so louder doesn't win
-12	`D`	Dims the output by 12 dB
Fader		Monitor volume

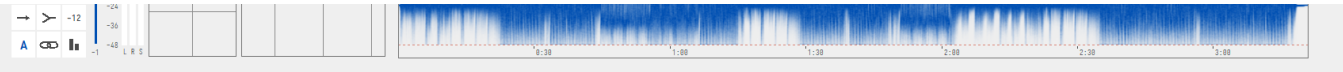
Drag on the waveform to mark a range. RANGE plays it once and LOOP repeats it. The range is drawn on every time chart as well. Click or drag on any time chart to move the playhead.

Meters and live pictures

Beside the transport sits an output meter with peak bars for left and right, a held peak mark, and the track's short-term loudness against your streaming target. A `CLIP` counter appears if the output has reached full scale.

Next to it are a live goniometer and a live spectrum of what is playing, drawn as a line over the same 20 Hz to 20 kHz axis as the app's other spectra. Each waveform's time, position over length, is in the margin at its right.

> These read the audio before the fader and the dim switch, so they show the master, not your monitoring level.

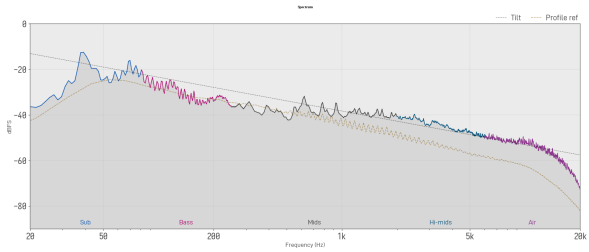


With a compare track the strip has two waveforms on one time scale, and A / B switches which one plays.

Audition a frequency band

Drag on any spectrum chart to hear only the band under the pointer. Moving left and right moves the band, moving up and down changes its width. Release to return to the full mix. This turns "there's a bump around 300 Hz" into something you can hear in two seconds.

Hold a bar on a band chart (Tonal Balance, L/R Balance, Correlation by Band, Dynamics by Band) to hear that band alone.



Drag here: left and right picks the band, up and down its width.

The filter glides between positions without clicks, and a look-ahead limiter catches the cases where one band of a limited master peaks higher than the whole.



Vexie Hex

Use it like a solo button for frequencies. Something sounds honky? Drag across the mids until the honk gets loud, read the number, and that's where your EQ cut goes.

Hear the codecs

On the Codec tab, the **Listen** row plays the track as a codec or chain delivers it, in place of the original. Click a codec's name to switch. Playback position, range and loop carry over and the switch is instant.

- **C** flips between the original and the last codec you heard.
- **DIFFERENCE** plays only what the codec removed or added.
- **NORMALIZE** brings that difference up to full level so the artifacts are easy to hear.



Taylor

DIFFERENCE is the strangest button in the app. It plays only the bits of your song the codec threw away. It sounds like a ghost of the cymbals.

How eagerly the codec versions are prepared, and how much memory and disk that may take, is one choice in Settings > Analysis (Instant, Balanced, Light, or Custom).

---

6. Tooltips and the four characters

Everything Kouncil explains, it explains four ways.



Taylor
A listener

What you would notice on earbuds on the bus.



Vexie Hex
A musician

What to reach for in your DAW.



Kate Adagio
A mastering engineer

Trade terms, thresholds, and the fix.



K0ndukt0r
An audio scientist

The measurement, the standard, the math.

Pick who talks under **Settings > Characters**. The same choice writes the Overview's summary line.

Hover almost anything and that character explains it.

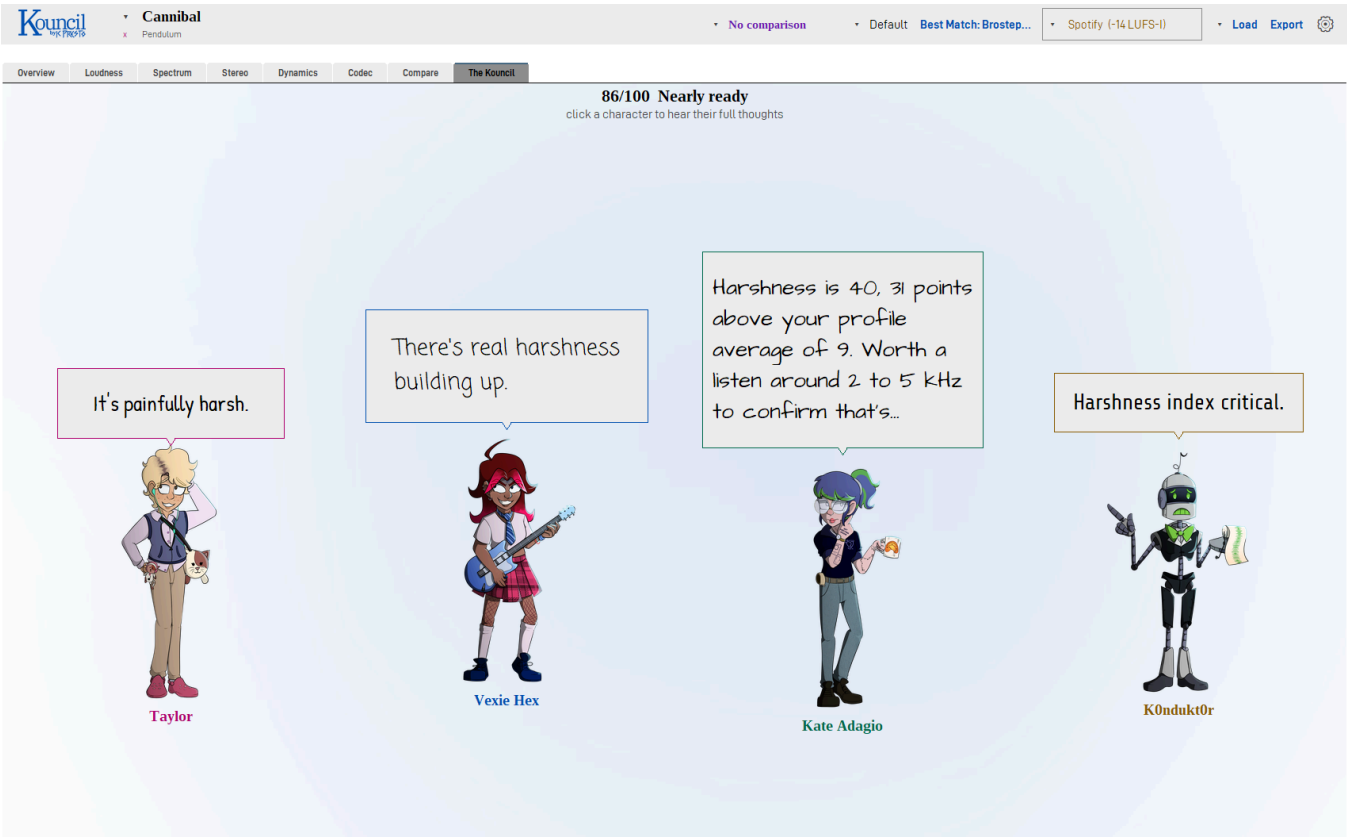
- **Labels and headings** say what a metric or chart is.
- **Values** say what this particular number means for this track. "-8.2 LUFS" gets a different tooltip from "-14.1 LUFS".
- **Targets and compare cells** say where the figure comes from.
- **Things inside a chart** have their own tooltips. The target line, the gate, a single histogram bar, one codec's curve and a shaded zone each explain themselves, and the chart's general description shows everywhere else.
- **Settings and skin colors** each say what they change.

Tooltips wait 0.4 seconds by default. The delay is adjustable, and they can be switched off. If they get in the way, Settings > Characters > Show them makes them wait to be asked for: hold a key (Alt, Shift or Ctrl; on a Mac Option, Shift or Command) and click what you want explained.

---

7. The Kouncil tab

The last tab is a scene with all four characters in it, each with their own findings on the track.



The Kouncil tab: the four characters and the whiteboard.

The heading is the health score and grade. Click a character and they become the speaker and give their findings one at a time in their own voice. Click their speech bubble for the next point. Praise and criticism both appear, with a different expression for each.

When a point is about something a chart shows, that chart goes up on the whiteboard behind them. A point about the loudness range brings up the loudness over time, and a mono-compatibility warning brings up the stereo charts.

The characters only complain about what the tables mark. A line is not said unless the same measurement is flagged yellow or red elsewhere in the app under the current target and profile, so the conversation and the numbers never disagree. Every criticism comes with what to do about it.

Individual characters can be hidden under Settings > Characters.

---

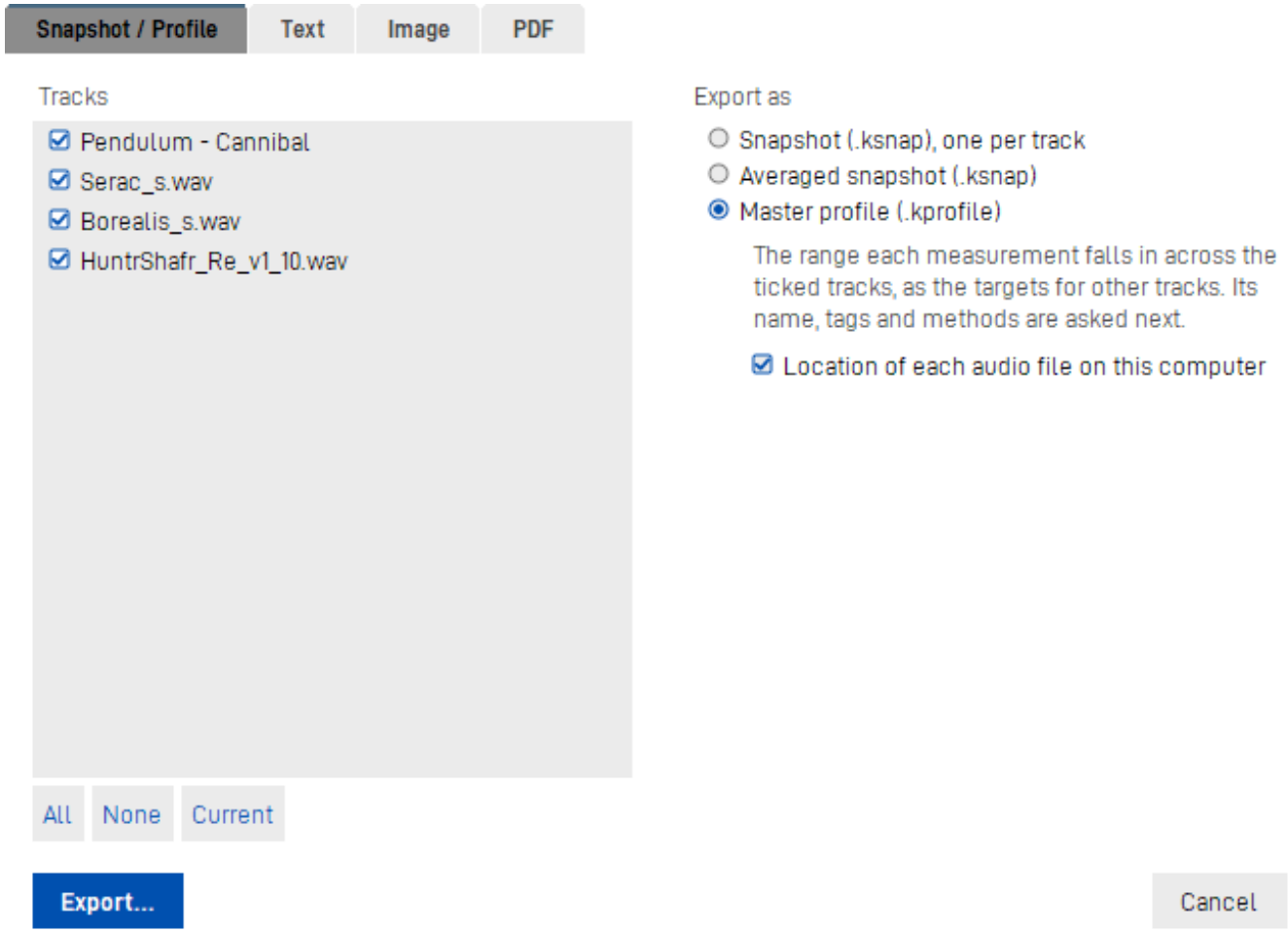
8. Exporting

Export (header, or Ctrl+S / ⌘S) opens one dialog with four tabs. The dialog remembers its size, its options and your last choices per tab.

Every export names the target and the profile the track was judged by.

Snapshot / Profile

Tick tracks on the left and choose what to make of them on the right.

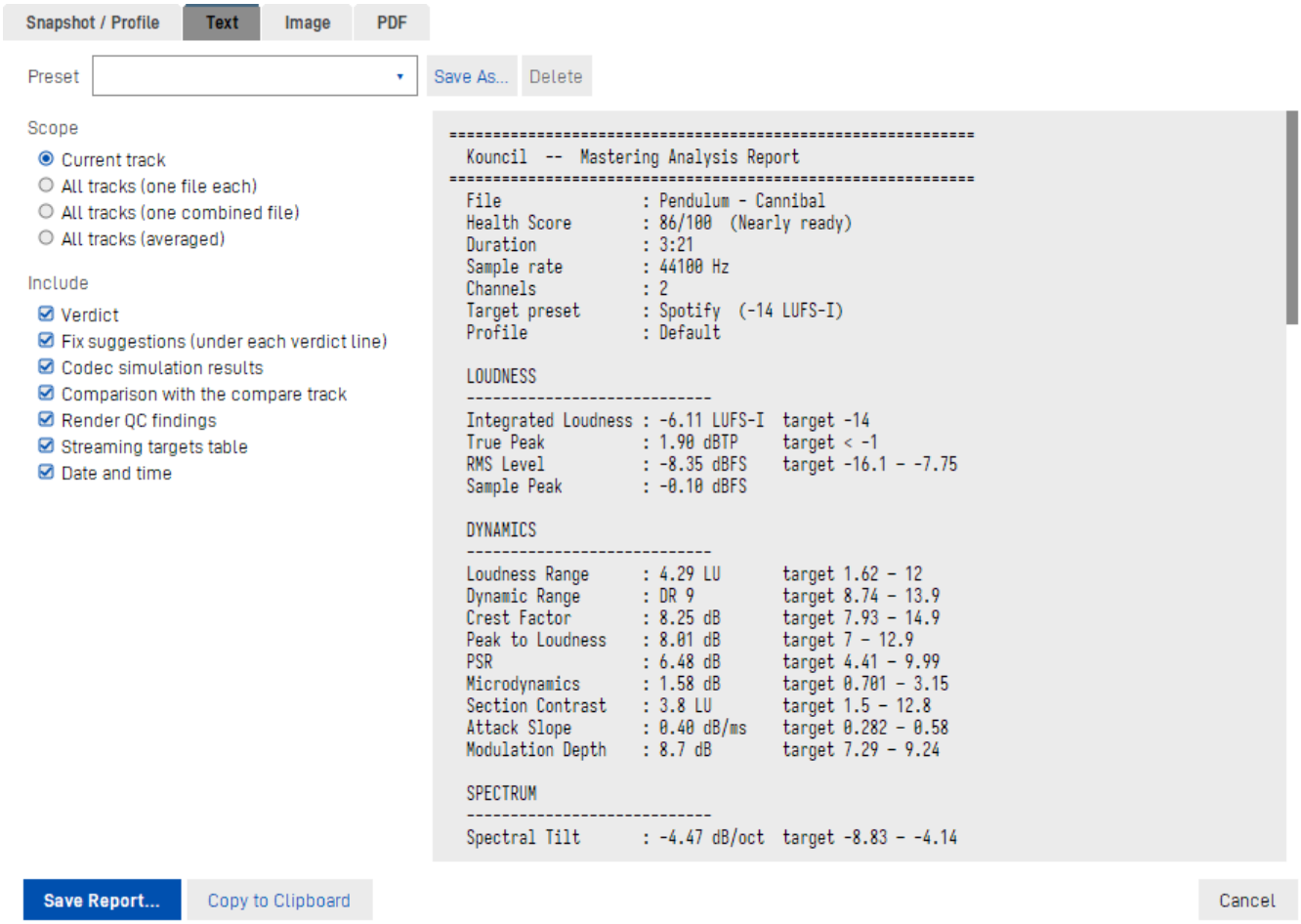


Snapshot / Profile.

- **A snapshot each**. A `.ksnap` file holds the complete analysis and reopens instantly, with no audio needed. Options cover whether to include the codec simulation and whether to record where the audio file was (leave that off for snapshots you share).
- **Their average as one snapshot**, for "what does this album measure overall".
- **A master profile** built from them (see Profiles of your own).

Text

A plain-text report with a live preview. What you see is exactly what is saved or copied.

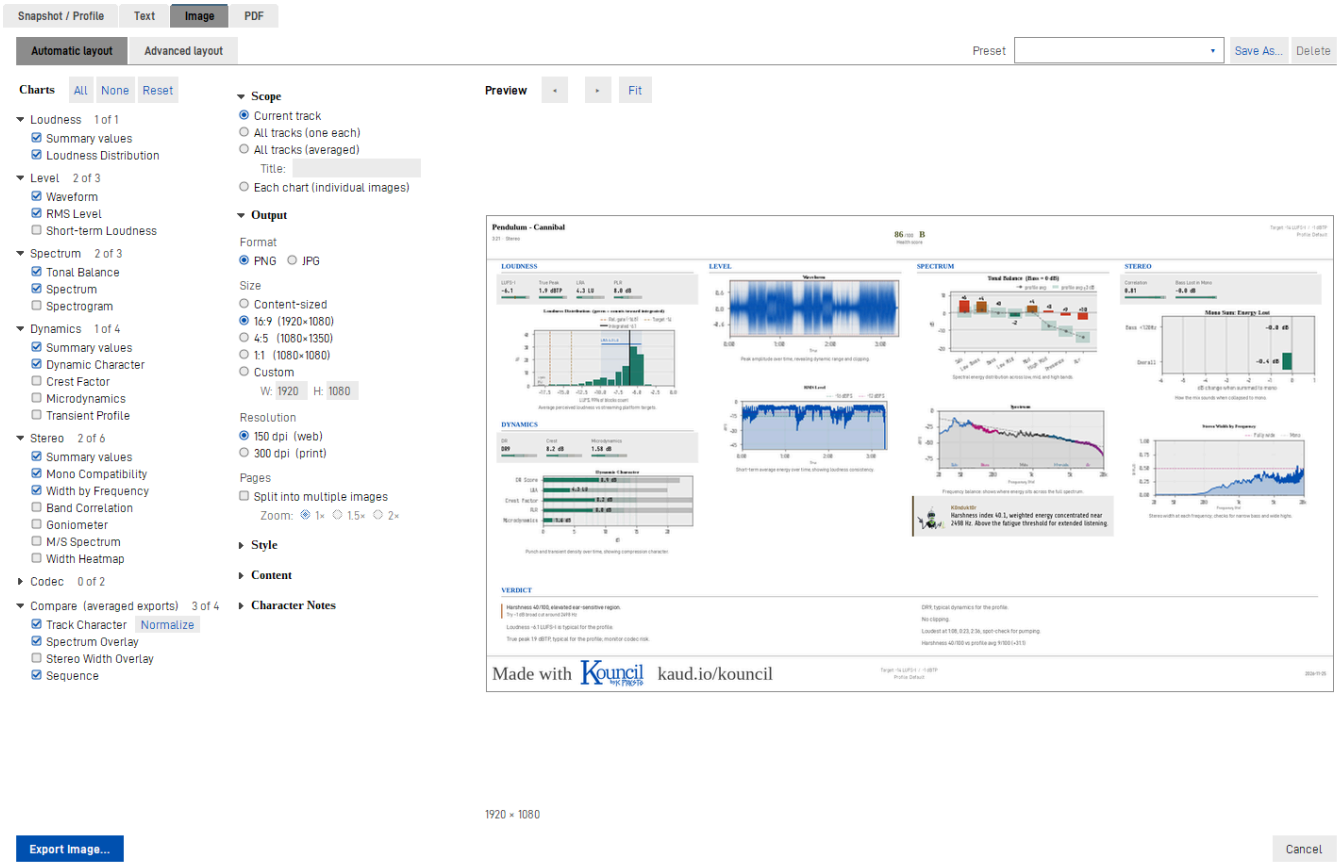


Text: the options at the left, the report as it will be saved at the right.

- Scope can be the current track, a file per track, or one combined file.
- Optional sections are the verdict, fix suggestions, the codec table, the comparison against the compare track, render QC, the streaming targets table and a timestamp.
- **Copy to Clipboard** for pasting into an email or a ticket.
- A report on several tracks ends with the Compare summary as a table and what was flagged on each track.

Image

For sharing a result or showing off a master. Pick charts from the list on the left (grouped as Loudness, Level, Spectrum, Dynamics, Stereo, Codec and Compare) and set the rest on the right.



Image, automatic layout: charts, options, and a preview that follows every change.

OPTION	CHOICES
Scope	Current track, every track (one image each), all tracks averaged, or each chart as its own image
Style	Your current skin, a clean light or clean dark style, or any other skin
Captions	Simple, Advanced, or none
Character notes	A speech bubble per section from the character best suited to it, with or without portraits and names, and a choice of which characters appear
Chart notes	An explainer above every chart
Compare overlay	Draw the compare source on the charts
Format	PNG or JPG
Size	Content-sized, 16:9 (1920×1080), 4:5 (1080×1350), 1:1 (1080×1080), or custom
Resolution	150 dpi (web) or 300 dpi (print)
Split / Zoom	Spread a large selection over several images at 1×, 1.5× or 2×

The tab's own two tabs, **Automatic layout** and **Advanced layout**, choose between a layout fitted for you and one you place by hand. The automatic layout fits everything you selected onto the canvas by itself, and the preview beside the options follows every change. Problem charts can be outlined in the warning color.

The options are grouped under headings that fold away (Scope, Output, Style, Content, Character Notes), and so are the chart groups, each with a count of how many of its charts are ticked. What is folded is remembered.

Built-in **presets** set everything in one click. They are Social: Post 4:5, Social: Story 9:16 (pages at 2x zoom, so text reads on a phone), Quick Overview: Square, Loudness Analysis, Dynamic Range Analysis, Before/After Comparison, Reference Match, Mix Notes and Batch Loudness Check. **Save As** adds your own. A preset works in both layouts and never switches between them: picked in the Advanced layout without a hand-placed layout of its own, it arranges the page for its charts (Ctrl+Z, ⌘Z on a Mac, undoes).

With the scope "All tracks (averaged)" the export gains the Compare tab's charts (Track Character, Spectrum Overlay, Stereo Width Overlay, Sequence) and a title of your choosing, such as the album's name.

Advanced layout

On the **Advanced layout** tab the middle of the dialog is a page editor with a live preview. Every piece of the export is a box you can move and resize by hand.



Advanced layout: the page editor, with the inspector for the selected element at its right.

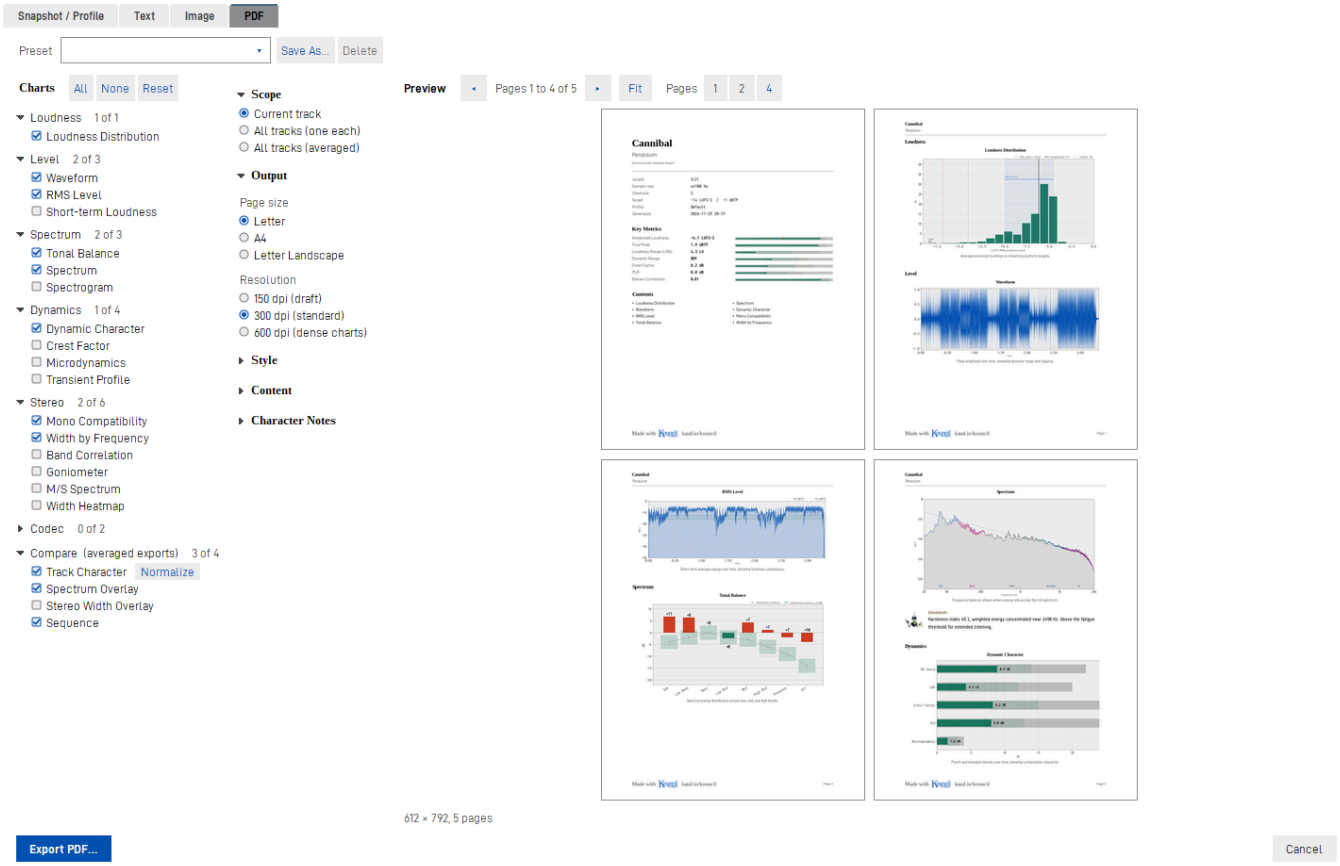
- **Elements**. Title, health score, targets, date, verdict, section headings with their metric chips, each chart, character speech bubbles, and your own images (a logo, cover art).
- **Speech bubbles**. Any chart or section can have a description or feedback bubble from any character. Each bubble chooses its character, a critical or positive expression, whether to show the name and portrait, and which individual lines to include. The portrait can be popped out as its own element, face or full figure. The bubble's tail has a handle you can drag to aim it at anything on the page.
- **Editing**. Drag to move, drag a corner to scale, Shift to unlock the aspect ratio. Marquee and Shift+click select several, which can then be aligned and distributed. Snapping to page margins, centers, thirds and to other elements, each with its own toggle. Undo and redo. Arrow keys nudge.
- **Pages**. Add and delete pages. Elements drag between them. Auto-arrange shares the charts out evenly as a starting point.

- **View**. Zoom with the wheel, pan with the middle button or Space+drag.
- **Images**. Crop by dragging a frame on the picture in its inspector.
- **Shadows**. Every element has a Shadow section in its inspector: a drop shadow of its own shape (a speech bubble's includes its tail) with blur, opacity and distance, to lift it off whatever it overlaps.
- **Your own bubbles and characters** (when run from source). **Add...** puts a speech bubble with your own words or a character's picture on the page, as many as you like, tied to no chart.

A layout is saved with a preset and comes back exactly as you left it.

PDF

A print report with a cover page and the charts laid out over the following pages.



PDF: the preview shows the real pages.

- Page size is Letter, A4 or Letter Landscape.
- Scope is the current track, a report per track, or the group as one report.
- Captions, character notes and compare overlay work as on the Image tab. Pages are always in the clean light style, for print.
- Resolution is 150, 300 or 600 dpi.
- A preview shows the real pages before anything is written.
- Presets are Technical Feedback, Before/After Report and Batch Report.

9. Profiles of your own

A profile is only as good as the tracks behind it, and the best reference set for your work is the one you chose.

1. Load the reference tracks. An album you admire, your label's back catalog, or your own best masters.
2. Open **Export > Snapshot / Profile**, tick them, and choose **Master profile**.
3. Give it a name, a description and tags.
4. Choose how the numbers are worked out.

SETTING	OPTIONS
Target	Mean, median, or trimmed mean (ignores the extreme 10%)
Range	Standard deviation, interquartile range, percentiles, or min / max



Vexie Hex

Not sure which to pick? Median and interquartile range. One oddball track in your set won't drag the targets around, and the range ends up meaning "where most of my references sit".



K0ndukt0r

Mean ± σ assumes a roughly normal spread and is sensitive to outliers. Median with IQR covers the central 50% and is robust. Percentiles (10th to 90th) cover 80%. Min / max accepts anything any reference did, so it flags almost nothing. For sets under about 20 tracks prefer the robust pair.

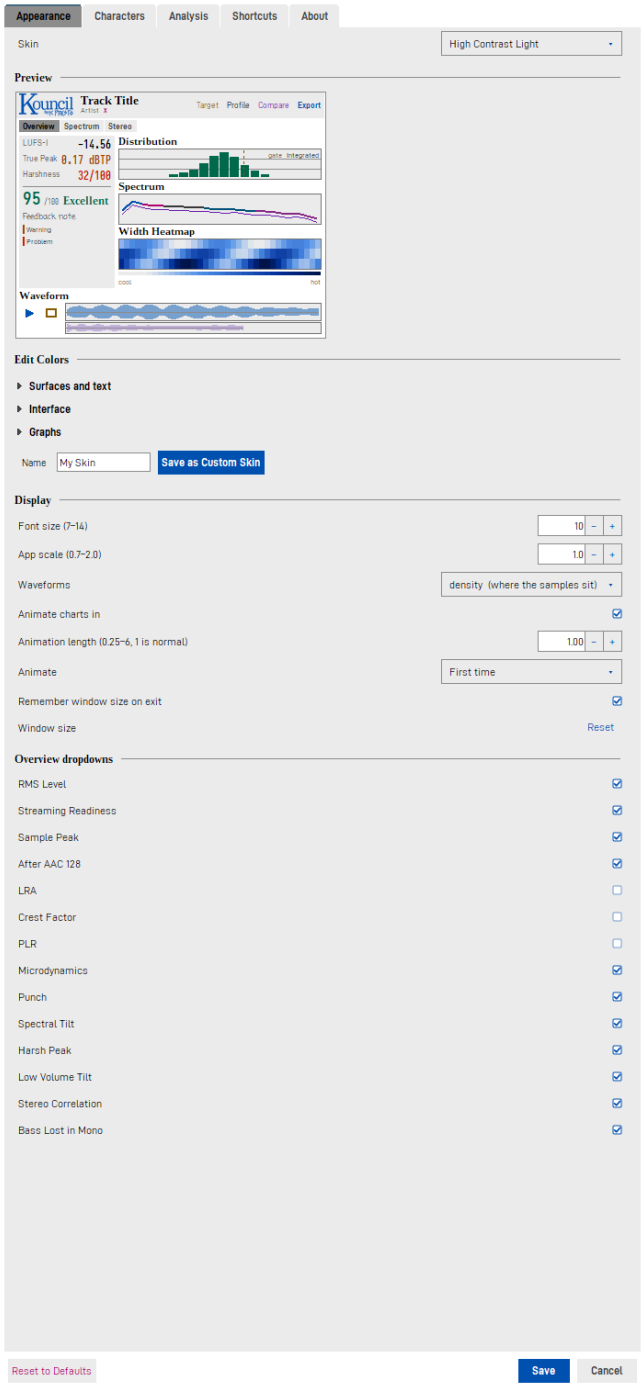
The profile is saved in My Profiles and appears in the Profile Library straight away. It works exactly like a bundled one, average spectrum curve included. Every statistic is stored for every method, so the methods can be changed later without rebuilding.

Profiles are single `.kprofile` files and are safe to pass around. They hold the names of the tracks they came from and never where those files were on your disk. An export judged by one of your own profiles says so.

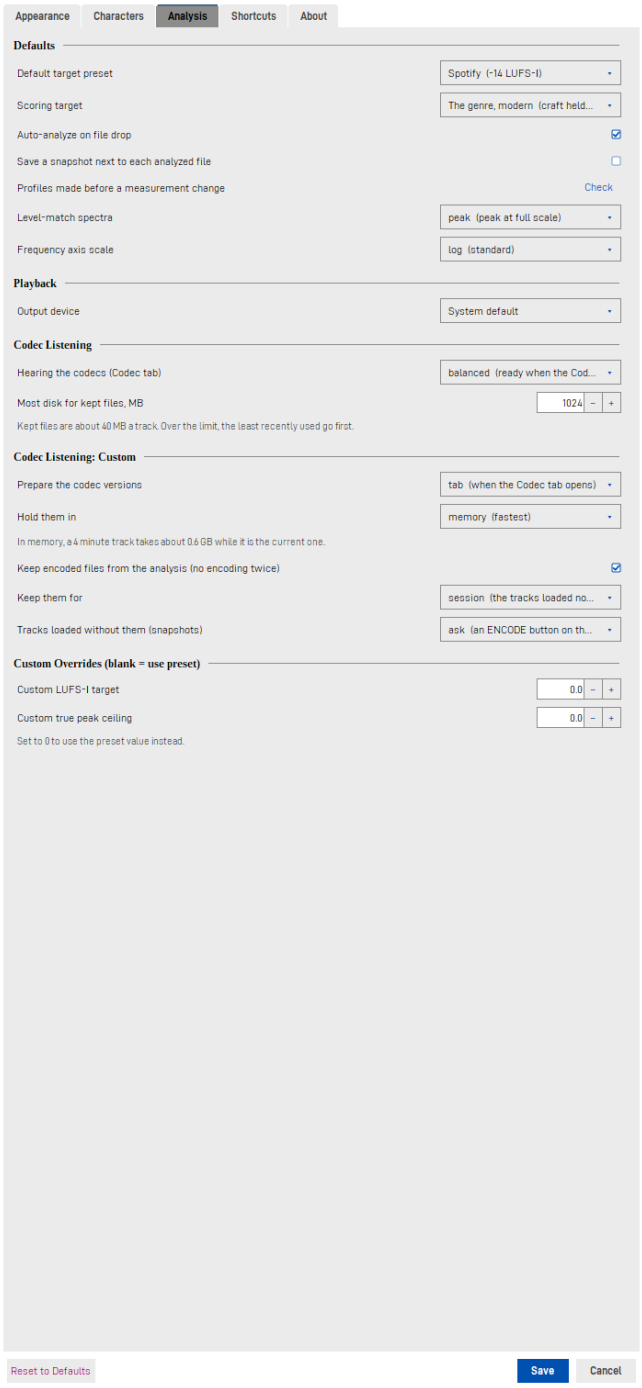
For a large reference set, build the profile from the command line and let it run unattended.

10. Settings

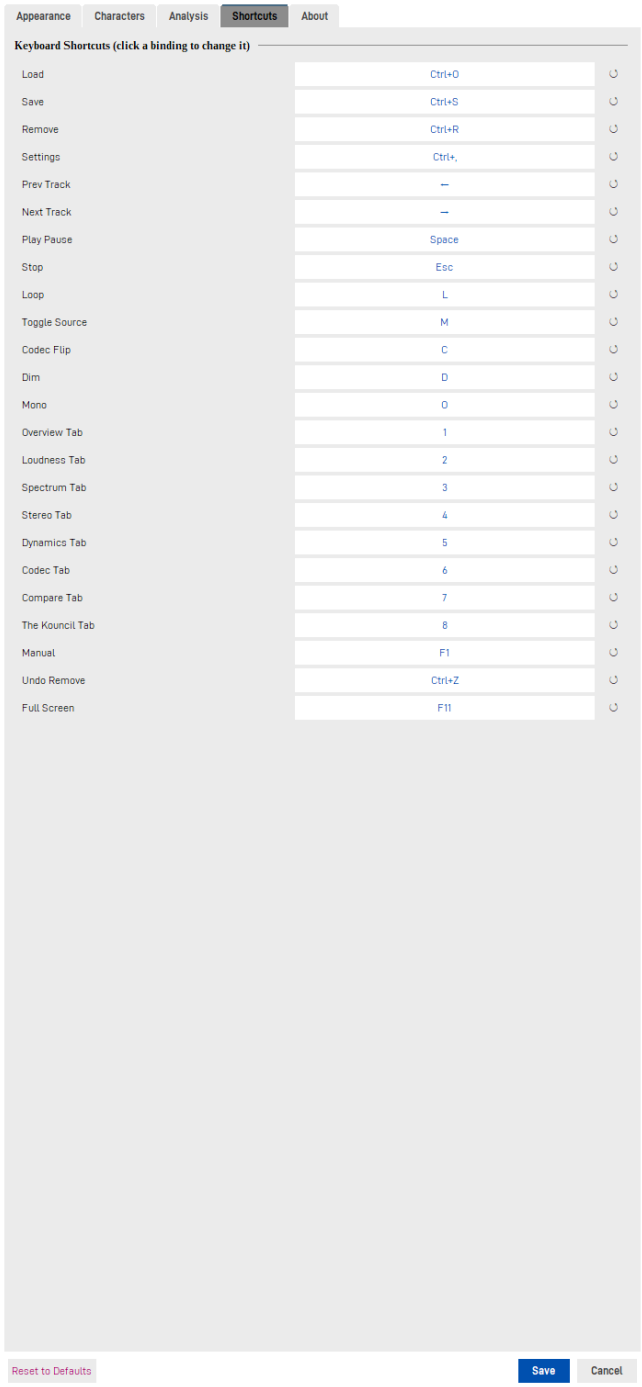
Ctrl+, (⌘, on a Mac, also Kouncil > Settings in the menu bar) or the control at the right end of the header. Every change applies live while the dialog is open, and Cancel puts everything back. Every field has a tooltip.



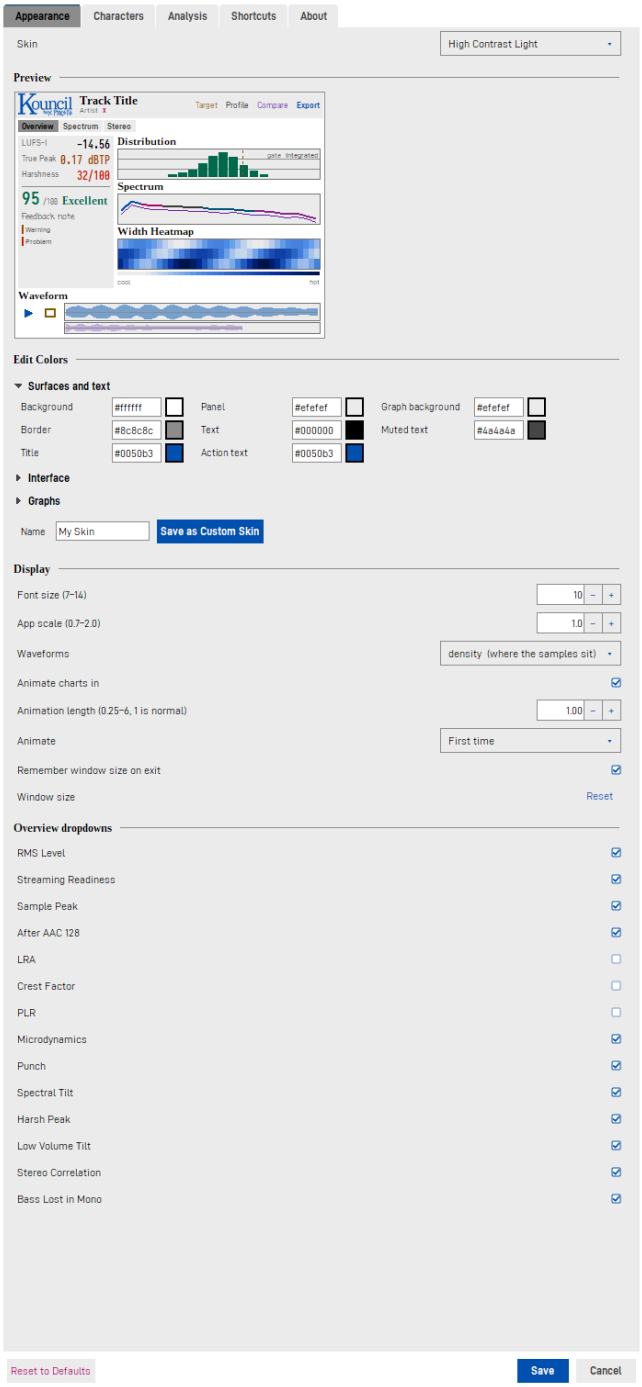
Appearance.



Analysis.



Shortcuts.



The skin, with the preview and the editor, at the top of Appearance.

Appearance - The skin: pick one, see it in the preview, edit its colors. See Skins. - Font size (7 to 14 pt) and app scale (0.7× to 2.0×). The whole interface follows both, charts included. - Animate charts in. The first time you open a tab for a track, its charts draw themselves: bars grow from their base, curves rise, time charts and heatmaps fill in from left to right. Turn it off and they appear finished. How long it takes, and whether it plays every time you come back to a tab. - Remember window size, and put it back to the default. - Overview dropdowns: which rows open under the Overview's headline metrics, such as RMS level, streaming readiness, LRA, crest factor and PLR.

Characters - Tooltips on or off, on hover or on a key and a click, their delay, and which character speaks them. - The characters' handwriting, or the body font instead; the character's summary on the Overview. - Which characters appear on The Kouncil tab.

Analysis - Default target. - Auto-analyze on file drop. - Save a snapshot next to each analyzed file automatically. - Level-match spectra, which can be off (file level), peak, or -14 LUFS-I. This only affects tonal and spectral figures. Loudness and peak figures are always the file's own. - Frequency axis scale (log, mel or linear). - Codec listening. One choice of Instant, Balanced or Light sets when the codec versions are prepared and what they cost in memory and disk. Custom opens up each decision separately, and a disk limit applies in every mode. - Custom loudness target and true-peak ceiling. - Scoring target: where a score of 100 sits. The genre (a little better than its middle), the genre with its craft held to modern masters (the default), the modern benchmark, or the all-time benchmark. Tolerances always come from the genre, so a jazz master aimed at modern standards is still judged by how much jazz varies. - Output device: where playback goes, for a studio whose monitors aren't the system's default output. A chosen device that is unplugged stays in the list.

Shortcuts - Every key binding can be changed. Click one, press the new key, and reset any of them individually.

About - Version and license, and where to enter a key. - Tour of Kouncil: the four characters show you round the window again. Enter or the right arrow moves on, Esc stops. - A button that opens your data folder, where `kouncil.log` is.

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11. Skins

A skin sets every color in the app, charts and exports included. Twenty come built in.

IDEA	SKINS
House style	Kouncil, Midnight
Plain dark	Slate, Deep Space, Monochrome
At home beside other audio software	Toolbox, Logical, Fabricator
Warm	Candlelight, Sunset, Matcha
Loud	Ultraviolet, Synthwave, Bubblegum, Terminal
Light	Lamplight, Cream, Print
Low vision	High Contrast, High Contrast Light

Some have a single strong idea. Monochrome is grays, with red only for trouble. Terminal is phosphor green. Print is grays on white, made so three lines on a chart can still be told apart on a mono laser printer.

The skin picker at the top of Settings > Appearance lists each skin in its own colors. Changing skin repaints the window at once. Drag rows to reorder the list.

The skin editor has a field for every color, grouped as surfaces and text, the interface, and the graphs. A miniature of the app updates as you edit, and each field's tooltip says what it colors. **Save as Custom Skin** adds yours to the list.

Things a skin controls beyond the obvious.

- Interface accents and graph colors are separate sets, so a control and a chart line never share a meaning by accident.

- The chart plot area can be a different surface from the panels, even on the opposite side (dark graphs in a light interface).
- Heatmaps take a cool and a hot color from the skin.
- Each character's color.
- The four typefaces (headings, body, numbers, speech) can each be replaced.

Skins are plain JSON `.kskin` files. Drop one into the `skins/user` folder in your data folder and it appears in the list. The format is documented in `skins/README.md`, is forgiving of hand-editing mistakes, and tells you why a file couldn't be read instead of skipping it silently.

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12. Command line

Kouncil can analyze tracks and build profiles with no window, for batch work and automation. Run from the source folder with Python 3 and ffmpeg on the PATH.



Taylor

This part is for people who like typing commands. Everything here can also be done in the window, so skip it if that's not you.

```
python3 kouncil.py analyze TRACKS... --out FOLDER [--report]
python3 kouncil.py profile TRACKS... --out FILE --name "Display Name"
                           [--tags rock,1990s,loud] [--description "..."]
```

`TRACKS` can be audio files, snapshots, folders of either, or a mix.

- **analyze** writes a `.ksnap` per track, the same file the app saves and opens. `--report` adds the text report beside each.
- **profile** builds a `.kprofile` from all the tracks. `--snapshots FOLDER` keeps each track's analysis and reuses it on the next run, so adding two tracks to a reference set means analyzing two tracks.

OPTION	WHAT IT DOES
`--no-codec`	Skip the codec simulation. About twice as fast.
`--normalize off|peak|lufs`	Level-match the spectra.
`--jobs N`	Tracks at once. Defaults to half your cores, 8 at most, fewer when memory is short.
`--recursive`	Look inside subfolders.
`--target-method`, `--range-method`	Profile statistics, as in the app.

A track that fails is reported and left out, and the rest carry on.

13. Keyboard shortcuts

All of these can be rebound in Settings > Shortcuts. On a Mac the ones with Ctrl use Command (⌘) instead, as Mac apps do; Settings > Shortcuts shows them the way your keyboard does.

WINDOWS	MAC	THE APP
Ctrl+O	`⌘O`	Load
Ctrl+S	`⌘S`	Export
Ctrl+R	`⌘R`	Remove the current track
Ctrl+,	`⌘,`	Settings
Left / Right	`Left / Right`	Previous / next track
1 to 8	`1 to 8`	Switch tab
F11	`^⌘F`	Full screen (Esc leaves it)

KEY	PLAYBACK
`Space`	Play / pause
`Esc`	Stop (in full screen, leaves it first)
`L`	Playback mode (Full, Range, Loop)
`M`	A / B between the track and the compare source
`C`	Codec tab, flip between the original and the last codec heard
`D`	Dim by 12 dB
`O`	Mono (left and right summed)

14. Files and privacy

Kouncil makes no network connections.

Settings, the last session, your skins and your profile library live in one folder that updates and uninstalls leave alone.

- Windows `%APPDATA%\Kouncil`
- macOS `~/Library/Application Support/Kouncil`

FILE	WHAT IT IS
`.ksnap`	One track's complete analysis. Reopens without the audio.
`.kprofile`	A master profile.
`.kskin`	A skin.

Older snapshots and profiles are brought up to date when loaded. A damaged or mistaken file produces a readable error and nothing else.

If something goes wrong, the details are written to `kouncil.log` in the data folder (Settings > About > Open data folder).

15. How it is built

For the curious, and for anyone evaluating the engineering.



Vexie Hex

Short version: it measures to the same standard the streaming services use, it really runs your track through the codecs, and playback doesn't stutter while it's busy thinking.

- **Python, Tkinter, NumPy / SciPy, Matplotlib and Pillow.** No web stack and no framework. Windows and macOS builds bundle Python and a purpose-built, audio-only LGPL ffmpeg.
- **Standards-checked measurement.** Loudness is implemented from ITU-R BS.1770 with the standard's own filter coefficients and is tested against EBU Tech 3341 reference signals and cross-checked against ffmpeg's `ebur128`. True peak is oversampled. Every algorithm is written up in ALGORITHMS.md.
- **Real codec round-trips.** Codec figures come from an actual encode and decode, sample-aligned by cross-correlation, compared against a per-quarter-Bark masking threshold. No modeled approximations.
- **Thresholds from data.** The baselines that decide what gets flagged were set from measured commercial masters (2,475 of them across 100 genres), not from rules of thumb.
- **Playback in its own process.** The audio engine runs as a separate process with its own interpreter lock, sharing decoded audio through shared memory and exchanging state through a small shared control block that neither side ever waits on, so analysis and chart drawing can't cause dropouts. Worst-case block timing under load went from 126 ms late to no underruns at a 93 ms buffer.
- **Click-free DSP in the monitor path.** The audition filter glides in log frequency and crossfades between coefficient sets, with a look-ahead limiter behind it.
- **A responsive UI on a toolkit not known for it.** Analysis is staged and threaded with memory-aware concurrency. Charts render ahead on worker threads and are shown in one step. Tabs are prebuilt in the background. Window resizes swap the live widgets for a snapshot until the drag settles, which took a resize step from about 2000 ms to 140 ms.
- **Resolution independence.** Every dimension derives from the font size and app scale, and custom-drawn controls replace the native ones that don't scale.
- **A full theming system.** Twenty skins as data files in a documented format, with separate roles for interface, graph, status and plot colors, applied live to widgets, charts and exports.
- **A layout engine and a layout editor.** Image export has both an automatic fitting engine and a hand-placement editor with snapping, multi-page support, undo and presets.
- **Written, tested content at four levels.** Every chart, metric, chart zone, setting and skin color has explanatory text for four audiences, and tests fail when one is missing.
- **A headless command line** over the same analysis code, and a test suite covering the loudness standard, codec alignment, file robustness, session integrity, the audio engine and the UI's layout rules.