

# **SPEK 1.0**

USER MANUAL · VERSION 1.0.0

MARULA DSP · 2026

# Spek 1.0 user manual

Spek 1.0.0 · VST3 · AU · CLAP · macOS and Windows



Spek is a saturator and perceived-loudness enhancer. It uses a level-dependent waveshaping curve: the harder you drive it, the denser and louder the result, while the controls around the curve let you keep the colour musical and the level honest.

This manual covers the released 1.0.0 build. Start with **Drive**, **Auto**, and **Amount**; then use the voicing, tone, mid/side, and oversampling controls to refine the result.

## 1. Quick start

1. Install Spek (section 2) and insert it on a stereo track, bus, or master.
2. Turn **Auto** on. It cancels the Drive boost exactly, so you hear the

*shaping* change instead of just “louder”.

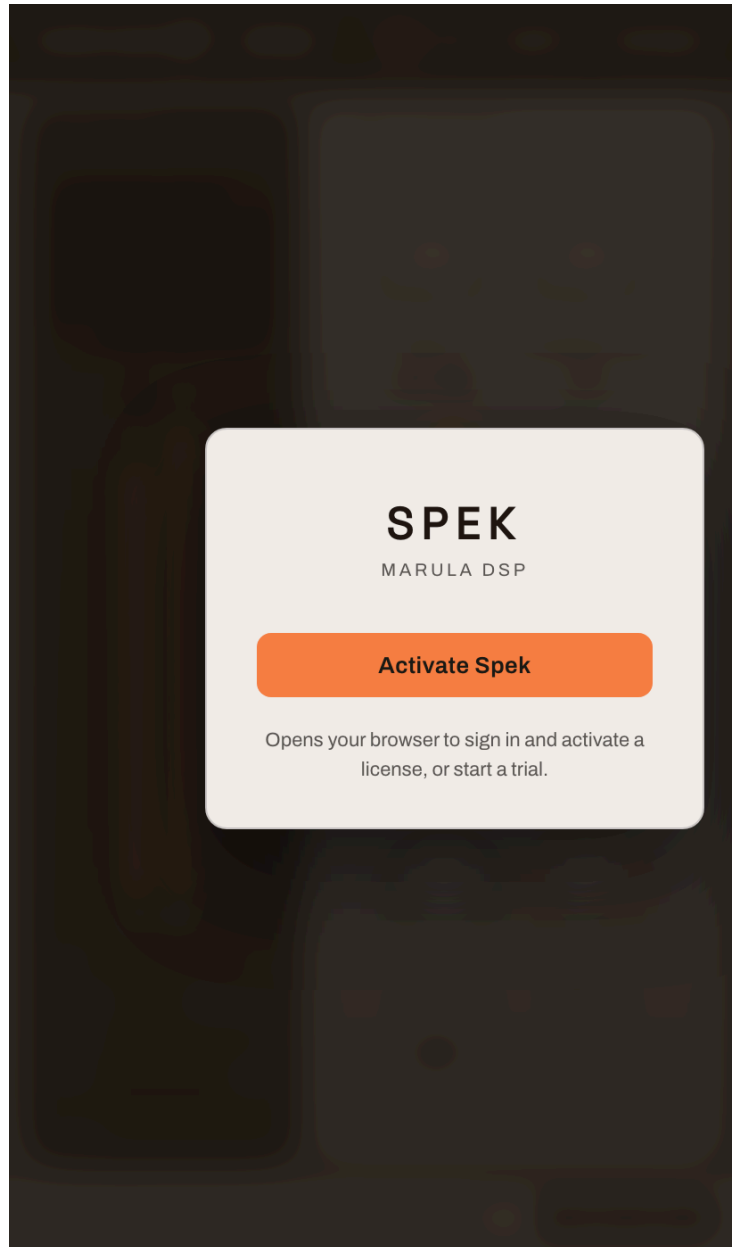
1. Raise **Drive** until it sounds good. Leave **Clip 0dB** on unless you specifically want the unclipped curve.

1. For the classic voicing: **Mode** Classic, **Character** 50 %, **Oversampling** 1x, Bias / Filter / M/S centred, **Amount** 100 %.



## Activation

The first time you open Spek it shows an activation screen. Click **Activate Spek** — your browser opens so you can sign in and activate a license, or start a trial. The plug-in unlocks automatically once that completes. Activation needs an internet connection; after that Spek checks its stored license locally, so day-to-day use does not.



License details live in the About screen (click the Marula Music mark in the header). To move a paid license to another machine, open that screen and click **Deactivate**, then activate on the new machine.

## 2. Installation

### macOS

Double-click `Spek-1.0.0-macOS.pkg` and follow the wizard: Introduction, Licence (you must accept), Destination, Installation Type, then Install.

Destination is **all users** (default, needs an admin password) or **this user only**. Plug-ins always go in the standard Audio/Plug-Ins folders — you cannot pick an arbitrary path. On Installation Type, choose VST3, AU and/or CLAP (all ticked by default).

A notarised build installs without a Gatekeeper warning.

Restart your DAW afterwards (Logic may take a moment to validate the AU on first scan), then open Spek to activate a licence or start a trial.

Installed locations (for manual removal):

All users:

- /Library/Audio/Plug-Ins/VST3/Spek.vst3
- /Library/Audio/Plug-Ins/Components/Spek.component
- /Library/Audio/Plug-Ins/CLAP/Spek.clap

This user only:

- ~/Library/Audio/Plug-Ins/VST3/Spek.vst3
- ~/Library/Audio/Plug-Ins/Components/Spek.component
- ~/Library/Audio/Plug-Ins/CLAP/Spek.clap

Requires macOS 11 or later. The installer is universal (Apple Silicon and Intel).

## Windows

Run Spek-1.0.0-Windows-Setup.exe and follow the wizard: Welcome, Licence (you must accept), Destination, Components, then Install.

The destination folder is only for the user manual and the uninstaller (default: C:\Program Files\Marula DSP\Spek). VST3 and CLAP always install to Common Files, which your DAW already scans. VST3 is always installed; CLAP is optional.

The Windows installer and plug-in binaries are Authenticode-signed. SmartScreen reputation may still take time to build for a newly issued certificate.

The editor needs Microsoft's WebView2 runtime (preinstalled on Windows 11). If the plug-in window comes up blank, install the Evergreen runtime from <https://developer.microsoft.com/microsoft-edge/webview2/>

Installed locations:

- C:\Program Files\Common Files\VST3\Spek.vst3
- C:\Program Files\Common Files\CLAP\Spek.clap
- C:\Program Files\Marula DSP\Spek (manual + uninstaller)

Then rescan plug-ins in your DAW, and open Spek to activate a licence or start a trial.

## 3. The interface

Spek is a **410 × 700** portrait channel strip. The window is resizable (about 0.8×–1.3×) at a fixed aspect; nothing reflows — the whole editor scales.



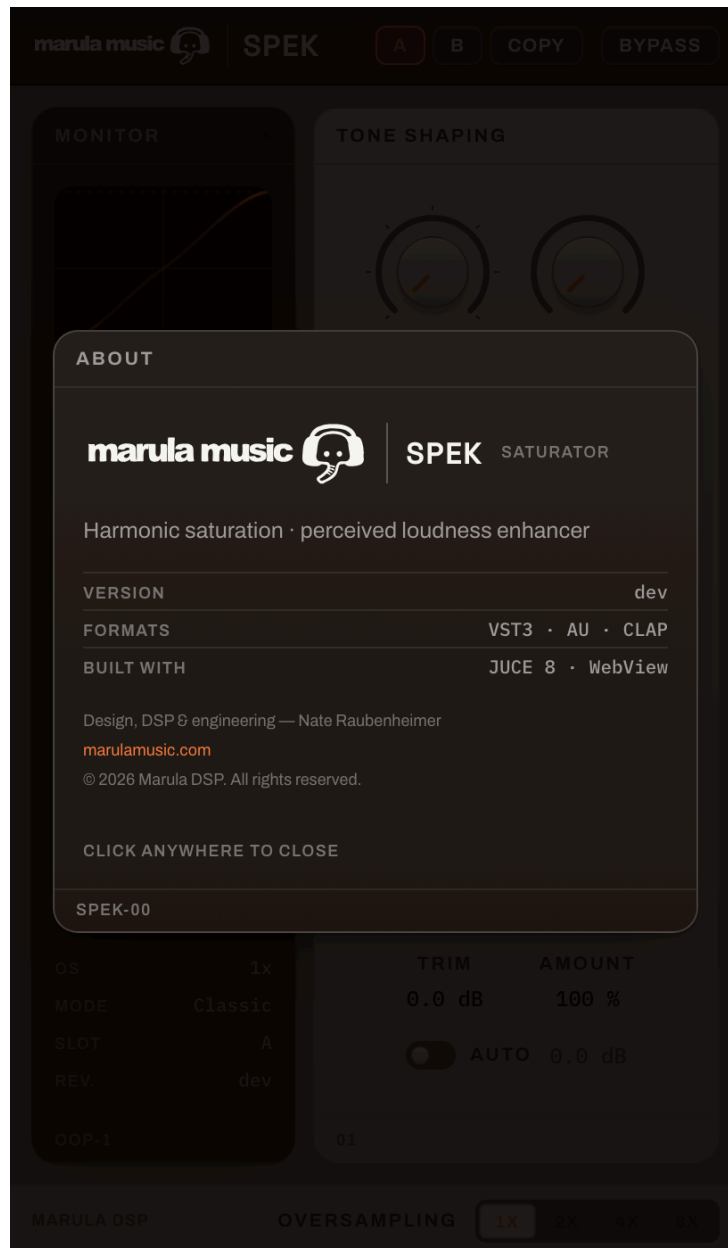
**Header.** Marula Music mark (opens About), Spek name, **A / B** compare slots, **Copy** (copies the active slot onto the other), **Bypass** (click-free, latency-matched).

**Monitor (left, dark).** Live transfer-curve display, IN / OUT meters, **In** and **Out** trims ( $\pm 12$  dB), a latched **OVER** LED, and a spec readout (oversampling, mode).

**Tone Shaping (right).** Drive / Character / Clip / PAR, then Bias / Filter / M/S / Mode / Analog, then Trim / Amount / Auto.

**Utility strip.** Oversampling 1x / 2x / 4x / 8x.

Click the Marula mark for version, formats, and license status:



Bypass dims the body of the editor but leaves the controls live — a bypassed plug-in is still something you set up.

## 4. Signal flow

Oversampling wraps **only** the waveshaper. Drive, both tone stages, M/S, DC blocking and the mix all run at host rate.

```

raw L/R in
  In trim (±12 dB)
  |— dry tap —————|
  | Drive → Bias tilt → M/S encode
    → M/S Balance (pre-shaper)
    → oversample UP → Waveshaper (+ optional Analog)
    → oversample DOWN → DC block → M/S decode
    → Filter → Trim × Auto make-up
    → Dry/Wet (Amount) ←—————|
    → Out trim (±12 dB)
                                out

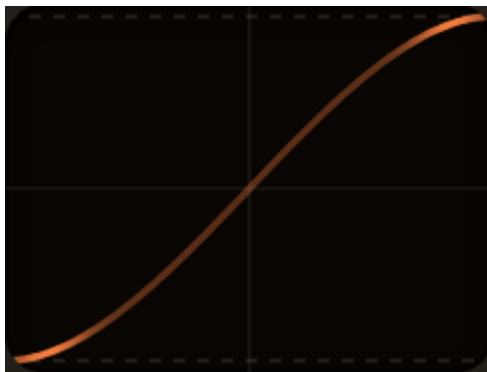
```

**1× oversampling is a bit-exact bypass of the oversampler.** It keeps the light aliasing of the hardware-era original on purpose — a character choice, not an oversight, and it is the default. 2× / 4× / 8× clean that up and add a small latency, reported to the host so delay compensation covers it.

The two tone stages sit on opposite sides of the shaper and are not interchangeable: **Bias** changes *what the curve is fed*, **Filter** shapes *what the curve produced*.

## 5. The transfer-curve display

The screen at the top of the Monitor rail is the **real** transfer function — a port of the shaper's own polynomial, not a decorative cartoon. It is lit by what you are actually playing through it.



A histogram of  $|x|$  measured at the shaper input brightens the stretch of curve the signal is working. Unvisited stretches stay visible: this is a preview of the curve first and a meter second. Silence still looks like a curve, not a blank box.

The display is read-only. It is not a host parameter and has no switches.

With **Clip 0dB** off and Drive high, the curve overshoots  $\pm 1.0$  and folds back on itself — you can watch that happen live.

## 6. The controls

In the order you'd typically reach for them.

**Drive → Auto.** Drive (0...+24 dB) pushes signal further up the transfer curve: more harmonics, more density, and without help, more level. **Auto** applies exactly  $-Drive$  dB of

make-up, computed rather than level-detected, so it costs zero latency and does not pump. The saturation still makes things louder; Auto removes the raw gain boost that otherwise masks it.

**Character → Mode → Clip 0dB.** These three *are* the curve. **Character** morphs its shape: 0 % is subtle (and the default), 50 % is the classic curve, 100 % is maximum loudness. **Mode** picks the voicing: **Classic** is the faithful odd-only reproduction; **Warmer** adds a genuine 2nd harmonic that Classic cannot produce. **Clip 0dB** puts a hard  $\pm 1.0$  ceiling on the curve. Leave it on unless you want the unclipped fold.



**Analog** adds an optional tanh glue stage after the shaper, inside the oversampled block. Softens the top of the curve; useful on busses.

**Bias → Filter.** Two tone controls, deliberately on opposite sides of the shaper:

- **Bias** is a pre-shaper tilt EQ,  $\pm 6$  dB mirrored about 1 kHz. Tilt up and

highs saturate first; tilt down and the low end takes the brunt.

- **Filter** is a post-shaper bipolar dial: negative sweeps a low-pass,

positive a high-pass, centre is flat. It tames or brightens the harmonics after they were generated, without changing how they were generated.

Reach for Bias to change the character of the distortion. Reach for Filter to clean up after it.

**M/S Balance** is a complementary pre-shaper gain on Mid and Side. Centre is true neutral — both stay at 100 %, not 50/50. Full Side is 100 % Side / 0 % Mid into the curve. A mono feed has no Side, so full Side at Amount 100 % is silence, not dry passthrough. Amount is the only place dry returns.

**Trim → Amount.** **Trim** is a wet-path output trim applied *before* the mix. **Amount** is the final mix. With **PAR** off it is a replace crossfade; with PAR on, dry stays at unity and Amount adds wet.

**Oversampling** trades CPU for anti-aliasing (see section 4).

**Monitor.** IN and OUT show peak and RMS. The **OVER** indicator latches on any 0 dBFS overshoot until you click it (or **CLR**) — so you can catch a transient you missed.

**A / B / Copy.** Two independent settings slots for the *sound* parameters. Oversampling and Bypass are shared, so flipping A/B will not move them. Copy writes the active slot onto the other.

## 7. Spek 1.0 at a glance

Spek 1.0 combines the complete WebView editor, live transfer-curve monitor, input and output trims, parallel mixing, the Analog glue stage, and the Classic and Warmer voicings in one release.

A new instance starts with **Character** at 0 %, which keeps the curve restrained. Set it to 50 % for the classic curve, then adjust Drive to taste.

## 8. Things worth knowing

- **Trim is pre-mix.** At Amount 100 % it behaves like an output level.

Below 100 % it changes the *balance* between shaped and dry, not just the volume. For a pure output level, use Trim at full Amount, or your channel fader.

- **Auto only cancels Drive.** It does not compensate for Bias. A big

low-end tilt still climbs in level, because that boost is also driving the shaper harder — which is the intent.

- **Character defaults to 0 %**, not the classic centre. Spek starts subtle;

you dial in.

- The transfer display is furniture, not a control.

## 9. Starting points

| Goal                     | Settings                                                                         |
|--------------------------|----------------------------------------------------------------------------------|
| <b>Classic voicing</b>   | Classic, Character 50 %, Clip on, 1×, Amount 100 %, Auto on, Drive to taste      |
| <b>Bus glue</b>          | Drive 3...6 dB, Character 20...30 %, Analog on, Amount 60...80 %                 |
| <b>Loud master</b>       | Character 60...80 %, Clip on, 4×, Auto on, small negative Filter to tame the top |
| <b>Air on the sides</b>  | M/S toward Side, Filter positive, Character low, Amount 50...70 %                |
| <b>Aggressive colour</b> | Bias positive, Clip <b>off</b> , Drive high — watch the curve fold               |

## 10. Parameter reference

16 host-automatable parameters.

| Control             | Range             | Default | What it does                                                |
|---------------------|-------------------|---------|-------------------------------------------------------------|
| <b>Drive</b>        | 0 ... +24 dB      | 0 dB    | Wet-path input drive into the waveshaper                    |
| <b>Character</b>    | 0 ... 100 %       | 0 %     | Morphs the curve. 50 % is classic                           |
| <b>Mode</b>         | Classic / Warmer  | Classic | Classic is strictly odd; Warmer is 2nd-harmonic             |
| <b>Clip</b>         | on / off          | on      | Hard $\pm 1.0$ ceiling vs unclipped curve                   |
| <b>PAR</b>          | on / off          | off     | Dry stays at unity; Amount adds wet                         |
| <b>Analog</b>       | on / off          | off     | Post-shaper tanh glue, inside oversampling                  |
| <b>Bias</b>         | -100 ... +100 %   | 0 %     | Pre-shaper tilt EQ about 1 kHz                              |
| <b>Filter</b>       | -100 ... +100 %   | 0 %     | Post-shaper LP $\leftarrow$ $\rightarrow$ HP. Centre = flat |
| <b>M/S Balance</b>  | -100 ... +100 %   | 0 %     | Pre-shaper Mid/Side gain. Centre = both unity               |
| <b>Trim</b>         | -24 ... +24 dB    | 0 dB    | Wet-path output trim, before the mix                        |
| <b>Auto</b>         | on / off          | off     | Zero-latency make-up cancelling the Drive boost             |
| <b>Amount</b>       | 0 ... 100 %       | 100 %   | Final mix. PAR off = replace; PAR on = dry + wet send       |
| <b>In</b>           | -12 ... +12 dB    | 0 dB    | Plugin input trim, before the dry/wet split                 |
| <b>Out</b>          | -12 ... +12 dB    | 0 dB    | Plugin output trim, after the mix                           |
| <b>Oversampling</b> | 1× / 2× / 4× / 8× | 1×      | Anti-aliasing. 1× is a true bypass                          |
| <b>Bypass</b>       | on / off          | off     | Host bypass, click-free                                     |

# 11. Specifications

|           |                                                                  |
|-----------|------------------------------------------------------------------|
| Formats   | VST3, AU (macOS), CLAP                                           |
| Platforms | macOS 11+ (universal), Windows 10/11 (x64)                       |
| Channels  | Stereo in / stereo out                                           |
| Latency   | 0 at 1x · small, host-reported delay at 2x / 4x / 8x             |
| UI        | 410 × 700 portrait, resizable 0.8x–1.3x, GPU-accelerated WebView |