

OWNER'S MANUAL

VOODOO



MULTIBAND · MID / SIDE · TUBE SATURATION

Three bands. Mid and side saturated independently. Every circuit fitted from bench measurements of real valve and transformer hardware — not modelled from a photograph, not invented, not guessed.

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GETTING STARTED

OPEN IT AND NOTHING HAPPENS — THAT'S DELIBERATE

VOODOO opens **completely flat**. Every drive control starts at zero, so it colours nothing until you ask it to.

The fastest way in: pick a preset from the menu at the top, next to the VODOO name, then use the < and > arrows to flip through by ear. Factory presets set the voices and the band balance; you drive to taste from there.

It opens in **STEREO**. Switch to **MID / SIDE** with the Stereo selector at the left of the control bar when you want to treat the centre and the sides differently — which is most of what VODOO is for.

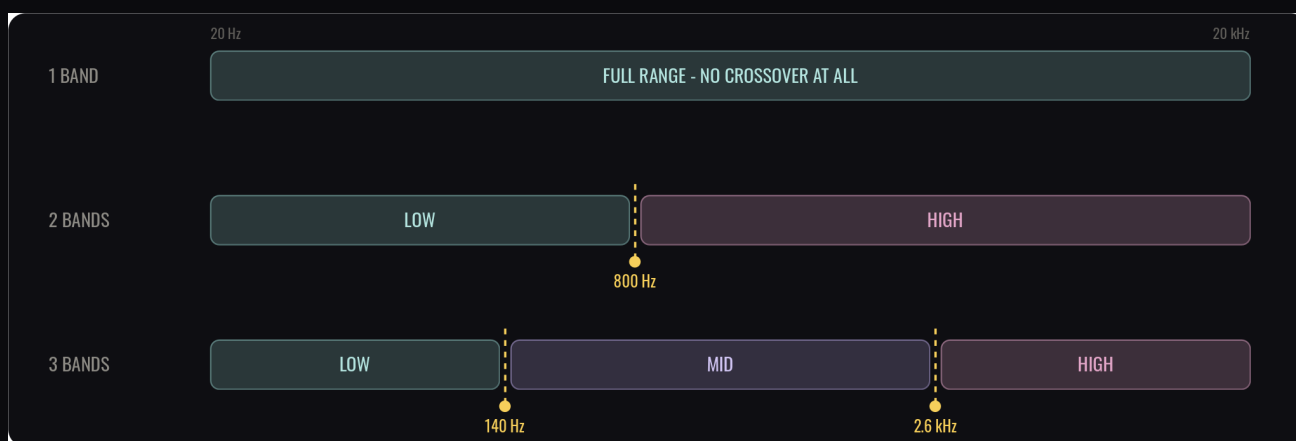
The one thing to know. The bands are split by the draggable dividers in the valve window. Drag them to set where one band becomes the next. The frequency shows on the divider as you move it.

HOW MANY BANDS

ONE, TWO OR THREE — AND IT CHANGES THE SIGNAL PATH

The **BANDS** selector on the control bar sets whether VODOO runs as one, two or three bands. This isn't cosmetic.

Setting	What happens
1 BAND	The crossover is skipped entirely. No filters, no crossover phase, just the saturation across the full range. The card grows to the full width and the DRIVE knob with it. Reach for this on a vocal, a bass, or anything you want coloured as one thing.
2 BANDS	A single divider you can drag anywhere. Low and high.
3 BANDS	The full tree, two dividers. Low, mid and high.



The gold dividers are the ones you drag in the valve window. At **one band** there are none, because there is no crossover in the path.

Two and three bands keep their own divider positions, so going $3 > 2 > 3$ hands your original crossovers back untouched.

THE THREE VOICES

COMPLETE WIRINGS OF THE MEASURED CIRCUITS

A **voice** is a complete wiring of the measured circuits. Two slots, A and B in the ENGINE box, so you can set two up and flip between them. (The A / B at the top is different: it snapshots the whole plugin.) They're automatically level-matched to within about a tenth of a decibel, so you're comparing character rather than volume.

VALVE

Even harmonics — the second sits far above the third, so it thickens without ever getting gritty. Its trick is that it's **level-independent**: it generates the same harmonic content on a quiet passage as a loud one. Use it for glue and weight, and on anything you're barely touching.

HARMONICS

Odd harmonics with a steep threshold — almost nothing until you hit it, then it bites. That threshold behaviour is why it works on drums: transients cross it, sustain doesn't, so you get edge on the hits and the body stays clean.

TUBE

The valve stage driven hard. Odd harmonics and strongly self-limiting — thirty decibels in becomes fifteen out. The most compressed of the three. Reach for it when you want the plugin to grab, not just colour.



Harmonic content of the three voices, fundamental at the left. **VALVE** leans on the second, **HARMONICS** and **TUBE** on the third — and the height of each bar is what your ear reads as character.

BAND CONTROLS

FIVE PER BAND — MOST OF THEM SET SEPARATELY FOR MID AND SIDE

In Mid/Side mode, **DRIVE**, **BIAS**, **GHOST** and **GAIN** are independent for the two pages — switch with the MID / SIDE buttons and each keeps its own settings. **WIDTH** is shared, because it scales the side content of a band and a separate "mid width" would have nothing to act on.

Control	What it does
DRIVE	How hard this band hits the circuit. All the harmonics come from here — the knob you reach for first.
BIAS	Which harmonics the distortion makes. Left is even — thick and warm, with the softer valve stage blending in. Right is odd — edgier, brighter, harder. The readout tells you where you are: NEUTRAL in the middle, then EVEN or ODD with a number. (Named for the circuit: in a valve stage it is the bias that sets how asymmetric the waveform is, and asymmetry is what makes even harmonics.)
WIDTH	Stereo width for this band, applied before saturation. Above 100% it manufactures width from mono content. The mono sum is never altered, so it stays mono-safe.
GHOST	Saturation makes sounds longer — push the drive and the tail of every hit comes up with it. GHOST controls that, and works in two directions. Left takes the length back : it pulls the tail down as each hit decays, like the sustain control on a transient designer. About halfway restores roughly the original length with all the saturation intact; fully left is tighter than the dry sound. Right adds bite : more of the drive on the hits, less on the tail, so attacks get edge while the decay stays clean. Centre is off. Set separately for every band, and for MID and SIDE — tighten a saturated kick in the low band while the top rings out, or keep the side tails short while the centre stays big.
GAIN	How loud the band sits after saturation. Drive it hard, then set the balance. Not the same as MIX.
S / B	Solo and bypass, per band.



One band card. The big knob is **DRIVE**: all the harmonics come from there. The four rails (**BIAS**, **WIDTH**, **GHOST**, **GAIN**) shape what that drive does, with their values on the right. **S** solos the band, **B** bypasses it. Click any control's name to bypass just that control, on this band, on the page you're editing. Here **GHOST** is pulled left to -31.

GAIN versus MIX. Pulling MIX down mixes the untouched signal back in, so you lose the saturation. GAIN turns down the finished band and keeps the character. If you want a band quieter, use GAIN.

Moving the rails precisely. They drag like the DRIVE knob — how far you drag sets the value, not where the rail ends, so you can carry on past the end of the slider. Hold **Shift** for fine adjustment, **double-click** to return to default, or use the scroll wheel for a single step.



Mid/Side, SIDE page: the high band driven harder and widened, while the centre is left alone

GLOBAL CONTROLS

EVERYTHING THAT ISN'T PER-BAND

Control	What it does
DENSITY	Multiplies the drive going into every band. A global "more of everything" — at 100% it doubles the drive. DRIVE *2, directly beneath it, is the next step up.
AIR	High-shelf sparkle above roughly 9 kHz, voiced from the measured top end.
MIX	Overall dry/wet. Blends the untouched signal back against everything VODOO has done, AIR and IRON included.
IRON	The transformer stage. Runs on the mono sum and is added equally to left and right, so it stays mono-safe. KNEE sets how softly it gives.
VOICE	Which circuit set is live, with its own A/B.

Control	What it does
QUALITY	Internal oversampling: 1× (off), 2×, 4× or 8×. Higher is cleaner at the top end and costs CPU. Mix at 4× (the default); save 8× for the final bounce, where it can't overload anything.
IN / OUT	INPUT sets the level going in, LEVEL the level coming out.

DRIVE ×2

FOR WHEN 100 ISN'T ENOUGH

The switch along the bottom of the TONE box **doubles the drive range on every band** and lifts the internal ceiling so the extra actually arrives rather than being clipped off.

It's deliberately a switch rather than a wider knob. A 0–200 knob was tried and discarded: the top half was unusable and it cost resolution everywhere you actually work. This keeps the knob calibrated where you live and puts the extra behind a decision.

Try DENSITY first. At 100% it already doubles the drive, and being a knob it lets you find the point in between. ×2 is for when that still isn't enough.

COMPARING AND BYPASSING

A / B, TRUE BYPASS, AND CLICKING A CONTROL'S NAME

Control	What it does
A / B	The A and B at the top: two complete snapshots of the whole plugin. COPY sends the current one to the other slot so you can make a variation.
BYPASS	True bypass. The audio is bit-identical to the input.
Click a name	Click any control's name to switch that control off and hear what it's doing. On a band card — DRIVE, BIAS, GHOST, GAIN — it bypasses that control on that band only, on the page you're editing , so you can bypass the low band's mid GHOST and leave everything else running. WIDTH is one control per band, so it bypasses that band's width for Mid and Side together. DENSITY, AIR, MIX and IRON act on the whole plugin. Click again to bring it back.

Nothing can hide. Anything switched off is listed in a red chip on the control bar, and the name itself reads red and struck through. A bypass can never quietly pretend to be normal.



Click a name to bypass it. Here the mid band's DRIVE is off: struck through in red, and listed in the chip top right

LISTENING TOOLS

WAYS TO HEAR WHAT YOU'VE ACTUALLY DONE

Control	What it does
STEREO	Normal listening: the full output. The other three buttons are temporary checks.
DELTA	Hear only what VODOO is adding. At factory default this is silence. Turn a drive up and you hear the harmonics on their own.
MATCH	Loudness-matches output to input so you judge character rather than volume. Uses a K-weighted measurement, because added harmonics are mostly high-frequency and plain RMS under-weights them.
MONO	Collapse to mono to check nothing falls apart.
SIDE	Listen to the side content alone. Available in Mid/Side mode.

SIDE greyed out? You're in Stereo mode. There's no separate side channel to solo until you switch to MID / SIDE. It isn't broken.

METERING

THE RAIL DOWN THE RIGHT

Top to bottom: the **stereo field**, four **level ladders** (mid and side, or left and right, plus in and out), and a **correlation** meter with a MONO-SAFE indicator.

Action	What it does
Click the meter	Swaps the first pair between MID / SIDE and LEFT / RIGHT.
Right-click	A menu: LED segments or solid bars, MID/SIDE or LEFT/RIGHT, and whether the stereo field shows at all.



Four ladders, not two. The left pair is what you're **making**; the right pair is your **gain staging** — which is why they're separated by a hairline.

Hiding the stereo field is a real trade. Turn it off and the level ladders grow to nearly three times the height, with finer resolution. Keep it on while you're setting up the stereo side of things; turn it off when you're mixing into it.

HOW TO USE IT

FOUR PLACES TO START

Glue on a bus

Three bands, VALVE. DRIVE around 20–30 on the low and mid, less on the high. DENSITY around 15. You're looking for the meters to barely move and the mix to sound like it's been sitting together longer than it has.

Drums with edge but a clean body

HARMONICS, GHOST up around +25 on the mid and high bands. GHOST redistributes drive toward the transients, so the hits get the harmonics and the sustain stays out of the way.

A wider master without losing the centre

Mid/Side mode. Drive the SIDE page harder than the MID. WIDTH above 100 on the upper bands only. Watch the MONO-SAFE readout — the mono sum is never altered, so it stays mono-safe, but your ears should agree.

One thing, coloured

One band. No crossover in the path at all, so what you hear is purely the circuit. TUBE if you want it to grab, VALVE if you want weight without compression.

WHERE THE CIRCUITS CAME FROM

A BENCH, A LOOPBACK, AND REAL NUMBERS

Every voice was fitted from bench measurements of analogue hardware — 1 kHz tones at seven levels, plus 100 Hz and 5 kHz, each pass differenced against a bypassed loopback so the numbers describe the circuit rather than the room it was measured in. Every stage was captured driven, across its full range, because a circuit sitting at unity tells you almost nothing about what it does when you lean on it.

Some of what came back was surprising. The harmonic generator behind VALVE is **level-independent**: it makes 5.4% distortion at -30 dBFS, where the valve and the transformer alongside it make 0.09%. No waveshaper can do that — a curve's harmonic ratio always tracks level — so it's modelled a different way entirely.

The valve stage is third-harmonic dominant and strongly self-limiting: thirty decibels of input become fifteen of output, and the distortion climbs from 0.10% to nearly 37% on the way. The transformer sets the ceiling; the valve colours underneath it.

Those two facts — a harmonic generator that ignores level, and a valve that limits itself — are what the whole plugin is built on. Neither is something you'd arrive at by ear.

SETTINGS & PRESETS

THE SETTINGS PANEL, AND WHERE YOUR PRESETS LIVE

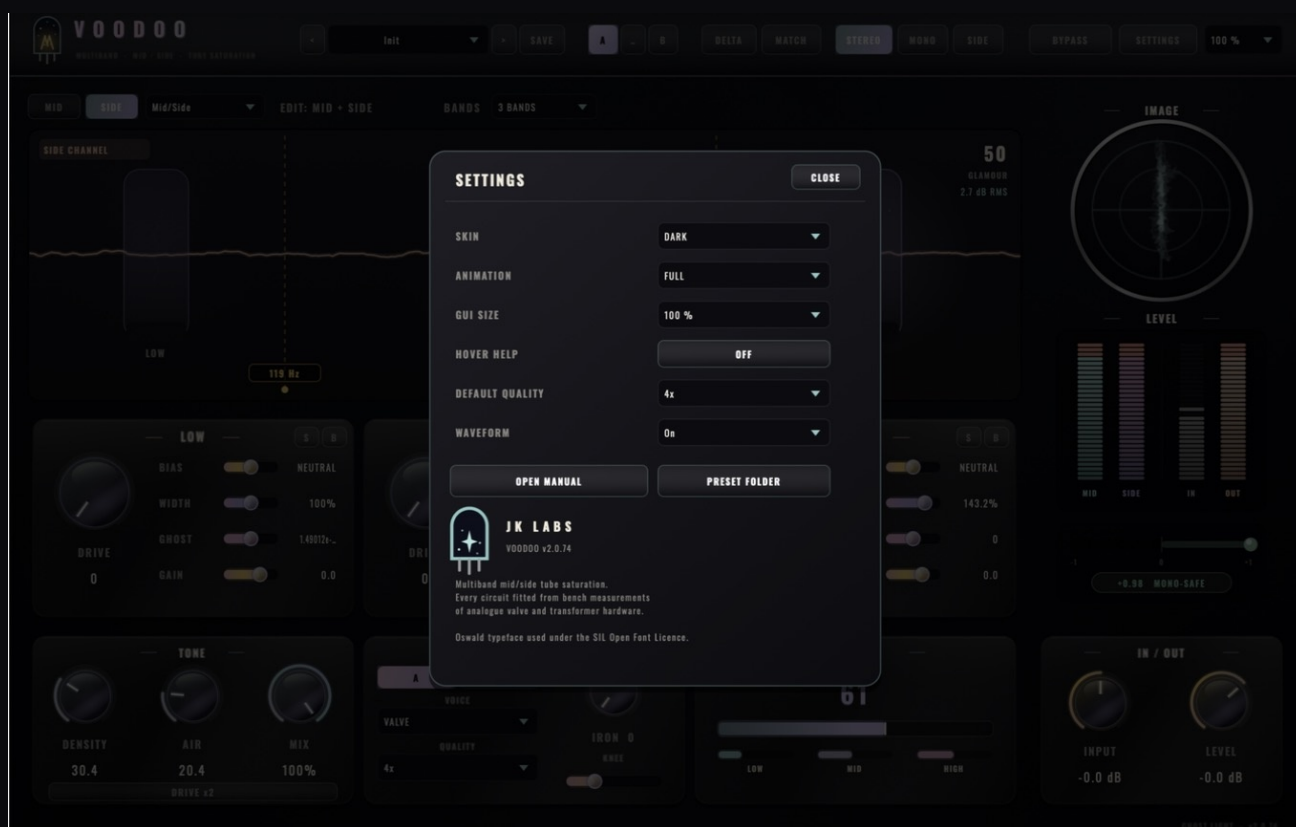
SETTINGS, top right, opens: **skin**, **animation**, GUI size, hover help, the default **QUALITY** for new instances, whether the waveform draws, a link to this manual, and your preset folder.

There are two skins: **DARK**, which VOODOO opens in, and **LIGHT**, a flat, pale panel for bright rooms. The choice belongs to your machine rather than the session, so opening someone else's project never changes how your plugins look.

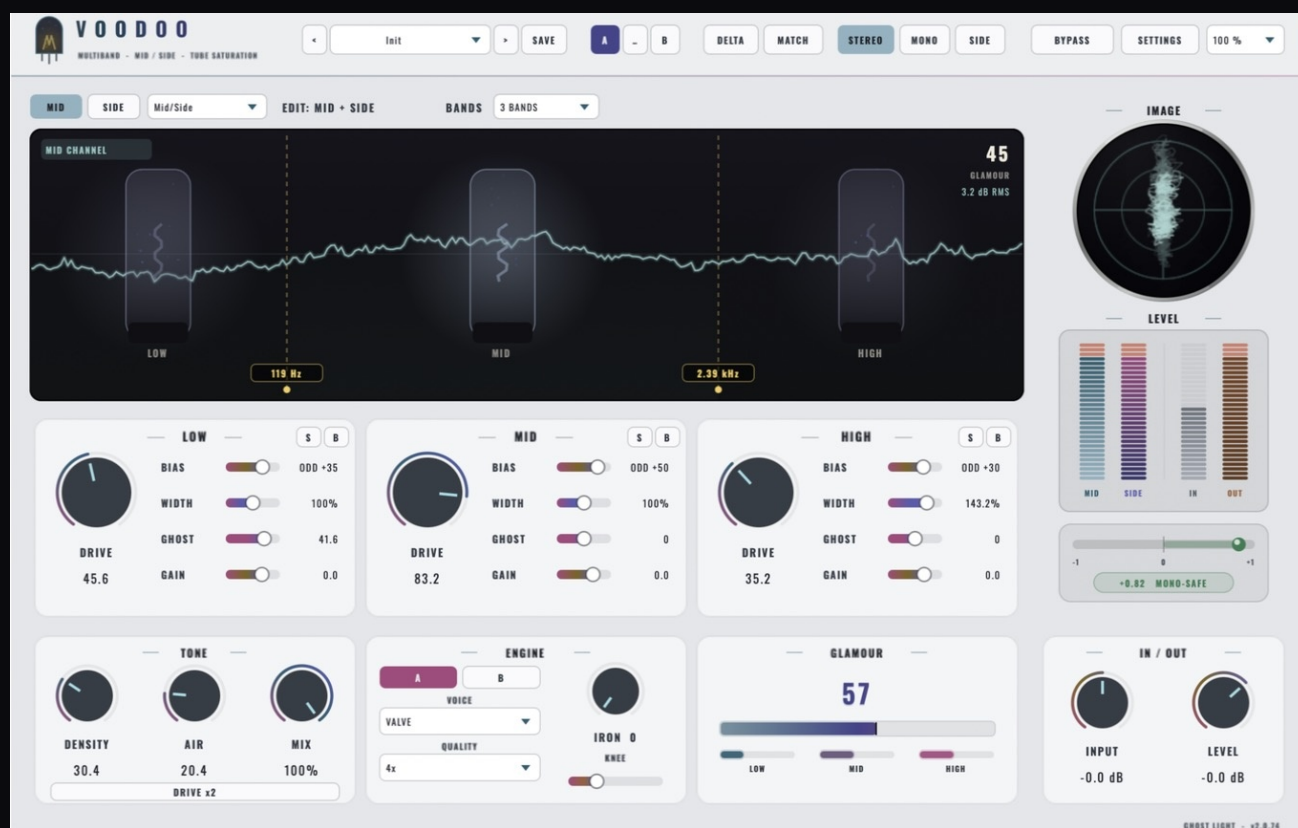
The valve in the top corner is live. It glows with how hard VOODOO is working and its filament flickers in time with the music, and the VOODOO lettering moves with it. **ANIMATION** sets how much: **FULL** is always alive, **CALM** only moves while audio is playing, and **OFF** is still — the lightest choice if you run a lot of instances in one session.

Factory presets are a starting point. Save your own with the save button in the preset row — they land in your preset folder as files you can back up or share.

Presets store only what they change. So a preset you make today still loads correctly after a future update adds new controls.



Settings: skin, animation, GUI size, hover help, default **QUALITY**, waveform, the manual and your preset folder



The LIGHT skin. Flat, high contrast, same layout

WHO MADE THIS

JK LABS

I'm a producer first. VODOO started because I wanted something that behaved like the boxes in my own rack, and nothing I could buy quite did.

So I measured them. Not from a schematic, not from memory, not by ear — on a bench, driven properly, every pass differenced against a bypassed loopback so what came back described the circuit and nothing else. The work is the measuring.

Every voice in here was fitted to real numbers. And where the hardware turned out to do something a waveshaper simply can't — and it does — VODOO does it a different way rather than approximating and hoping you won't notice.

JON KONG

JK LABS

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