SMASH HAPPY AUDIO — USER MANUAL

Airwaves

Mastering-grade high-end enhancement and saturation — air, de-harshing, transient sheen, and a clipper built to be pushed, all in one always-on signal chain.

Formats · AU, VST3 (macOS) **Version** · 2.5 **Manufacturer** · Smash Happy Audio

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01 / Overview

What Airwaves is for

Airwaves is the high-end companion in the Smash Happy Audio mastering line — Groundwaves handles the bottom, Airwaves handles the top: air, sheen, controlled saturation, and a musical ceiling. It's built to be pushed hard without becoming harsh, largely because de-harshing and clipping are always working alongside the enhancement, not bolted on as an afterthought.

The signal runs through a fixed nine-stage chain in this order: Air, Smooth Happy, To The Stars, Width + Edge Happy, Clip + Peak Happy, Output Gain, Spark Happy, and a final always-on two-stage ceiling.

02 / The Interface

The interface

Four sections run left to right: AIR, CLIP, WIDTH, and OUTPUT, each with its own knobs, meters, and LEDs. The ENGAGED/BYPASSED button in the top rail is the master switch for the whole chain — everything else stays live underneath it.

03 / Air

Air

A triple Baxandall high-shelf stack at 700 Hz, 10 kHz, and 16 kHz, paired with harmonic saturation and automatic RMS gain compensation so pushing Air hard doesn't just make the mix louder. This is the one knob Airwaves wants you to push — the whole chain is built to keep up with it.

04 / Smooth Happy

Smooth Happy

Six fully independent de-harshing bands, each with its own detector and a short lookahead so gain reduction arrives just ahead of the peak that triggered it rather than reacting after the fact. Switch it to run before or after Air — the two are designed to work together, so the harder you push Air, the more Smooth Happy has to do.

05 / To The Stars

To The Stars

A parallel high-frequency enhancer working above 8 kHz, with mid/side pinking shelves and upward expansion for analog-style sheen and a sense of dimension "in the box" — a subtler, more textural lift than Air's shelf boost.

06 / Width & Edge Happy

Width & Edge Happy

WIDTH

A straightforward mid/side widener. 100% is unity; below narrows, above opens — zero phase compromise either way.

EDGE HAPPY

Isolates high-frequency side-channel transients above 6 kHz and expands just their attack — cymbals, picks, and air open up in the stereo field while the centre stays completely untouched.

07 / Clip & Peak Happy

Clip & Peak Happy

A 16x oversampled clipper with a narrow, genuinely usable range — 0 is 0 dBFS, 10 is a −3 dB threshold. Peak Happy tracks both RMS and peak envelopes to measure the real crest factor of your material and sets the clip margin accordingly, so dense, already-compressed genres aren't forced to pin the knob at 10 to get an effect.

08 / Output & Spark Happy

Output & Spark Happy

Output is a linear trim, −12 to +6 dB. **Spark Happy** sits after it — a post-output transient upward expander (max +0.6 dB) that lifts attacks only, leaving sustain untouched. The chain finishes with an always-on two-stage true-peak ceiling — there's no bypass for it, since Airwaves is built to never hand your DAW an over.

09 / Undo & A/B Compare

Undo & A/B compare

UNDO

Steps back your last change. Related edits in quick succession group into one undo step.

ALT

A/B compare: first press stores your current settings as the alternate; press again to flip and compare.

10 / Specifications

Specifications

Formats	Audio Unit, VST3
Platform	macOS, Apple Silicon
Signal chain	Air → Smooth Happy → To The Stars → Width/Edge Happy → Clip/Peak Happy → Output → Spark Happy → Ceiling
Smooth Happy bands	6 independent, 2.8/3.6/4.5/5.5/6.8/8.2 kHz
Clip range	0 dBFS to −3 dBFS threshold, 16x oversampled
Output trim	−12 to +6 dB
Ceiling	Always-on two-stage true-peak limiting
Channel configuration	Stereo in / stereo out

Troubleshooting

Pushing Air is making things harsh

Make sure Smooth Happy is engaged and its Strength is up — it's designed specifically to keep pace with Air. Try switching it to run before Air rather than after if harshness is appearing before the boost.

The Clip knob doesn't seem to be doing much at 10

Peak Happy sets the working margin based on your material's actual crest factor — on dense, already-loud material the full clip range may sit well below what 10 does on quieter, more dynamic sources. That's the intended behaviour, not a bug.

I want more stereo width but Edge Happy feels subtle

Edge Happy only expands the transient attack of high-frequency side content — it's deliberately restrained. For overall width, start with the Width knob and use Edge Happy as a finishing touch on top.