VARDE

SATURATION AND DISTORTION

User guide

Written for version 1.4.0 · November 2026



WHAT VARDE IS FOR

Harmonics, from a faint thickening to a fuzz you could build a track around.

VARDE adds harmonics to whatever you put it on: a vocal, a bass, a drum bus, a whole mix. Pick one of seven characters and turn Drive up until you hear what you wanted. Drive runs from clean to 48 dB, so the same plug-in covers a trace of warmth on a mix bus and distortion that becomes the sound of the part.

Two things keep the comparison honest while you work. All seven characters are level matched, so clicking from one to the next changes the tone and leaves the loudness where it was. And Auto Gain, which is on when VARDE opens, holds the output at the level of the input while Drive moves. Turning up never sounds better simply because it got louder, so the setting you land on is the one that sounds right.

When one setting cannot suit the whole signal, Multiband splits it into as many as eight bands, each with its own character and Drive. The low end can stay clean while the mids break up.

Quality

Saturation adds new high harmonics. Any that would land above the top of the audio range fold back down as harsh tones that are out of tune with the note. This is called aliasing. To prevent it, VARDE runs the saturation at a higher sample rate and filters those harmonics away before coming back down: **Eco** at 2 times the sample rate, **Normal** at 8 times and **Ultra** at 16 times. Higher settings are cleaner on bright, hard-driven sounds such as cymbals, leads and distorted synths, and use more CPU. Normal suits most work. Keep Ultra for the brightest, hardest-driven parts.

Installing

1. Open the disk image and double-click **Install VARDE.pkg**.
2. Follow the prompts.
3. Restart your DAW. It will not appear until you do.

Two versions are installed: an Audio Unit for Logic Pro, and a VST®3 for Ableton Live and everything else. The first time VARDE opens it asks for the licence key from the Takt Audio Labs email. Until a key is entered, audio passes through untouched.

Loading it in Logic Pro

1. On an audio track, a bus or an instrument track, click an empty **Audio FX** slot.
2. Choose **Audio Units › Takt Audio Labs › VARDE**.
3. Choose **Stereo**, or **Mono** on a mono track.

Loading it in Ableton Live

1. In Live's settings open **Plug-Ins**, turn on **Use VST3 Plug-In System Folders**, and click **Rescan**.
2. In the browser sidebar click **Plug-Ins**. Audio Effects holds only Live's own devices, so VARDE is not there.
3. Open **Takt Audio Labs** and drag **VARDE** onto an audio track or a return.

If **Use Audio Units** is also on, Live lists VARDE twice, once as an Audio Unit and once as a VST®3. They are the same plug-in and sound the same. Pick either.

THE PANEL

The stage on top, what comes before and after it underneath.



The character and Drive on top, Input and Output underneath. The meters at the two edges show peak level going in and coming out, so you can see what Auto Gain is doing.

The top bar

CONTROL	SETTINGS	WHAT IT DOES
PRESETS	Arrows, menu	Click the name for the menu; the arrows step through the presets. Page 7.
MULTIBAND	On or off	Splits the signal into bands, each with its own character and Drive. Page 6.
QUALITY	Eco, Normal, Ultra	Oversampling: 2, 8 or 16 times. Higher keeps hard-driven highs cleaner and uses more CPU. Normal is the default.
LATENCY	Low latency, Linear phase	Low latency adds about 0.1 ms, fine for recording through. Linear phase keeps the phase exact and adds about 1.4 ms. Both are reported to your DAW. Page 6.
DELTA	On or off	Plays only what VARDE adds, so you hear exactly which harmonics a setting creates.
BYPASS	On or off	Plays the untouched input, delayed by the same latency, so switching it shows you the change in tone and nothing else.
?	On or off	Help. While it is lit, hovering over any control shows what it does. Off, nothing pops up.
Gear	Menu	Window size, reduced glow, your licence, and About VARDE. The moon beside it switches dark and light.

The grille

Behind the grille is a valve unit that follows your signal: the left valve what comes in, the middle one how hard VARDE is working, the right one what goes out. **Reduced glow** in the gear menu lightens the animation.

Working the controls

Drag a knob up or down, with **Shift** for fine moves. Double-click it to return it to its default, or click its value to type a number. Double-click **RESET ALL** to put every control back where it started, multiband included. Quality and Latency stay as they are. For six seconds afterwards the same place reads **UNDO RESET**, and one click brings back everything as it was.

THE KNOBS

By column, left to right, in the order the signal meets them.

CONTROL	RANGE	WHAT IT DOES, AND WHAT IT COSTS YOU
INPUT		
TRIM	−24 to +24 dB	Level into VARDE, before Drive. It moves the dry signal too, so Mix stays balanced. Use it to bring a quiet or hot source into the range where the characters work best.
BASS PROTECT	Off, 20 to 300 Hz	Everything below this frequency goes around the stage, and around Auto Gain, so the low end stays clean, tight and at its own level. Off by default. Greyed out in multiband, where the lowest band does the same job.
INTERACTION	0 to 100 %	Lets Drive follow the level of what arrives. Signal around −12 dBFS is left alone; louder moments are pushed harder and quieter ones less. At 100 % each dB of level adds or removes 0.75 dB of Drive. The cost is a distortion that moves with the performance, which is the point on a vocal and a distraction on a pad.
SOFTENING	0 to 100 %	Eases Drive back on fast transients, by up to 12 dB, and gives the same gain back after the stage. Steady signal is unchanged; hits break up more gently. The cost is some of the bite on the attack.
STEREO MODE	Stereo, Mid/Side	Stereo processes left and right. Mid/Side processes the centre and the sides separately, so a wide part stays wide.
THE STAGE		
BIAS	−100 to +100	Shifts the curve off centre, which adds even harmonics, the second above all. At 0 the curve is symmetric. No DC reaches the output at any setting.
DRIVE	0 to 48 dB	How hard the signal is pushed into the character. At 0 most material passes almost clean; by 48 dB every character is far into distortion. Auto Gain follows it in both directions, so Drive can be automated.
MIX	0 to 100 %	The blend of dry and distorted. The two are aligned to the sample, so a partial setting never thins the sound through phase cancellation.
OUTPUT		
TONE	−6 to +6 dB	A tilt after the stage, pivoting around 800 Hz: darker to the left, brighter to the right.
AIR	0 to +6 dB	A high shelf at 10 kHz after the stage. Brings back sparkle that heavy Drive can soften.
OUTPUT	−24 to +12 dB	Final level, after everything else.
AUTO GAIN	On or off	Under Level Match. Keeps the output as loud as the input, so you hear the tone change and not a level change. On by default. Switch it off when you want Drive to make things louder.

THE SEVEN CHARACTERS

Level matched, so you compare tone and not volume.

Every character is trimmed at each 6 dB step of Drive so that, on pink noise, it stays within 1 dB of Velvet. Click across the strip at any Drive setting and the loudness holds. What changes is the shape of the harmonics, which is the thing you are choosing.

Each keeps its own sound all the way up: the overtones still fade as they climb, and the lows are held back from the curve and given back after it, so a pushed character keeps its weight.

Above the keys, the first four are marked SATURATION and the last three DISTORTION. The line under the CHARACTER title names what the selected one does, and with **?** on, hovering over a key gives a sentence more.

CHARACTER	ON SCREEN	WHAT IT DOES TO A SIGNAL
VELVET	Rounded, odd harmonics	Smooth, symmetric soft clipping, the same curve as IMPACT engine. Clean below −6 dBFS at Drive 0. Past 14 dB of Drive it keeps some give, so it stays round. The one to reach for first on a drum bus or a mix bus, because it adds weight without announcing itself.
TUBE	Thick, blooms when hit	Led by the second harmonic at every Drive, which reads as thickness and warmth rather than grit. Hit it hard and loud notes grow thicker, then clear again as they fade. Good on vocals, bass and keys.
TAPE	Soft, darkens when pushed	The softest curve of the seven. As Drive rises the top end rolls off and the low end lifts, the way a tape machine behaves when it is pushed. Suits anything that sounds too sharp or too digital.
TRANSFORM	Fat low mids, clean sub	The low mids around 160 Hz reach the curve first, so the more bass arrives the harder it drives. Below 45 Hz the deep sub bypasses the curve entirely and stays clean and in phase. Made for bass and kick: weight you can hear on small speakers without muddying the floor.
DIODE	Pedal grit, mids forward	A hard, asymmetric clipper. The fizz it makes up top is smoothed on the way out, and the mids around 900 Hz come forward by up to 2 dB as Drive rises, while the low end stays. Buzzy and cutting. Guitars, synths, a vocal that needs to get through a dense mix.
FOLD	Wavefolder, metallic	Past its peak the wave folds back on itself instead of flattening, so more Drive brings more folds and a brighter, more metallic tone. The folds sit over a soft clip, so the note itself stays underneath at any Drive. A sound-design tool more than a mixing one.
RECTIFY	Octave up, buzzing	The lower half of the wave flattens out as Drive rises, completely by 30 dB, then folds upwards, so at full Drive the octave is almost as loud as the note. Buzzy and synthetic, and striking on a bass line or a lead.

Choosing

Set Drive where you want it, then click through the strip. Because the level holds, the first character that sounds right usually is. Bias then moves any of them toward even harmonics, and Mix pulls the effect back under the dry signal when the character is right and the amount is too much.

MULTIBAND

Up to eight bands, each with its own character and Drive.



Four bands, the third selected. The spectrum shows what is playing; the dividers are the crossovers.

Press **MULTIBAND** and the grille slides open onto the band display. The first time, every band starts with the full-band character and with Drive and Bias at zero, so each band is pushed on its own from there. After that the bands come back as you left them.

Working with bands

- Click a band to select it. The title then reads **BAND** and its number, with its frequency range at the right, and the character strip, Drive and Bias set that band.
- Drag a divider to move a crossover, anywhere from 20 Hz to 20 kHz.
- **+** splits the selected band in two. **–** joins it to its neighbour. VARDE starts with three bands, split at 150 Hz and 2.5 kHz, and runs from two to eight.
- The toolbar above the display always acts on the selected band: **MUTE**, **SOLO**, **BYPASS**, **DELTA**, its own **MIX** from 0 to 100 %, and **OUT**, the level of what the band's stage makes, from −24 to +12 dB.
- **SLOPE** sets how steeply the bands are divided: 12, 18 or 24 dB per octave. 12 overlaps the most and sounds smoothest; 24, the default, keeps each band most to itself. At any slope the bands add back up flat.

Trim, Interaction, Softening, Stereo Mode, the main Mix, Tone, Air, Output and Auto Gain apply to the whole signal. In multiband, Auto Gain matches each band on its own, so driving one band never turns the others down.

How many bands

Two or three cover most mixing jobs: a clean low band, and the rest driven. Bass Protect is greyed out in multiband for this reason. Set the lowest band's Mix to 0 % and it passes exactly as the split made it, with a divider you can see and move. Reach for more bands when different parts of the spectrum want different characters, Tube on the low mids and Tape on the top, say, or for sound design.

Worth knowing

- VARDE is for macOS 11 or later, as an Audio Unit and a VST®3, on Apple Silicon and Intel.
- Low latency reports 5 samples, about 0.1 ms at 48 kHz. Its filters are minimum phase, like an analogue circuit: the very top of the band arrives a few samples later.
- Linear phase keeps the phase exact and reports its delay, which your DAW compensates: 51, 65 and 67 samples for Eco, Normal and Ultra, about 1.1, 1.4 and 1.4 ms at 48 kHz.
- Eight bands at Ultra is the heaviest setting; Normal uses half. On silence, VARDE rests and uses almost no CPU.

PRESETS

Eighty starting points, and a place for your own.

The preset bar runs along the top of the panel. Click the name to open the menu. The arrows on either side step to the previous or next preset, through the factory set and on into your own. Move a control after loading a preset and a star appears after its name; choose the same preset again to go back to it.

The factory presets

FOLDER	PRESETS	WHAT IS IN IT
ALLROUND SATURATION	16	Mixing, from a trace of warmth to plainly driven: drum bus, vocals, keys and the mix bus.
CRISP AND MID SATURATION	16	Forward and cutting, for a snare that cracks or a vocal that has to get through.
LO-FI AND BROKEN	16	Worn tape, blown speakers and overloaded desks.
MULTIBAND	16	Two to eight bands, each with its own character, such as a clean low end under a driven top.
SOUND DESIGN	16	Folding, rectifying and fuzz, used as an instrument.

Auto Gain is on in every factory preset, so moving from one to the next changes the sound and leaves the level where it was.

Saving your own

1. Open the menu and choose **Save As...**.
2. Type a name and pick a folder.
3. Click **SAVE**. If the name is taken, VARDE asks first; click SAVE again to replace it.

Your presets appear under **User** in the menu. While one of yours is loaded, the menu can also save your changes to it, or delete it. A deleted preset goes to the Bin, so it can be put back.

Where they are kept

Your presets are files in **~/Library/VARDE/Presets**. **Show User Presets in Finder** in the menu opens that folder. Folders you make inside it appear as submenus under User, and presets copied in from another Mac appear the next time the menu opens.

What a preset holds

Every control except Quality, Latency Mode, Bypass, Delta, and each band's Mute, Solo, Bypass and Delta. Those belong to how you are listening and working, so loading a preset leaves them where they are, as RESET ALL does. Your DAW's own presets of VARDE still hold everything.

YOUR LICENCE

What activation does, and what it does not do.

The licence key email from Takt Audio Labs has your key. Paste it into VARDE once and it activates. That is the only moment it needs an internet connection. The licence does not expire.

Three machines

One purchase activates on up to three machines. If you sell a Mac or a drive dies, open the gear menu, choose the licence line, and press **Release this machine** to free the slot. You do not need to email anyone and there is nothing to wait for.

What leaves your computer

- Activating contacts the Takt server once, at the moment you paste your key in. That is the only time anything about your purchase is transmitted.
- Once a day VARDE asks taktaudiolabs.com whether a newer version exists. That is a request for a public file. It carries nothing about you or your machine, and if you are offline it does not ask.

There is no account, no cloud and no telemetry. Any network monitor will confirm it.

DETAILS

FORMATS	Audio Unit, VST®3
SYSTEM	macOS 11 or later, Apple Silicon and Intel. Mac only for now; tell me if you need Windows.
CHANNELS	Mono and stereo
LICENCE	One purchase, up to three machines, moveable
ACTIVATION	One time, with the key from the Takt Audio Labs email
UPDATES	Free within the current major version

Uninstalling

Release the licence first if you want the slot back, then delete these three:

```
/Library/Audio/Plug-Ins/Components/VARDE.component
/Library/Audio/Plug-Ins/VST3/VARDE.vst3
~/Library/VARDE
```

When something is wrong

Write to **support@taktaudiolabs.com**. Takt Audio Labs is one person, so the reply comes from whoever wrote the code. The **Report a bug** link in the About panel fills in your version, format and DAW for you; add what you did before it went wrong.

> This guide was written for VARDE 1.4.0. The version in your copy is shown under About VARDE in the gear menu. If it does not match, the current guide is on the download page at taktaudiolabs.com/varde/download/.

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