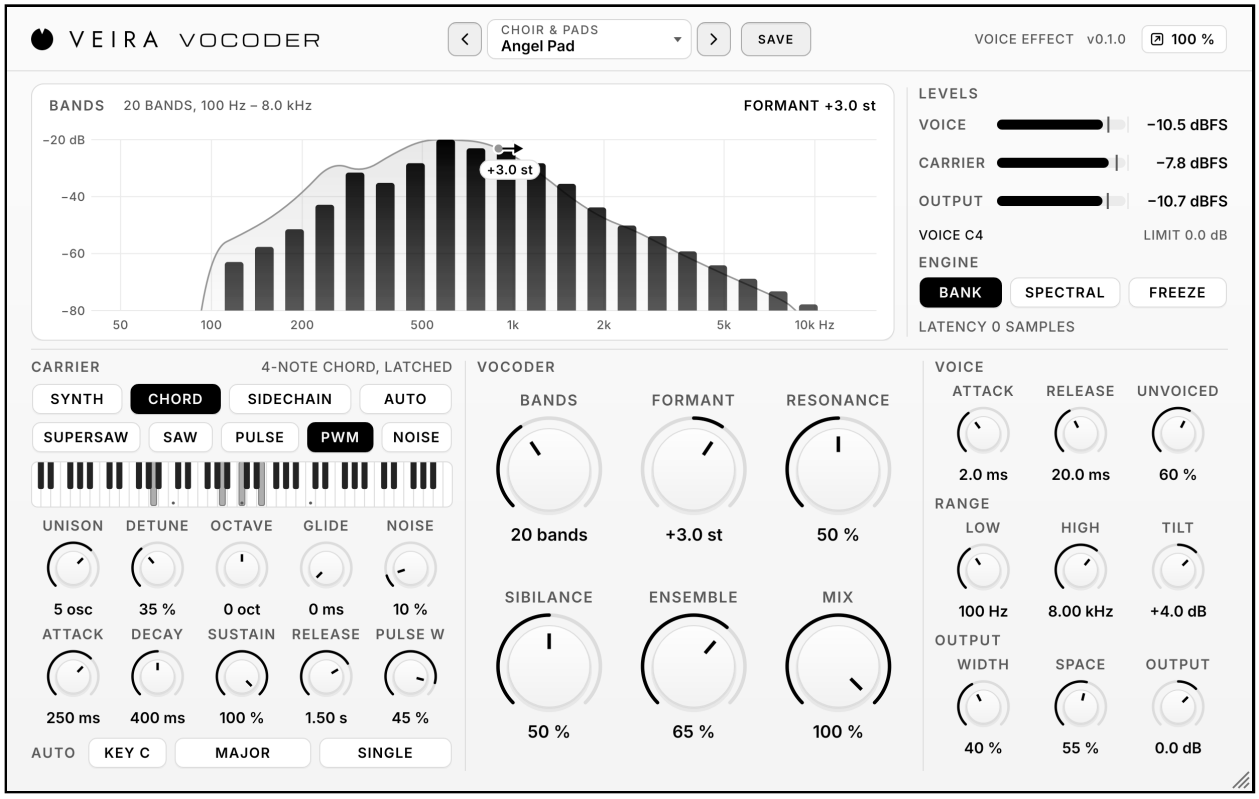
VEIRA

VOCODER

VEIRA Vocoder

User Manual

Sing or speak into it and it plays your words on a carrier: its own synth following your voice, with up to four-note harmony and no MIDI at all; the synth played by MIDI notes or latched chords; or another track on the side-chain. Robots, choirs, talk-box leads, string machines and whispers.



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Welcome

Thank you for choosing **VEIRA Vocoder**. A vocoder takes two sounds and makes one. The first is a voice: you sing or speak into it. The second is a **carrier**: a synth, a chord, a pad or a guitar. What comes out is the carrier, shaped by your voice, so the carrier seems to sing your words.

VEIRA Vocoder has four carriers. AUTO, the one it opens in, needs nothing but your voice: its own synth follows the pitch you sing, in a key you choose, with up to four notes of harmony. SYNTH is the same synth played by MIDI notes, CHORD holds the chords you play until the next one, and SIDECHAIN uses another track in your session.

What makes it different

- **It sings straight away.** A new instance is in AUTO: put it on a vocal track and sing, and you hear a vocoder at once. No MIDI and no routing.
- **Clear words.** The bands can't get so narrow that they ring and smear the consonants; on *s*, *t*, *f* and *sh* the carrier turns to noise as your voice does (UNVOICED), and the very top of your voice can be passed through (SIBILANCE). A dark pad and a bright saw speak equally clearly, because the plugin evens out the carrier's own tone before the voice shapes it.
- **Harmony without MIDI.** In AUTO, HARMONY turns one voice into a duet, a triad, a seventh chord or a four-voice choir, always in your key.
- **A full synth inside.** Eight voices, five waves including a seven-saw stack, unison, glide, an envelope, pitch bend, vibrato from the mod wheel and the sustain pedal.
- **Two engines.** The classic filter bank, with no delay at all, or a spectral engine with the smoothest highs.
- **53 factory presets** in 8 folders, from robots to choirs, talk-box leads and whispers.

How this manual is organised. *Getting started* installs and activates the plugin. *The panel at a glance* names its parts. *How a vocoder works* explains the idea and what happens inside. *The four carriers* shows how to get a sound in each, including how to send MIDI and a side-chain to the plugin. *The carrier's synth*, *The vocoder*, *Voice, range and output*, *The displays* and *The engine and FREEZE* go through the panel. *Presets*, *Recipes*, *Specifications* and *Troubleshooting* close the manual.

Getting started

What you need

macOS	macOS 11 Big Sur or later. Native on Apple silicon and Intel Macs (universal).
Windows	Windows 10 or 11, 64-bit.
Plugin formats	VST3 (macOS and Windows), Audio Units (macOS), and a standalone app. Pro Tools (AAX) versions arrive once they are signed for Pro Tools.
Hosts	Any DAW that loads VST3 or Audio Units: Logic Pro, Cubase, Nuendo, Ableton Live, Studio One, Reaper, FL Studio, Bitwig and others.
Account	A VEIRA account at veiraaudio.com, and the free **VEIRA Manager** app.
Internet	Needed to install and to refresh the licence. The plugin itself never goes online.

Install with VEIRA Manager

VEIRA plugins are not downloaded from the website one by one. You install them with **VEIRA Manager**, the free VEIRA app that installs, updates and activates everything you own. Its own manual covers it in full; the short version is:

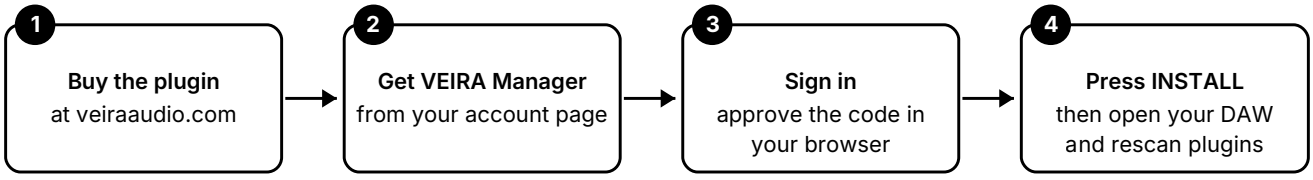


FIGURE 1 From purchase to first sound in four steps.

1. **Buy** VEIRA Vocoder at **veiraaudio.com**. It's a one-time purchase: you own it for good, with free updates.
2. **Download VEIRA Manager** from your account page (or veiraaudio.com/manager) and install it.
3. **Sign in.** VEIRA Manager shows a short code and opens your browser; confirm the code there. Your password is never typed into the app.
4. Find VEIRA Vocoder in the list and press INSTALL. When it says SHOW, it's installed. Open your DAW and let it rescan its plugins.

After installing, VEIRA Vocoder appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Vocoder).

Activation and the licence

VEIRA Manager keeps a licence on your computer that the plugins check. It is refreshed every time VEIRA Manager opens and stays valid for 30 days offline, so you can work without internet as long as you open VEIRA Manager now and then.

Without a valid licence, VEIRA Vocoder still loads and works, but **its sound fades out for 1.5 seconds every 30 seconds**, and a strip along the bottom of its window says why (for example, *NOT ACTIVATED ON THIS COMPUTER. SIGN IN WITH VEIRA MANAGER.*). Clicking the strip opens your account page.

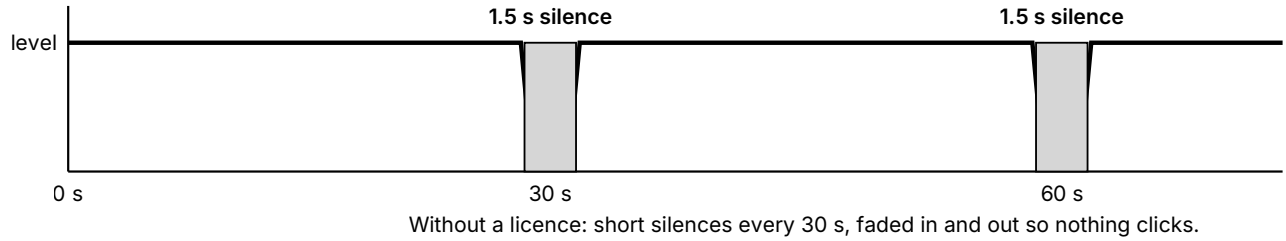


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **Activating while your DAW is open** takes effect within about two minutes. You don't need to reload the plugin.
- **"Not activated on this computer"**: open VEIRA Manager and sign in.
- **"Expired"**: open VEIRA Manager while online; it renews the licence at once.
- **"Not included"**: the signed-in account doesn't own VEIRA Vocoder. Check that you're signed in with the account you bought it with.

Formats and where the files go

VEIRA Manager puts every format in the standard place, so you never need to copy files by hand:

Format	macOS	Windows
VST3	`~/Library/Audio/Plug-Ins/VST3` (just for me, the default) or `/Library/Audio/Plug-Ins/VST3` (all users)	`C:\Program Files\Common Files\VST3` (all users, the default) or `%LOCALAPPDATA%\Programs\Common\VST3`
Audio Units	`~/Library/Audio/Plug-Ins/Components` or `/Library/Audio/Plug-Ins/Components`	(Audio Units are macOS only)
Standalone	`~/Applications/VEIRA` or `/Applications/VEIRA`	`C:\Program Files\VEIRA` or `%LOCALAPPDATA%\Programs\VEIRA`

You choose *just for me* or *all users* in VEIRA Manager's install settings.

The standalone app runs VEIRA Vocoder on its own, with your audio interface's input and output, which is handy for trying presets without a DAW.

The panel at a glance

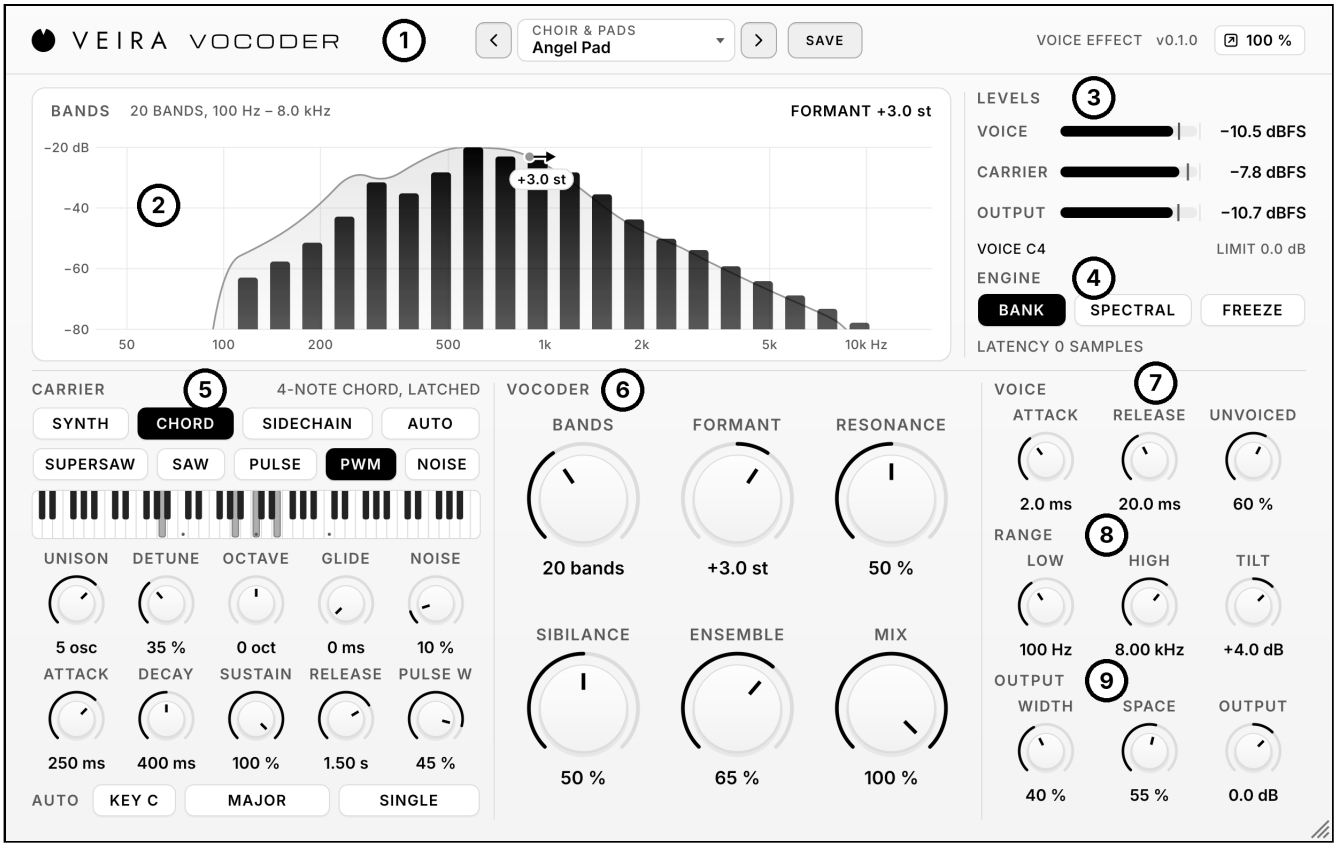


FIGURE 3 VEIRA Vocoder with the preset *Angel Pad*, a latched four-note chord under a sung vowel: 1 the header, 2 the BANDS display, 3 LEVELS, 4 ENGINE, 5 CARRIER, 6 VOCODER, the six big knobs, 7 VOICE, 8 RANGE and 9 OUTPUT.

	Part	What it does
1	Header	The VEIRA logo and the name, the preset browser, SAVE, the version and the size button.
2	BANDS	Your voice's spectrum as the bands read it, and the vocoder's output, band by band.
3	LEVELS	The voice, the carrier and the output, the note you are singing, and the safety limiter.
4	ENGINE	BANK or SPECTRAL, FREEZE, and the latency.
5	CARRIER	Where the notes come from (SYNTH, CHORD, SIDECHAIN, AUTO), the synth's wave, its keyboard and knobs, and AUTO's key, scale and harmony.
6	VOCODER	The six controls you use most: BANDS, FORMANT, RESONANCE, SIBILANCE, ENSEMBLE and MIX.
7	VOICE	How quickly the bands follow your voice, and UNVOICED for clear consonants.
8	RANGE	The lowest and highest band, and a tilt from dark to bright.
9	OUTPUT	The stereo width, a small room, and the level out.

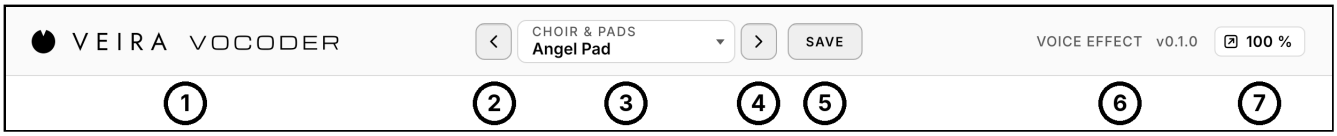


FIGURE 4 The header: 1 the VEIRA logo and the name, 2 and 4 the previous and next preset, 3 the preset's folder and name (an asterisk: changed since it loaded), 5 SAVE, 6 what it is and the version, and 7 the size button, here at 100 %.

Using the controls

Every VEIRA plugin is played like a piece of hardware. The same few parts appear on every panel:

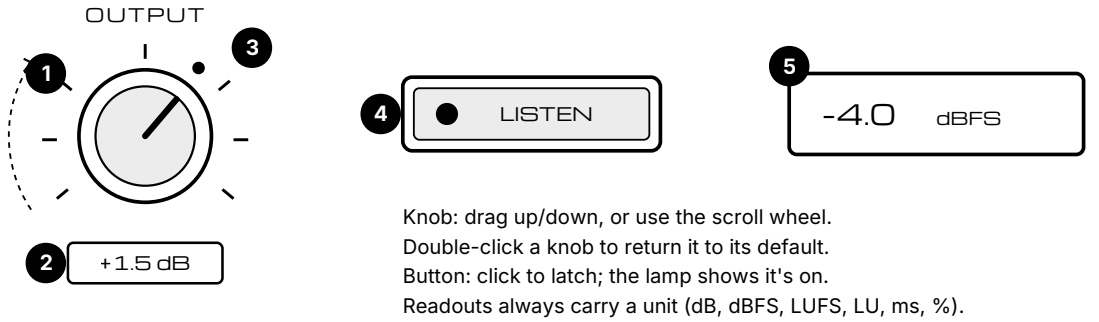


FIGURE 5 The parts you'll find on every VEIRA panel (the labels are examples).

- 1 **Knob.** Drag up to turn it clockwise, down to turn it back, or use your mouse wheel. **Double-click** returns it to its default. The engraved pointer and the small dot on the scale show where it's set.
- 2 **Value window.** The backlit window under each knob shows its exact value with its unit.
- 3 **Silkscreen label.** The control's name, as it appears in your DAW's automation list.
- 4 **Push button.** Click to switch on; the lamp lights and the cap sits lower in its bezel. Click again to switch off.
- 5 **Readout.** Live numbers update ten times a second so you can read them while the meters move. A value over 0 dBFS shows as a warning.

Tooltips: hover over any control or display for a short explanation. On displays, the tooltip depends on where you point.

Automation: every knob and button is a host parameter, so you can automate it in your DAW and control it from a MIDI controller or control surface that your DAW maps.

Units: VEIRA never shows a bare number. **dBFS** is level against digital full scale (0 dBFS is the loudest a digital signal can be); **dB** is a change in gain; **LUFS** is loudness as streaming services and broadcasters measure it; **LU** is a difference in loudness (1 LU = 1 dB).

On VEIRA Vocoder's panel the parts look a little different from the drawing above. The face is drawn in VEIRA's clean style: off-white paper, charcoal type and hairlines.

- **Knobs are white discs** with a charcoal arc that shows the setting and the value printed under them. The six in the middle are large; the rest are small. Drag up and down or use the wheel; double-click for the default; right-click (Control-click on a Mac) to type a value.

- **Keys** are flat, rounded and white. The one that is on is filled charcoal with white letters, like CHORD, PWM and BANK in the picture above. KEY, SCALE and HARMONY at the bottom left open a menu when you click them, and show the current choice.
- **Amber** marks the keys that sound on the keyboard, the limiter's read-out while it works, and FROZEN. In print, the sounding keys are the grey ones between the white and the black keys.
- **Tooltips** explain every control: hover over it.
- **The window size.** VEIRA Vocoder opens at 100 %, 1240 × 780 points. To change it, click the size button 7 in the header and choose 75, 90, 100, 125, 150 or 200 % or *Fit to screen*; or drag the grip in the bottom-right corner (double-click it for 100 %); or press Cmd + = and Cmd + - (Ctrl on Windows) to step up and down and Cmd + 0 for 100 %. Your DAW saves the size with the session, and new instances open at the size you chose last.

Where to find it in your DAW. VEIRA Vocoder is an effect that also takes MIDI notes. Insert it on an audio track, like any effect: the vocal track. Hosts that sort their Audio Units by kind list it with the **MIDI-controlled effects**, not with the ordinary audio effects; in VST3 it is listed with the effects.

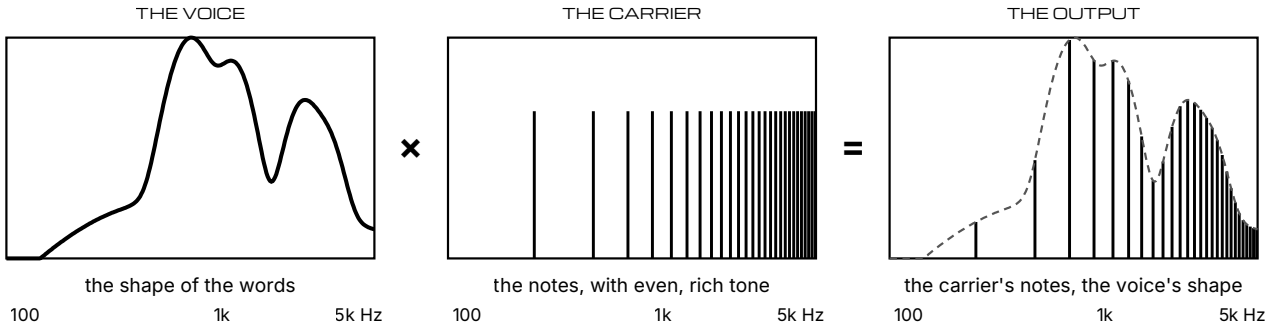
How a vocoder works

If you know vocoders already, skip to *What happens inside VEIRA Vocoder*.

Words are shapes

Say “ah” and then “ee” on the same note. The pitch doesn’t change, but the sound does: your mouth and throat make some frequencies louder than others, and each vowel has its own pattern of loud regions, called **formants**. Consonants are mostly noise: *s* and *sh* are hiss, high up; *t* and *k* are short bursts. That shape, changing many times a second, is what makes words understandable. It is separate from the note you sing.

A vocoder takes that shape off your voice and puts it on another sound.



The vocoder measures how loud the voice is in each band, many times a second, and gives the carrier the same loudness in the same bands. The words come through; the pitch and the tone are the carrier's.

FIGURE 6 A vocoder in one picture: the voice gives the shape, the carrier gives the notes.

Bands

To measure the shape, a vocoder splits the voice into **bands**, like the sliders of a graphic equaliser, and follows the level in each band. It splits the carrier into the same bands and sets each carrier band to the voice’s level in that band. Add the bands back together and the carrier speaks.

- **Few bands** (8 to 12) give the coarse, buzzy machine voice of early vocoders.
- **More bands** (20 to 40) give clearer words and a more natural sound.

What makes a good carrier

The carrier needs sound in every band the voice uses, or those parts of the words disappear. Bright, rich sounds work best: saws, stacks of saws, strings, distorted guitars, pads full of harmonics. A pure tone, like a flute or a sine, has almost nothing to shape. VEIRA Vocoder evens out the carrier’s own tone first, so a dark pad speaks almost as clearly as a bright saw, but it can’t create sound that isn’t there.

The carrier also decides **when** there is sound. If no note is playing, the vocoder is silent, however loudly you sing. That is why VEIRA Vocoder opens in AUTO, where the notes come from your own voice.

What happens inside VEIRA Vocoder

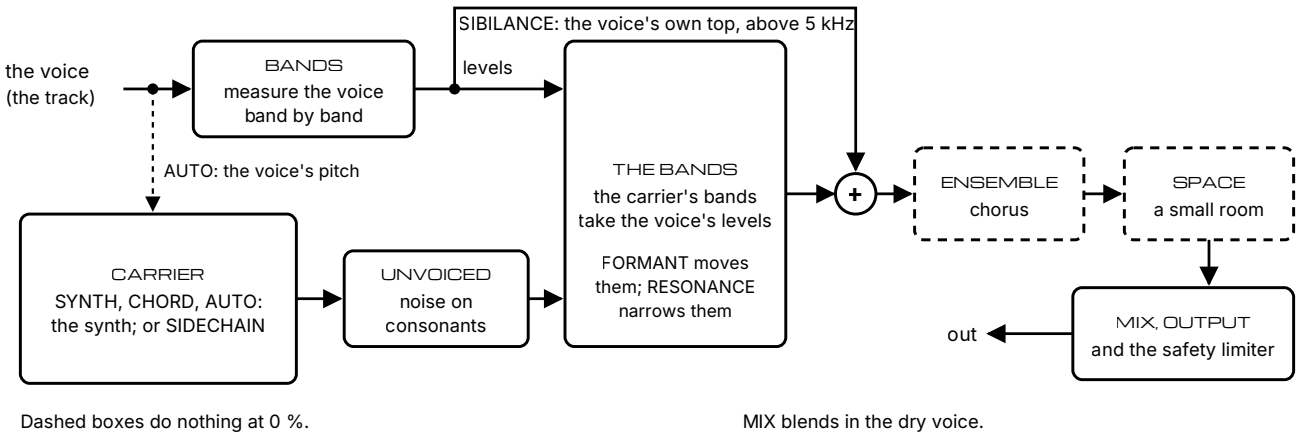


FIGURE 7 The path through the plugin, from the voice and the carrier to the output.

1. **The voice comes in** from the track (a stereo voice is mixed to mono). The bands measure it, AUTO reads its pitch, and a detector listens for consonants.
2. **The carrier is made:** the synth, playing your MIDI notes, your latched chords or the notes AUTO finds; or the side-chain input. On consonants, UNVOICED blends the carrier towards noise, as a voice does.
3. **The bands** give the carrier the voice's shape. FORMANT moves the carrier's bands against the voice's, RESONANCE sets how narrow they are, TILT makes the result darker or brighter, and WIDTH spreads them across the stereo field.
4. SIBILANCE adds the very top of the real voice, above 5 kHz, for crisp *s* and *t* sounds.
5. ENSEMBLE adds chorus, and SPACE a small room.
6. MIX blends in the dry voice, OUTPUT sets the level, and a **safety limiter** keeps the peaks under −1 dBFS.

No delay with the filter bank. The filter bank works sample by sample, so you can sing through it while recording. The spectral engine delays the sound a little (see *The engine and FREEZE*).

The four carriers

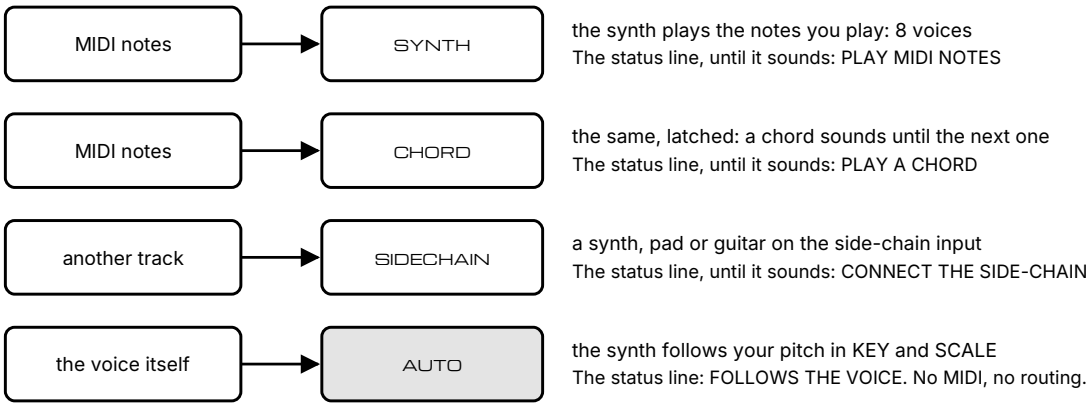


FIGURE 8 Where the carrier's notes come from in each mode, and what the status line says while it waits.

Choose the carrier with the four keys at the top of [CARRIER]. The status line at the right of the [CARRIER] title tells you what the plugin is waiting for, or what it is playing.

AUTO: no MIDI needed

[AUTO] is where a new instance starts, and where the preset *Init* puts it.

1. Insert VEIRA Vocoder on the vocal track, mono or stereo. It always plays in stereo.
2. Sing or speak. The status line reads [FOLLOWS THE VOICE], and [LEVELS] shows the note you are singing ([VOICE C4], for example).
3. You hear the synth follow your pitch, pulled to C major, shaped by your words.
4. Set [KEY] and [SCALE] to your song's key, so the notes land where they belong. If you don't know the key, choose [CHROMATIC] (every semitone: the classic robot) or [FREE] (no pulling at all).
5. Try [HARMONY] for more notes: *THIRDS*, *TRIAD*, *CHOIR* and others (see *The carrier's synth ▸ KEY, SCALE and HARMONY*).

> **Tip:** [AUTO] follows a sung or spoken voice between about 70 and 1000 Hz. It needs a voice on its own: a whole mix or a choir has no single pitch to follow.

SYNTH: play MIDI notes

[SYNTH] plays the internal synth from MIDI notes, up to eight at a time. Until notes arrive, the status line reads [PLAY MIDI NOTES] and the vocoder is silent. To try it without any routing, click the keyboard in the plugin: it plays in [SYNTH] and [CHORD].

To play it from your MIDI keyboard or from MIDI notes in your session, the notes have to reach the plugin on the vocal track. Hosts do this in one of three ways:

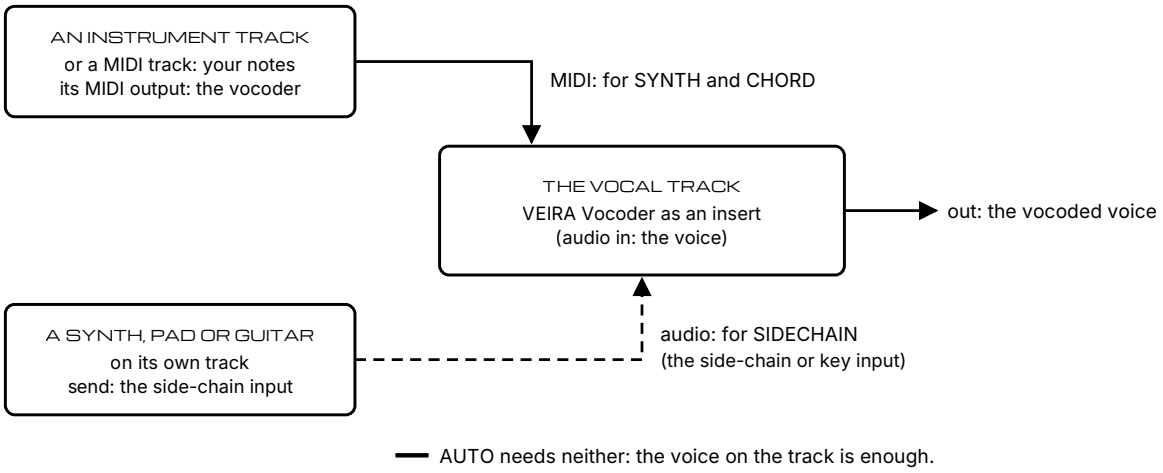


FIGURE 9 The two kinds of routing: MIDI from an instrument or MIDI track (for SYNTH and CHORD), audio from another track to the side-chain input (for SIDECHAIN).

1. Put VEIRA Vocoder on the vocal track, and choose [SYNTH].
2. Create a MIDI track (or an instrument track) for the notes. Record or draw your notes on it, or arm it to play live.
3. Send its MIDI to the vocoder. The most common ways are:
   - **A MIDI menu in the plugin window's header.** Some hosts show a side-chain menu for MIDI at the top of the plugin's window when a plugin takes MIDI. Choose the MIDI track or instrument track there.
   - **The MIDI track's output.** In many hosts, a MIDI track's output can be set to another track's plugin. Set it to the vocal track, then to *VEIRA Vocoder*.
   - **MIDI on the vocal track itself.** Some hosts let an audio track also hold MIDI for its effects. Record or draw the notes there.
4. Play. The status line counts the notes ([3 NOTES]), and the keys light up on the plugin's keyboard.

The synth answers the **pitch bend** (±2 semitones), the **mod wheel** (vibrato, up to 40 cents) and the **sustain pedal**. Each note sounds while you hold it, then fades with the envelope's [RELEASE].

> **Tip:** Every host names these menus a little differently, and some move them between versions. Look in your host's help for "MIDI-controlled effect" or "MIDI to a plugin". If your host can't send MIDI to an effect, use [AUTO], or put an instrument on its own track and route it to [SIDECHAIN].

CHORD: latched chords

[CHORD] uses the same synth and the same MIDI routing as [SYNTH], with one difference: **a chord keeps sounding after you let go of the keys**, until you play the next one. Play a chord once at the start of each bar or section and both hands stay free; or just let a chord ring under a whole phrase.

- A new chord replaces the old one the moment its first key goes down after all keys were up. Keys added while others are still held join the chord.
- The status line reads [PLAY A CHORD] until you do, then [4-NOTE CHORD, LATCHED] (or however many notes).

- The envelope's [ATTACK] shapes how each chord comes in, and its [RELEASE] how the old chord fades as the new one starts.

SIDECHAIN: another track as the carrier

With [SIDECHAIN], the carrier is another track in your session: a synth, a pad, an organ, a distorted guitar. The plugin's own synth is silent. This is the classic way to make an instrument "talk".

1. Put VEIRA Vocoder on the vocal track, and choose [SIDECHAIN] (or load *Default* ▸ *Sidechain Carrier*).
2. Route the carrier track to VEIRA Vocoder's **side-chain input** (some hosts call it the **key** input). Every host does this a little differently:
   - **Hosts with a side-chain menu** at the top of the plugin's window: choose the carrier track, or a bus that carries it, in that menu.
   - **Hosts where the side-chain input must be switched on first:** switch it on in the plugin window's header, then on the carrier track add a send to *VEIRA Vocoder – Side-Chain* (the name varies).
   - **Other hosts:** look for the plugin's side-chain or key input in the routing of the carrier track's send or output, or in the plugin's input pins (inputs 3 and 4).
3. Play the carrier and sing. The status line reads [SIDE-CHAIN PLAYING].
4. Often you don't want to hear the carrier on its own as well. Then send all of it to the side-chain and none to the main mix: turn the carrier track's own fader down, or set its output to the side-chain only.

The status line	What it means
[CONNECT THE SIDE-CHAIN]	The host hasn't connected the side-chain input. Check step 2.
[SIDE-CHAIN: NO SIGNAL]	It is connected, but nothing is playing on it. Play the carrier track.
[SIDE-CHAIN PLAYING]	The carrier is arriving.

A stereo carrier is mixed to mono; the stereo image comes from [WIDTH], [ENSEMBLE] and [SPACE]. The carrier's own dynamics come through: a plucked note fades as it would, a strummed chord pulses. The synth's wave, [UNISON], the envelope and [AUTO]'s settings don't apply; [NOISE] and [UNVOICED] still do.

> **Tip:** In [SIDECHAIN] the carrier only sounds while it plays, and only in the bands where it has sound. A bright, sustained part (a saw pad, a distorted guitar) speaks best.

In the standalone app

The standalone app takes the voice from your audio interface's input and MIDI from a connected keyboard; choose them in its audio and MIDI settings. [AUTO], [SYNTH] and [CHORD] work as in a DAW. Use headphones, so the speakers don't feed back into the microphone. [SIDECHAIN] needs a DAW.

The carrier's synth

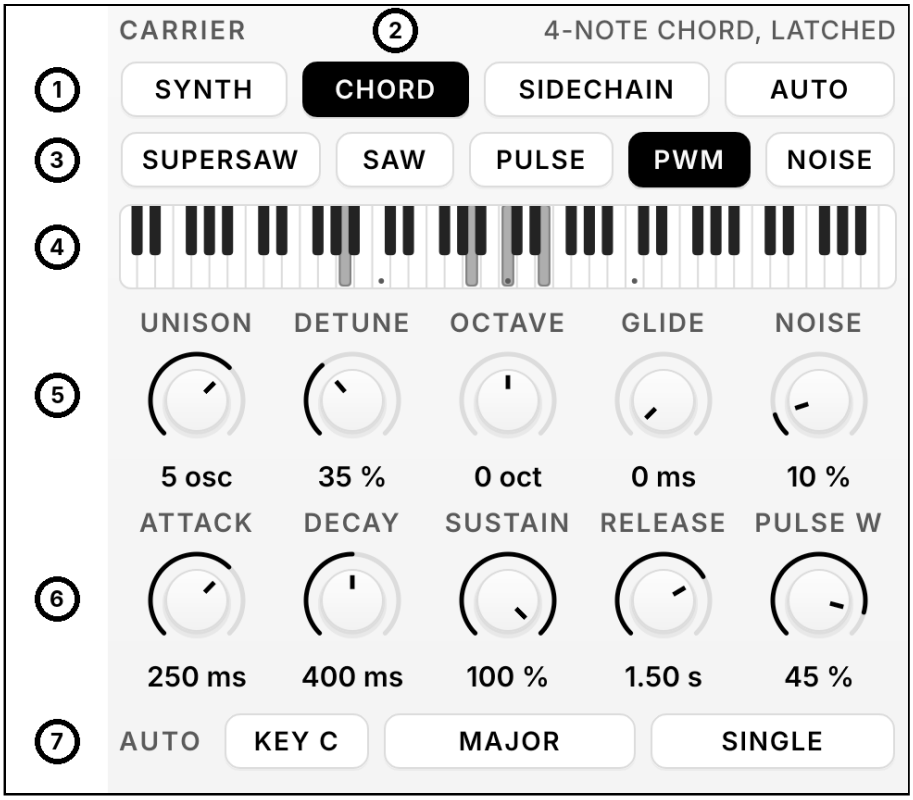


FIGURE 10 CARRIER: 1 the four carriers, here CHORD; 2 the status line; 3 the wave, here PWM; 4 the keyboard, with the four notes of the latched chord lit; 5 UNISON, DETUNE, OCTAVE, GLIDE and NOISE; 6 the envelope and PULSE W; 7 AUTO's KEY, SCALE and HARMONY.

The synth is the carrier in SYNTH, CHORD and AUTO. In SIDECHAIN, only NOISE among these controls still acts on the carrier.

Control	Range	Default	What it does
SYNTH CHORD SIDECHAIN AUTO	four keys	AUTO	Where the carrier comes from.
SUPERSAW SAW PULSE PWM NOISE	five keys	SUPERSAW	The synth's wave.
UNISON	1 to 7 osc	5 osc	How many oscillators play each note.
DETUNE	0 to 100 %	30 %	How far apart the unison oscillators are tuned.
OCTAVE	−2 to +2 oct	0 oct	Moves the carrier up or down by octaves.

Control	Range	Default	What it does
GLIDE	0 ms to 1.00 s	0 ms	The time a note takes to slide to the next.
NOISE	0 to 100 %	0 %	A steady breath of noise in the carrier.
ATTACK	0.50 ms to 2.00 s	5.0 ms	How quickly a note rises.
DECAY	5.0 ms to 5.00 s	400 ms	How quickly it falls to SUSTAIN.
SUSTAIN	0 to 100 %	100 %	The level a held note keeps.
RELEASE	5.0 ms to 5.00 s	250 ms	How long a note fades after its key is released.
PULSE W	5 to 50 %	50 %	The shape of PULSE and PWM.
KEY	C to B	C	AUTO: the key.
SCALE	eight scales	MAJOR	AUTO: the notes it may land on.
HARMONY	seven voicings	SINGLE	AUTO: the notes played for the one you sing.

The waves

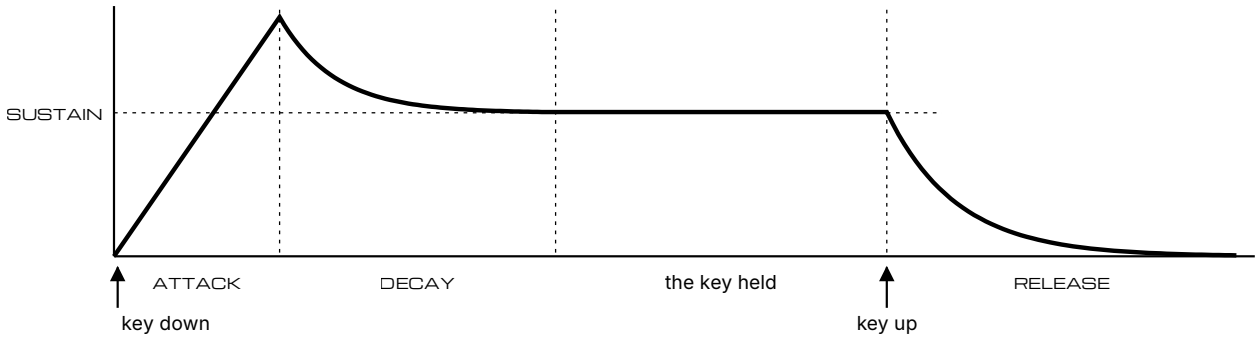
- SUPERSAW: a stack of up to seven saws per note, spread unevenly, with the centre one louder. Wide, bright and full: the big modern vocoder sound, and the default.
- SAW: bright and buzzy, the clearest carrier for words. The classic robot.
- PULSE: hollow and reedy. PULSE W sets its shape: 50 % is a square, 5 % thin and nasal.
- PWM: a pulse whose width sweeps slowly, down from PULSE W: a moving, string-like carrier for pads and string machines.
- NOISE: no pitch at all. The words become a whisper. In AUTO it sounds whenever your voice does.

The saws and pulses are band-limited, so high notes stay clean.

UNISON, DETUNE, OCTAVE, GLIDE and NOISE

- UNISON stacks oscillators on each note, from 1 to 7. One is a single, clean machine; five to seven are a thick section. With SUPERSAW, the default 5 makes a five-saw stack.
- DETUNE spreads them apart, up to about a semitone at the outermost for SUPERSAW. A little (20 to 35 %) sounds wide; a lot sounds sour and dramatic. With UNISON at 1 it does nothing.
- OCTAVE moves the whole carrier by octaves. Down for a deep robot or a talking bass; up for a small, high one. In AUTO it moves the notes it finds, too.
- GLIDE slides from one note to the next instead of jumping: a talk-box phrasing for leads. In AUTO it smooths the steps between the notes it finds; 20 to 40 ms sounds smooth in a fast melody.
- NOISE adds a constant breath of noise to the carrier, at the carrier's level: a breathy, airy vocoder. *Breathy Robot* uses 45 %.

The envelope



The carrier's level for one note. The defaults: ATTACK 5 ms, DECAY 400 ms, SUSTAIN 100 %, RELEASE 250 ms.

FIGURE 11 The carrier's envelope for one note.

[ATTACK], [DECAY], [SUSTAIN] and [RELEASE] shape every note the synth plays. The attack rises in a straight line; the decay and the release fall in a natural curve.

- **Quick and full** (the defaults): the words come out as soon as you play.
- **Slow attack, long release** for pads and choirs: *Cathedral Pad* uses 300 ms and 2.00 s.
- **Short decay, low sustain** for plucked notes: the words come out in the rhythm of the keys (*Pluck Vocoder*).

In [AUTO] the envelope starts when your voice starts and releases when it stops.

The keyboard

The keyboard shows six octaves, C1 to C7, with small dots under C3, C4 and C5. **The keys that sound are lit in amber**: the notes you play in [SYNTH], the latched chord in [CHORD], and the notes [AUTO] plays. A note outside the six octaves shows as a small arrow at that end.

In [SYNTH] and [CHORD] you can **click a key to play it**, which is handy for trying a preset before any MIDI is routed. In [AUTO] and [SIDECHAIN] the keyboard only shows.

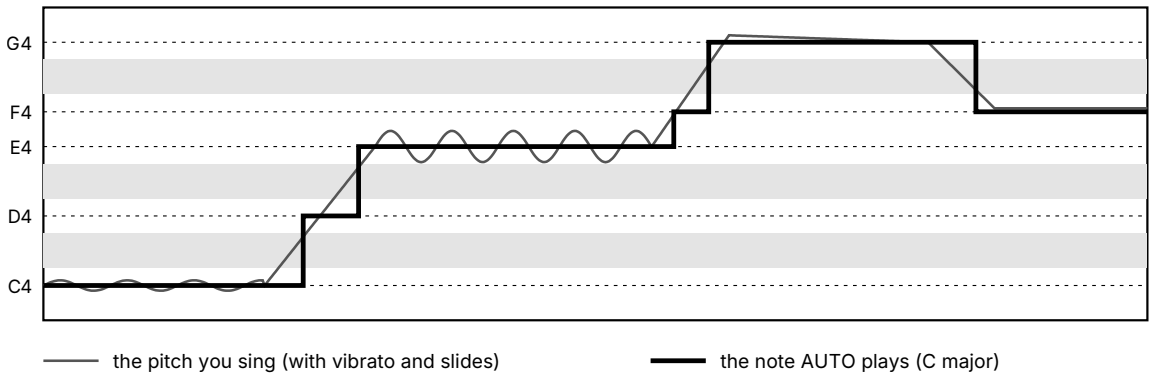
KEY, SCALE and HARMONY

These three set what [AUTO] plays. They do nothing in the other carriers.

[KEY] (C to B) and [SCALE] say which notes the voice may be pulled to:

[SCALE]	**The notes**
[CHROMATIC]	Every semitone: the voice moves to the nearest note. The classic talking robot.
[MAJOR]	The seven notes of the major key.
[MINOR]	The natural minor.
[HARM MINOR]	The harmonic minor (the minor with a raised seventh).
[DORIAN]	The minor with a raised sixth: jazz and funk.

SCALE	The notes
MAJOR PENT	Five notes of the major key: no wrong notes in most pop songs.
MINOR PENT	Five notes of the minor key.
FREE	No pulling at all: the carrier follows your voice's exact pitch, with every slide and vibrato.

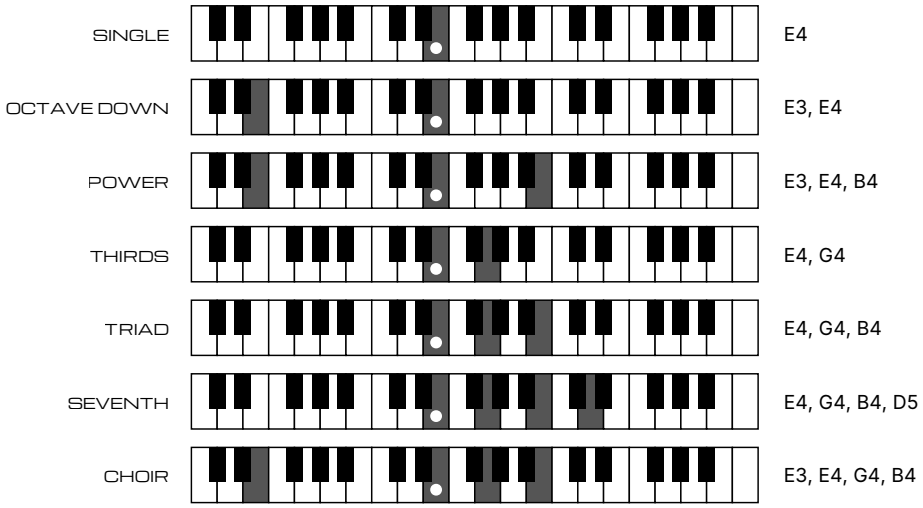


Notes outside the scale (shaded rows) are skipped. A note is kept until the voice is clearly past the half-way point to the next one, so vibrato never makes it flicker. GLIDE smooths the steps.

FIGURE 12 How AUTO turns a sung line into notes, here in C major.

AUTO keeps a note until your voice is clearly on its way to the next one, so vibrato doesn't make it flicker. It follows about 15 to 20 ms behind the voice, the time it needs to hear a pitch, and holds the last note through consonants and short breaths (350 ms).

HARMONY adds notes to the one you sing, up to four in all:



Sung E4 (the white dot) in C major: the keys AUTO plays for each HARMONY (grey). The added notes are steps of the scale, so they change with KEY and SCALE; POWER adds a fifth and the octave below.

FIGURE 13 The seven voicings of HARMONY for a sung E4 in C major.

HARMONY	What it plays
SINGLE	The sung note.
OCTAVE DOWN	The sung note and the octave below.
POWER	The sung note, the fifth above and the octave below: a hard, open robot chord.
THIRDS	The sung note and the third above in the scale: an instant duet.
TRIAD	A three-note chord in the scale.
SEVENTH	A four-note seventh chord in the scale: lush and jazzy.
CHOIR	The octave below and a triad: a full choir from one singer.

The added notes are steps of the scale, so they always fit the key. In CHROMATIC and FREE they are built as in a major key on the sung note.

> **Tip:** Set KEY and SCALE before you judge a harmony. In the wrong key, *THIRDS* and *TRIAD* will clash.

The vocoder

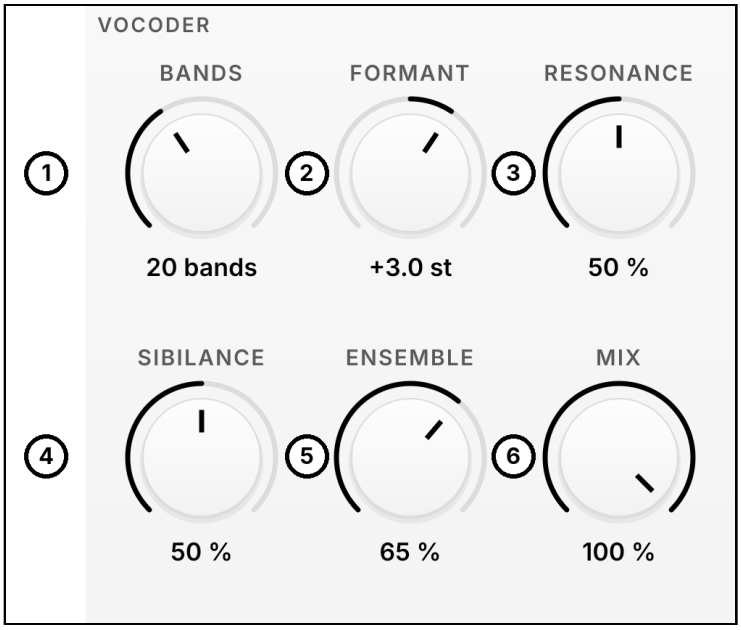
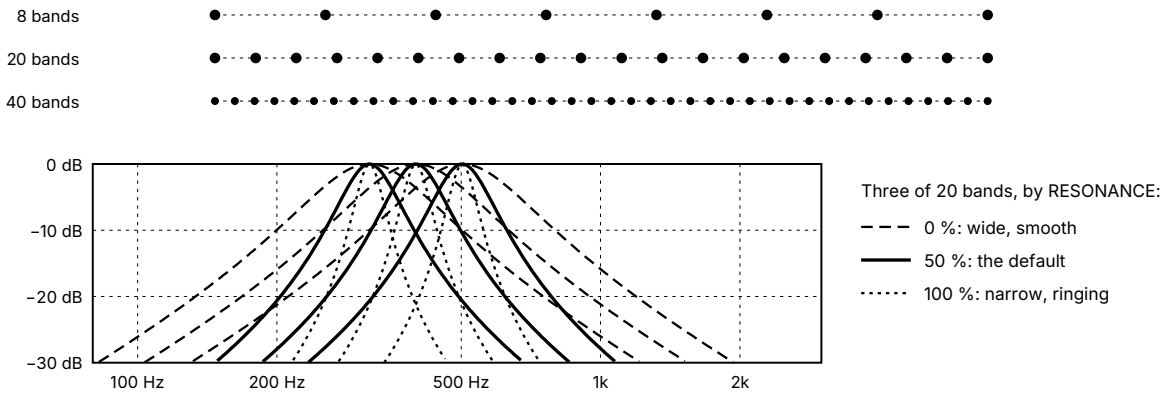


FIGURE 14 The six big knobs: 1 BANDS, 2 FORMANT, here +3.0 st, 3 RESONANCE, 4 SIBILANCE, 5 ENSEMBLE and 6 MIX.

Control	Range	Default	What it does
BANDS	8 to 40 bands	20 bands	How many bands the voice is split into.
FORMANT	−12.0 to +12.0 st	0.0 st	Moves the voice's shape up or down against the carrier.
RESONANCE	0 to 100 %	50 %	How narrow the bands are.
SIBILANCE	0 to 100 %	50 %	How much of the voice's own top, above 5 kHz, is added.
ENSEMBLE	0 to 100 %	20 %	Chorus and detune.
MIX	0 to 100 %	100 %	The vocoder against the dry voice.

BANDS



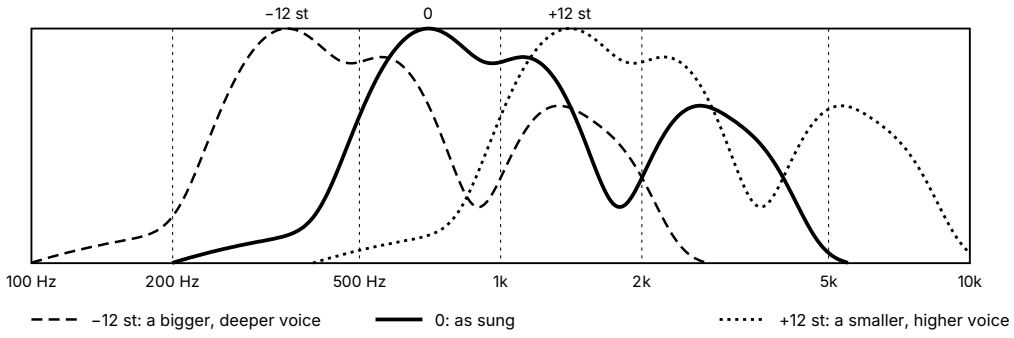
The bands sit evenly on a musical (octave) scale between LOW and HIGH. More bands are narrower, but never narrower than a floor, so 40 bands still keep the words clear.

FIGURE 15 Top: where the bands sit for 8, 20 and 40 bands between 100 Hz and 8 kHz. Bottom: the shape of three bands at three settings of RESONANCE.

- **8 to 12 bands:** a coarse, buzzy, retro machine (*8-Band Retro*, *Retro Robot*).
- **16 to 24 bands:** the classic vocoder, clear and musical. The default is 20.
- **28 to 40 bands:** the clearest words and the most natural sound (*Clear Speech* uses 32).

Changing BANDS while you play is smooth: the plugin fades to the new set of bands over 40 ms, with no click and no drop in level, so you can automate it.

FORMANT



The shape of a sung “ah” as the output gets it: FORMANT slides the whole shape, the notes stay where they are.

FIGURE 16 What FORMANT does to the shape of the voice in the output.

FORMANT moves the shape of your voice up or down against the carrier, while the notes stay where they are. A shape moved **up** sounds like a smaller person, a child or a little droid; moved **down**, a bigger one, a giant or a deep android. Measured on a sung vowel, the centre of the output’s tone sits at about 424 Hz at −12 st, 851 Hz at 0 and 1691 Hz at +12 st.

- **±2 to 4 st** changes the character without sounding like an effect.
- **±7 to 12 st** is a deliberate creature: *Tiny Droid* (+7 st), *Formant Giant* (−12 st), *Chipmunk Choir* (+12 st).

- Combine it with OCTAVE: down an octave with FORMANT down sounds natural for a low voice; down an octave with FORMANT up sounds strange on purpose.

The BANDS display draws an arrow from where the bands read the voice to where the carrier plays it, labelled with the shift.

RESONANCE

RESONANCE sets how narrow the bands are. **Low** settings make wide, overlapping bands: smooth and soft. **High** settings make narrow bands that ring at their own frequencies: metallic, glassy and synthetic (*Metal Mouth* uses 92 %, *Glass Choir* 75 %). However many bands you use, they never get narrower than a floor, so the words stay clear even at 40 bands and high resonance.

SIBILANCE

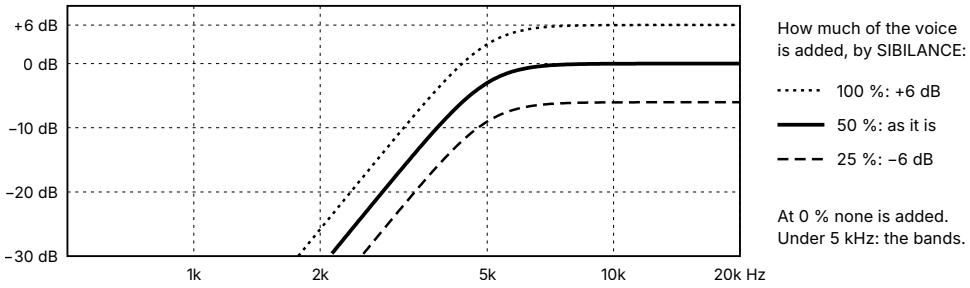


FIGURE 17 SIBILANCE adds the voice's own top, above 5 kHz, to the vocoder.

Vocoders often lose the *s*, *t* and *f* sounds, because the carrier has little above 5 kHz. SIBILANCE adds the real voice's top above 5 kHz back in, while the vocoder sounds. At **50 %** it is at its own level; at **100 %** it is 6 dB louder (measured on sibilant speech, 100 % gives 9.1 dB more above 5 kHz than 0 %); at **0 %** none is added, for a pure machine sound (*Telephone Robot*).

> **Tip:** If the *s* sounds are sharp, turn SIBILANCE down rather than adding a de-esser after the vocoder.

ENSEMBLE

ENSEMBLE runs the vocoder through three slowly moving delays on each side, for chorus and gentle detune: a section instead of one machine. 20 % (the default) adds a little life; 50 to 90 % gives the thick, swimming sound of string machines and choirs (*String Machine* uses 90 %).

MIX

MIX blends the vocoder with the dry voice. At **100 %** you hear only the vocoder. Lower it to keep some of the real voice under the effect: 30 to 50 % is a common way to make a vocoder sit with a lead vocal. When the carrier is silent, only the dry part sounds.

Voice, range and output

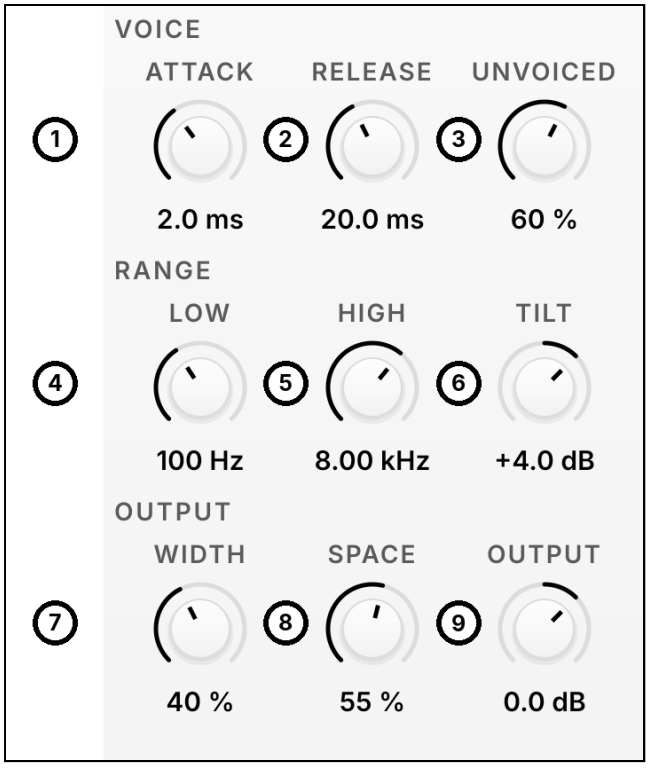


FIGURE 18 VOICE: 1 ATTACK, 2 RELEASE, 3 UNVOICED. RANGE: 4 LOW, 5 HIGH, 6 TILT. OUTPUT: 7 WIDTH, 8 SPACE, 9 OUTPUT.

Control	Range	Default	What it does
ATTACK	0.5 to 50.0 ms	2.0 ms	How quickly the bands follow the voice getting louder.
RELEASE	5.0 to 500 ms	20.0 ms	How quickly they follow it getting quieter.
UNVOICED	0 to 100 %	60 %	On consonants, how far the carrier turns to noise.
LOW	50 to 600 Hz	100 Hz	The lowest band.
HIGH	2.00 to 14.0 kHz	8.00 kHz	The highest band.
TILT	−12.0 to +12.0 dB	0.0 dB	Darker (−) or brighter (+) across the bands.
WIDTH	0 to 100 %	40 %	Spreads the bands across the stereo field.
SPACE	0 to 100 %	0 %	A small room under the vocoder.
OUTPUT	−24.0 to +12.0 dB	0.0 dB	The level out.

VOICE: ATTACK, RELEASE and UNVOICED

ATTACK and RELEASE here are the bands' own, not the synth's. They set how closely the bands follow the voice.

- **Short** (the defaults, 2 ms and 20 ms): crisp consonants and fast, clear words.
- **Longer release** (40 to 100 ms): smoother and more legato, but the words blur.
- **Very short release** (10 to 15 ms): the punchiest articulation, for funk lines and rap (*Funk Talker* uses 12 ms).

UNVOICED helps the words most. On *s*, *t*, *f* and *sh* your voice has no pitch: it is noise. A synth carrier keeps its pitch, so those sounds come out as a buzz. With UNVOICED up, the plugin hears the consonant and blends the carrier towards noise for as long as it lasts, at the carrier's own level. At 0 % the carrier never changes; at 100 % consonants are pure noise (*Whisper*). The default 60 % keeps the words clear and the tone musical.

RANGE: LOW, HIGH and TILT

LOW and HIGH set where the lowest and the highest band sit; the bands in between are spread evenly on a musical scale. The display's title shows the result, for example 20 BANDS, 100 Hz - 8.0 kHz.

- The defaults, 100 Hz to 8 kHz, suit most voices.
- **Narrow** the range for a telephone or radio voice (*Telephone Robot* uses 400 Hz to 3.4 kHz).
- **Lower** LOW for a deep carrier or a talking bass (*Talking Bass* uses 70 Hz); **raise** HIGH for air (*Bright Air* uses 12 kHz).

HIGH always stays below the top of what your sample rate can carry, and LOW at most an octave under HIGH. Changing them glides over 40 ms.

TILT tilts the level of the bands, up to 12 dB from one end of the range to the other: towards the lows for a dark, smoky sound (*Dark Tilt*), towards the highs for a crisp one that cuts through a mix.

OUTPUT: WIDTH, SPACE and OUTPUT

- WIDTH sends the bands alternately to the left and the right: at 0 % the vocoder is mono, at 100 % it is wide. The default 40 % gives a gentle spread. In mono every band is still there, so the words stay whole.
- SPACE adds a small room, about 1.6 seconds long, under the vocoder. A little (15 to 30 %) places it in a space; *Cathedral Pad* uses 70 %.
- OUTPUT sets the level out, from −24 to +12 dB, before the safety limiter. The vocoder's level follows the voice's (about 2 dB under it on speech), so most of the time OUTPUT can stay at 0.0 dB.

The safety limiter sits at the very end. It keeps the output's peaks under −1 dBFS whatever you do, with no delay. It is a safety net, not a sound: when it works, the LIMIT read-out in LEVELS turns amber and shows how much. If it works often, turn OUTPUT down.

The displays

BANDS

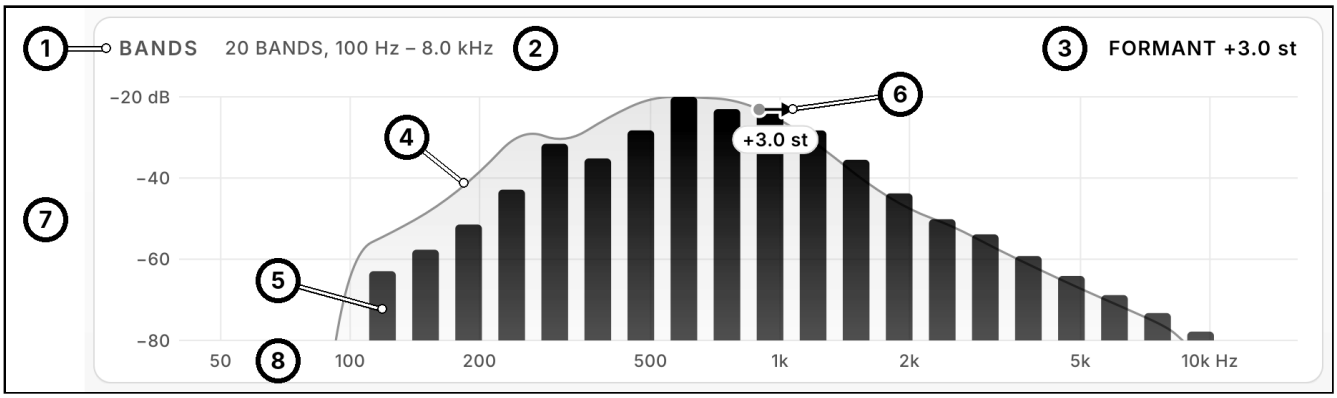


FIGURE 19 The BANDS display: 1 the title; 2 the number of bands and their range; 3 the FORMANT shift; 4 the voice, as the bands read it; 5 the output, band by band; 6 the formant arrow and its label; 7 the level scale, −20 to −80 dB; 8 the frequency scale, 50 Hz to 10 kHz.

The display shows the vocoder at work, about 60 times a second.

- **The curve** 4 (a grey line with a light fill) is the voice's spectrum as the bands read it: one point at each band's frequency. It moves with every vowel and consonant you sing.
- **The bars** 5 (solid charcoal) are what the vocoder puts out in each band. They sit at the carrier's bands, so they move sideways when you turn FORMANT.
- **The arrow** 6 appears when FORMANT is not 0. It starts on the voice's curve near 1 kHz and points to where the carrier plays that part of the voice, with the shift in semitones on its label.
- FROZEN appears in amber beside the title while FREEZE is on.

What to look for. Bars that are much shorter than the curve mean the carrier has little sound in those bands: the words there will be weak. Try a brighter wave, more UNISON, or TILT towards those bands. Bars missing at the top or bottom mean FORMANT has moved the carrier's bands past the range of hearing; they fade out there.

LEVELS

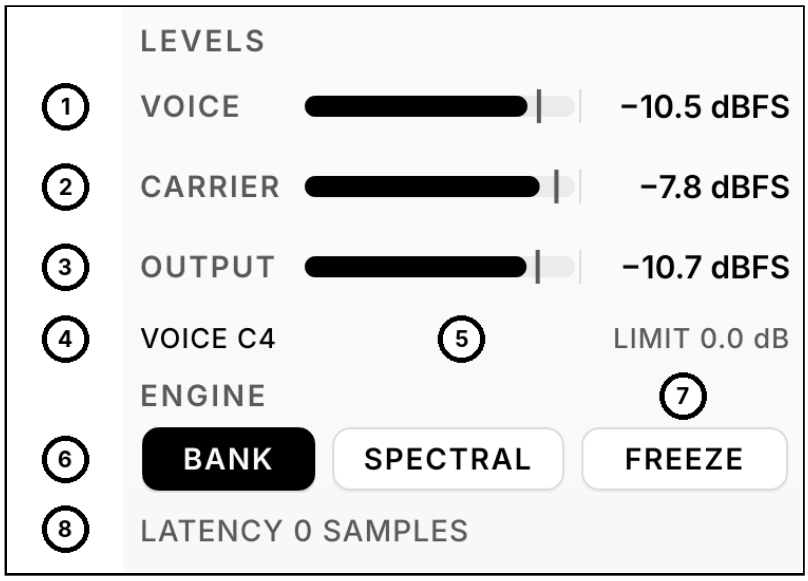


FIGURE 20 [LEVELS] and [ENGINE]: 1 [VOICE], 2 [CARRIER], 3 [OUTPUT]; 4 the note you are singing; 5 the limiter; 6 [BANK] and [SPECTRAL]; 7 [FREEZE]; 8 the latency.

Read-out	What it shows
[VOICE]	The peak level of the voice coming in, in dBFS.
[CARRIER]	The peak level of the carrier: the synth or the side-chain.
[OUTPUT]	The peak level going out.
[VOICE C4]	The note the voice is singing, as [AUTO] hears it, or [VOICE –] (dimmer) when there is none.
[LIMIT 0.0 dB]	How much the safety limiter is turning the peaks down. Amber while it works.

Each meter's bar runs from −60 dBFS on the left to 0 dBFS at the thin mark on the right. A short upright line holds the latest peak for a moment. Below −60 dBFS the value reads [– dBFS].

- **No** [CARRIER] while you sing means no notes are playing: check the status line in [CARRIER].
- [VOICE –] while you sing in [AUTO] means the plugin hears no clear pitch: a whisper, a very noisy track, or a whole mix instead of one voice.

The engine and FREEZE

Control	Range	Default	What it does
BANK SPECTRAL	two keys	BANK	The filter bank, with no delay, or the spectral engine.
FREEZE	on or off	off	Holds the voice's shape as it is now.

BANK and SPECTRAL

BANK is the classic vocoder: a set of filters for the voice and another for the carrier. It has **no latency**, so you can sing or play through it while recording. Its bands ring a little at high RESONANCE, which is part of the classic sound.

SPECTRAL builds the same bands from a fast analysis of the sound (an FFT). It has no filter ringing and the smoothest highs (*Spectral Clean*, *Spectral Strings*). It needs to collect a short block of sound before it can work, so it delays the output by **1024 samples at 44.1 and 48 kHz** (about 21 ms at 48 kHz), 2048 at 88.2 and 96 kHz and 4096 at 176.4 and 192 kHz. The plugin tells your DAW, which compensates; the dry voice, the SIBILANCE path and the DAW's own bypass are delayed by the same amount, so everything stays in time. Very sharp onsets can be heard a few milliseconds early, as with every engine of this kind.

The line under the keys shows the latency now: LATENCY 0 SAMPLES, or LATENCY 1024 SAMPLES (21.3 ms).

> **Tip:** Record with BANK, and switch to SPECTRAL when you mix if you prefer its sound. Some hosts only take a new latency into account when playback stops and starts again.

FREEZE

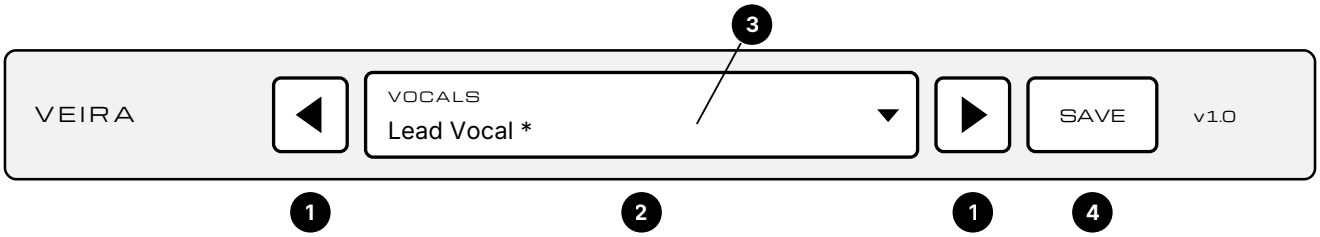
FREEZE holds the voice's shape exactly as it is at that moment: the vowel you were singing keeps sounding on the carrier, however long you play and whatever you sing next. In AUTO it also holds the note. Use it for drones and pads made from a single vowel, or automate it for stuttering, held syllables. FROZEN lights up in the BANDS display while it is on.

Presets

VEIRA Vocoder comes with **53 factory presets** in 8 folders. Each one is a starting point made for a real job. Load one close to what you need, then adjust the first control its note mentions.

The preset browser

The preset browser sits in the header, at the top of the window.



The header: logo and plugin name, then the preset browser, then the version.

FIGURE 21 The preset browser.

- 1 ◀ ▶ step to the previous or next preset, through every folder in order.
- 2 **The display** shows the folder (small, above) and the preset's name. Click it to open the preset menu. Hover over it to read the preset's note: what it's for and what to adjust first.
- 3 **An asterisk (*)** after the name means you've changed something since the preset loaded.
- 4 SAVE stores your current settings as a user preset.

The preset menu

Clicking the display opens a menu with:

- one submenu per **factory folder**, in the order shown below;
- **User Presets**, with your own presets in their folders;
- **Save...**, **Delete** (only for user presets: factory presets can't be deleted), **Rescan** (re-reads the user folder, if you copied presets in by hand) and **Show User Preset Folder** (opens it in Finder or Explorer).

Saving your own presets

1. Set VEIRA Vocoder the way you like it.
2. Press SAVE. A dialog opens inside the plugin window.
3. Type a name, choose a folder or type a new folder name, and confirm.

Each user preset is one small .veirapreset file:

	Folder
macOS	~/Library/Audio/Presets/VEIRA/VEIRA Vocoder/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Vocoder\Presets\<Folder>\

Copy these files to move your presets to another computer, or to back them up. Presets keep loading in future versions: any control added later simply starts at its default.

Presets in your DAW

The factory presets also appear in your DAW's own preset or program menu, named *Folder: Name* (for example *Vocals: Lead Vocal*). Whatever preset is selected is saved with your session and comes back when you reopen it, including the asterisk if you'd changed it.

The **Default ▸ Init** preset equals a fresh instance of the plugin: every control at its default.

The factory folders

Each preset sets every control, including the carrier, and leaves OUTPUT at 0.0 dB. **Init** and the presets marked *(no MIDI)* use AUTO and sound as soon as you sing; the *(MIDI)* presets need MIDI notes or the plugin's keyboard (SYNTH or CHORD); the *(side-chain)* presets need a carrier on the side-chain input.

Folder	Presets
Default	Init (no MIDI), MIDI Synth (MIDI), Clear Speech (MIDI), Wide Stereo Vocoder (MIDI), Spectral Clean (MIDI), Sidechain Carrier (side-chain)
Classic Robot	Retro Robot (MIDI), Speaking Robot (no MIDI), Deep Android (no MIDI), Tiny Droid (no MIDI), Square Talker (MIDI), 8-Band Retro (MIDI), Metal Mouth (MIDI)
Choir & Pads	Vocoder Choir, Cathedral Pad, Soft Ensemble, Dark Choir, Angel Pad, Chord Hold Stack, Glass Choir (all MIDI; all but Soft Ensemble latch chords)
Talkbox Style	Talkbox Lead, Funk Talker, Wah Mouth, Smooth Talk, Talking Bass (MIDI), Guitar Talkbox (side-chain)
Strings & Synths	String Machine, Supersaw Anthem, Pluck Vocoder, Brass Section, Analog Poly, Sub Octave Synth, Spectral Strings (all MIDI)
Auto Harmony	Auto Triad Major, Auto Minor Choir, Power Robot, Thirds Duet, Seventh Heaven, Hard Tune Robot, Free Follower (all no MIDI)
Whisper & Noise	Whisper (no MIDI), Breathy Robot (MIDI), Ghost Voice (no MIDI), Air Choir (MIDI, latched), Static Radio (MIDI), Wind Voice (no MIDI)
Creative FX	Formant Giant (MIDI), Chipmunk Choir (MIDI, latched), Telephone Robot (MIDI), Alien Transmission (no MIDI), Dark Tilt (MIDI), Bright Air (MIDI), Lofi Bands (MIDI)

The *Auto Harmony* presets are in C major or C chromatic, except *Auto Minor Choir* (A minor), *Seventh Heaven* (D Dorian) and *Free Follower* (no pulling). Set KEY and SCALE to your song after loading one.

> **Levels:** the vocoder's level follows the voice's, about 2 dB under it on speech, so switching presets keeps the level close. Presets with a lot of SPACE or ENSEMBLE sound a little fuller; presets that narrow the range (*Telephone Robot*, *Static Radio*) a little quieter. The safety limiter keeps every preset's peaks under −1 dBFS.

Recipes

A talking robot in ten seconds

1. Put VEIRA Vocoder on the vocal track and load *Classic Robot* ▸ *Speaking Robot*.
2. Sing or speak. No MIDI is needed: the carrier follows your voice to the nearest semitone.
3. For a deeper robot try *Deep Android*; for a small one, *Tiny Droid*.

Instant harmony from one voice

1. Load *Auto Harmony* ▸ *Auto Triad Major*.
2. Set [KEY] and [SCALE] to your song.
3. Choose a [HARMONY]: [THIRDS] for a duet, [TRIAD] or [SEVENTH] for chords, [CHOIR] for a full choir.
4. Raise [GLIDE] to 20 to 40 ms if fast notes sound stepped, and [ENSEMBLE] and [WIDTH] for a bigger choir.

A vocoder choir on chords

1. Load *Choir & Pads* ▸ *Vocoder Choir* ([CHORD]).
2. Route MIDI to the plugin (see *The four carriers* ▸ *SYNTH*), or click a chord on its keyboard to try it.
3. Play one chord per bar. Each chord holds until the next, so the choir sings your words on your harmony.
4. For a slower, bigger sound try *Cathedral Pad*; for a low male choir, *Dark Choir*.

A talk-box lead

1. Load *Talkbox Style* ▸ *Talkbox Lead*: one saw, with glide.
2. Route MIDI to the plugin and play the melody one note at a time, in time with your voice.
3. Shape each word with your mouth as you play. Shorter [RELEASE] in [VOICE] sharpens the vowels; *Funk Talker* is punchier.

Make a guitar or a pad talk

1. Put VEIRA Vocoder on the vocal track and load *Talkbox Style* ▸ *Guitar Talkbox* or *Default* ▸ *Sidechain Carrier*.
2. Route the guitar or pad track to the plugin's side-chain input (see *The four carriers* ▸ *SIDECHAIN*). The status line should read [SIDE-CHAIN PLAYING].
3. Play the instrument and sing at the same time. Turn the instrument's own fader down if you only want to hear it through the vocoder.

A whisper or a ghost

1. Load *Whisper & Noise* ▸ *Whisper*: the carrier is noise, so no MIDI is needed and there is no pitch.
2. For a darker, more distant sound try *Ghost Voice*; for words carried on a whistling wind, *Wind Voice*.

Blend the vocoder under a real lead vocal

1. Load any preset that suits the song, then turn MIX down to 30 to 50 %.
2. Or keep MIX at 100 % on a copy of the vocal track and blend the two tracks with their faders.
3. Keep SIBILANCE at 50 % or lower, so the *s* sounds don't double up.

Specifications

Type	Vocoder, an effect that takes MIDI (a MIDI-controlled effect in Audio Units)
Channels	Mono or stereo in (mixed to mono), stereo or mono out; side-chain input mono or stereo (mixed to mono)
Carriers	SYNTH (MIDI), CHORD (latched MIDI chords), SIDECHAIN (the side-chain input), AUTO (the voice's own pitch, 70 to 1000 Hz, up to 4 notes); default AUTO
Synth	8 voices, up to 7 oscillators each; SUPERSAW, SAW, PULSE, PWM, NOISE; pitch bend ±2 semitones, mod wheel vibrato up to 40 cents, sustain pedal
Synth controls	UNISON 1 to 7 osc (5); DETUNE 0 to 100 % (30 %); OCTAVE −2 to +2 oct (0); GLIDE 0 ms to 1.00 s (0 ms); NOISE 0 to 100 % (0 %); ATTACK 0.50 ms to 2.00 s (5.0 ms); DECAY 5.0 ms to 5.00 s (400 ms); SUSTAIN 0 to 100 % (100 %); RELEASE 5.0 ms to 5.00 s (250 ms); PULSE W 5 to 50 % (50 %)
AUTO	KEY C to B (C); SCALE Chromatic, Major, Minor, Harmonic Minor, Dorian, Major Pentatonic, Minor Pentatonic, Free (Major); HARMONY Single, Octave Down, Power, Thirds, Triad, Seventh, Choir (Single)
Vocoder	BANDS 8 to 40 (20); FORMANT −12.0 to +12.0 st (0.0 st); RESONANCE 0 to 100 % (50 %); SIBILANCE 0 to 100 % (50 %; the voice above 5 kHz, 100 % = +6 dB); ENSEMBLE 0 to 100 % (20 %); MIX 0 to 100 % (100 %)
Voice	ATTACK 0.5 to 50.0 ms (2.0 ms); RELEASE 5.0 to 500 ms (20.0 ms); UNVOICED 0 to 100 % (60 %)
Range	LOW 50 to 600 Hz (100 Hz); HIGH 2.00 to 14.0 kHz (8.00 kHz); TILT −12.0 to +12.0 dB (0.0 dB)
Output	WIDTH 0 to 100 % (40 %); SPACE 0 to 100 % (0 %; a room of about 1.6 s); OUTPUT −24.0 to +12.0 dB (0.0 dB); a safety limiter, peaks under −1 dBFS, no latency
Engine	BANK (filter bank) or SPECTRAL (default BANK); FREEZE (off)
Latency	BANK: none. SPECTRAL: 1024 samples at 44.1 and 48 kHz, 2048 at 88.2 and 96 kHz, 4096 at 176.4 and 192 kHz; reported to the host; the dry voice and the host's bypass delayed by the same amount
Metering	The BANDS display (the voice's spectrum and the output, band by band, the formant shift); VOICE, CARRIER and OUTPUT peak meters (−60 to 0 dBFS); the sung note; the limiter
Presets	53 factory presets in 8 folders, plus your own
Window	1240 × 780 points at 100 %; 75 to 200 % or Fit to screen, from the size button, the corner grip or Cmd/Ctrl + = - 0; opens at 100 %, saved with the session and remembered for new instances
Formats	VST3, Audio Units (a MIDI-controlled effect), standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vvcd

Troubleshooting and questions

The sound drops out for a moment every 30 seconds. The plugin isn't activated on this computer. Open VEIRA Manager and sign in; the strip at the bottom of the plugin's window says exactly what's wrong. See *Getting started ▸ Activation and the licence*.

I sing and hear nothing. The carrier is silent. Look at the status line in [CARRIER]: [PLAY MIDI NOTES] or [PLAY A CHORD] means [SYNTH] or [CHORD] is waiting for notes; [CONNECT THE SIDE-CHAIN] or [SIDE-CHAIN: NO SIGNAL] means [SIDECHAIN] has no carrier. Choose [AUTO], or load *Default ▸ Init*, to hear it without any routing. Also check that [VOICE] in [LEVELS] moves: if not, no audio reaches the plugin.

I can't find it in my DAW's list of effects. In hosts that sort Audio Units by kind, it is with the **MIDI-controlled effects**. Make sure VEIRA Manager shows [SHOW] (installed) for it, then rescan plugins. Look under the manufacturer **VEIRA**.

My MIDI notes don't reach it. The carrier must be [SYNTH] or [CHORD]: [AUTO] and [SIDECHAIN] ignore MIDI notes. Then check the routing: the MIDI track's output (or the plugin's MIDI menu) must point at *VEIRA Vocoder* on the vocal track, and the MIDI track must be playing or armed. Clicking the plugin's keyboard is a quick test that the sound works.

In AUTO the notes are wrong or jump around. Set [KEY] and [SCALE] to your song's key. If the voice is breathy, very quiet or has a lot of other sound in it, [AUTO] may lose the pitch ([VOICE –] in [LEVELS]); use a clean, dry vocal. [GLIDE] at 20 to 40 ms smooths the steps.

AUTO is a little late on fast notes. It needs about 15 to 20 ms to hear a pitch. For tight timing on fast melodies, play the notes with MIDI in [SYNTH].

The words are hard to understand. Raise [BANDS] (24 to 32), raise [UNVOICED] and [SIBILANCE] a little, keep [RELEASE] in [VOICE] short, and use a bright wave ([SAW] or [SUPERSAW]). Try *Default ▸ Clear Speech*. A dull carrier, such as a soft pad on the side-chain, gives softer words.

The vocoder's level jumps around. It follows the voice, as a vocoder should. A compressor on the vocal before VEIRA Vocoder evens it out.

The limiter is working all the time. Turn [OUTPUT] down until [LIMIT] stays at 0.0 dB most of the time.

My DAW shows latency, or the track is late. [SPECTRAL] delays the sound by one block (1024 samples at 44.1 and 48 kHz) and tells your DAW, which compensates. [BANK] has none. If you sing through the plugin while recording, use [BANK]. If the track is late right after you switched engines, stop and start playback.

Is the carrier in stereo? The carrier is mono: a stereo side-chain is mixed to mono. The stereo image comes from [WIDTH], [ENSEMBLE] and [SPACE].

How much CPU does it use? In our measurements, with 40 bands, eight notes of seven saws, [ENSEMBLE] and [SPACE], about 3 to 5 % of one processor core for either engine.

Contact: support@veiraaudio.com. Mention your computer (Mac or Windows and its version), your DAW and version, and what you see.



VEIRA Vocoder · User Manual · Version 0.1.0

Support: **support@veiraaudio.com** · Web: **veiraaudio.com**

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