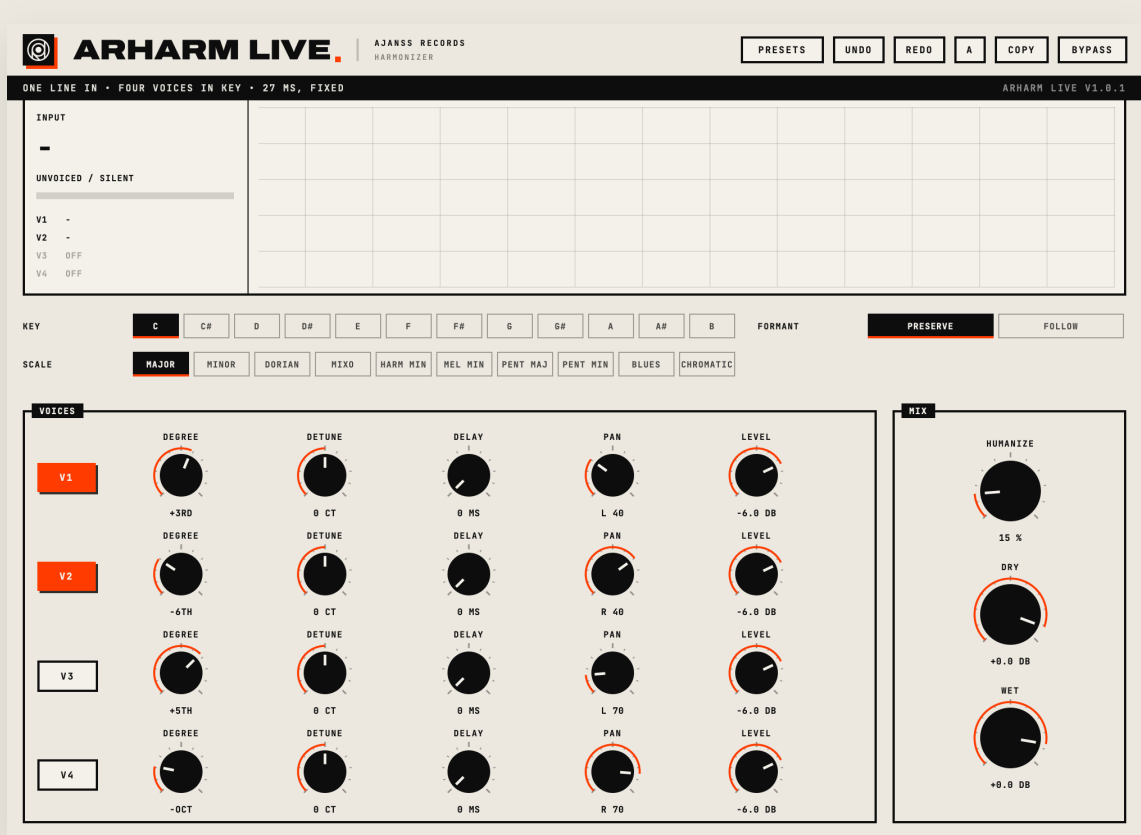


ARHARM LIVE



HARMONIZER FOR THE STAGE



VERSION

1.0.1

FORMATS

AU • VST3

PLATFORMS

macOS • WINDOWS

DOCUMENT

USER GUIDE

01 WHAT IT DOES

ARHARM LIVE harmonises the take you already have. It follows the pitch of whatever plays on the channel and builds up to four more voices from it, each one an interval away in the key and scale you set – so a harmony can never land outside the song. One pitch is tracked at a time, so it wants a single line: a lead, a single-note guitar or synth part, a bass. The voices are made by cutting the recording into pitch periods and laying them back down at the new spacing, which moves the pitch and leaves the spectral envelope alone: the harmony still sounds like the same source, not like a smaller one. Measured, in C major, a third above G lands on B and a third above E lands on G, both within a tenth of a cent; the harmonic profile of a source shifted five semitones sits within 2.6 dB of the same source recorded at that pitch. Unpitched moments – consonants, breaths, pick attacks – are copied at their own pitch, so nothing is smeared: on a plucked string the harmony's attack lands within 0.17 ms of the input's. With every voice off, or in BYPASS, the output is the input, sample for sample.

What separates this from ARHARM is **latency**. ARHARM reports 69 ms – fine in a DAW, where the host compensates, but unusable on stage: insert it on the vocal channel and the singer hears themselves 69 ms late; feed it from an aux and the harmony lands 69 ms behind the lead, which at 120 BPM is more than a thirty-second note. ARHARM LIVE reports **27 ms** – measured, fixed, and reported to the host. A harmony arriving 27 ms after the lead reads as an ensemble, not an echo: real backing singers are never sample-aligned either.

The floor is the price. ARHARM LIVE harmonises sources down to 100 Hz (G2, under most male leads). Below that it reports no pitch and passes the audio through untouched – better than harmonising into the wrong octave. For bass, or a very low male voice, use ARHARM: it tracks to 60 Hz.

02 INSTALLING

macOS

Run ARHARM LIVE Installer.pkg and follow the steps. You can choose which formats to install, and whether to install for every user or only for yourself. The package is signed and notarised by Apple, so it opens normally.

Windows

Run ARHARM LIVE Installer.exe and follow the steps. The plugin is placed in the shared VST3 folder. The installer is not codesigned yet, so SmartScreen may warn you: click More info, then Run anyway. This is only needed once.

After installing

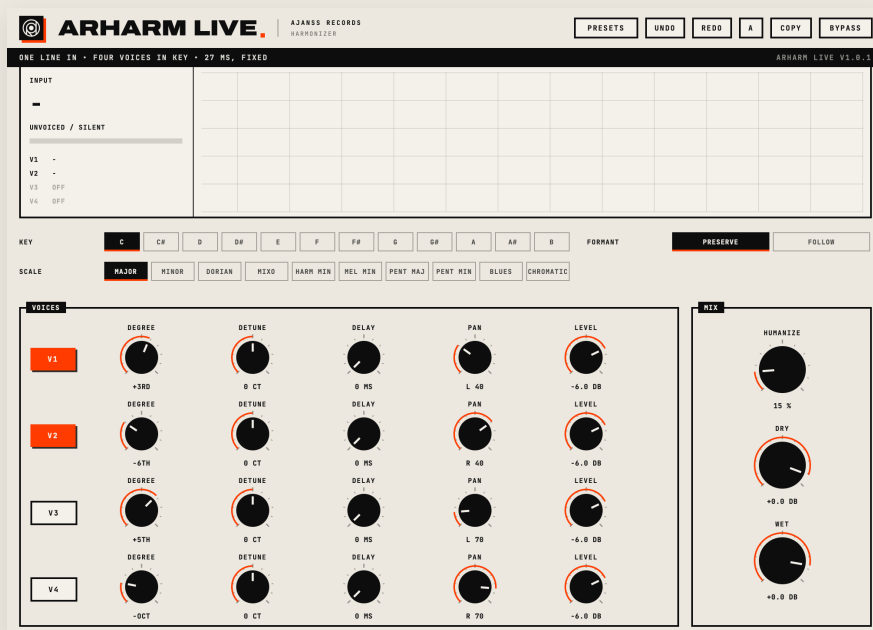
Rescan the plugin list in your DAW. ARHARM LIVE appears under Ajanss Records › ARHARM LIVE.

ARHARM LIVE reports **27 ms** of latency at 48 kHz (1280 samples; 1280 at 44.1 kHz = 29 ms, 2304 at 96 kHz = 24 ms). Your DAW compensates automatically; on a stage rig nothing compensates, which is the whole reason this version exists. The number is **fixed** – it never changes while you play, so your monitor path stays predictable.

Measured cost: **0.4 %** of one core with two voices at 48 kHz and 128-sample blocks. Not only voices: a decaying pluck at 196 Hz is tracked within 7 cents and the third above lands within 7 cents of its target.

Requirements – macOS 10.13 or newer, Intel or Apple Silicon (universal binary). Windows 10 or newer, 64-bit. Formats: Audio Unit and VST3 on macOS, VST3 on Windows.

03 THE INTERFACE



INPUT READING

The note the tracker is hearing, its frequency, how far it sits from that note in cents, and a confidence bar. Under it, the note each voice is currently singing – or OFF.

PITCH TRACE

Thirteen seconds of history: the line you played in ink, the harmony voices in orange. Gaps are the unpitched parts, where the voices copy instead of transpose. The grid moves one line per second while audio is playing and stops when it is not.

KEY • SCALE

The key and the scale every voice is locked to. An input note that is not in the scale is snapped to the nearest scale tone first, so the interval is still musical.

FORMANT

PRESERVE keeps the source's size at every interval. FOLLOW lets the formants move with the pitch, which is the chipmunk sound, on purpose.

VOICES

Four identical rows: on, interval, detune, delay, pan, level. A row with its button dark is off and costs nothing.

MIX

HUMANIZE, and the DRY and WET levels.

04 PARAMETERS

CONTROL	RANGE	DEFAULT	WHAT IT DOES
KEY	C ... B	C	The tonic the scale is built on. It has no effect in CHROMATIC.
SCALE	10 scales	MAJOR	MAJOR, MINOR, DORIAN, MIXO, HARM MIN, MEL MIN, PENT MAJ, PENT MIN, BLUES, CHROMATIC. In CHROMATIC one degree is one semitone, so you set exact intervals instead of scale steps.
FORMANT	PRESERVE / FOLLOW	PRESERVE	Whether the spectral envelope stays where it was or moves with the pitch.
V1 ... V4	on / off	V1, V2 on	Turns a voice on. Off voices are not computed.
DEGREE	-12 ... +12	+3RD / -6TH / +5TH / -OCT	How far to move in the scale – a third, a fifth, an octave. In CHROMATIC the same dial reads in semitones, and ±12 is a full octave.
DETUNE	-50 ... +50 CT	0 CT	A fixed offset in cents for that voice. A few cents apart is what makes two voices instead of one doubled.
DELAY	0 ... 120 MS	0 MS	Holds that voice back. Twenty to forty milliseconds reads as depth; more reads as an echo.
PAN	-100 ... +100	L40 / R40 / L70 / R70	Where the voice sits, negative to the left and positive to the right. Constant power, calibrated so the centre is unity gain.
LEVEL	-40 ... +6 dB	-6.0 dB	That voice against the others.

04 PARAMETERS — CONTINUED

CONTROL	RANGE	DEFAULT	WHAT IT DOES
HUMANIZE	0 ... 100 %	15 %	A slow random drift of up to twenty-five cents, different for every voice. Nobody holds a perfect pitch, and four perfect voices sound like one machine.
DRY	-60 ... +6 dB	0.0 dB	The original signal. Pull it all the way down for a harmony-only send.
WET	-40 ... +6 dB	0.0 dB	The harmony stack as a whole, after the per-voice levels.
BYPASS	on / off	off	Passes the input through, delayed by the reported latency and otherwise untouched.

05 PRESETS

Open the browser with PRESETS. It has two categories: FACTORY, which ships with the plugin, and USER, which is yours. Click a preset to load it, or browse with the keyboard. A preset sets the scale, the voices and the mix – it never changes your KEY, because the key belongs to the song, not to the sound.

↑ ↓	Move through the list. The highlighted preset loads as you go, so you can audition the whole bank without clicking.
← →	Switch between FACTORY and USER.
ESC	Close the browser.
SAVE	Type a name in the field and press SAVE to store the current settings as a user preset.
RENAME · DELETE	Act on the selected user preset. Factory presets cannot be changed or removed.

Factory bank — 12 presets

THIRD ABOVE	OCTAVE DOWN
THIRD + SIXTH	OCTAVE UP AIR
TRIAD STACK	WIDE DOUBLE
GOSPEL FOUR	WIDE FIFTH
MINOR STACK	DORIAN STACK
PENTATONIC PAD	BLUES SHOUT

06 STARTING POINTS

On stage

Two ways to patch it. **Insert on the vocal channel:** everything you sing is delayed 27 ms, including your own monitor – noticeable but singable, and the harmony sits exactly with the lead. **Aux send:** your voice reaches the monitor untouched and only the harmony comes back 27 ms later, which reads as a second singer standing beside you. Try the aux first; most singers prefer it.

Before the show

Set the key and scale of each song – that matters more than any dial, and it is what keeps a harmony from landing outside the song. Save one preset per song and switch between them.

07 MORE STARTING POINTS

Set KEY and SCALE to the song first. Everything else is taste.

One harmony under a chorus

V1 only, +3RD, LEVEL around -6 dB, PAN near the middle, HUMANIZE 15 %. It should read as the same performer doubling themselves.

Wide double, no interval

Two voices at UNISON in CHROMATIC, DETUNE +14 and -14 CT, DELAY 14 and 22 MS, panned hard apart. No new notes, just width.

A section, not one player

All four on, +3RD, +5TH, -3RD, -5TH, LEVEL between -6 and -9 dB, DELAY spread 0 to 15 MS, HUMANIZE 22 %.

Harmony-only send

DRY all the way down. Now the channel carries only the stack and you can treat it on its own.

If a harmony sounds wrong

Check SCALE before anything else – a major third where the song wants a minor one is a scale away, not a tuning problem. Then check that the source is one note at a time: on a strummed chord the tracker follows the dominant note and harmonises that. On a very quiet or very noisy take, watch the confidence bar: when it drops, the voices copy instead of transposing.

09 MEASURED BEHAVIOUR

SCALE LOCK	In C major, a third above G lands on B and a third above E on G – both within 0.1 cent. In CHROMATIC, seven semitones above A4 lands on 659.28 Hz.
FORMANTS	Shifted five semitones with PRESERVE, ten harmonics sit within 2.6 dB of the same source recorded at that pitch (worst case; 1.0 dB average). The same test against a shifted envelope reads 25 dB.
VIBRATO	A ± 55 cent vibrato is followed to within 11.5 cents at the harmony's pitch, 5.0 cents on average. It lags a little more than ARHARM does, and that is inherent: with no look-ahead the pitch estimate is always slightly behind, so the tracker predicts forward from the recent slope instead.
ONSETS	Coming out of a rest, a voice is within ten cents of its target 41 ms after the note starts. On a plucked string the harmony's attack lands within 2.3 ms of the input's.
LEVEL	A voice five semitones up or down keeps the input's loudness to within 1.1 dB (measured -1.07 up, -0.69 down).
ALL VOICES OFF	Output bit identical to the delayed input; the same in BYPASS.
HOST BUFFER	The output is bit identical whether the host sends 512-sample blocks or a mix of 64 to 512 – the plugin chops the input into fixed internal chunks so its own timing never follows the host's.
RANGE	Harmonises sources from 100 Hz up. Below that it reports no pitch and passes the audio through untouched.

08 SUPPORT

For questions, bug reports and feature requests, please reach us on Instagram at @ajanssrecords. Please include your operating system, your DAW and its version, the plugin format you are using, and the plugin version shown in the top right of the window.

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