DUO X

Version 1.1.0 / Double and triple aligned in time and tuning

Edit and mix up to three takes with independent controls. TIGHT MATCH adjusts the doubles to the time of the main and PITCH FOLLOW approximates its tuning to that reference.



Functional native interface of this version. The data visible are test examples; the full PNGs are in Displays.

What’s included

- Level, panorama, EQ, compression, de-ess and cleaning by voice.
- Temporary alignment of doubles and triples while retaining originals.
- Sound tuning monitoring, naturalness and protection of trainers.

Supporting files: the local catalogue includes complete native catches, original logos and technical manuals. Empty views show real controls; audio examples come from testing. See also the validation of this version.

Quick start

1. Load independent takes in A, B and optionally C.
2. Choose the principal and press double Align.
3. Compare Original/Aligned and check consonants and endings.
4. In Alignment, adjust the intensities and press Follow main.
5. Mix the voices and export mix/tracks or save a .duox.

Saving your work

.duox includes original audio, aligned/affiliated and controls; the DAW session keeps parameters.

Before you start

Alignment and tuning are calculated before listening. He needs monophonic takes of the same phrase. Following the main can turn a harmony into unison; it does not correct the main to an ideal scale.

General compatibility

Mac Apple Silicon, macOS 13.3 or later Audio Unit, VST3 and independent application. Installers do not have Developer ID signature or Apple notarization; binaries are ad hoc local signature. Local processing.

Complete operation and controls reference

INSTALL

Close your audio apps and open DUO-X-1.1.0-macOS-AppleSilicon.pkg. It includes Audio Unit, VST3 and standalone application. In your DAW, look for NATURA Audio > DUO X. The app appears in Apps. DUO X has its own identifiers and does not replace NATURA X. The installer is local, no Developer ID signed or notarized by Apple. If macOS blocks it, check the source and use Open equally in Privacy and security. No need to disable system protections.

NEW IN 1.1 — PITCH FOLLOW

The doubles and triples can follow the tuning of the main voice.

1. Load monophonic voices of the same phrase and line the time first.
2. Open the "Affination" tab. Choose a major A/B/C.
3. Adjust intensity, nature, maximum and intensity for each voice.
4. Press the follow main. Compare Sin/Con tuning and listen to the result.
5. Export mix/tracks or save a .duox project with the tuned render.

The main one is not aligned: it is the reference. Changing from the main or Original/Aligned version leaves renderings that no longer correspond unapplied; recalculate. Loading new takes, aligning again or removing alignment

To change controls you need to press "Continue" again to render. Remove tuning recovers the pre-tuning take and saves time.

Global intensity and voice multiply. 0% keeps samples intact; 100% proposes all the follow-up allowed by the rest of the adjustments. High nature smoothes correction and retains more vibrato of its own; low follows the main curve more closely. It's not a measure of quality.

Maximum is the allowed interval: major differences are left uncorrected, not forced to the limit. By default +/-3 semitones; adjustable from 0.5 to 12. Proteger formants uses the Rubber Band vocal envelope preservation mode to reduce timbre alterations. It does not guarantee exact stamp identity. The detection estimates monophonic F0 approximately between 65 and 1000 Hz. The following are the main characteristics of the test: The edges of the correction are smoothed. The

The notes must be positioned/aligned: no longer than 0.1 s are rejected. No missing words or notes are corrected, no voice within a chord or instrumental mixture is corrected. Harmonies with distinct notes should be kept untracked, unless you seek to make them unison. No key is quantified to a tone/scale nor is the key corrected to an ideal: the interpretation of the reference, including its possible errors, is followed.

Listening/exporting; it is not live tuning. Always check for tuning, vibration, consonants and endings. Correcting too much can create artifacts, and there is no universal guarantee of naturalness.

Previous projects

DUO X 1.1 opens .duox projects of 1.0 and old states with off tuning. The new .duox (v2 format) includes tuned renders and does not open in 1.0. Save an earlier copy if you need to go back to 1.0.

MIXING TWO SPEAKERS

Open a mixture in 0.5 to 60 seconds. Press Separate two voices. The Conv-TasNet model assigns two sources to A and B: listen to each with Solo and mix separately. You can also capture the input of your track: start the DAW playback, stop the capture and separate. No live speaker separation is performed. The separation converts stereo to monkey and produces banded voice up to 8 kHz.

A/Bs are arbitrary labels: they don't identify people. There are no guarantees for more than two speakers, very similar voices, singing or extreme noise/reverberation.

DOUBLES AND TRIPLES — TIGHT MATCH

Load INDEPENDENT takes in A, B and optional C, 0.5 to 120 s each. Choose the principal and press double Align. The takes must contain the same words, in the same order, with a reasonably similar interpretation. Don't use TIGHT MATCH between different people speaking different phrases. The analyser relates envelopes/spectrums (DTW) and generates a time map. Rubber Band R3 compresses/expands parts of each pair without transposing its tuning. The Time module does not correct notes; it uses PITCH FOLLOW tuning.

100% intensity: complete map and duration of the main. 0%: intact take.

Margin: how far away the map can be from the global ratio between durations. It's not a maximum error guarantee in milliseconds. If there's no correspondence, check the takes or increase the margin. Differences of duration greater than 2:1 are rejected to avoid extreme maps. Compare Original/Aligned, listen to consonants and endings. Removing the alignment returns the original takes. The deflection allows manual adjustment

+/-250 ms per file (positive delay; your tail is retained extending export). It does not change the tuning and does not act in L/R input. The alignment can produce artifacts and is not perfect: it does not recognize words, does not reconstruct missing syllables, and does not guarantee identical phase or articulation. When changing the main, intensity or margin, press Double Align again. When another take is loaded, the previous lines, the original ones preserved, are invalidated.

PER-VOICE CONTROLS

Level, panorama, cutting of the bass, body (shelf 180 Hz), clarity (shelf 3.2 kHz), independent threshold compressor (3:1, soft knee), de-esser and cleaning AI. The X button on each channel removes its take and invalidates the previous lines. The Compressor button activates the compression. M = mute; S = alone. The AI cleaning uses RNNoise for spoken voice. It starts at 0 for singing; climbing it can take away breaths, air and expressive details. Double click on a slider restores its original value. The active RMS of the

Peak Guard reduces sample peaks linked to 0.98: not true-peak. Bypass FX omits cleaning, EQ, compression and de-esser; level, bread, mute/solo and master remain active to compare the timbre within the same mixture.

PREVIEW / EXPORT

The waveforms' reproduction and cursor allow you to listen to the project.

Export mix: 48 kHz/24 bit stereo WAV with panorama and master.

Export tracks: WAV mono 48 kHz/24-bit, with processes for each channel, before panorama and master. They respect each other. Use a new folder. The renders follow Original/Aligned and current settings, including Bypass FX. The exporter shall notify if there has been a peak cut; lower levels and repeat if there has. Import the exported WAVs in your DAW. The file preview within the plugin does not sync to host transport.

LIVE INPUT

L/R input: left is processed by A, right by B. Monkey comes in through A. C is used for files. No two mixed speakers are separated live. The manual and TIGHT MATCH defases are only applicable to file takes. In the app select devices in Options > Audio/MIDI Settings; authorise the microphone if you use it and check the host JUCE input silent. Use headphones to avoid feedback.

Constant processing latency: 1024 + ceil(0.04 * sample rate) samples.

At 48 kHz: 2944 samples / 61.33 ms, reported to the DAW. Separation/alignment are additional pre-calculations and are not part of that live latency.

SESSIONS / LIMITS

Project > Save creates a .duox file with original, aligned/affiliated Float32 and controls. Project > Open restores everything to continue editing. The DAW session saves parameters, but does not embed the audio: save a .duox and reopen it from the plugin when you resume work. It is internally operated at 48 kHz mono per take; stereo imports are averaged and can be cancelled if there are counterphase channels. The separation is 60 s, the take is 120 s. Local processing without Python, keys, cloud or downloads when running.

INSTALLED FILES

/Applications/DUO X.app /Library/Audio/Plug-Ins/Components/DUOX.component /Librory/Audio /Plug-ins/VST3/DUO X,vst3 /Librry/Documentation/DUO x/ To uninstall, close the applications and move those elements to the trash can. Source, models and licence notices included. It's a functional delivery with documented limits; not a commercial certification or a universal quality guarantee on real recordings.