

Multiplier

User Guide | Parish Audio

Create natural doubles, wide pairs, layered stacks, and spatial ensembles from a single performance.



Product page: <https://parishaudio.com/products/multiplier>

Multiplier turns one source into a controllable group of related performances. It creates up to eight additional copies, each with its own timing, pitch, level, pan, distance, and filtering, while global controls let you quickly shape width, depth, timing variation, and humanization.

1. Quick Start

1. Insert Multiplier on a vocal, guitar, synth, or other source you want to make wider, thicker, or more layered.
2. Start with a factory preset such as Natural Double, Wide Pair, Guitar Width, or Backing Trio.
3. Use Spread to set the overall stereo width and Depth to define the size of the virtual stage.
4. Use Timing for the base separation between the generated copies and Humanize for continuous timing and pitch variation.
5. Click a copy in the stage display to edit it. Adjust Level, Delay, Pan, Distance, Note, Pitch, HPF, and LPF as needed.
6. Use + Add Copy to build a larger stack, or Delete to remove selected copies.
7. Use Main to balance the original/main voice against the generated copies, then set Mix and Output in context.

2. What Multiplier Is Doing

Natural double tracking sounds larger because separate performances are never perfectly identical. Small differences in timing, pitch, level, placement, and tone stop the layers from collapsing into one copy of the same waveform. Multiplier recreates those differences from a single source and gives you direct control over them.

Internally, Multiplier builds the Main voice and all generated copies from a mono working signal derived from the incoming left and right channels. Each copy reads from a delay buffer, can be shifted in pitch, receives its own filtering and level, and is positioned across the stereo stage. The resulting voices are then summed back to stereo.

Humanize adds slow, independent timing and pitch drift to the generated copies. This variation is continuous rather than random from sample to sample, helping the copies move more like separate performances. Distance also affects more than position: farther voices receive propagation delay, level loss, and progressively darker high-frequency response.

The Main voice is part of the same stage system. It can be panned, delayed, pitch-shifted, filtered, moved in depth, muted, or soloed just like a generated copy. The bottom Main control is a quick level control for that voice.

3. Global Controls

Spread (0-150%)

Scales the stereo pan positions of the generated copies. At lower settings the copies collapse toward the center; higher values exaggerate their left/right placement.

Practical note: 100% uses the copy pan positions as set. Values above 100% push the stage wider until the final pan is limited at the stereo edges.

Depth (1.0-25.0 m)

Sets the maximum physical depth represented by the Distance controls. A copy at 100% Distance is placed at the full Depth value, while intermediate settings represent a proportion of that distance.

Practical note: Increasing Depth makes the same Distance settings farther away, which increases propagation delay, attenuation, and distance-related high-frequency loss.

Timing (0.0-60.0 ms)

Adds a global base delay to the generated copies. Higher values separate the copies more clearly from the Main voice and can move the effect from tight doubling toward obvious layered or slap-like spacing.

Practical note: For natural doubling, keep Timing moderate and let the individual Delay and Humanize settings create differences between copies.

Humanize (0-100%)

Controls continuous timing and pitch drift for the generated copies. Higher values create larger and somewhat faster variations, making the layers feel less mechanically identical.

Practical note: Use lower values for tight doubles and higher values for crowds, stacks, and chorus-like movement.

Main (-48.0 to +12.0 dB)

Sets the level of the Main voice. This is the same Main level that appears as Level when the Main source is selected in the voice editor.

Practical note: Lower Main when you want the generated copies to dominate. Keep it near unity for a conventional double-tracking blend.

Mix (0-100%)

Controls the level contribution of the generated copies in the final result. The Main voice remains present according to its own level; Mix is not a conventional dry/wet crossfade.

Practical note: At 0% Mix you hear the Main voice without the added copies. At 100% the copies are included at their full configured levels.

Output (-18.0 to +18.0 dB)

Adjusts the final stereo output after the Main voice and generated copies have been combined.

Practical note: Use Output to level-match bypassed and processed audio before judging whether the effect improves the mix.

Power (On / Off)

Engages or bypasses Multiplier with a smoothed transition.

4. Stage and Voice Controls

The stage display shows the Main source and each active copy. Horizontal position corresponds to Pan and front-to-back placement corresponds to Distance. Select a source to edit it in the right-hand panel. Copies can be moved directly in the stage display, making spatial arrangement fast and visual.

+ Add Copy (Up to 8 generated copies)

Adds another generated voice when an unused slot is available.

Delete (Selected copies)

Removes selected generated copies. The Main source is permanent and cannot be deleted.

M / S (Mute / Solo)

Mutes or solos the currently selected Main voice or generated copy. If any source is soloed, only soloed sources remain audible.

Level (-48.0 to +12.0 dB)

Sets the level of the selected source. On a generated copy this controls that copy independently; on Main it controls the Main level.

Delay (0.0-80.0 ms)

Adds delay to the selected source. Generated copies also receive the global Timing value, distance-related propagation delay, and Humanize timing drift.

Practical note: Small offsets are useful for doubling. Larger values can create looser stacks or audible echoes depending on the rest of the settings.

Pan (-100% to +100%)

Places the selected source left or right. Generated copy pan positions are also scaled by the global Spread control.

Distance (0-100%)

Places the selected source from the front of the stage toward the maximum distance set by Depth. Distance adds physical-style delay, attenuation, and high-frequency loss.

Practical note: Use different distances across copies to create front/back separation rather than relying on pan alone.

Note (-12 to +12 semitones)

Shifts the selected source by whole semitones. Unison leaves the source at its original pitch.

Practical note: Small octave or harmony offsets can turn Multiplier into a more obvious layered voice generator rather than a natural doubler.

Pitch (-50.0 to +50.0 cents)

Applies fine pitch offset to the selected source. Generated copies also receive Humanize pitch drift.

Practical note: Small positive and negative offsets across different copies are one of the main tools for creating believable width and separation.

HPF (20 Hz-20 kHz)

High-pass filters the selected source, removing low-frequency content below the selected cutoff.

LPF (20 Hz-20 kHz)

Low-pass filters the selected source. Distance can lower the effective high-frequency limit further as a source moves farther away.

Practical note: Roll off extreme lows or highs on supporting copies so they add size without competing with the Main voice.

5. Practical Workflows

Natural Vocal Double

- Load Natural Double or start with two copies.
- Keep Note at Unison and use only a few cents of opposite Pitch offset.
- Use moderate Timing and Humanize so the copies do not sound locked to the original.
- Pan the copies left and right, then adjust Spread to fit the mix.
- Keep Main present and bring the copies up with Mix until the vocal feels larger without sounding like an obvious effect.

Wide Guitar or Synth

- Start with Wide Pair or Guitar Width.
- Use wide opposite Pan positions and a high Spread value.
- Keep Depth relatively shallow if you want width without pushing the copies backward.
- Use HPF/LPF to keep the copies from masking the center source.

Backing Vocal Stack

- Use three to five copies with different Pan, Distance, Delay, and Pitch values.
- Increase Humanize so the voices drift independently.
- Use a lower Main level if the goal is a group rather than a doubled lead.
- Try Wall Of Backs, Backing Trio, Choir Arc, or Pop Crowd as starting points.

Depth and Perspective

- Increase Depth to create a larger virtual stage.
- Move selected copies farther back with Distance.
- Farther copies become quieter, later, and darker automatically.
- Use this to separate layers in front-to-back space instead of simply turning them down.

Chorus-like Texture

- Start with Near Chorus or several close copies.
- Use moderate Timing and higher Humanize.
- Keep pitch offsets small so the movement feels fluid rather than harmonized.
- Adjust Mix to control how strongly the animated copies are heard.

6. Factory Presets

Preset	Purpose
Natural Double	Two moderately spaced copies for a natural, everyday double-tracking sound.
Wide Pair	A wider two-copy arrangement with stronger stereo separation.
Backing Trio	Three supporting copies arranged across the stage.
Choir Arc	Four copies spread across a broader, deeper arc.
Tight Slap	A compact pair with shorter timing for a tight, immediate double.
Guitar Width	A strongly panned pair intended for wide guitar or instrument treatment.
Pop Crowd	Four animated copies for a larger pop-style group effect.
Far Wash	Three distant voices with greater depth for a washed-back spatial layer.
Wall Of Backs	Five supporting copies for a dense backing-vocal wall.
Front Row Stack	Three close voices with tailored filtering for a focused stack.
Wide Ensemble	Four broadly panned voices for a large stereo ensemble.
Near Chorus	Three close copies with moderate humanization for chorus-like movement.

7. Tips and Best Practices

- Use small differences across several controls instead of making one copy extremely different. Natural width usually comes from many subtle variations working together.
- If the sound becomes phasey or overly chorus-like, reduce Humanize, reduce fine Pitch offsets, or increase Timing slightly so the copies are less correlated.
- If the effect becomes too diffuse, reduce Depth and Distance before narrowing Spread. This keeps the stereo image wide while bringing the voices closer to the listener.
- Use HPF and LPF on supporting copies to leave more room for the Main voice.
- Solo individual copies while building a stack, but always make final decisions with all voices active and in the full mix.
- Presets preserve the current Output setting, so switching presets does not automatically change your final output trim.

8. Troubleshooting

Symptom	What to try
The effect is too obvious or chorus-like.	Reduce Humanize and fine Pitch offsets, lower Mix, or use fewer copies.
The copies sound too far away.	Reduce Depth and/or the selected voices' Distance values.

Symptom	What to try
The mix loses center focus.	Raise Main, reduce Mix, narrow Spread, or keep at least one copy closer to center.
The stack sounds muddy.	Use HPF on copies, lower their Level, or move some voices farther away.
The stack sounds too dark.	Reduce Distance or raise the selected copies' LPF values.
A copy is not audible.	Confirm it is active and not muted. If any source is soloed, only soloed sources are audible.
0% Mix still produces audio.	This is expected. Mix controls the generated-copy contribution; the Main voice has its own level and remains audible.
The stereo input sounds different after processing.	Multiplier creates its internal Main and copies from a mono working signal, then positions those sources in stereo.

9. Technical Reference

Item	Specification
Generated copies	Up to 8, plus the Main voice
Working source	Incoming L/R averaged to a mono working source
Spread	0-150%
Depth	1-25 m
Timing	0-60 ms
Humanize	0-100%
Main / Voice Level	-48 to +12 dB
Delay	0-80 ms per source
Pan	-100% to +100%
Distance	0-100% of global Depth
Note	-12 to +12 semitones
Pitch	-50 to +50 cents
HPF / LPF	20 Hz-20 kHz
Mix	0-100% generated-copy contribution
Output	-18 to +18 dB

10. More Information

Multiplier product page: <https://parishaudio.com/products/multiplier>

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For the latest installers, product information, and updates, use the product page above.