

# MDoubleTracker



MDoubleTracker is a marvelous natural sounding artificial stereo expander based on some pretty old techniques used for decades on some hardware modules such as Eventide H3000. We just polished it a bit and provided a few more controls as usual. In most cases you simply insert the plugin onto guitars, vocals or just any material that needs to sound big and let the plugin do the magic. Presets should be the first aid if it doesn't sound as good as you'd like. And if even that fails, then the following information may give you the necessary pointers.

One important thing that needs to be noted - unlike MStereoSpread and MStereoGenerator, the algorithm of MDoubleTracker is not mono compatible. That may be a problem, if you suspect your audio may be collapsed to mono on some playback equipment. While problems with mono compatibility are pretty common and cannot be avoided, it's worth checking how the results would sound in mono, and MDoubleTracker has a handy switch for that.

## How does MDoubleTracker work

MDoubleTracker tries to simulate the good old trick of recording the same performance multiple times, panning one to the left and the other to the right. That produces the classic big sound commonly used on guitars and vocals for example. While recording the same performance multiple times is very tedious, complex and error-prone process, producing such a thing automatically provides an extremely efficient alternative.

To do that, MDoubleTracker uses a system of varying delaylines to pitch-shift each channel just a little bit, up on one side, down on the other. Additionally it can delay each channel differently and the difference between channels is slowly evolving. As a result, different signals are produced for both left and right (and potentially surround) channels, creating a sensation of the performance being just a little bit different on each side, enough to produce the big wide stereo sound. When **Dry/Wet** may be used to create sort of a phasing / chorusey effect, useful creatively.

### Presets

#### Presets

Presets button shows a window with all available presets. A preset can be loaded from the preset window by double-clicking on it, selecting via the buttons or by using your keyboard. You can also manage the directory structure, store new presets, replace existing ones etc. Presets are global, so a preset saved from one project, can easily be used in another. The arrow buttons next to the preset button can be used to switch between presets easily.

Holding **Ctrl** while pressing the button loads a random preset. There must be some presets for this feature to work of course.

Presets can be backed up by 3 different methods:

- Using "Backup" and "Restore" buttons in each preset window, which produces a single archive of all presets on the computer.
- Using "Export/Import" buttons, which export a single folder of presets for one plugin.
- By saving the actual preset files, which are found in the following directories (not recommended):

Windows: C:\Users\{username}\AppData\Roaming\MeldaProduction

Mac OS X: /Library/Application support/MeldaProduction

Files are named based on the name of the plugin like this: "{pluginname}.presets", so for example MAutopan.presets or MDynamics.presets. If the directory cannot be found on your computer for some reason, you can just search for the particular file.

Please note that prior to version 16 a different format was used and the naming was "{pluginname}presets.xml". *The plugin also supports an online preset exchange. If the computer is connected to the internet, the plugin connects to our server once a week, submits your presets and downloads new ones if available. This feature is manually maintained in order to remove generally unusable presets, so it may take some time before any submitted presets become available. This feature relies on each user so we strongly advise that any submitted presets be named and organised in the same way as the factory presets, otherwise they will be removed.*



### Left arrow

Left arrow button loads the previous preset.



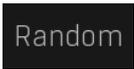
### Right arrow

Right arrow button loads the next preset.



### Randomize

Randomize button loads a random preset.



### Randomize

Randomize button (with the text 'Random') generates random settings. Generally, randomization in plug-ins works by selecting random values for all parameters, but rarely achieves satisfactory results, as the more parameters that change the more likely one will cause an unwanted effect. Our plugins employ a smart randomization engine that learns which settings are suitable for randomization (using the existing presets) and so is much more likely to create successful changes.

In addition, there are some mouse modifiers that assist this process. The smart randomization engine is used by default if no modifier keys are held.

Holding **Ctrl** while clicking the button constrains the randomization engine so that parameters are only modified slightly rather than completely randomized. This is suitable to create small variations of existing interesting settings.

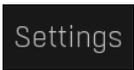
Holding **Alt** while clicking the button will force the engine to use full randomization, which sets random values for all reasonable automatable parameters. This can often result in "extreme" settings. Please note that some parameters cannot be randomized this way.



### Panic

Panic button resets the plugin state. You can use it to force the plugin to report latency to the host again and to avoid any audio problems. For example, some plugins, having a look-ahead feature, report the size of the look-ahead delay as latency, but it is inconvenient to do that every time the look-ahead changes as it usually causes the playback to stop. After you tweak the latency to the correct value, just click this button to sync the track in time with the others, minimizing phasing artifacts caused by the look-ahead delay mixing with undelayed audio signals in your host. It may also be necessary to restart playback in your host.

Another example is if some malfunctioning plugin generates extremely high values for the input of this plugin. A potential filter may start generating very high values as well and as a result the playback will stop. You can just click this button to reset the plugin and the playback will start again.



### Settings

Settings button shows a menu with additional settings of the plugin. Here is a brief description of the separate items.

**Licence manager** lets you activate/deactivate the plugins and manage subscriptions. While you can simply drag & drop a licence file onto the plugin, in some cases there may be a faster way. For instance, you can enter your user account name and password and the plugin will do all the activating for you.

There are 4 groups of settings, each section has its own detailed help information: **GUI & Style** enables you to pick the GUI style for the plug-in and the main colours used for the background, the title bars of the windows and panels, the text and graphs area and the highlighting (used for enabled buttons, sliders, knobs etc).

**Advanced settings** configures several processing options for the plug-in.

**Global system settings** contains some settings for all MeldaProduction plugins. Once you change any of them, restart your DAW if needed, and it will affect all MeldaProduction plugins.

**Dry/Wet affects** determines, for Multiband plug-ins, which multiband parameters are affected by the Global dry/wet control.

**Smart interpolation** adjusts the interpolation algorithm used when changing parameter values; the higher the setting the higher the audio quality and the lower the chance of zippering noise, but more CPU will be used.



### WWW

WWW button shows a menu with additional information about the plugin. You can check for updates, get easy access to support, MeldaProduction web page, video tutorials, Facebook/Twitter/YouTube channels and more.

## Sleeping

### Sleep indicator

Sleep indicator informs whether the plugin is currently active or in sleep mode. The plugin can automatically switch itself off to save CPU, when there is no input signal and the plugin knows it cannot produce any signal on its own and it generally makes sense. You can disable this in Settings / **Intelligent sleep on silence** both for individual instances and globally for all plugins on the system.



### Dry/Wet

Dry/Wet defines how powerful the effect is, thus this is the ratio between dry and wet signals. In most cases you will want to keep this at 100%, since with lower values you have a phase cancellation will occur, leading to a sort of phasey results, which can however sound interesting on guitars for example.

Range: 0.00% to 100.0%, default 100.0%



### Focus

Focus defines the minimal frequency used for the stereo expansion. You can use this to get rid of widening and phasiness in the low part of spectrum.

Human brains are adjusted to resolve phase below about 1kHz. Frequencies above are just too quick for the brain to catch the time differences accurately. This has the disadvantage, that big changes in phase in lower frequencies can cause dispersion, especially for transient signals. For example acoustic bass drums may sound almost synthetic when passed through the stereo expansion algorithm with a high number of bands. By setting Min frequency to say 100Hz you can usually get rid of these artifacts. This is only relevant if you are looking for the most natural results of course.

Range: Off to 20.0 kHz, default Off



### Space

Space controls the delay sizes used by the algorithm ending with a feeling of smaller (lower values) or bigger (higher values) space. You can control the stereo field character with this parameter.

Range: 0.00% to 100.0%, default 50.0%



### Saturation

Saturation defines the amount of saturation applied to the stereo expanded signal. Saturation naturally generates higher harmonics, which makes the signal richer and exciting. As a secondary result, this may cause the stereo field to appear even wider. However be cautious with this, as saturation is technically a form of distortion.

Range: 0.00% to 100.0%, default 0.00%



### Output gain

Output gain defines the power modification applied to the output signal, which is useful to make the output signal similar in loudness to the input, so that using **Dry/Wet** works well and avoids differences in loudness.

Range: -24.00 dB to +24.00 dB, default 0.00 dB

## Algorithm panel



Algorithm panel contains more advanced parameters of the underlying algorithm. For most audio materials you will be fine with defaults or presets, but if you need more control, here you can access every aspect of the technology.

## Mono Mono

Mono switch lets you audition the output collapsed to mono. Since the algorithm is not mono compatible (similarly to true double tracking), this is a handy feature that lets you adjust the parameters for maximum mono compatibility, if that is a relevant property for your audio results.

### Depth 50.0% Depth

Depth defines the length of the delays being used. Longer delays provide more natural results and spaceness, but also the tightness gets lost.

Range: 0.00% to 100.0%, default 50.0%

### Depth width 0.00% Depth width

Depth width controls the difference of the depth between channels. This way you can make both channels more different hence appearing wider and bigger.

Range: -100.0% to 100.0%, default 0.00%

### Delay 25.0% Delay

Delay lets you delay the stereo signals to the dry signal. This can be thought as a form of varying haas delay, which naturally creates a stereo width. It doesn't really have any useful effect (except for the delay itself) when the **Dry/Wet** is 100% and **Delay width** is 0%.

Range: 0.00% to 100.0%, default 25.0%

### Delay width 0.00% Delay width

Delay width controls the difference of the delay between channels. This way you can make both channels more different hence appearing wider and bigger.

Range: -100.0% to 100.0%, default 0.00%

### Detune 25.0% Detune

Detune defines the pitch shift applied on both channels. The higher the shift, the more different both channels are, but also more "honky tonky" the results sound, especially when mixed with the dry signal using **Dry/Wet**. The default settings are pretty low and provide nicely smooth and natural results in most cases.

Range: 0.00% to 100.0%, default 25.0%

### Detune width 0.00% Detune width

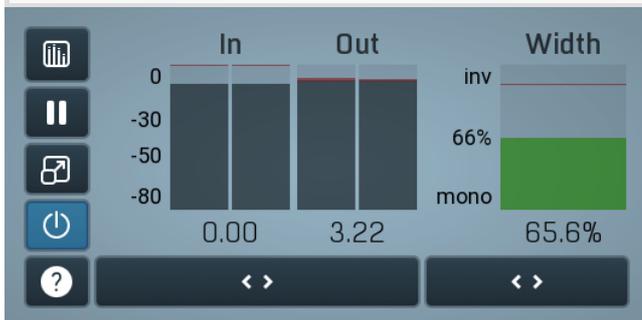
Detune width controls the difference of the detuning between channels. The algorithm naturally detunes both channels oppositely, but this way you can make both channels even more different hence appearing wider and bigger. And it gets especially useful for surround processing.

Range: -100.0% to 100.0%, default 0.00%

### Slope 6dB/oct A Slope

Slope defines the slope of each band transition and is used only by analog crossovers (including the linear-phase versions). It essentially controls the separation between the bands - the higher the slope, the lower the overlap between bands. Higher slopes require more CPU power and exhibit higher phase shift, which may be a problem especially when percussive materials. In these cases it may be necessary to switch to a linear-phase version.

Interesting exception to the classic rule are the 6dB/oct crossovers, which are linear-phase by nature (while still being zero latency), because the bands compensate for each other's phase shift. A side-effect of this is that the signal level in each band is much higher than using other crossovers, so you may expect these crossovers sound considerably different to the other modes.



### Global meter view

Global meter view provides a powerful metering system. If you do not see it in the plug-in, click the **Meters** or **Meters & Utilities** button to the right of the main controls. The display can work as either a classical level indicator or, in time graph mode, show one or more values in time. Use the first button to the left of the display to switch between the 2 modes and to control additional settings, including pause, disable and pop up the display into a floating window. The meter always shows the actual channels being processed, thus in M/S mode, it shows mid and side channels.

In the classical level indicators mode each of the meters also shows the recent maximum value. Click on any one of these values boxes to reset them all.

**In meter** indicates the total input level. The input meter shows the audio level before any specific processing (except potential oversampling and other pre-processing). It is always recommended to keep the input level under 0dB. You may need to adjust the previous processing plugins, track levels or gain stages to ensure that it is achieved.

As the levels approach 0dB, that part of the meters is displayed with **red** bars. And recent peak levels are indicated by single bars.

**Out meter** indicates the total output level. The output meter is the last item in the processing chain (except potential downsampling and other post-processing). It is always recommended to keep the output under 0dB.

As the levels approach 0dB, that part of the meters is displayed with **red** bars. And recent peak levels are indicated by single bars.

**Width meter** shows the stereo width at the output stage. This meter requires at least 2 channels and therefore does not work in mono mode. Stereo width meter basically shows the difference between the mid and side channels.

When the value is **0%**, the output is monophonic. From 0% to 66% there is a green range, where most audio materials should remain.

**From 66% to 100%** the audio is very stereophonic and the phase coherence may start causing problems. This range is colored blue. You may still want to use this range for wide materials, such as background pads. It is pretty common for mastered tracks to lie on the edge of green and blue zones.

**Above 100%** the side signal exceeds the mid signal, therefore it is too monophonic or the signal is out of phase. This is marked using red color. In this case you should consider rotating the phase of the left or right channels or lowering the side signal, otherwise the audio will be highly mono-incompatible and can cause fatigue even when played back in stereo.

For most audio sources the width is fluctuating quickly, so the meter shows a 400ms average. It also shows the temporary maximum above it as a single coloured bar.

If you right click on the meter, you can enable/disable loudness pre-filtering, which uses EBU standard filters to simulate human perception. This may be useful to get a more realistic idea about stereo width. However, since humans perceive the bass spectrum as lower than the treble, this may hide phase problems in that bass spectrum.



### Time graph

Time graph button switches between the metering view and the time-graphs. The metering view provides an immediate view of the current values including a text representation. The time-graphs provide the same information over a period of time. Since different time-graphs often need different units, only the most important units are provided.



### Pause

Pause button pauses the processing.



### Popup

Popup button shows a pop-up window and moves the whole metering / time-graph system into it. This is especially useful in cases where you cannot enlarge the meters within the main window or such a task is too complicated. The pop-up window can be arbitrarily resized. In metering mode it is useful for easier reading from a distance for example. In time-graph mode it is useful for getting higher accuracy and a longer time perspective.



### Enable

Enable button enables or disables the metering system. You can disable it to save system resources.



### Collapse

Collapse button minimizes or enlarges the panel to release space for other editors.



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Collapse button minimizes or enlarges the panel to release space for other editors.

## Utilities

The screenshot shows a dark-themed 'UTILITIES' panel. At the top right, there are 'Map', a help icon (?), and a collapse icon. Below this, there are four rows, each representing a channel:

1 :	50.0%	≡
2 :	50.0%	≡
3 :	50.0%	≡
4 :	50.0%	≡

At the bottom of the panel, there is a 'Lock' button with a toggle switch and a menu icon (≡).

## Map

Map button displays all current mappings of modulators, multiparameters and MIDI (whichever subsystems the plugin provides).



## Multiparameter

Multiparameter button displays settings of the multiparameter. The multiparameter value can be adjusted by dragging it or by pressing Shift and clicking it to enter a new value from the virtual keyboard or from your computer keyboard.

Click on the button using your left mouse button to open the **Multiparameter** window where all the details of the multiparameter can be set. Click on it using your right mouse button or click on the **menu button** to the right to display an additional menu with learning capabilities - as described below.



## Menu

Menu button shows the **smart learn** menu. You can also use the right mouse button anywhere on the multiparameter button.

**Learn** attaches any parameters, including ranges. Click this, then move any parameters through the ranges that you want and click the multiparameter button again to finish. While learning is active, "REC" is displayed on the multiparameter button and learning mode is ended by clicking the button again.

**Clear & Learn** clears any parameters currently in the list then attaches any parameters, including ranges. Click this, then move any parameters through the ranges that you want and click the multiparameter button again to finish. While learning is active, "REC" is displayed on the multiparameter button and learning mode is ended by clicking the button again.

**Reset** resets all multiparameter settings to defaults.

**Quick Learn** clears any parameters currently in the list, attaches one parameter, including its range and assigns its name to the multiparameter. Click this, then move one parameter through the range that you want.

**Attach MIDI Controller** opens the MIDI Settings window, selects a unused parameter and activates MIDI learn. Click this then move the MIDI controller that you want to assign.

**Reorder to ...** lets you change the order of the multiparameters. This can be useful when creating active-presets. Please note that this feature can cause problems when one multiparameter controls other multiparameters, as these associations will not be preserved and they will need to be rebuilt.

In learning mode the multiparameter does not operate but rather records your actions. You can still adjust every automatable parameter and use it normally. When you change a parameter, the plugin associates that parameter with the multiparameter and also records the range of values that you set.

*For example, to associate a frequency slider and make a multiparameter control it from 100Hz to 1KHz, just enable the smart learn mode, click the slider then move it from 100Hz to 1KHz (you can also edit the range later in the Multiparameter window too). Then disable the learning mode by clicking on the button.*



## Lock

Lock button displays the settings of the global parameter lock. Click on it using your left mouse button to open the Global Parameter Lock window, listing all those parameters that are currently able to be locked.

Click on it using your right mouse button or use the **menu button** to display the menu with learning capabilities - **Learn** activates the learning mode, **Clear & Learn** deletes all currently-lockable parameters and then activates the learning mode. After that, every parameter you touch will be added to the lock. Learning mode is ended by clicking the button again.

The On/Off button built into the Lock button enables or disables the active locks.

