



MELDAproduction

the only limit is your imagination

GENERAL MELDAPRODUCTION SOFTWARE INFORMATION

Thank you for purchasing MeldaProduction software!

MeldaProduction provides top-class software and we hope you will be satisfied with it. If you have any problems or ideas, please do not hesitate and contact our support via info@meldaproduction.com .

INSTALLATION & ACTIVATION

By purchasing MeldaProduction software you have obtained a license file via e-mail. If you did not receive any e-mail, contact our support team using info@meldaproduction.com and we will send you your license again.

To activate the software you can drag & drop the licence file into the plugin. Alternatively you can use provided Licence manager (if any) or use Settings/Activate in the plugin. You are allowed to use the software on all your machines, but only you are allowed to operate the software. The licences are "to-person" as defined in the licence terms, therefore you can use the software on all your computers, but you are the only person allowed to operate them. MeldaProduction can provide a specialized licence for facilities such as schools with different licence terms. For more information about activation please check the [online video tutorial](#).

UPDATING

There are 3 methods to ensure your software is always up-to-date:

1. Run Update manager from start menu, using "update.cmd" file in the installation directory or using setup.exe in the installation directory. It will locate any necessary updates or packages and install them for you. Requires internet connection. In some cases, such as major updates, this method may not be available.
2. Download and run the update installer from [our website](#). This way you can update computers without internet connection.
3. Reinstall the software using the newest installer available from [our website](#). It is recommended to store your software installers. Despite you can always download new ones, which will in many cases be the newest version, you may need the specific version for any reason.

MELDAPRODUCTION MMULTIBANDLIMITER



OVERVIEW

MMultiBandLimiter is a state-of-the-art mastering multiband brickwall limiter that makes your recordings sound louder with minimal distortion and artifacts and you do not need to be a scientist to use it!

INTRODUCTION

The purpose of multiband limiter is to increase loudness by reducing ratio between average and peaks, however dynamics of the audio material is always sacrificed. Multiband dynamic processors can balance spectrum of the audio material, however they can also change the sound character. Though they are considered more transparent than single-band dynamic processors such as MDynamicsLimiter.

When opening the plugin window, you should use mainly the **Input gain** control. When you increase the input gain, it will be limited more, which provides higher loudness, but also removes some more dynamics and can even lead to a distortion if overused. Be careful not to make the input gain too high.

Peak meters on the right of the spectrum editor show output peaks of each band and the master. Bands should not reach 0dB

since they are limited, on the other hand the master should reach 0dB, but only temporarily. You will probably want to increase the input gain until you get the point, when all bands are slightly limited, which is indicated by the red tops.

After you have defined the **Input gain**, you will probably be interested in **Output gain**, which controls output level and amount of saturation. Use this parameter to get the master reach the 0dB. The more it touches the top of the master peak meter, the more saturation and loudness you get, but also the more the sound is distorted.

The point of multiband processing is that each band contains part of the spectrum and it is likely that each of them will have different level. Therefore some band may be limited more than the other. Your goal is to minimize artifacts caused by limiting, keep spectral balance, and still increase the loudness.

When you click a band, the editor below is changed (see the title). This way you can adjust details of processing of each band. However the most important is the **Threshold** parameter. The meaning is rather different than in the single-band version. Threshold here is a requested relative threshold between bands. Hence the numbers are only orientation. The plugin tries to minimize artifacts by adjusting internal parameters and threshold serves as an indicator of how much the band should be limited. By increasing the value, you make it harder for the signal to reach the real threshold and get limited, so you avoid pumping but can get more distortions or lower loudness.

Saturation panel contains parameters of the saturator performed on the output signal, which ensures there will be no peaks above 0dB. It can also improve clarity of the sound and increase loudness, but since the concept of saturation is distorting the sound, you should be careful not to overuse it. You can also disable the saturation at all, in which case the output will not be limited to 0dB and you should use additional single-band limiter afterwards.

Presets button

Presets button displays a window where you can load and manage available presets.

◀ button

the button loads previous preset.

▶ button

the button loads next preset.

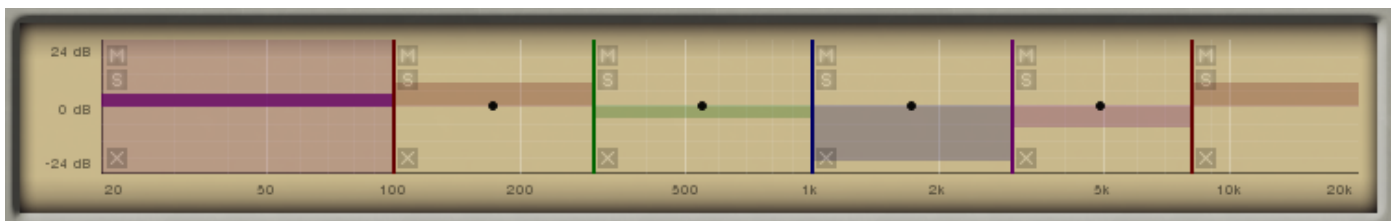
Channel mode button

Channel mode button shows current processing channel mode, such as L+R (which is default) and means processing left and right channels separately, or M+S which makes the plugin process mono and stereo channels separately.

Settings button

Settings button shows menu with additional settings and functions.

BAND EDITOR



Band editor shows available bands, cross-over frequencies delimiting them, and input gains. Use left mouse button to change cross-overs or input gains. Use right mouse button to add more bands, solo them etc.

Multiparameter button

Multiparameter button displays settings of particular multiparameter, which can control multiple other parameters at once. the button shows **smart learn** menu. You can also use right mouse button. In smart learn mode the modulator/multiparameter does not work and rather records your actions. You can use every automatable parameter and use it normally. When you change a parameter, the plugin adds it to the modulator/multiparameter and also notices the interval of values you set. *For example, to record a frequency slider and make a modulator control it from 1Hz to 10Hz, just enable the smart learn mode, click the slider the move it from 1Hz to 10Hz. Then disable the learning mode by clicking on the button.*



button

the button shows **smart learn** menu. You can also use right mouse button. In smart learn mode the modulator/multiparameter does not work and rather records your actions. You can use every automatable parameter and use it normally. When you change a parameter, the plugin adds it to the modulator/multiparameter and also notices the interval of values you set. *For example, to record a frequency slider and make a modulator control it from 1Hz to 10Hz, just enable the smart learn mode, click the slider the move it from 1Hz to 10Hz. Then disable the learning mode by clicking on the button.*

Input gain

Input gain defines power modification applied on the incoming signal, before it is split into bands.

Output gain

Output gain defines gain applied on the output signal, right after it is summed from the bands, before the signal is passed into the saturator. By increasing this value you can get more saturation, hence the sound will be louder and still won't get above the 0dB limit.

Temp gain

Temp gain defines temporary power modification applied on the input signal and then reversed on the output. You can do the same effect by setting **Input gain** to a value **g** and **Output gain** to value **-g**.

Slope

Slope defines balance between band thresholds therefore it basically defines resulting sound character. Negative value provides more energy for bass frequencies, which is often desirable.

Mode

Mode defines how the limiter responds to changes to band thresholds and resulting gain reduction. You typically increase **Input gain** to some point where the loudness is high enough, then use **Threshold** of each band to ensure none of the bands is overprocessed. During the processing you lose some dynamics and gain is changed too. This parameter defines, how the limiter reacts to this change.

Manual mode is typical for limiters and means, that no compensation for the gain reduction is performed. In manual mode you use the **Output gain** to bring the output to 0dB. The disadvantage is that by lowering a threshold you decrease output gain, so you have to use the output gain to perform manual compensation, otherwise you will not use all the dynamic range you can. Moreover by increasing all thresholds you can easily make the limiter pass the 0dB and the following saturator would overdrive the signal. **Automatic output gain compensation** makes the limiter adjust output gain automatically according to current thresholds for each band. When you change a threshold of a band, the limiter will ensure that the output will be reaching exactly 0dB plus specified **Output gain**, which is then usefull to provide some additional drive before the the saturation is performed. The advantage is, that once you set the output gain, when you change the thresholds the difference in output level should be minimized. Therefore you can use band thresholds to actually control output loudness.

Automatic threshold compensation causes the thresholds be changed according to the others. For example, increasing one threshold causes the others to decrease. As a result you can expect stable output level and you use thresholds to control the amount of gain reduction in all bands. This mode is designed to minimize loss of dynamic, however is probably harder to use.

Meter display

Meter display contains peak meters for each band. Red part on the top shows difference between input and output signal. Input signal is defined by the entire bar, output signal by the black part only. Meter named **M** contains measurements for the master output. Meter named **R** shows the master gain reduction. Meter named **S** shows the saturation reduction, the highest reduced peak.

Note that the saturation may distort the sound even if no reduction as actually performed. Only output gain affects this meter.

SATURATION PANEL



Saturation panel contains parameters of the master effect performed after the bands are processed and the signal is mixed back together.

⏻ button

the button enables or disables the effect.

Ceiling

Ceiling defines gain applied on the output after the saturation, hence this is the maximal level the output can reach.

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

Dry/wet

Dry/wet defines ratio between dry and wet signals. 100% means fully processed, 0% means no processing at all.

Range: 0.00% to 100.0%, default 20.0%

Threshold

Threshold determines minimal signal level, when the effect starts to apply. By lowering the threshold you increase loudness and also distortion.

Range: silence to 0.00 dB, default silence

Even harmonics

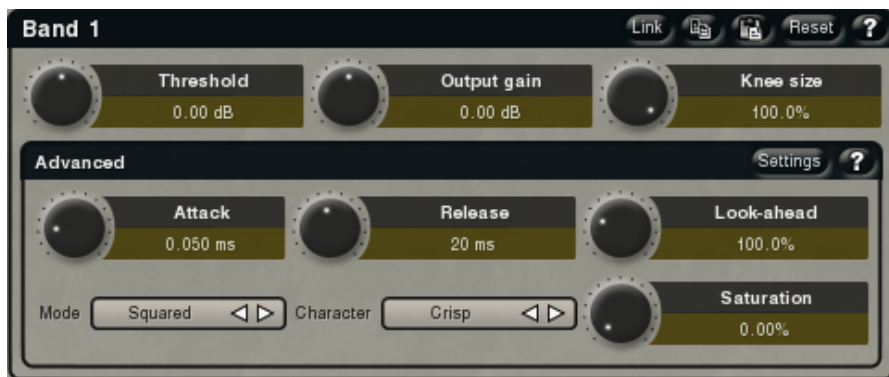
Even harmonics determines amount of even harmonics added to the signal in addition to the main saturation. Amount of the harmonics is dependent on the saturation signal, unlike the full harmonic control in **harmonics** panel, which is completely independent on actual saturation processing.

Range: 0.00% to 500.0%, default 50.0%

Mode

Mode defines limiting shape.

BAND PANEL



Band panel contains parameters of particular band. You can select a band using the selector above. Processing is performed on separate bands first and the master is processed afterwards.

Link button

Link button enables parameter linking between bands. Every change performed with this enabled changes all bands.

Clipboard button

the button copies settings of selected band or master into system clipboard, so you can paste it somewhere.

Paste button

the button pastes settings of selected band or master from system clipboard.

Reset button

Reset button loads default settings to selected band or master.

Threshold

Threshold determines relative threshold of the band. Increase the value to limit the band less and vice versa. Note that the processor performs additional processing and the real threshold value may be different.

Range: -12.00 dB to +12.00 dB, default 0.00 dB

Output gain

Output gain defines gain applied on the output signal. If you set ratio to 1:1 and custom shape is disabled, then the plug-in works simply as a fast gain processor.

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

Knee size

Knee size defines size of the knee.

Range: 0.00% to 100.0%, default 100.0%

ADVANCED PANEL



Advanced panel contains more advanced parameters defining how the plug-in determines level of the source signal, dynamic shape transformation etc.

Settings button

Settings button shows additional dynamics detector settings.

Attack

Attack defines how quickly can the processor increase the measured input level.

When using as a compressor, attack controls how quickly can the plugin start compressing. As a result, too small attack time will compress even beginning transient thus removing punch from a snare drum for example. Too high attack on the other hand will avoid even reaching the threshold, so the compressor may not do anything.

When used as a limiter, attack becomes a very sensitive control defining how much is the signal limited and how much saturated/clipped. If the attack is very low, the limiter catches most peaks itself and reduces them. That provides lower distortion, but can cause pumping. On the other hand higher attack (even above 1ms) may let most peaks through the limiter to the clipper or saturator, which causes more distortion but less pumping.

Range: 0 ms to 100 ms, default 0 ms

Release

Release defines how quickly can the processor decrease the measured input level.

When used as compressor, release time defines how quickly can the compressor stop working. If the release is high, then after every peak, which drives the compressor above the threshold, it stays above it and compresses the audio a lot. As a result this attenuates sustain. Very low values usually cause distortions as the measured level is jumping quickly giving very nonuniform changes in level. When used as limiter, the release time should be low enough, say about 10ms. With higher values the limiter may start pumping, because every peak makes it start compressing the audio, but the release time leaves the measured level above the threshold for too long. In an extreme case with very low attack and very high threshold the measured level may stay virtually constant causing the limiter to perform just a simple gain.

Range: 1.0 ms to 500 ms, default 1.0 ms

Look-ahead

Look-ahead defines how far the limiter looks ahead of the incoming signal. In practice this means delaying the actual signal. In compressors this parameter is usually defined in milliseconds, here however we specify it as a multiply of attack time, hence 100% means the same value as attack time.

Range: 0.00% to 400.0%, default 100.0%

Mode

Mode affects the processing shape. The plug-in features special non-linear transfer shapes which affect the way the signal is processed. **Logarithmic** produces classic dynamic processing where a signal exceeding the threshold by 10dB at a compression ratio of 2 : 1 produces 5dB attenuation in output level. In this same scenario, **Squared** mode produces a slightly greater output attenuation of 6.4dB and **Linear** mode produces a still greater value of 7.5dB. Thus, Squared and Linear modes produce progressively more compression / expansion. There is no compromise in sound quality between the different modes. Comparing the three modes, Linear mode requires the least amount of CPU power, and Logarithmic the most.

Character

Character defines sound character. **Crisp** provides more sharp results with some amount of saturation. **Clean** usually provides more transparent results.

Saturation

Saturation defines amount of band saturation. Note that there is still a global saturator performed on the master channel.

Range: 0.00% to 100.0%, default 0.00%

Upsampling

Upsampling can potentially improve sound quality by performing processing at a higher sample rate, which can avoid aliasing.

However upsampling has a huge impact on the CPU requirements. Also since upsampling is essentially filtering, it can add some artifacts on its own, and for some algorithms processing at higher sampling rates can lower the audio quality, so you should use it only if you need it. Note that high-quality upsampling mode induces latency, which usually cannot be reported to the host. As an alternative you can simply work at higher sampling rates. Upsampling is usually useless when processing in 96 kHz or higher. We recommend recording and processing in 96 kHz, which is absolutely sufficient without upsampling in most cases.

Presets selector

Presets selector defines current preset. The plugin can handle multiple presets at once. When you change any parameter, only current preset is modified. All presets are stored in the project. This way you can easily check changes and find the best settings for your case. Preset selection is not automatable.

A/B button

A/B button switches between this and previous preset. You can do the same thing by clicking on particular preset, but this makes it easier letting you close your eyes and listen, hence avoiding prejudice.

Morph button

Morph button let's morph between ABCD settings. Note that if you have selected e.g. A setting, you will actually change it, so it is suitable to select for example E settings and then use morphing. Also note that there are parameters which cannot be morphed.



button

the button copies current settings to clipboard. Other presets and upsampling settings are not copied.



button

the button pastes settings from clipboard into current preset.

MULTIPARAMETER EDITOR



Name

Name specifies name of the parameter, which is shown on the multiparameter button. The name is also used for active presets - if the name is specified, then the multiparameter serves as a parameter for the active preset. However if the first character is *, then the parameter is hidden. This is useful if you need some internal multiparameters, which you don't want to show.

Group

Group can be used to put some multiparameters into the same group, which results in placing them in the same panel on the active preset editor.

Info

Info may contain additional information about the multiparameter.

Mode

Mode controls the behaviour of the multiparameter. **Normal** mode makes the multiparameter work like any other slider. **Switch** mode hides the slider and shows a button instead. The button has 2 states. By pushing the button the multiparameter, the multiparameter value goes from 0% to 100% over a specified time interval. By unpushing the button the value goes back to 0%. You could do the same thing having the multiparameter in normal mode and moving the slider from left to right and then back, but this performs that manually and maintains the time interval. **Trigger** mode is similar to switch mode, but the button has only a single

state and when you push it, the value automatically goes from 0% to 100% and then back without any need to push the button again.

Value mode

Value mode controls units displayed on the multiparameter. **Percents** mode lets the plugin display percents from 0% to 100%. **By first parameter** mode uses the current value of the first parameter controlled by the multiparameter. For example, if you want to control a plugin gain, but also in addition to the changed gain control other parameters, you may still want to call the multiparameter gain and the units should be decibels as usual, not percents which do not make much sense for that parameter.

Switch time

Switch time defines time needed to switch from the minimum value to the maximum one, or conversely. It is used only in **switch** and **trigger** modes.

Set current value as default

Set current value as default stores current value as default one for the multiparameter.



Parameter

Parameter defines target parameter being controlled. The set contains all automatable parameters.

Range mode

Range mode defines from which range are the values taken.

Up and down mode makes the values go above and below selected **Value**, which is considered the center. The interval is compressed if necessary. For example, when value is 10% and range 100%, possible outputs are going from 0% to 20%, thus maximal interval around 10%.

Full range mode is similar, except the interval is never compressed, so the selected value may not be the center anymore. For example, when value is 10% and range 50%, possible outputs are going from 0% to 50%. But if value is 50%, then the interval is from 25% to 75%.

Up/down only mode goes from the selected value up/down only. For example, when value is 10% and range 50%, possible outputs are going from 10% to 60% in up only mode.

Interval mode is the most simple and simply goes between specified value and maximal value.

Value

Value defines center value of the modulation.

Maximal value

Maximal value defines limit when **interval mode** is being used.

Depth

Depth defines modulation range, size of the interval from which the values are used. Higher depth causes higher modulation and more audible effect.

Invert

Invert checkbox inverts the modulator shape, so minimum becomes maximum etc.

Use first parameter's range

Use first parameter's range makes the parameter use the same range as the first parameter in the list. This is often useful if want to control the range somehow and apply the range to multiple parameters.

SHAPE GRAPH



Shape graph lets you tweak the shape of the curve used to control selected parameter. X axis shows the original values, Y axis defines the results. Note that this takes some CPU, therefore you have to enable it using the the button in the caption.

Presets button

Presets button displays a window where you can load and manage available presets.

◀ button

the button loads previous preset.

▶ button

the button loads next preset.

MIDI CONTROLLERS EDITOR



Presets button

Presets button displays a window where you can load and manage available presets.

◀ button

the button loads previous preset.

▶ button

the button loads next preset.

CONTROLLERS PANEL



Controllers panel contains settings of MIDI controllers.

Enable

Enable enables or disables the controller.

Parameter

Parameter defines target parameter being controlled. The set contains all automatable parameters.

Learn

Learn enables or disables MIDI learn.

Channel

Channel defines controller MIDI channel.

Controller

Controller defines source controller.

Value

Value defines center value of the modulation.

MaxValue

MaxValue defines maximum value in case **interval mode** is used.

Depth

Depth defines modulation range, size of the interval from which the values are used. Higher depth causes higher modulation and more audible effect.

Range mode

Range mode defines from which range are the values taken.

Up and down mode makes the values go above and below selected **Value**, which is considered the center. The interval is compressed if necessary. For example, when value is 10% and range 100%, possible outputs are going from 0% to 20%, thus maximal interval around 10%.

Full range mode is similar, except the interval is never compressed, so the selected value may not be the center anymore. For example, when value is 10% and range 50%, possible outputs are going from 0% to 50%. But if value is 50%, then the interval is from 25% to 75%.

Up/down only mode goes from the selected value up/down only. For example, when value is 10% and range 50%, possible outputs are going from 10% to 60% in up only mode.

Interval mode is the most simple and simply goes between specified value and maximal value.

Invert

Invert checkbox inverts the modulator shape, so minimum becomes maximum etc.

NOTES PANEL



Notes panel contains settings of MIDI note controllers, thus if you want to control parameters using MIDI keys.

Enable

Enable enables or disables the controller.

Parameter

Parameter defines target parameter being controlled. The set contains all automatable parameters.

Channel

Channel defines controller MIDI channel.

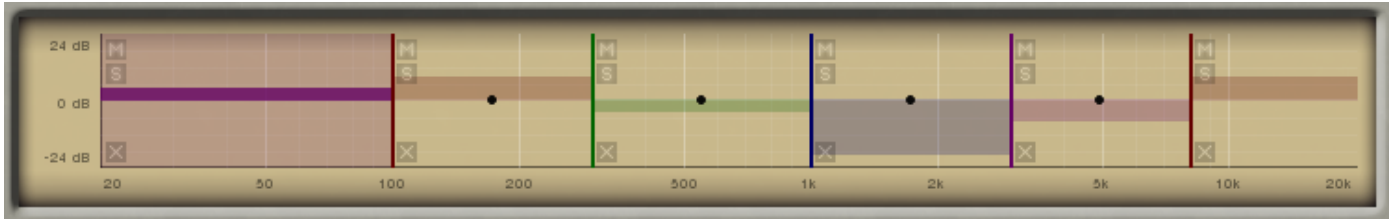
Logarithmic

Logarithmic if logarithmic scale is used which is common for oscillator frequencies, however may not be useful for general parameters.

CONTROL SPECIFICATION

Here we will discuss the general properties of all application controls. As a most important rule you should note, that you can always use any question mark button or F1 key with mouse cursor at a specified control to get detailed information about what it does and how to use it. If the F1 key does not work, it is possible that some other application is using it, so please try holding Ctrl, Alt, Shift or any combination.

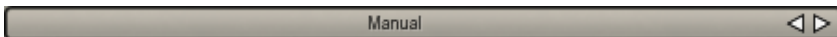
GRAPH EDITOR



Graph editor will show and edit one or more graphs.

- **Left mouse button** can be used to select a band, drag band cross-over frequencies and band input gains. Hold **Ctrl** to get more precision.
- **Right mouse button** shows a menu useful to add/delete bands, solo/mute etc.
- **Mouse wheel** modifies band input gain.

SWITCHER



Switcher is an alternative to tracker or knob controls, but it has only a limited set of values.

- **Left mouse button** shows a menu with list of all possible values. This function might be unavailable in certain cases when the number of possible values is too high.
- **Up** and **down** arrow keys, **buttons** in the control and **mouse-wheel** increase or decrease the value.

KNOB



Knob is an alternative to trackers, which simulates physical knobs.

- **Click/drag using left mouse button** to change the value.
- **Right mouse button** selects default value.
- **Mouse wheel**, **arrow keys** and vertical drag using **middle mouse button** or using **left mouse button while holding Ctrl** modifies the value more accurately.
- **Home key** configures minimal possible value, conversely **end key** setups a maximal one.
- **Shift + left mouse button** lets you edit the value as text.

TRACKER



Tracker (also known as a slider) is an alternative to common knob control. However the tracker is typically quite small, easy to use and capable of quite high precision and in most cases provides immediate text or similar representation of value you are editing.

- **Click/drag using left mouse button** to change the value.

- **Right mouse button** selects default value.
- **Mouse wheel, arrow keys** and vertical drag using **middle mouse button** or using **left mouse button while holding Ctrl** modifies the value more accurately.
- **Home key** configures minimal possible value, conversely **end key** setups a maximal one.
- **Shift + left mouse button** lets you edit the value as text.