Caustic Mastering - User’s manual

What is mastering? Why do I need this app?

There are many definitions of mastering but the analogy I prefer is "Mastering is like Photoshop for audio" because everyone has taken a photo or two and most people know what Photoshop is. To further the analogy, you might take lots of photos (create lots of tracks) and they'd probably be good enough to show other people (publish to soundcloud, etc.) but once in a while you want to take a particular photo and bring out the best in it, to have it really pop for when you frame it. That's when you run it through a few subtle Photoshop adjustments and filters (mastering app).

What the app ISN'T

It isn't the place to fix mistakes in composition, mixing or general sound. First, you're working with a single rendered track (WAV, mp3, etc.), not individual tracks so this isn't where you can boost the drums or run compression *just* on the drums. You're making a whole bunch of **small** changes that hopefully add up to a song that sounds a bit better once exported.

It also isn't the tool the professionals are going to use to replace their thousands of dollars worth of gear. Let's not kid ourselves, the goal here is to take your average hobbyist's track and polish it up. An app costing a few dollars isn't going to offer the same level of control and quality as pro software, but I'm confident the tools presented here are powerful, yet **simple enough for anyone to use**, and make it possible to bring out the best in your creations!

User interface / How does it work?

The basic workflow involved in using Caustic Mastering is as follows:

First of all, and it should go without saying, but be sure to work with good headphones or studio monitors when mastering your tracks.

1. Load a source track

Load a source track by tapping inside in the top area. Supported formats are WAV, Ogg, mp3 and FLAC. It is however not recommend to start with compressed formats (Ogg, mp3) because changes you make in mastering are likely to exaggerate compression artifacts. If exporting from Caustic (3.2 or greater), choose to export your tracks as WAV 32bit. At 32 bit depth, Caustic will export your track with more headroom and won't clip peaks (> 0dB). Instead it lets you use the mastering app to better control *how* to deal with these peaks (clipper / limiter). Also note that any compatible audio file can be used as input, including tracks exported from other apps.

Once loaded, the track's audio waveform is displayed. Touching anywhere on the waveform skips to that section of the track.

2. Place effects

Place effects in any of the 8 slots by pressing the "**+**" symbols. A description of each effect follows but most are common audio effects. Remember, changes are meant to be subtle so don't be afraid to bring a slider all the way up and down to hear its influence on the audio.

Audio signal path is evaluated left to right.

Drag an effect tab left or right to rearrange the effects order.
Drag up / down on an effect tab as though it were a switch to bypass / activate it.
Drag an effect all the way to the bottom bar and release to delete it.

Effect chains can be saved and recalled for use in other projects using the menu in the bottom center (fx section).

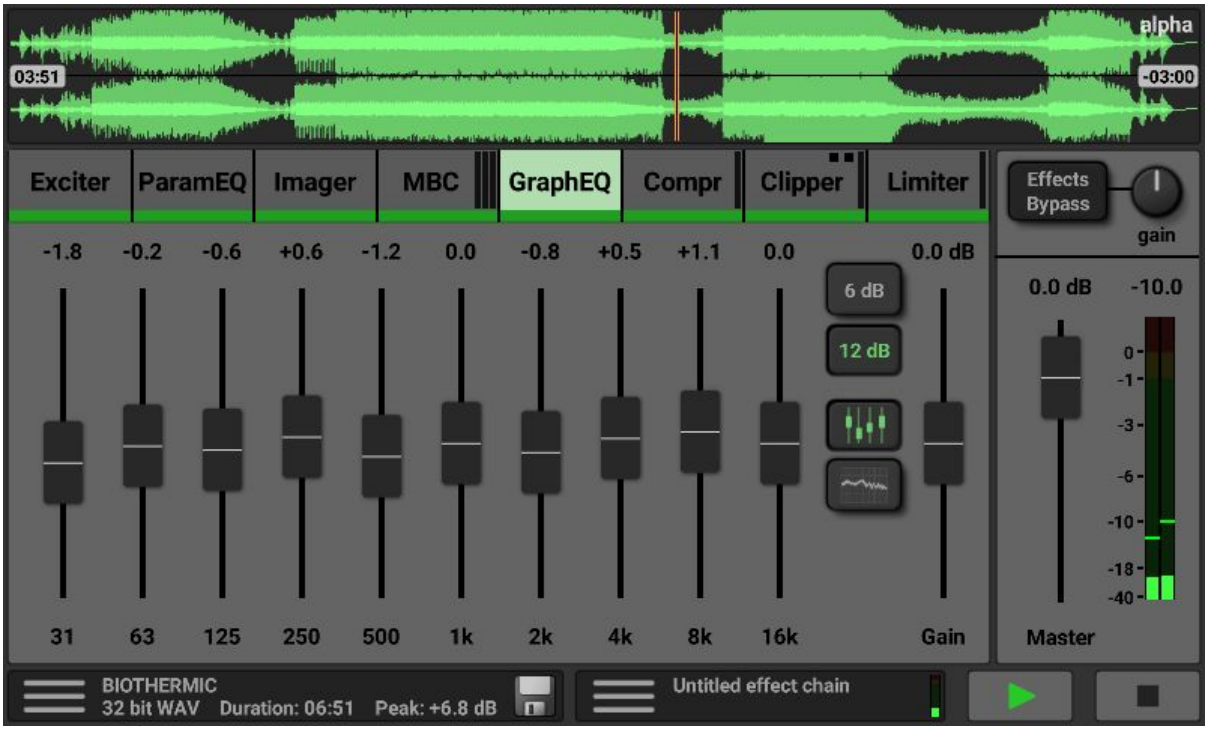
3. Export your mastered result

Once you are satisfied with the audio result in Caustic Mastering, bring up the project menu (bottom left) and select "Export...". From there you can choose a compressed or uncompressed format and share the result to soundcloud, etc.

There is a master effects bypass button above the master volume and this lets you A/B test your changes. To help with comparison, level of the un-mastered audio can be adjusted with a gain knob.

Effects

Graphic Equalizer



A standard 10-band EQ. Slider range can be either 6 or 12 dB. A common trick is to adjust audio to your liking on the 12dB setting and then switch to 6dB to get a more subtle result. The display be be switched from the simpler 10 slider or a spectrum view.

When viewing the spectrum, the orange line is the incoming signal and the green line is the output of the effect.

Output gain can also be adjusted.

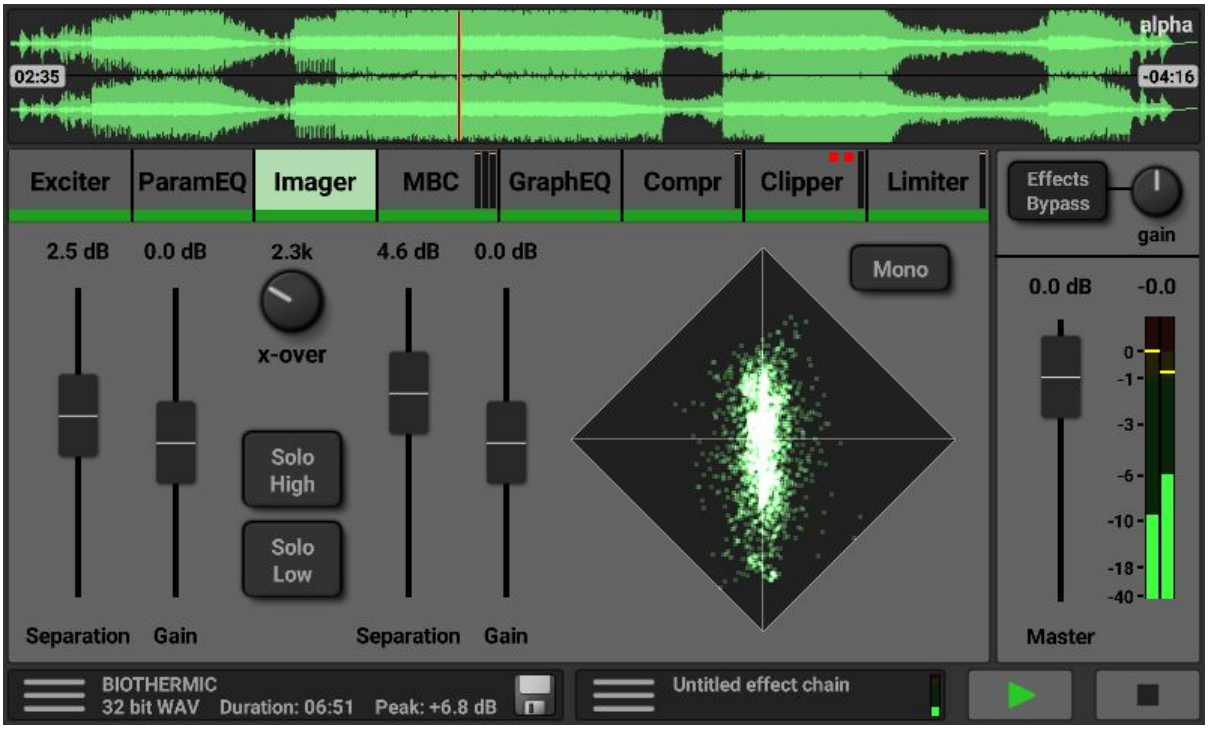
Parametric EQ

This effect consists of 6 independent EQ bands with 3 possible filter types: lowpass, highpass, and bandpass. Also offered are controls over center frequency, bandwidth, and gain. Each EQ band can be turned on or off (by dragging the tab up or down) and can be controlled either be using the knobs or by dragging the small numbers icons inside the spectrum view.

In the spectrum view, the orange line is the incoming signal and the green line is the output of the effect.

Output gain can also be adjusted.

Stereo Imager



This effect is used to exaggerate or lessen the stereo separation in the audio. An adjustable crossover allows for independent control over the highs and lows and each side of the crossover output can be solo'ed to isolate its effect and aid in tuning.

A common enhancement is to boost separation on the highs while ensuring lows remain either untouched or brought closer to mono. Gain on each crossover side can also be adjusted to compensate for width changes.

A mono button allows for quick auditioning of the signal path without stereo separation.

Exciter

This effect subtly enhances the input signal by adding harmonic "noise". Two units are provided, bass on the left and treble on the right.

A filter is used to control which frequency range of the audio gets fed into the unit and cutoff frequency can be controlled.

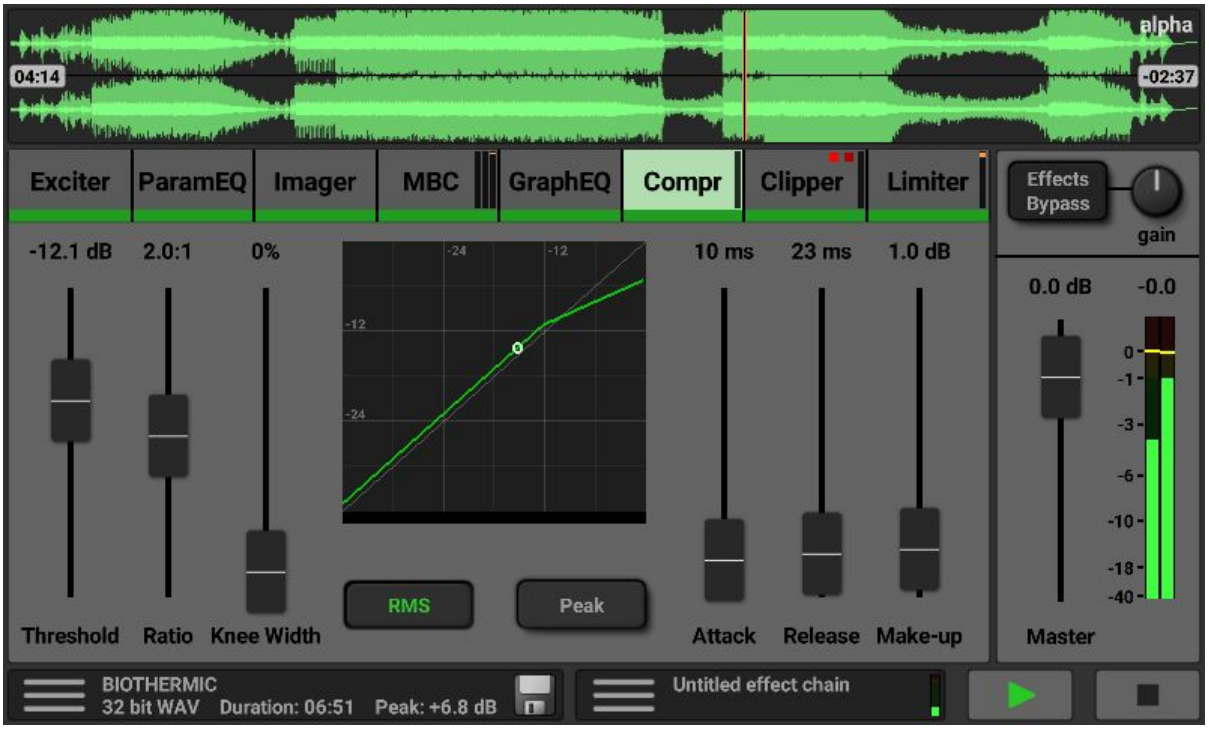
Drive controls the amount of distortion used to create the noise.

Level is the mix of wet signal going into the output.

The treble unit also has an extra stereo width unit, similar to the "width" knob in Caustic's mixer.

If you're new to exciters, stick with adjusting levels for now.

Compressor

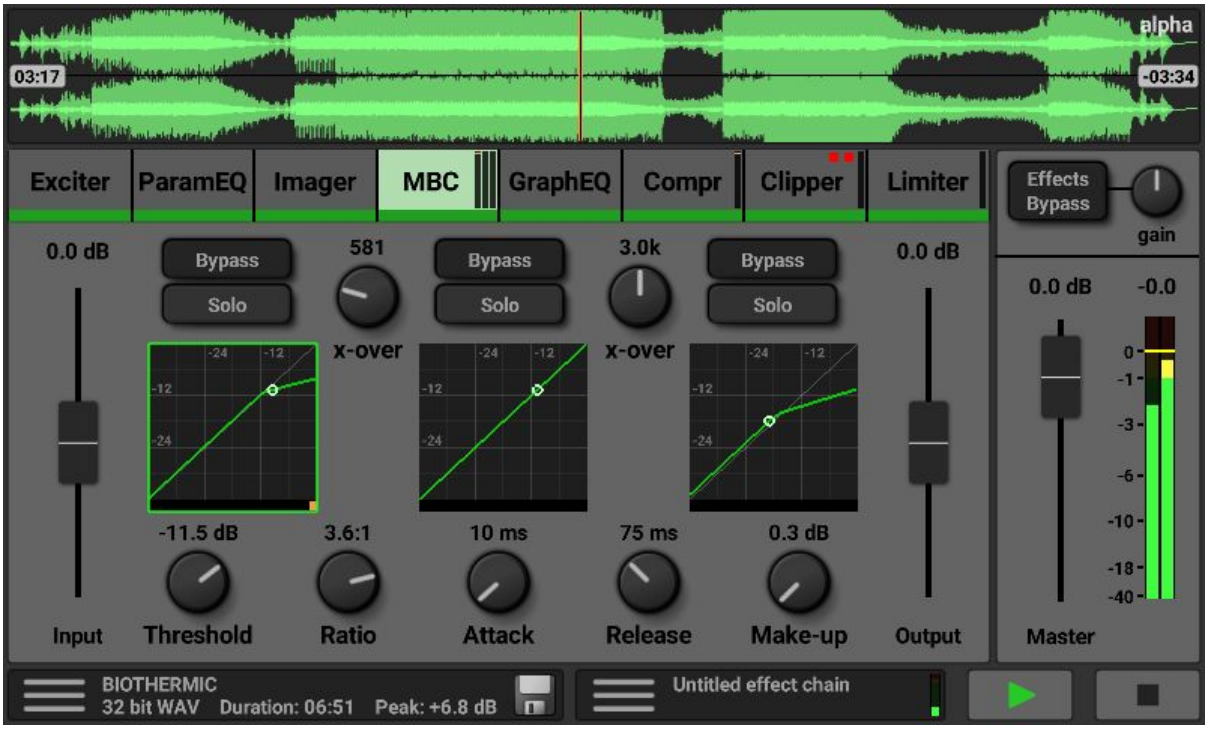


A true, dB-range compressor with adjustments for knee width, attack and release times, and make-up gain.

The graph in the center follows the input level and plots it to the output level based on the compression parameters.

The input to the compression signal tracker can either be an RMS average or a single peak value.

Multi-band compressor



This is the same effect as the basic Compressor but with the input signal being split into 3 bands using adjustable crossovers.

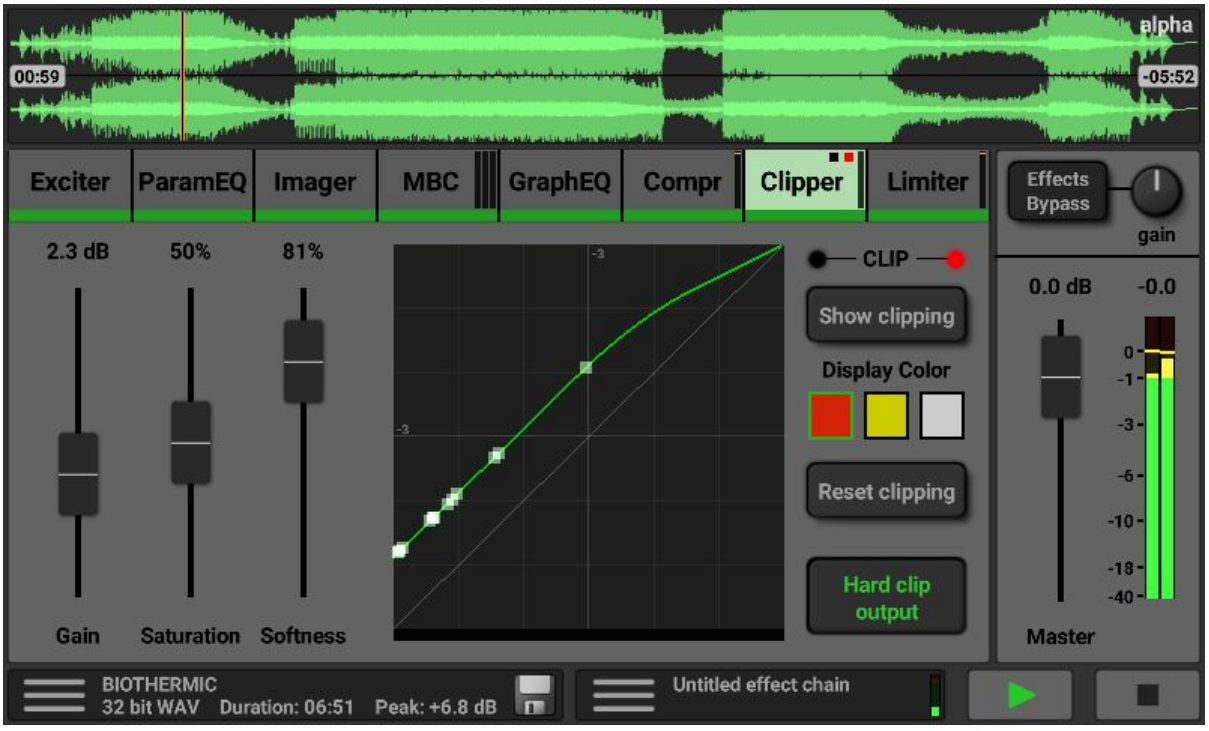
The knobs at the bottom control the currently selected crossover band. A band can be selected by touching its input / output graph. The selected band appears with a highlighted outline around its graph.

Each band can be solo'ed or bypassed.

This effect can be used to compress hard-hitting bass sounds without affecting hard signals of higher frequency like snares, synths.

Output gain can also be adjusted.

Clipper

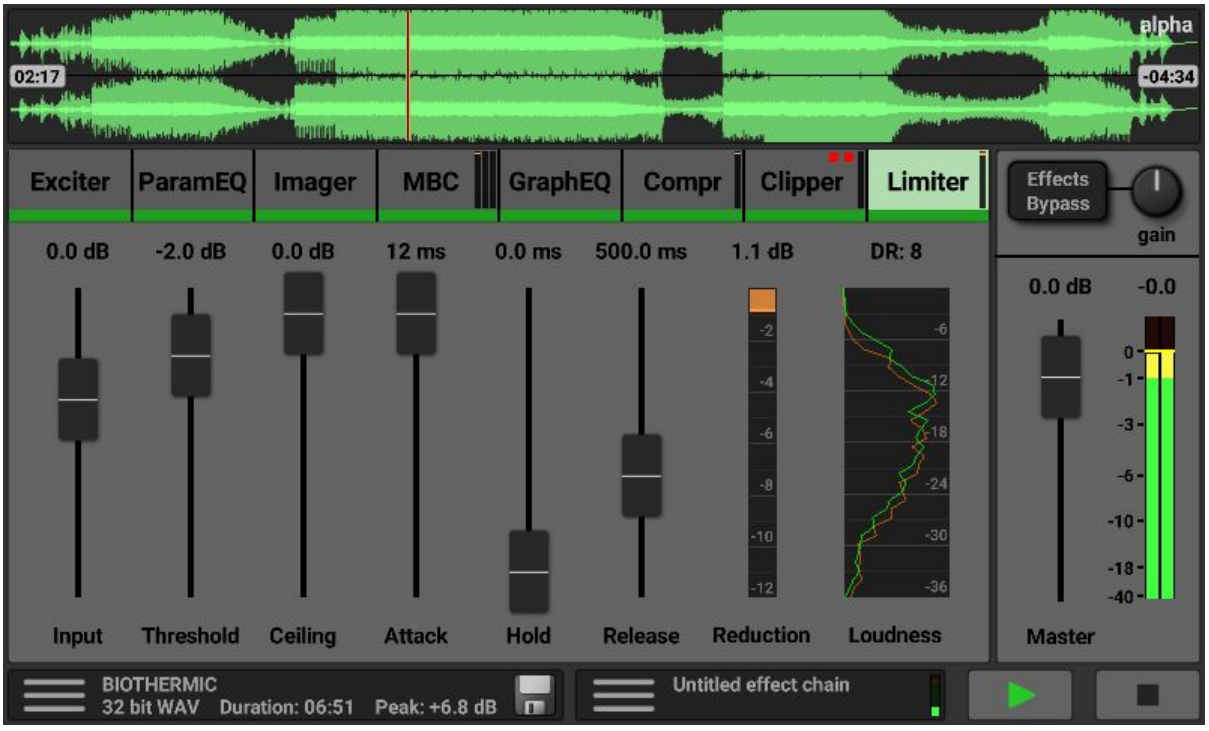


This waveshaper effect gives you control over how incoming input signals get clipped and what happen to signals approaching the clip plane (0dB). This effect can also be used to boost overall volume without creating any more clip peaks.

Incoming signal which clips can be shown as an overlay on the audio waveform, in different colors to differentiate multiple Clippers.

Outgoing signal can either be hard clipped at 0dB or let to pass through to the next effect or output.

Look-ahead Limiter



This limiter effect uses a look-ahead to ensure signal gets compressed before it would clip.

A boost in input or a lower activation threshold will result in quiet parts becoming louder without causing loud parts to clip and distort. This can be used to make a track "louder", at the expense of dynamic range.

Reduction is shown in dB in a small meter with a peak hold.

The graph display on the right shows the loudness curve as a histogram of sample volumes.

A dynamic range calculation is constantly being updated and shown above the loudness graph.

The "ceiling" slider can be used to set the upper limit of the limiter's output.