VST Mastering Tutorial

This tutorial describes one example of a professional mastering process with native vst plugins only. First of all, the final mix has to be established. Mastering is only used to bring details and brilliance to a mix, and not to boost a non optimized mix up. The better the mix, the less you have to do in the final mastering process.

Export the final mix with a headroom of -3dB in a 24bit wav-audio file. Load in into an audio editing software like WaveLab, Soundforge, Logic, Audition or Cubase.

Remove the DC-Offset. (Many DC converters show a DC offset voltage, which is a baseline that does not correspond to the 0 voltage baseline. This is caused by connecting the converter to a soundcard or by component tolerances relating to the internal voltage reference. Also, external mixer and effect devices can generate an offset voltage and thereby reduce the signal dynamics. Offset voltages can be recognized in that they do not show a baseline that is identical to the 0 voltage baseline).

We can now start with the mastering chain.

1. **Waves REQ2Band**: The first element in the mastering chain will be a 2-band-eq with a very short rise and fall time for the low and high cut. The low cut is necessary to avoid unwanted noises in the lower frequencies. Anything lower than 30Hz can be thrown out of the mix.

"Waves - Renaissance Equalizer REQ 2 bands" with lowcut at 30Hz and highcut at 20kHz
2. **Waves LINMB**: We continue with a 5 band multiband compressor. The sum of all bands will be compressed to achieve more headroom, so you can get the mix louder in the end.

"Waves - Linear Multiband" compresses the mix to achieve more headroom

3. **Roger Nichols FREQUALIZER**: Now we have to reduce the formants. Gain up each frequency with the right mouse button. The frequencies that produce a loud, unwanted tone are gained down till they can't be heard anymore. Also use your headphones! This is a very important step because it makes the mix soft and enjoyable for the ears.

"Roger Nichols Frequal-izer" cuts unwanted tones out of the mix
4. **BBE Sonic Maximizer**: Now we need an exciter to add harmonics to the mix that we have cut out in the step before.

"BBE Sonic Maximizer" adds harmonics back to the mix

5. **Brainworx db Digital**: It is time to eq the whole work with a special mastering equalizer. To avoid antiphase, we need to get control of the stereo field. This is especially important for the bass, so it won't lose any punch. To solve this problem, all frequencies below 300Hz are set to mono (Mono-Maker wheel in the center). In the upper frequencies, the stereo field can be widened a bit.

"Brainworx db Digital" avoid antiphase in the lower frequencies
6. **Sonnox Oxford Inflator**: The next step is to add analogue sound to the digital mix. I prefer the Inflator from Sonnox Oxford, it really adds warmness to the mix.

![Sonnox Oxford Inflator](image)

"Sonnox Oxford Inflator" adds warmness to the mix

7. **Waves L3-LL Ultramaximizer**: The end of the mastering chain is the limiter which makes the mix as loud as possible. Set Quantize to 24bits and Shaping to Ultra. Make a little headroom by setting Out Ceiling to -2.0dB to avoid clipping. Now pull down the Threshold and don't let the Atten LED light up.

![Waves L3-LL Ultramaximizer](image)

"Waves L3-LL Ultramaximizer" makes the mix loud
8. **Waves PAZ Analyzer**: To get a visual overview of the final result. The whole frequency band should be as linear as possible. The stereo field can be viewed, too.

"Waves PAZ Analyzer" provides a visual overview

9. **Ok, let's see what we did again:**

1. EQ (high-lowcut)
2. Multicomp (get more headroom)
3. EQ (correct formants)
4. Exciter (add harmonics)
5. EQ (avoid antiphase, widen up)
6. Inflator (add warmthness)
7. Limiter (loudness)
8. Analyzer (Control the mix)

This is just one example of a mastering process. There are thousands of ways of mastering, but this one is certainly a good one and for native only the results are really amazing!

One more thing: Don't use Reason for Mastering!