

5 tips when mastering

There are many tools out there to do this. I have chosen Ozone by iZotope as an example here, as it contains an affordable and excellent set of tools for those working in-the-box.

First step after load-in: listen for unwanted parts in audio and take corrective measures:

1. L/R balance: is the lead-vocal well centered? If not:

In Ozone unlink input level faders to make necessary adjustments. This will rarely be necessary, but should be done first. Subsequent stereo processing will track better to preserve imaging, i.e. the stereo sound stage.

2. Frequency balance: using spectrum analyzer and your ears, are there any portions that need to be cut? Subtracting unnecessary frequencies may unmask the important portions in audio better as well as regaining headroom, rather than trying to boost the important parts and running the risk of clipping.

In Ozone, if large amounts of cut are needed it is usually best to use EQ in Digital mode.

3. Tight low end: if bass is lacking focus and clarity try a high-pass filter on the side-channel (elliptical EQ), essentially making the low-end mono.

In Ozone use EQ in Mid-Side mode, listen and observe LF content in side-channel. While listening to the regular stereo signal, adjust the cut-off frequency of the side-channel high-pass filter until it sounds right. Make sure this is not set too high, stereo imaging and width should not change noticeably.

4. Dynamic problems: are the various instruments of a track cohesive? For example: it may be easier to reduce sibilance early by de-essing.

In Ozone use Multi-Band Dynamics tool. To affect only lead vocal sibilance predominantly in the stereo center use Mid-Side mode and use frequency dependent compression on the mid channel only to minimize unwanted side effects such as loss of clarity and silk. Use mid-frequency band in 3-band processor to adjust for sibilant frequencies.

5. Leveling: an essential part in mastering is to assure all tracks play at the same perceived loudness. This task is best done using your ears and relying less on level-meters, as they do not accurately respond to the frequency response of our ears. To leave the entire load of leveling all your tracks to individual limiters is not recommended, as they tend to alter the sound if driven too hard. 2dB of limiting may already have an adverse effect, especially on transient and bass content of a track. Use previous gain stages in your processing to get all of your tracks within ± 1 dB of perceived loudness from on another. For example:

In Ozone before you use the Loudness Maximizer as a last step in leveling, capture/bounce your tracks at highest resolution (24-bit, 32-bit float, or higher) used. Next, line up all these bounced tracks in the right order, as they should appear on a CD. Use one instance of Ozone on the master insert using the Loudness Maximizer only. For CD set a healthy -0.3dBfs safety Margin and leave Threshold at 0dBfs. Set Mode and Dithering to taste/need. Now you can use gain (e.g. automation) on individual tracks or parts of a track to achieve coherent leveling without having to change Loudness Maximizer settings. In vocal music, use the vocal level as a 'loudness-anchor' or reference when dealing with mixed musical styles and arrangements. Listen to the transitions from one track to the next for coherent leveling. After all, we as mastering engineers are responsible to make sure there aren't any sudden changes that would spoil the flow of a record.

