

## MIXING AND MASTERING, PART 2

*“The trick with mastering is you want your sound to be as loud as possible without distorting.”*

—Armin van Buuren

### SUBCHAPTERS

- Mixing Layered Leads
- Keep Your Reverb Clean
- Use the Frequency Analyzer to Understand Your Instruments
- Breaking Down the End Bus
- Find the Right Loudness
- Test Your Mix by Turning It Down

### CHAPTER REVIEW

As Armin continues discussing “Sunny Days (Club Mix),” he notes that each lead track has its own EQ setting, and that changing the reverb, release, or attack on each lead can make a difference in the overall sound. Reverb is essential to trance music and creating a dancing atmosphere, but Armin warns that it can clog your mix without proper EQing. A reverb plug-in that lets you adjust the frequency spectrum of the reverberations, like the ArtsAcoustic, can help you avoid this issue.

When it comes to mastering, Armin’s work tends to be relatively understated. He uses multiband compression to bring the track’s loudness up across the frequency spectrum. And he uses a limiter to get the overall track as loud as he can without distorting. (He reminds us that people’s definition of acceptable distortion varies in the EDM world.) A crucial part of Armin’s mastering process is to constantly A/B his processed mix against his unprocessed mix to hear how the sound has changed. To make this easier, he has these two mixes set up on auxiliary channel strips that get their signal from the pre-dynamics bus. When he’s tweaking the processed mix, he’s careful to make sure the perceived volume is the same as that of the unprocessed mix—otherwise his ears would get fooled into preferring whichever is louder. It’s important to check your dynamic processing work like this because processing can take away transients and deaden the overall impact of your track.

Armin’s tip for testing your final mix is to turn things way down—if you can hear all the important elements at a low volume, chances are your mix is well-balanced.

### EXPLORE THE PLUG-INS

Armin makes use of the following plug-ins in this chapter:

- [Noveltech Character](#)\*
- [Sylenth1](#)
- [ArtsAcoustic Reverb](#)
- [G Bus Compressor](#)
- [Invisible Limiter](#)

\*This is an EQ enhancer. Armin says this plug-in is best used for adding character to the top end of a sound.

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### LEARN MORE

- Platforms such as YouTube, iTunes, and Spotify use loudness standards and volume normalization to keep a consistent volume between tracks. As you begin to mix and master your own tracks, you should be familiar with the following terms:
  - **Dynamic range:** The difference between the quietest sound and the loudest sound you hear in a piece of music.
  - **Compression:** The process by which the loudest sounds are lowered (and the quietest sounds are raised) in order to reduce the dynamic range within a track. This is a way to increase the perceived volume of a track.
  - **Loudness:** The perceived volume of a sound, which changes based on dynamic range.
  - **LUFS:** “Loudness Units Full Scale,” a unit used to measure loudness.
- Learn more about loudness ranges [here](#), and learn more about loudness standards in club and EDM music [here](#).
- Compressors and limiters are the main tools Armin uses for adjusting his track’s dynamic range. You can learn more about how they work and why to use them [here](#).

### ASSIGNMENT

- Start to rough in the end bus on your tracks-in-progress. Add a limiter and play with the settings to see how loud you can get your mix without distorting. Pay attention to what your dynamic processing is doing to each of the important sounds in your mix. How are the leads affected? How is the percussion affected? What is the impact of the kick drum?