

**MIXING & MASTERING
TECHNIQUES:
50 TECHNICAL TIPS
TO USE IN YOUR
MIXES RIGHT NOW**



HYPERBITS



EQ

SUBTRACTIVE / ADDITIVE / MID-SIDE

1. To make your kick punch through the mix, try subtracting the fundamental frequency of the kick from any other element in the low-end (bass, sub, etc.). Two tiny EQ dips are almost always better than one big move, so try looking for two fundamentals in the kick to clear space.
2. If your gain-staging is already in place and you're also doing a lot of subtractive moves, make sure to manually add back the volume you just lost. You can also try using the auto-gain feature in a more advanced EQ like FabFilter Pro Q-2. The auto-gain feature does this automatically, and helps your ears separate coloration changes from volume changes. This is big.
3. The most important part of a vocal sits between 1000-2500Hz. Use subtractive EQ on all other sounds here to help the vocals stand out. It's techniques like this that make engineers say "professionals use subtractive EQ, amateurs are always boosting."
4. Subtle boosts with an analog emulated EQ on the high end can really make individual or groups of layers stand out. Use a modeled EQ to find those sweet spots in every sound. Vocals sound really good with a boost at 2048Hz. Some of our favorite analog emulations are the Electra DSP, Waves PuigTec EQP1A, Waves VEQ4 & Waves RS56.
5. Boosting the high end should often be accompanied with a high end cut. If you boost the highs with a shelf, then you can add a lot of unnecessary air to your sound. Using a cut to remove it sounds much more transparent.
6. Boosting your sub bass at about 80 Hz can really help it pump with the kick. You might have to remove a little from the kick, but usually a subtle 1-2 dB boost adds nice warmth to your sub range. Pair this with a subtle amount of saturation and you're very ahead of the game.
7. Leads are usually pretty mono. Use a mid/side EQ to carve space for your leads in the mids only. Remove a dB or two from the mids of any other sound that conflicts with the lead.
8. Mid/side EQ is great with atmospheres. Boosting the sides drastically on the high end around 10000Hz for sounds like vinyl crackle or general atmosphere can add a great beautiful shine and even perceived clarity to your mix.
9. Mid/side EQ is also great for creating a wider sound when necessary. If your sound feels too mono (but actually is stereo) try boosting the sides at around 5000Hz to make it feel wider and more present.
10. EQ-Matching (like in Ozone) can be super useful in coloring your track similarly to a reference. Try using EQ matching on individual synths to get them to match one of your favorite records. Pro tip: try using EQ-matching with stems from remix competitions or layers from songs that appear on their own.





DYNAMICS

COMPRESSION / LIMITING / SIDECCHAIN

11. To get your sounds to gel better and pump together, try using slight bus compression on all your groups. ~30ms attack, fast release, 2:1 ratio, and about 2-3 dBs of gain reduction works well.
 12. To beef up your synth stacks, multiband compression can go a long way. Try balancing the frequency content of your synth layers using a single multiband compressor on the group. This can really tighten (and add perceived volume) to an otherwise overly dynamic stack.
 13. If a lead, vocal chop, or even a percussive element seems to stick out of the mix too much, instead of turning it down and losing energy, try compressing it fairly aggressively. A quicker attack time will grab down on the transient without lowering it's perceived volume.
 14. Try using NY compression on your drum bus. Remove most of the midrange from your drums using a linear phase EQ, and then overly compress your drums till you hear that super pumping effect. Blend this signal back in with the original dry drums signal to create a parallel compression effect. This trick is an absolute classic and can really help your drums pop.
 15. If you need a little extra volume, try adjusting the lookahead, attack, and release of your limiter. Shorter lookahead, longer attack time, and shorter release times will give the loudest results.
 16. Limiting isn't only for mastering! Try putting a limiter on your sub to really maximize the power and energy of your low end. Set it to create a sausage of sub information. There's no need for a huge dynamic range in the sub frequencies (plus this helps with those sub notes that are either too high or too low to have the same energy as that sub frequency sweet spot).
 17. If you feel that your synth leads and chords are too separate from one another, try limiting them together. This is similar to bus compression but since there is a lot of high end information you can be more dramatic with your gain reduction and limiting here. This can really help make your track feel full and energetic in those upper mid frequencies.
 18. Try adding a 1-10ms lookahead to your sidechain compressors. This will allow them to see what's coming a little sooner and helps avoid those nasty clicks and pops that anyone who has ever used sidechain knows exactly what I'm talking about...
 19. Sidechain isn't only for your kick! Use it on your snare, tom fills, and maybe even impacts. Also consider using it to allow vocals to stand out more if they are fighting for space. Using sidechain on several elements of your track create a more dynamic and responsive experience for the listener. This translates into a more human mix, with additional movement and energy.
 20. If your kick-sub relationship still isn't right, try manually implementing fades on your sub instead of traditional sidechain. You can sculpt exactly how long you want the sub to be ducking when the kick is playing. This give you a level of control you simply don't have when working with classic or visual side chain compressors.
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HARMONICS

SATURATION / DISTORTION / CLIPPING

21. Colorize your leads and make them stand out more by running them through a guitar amp (my favorite is the Waves CLA Guitar plugin). Tweaking the treble and presence on any guitar amp plugin can really help accentuate sounds in the context of a mix.
22. Saturation on the low end is crucial in getting a powerful mix. Try saturating basses using 1-3 dBs of drive. My favorite saturator is the SoundToys Decapitator and my favorite preset on bass is the 'Beefy' preset. Mix this setting in to taste.
23. Saturation is also super important on drop synths and big chord stacks. There are so many options here, but try using multiple levels of saturation instead of just one. Saturate each layer and then also saturate the group. Just be careful to be mindful of distortion. 1-2 dBs works well here.
24. If you want a little extra brightness (or fullness) from your reverbs, try saturating your reverb buses. This can really help bring out the presence of the reverb without compromising the original sound.
25. Use distortion on leads. It can really make them pop. Try a multiband distortion plugin like iZotope Trash 2 and only distort the high end of a synth above 7000Hz. The added clarity and presence is incredible.
26. If your sub isn't cutting through the mix on smaller speakers, distortion can be great for creating overtones on the sub that shine on smaller speakers. Try distorting just the upper frequencies of the sub (above 110Hz).
27. Distortion can also be really useful on drums. Try using a distortion plugin on the drum bus to add punch and drive to the transients. One of my favorites for this is Camel Crusher. Another favorite is Soundtoys Devil Loc Deluxe. It emulates this ugly compressor saturator from the 50s and 60s that sounded so bad, is sounds good.
28. Using a hard clipper can really help achieve greater volume in a synth stack. Try activating the clipping feature in many compressors or use a clipping plugin like Native Instruments Transient Shaper to allow clipping signals to retain their volume and not clip. Again, the volume benefits here are almost unfathomable.
29. Clipping is not the same thing as distortion! Just because something is red lining doesn't mean it sounds bad. Be mindful of digital distortion with your ears and not your eyes. Sometimes allowing multiple tracks to go red actually sounds louder and clearer than when they are safe and green. Don't get too caught up in those old-school gain staging debates.
30. Clipping your sub can also sometimes add punch and fullness to the low end. Try slamming your sub into a hard clipper instead of a limiter to really get the sub's energy to remain constant, level and essentially, super compressed.





EFFECTS

REVERB / DELAY / MOVEMENT

31. Try using the same room reverb on almost every element in the mix except your kick. This will help glue the mix together and place it in a real space. Keep it light! Room reverb should be used very sparingly in your mix (no more than -18dB send amounts).
 32. If your reverb is overly bright, try rolling off the highs at around 8-10K. Engineers call this the 'Abbey Road Reverb Trick' and it does wonders for getting your reverb to sit right.
 33. Reverb on vocals is super important, but sometimes, that same reverb can also drown out the vocal. Try sidechaining the reverb against the vocal itself so that the reverbed signal dips whenever the vocal is playing. Try some long reverb tails here for some truly beautiful, dynamic reverb responses.
 34. If there is too much audio content in the middle of your mix, instead of reaching for the panning knob, try executing the Haas effect. In short, this effect tricks the brain into perceived width, despite only delaying your left and right signals about 10-35ms.
 35. Delay should be automated. Too much delay creates an extremely sloppy mix. Instead, try automating your delay to be more present once much of the musical content of your song has stopped (like when entering a break section). Bonus tip: wherever you set your delay levels, lower it a few DBs.
 36. At the same time, once in a while, delay plays an integral part in the energy of your composition. If this is the case, try dulling the delay with EQ before lowering the send amount. Sometimes, it's the brightness of a delayed signal that is creating an issue, not the volume itself. Removing around 5000Hz from a delayed signal works well.
 37. Try using an auto-panner on your high-hats (our favorite is Soundtoys Panman). Even a simple high-hat pattern can feel much more human and detailed with simple back and forth movement. Bonus perspective: making music on a computer is one big massive attempt at sounding more human. Make things sound less digital with movement tricks, humanization, randomness, added dynamics, etc.
 38. Filter automations go a LONG way in transitions. People have killed for less than the knowledge necessary to execute a perfect transition. Try creating movement from section to section by automating a low pass on certain instruments as they come in or exit a section. My favorite sounding resonant filter is the Waves One-Knob Filter. This thing is worth its weight in gold.
 39. Automating the stereo width during a buildup is also really effective in creating an added energy boost. We call this the mono-build trick. Automate your build towards mono during only to shoot the entire mix back to stereo in the drop. A really cool and easy to implement effect.
 40. Sometimes all a transition needs is a little movement in the form of a swell. Try reversing a sound that hits on the downbeat of a new section, and have that reverse lead into that downbeat. Subtle and strategic use of reverses can often polish transitions or add that extra leading spark when introducing a new sound.
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MASTERING

COMMERCIAL LOUDNESS / STEM MASTERING

41. When mastering, always start with limiting! Put your limiter on first (even though it's the last in the mastering processing chain) and then adjust the levels in your mix. Getting your mix to sound as balanced as possible without grabbing an EQ will always sound more transparent and clean.
 42. If you can't get your master to the volume you want, try scooping out more of the low mids. If you're heavy between 400-800Hz it can be really hard to get loud. Bonus tip: try cutting on individual layers throughout your mix - think about all that added headroom you can create with small, efficient cuts.
 43. The Sonnox Inflator is THE secret tool in mastering. Try it on the beginning of your mastering chain to really push the track. It creates a nice, warm, full and analog feel. It also couldn't be easier to use...
 44. Watch out for troublesome areas when you master. Subtle EQ dips around 250Hz, 1000Hz, 4000Hz and 12000Hz can make a huge difference in how clean your track sounds when played loud.
 45. Using a reference is important, but using a reference for specific parts of the frequency spectrum is even more important. Solo only the parts of a reference that you are trying to match - then use all of your mixing and mastering tools to recreate that section in your track. The most classic example of this? Solo your reference below 200Hz, do the same to your track, and don't stop until they sound the same.
 46. You should be stem mastering. Always. Stem mastering is better than a one-track master because you have the ability to isolate and adjust groups of your track at will (drums, synth leads, synth chords, top bass, sub bass, etc.). Plus, if you bring your stem master into a new project, this means starting with a completely fresh amount of CPU.
 47. If your master is lacking sizzle, try boosting the sides above 7000Hz in your master. This will make the track feel bigger and brighter without fatiguing the ears as much as a traditional EQ boost. You can also cut the lows from the sides below 150-200hz to clean up muddiness.
 48. Automating the volume going into your drop will always help increase the punch and impact of the drop. Try automating the master volume before the limiter during buildups. Bonus tip: try a combination of volume, eq & reverb automation on your build. Dips in volume, low cutting with EQ, and automating the reverb wetness up. Dada Life's 'Endless Smile' plugin essentially does all of that with one knob.
 49. Excitement is huge in mastering. Instead of just exciting the high end though, try exciting the lows too for some added warmth. Even use a mid/side exciter like iZotope Ozone so that you have ultimate control over your master. Exciting the sides can be done much more aggressively than the mids in the higher bands.
 50. Always check your master on every sound system you have at your disposal. Don't be afraid to take exports/bounces to your car with a pen and paper and really judge your master with some good old fashioned note-taking. I usually go through at least 2-3 iterations before I'm satisfied.
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