



## SONIC FREQUENCY MAP

### GLOSSARY OF TERMS

To get the most of your Sonic Frequency Map, it's important to understand what each of the descriptive words mean on the Map.

So here is a detailed glossary for you!

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*Listed in alphabetical order*

### CUTTING FREQUENCY TERMS:

#### **Bloated**

Refers to an excess of mid-frequencies on a kick drum. Frequencies around 500-800 Hz on a kick can make it sound overly thick, heavy, or muffled. This can result in a lack of clarity and definition and detract from the important powerful low frequencies. Apply a bell filter cut in this range to reduce this bloated effect and free up your mix a little with more space and lightness.

#### **Boomy**

Excess 'boom' is a common problem in mixing that means there are too many low frequencies causing a very low, yet overpowering, resonance in the low end. This can make your low end sound unclear, 'soupy' and uncontrolled. Boominess is more common on instruments like bass, kicks, snares, pianos and vocals and are therefore labelled at various points on the Map. Cutting the 'boomy' frequencies can lead to a cleaner sound with more definition and tightness.

## **Boxy**

Boxiness describes a hollow sound as if it's being played back in a cardboard box or a closet/wardrobe. This is often caused by too many midrange frequencies. It can make snares, vocals, mixes or pianos sound flat or enclosed. Try cutting this range to open up the sound and give it more clarity. For vocals, cutting this area can reduce the "boxy" tone and make them feel more present. You are especially at risk of boxy frequencies on vocals if the vocals have not been recorded in an acoustically treated environment.

## **Bright/Hiss**

This term relates just to the mixbus part of the Map. From 10-20kHz is where the 'air' frequencies sit and this is where you can add a lovely top end sheen and brilliance to your mix. However, if you push this too much, it can also degrade the mix, bringing out hiss in the mix from analog equipment, analog emulation plugins or recorded audio. Boosting these frequencies could also lead to excessive brightness which could make a mix sound thinner and less full. If there is hiss, or if the mix is too bright, try a 1-2dB low shelf filter at around 10-20kHz to soothe some of that brightness/hiss.

## **Brittle**

A Brittle sound is an overly sharp or harsh quality in the high-end frequencies, often making sounds sound thin or particularly piercing. Brittleness is most common in poorly EQ'd vocals or cymbals. If your mix sounds harsh or piercing, especially in the high frequencies, cutting in the 6 kHz–10 kHz range can smooth out the sharpness. This helps create a more balanced and less grating sound.

## **Clanky**

Clankiness is often associated with metallic or harsh tones in instruments like the snare, particularly acoustic snares that have been recorded rather than sampled and pianos. It adds a high-pitched, jarring sound that can be unpleasant and distracting. If your sound has a harsh, metallic edge, try cutting the clanky frequencies to smooth things out. Be careful not to cut too much though, as the opposite of the clanky ranges usually adds presence. Picture the 'clank' sound as when you hit something with a metal pipe! It sounds exactly as the word 'clank' sounds!

## **Clutter**

Clutter can be a challenge in mixing and happens frequently due to so many instruments occupying the mid-range of the frequency spectrum. Clutter is basically an excess of overlapping frequencies that make your mix feel crowded, messy, or unclear. This often happens in the low-mid range and/or bass frequencies, where different sounds can blend and then blur together, causing too many sounds and a bloated mid-range. Try cutting a little in the clutter ranges to clean up the overlapping instruments and to prevent EQ masking. Removing clutter helps individual elements stand out as well.

## **Harsh**

Harsh is an unpleasant, sharp, or piercing quality in a sound. Too much energy on the 'harsh' frequencies can cause instruments to sound aggressive, fatiguing, or grating to the ears! Cutting these frequencies can help smooth out the sound and make it more pleasant and balanced in the mix. The harsh frequencies can sit anywhere from the mids - the highs depending on the instrument and is a term used on many of the instruments featured in the Map.

## **Hiss**

Certain live recorded instruments might produce a high end hiss, or analog equipment might cause the hiss. Or just using analog emulation plugins might cause a hiss. And if they do, they sit at the far end of the spectrum. Hiss can blend in with the mix if the track is loud and full but it wouldn't work so well on a sparse piano ballad! So if the hiss is really obvious and unpleasant, try cutting the frequencies between 10-20kHz to reduce it. Try either a low-pass filter to remove them completely or a low-shelf filter to reduce the hiss.

## **Honky**

Honky sits somewhere between an unpleasant nasal or boxy sound, especially on snares and vocals. It can make them sound congested or hollow, like they're being played through a narrow tube! Reducing or cutting frequencies in the honky ranges can help eliminate the unpleasant tone and give the sound more clarity and naturalness. On vocals, honkiness is usually caused by the type of microphone and preamp used and whether the recording room was acoustically treated. Some singers also have more honky vocals than others!

## **Muddy**

Muddiness is something you hear a lot in mixing terms! And is usually the opposite of 'clarity'. Muddiness happens when the low frequencies, particularly in the bass and low-mids, overwhelm the mix, making it sound thick and unclear. For instruments like kicks or bass, cutting the sub-bass somewhere between 20–70Hz can help remove rumble and excess low-end energy. Applying a high-pass filter on vocals up to 80Hz on vocals can also help to achieve a clearer and more present/upfront sound by removing super low frequencies that add nothing to the tone of the vocal.

## **Nasal**

This refers to vocals that have a sharp, narrow, or "closed" feeling, often resembling the tone of someone speaking through their nose! Not every vocalist will have a nasal tone, but some do (think Nelly Furtado!) Depending on the vocalist, nasal frequencies can sit anywhere between 800 Hz - 2kHz with the core frequencies at around 1-2kHz. Cutting frequencies in this range can help reduce the nasal tone and make the vocals sound more open and balanced....and less irritating!

## **Noise**

On bass guitars, and guitars, there can be a lot of noise that is picked up in the recording. This could be hum, fret noises, buzzing or clicks. At 6-8kHz on a bass guitar is where you would typically find noises from the guitar recording (finger plucks, fret noises, slides etc). These noises can reduce the clarity, clearness and musicality of the instrument, leading to a cluttered sound, but it can also add realism and a natural organic sound to the instrument. So a decision to remove or reduce noise from recordings is entirely a subjective and stylistic choice and dependent on the genre of music. Applying EQ to cut the unwanted noise frequencies will help to clean up the mix though, allowing the bass to be more defined and musical in the mix.

## **Rumble**

Rumble refers to low-frequency noise or unwanted low-end energy, usually found below 60Hz or thereabouts, depending on the instrument. This area can create a muddy or indistinct sound, often due to sub-bass frequencies that are not musically relevant, such as background noise. Removing or cutting these frequencies with a high-pass filter can help clean up the mix and allow more clarity and definition in the low end. Try applying a

high pass filter on all non-bass instruments up to 80Hz to ensure there is no unwanted background rumble so the kick and bass have room to breathe in the mix. This will instantly enable the low-end to sound tighter, cleaner and more present and who doesn't want that?!

## **Sharpness**

Sharpness is an excess of clarity or a 'piercing' sound quality on the snare or synth. This can create harshness or an unpleasant bright tone, which may lead to ear fatigue. While some subtle sharpness can enhance detail and definition, too much can make the snares sound overly aggressive and synths overly harsh on the ear (especially saw synths or leads). Reducing frequencies in the sharpness ranges can help soften the sound and create a more balanced and warmer sound.

## **Sibilance**

Sibilance relates to a harsh 's' sound and sometimes 't' sounds on vocals. Both male and female vocals can suffer from sibilance, but it can be more prominent with female vocalists. You can use a DeEsser plugin to reduce sibilance but sometimes it can affect audio quality. You can use a dynamic EQ plugin with a fairly narrow cut to reduce harsh sounding sibilance for a more natural result. A Notch or Bell filter will work best.

## **Sub Rumble**

At the lowest end of the frequency spectrum are the 'sub' frequencies. This is where you'll find the sub bass that gives EDM and hip-hop their low end deepness and power. However, these low sub frequencies on synths can muddy up the low end and are simply not needed in this area. On synths, they can create a low end rumble that masks the sub and bass. Try a high pass filter on all synths up to 70-90 Hz to clean up the low end. This shouldn't affect the core tone and sound of the synths at all.

## **BOOSTING FREQUENCY TERMS:**

### **Air**

Air frequencies are at the highest end of the frequency spectrum and lead to openness, brightness, and clarity in the 10 to 20kHz ranges. Boosting these frequencies adds a delicate sparkle or shine to vocals, cymbals, instruments and can add a lovely high end sheen and polish to whole mixes, making them feel more natural and spacious. Too much air, however, can make a mix sound harsh or overly bright, and can also bring up any hiss to the forefront.

### **Body**

Body refers to the full, core frequencies of a sound, typically found in the low-mids but will vary depending on the instrument. The 'body' frequencies give instruments or vocals their sense of weight and fullness. Boosting these frequencies adds thickness and richness, making the sound feel stronger. However, be aware that too much 'body' can lead to muddiness and a lack of clarity.

### **Bright**

Does what you think it does! Bright, or brightness, refers to a sound that is clear, crisp, and well-defined in the higher frequencies. A bright sound has a sense of sparkle and clarity, making instruments like cymbals or vocals feel lively and present in the mix. Boosting the brightness frequencies on the Map (frequencies vary slightly depending on the instrument) enhances brightness, but too much can make the sound overly harsh, can add sibilance or make analog hiss more obvious.

### **Brilliance/Sheen:**

This is where you get that sought after 'polish' sound. And brilliance sounds exactly like it does - ultra clear, pleasant and defined. This offers up a lovely shiny polish in the upper frequencies of the mix that gives a clear presence and smooth brightness to instruments and mixes.

## **Clarity**

Clarity is important in mixes, and often applies to mid - high frequencies. Similar to presence and definition, clarity makes a sound very clear and clean where you can hear all of the fine detail of that particular sound without anything masking it. When used correctly, clarity can make all of the elements of a mix shine and leads to a pro sounding mix.

## **Click**

Certain kick drums feature a 'click' sound (sometimes called a 'beater') and it sounds like a click! Whilst most kicks will have lots of low end energy, the 'click' gives the kick some bite that can help it punch through a busy mix. However, too much click can lead to masking with other instruments in that area, including vocals, guitars, pianos and synths and can be grating if it's too prominent. However, if the kick's click is not prominent enough you can boost the click frequency range of 2-4kHz to make it more defined.

## **Crack**

Certain snare drums produce a 'crack' sound at around 2-4kHz. This can help the snare cut through a busy mix and give it some top end whack and power. Try a small bell filter boost here to add more 'crack' to the snare. This works best on acoustic snare drums that have been recorded rather than synthetic or sampled snares.

## **Crispiness**

Crisp, or crispiness, means a very clear, defined, and slightly bright quality on snares and hi-hats. This enhances the attack and presence of these drum elements, making them sound lively and articulate. Boosting these frequencies can add a very clear and present sound, helping them cut through the mix. However, too much crispiness can lead to excessive harshness and can make them sound shrill, so it's important to balance these frequencies to maintain a smooth and well balanced mix.

## **Definition**

Definition is where a sound is incredibly detailed and clear, similar to clarity but definition is probably a step up from clarity! Think of 'definition' as being as if you are hearing something in high definition! These frequencies can bring detail and clearness to your mid frequencies making a whole range of mid-range instruments sound pro and

polished in a mix. However, over-do the definition frequency ranges and the sound can degrade leading to a piercing or harsh sound that is deeply unpleasant!

## **Plucky**

Plucky is the finger or plectrum/pick sound played by a bassist (or guitarist) on the instrument's strings. It's a particularly thin and highly present sound that can help finger basses have more bite which makes them audible in the mix on bass-light sound systems. But too much 'pluck' can lead to unpleasant transient 'spikes' in the frequency spectrum that can be quite harsh on the ears.

## **Power**

Power on a kick is the deep, resonant low-end energy, usually found in the 50 to 100Hz area of the frequency spectrum. This frequency range gives the kick its weight and depth, providing a solid foundation in the mix. Boosting this area adds a sense of fullness, making the kick feel more dominant and powerful, especially in bass-heavy genres. If you overcook it though, too much power can lead to muddiness and clash with other low-end instruments, leading to frequency masking and a mushy, boomy low end/

## **Presence**

Presence gives clarity and forwardness to a sound, typically found in the mid frequencies. Boosting present frequencies can make instruments or vocals more prominent and upfront in the mix, helping them stand out without being too overpowering. It can be really useful at adding definition and detail and helps listeners perceive the sound as 'closer' or more engaging. However, too much presence can result in clutter of the mid frequencies and/or ear fatigue.

## **Punch**

The punch is important to aim for when you want powerful kicks. 'Punch' refers to the most powerful and impactful part of a kick which is usually found in the 100 to 150Hz range. Boosting these frequencies will give the kick a tight and strong sound with a well defined low-end presence that cuts through the mix without sounding too boomy. It adds weight and energy to the kick, making it feel more aggressive and impactful.



## **Sizzle**

Sizzle is a sound associated with hi-hats or cymbals and adds an energetic, 'sizzling' quality to the top end of the mix like a sizzling frying pan cooking sausages!. Sizzle means bright, sharp, and has a sustained high-frequency sound, typically found in the 6 to 10kHz frequency range. Sizzle enhances the brightness and excitement of hi-hats and cymbals, making them obvious and clear in a mix of any genre, but especially electronic, trap and hip-hop genres. Too much of that sizzle though can lead to excessive harshness and shrillness, making the mix feel overly sharp or piercing which means you wouldn't be able to listen to the mix too long without your ears hurting!

## **Sub**

Refers to the very low and deep 'sub' bass frequencies that you can hear and 'feel' in clubs and live venues. Genres like EDM, trap and hip-hop benefit from sub-bass frequencies underneath their basses as it adds low end energy to the mix. Too much sub could easily muddy a mix though and its resonances can be tricky to manage in terms of EQ and compression. Because it's so low and deep, you might not be able to hear the frequencies around 20-30Hz. But these frequencies can be heard and felt in clubs with huge bass sound systems. So test your sub on a subwoofer and on multiple sound systems to test the impact of the sub in your mix.

## **Warmth**

Warmth offers a rich and smooth sound. A sense of warmth on vocals, pianos, mix buses etc can add body and fullness making everything sound more rounded and less harsh. Boosting the 'warmth' frequencies enhances the tonal warmth of that instrument or sound, by giving it a more natural, pleasing sound that complements other parts in the mix. However, too much can cause muddiness, so it's important to strike a balance.