Claro

2.1   Quick start

Claro is an equaliser that aids the production process from composition to final mix. Three different views progressively add more in-depth insight and precision as you need it.

Produce view streamlines Claro into a quick, creative, and non-distracting EQ.

Tweak view zeroes in on the Produce result, opening up further correctional possibilities - Our cleanest, most flexible filters yet with a realtime analyser that adapts to your your EQ moves and helps to visualise resonances.

Mix view contains all the information you need to understand and assemble your mix. All Claro instances in your project are displayed in context for you to prioritise, allocate space, explore interactions and quickly mitigate excessive overlaps.

2.1.1 What if Claro isn't in my DAW after running the installer?

If the plugin is not showing up in your DAW after installation, it could be because your iLok installation is out of date or because your licence has not been activated yet. See this support article for detailed instructions.

2.1.2 Using Claro while composing and producing

If you're writing/producing, try using only Produce view to start with. Make quick tone shaping moves as you add musical elements. Try to resist Tweaking details early on.

2.1.3   Adding Claro to an existing mixing project

If you're working on a project that's ready for or in the middle of a final mix, try adding Claro to all tracks, buses, and effects returns. Then open the Claro instance on a lead track (e.g. vocals) and explore in Mix view. That track is your Reference. Yellow meter areas in the left-hand track list show where each other track is overlapping excessively with your Reference. Such overlaps can cause the full mix to sound cluttered or harsh, or simply make that Reference track difficult to hear clearly.

How to quickly add plugins to multiple tracks

- **Logic, Studio One:** Select multiple tracks and add Claro to one of them.

- **Cubase:** Select multiple tracks and add Claro to one of them while holding **Shift** and **Alt** .

- **Pro Tools:** Hold **Alt** when inserting Claro to insert it on all tracks.

- **Reaper:** Click the FX button on any track and search for Claro. Right click it in the list, select "Create shortcut", and enter a key combination. Now you can use that keyboard shortcut to add Claro to all selected tracks. Quick tip - To prevent all of the new Claro windows from appearing on-screen after running your shortcut go to Preferences, Plugins, and un-check "Auto-open FX windows after quick-add".

2.2   How to use Claro

While writing music in a DAW with plug-in synths, loops, and drum machines, source sounds all tend to take up lots of space across the spectrum. This can quickly lead to a very busy sounding mix. At this stage, a little bit of tone shaping goes a long way - if we can make what we're hearing a little closer to how a final mix could sound, we'll be able to make our musical choices with that final sound in mind.

If quick volume and EQ adjustments don't work to meld a new part with the existing instrumentation, perhaps the music would benefit from a different sound source or alternate melodic or chordal arrangement. Yet this is easy to lose sight of when we're able to dive down a rabbit hole of detailed EQ tweaking at any moment. We can find ourselves putting more time into tweaking a sound which struggles to fit than exploring the wider range of possibilities available by tweaking the instrumentation and the music itself.

A helpful approach is to use tools with fewer options while composing and different tools with more flexible options while mixing. However, if we can't see our early EQ moves that weren't quite right or are now causing a problem in the final mix, because they're in a different plugin than the one we're using to finesse, the experience is more difficult to learn from. Building intuition takes longer. With that in mind, Claro allows its flexibility to unfold over time. We don't need to ignore it in the early stages, or switch back and forth between tools in the later stages.

If we start with Claro, we can use it all the way through to the end.

2.2.1   Produce

Gut feeling is the key here. We can see immediately where in the spectrum the sound's energy is vs where we would like it to be - not just in terms of Hz, but in the language we usually use to describe sounds. Just drag a horizontal slider towards Definition, if that's what we want more or less of, then drag the circular gain control up and down to taste.

The same goes for the low and high cut filters above the energy meter. Just drag the left-hand Low Cut slider to the right to remove low end rumble or reduce weight and mud.

Frequency shortcuts

The set options for each band are inspired by various popular analogue EQs. They've been chosen because they're frequently useful and are often a great starting point - close enough while composing and mixing quickly and fully adjustable later on in Tweak and Mix views.

For anyone with an existing intuition for the sound of EQ moves in specific frequency ranges, these hover shortcuts can be even faster than the sliders. And using them is a great way to build that intuition!

Shelving modes
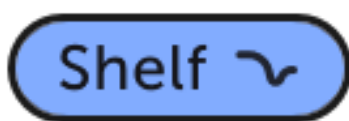
Enable the Low band for rumbly low end enhancement without the mud of a typical shelving EQ (a lot like the classic Pultec push/pull trick!). In Tweak/Mix views this behaviour is available for all bands by switching them into Shelf Shape and increasing the Overshoot control (more about this later)

Enable the High band for smooth airy boosts or subtle high end softening. The Slope is gentler than a typical shelving EQ, so can be pushed/pulled harder without harshness or dullness.

Tone and Width

On stereo tracks a Tone | Width button appears in the plugin footer. Toggle it to switch Produce view between overall stereo Tone shaping and stereo Width shaping.

Bright Width metering shows regions of the spectrum with wide stereo image, while dark areas show where the signal is narrow (or mono). Bands that boost or cut in regions with little or no Width will sound like they're bypassed.

Width bands apply EQ to only the "side" channel - attenuate a band to narrow the stereo image in that area of the spectrum, or boost to widen it. Do be careful when boosting - a little goes a long way! See the Stereo tone shaping section for more information about "mid / side" EQ and how to get the most from it.

Mono-ing the low end

Here the Width meter shows a sound with wide stereo image across the spectrum:

The low end Width energy around Rumble | Weight can be removed simply by dragging the Low Cut filter to the right. This is often a good thing to do on stereo instruments whose low end energy isn't fundamental to the bottom-end groove or ambience of the mix.

2.2.2   Tweak

When you need to get really surgical, dive into Tweak view!

All of your tone shaping moves from Produce view are carried over and can be further adjusted, and up to 16 additional bands can be added.
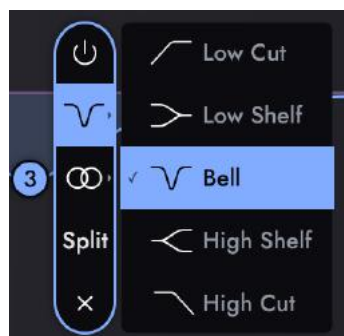
EQ controls
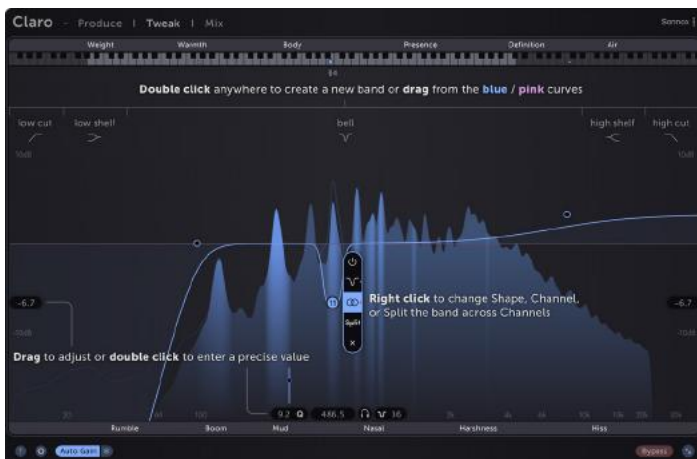
When multiple bands are selected, Gain, Frequency, Q, and Slope are adjusted relatively while Shape and Channel are adjusted absolutely.

Band Right Click Menu

Bypass bands: Double Click a band's handle to toggle Bypass or click

Shape

Low Cut: Removes all sound below the band's Frequency
Low Shelf: Boost or attenuate low frequency sound
Bell: Boost or attenuate either side of the band's Frequency
High Shelf: Boost or attenuate high frequency sound
High Cut: Remove all sound above the band's Frequency

Channel (stereo tracks only)

Applies the band's processing only to the selected channel. See Stereo tone shaping for details.
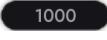
Split (stereo tracks only)

Splits the band across two channels.

A Stereo/Left/Right band splits into Left & Right A Mid/Side band splits into Mid & Side

Delete a band: Click the button.

Floating Controls

Gain (dB) `-6.5` **:** Gain (dB) controls float on the left and right sides of the EQ display, in line with the selected band. Drag vertically to adjust the band's Gain without adjusting Frequency, or Double Click to enter a precise value.

Frequency (Hz, Note) Q control `1000` `B5` **:** Frequency (Hz, Note) controls float below and above the selected band. Drag left/right to adjust the band's Frequency without adjusting Gain, or Double Click to enter a precise value in Hz or as a Note value.

Q control `2.5 Q` **:** Adjusts how wide a Bell band is across the frequency range, and how much resonant boost a Low or High Cut filter band has at its cutoff frequency: Scroll, Command Drag (macOS), or Control Drag (Windows) and Bell band's handle to adjust its Q. Drag a Low/High Cut band's handle vertically to adjust its Q.

Slope control `12` `12` `12` **:** Adjusts how steep the edges of a band's curve are. Use a Slope ot 6 (dB/octave) for smooth and subtle shaping, 12 to match the sound of a typical EQ, and higher Slopes up to 120 for extremely precise spectral tweaking. Scroll , Command Drag (macOS), or Control Drag (Windows) and Low/High Cut band's handle to adjust its Slope.

Shelf Overshoot `2.5` **:** Overshoot replaces the Q control for Shelf bands. Increasing the Overshoot creates a dip on the other side of the shelf boost (or vice versa). A setting of 0% has no overshoot, and behaves like a typical EQ shelf. Settings around 50% mimic the behaviour of some analogue EQs renowned for their "musical" qualities. Scroll, Command Drag (macOS), or Control Drag (Windows) a Shelf band's handle to adjust its Q.

Listen 🎧 **:** Drag the Listen control to solo the region around the selected EQ bnad. This can be helpful when exploring the contribution of certain parts of a sound to the rest of the mix, and when exploring with the aid of the resonance metering. Alt Dragging any EQ band's handle in the graph also activates Listen mode. While Listen is active, drag vertically to adjust the Listen volume without changing the band's EQ gain.
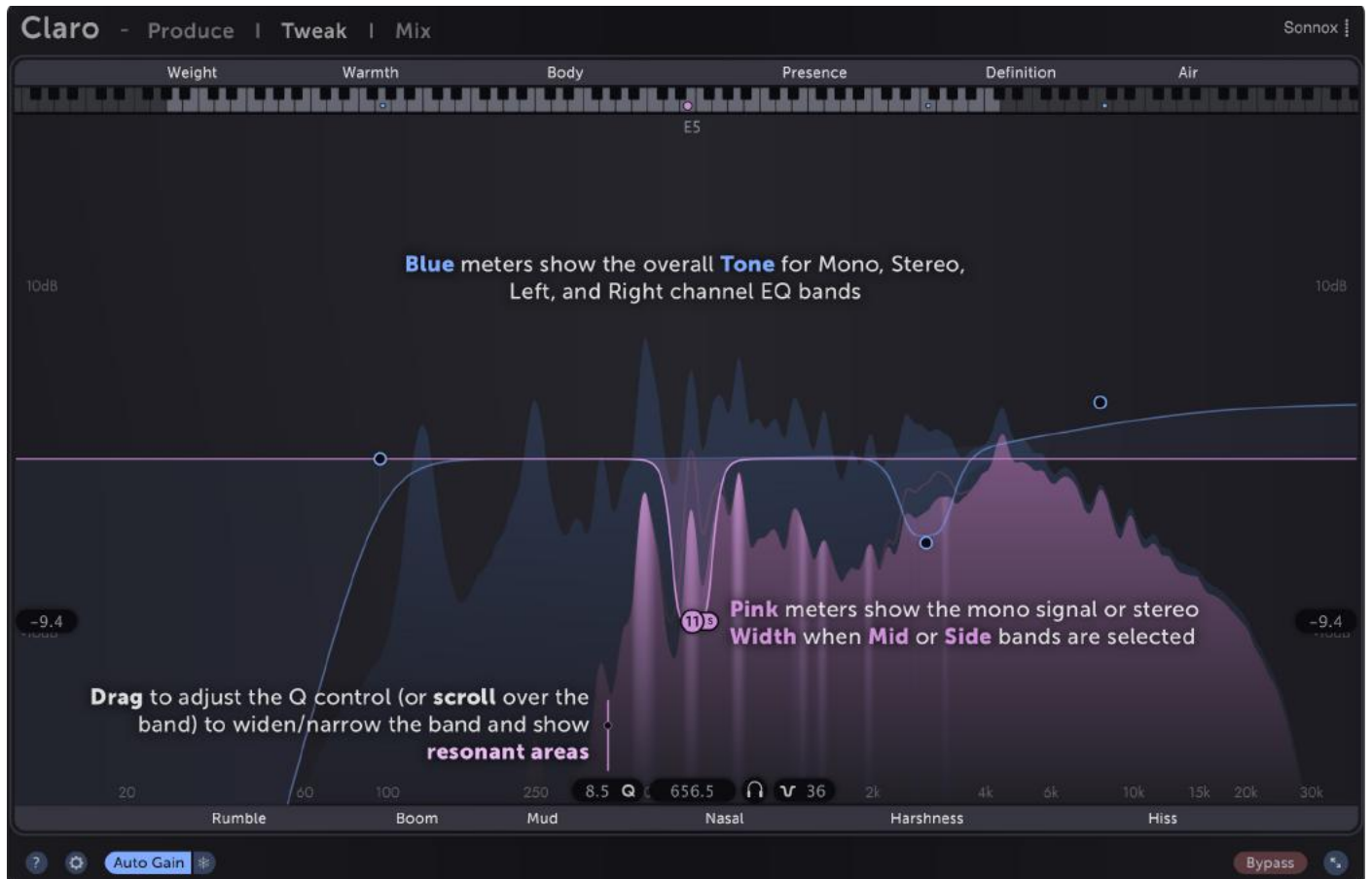
Precise control: Shift Drag any control to adjust it with greater precision. Double Click any numeric label to enter a precise value with the keyboard.

Piano note value display

This display shows the note value of the current band's centre Frequency. Double Click the value to enter a note value to set the band to.

Adaptive spectral metering

Claro's spectral metering adapts to your EQ moves to always show the most useful information - whether you're tweaking overall tonal balance or resonance- hunting, on the stereo channel or on left, right, mid or side sub-channels.

Resonances
When adjusting overall tonal balance with a wide Bell or Shelf band, the meter becomes slow and smooth, showing the overall balance of the spectrum. When searching for resonant areas to tweak, the meter shows precise peaks, and the peaks which resonate most over time are highlighted.

What does resonance mean? These are the sharp, tonal characteristics of some signals which ring over time, like the overtones of a bell. They're present in most sounds, and help determine that sound's character, including its pitch. Sometimes, though, such areas can give the sound a boxy or harsh character that we would prefer to reduce.

It's common to find these unwanted resonances by boosting with a narrow Bell band and sweeping the Frequency up and down. The idea is that the resonances we want to reduce will jump out the most, showing us where to place our EQ band. In practice, though, this approach has downsides.

In short, all parts of a signal tend to sound quite bad when sweeping a narrow boost. And when we decide where to place our EQ cut, we've just been listening to an exagerrated version of the "problem" area. The result: it's still often difficult to find the areas we're looking for, and we can over-attenuate because we've primed ourselves by boosting first.

With Claro, there's no need to work around these downsides. Simply grab a Bell band and scroll to narrow the Q. Then think, for example:

Defaulting to Tweak view

If you tend to use Claro for later-stage mixing projects and always want to dive right into the details in Tweak view, simply toggle the option in Preferences.

2.2.3   Mix View

Claro's Mix view contains all the information you need to understand and assemble your mix. All Claro instances in your project are displayed in context for you to prioritise, allocate space, explore interactions and quickly mitigate excessive overlaps.

A single Claro Mix view allows you to very quickly explore your entire mix and tweak any two Claro instances at the same time without needing to find and juggle many plugin windows.

Workflow

There are four key sections in Mix view:
- The track list on the left
- The Reference Track EQ slot (top). To change the Reference Track Click the yellow star in the track list or Drag the track onto the top EQ slot.
- The Working Track EQ slot (bottom): To change the Working Track click anywhere in the body of a different track in the list or Drag the track onto the bottom EQ slot
- The footer, which contains features specific to Mix view

The left-hand track list shows the spectral energy of all tracks on which Claro is used. Blue meter areas show the overall energy of that track, just like the Produce view metering. Yellow meter areas show where that track overlaps with the energy of your Reference Track enough that their combination might sound muddy, harsh, or otherwise make the Reference Track more difficult to hear.

Any track that shows large or numerous yellow overlap areas is a good candidate to load into the Working EQ slot, so that its tone can be tweaked alongside the Reference Track.

Overlap metering and masking

The yellow overlap areas show where the Reference Track and Working Track are overlapping enough that the Reference is struggling to cut through the mix. Sometimes these excessive overlaps are called "collisions" or, more precisely, "spectral masking".

Masking occurs when a frequency range of one signal is sufficiently louder than the same frequency range in a second signal such that our ear-brain system doesn't notice that frequency range in the quieter signal. This is why we can have the experience of a single track being easily audible when solo'd but difficult to hear clearly in the full mix.

In a sense, all mix elements compete for attention and one of our jobs while mixing is to make sure that the right elements win at the right moments, while keeping the overall tone of the full mix balanced.

A good way to approach this in Claro's Mix view is to
- Decide which track should lead in each frequency range. For example, you might want a lead melody part or vocal to lead in the Body- Presence range
- Start by setting that track as your Reference
- Check the track list for other tracks which show yellow overlaps
- Load one into the Working track EQ slot and tweak both EQs to taste, then load another and repeat
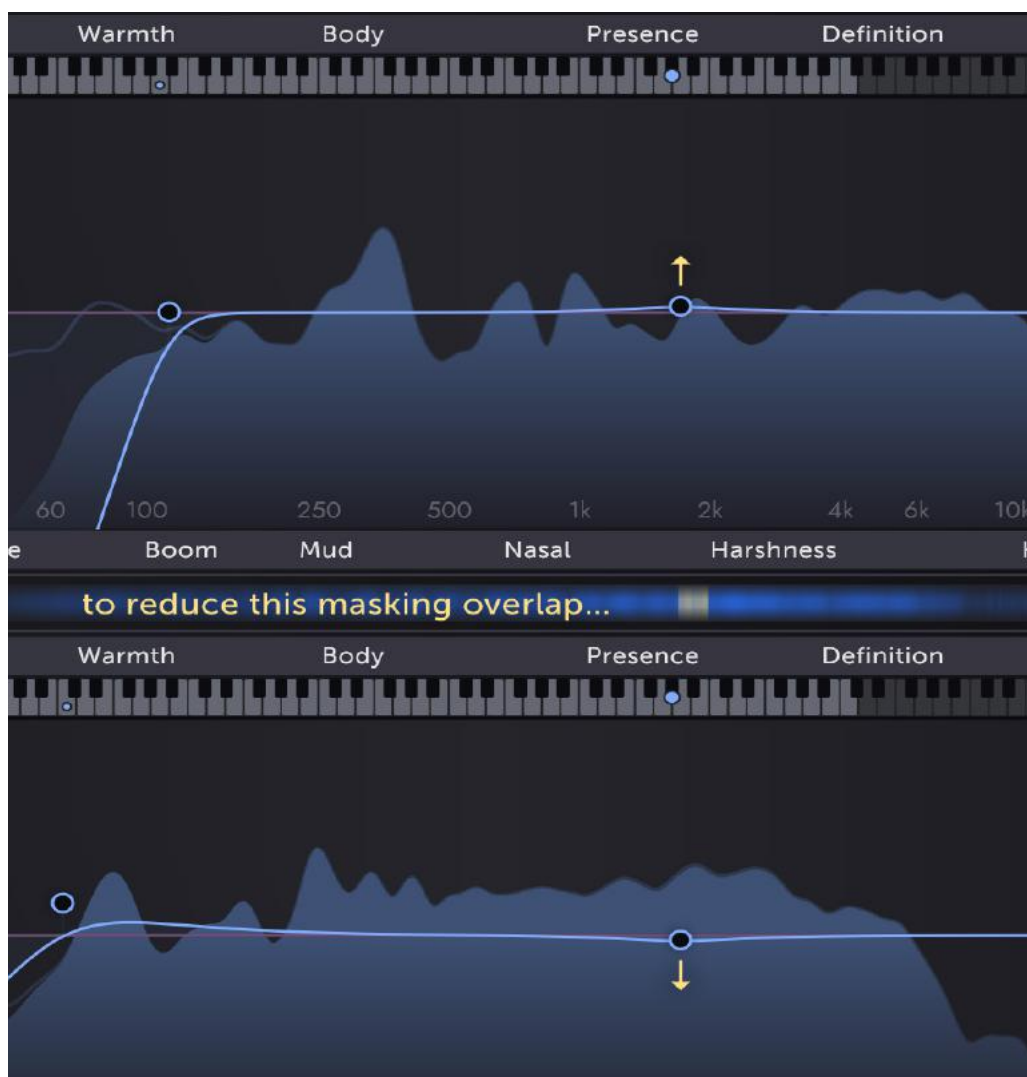
By tweaking overlapping tracks to create space for the lead melody to sit in we can avoid counter-productive moves such as making that lead melody line easier to hear by turning it up or boosting its Presence, both of which might unbalance the mix.

Sometimes it's even more effective to do a little of both - enhance the lead's Presence while attenuating the same range on overlapping tracks. See Invert EQ moves for a way to make this easier.

Masking is not always bad

All mixes, including our favourites, contain lots of masking. Instruments and voices overlapping helps the mix blend together with character that is greater than the sum of its parts.

- Less masking makes elements sound more distinct. This can be desirable, for example when we want melodies and lyrics to be highly intelligible, or when the groove of the music relies on the interplay between kick and bass in the Warmth - Body range.
- More masking can make elements sound less distinct from each other, as if they're blending together. This can be desirable too, for example if we want melodies and lyrics to sound embedded deep in the mix, rather than floating on top of it, to enhance the intensity of the music.

Which direction to tweak towards is up to you. Claro aims to make overlaps and masking visible and enable you to explore whether they're helping achieve the sound that you want.

Can I still use my faders?

Please do! Claro's Mix view metering is scaled by your DAW faders to match what you're hearing, rather than matching the pre-fader track volume. And the overlap metering is always relative to the Reference Track.

So, if you need to turn everything down towards the end of a mix, you can do so with a gain plugin before all Claro instances, or by pulling all of the DAW faders down by the same amount - without affecting the overlap metering. See Compatibility for details about your DAW.

This also means that your DAW faders can be used to reduce the masking that you're seeing and hearing. For example, the amount of masking between this lead vocal track and other mix elements suggests that the vocal is too quiet.

In this case, pushing the lead vocal track's fader up might be a more effective first move than boosting its Presence or attenuating the Presence of other tracks. If this vocal was already sitting at the volume you want, but still wasn't intelligible enough, tweaking the balance of Presence across multiple tracks would help.

Tip: Excessive masking of lead elements suggests that an alternate musical arrangement may be even more effective than volume or tone tweaking.

Invert EQ moves

Boosting on one track and attenuating on the other can reduce excessive overlaps while changing the tone of each track less. This is because less EQ gain is required on each track to create the same amount of difference betwen them.

To do this quickly in Claro, enable the Invert EQ button and EQ as normal.

When enabled, all EQ adjustments are mirrored on the other instance with inverse gain.

Tracks / Buses / Effects visibility

Show: Tracks Buses Effects

When working on a mix with many tracks, buses, and auxiliary effects returns the track list filtering buttons in the footer allow you to hide track types that you don't want to see yet.

For example, you might want to start with only Buses visible for a top-down mixing approach - explore overlaps and subtle EQ tweaks across buses before stepping down to the level of tracks. Or you might prefer the opposite bottom-up approach, starting with just the Tracks visible!

Or you might find that Reverb and Delay Effects returns seem to significantly overlap with all other tracks, and therefore not want to see their metering all the time.
Remember, masking is not always bad.

Claro categorises tracks by the track type in the DAW, or based on the name of the track where the track type is not available. See Compatibility for details.

Bypass EQs

Bypass EQs temporarily bypasses both of the loaded tracks' Claro instances.

The button is non-latching to prevent instances from being left bypassed by accident when different tracks are loaded into the Reference and Working slots.

2.3 Tech notes

2.3.1 Auto Gain

What is it for?

Boosting with an EQ makes the track sound louder, which can give the impression that it sounds better. Even when comparing two signals which are identical apart from a slight difference in volume, we still tend to perceive the louder one as sounding better. This poses a challenge when boosting with an EQ - are we really improving the tone of an instrument and how it sits in the mix, or is the loudness increase tricking us?

If we don't compensate for boosts by adjusting the track's fader, this "louder sounds better" effect can lead us to boost other tracks too. If we aren't careful we can end up with much higher signal levels than we started with across many tracks and potentially overload other plugins further down in the chain, or even the mix bus. This is one reason for the oft-shared advice to cut more often than boosting.

So why don't we?

The other side of the "louder sounds better" coin is that reducing loudness tends to sound less powerful, less exciting, a little boring. And that usually isn't what we want. Yet compensating for EQ cuts by boosting the track fader is fiddly.

With Auto Gain enabled in Claro, EQ cuts don't sound boring and EQ boosts don't start a loudness race between tracks. Mixing feels simpler - use Claro for tone and your DAW faders for volume, rather than the two feeling intertwined.

I've used auto gain before and it didn't work. Is this any different?

Some other equalisers also provide automatic output gain control. They tend to operate by assuming that the input signal's spectrum matches pink noise - constant energy across the spectrum, with energy gently reducing as frequency increases. When EQ is applied the output gain is adjusted as if to keep the resulting pink noise spectrum the same loudness as before.

However, most instruments' spectra do not match pink noise... for example:
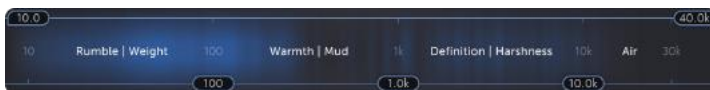
 A rumbly kick drum
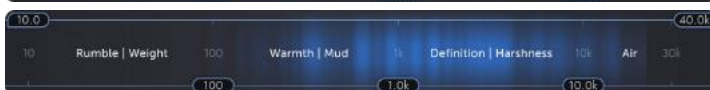
 Or a voice with little low end weight

Both spectra are very different from pink noise. When an EQ's automatic gain adjustment assumes a pink noise spectrum, adding definition to such a kick drum, or adding weight to such a voice, will make the track sound quieter! This feels unexpected and requires adjusting the fader to compensate - the exact problem we want to avoid!

How Claro's auto gain is different

Claro's Auto Gain follows the spectrum of the input signal. If you boost or cut in a region which contains no energy the track will stay the same loudness - just like when auto gain is disabled. If you boost or cut in a region which does contain energy the output gain is automatically adjusted so that the loudness of your signal stays the same loudness.

The result is that the track will sound about the same loudness no matter what you do, and no matter how much the input signal's spectrum differs from pink noise. And Claro's Auto Gain only updates when the EQ curve changes, so you don't need to worry about it behaving like a slow volume leveller.

Freezing Auto Gain

This can be useful when polishing a mix in which Claro was used from the beginning with Auto Gain enabled.

For example: you're fine-tuning the high end definition of a kick drum to prevent it from interfering with the definition of a lead instrument. In this case we might not want the loudness of the kick's low energy to change because that would upset its balance with the low energy of other bass instruments.

Freezing Auto Gain will retain that balance and prevent it from changing with subsequent EQ moves.

You can Freeze Auto Gain in Produce or Tweak view by clicking the snowflake button Auto Gain ✳ In Mix view, the Auto Gain of the two loaded tracks can be Frozen / Unfrozen by toggling the Freeze Auto Gains button.

Disabling Auto Gain

If you can't get used to how different tone shaping and mixing feels with Auto Gain enabled, you can disable it completely. When Auto Gain is disabled Claro's internal output gain is locked to 0 dB, and it will feel more like other EQ plugins.

To default Auto Gain to disabled we recommend using your DAW's preset manager to load new instances with custom settings.

2.3.2   Stereo tone shaping

Overview
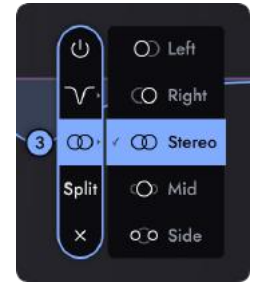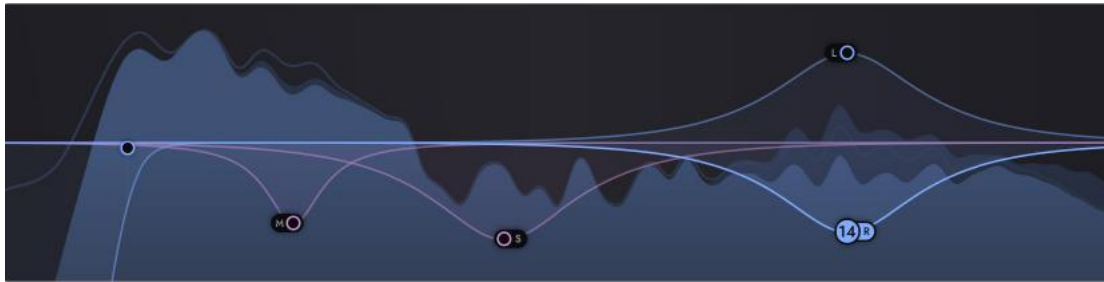
On stereo tracks Claro bands can be set to process the overall stereo signal (processing left and right channels equally), or set to process only the Left, Right, Mid, or Side sub-channel. This allows sub-channels to be processed differently, for example to boost Definition on the left while attenuating Definition on the right in order to bring right-heavy hi-hats in a drum loop into the centre.

To change the channel that a band is processing, Right Click on the band and select from the Channel menu. Alternatively, click the Split button to duplicate the band across multiple channels. A Stereo/Left/Right band splits into Left & Right, while a Mid/Side band splits into Mid & Side

Here are some examples where sub-channel bands are useful when processing a stereo drum loop

- Boost a Left channel band to shift mono parts of the spectrum (e.g. the Body of a snare) towards the Left to clear space for another mix element, such as a lead synth line or vocal hook. Such shifting to the left can be made more effective by simultaneously attenuating the same frequency range on the Right channel
- Attenuate low frequency resonances in the Mid channel to fix a muddy or boomy sounding kick without attenuating low frequency stereo ambience
- Boost Body or Presence in the Side channel to enhance stereo ambience without drastically changing the overall tone of the signal

Width and mid/side tone shaping

Claro's Produce view Width section uses Side channel bands to adjust the stereo image. This is particularly useful, for example, to quickly mono or centre the Low end by Low Cut filtering the Side channel, or to enhance ambience by boosting Presence or Definition on the Side channel with a wide Bell or smooth High Shelf.

Tweak and Mix views provide more control over these Side channel bands, and allow bands to process only the Mid channel.

Mid channel bands process only the mono components of a stereo signal - only those components which are heard in the centre of the stereo image.

Side channel bands process only the wide stereo components - only those which are heard towards the left and right sides of the stereo image.

Side channel Width processing is achieved by processing the difference between the left and right channels. Because of this, we advise being careful when boosting Side channel bands. Drastically increasing the difference between the left and right channels of a stereo signal can, rather than sounding increasingly wide, begin to sound unnatural. In some cases, extreme Side channel boosting can result in poor mono-compatibility of your mix, where wide stereo frequency ranges are too quiet when the mix is played on a mono system.

2.3.3   Placing EQ bands above 20 kHz

While we cannot hear frequencies above approximately 20 kHz, placing an EQ band above 20 kHz can result in a gentler response below 20 kHz than can be achieved only by adjusting the Shape, Q, or Slope. It is often possible to achieve a similar response with a band below 20 kHz, though it takes some fiddling.
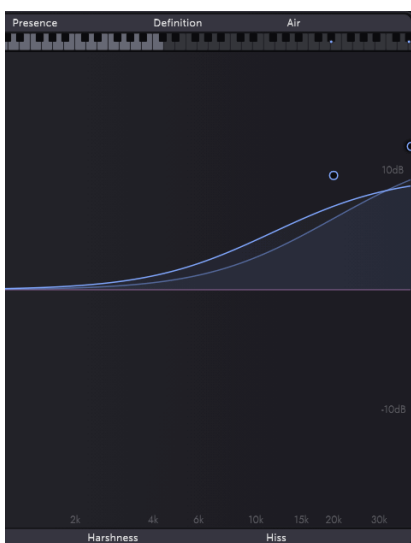
For example, compare the shape of these 6 dB/oct High Shelf bands as gain varies:

The higher the band's centre frequency is placed, the more gain must be increased for a similar response in the audible range, effectively making it more difficult to over-do the EQ move, and easier to find the sweet spot.

So in general, it's easier to create a smooth and subtle high frequency Air lift by placing a 6 dB/oct High Shelf band above 20 kHz.

Quick tip - Using a 6 dB/oct High Shelf cut at 40 kHz to subtly reshape the extreme high end can make aggressive leads sound less fatiguing - a little more analog - without losing the brightness they need to cut through the mix.

2.4   Compatibility

2.4.1   Supported DAWs

Claro Produce and Tweak views are compatible with all DAWS which accept VST3 or AU plugins, and with Pro Tools (AAX). Mix view support relies on plugin extensions which some DAWs do not fully support.

2.4.2   VST3 and AU

Please use VST3 in all DAWs which support VST3 and AU. Claro's Mix view is only supported for the AU format in Logic Pro X.

2.4.3   Mix view compatibility

DAW	Track name	Track order	Fader scales Claro meters	Track / Bus / Effect
Ableton Live	✅	✅	✅	abc
FL Studio	✅	✅	✅	abc
Logic Pro (Intel)	✅	✅	❌	abc
Logic Pro (Apple Chips)	❌	❌	❌	❌
Cubase	✅	✅	❌	abc
REAPER	✅	✅	✅	abc
Studio One	✅	✅	✅	✅
Cakewalk by BandLab	✅	✅	✅	abc
Pro Tools	✅	❌	❌	abc
LUNA	❌	❌	❌	❌

VST3 Mix view relies on the Presonus plugin extensions. In DAWs which do not (fully) implement these extensions and therefore do not tell Claro the Type of track it is inserted on, Mix view uses the track name to deduce whether the track is a Bus or Effects return.

If the track name contains (case-insensitive)...	the track is classified as
Reverb, Verb, Hall, Plate, Spring, Chamber, Ambience, Echo, Delay, Effects, FX, Aux, Return	Effect
Group, Bus, Submix, Sub-Mix, Sub Mix	Bus
Anything else	Track

2.5   Troubleshooting

Mix View: Some instances are not visible in the track list

- **Cause:** If Audio Unit and VST3 instances are used in the same project, the Audio Units will only show other Audio Units, and the VST3s will only show other VST3s.
- **Fix:** Replace the Audio Units with VST3s.

Mix View: All tracks show in a single folder or have no name

- **Cause:** Using Audio Unit instances in any DAW except for Logic Pro.
- **Fix:** Replace all instances with VST3.