

CROWE SOUND LAB

THE FUTURE OF ANALOG



TRACKER

PRODUCT MANUAL:

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Congratulations and welcome to the future of analog! As the proud new owner of a Crowe Sound Lab Tracker, you have taken a monumental step towards saturation excellence!

WHY TRACKER?

For years, our founder struggled with “all-in-one” outboard hardware that literally drowns the pro audio market with features and confusing marketing. To the discerning engineer, producer, or musician seeking saturation, very little outboard hardware that is both affordable and focused on saturation actually exists. Tracker was created from the very same components that adorn some of the most beloved American Preamps on the market, but it’s not a preamp, it delivers no amplification whatsoever. What Tracker gives you is saturation without all of the expensive components that you normally have to pay for when all you want are American Preamp harmonics.

In fact, Tracker is more of a minimalistic approach to the classic saturation that we have come to expect from much more expensive outboard hardware. Due to its battle-tested, vintage design, we are confident your Tracker will be a much used tool in your studio for decades to come!

PRODUCT OVERVIEW

Tracker has two primary features: Saturation and High-Pass Filter.

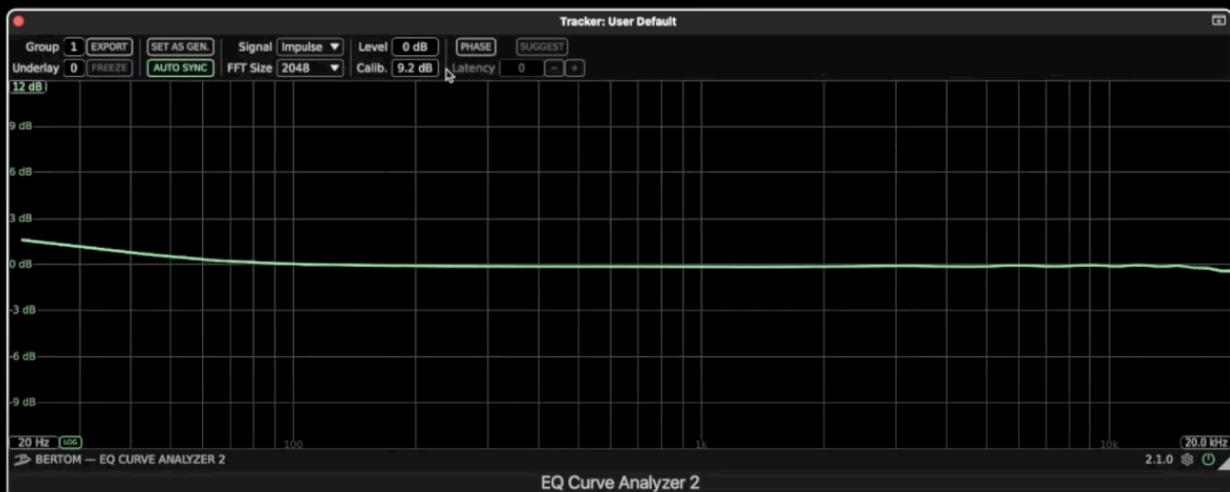
1.) **Saturation** - Tracker is just one stage of a three-part, American preamp that became popular in the 1970s. Most preamps have a Microphone, Amplification, and an Output stage. Since Tracker is purely a line-level device, it allows you to bypass the Microphone and Amplification stages and send your signal through the Output stage, thereby imparting the characteristic saturation and signal shaping that we have come to expect from such an incredible preamp circuit.

2.) **High-Pass Filter** - Because Tracker was primarily developed as a recording tool, although it can be employed at any stage of the tracking and mixing process, even mastering, we added a High-Pass filter which is typical of most tracking EQs. Generally, engineers do not prefer to fully EQ a source while tracking, however for many sources, a low-cut filter which eliminates low-end pops and unnecessary frequencies is usually employed. With Tracker, you can choose to send your signal through unaltered, or gently roll-off the low-end where applicable.



FREQUENCY RESPONSE

Generally speaking, any components you add to your FX chain should provide a predictable, intentional frequency response. This means no sharp boosts or cuts in the frequency spectrum by default (i.e., a flat response). Unfortunately, not all outboard hardware or plugins - the worst offenders - respect this rule. When a component in your chain alters the frequency response, you now potentially have EQ issues that can either impact a single source or build-up unknowingly within a mix. This is an unfortunate reality but something that is completely avoidable if you employ the correct components into your FX chain.



The Tracker frequency response is nearly dead flat. Rest assured, it won't be tricking your ears.

HARDWARE SETUP

You will connect Tracker to your Interface using TRS 1/4" cables:

- 1.) Start with the Line-Outs from your Interface (Left=1 & Right=2). Here I have chosen a Scarlett 4i4 as the example because it is one of the most popular interfaces for home studios.
- 2.) Connect the Line-Out from your Interface to the Inputs on the Tracker (Line1=Left & Line2=Right).

NOTE: You can choose to use only one mono channel, or both in dual mono, or employ the Tracker in Stereo with both left and right sides.

- 3.) Now from the Tracker, connect your TRS cables to Out 1 & 2, and connect the other ends to the Line-In on the front of your Interface.



NOTE: Obviously this setup will vary depending on your hardware situation, but the fundamentals will remain the same. Tracker supports a line-level signal and will present back to the interface a line-level source, so Line-Out and Line-In are required at both ends.

CAUTION: Some interfaces, like the Focusrite Scarlett, do not support true Line-Inputs (i.e., they do not bypass the microphone preamp). Check if your interface supports true line-in, if not, ensure the gain on your Interface inputs is at a minimum by default. You may choose to increase the level of input after your software setup, but this is generally not needed.

SOFTWARE SETUP

Once you are connected, it is time to open your DAW and finish the setup. Since anything you place in the FX Chain of your track does not get printed to the track during recording, in the example below, we are going to add Tracker to an FX track which will send its signal to the track that will be capturing the recording.

Sends & Returns - Most DAWs have an I/O plugin that allow you to route a track to a Line-Out port or receive a Line-In source into your Interface. In Logic Pro, this is called the I/O plugin. On other DAWs it may be called:

- **Ableton Live:** External Instrument
- **Pro Tools:** Instrument Track
- **FL Studio:** MIDI Out
- **Cubase:** External Instrument
- **Reaper:** RealRoute

You will employ this plugin to both send and return the signal to/from the Tracker. Line-Out=Send and Line-In=Return.

1.) **Source Track** - On the track receiving the input from a microphone or other source like a synth, or an already recorded track, we will call this your **Source Track**, place the I/O plugin in that track's FX chain, and then in the plugin set the Sends to the Line-Out ports and the Returns to the Line-In ports on your interface.

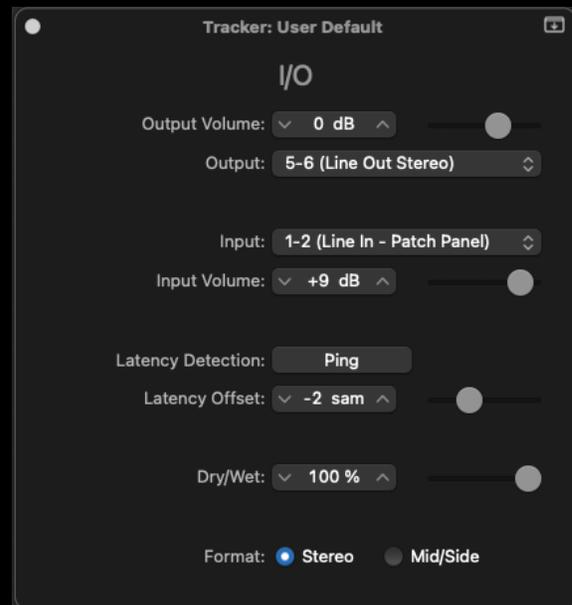
2.) **Source Track** - Now set the output of this track to a Bus (e.g., Bus 51).

3.) **Recording Track** - Now create a new track, the **Recording Track**, and set the input to the Bus where you sent the output of the **Source Track** (e.g., Bus 51). This will receive the output of the Source Track, including the Tracker signal, so it can be recorded.

NOTE: You may want to create a pair of Source Tracks so they can be used against two mono mics/instruments/etc. or a single stereo track for any stereo sources.

4.) **Return Gain** - Since Tracker has a 9dB Insertion Loss, it is recommended you add 9dB to the Return signal in order to achieve Unity Gain as you audition your track. This is also useful when you want to A/B the Tracker.

NOTE: It is best to ensure your I/O plugin is configured for latency as most external routing will return a signal that is a few samples faster or slower than the DAW. In Logic Pro, this is called a Ping Test.



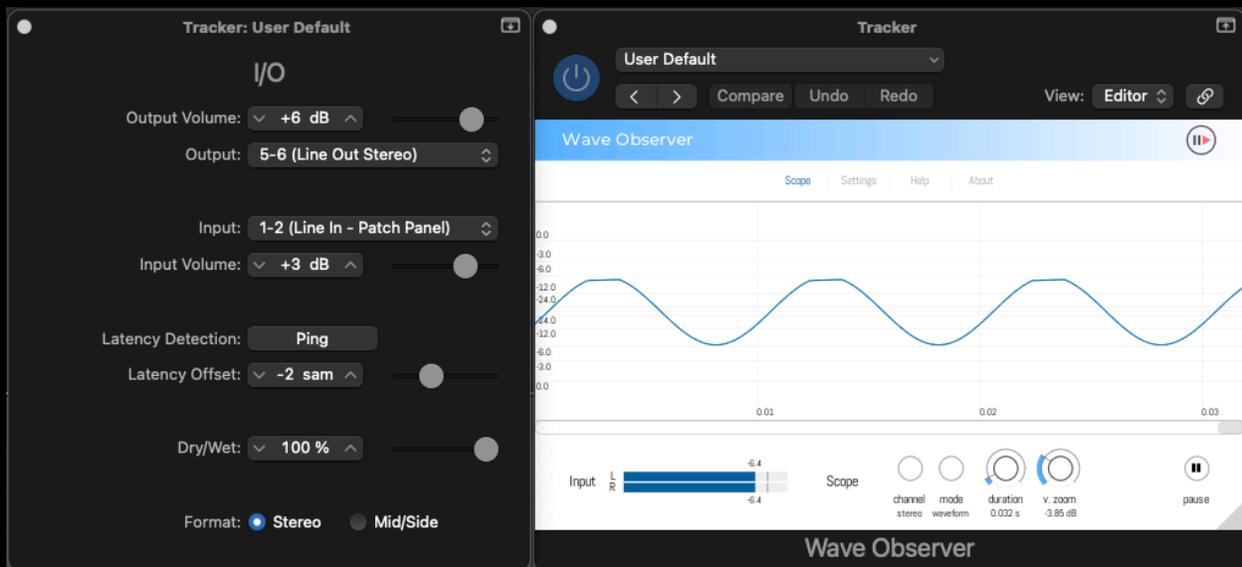
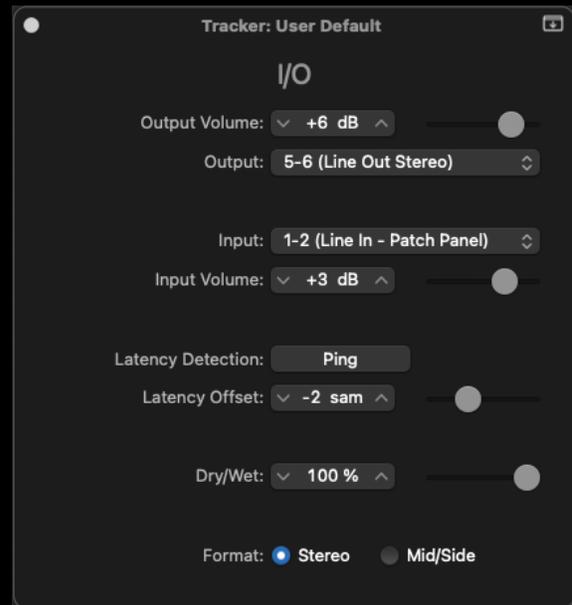
5.) **Initial Source Gain** - It is recommended the peak of your Source is at -6dB to start. Tracker has a sweet-spot around -6 to 0dB before it starts to clip the signal. At -6dB, you will get a gentle amount of saturation. As you increase the send, the harmonics will intensify.

If you are recording with a mic or an instrument, check the signal and ensure it is near this range before moving forward. If you are employing an already recorded track, set the peak of the track (i.e., normalize it) to -6dB.

6.) **Setting Send / Return Levels** - Tracker will perform quite well from -6 to +6dB, so all things being equal, if your Source has a peak of -6dB, you can add up to 12dB of gain to the Send (Output Volume) as you set the level of saturation desired. Audition the source and increase the Send level until the saturation is acceptable. Turn the I/O plugin off and on to A/B the difference.

NOTE: As you increase the Send level, you will need to decrease the Return level at equal increments to achieve Unity Gain until the send hits 0dB, after that, clipping will prevent the Return signal from additional gain.

Clipping is useful for managing transients or increasing headroom because it shaves-off the peak of the signal. When this occurs, Tracker has reached its full potential and cannot output the signal at the same level as the input. Even though it is considered destructive to the signal, analog clipping is NOT the same as preamp clipping, and will not cause a source to become unusable. Notice the Return level is still around -6dB.



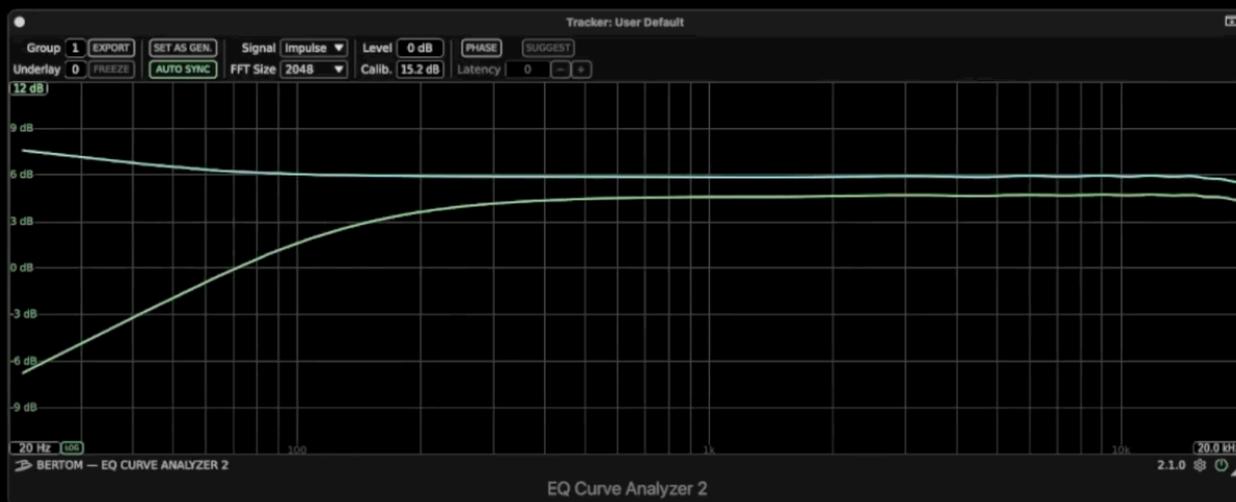
7.) **Record & Recycle** - Once the send level is achieved, you are ready to record. Once recording is complete, you can reuse your **Source Track** for additional recordings. This makes it easy to employ Tracker throughout your tracking session.

HIGH-PASS (LOW-CUT) FILTER

The filters on the Tracker are primarily utilized to prevent low-end pops and rumble from being recorded. These generally occur when using a Condenser microphone - they can occur with any microphone - because they are so sensitive to atmospheric noise (e.g., HVAC systems) and the proximity effect (e.g., standing close to a mic). Suffice to say, if you are recording a vocal or instrument which does not require frequencies below 200-400Hz, a Low-Cut will not limit your recording.



Here is the frequency response of a channel with no High-Pass Filter engaged, and one fully engaged. Notice the cut at 20Hz is around 12dB lower than the original signal that is not attenuated. This is a gentle roll-off at 20Hz, which both prevents unnecessary phase shifts and does not dampen upper frequencies.



NOTE: Notice also the overall gain of the signal is reduced when the Low-Cut is fully engaged. Low-end information requires the most voltage to produce, therefore if you cut-out a majority of it, the overall loudness of the track will be minimally attenuated. This should not cause any issue with maintaining a near Unity Gain signal.

During tracking, it is best to audition the source while adjusting the Low-Cut filter. You are looking to reduce or eliminate unnecessary low frequency information here, without negatively impacting the source.

TIP: The **Bertom EQ Curve Analyzer 2** is a free tool, donations are accepted by the developer, and an excellent way to test your equipment to learn how hardware and plugins impact the frequency range. We highly recommend any engineer who employs either plugins or outboard to download this plugin and get familiar with their equipment. You may be surprised what some plugins do to your signal!

FEATURES

- 2-Channel Stereo or Dual Mono
- Low-Cut Filter @20Hz
 - 5dB / Octave (13dB per Decade)
 - 20Hz to 500Hz
 - Maximum Cut: 15dB @20Hz
- 1/4' TRS Input and Output Jacks
- Supports Line-Level Audio

COMPONENTS

- Hammond Desktop Case (8"x8"x3")
 - Black Powder Coat Finish
 - Laser Engraved Front & Rear Panels
- Custom-Wound Steel American Transformers
- Vishay Resistors
- Long-Life Ceramic Capacitors
- TT Electronics Potentiometers (500k Cycle Life)
- Vintage RCA-style Amphenol Black Dials
- Amphenol Audio 1/4" Jacks
- All Discrete, Hand-Wired Components

TECHNICAL SPECS

- Frequency Response: 20Hz to 20kHz
- Input/Output
 - Line-Level Audio
 - 1/4" TRS Balanced
 - Input Impedance: 75 Ohms
 - Output Impedance: 600 Ohms
- Signal-to-Noise Ratio: 94dB (+4dB/-90dB)
- Insertion Loss: 9dB
- 100% Passive, No External Power Required

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