The Fabulous Party Boys and Adapting the Tuba for Modern Popular Contexts

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Abstract

The Fabulous Party Boys and Adapting the Tuba for Modern Popular Contexts

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Tubas are instruments that are used primarily in classical (a term used broadly in this instance) settings. While wind bands, orchestras, marching bands, and brass ensembles have consistently held need for the tuba, the instrument has been seldom used in other contexts that garner mass appeal since the 1920s, when the double bass usurped the tuba as the bass instrument of choice in early jazz music. As a tuba player that has played in a variety of popular styles, I have arrived at the belief that the instrument's decline in use is the result of a number of practical and acoustic disadvantages that it has relative to other bass instruments that coevolved with these applications. I have recorded an album, *The Fabulous Party Boys*, that among other things attempts to overcome these disadvantages as they relate to funk music, and in this paper I will explicate what the disadvantages are as well as show how I have managed to mitigate them.

The ten songs that comprise the album and body of work for this dissertation are attached as supplementary files. The song titles are: (1) You're Fabulous, (2) Roma Tomatoes, (3) Take a Trip, (4) Nothing Here For You, (5) Hot 'n' Ready, (6) Juice Box, (7) Smoothie Sauce, (8) Meat Thief, (9) My Kinda Lovin', and (10) Doin' It Harder.

Tubas are instruments that are used primarily in classical (a term used broadly in this instance) settings. While wind bands, orchestras, marching bands, and brass ensembles have consistently held need for the tuba, the instrument has been seldom used in other contexts that garner mass appeal since the 1920s, when the double bass usurped the tuba as the bass instrument of choice in early jazz music. As a tuba player that has played in a variety of popular styles, I have arrived at the belief that the instrument's decline in use is the result of a number of practical and acoustic disadvantages that it has relative to other bass instruments that coevolved with these applications. I have recorded an album, *The Fabulous Party Boys*, that among other things attempts to overcome these disadvantages as they relate to funk music, and in this paper I will explicate what the disadvantages are as well as show how I have managed to mitigate them.

The most obvious problems that the tuba has in modern popular contexts are the results of the instrument simply not being loud enough to be played comfortably when left without sound reinforcement in these settings. While playing alongside drum sets and electric guitars, instruments that are ubiquitous in funk music, tubists that are not using amplification find that they need to play extremely loud if they are to hear themselves and be heard by others. The seemingly insurmountable conundrum of this issue is that tubas generally get brighter as they are played louder, when what is really needed for them to stick out as bass instruments is more low frequencies. The more noticeable problem from the player's perspective is that one develops issues with consistency, accuracy, and tone after playing loudly for a long or sustained duration of time. For touring bands, this doesn't work because after subjecting the tubist's face to that kind of damage several days in a row, the tubist often finds that these detrimental effects become part of how they play at the beginning of the show in addition to the end, and the instrument gets seen as clumsy and cumbersome.

The degradation of technique associated with un-amplified tuba playing alongside drums is not much of a problem if the basslines that one plays require little technical mastery, but if the bass lines are difficult to play, there will be all sorts of issues that are musically unacceptable in most contexts. Styles such as New Orleans Second Line and Balkan Brass Band have subsumed these issues to some extent, and there is the expectation that tuba players will always play this way and that doing so is just part of the style. While playing balkan brass music and second line music, I have been told to "dirty up" my sound, "edge out all the time," and that my playing is "too clean". There is some legitimacy to this advice, as these types of music originated as street music where there were no sound systems. The quality of sound exhibited by most tuba players that primarily play in these styles works very well for these applications, but it can be limiting for the players themselves because it often doesn't fit other styles, and it is much harder to successfully move from predominantly playing in these kinds of loud styles to playing more finesse based music than it is to do the opposite.

To play bass lines well that require more technical prowess, or even just to play simple bass lines with a high degree of consistency, one's base volume must be less than that which is required to be heard clearly alongside a loud drum set and electric guitar. This dilemma has been a major limitation for the tuba in popular contexts and is one of the reasons that nearly every style of popular music uses some form of string or synth bass as the bass voice as opposed to the tuba. These other bass instruments are much easier to amplify than the tuba, and so they have historically been able to fit alongside a drum set more easily in live contexts. The tuba's sound gets a lot of its character from the room that it is being played in, and so when it is mic'd from a very close distance (as it needs to be when playing a bass role alongside a loud drum set if the desired signal is to contain more tuba than drums) it loses this character and depth and no longer

sounds how most people think a tuba should. Because of this reality, a tuba player trying to play a bass role in loud environments must use whatever means they have available to develop a sound that is undeniably "good" but is different from what people expect to hear from a tuba.

It should be mentioned here that while there is a lot of accessible dance music that uses the tuba as its bass voice, the vast majority of it is in brass band contexts (e.g. New Orleans second line, Balkan Brass band, Banda, etc...), and it is fundamentally different from my playing on *The Fabulous Party Boys* for a few reasons. Firstly, all of these types of music are usually played with BBb sousaphones rather than F tuba like I use on *The Fabulous Party Boys*. Secondly, the instruments that play alongside the tuba in these groups are almost always other acoustic instruments, whereas in The Fabulous Party Boys I play tuba alongside electric guitar and electric keyboards (in addition to drums, trumpet, saxophone, and vocals), and so I need to adapt my sound to fit into an unusual context for a tuba. In Bonerama, the fantastic tuba player Matt Perrine plays alongside drums, electric guitar, and a group of trombones, but what he is doing is different from what I do by virtue of him playing a sousaphone with a mic-down-the-bell setup that is not very processed and blends well with the trombones that provide the sonic framework of the group. This mic technique is popular among modern New Orleans second line groups as well (Dirty Dozen Brass Band, Rebirth Brass Band, etc…). These groups often do a lot of playing off-stage or on the street, so the line between their marching and stage shows is sometimes blurry and it is best to have an amplification setup for the tuba that is easy to do without. François Thullier employs a similar technique to mine (an F tuba with a mic down the bell that is then sent through electronics) in the group Wonder Brass Factory. In terms of tuba method, this is the closest thing that I can find to what I did on *The Fabulous Party Boys*, but the

fact that it is still a brass group and also in a jazzy style does a lot to differentiate the two projects.

Bass guitars have had pickups and 1⁄4” line outs for a very long time, and ways of processing their sounds have been more or less standardized by genre at this point (e.g. distortion/overdrive for hard rock, envelope filters in parliament--style funk, certain amp/bass combinations for certain genres, etc...). Tubas are not sold with line outs and there is not really a standard way for mic-ing them for popular music. Some people stick mics down the bell as far as they go, some tape them part way down the bell, some clip them on the bell, some suspend them in the center of the bell, some place them on a boom stand positioned above the bell, and I’ve even heard of people drilling holes for contact mics in their mouthpieces. This lack of standardization in mic technique has left the tuba at a disadvantage when it comes to standardizing processing relative to the bass guitar, because the difference between any two given audio signals of tubas that are mic’d differently can be great enough to drastically affect any processing that one might apply to one of these signals. A barrier to entry is thus created when a tubist wants to start processing their sound to fit a bass role in unconventional genres for tuba, as they must be persistent and patient enough to spend the considerable time and money that is required to develop a setup that does not feed back, can be set up in a reasonable period of time, keeps their horn safe, works consistently in a variety of acoustic environments, and sounds convincingly “good”.

When I first tried to do this, I was using an Ampeg B5R bass head and also an Ampeg cabinet (4x10”). Just putting a cheap dynamic mic (Audix drum mic) on a stand six inches above the bell and running it through the amp made me realize that this approach had potential and was worth investigating. After getting a better mic (Sennheiser 602ii), I spent a long time

experimenting with mic placement and found that if the mic is above the bell, although it sounds fine in rehearsal contexts and captures a sound that most tuba players would consider better than if it were actually in the bell, the signal to noise ratio with this technique is way too low for loud venues with a lot of monitors, which results in feedback. Placing the mic actually inside the bell raises the signal to noise ratio substantially, allowing me to turn the amp down, play softer, and reduce the risk of feedback. Mic placement within the bell is important too, as if it is too far down it can affect intonation, and if it isn't far enough it doesn't get enough signal. A good way to find the best placement is to play a long tone while a friend lowers the mic down along the edge of the bell. When the tone or intonation starts to change, one has lowered it too far. The best place, in my experience, is just above where the sound is audibly affected by the mic.

After making this work for a while, I began experimenting with effects, and settled on a digital multi--effect pedal (Boss GT10-B). This works well for me because there are decent compressors, amp modelers, preamps, a/d converters, and effects, and having all of these options in a single unit reduces the risk of technical malfunction substantially when compared to a bunch of analog boxes and pedals. While a board of pedals works for a lot of bassists and guitarists, tubists unfortunately can't hang their instrument from a neck strap while they fiddle with cables after their sound cuts out in a middle of a performance. Dealing with any technical issue during a show is much more difficult for tubists than it is for bassists because their instruments are very big, very expensive, and very fragile. For tubists, minimizing risk of technical error is of the utmost importance because in addition to the musical downsides of having a sound suddenly cut out, our instruments are highly prone to being damaged if they get set down on a stage during a show.

An issue with using effects that is unique to tubas as a bass instrument is the difficulty associated with controlling the balance between acoustic tuba sound and the processed sound that is coming from the amp and house speakers. Because the acoustic sound of an electric bass is extremely quiet and synth basses have no acoustic sound, this issue doesn't exist for these instruments. After hearing recordings of my playing with effects in some small venues and some big venues, I realized that in the small rooms it was hard to hear the effects clearly and in the big rooms it was difficult to hear the acoustic sound at all. To control this balance, I built a mute (Fig. 1) that encases my microphone so that the acoustic sound isn't heard. I took the bottom half off of a Yamaha silent brass mute, removed its built in mic because it sounded tinnier than I would like, and removed the retractable spine that goes into the bell because it drastically affected intonation. I built a shell to surround my bell and covered it in foam, attached the shell to the remaining parts of the silent brass mute, and put my microphone inside. This worked remarkably well for most of the playing that I was doing, but I found that with the mute in, my high register was flat and my low register was sharp. I tried to account for this with alternate fingerings and air/embouchure adjustments for about six months, but I found the issues to be too serious for these types of solutions, and so I went back to not using a mute (Fig. 2) and decided that for the time being I wouldn't play with effects in small venues. As of this point in time, I have settled on dropping a mic down the bell as far as it can go without audibly affecting intonation and sound, running the mic through effects, and then sending that signal through a bass amplifier. It would still be worth experimenting with a mute for small venues, but next time optimizing less for silence and more for even intonation and general noise reduction.

On the effects board, I have three different configurations that were used on the album. Below are pictures of the different settings, but because the user interface of the effects board is

very limited, the information contained in these images may not be as specific as one would like. The setup that is used the vast majority of the time is a bass sound that employs a compressor (Fig. 3), an equalizer (Fig. 4), and a tone modifier (Fig. 5). On "Take a Trip" I use a wah sound that is made up of a compressor (Fig. 6), an EQ (Fig. 7), and a T-Wah (Fig. 8). In the breakdown section of "Meat Thief" I switch from the main bass sound that I use to a bass synth sound comprised of a compressor (Fig. 9), an EQ (Fig. 10), two synth generators (Fig. 11-12), and a light reverb (Fig. 13). These sounds were mixed in slightly differently than the bass sounds on the rest of the album, but generally the same tools were used.

The sound that I usually use on my electronic setup at this point sounds very much like an electric bass, but because it is a tuba there are a some things that I can do that bassists cannot (e.g. fine dynamic control on single notes, extended techniques that are unique to tuba) and some things that bassists can do that I cannot (e.g. play four notes simultaneously without using a harmonizer). The most noticeable difference between the two sounds, however, is that the attack of the tuba is softer than that of the electric bass. The sound of a finger or pick plucking a string is entirely different than that of a tuba's articulation, and it blends very well with electric guitars because it is essentially the same mechanism at play. Furthermore, because styles like funk and rock gained their identity with electric bass as the bass voice, listeners' expectations for music in these styles are jarred when a tuba replaces the bass guitar and doesn't achieve the same punch in articulation. A simple way to add punch to the sound is with compression in which the attack time allows the transients to pass uncompressed (>50ms) and the release time is fast enough to allow transients of notes in fast succession to pass as well (as fast as possible). What tubists can do to mimic this sound in their performance, though, is to play softer but with more emphasis on the front of the note. Transients reach their maximum volume at a lower point than actual notes

do on tubas (i.e. resonating notes can have a greater dynamic peak than pre-pitch articulations), and so if one plays with a strong articulation but less strong of a note, one can raise the transient to pitch ratio to a level that matches more closely with that which is more typical of electric basses and thereby achieve a punchier sound. Having said that, playing in this manner too frequently can form habits that are undesirable in other contexts, much like the loud playing that was discussed earlier.

For *The Fabulous Party Boys*, we recorded the tuba using a combination of my live setup and a more typical recording setup for tubas, because I was isolated and thus didn't need to make the compromises that are necessary in live environments. I was alone in a drum room, with the guitarist, keyboardist, and drummer in a live room, trumpet and saxophone in a small room, and the vocalist in another small room. I had a Milab large diaphragm condenser mic 2.5' from the bell at a 45 degree angle to capture my natural sound, while my mic was halfway down my bell to feed into my effects board, which then was sent into my amplifier (same as was mentioned before), from which we took a direct out and also mic'd about a foot in front of with a kick mic (RE-20). This provided me with three signals to mix together: clean, direct out (DI), and mic'd amp (Cab). Having the three signals was fantastic, as it allowed me to have a lot of control over the tuba's sound. Electric bass is typically recorded with a direct out and a mic on the amp (or it is re-amped) as well for this same reason. The added difficulty of the tuba is how to mic the instrument itself, because people don't typically record the acoustic sound of an electric bass being played.

Below are spectral analysis graphs of each of the three signals playing the opening four bars of "You're Fabulous". As is evidenced in the graphs, the clean sound (Fig. 14) was a lot brighter and with a lot more midrange presence than the other sounds, the cab sound was

primarily present in the lows and low-mids (Fig. 15), while the DI (Fig. 16) was spectrally in between the two.

This was as expected, as close micing tubas results in a very bright sound that is quite undesirable in most contexts. In most classical solo tuba albums, for example, tubas are mic'd from far away (sometimes from close distances as well, but this is in addition to the room mics) and get a lot of their bass frequencies from these room mics. Because I play the bass role on *The Fabulous Party Boys*, bass frequencies are an essential part of my sound that I can't do without, but I also don't want to have a big reverberant room sound, as that would muddy up the mix and clash with the kick drum. I needed immediate low frequency energy, and arriving at the tuba sound that I wanted for this record involved focusing on certain parts of each of the three signals and blending them together. Below is a graph of an electric bass playing the exact same passage as I played (Fig. 17). It is relevant to this discussion because electric bass has traditionally occupied the bass instrument role in funk music, and so looking at this graph can provide insight into what most listeners would expect to hear (spectrally) from the bass voice in a funk group such as The Fabulous Party Boys.

Relative to the clean tuba sound, this graph indicates that the electric bass's signal contains less information in the 200 hz to 1.1 khz range (mid range, to use a loosely defined term), and more information above and below that range. The graph of the clean tuba signal shows a more or less straight horizontal line from 85 hz to 415 hz, which makes sense given that these are the fundamental frequencies of the highest and lowest notes that are played in the selection. Compared to this, the electric bass graph has a downward slope that begins around 100 hz. The DI and cab graphs are more similar to the electric bass graphs in this regard, but the DI,

like the clean signal, has more upper mids than the bass, and the cab signal has a steeper roll-off and contains very little mid, upper mid, and high content.

Bass instruments, by definition, are most aurally present in the low range of the ensembles that they find themselves in, and this is largely due to their occupation of a frequency range in which no other instrument simultaneously exists. In funk music, bass instruments (usually) only share the area below approximately 150 hz with the kick drum and toms. Above this area, they can be competing with instruments like electric guitar, keyboard, the rest of the drum kit, trombone, or saxophone for sonic space, and their presence is not as necessary to the group sound. It is necessary, though, that the bass instrument is present enough in the areas above 150hz for it to have a clear pitch, a clear attack, and a recognizable sound as a distinct instrument. The electric bass graph shows how well designed the instrument is for this application, as it drops in volume as the frequency increases starting at a point that is appropriate for its space in the group, but it levels out a bit around 1.1 khz, which allows for it to have some punch and vitality in the mix. The tuba, by comparison, spends a lot of its acoustic energy in the mid-range of the spectrum, which instead of helping the group, hinders the ability of other instruments to cut through.

Maximizing low range is one of the main reasons that I use a bass amp in this project, and doing so makes the tuba's sound more complimentary to the rest of the ensemble. To make the sound work even better than just using the DI or cab signals (which already look more similar to the electric bass than that of the clean tuba), I bussed the clean and DI signals together, and then used EQs and compressors to shape the sound into what I felt was appropriate in the mids and highs, and then I combined this sound with a Sub track that I made by compressing and filtering out the highs from the cab signal.

For the clean signal, I used a time adjuster plugin so that the polarity was aligned with the DI and cab signals, and an EQ (Fig. 18) to attenuate the mid range. I left the DI signal untouched before the DI and clean combined bus, but on this bus I used a UAD 1176 compressor with a slow attack and fast release (Fig. 19), another EQ (Fig. 20) with a sharp notch to give the kick drum some space and two sharp bumps where other instruments were notched out for the tuba to cut through, a band compressor sidechained with the Kick bus (Fig. 21) to clear up the low end, and another band compressor sidechained from the Guitar bus (Fig. 22) to give the mid range of the guitar more room to sit. Lastly, I sent the DI and clean bus to a return track with a saturator (Fig. 23) so that it has enough clarity and high end to be present in the mix, and also to a return track with reverb (Fig. 24). Because of the tuba's capacity for adding muddiness to the mix, I didn't use very much of the reverb and I automated the reverb send level throughout the track so that it was less present in sections where the drums were playing.

On the Sub track (the cab signal), I used a UAD LA-2A compressor (Fig. 25) instead of the 1176 because I wanted a smoother sound on the sub, an EQ that removed all of the mids and highs and provided a bump around 100hz (Fig. 26), and a compressor sidechained to the Kick drum (Fig. 27).

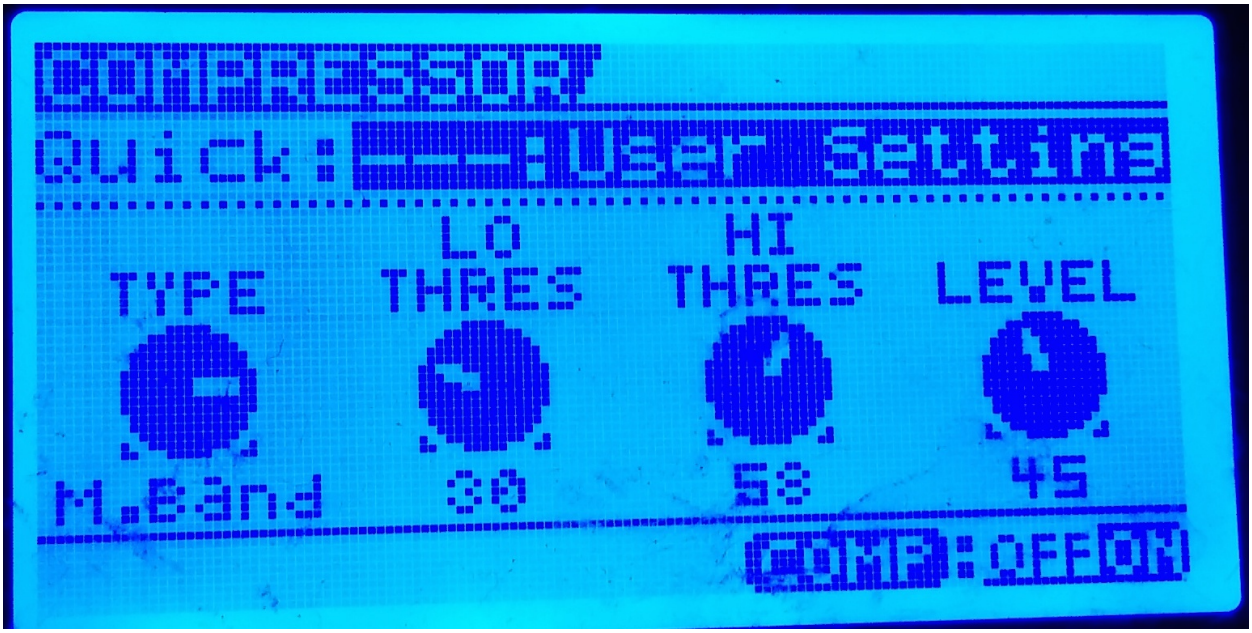
This approach allowed me to have control over the lows and highs of the tuba sound for mixing purposes while maintaining a sound that I felt was desirable. Alternatively, one could bus all three together but use the send volume of the filtered cab signal to control the balance of lows and highs. Below are graphs of the combined and processed clean and DI signals (Fig. 28), the Sub signal (Fig. 29), and also the combination of all of these signals that was used in the song as the tuba sound (Fig. 30).

Out of all of the tuba graphs, the Tuba combined graph is the most similar to that of the electric bass. It has a downward slope starting near 100 hz, and also contains enough high end information that can help the tuba pop out clearly in the mix. Combining the Sub signal with the Processed Clean and DI Combined signal gave me a way to set the high point of the curve where I wanted and then control the slope of the roll-off as well. In the process of shaping this sound I was using my ears and taste instead of graphs of course, but graphs are a good way to visualize and communicate what my goals were, my process was, and also show the results, which validate the approach to the extent that they demonstrate the change in sound from the original starting point of an acoustic F tuba towards the goal, which was a sound that contributes positively and naturally to the group in a way that doesn't stick out as a novelty (modeled after an electric bass sound in this case).

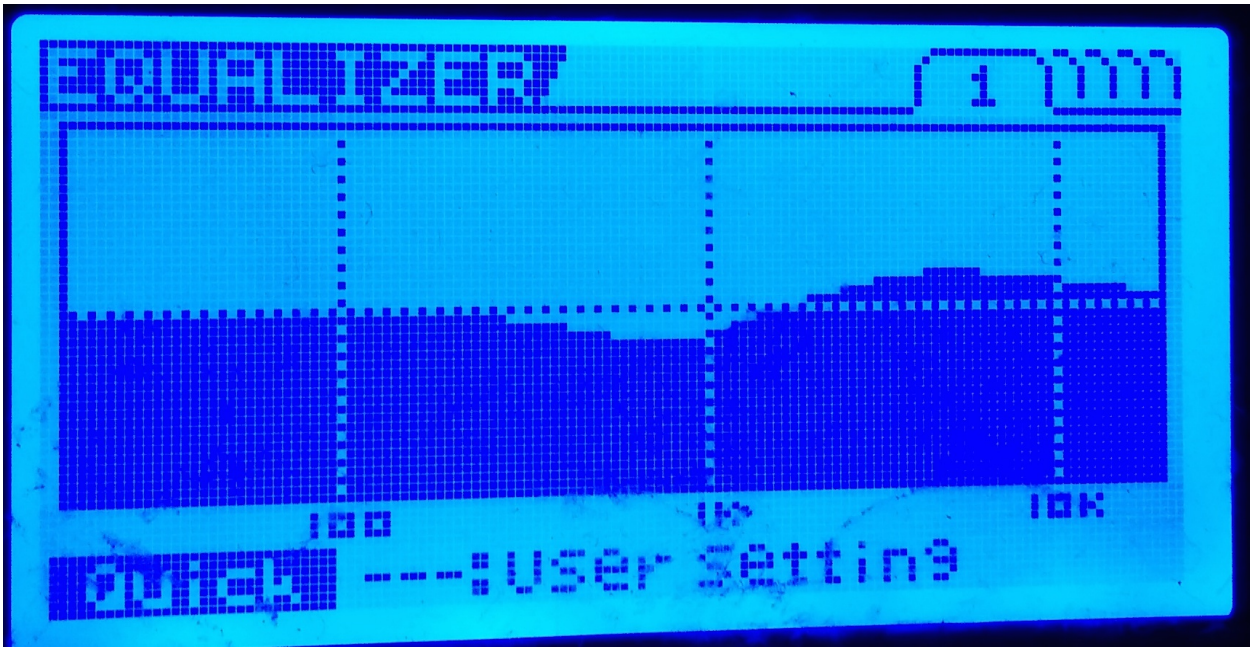
By creatively integrating technology into their performance apparatuses, as bassists have been doing for many years, tubists (and musicians of all sorts, for that matter) can find themselves fitting into sonic and stylistic spaces that wouldn't otherwise be possible. I hope that *The Fabulous Party Boys* demonstrates this transformation in a manner that inspires other tubists to be creative about their sound, and that this paper can aid in their efforts to bring the instrument into territories that it has yet to make a mark.

Mute setup (Fig. 1)

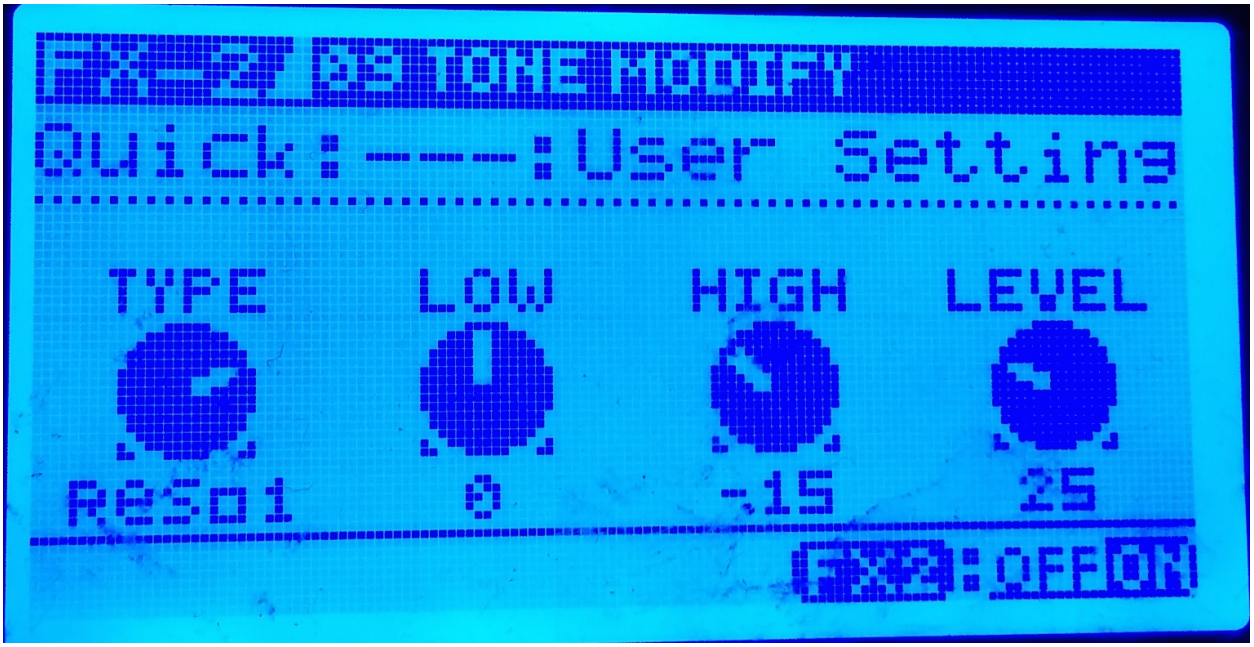
Current Setup (Fig. 2)



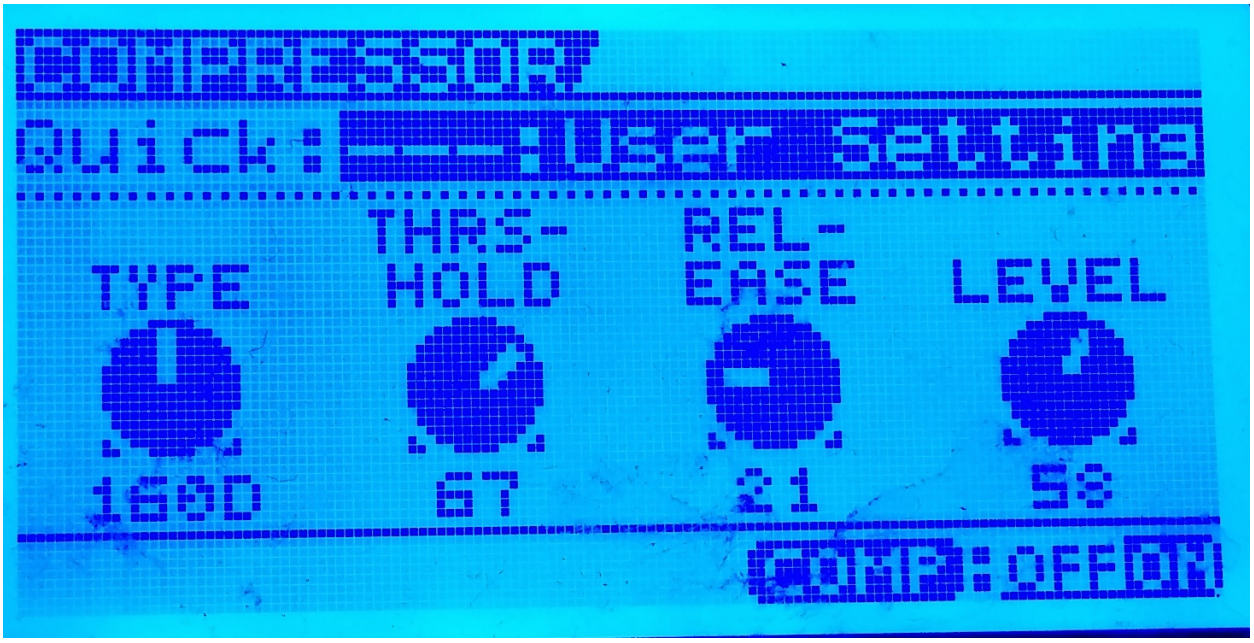
Bass sound compressor (Fig. 3)



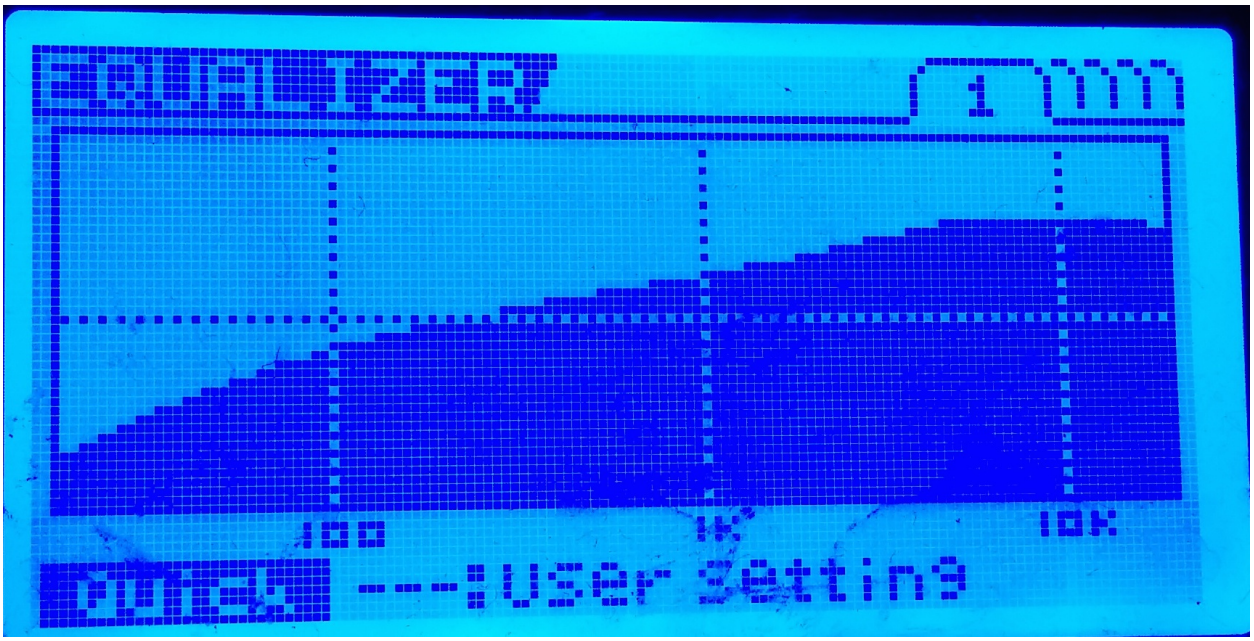
Bass sound EQ (Fig. 4)



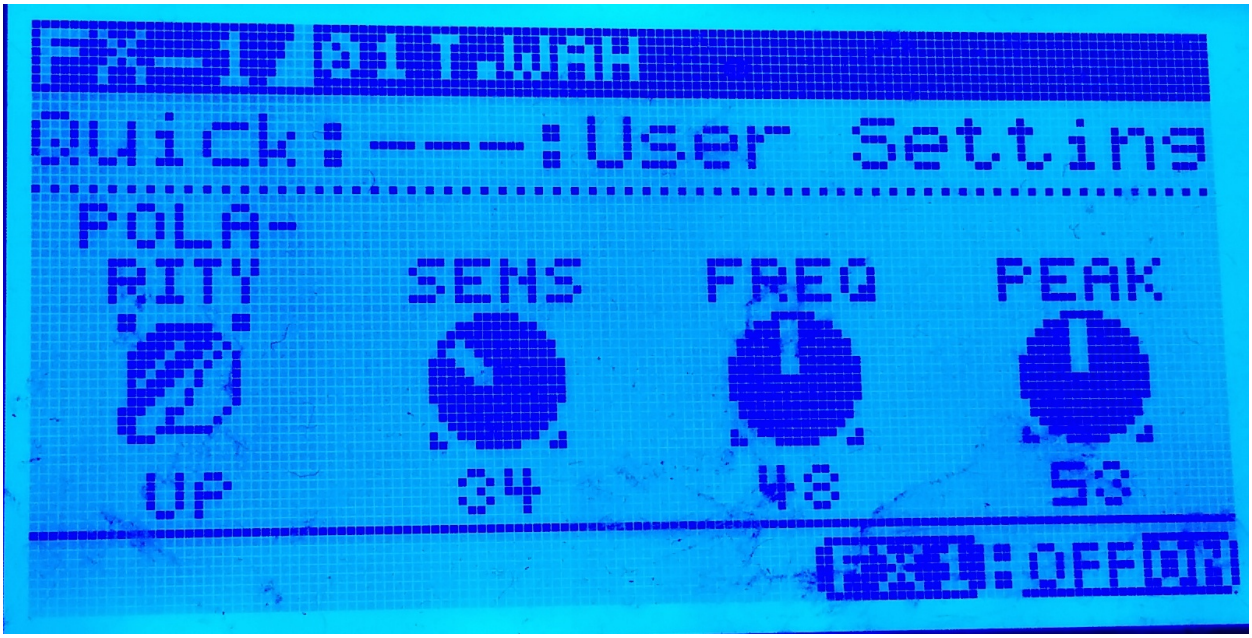
Bass sound tone modifier (Fig. 5)



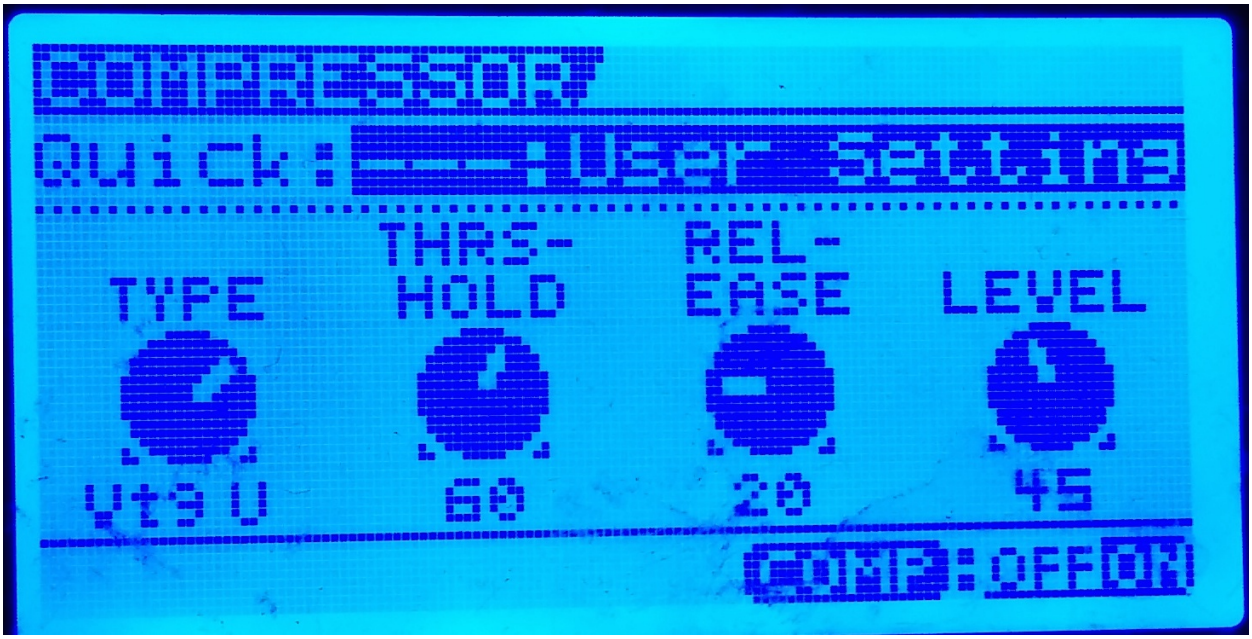
Take a Trip compressor (Fig. 6)



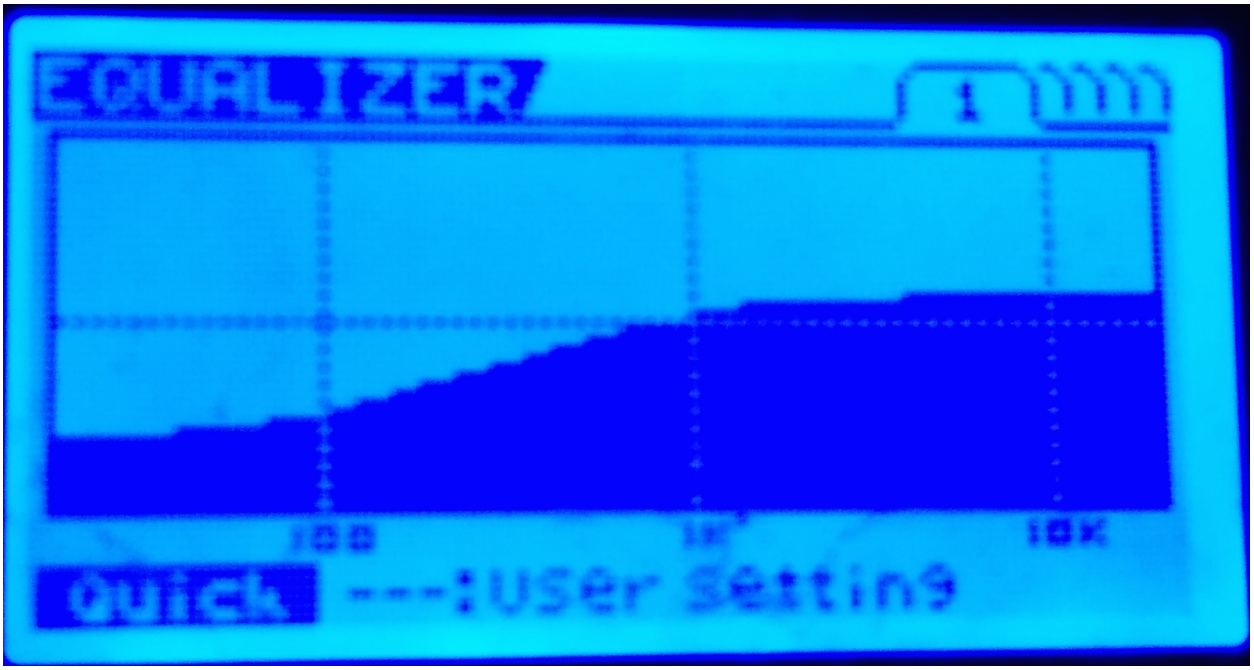
Take a Trip EQ (Fig. 7)



Take a Trip Wah (Fig. 8)



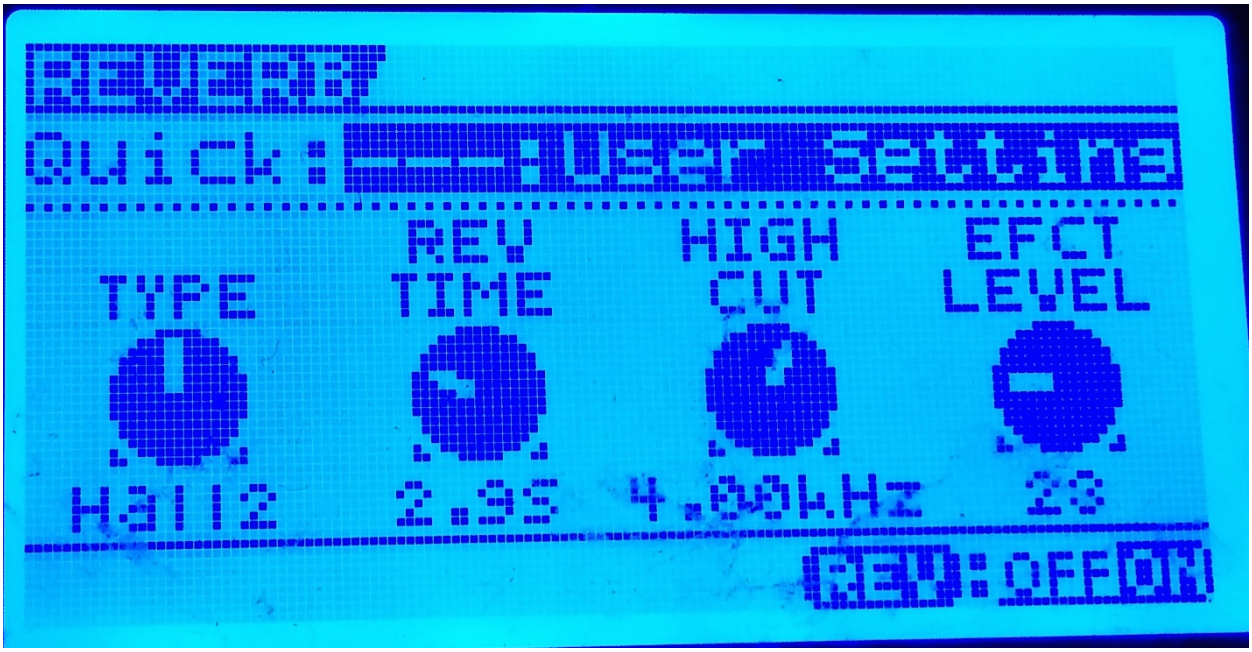
Meat Thief compressor (Fig. 9)



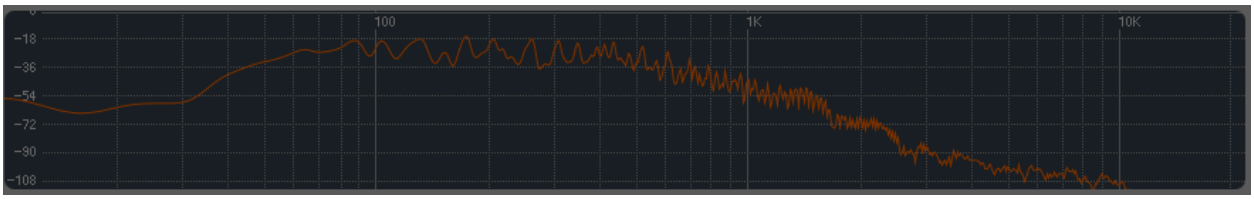
Meat Thief EQ (Fig. 10)

Meat Thief synth A (Fig. 11)

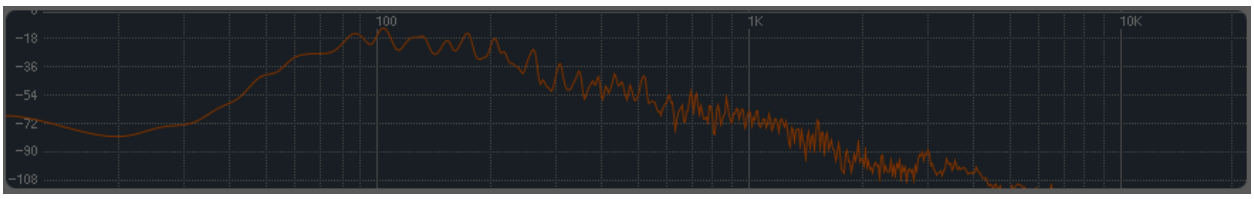
Meat Thief synth B (Fig. 12)



Meat Thief reverb (Fig. 13)

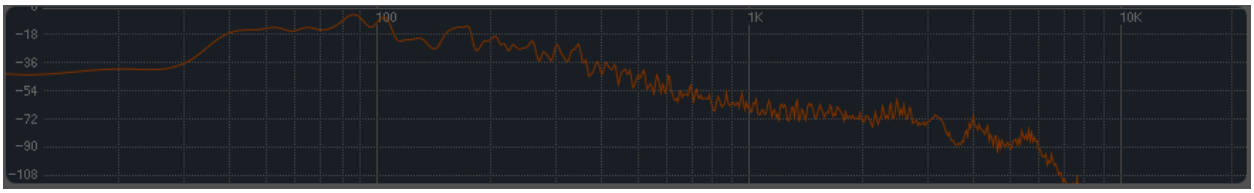


Clean (Fig. 14)

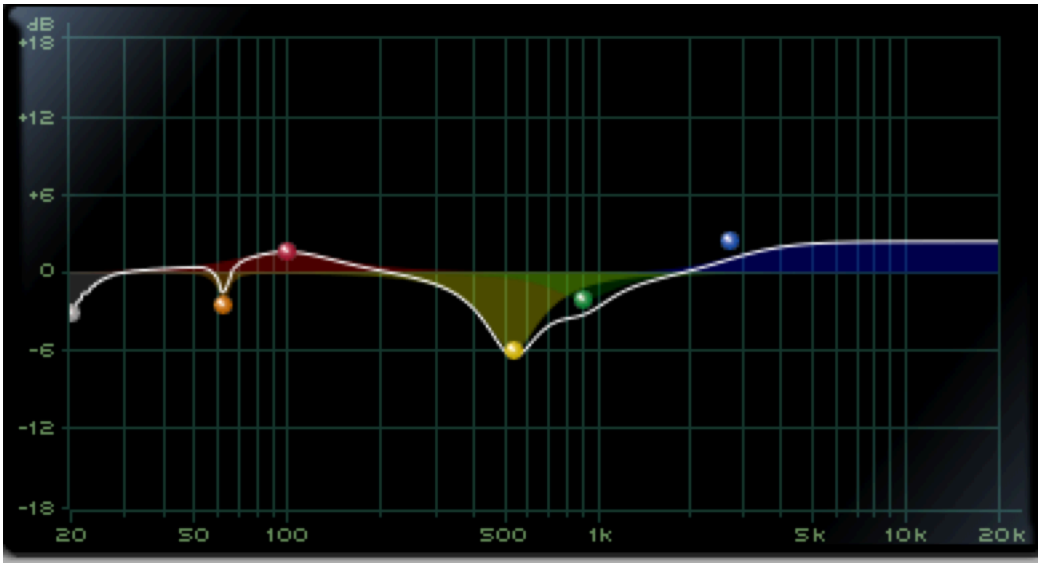


Cab (Fig. 15)

DI (Fig. 16)

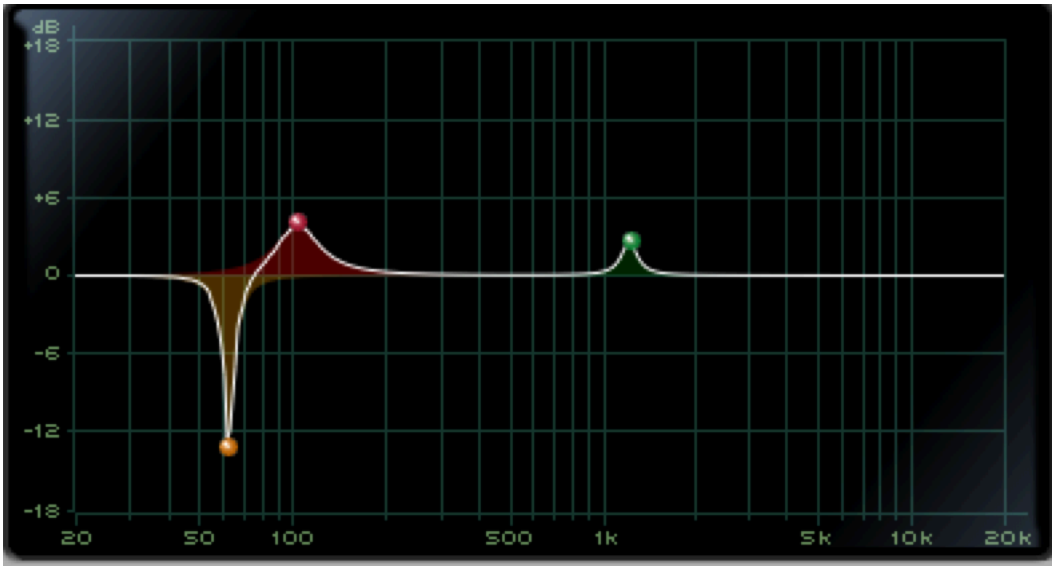


Electric Bass Amp (Fig. 17)



Tuba Clean EQ (Fig. 18)

Clean and DI Combined Compressor (Fig. 19)



Clean and DI Combined EQ (Fig. 20)

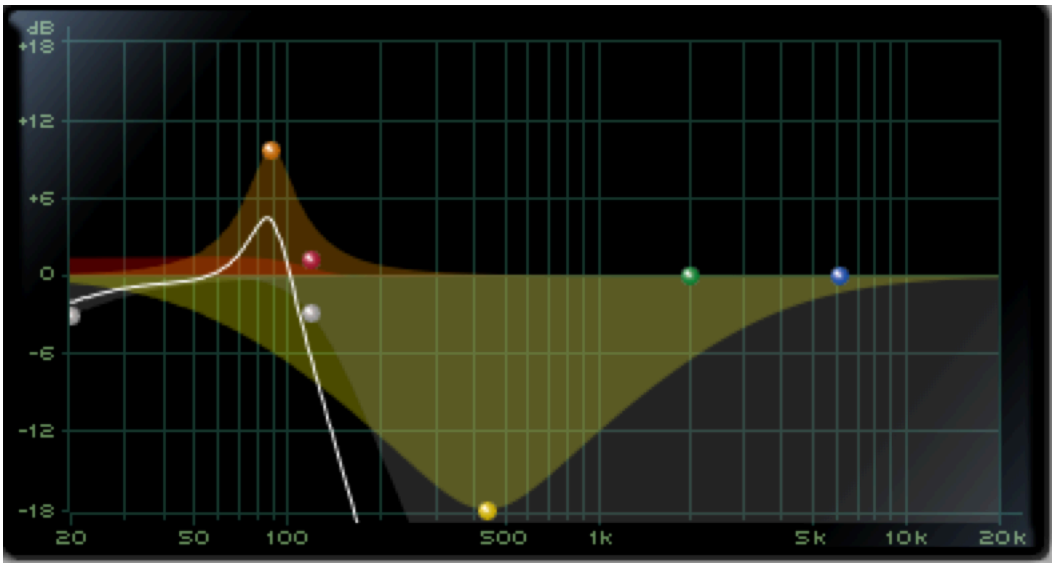
Clean and DI Combined compressor sidechained from Kick (Fig. 21)

Clean and DI Combined compressor sidechained from Guitar (Fig. 22)

Saturator (Fig. 23)

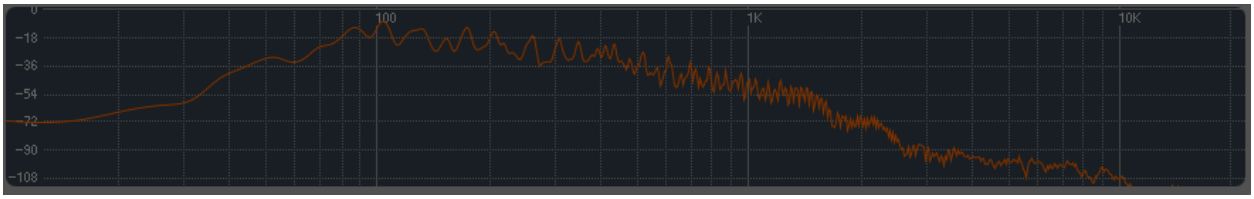
Reverb (Fig. 24)

Sub compressor (Fig. 25)

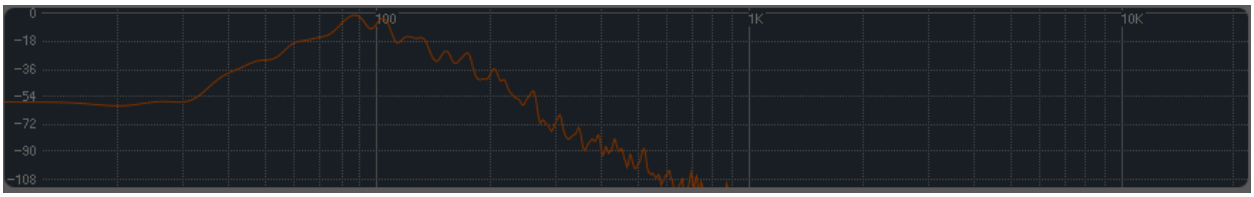


Sub EQ (Fig. 26)

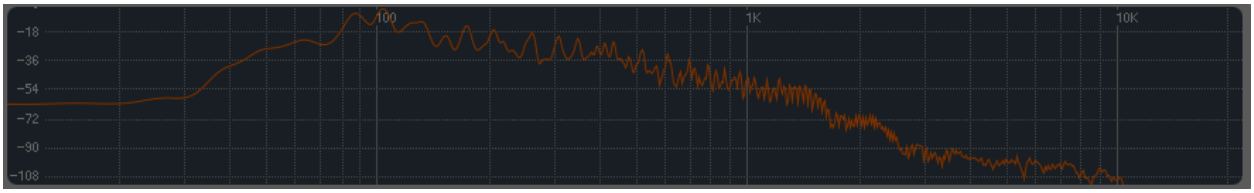
Sub compressor sidechained from Kick (Fig. 27)



Processed Clean and DI combined (Fig. 28)



Sub (Fig. 29)



Tuba combined (Fig. 30)