

UBK FATSO

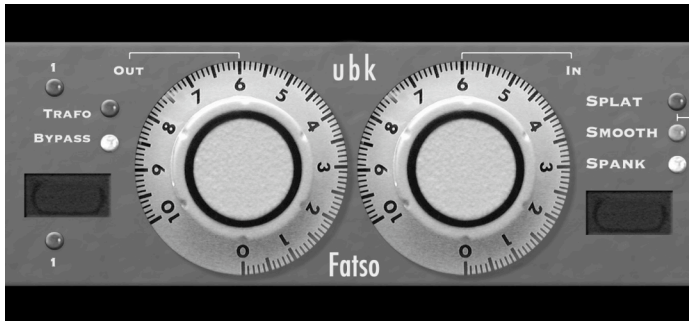
DUAL CHANNEL CHARACTER COMPRESSOR



OPERATOR'S MANUAL



RULES ARE FOR INTERSECTIONS



Welcome to the UBK Fatso, arguably one of the world's most complex analog signal processors housed inside one of the simplest, easiest to use compressors on the market. Like the most respected and revered compressors in the history of audio, the UBK Fatso offers a one-knob control over any one of 7 radically different preset compressors.

The result is that your job, at its simplest, is to choose the flavor or style of 'grab' that best serves the sound, then dial up more or less of that effect. This approach makes quick work of one of the hardest tasks in sound engineering, and allows for some pretty stunning results even if you don't know your ratio from your knee.

On the flipside, the UBK Fatso goes deep, very deep in fact. Its capabilities and potentials are limited only by the depths of your experience and the ferocity of your imagination.

I wanted to turn this tape-emulator into a full-on dual mono compressor with as much attitude and vibe as the user can stand to bear. I wanted it to work on any source you could throw at it, and to be as adept as modest rounding and softening as it is at balls-to-the-wall crushing and distorting. And I wanted it to change your approach to when, where, and why you compress by encouraging you to keep turning that knob until you get something that makes you smile.

That's a tall order for a compressor with no attack, release, or ratio controls. I like to think I succeeded, and now you've got the results in your rack. Congratulations!

ALL THE WORLD'S A STAGE

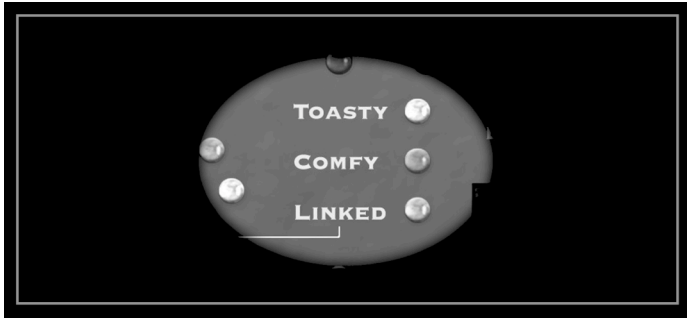


- At its heart, the UBK Fatso contains 4 powerful, discrete processing stages. Each processor works its magic before passing the signal along to the next. The stages are, in order:
 1. Saturation & Harmonic Overdrive
 2. FET Compression
 3. Warmth (High Frequency Limiting)
 4. Transformer

The serial nature of the UBK Fatso's internal architecture means that everything that happens in one stage depends on what came before it, and the sound at the output is the result of a cumulative series of treatments that interact and stack up in ways that can be so subtle as to be barely noticeable, or so over-the-top that it bears only the slightest resemblance to the original.

If you want extreme, then grab the knobs and start cranking. If you want subtle, study the following sections closely; they contain the keys to understanding and controlling each stage of processing. Do not let its apparent simplicity and ease-of-use fool you: as of the writing of this manual I've owned and used the UBK Fatso extensively for almost 2 years, and it still manages to surprise me on every mix I do. If you invest the time in learning its ways, it will reward you in kind.

STAGE 1: SATURATION AND HARMONIC OVERDRIVE



- At modest input levels (peaks lighting up the **Comfy** LED) the UBK Fatso begins to soft clip transients and add a subtle amount of harmonic overdrive
- At more aggressive input levels (Peaks lighting up the **Roast** LED) the UBK Fatso begins to hard clip transients and adds a significant amount of harmonic distortions
- By default, the saturation circuit and the compressor section act as one. More input = more saturation = more compression. But you can control the sat circuit independent of the comp by inserting a simple gain control in the UBK Fatso's rear-panel *Insert* jack.

Control over the saturation circuit of the UBK Fatso couldn't be simpler: turn up the input knob to increase saturation, turn it down to decrease saturation. That's it.

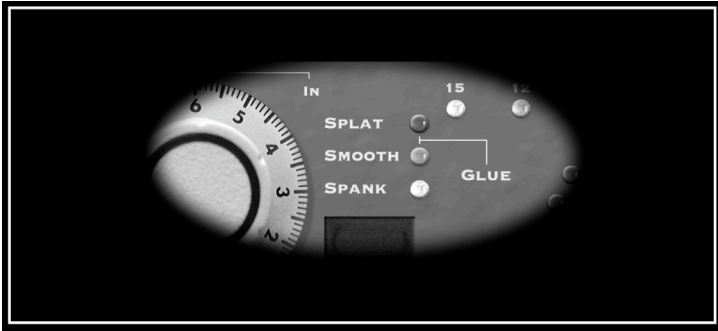
The primary purpose of the classic Fatso was to emulate the sweet distortions and transient softening effects that you get when you push a signal harder and harder into magnetic tape. And so it is with the UBK Fatso: the more you crank that input level, the more it fattens the sound, rounds out the spiky transients, adds musical harmonics across the entire spectrum, and saturates and sweetens the high frequencies. Lovely!

If you simply operate the UBK Fatso in its default mode, you cannot separate the degree of saturation it produces from the amount of compression it generates. More of one always produces more of the

other, and vice versa. However, if you avail yourself of the Insert on the rear panel, you will gain independent control over the sat and comp circuits, and it is no exaggeration to say that when you do, this piece of hardware becomes an entirely new animal.

To learn more about using the Insert jack, see the first paragraph under the section titled “Random Final Thoughts” on page 11.

STAGE 2 – COMPRESSION



- The UBK Fatso has 7 compression presets per channel; 4 have names and their own LED indicator, 3 are unnamed and are indicated by combinations of LED's
- Pressing the button below 'Spank' cycles through the compression presets one at a time
- When no preset LED is lit, the compressor section is inactive and the UBK Fatso can be used just for saturation, warmth, and/or transformer coloration. Note: at aggressive input levels, the comp may still grab some signal due to non-linearities in the detector circuit

Now we get to the really fun part: the different ways that the UBK Fatso grabs, pushes, pulls, and otherwise bends sound. Each preset on this unit not only has a distinctly different attack, release, and ratio from the others, each one has its own knee as well. The difference this makes cannot be overstated, and in my opinion having all of these unique knees is means that, despite the preset architecture, this compressor is one of the most versatile on the planet.

With that in mind, I give you my best attempts to describe the energy and attitude of the UBK Fatso compressors.

Splat - this is my take on the comps built into my favorite 3-lettered vintage console, and it is by far the most unusual compressor of the bunch. It has a very distinct knee/attack relationship which creates a wonderful 'pop' on the front of transient rich sources like drums, and the more you dig in the more that pop creates the 'splat' character. The medium release has a swimmy kinda motion which makes for a

very vintage grab. At modest settings, it stiffens and reigns in drums, focuses a vocal, and enhances the vibe of the original sound while making it easier to manage. But when you dig in, wonderful things begin to happen. Drums develop thwack and hit you in the chest. Vocals get utterly creamy with a pleasing, old school hair. Loops come alive and breathe organically. Electric guitars get thicker, deeper, and stay pinned where you want them. But don't be afraid of those meters: push it farther, past that red light.

Smooth - this is as close to brickwall limiting as analog gets, the attack time is ~70 microseconds (!) and the release is ultrafast. It was designed for tracking, but it does have its uses at mixtime too, so (as always) experiment. My intent here was to craft a foolproof peak limiter that would allow the engineer to shave 3-7db off the tips of the waveform without sounding like much of anything happened, yet things are somehow sweeter, they behave better. When you print elements thru this preset, you'll find your mixes come together easier and faster, with less eq and compression. Things just 'fit', the way they did when we tracked to tape.

Glue -if I could only have one compressor for the rest of my life, this might well be it. The bottom end on this preset has to be heard to be believed. It is simply unreal how easily this preset will lock the bass in place, punch it up, let all the notes ring clear as a bell, and make it loud while getting it out of the way. Engage the transformer to make the low end sing, even on iPod docks. If gluing the bass were the only thing the UBK Fatso did, it would still be worth the price. But Glue is every bit as versatile and surprising as the rest of this box, especially when pushed. It's an extraordinary drum compressor, imparting a distinct smack even as it makes the room explode. It's lovely on acoustic guitars, Rhodes, sitar... whatever.

Beyond it's versatility as a do-it-all instrument leveler, Glue is an incredible compressor for the 2-buss... hence its name. If you have any experience at all with mix compression, you know how tricky it can be to get the time constants right. Now imagine you had to pick one attack, one release, one ratio, and those choices had to work on the majority of mixes you slap the compressor on. That was what I was up against, and that's why this preset took the longest to develop *by a longshot*.

Hip hop, rock, singer-songwriter, dance... I tested them all extensively with Glue, and believe I have created one of the rarest birds in the world of high end compression: a fixed setting compressor that can pull together almost any mix regardless of style, tempo, or energy

levels. And depending on what you want to hear, it can sound as good at 7db of reduction as it can at 2db, so (as always) don't be afraid to push it, see what happens.

Spank – What can I say about Spank that hasn't already been said? It was Dave Derr's attempt to emulate the infamous talkback compressor built into the monitoring section on SSL consoles. If you've ever heard a Phil Collins song, you know the sound of this compressor on drums.

Spank is the one compressor I didn't modify, and that's because I *couldn't*. Spank lives deep in the heart of the Fatso's circuitry and it's workings are a mystery even to me. That's just as well, because Spank is perhaps my all time favorite electric guitar compressor. Something about the way it grabs the strums, it has a way of bringing out the articulation no matter how hard you crush it.

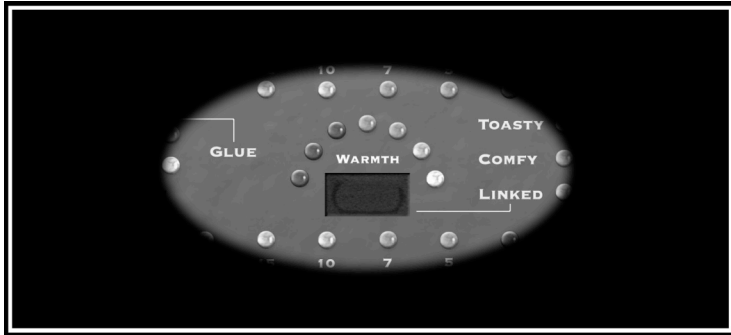
But the real beauty of Spank is the way it combines with my presets to create an entirely new and unique set of compressors that were not purpose-built, but which nonetheless can be just as useful and exciting as the ones that were.

Splat + Spank - I call this one "Squish", and it's the one I turn to most when I want something reminiscent of the huge, pillowy compression sound I associate with Abbey Road in the mid to late 60's. The aggressive knee coupled with a release that leans towards the slow means bass comes pounding thru while mids get softened and highs get creamed. When I really need to reign in a particularly unruly signal that feels too 'pumpy' with faster releases, this is where I turn.

Glue + Spank – aka "Spue", this is the UBK Fatso's equivalent of all-buttons-in (google that + 1176 if you don't know what I'm referring to). It hammers, it nullifies transients, and it does so with a quintessentially modern, ELI twist. There are a couple of top-tier engineers and producers whose unit seems to be parked in this mode, which they use for the ultimate parallel smashing effects, especially drum buss and backing vox.

It's also killer for a pop or rnb style lead vocal where dynamics are not desired in the least and the goal is to plant the singer at the front of the mix. The combination of the pancaked signal and the excited harmonics seem to lift the vocal up and suspend it in space. It's a great effect, and when it works there's nothing else quite like it.

STAGE 3 – THE WARMTH CIRCUIT



- Warmth is a lightning fast high-frequency limiter designed to transparently soften and mellow the edgy, harsh top end that is common in the world of digital recording
- 7 discrete threshold levels with LED indication; each press of the Warmth button lowers the threshold *and* raises the corner frequency which the limiter responds to
- While it has its own threshold, Warmth's behavior is interactive with the Saturation and Compressor sections: the more level you feed it, the more it reacts to the hf energy and transients in the program
- Warmth not only limits the high freqs, it attenuates them as well. The lower the threshold you select, the more it attenuates and darkens the tone

The idea behind the Warmth circuit is to emulate the peculiar top end response of analog tape. If you're familiar with tape, you know this is a tall order. Tape not only saturates the high frequencies beautifully, it softens them as well. At extreme levels, it also begins to exhibit what is known as 'self-erasure', where the highs begin to disappear and the whole sound takes on a thick, dark quality. This aspect of tape is arguably responsible for the biggest difference between music recorded analog vs. music recorded straight to digital.

Enter the Warmth circuit, one of the more powerful weapons available to counteract 'digititus'. Warmth is a wickedly fast limiter,

which means it's a compressor with a fast attack, fast release, and high ratio. Warmth is so fast that it usually gets in and out with an absolute minimum of artifacts, even when it's doing a respectable amount of limiting. Furthermore, it only compresses the highest frequencies in your signal, leaving the midrange, lower midrange, and bass frequencies completely untouched.

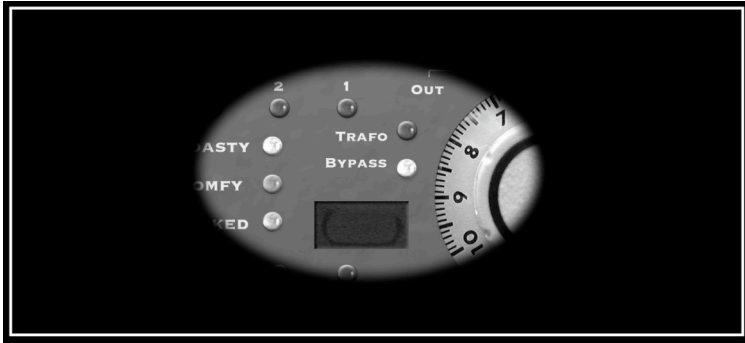
On top of all that, Warmth has a "dynamic corner frequency"; what this means is that as you dig in with the Warmth's threshold control, the corner frequency shifts so that it becomes less obtrusive. As you do more and more limiting of the high frequencies, you affect a narrower range of them, which allows the Warmth limiter to stay as transparent as possible.

The net effect of this ingenious circuit is that it can do anything from subtly and gently taking the edge off of overly bright and edgy material, to powerfully reshaping and smoothing out harsh or brittle sounds that feel like icepicks in the ear, to completely crushing a source into a dark and creamy soup of analog fatness. As with the compressors, I encourage you to explore the extremes of the circuit to see what creative effects you can generate.

Something to note is that there are two ways to control how much the Warmth circuit responds and limits the signal: the first is by lowering the threshold using the Warmth button, the second is by feeding it more level with the input knob. In this way, the Saturation, Compression, and Warmth circuits are all interactive.

The moral of the story is this: get your Input/Compression levels dialed in first and foremost (including the use of the Insert to control Compression levels) **before** you begin to set up the Warmth control, because any subsequent changes you make with the Input knob or Sidechain will also change the amount of HF shaping done by the Warmth limiter.

STAGE 4 – TRANSFORMER COLORATION



- One touch operation tightens the low end and adds low mid density, midrange presence, and high frequency sparkle
- Pressing the Trafo button cycles the UBK Fatso between transformless operation, transformer active, and hardwire bypass
- When both channels are linked, use channel one's Trafo button to control the state of both channels

The Transformer is far and away the most subtle effect the UBK Fatso produces. You have no control over what it does or how much it does it; you just turn it on or off, and you either like it or you don't. It is not radical, nor is it a panacea. Instead, it's merely icing on the cake, and whether or not it works very much depends on the source and what you need from it.

For starters, I recommend you try something I've seen Dave Derr do countless times for people: run a 60hz tone into a channel and monitor the output on small speakers where you can't actually hear the bass note. With Input on 1 and Output on 5, press the Trafo button until the Trafo LED is lit and listen. Now slowly turn the Input up and at some point you'll hear all the harmonics and overtones ringing out. The harder you drive the input, the more harmonic distortion you get.

What I hear with the transformer is a subtle shift in energy away from the extreme ends of the spectrum and towards the middle. The super

low end gets leaner and tighter while mid bass gets thicker and moves forward. The extreme top end rolls off a bit while the mids and upper mids become more alive with an excited presence.

Overall, I'd say that sound coming thru the transformer takes on a shimmering quality and becomes much more harmonically dense. For some signals, such as bass, I will 99% of the time have this circuit engaged, it's absolutely killer at adding definition and clarity to the low end, helping it cut thru the mix without taking up any extra real estate. Same for kick drums in dense mixes, or acoustic guitars that sound a little flat and lifeless. On overall program material it can work beautifully but I've also noticed that sometimes it can make things too blurry, so my advice is don't take it for granted that more harmonics are always desirable.

One last thought: don't be concerned if you have trouble hearing what the Transformer does to your signal. Some guys hear it right away; some (like me) took a little longer to become sensitized to it. If you're in the latter camp, give it time. The effect is very real, it's just very subtle. Once you get tuned into it, you won't have any trouble knowing when to engage its magic and when to keep the signal path pure.

RANDOM FINAL THOUGHTS

WHY WOULD YOU WANT TO USE THE SIDCHAIN INSERT TO CONTROL THE UBK FATSO'S THRESHOLD

I alluded to this earlier in the manual, and now I'm gonna do my best to drill it into your skull: you really, **really** need to insert a gain changing device into the UBK Fatso's rear panel Insert, one on each channel. This effectively gives you a threshold control: turn the insert volume up, and you get more compression, and turn the volume down and you get less compression.

Why is this so important? Because it allows you to control the amount of saturation and distortion you exert on the signal independently of how much you compress it. As soon as you play with this kind of setup, you will understand why I'm stressing it.

Saturation is, in my opinion, at the heart of the sound of analog tape

and all those records whose sound you love. I'm all about less compression and more saturation, because saturation is such a more natural, soft, unobtrusive, and 'round' sounding phenomenon. It adds color, drive, presence, and girth to signals without drawing any attention to the fact that anything was done. As a first stage to compression, it means the compressor needs to work less hard because the initial transient is already softened. It also means you're compressing a richer, rounder source, which to my ears generally leads to a more euphonic end result.

So grab an old preamp, or guitar pedal, or anything that has a level up and down control, and put it to good use. It'll change your life, I'm not kidding.

WHY DO ONLY 4 PRESETS HAVE NAMES?

Splat, Smooth, Glue, and Spank are all presets that were deliberately tweaked to sound and behave the way they do. The remaining three presets are 'happy accidents' that result from the electrical combination of those first 3 with Spank.

Which is quite fascinating, really, because at least two of those random compressors (Splat + Spank and Glue + Spank) are favored by some heavy hitting mix engineers, and I'm pretty fond of them as well.

IS THERE ANYTHING I DON'T LIKE ABOUT THIS COMPRESSOR?

Well, truth be told I haven't yet figured out what Smooth + Spank excels at, but I have no doubt I will, and when I do I'll be sure to let people know.

In the meantime, if you discover something you love about the UBK Fatso, or (even better) something you very much don't love, I would truly love to hear about it. Drop me a line at ubk@kushaudio.com. It doesn't matter if you're a platinum hitmeister or a bedroom warrior, every single one of you has good ideas and observations I can learn from, and I for one never get tired of improving my game. You never know when one of your crazy ideas might make it into one of my next products. If that happens, you *know* I'm gonna hook you up.

CREDIT WHERE CREDIT IS DUE

In case there's any confusion, let me be emphatically clear: the Fatso was designed from the ground up by Dave Derr of Empirical Labs, a design guru whose talent for circuits and gift for design will always exceed my own by a factor of ten. He created this marvelous compressor from scratch, and I came along and tweaked the attack, release, ratio, and knee for 3 of the 4 primary presets. I also tweaked the saturation-to-compression relationship.

All of which is to say that I am merely a talented mixer with passable tech skills and a particularly good ear for compression, but Dave is the true genius behind the product you're using. The UBK Fatso is very much a collaborative effort between two badass, forward thinking companies.

That said, I can and will take full credit for that snazzy brown faceplate on the front, along with the 3-D badges flanking the edges. So when those ladies sidle up alongside you and coo breathlessly in your ear about how sexy your rack is, you know who to thank...

To see more of KuSh Audio's left of center products, videos, and general aesthetic eccentricities, come on over to www.kushaudio.com.

If you ever have any questions, issues, or ideas you'd like to share with me, hit me up anytime at ubk@kushaudio.com.

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