WARRANTY AND FACTORY SERVICE
This Empirical Labs Inc. product is covered by a limited warranty covering full parts and labor for 3 years from the purchase date. The warranty is only effective if the owner has returned his or her warranty card. See warranty card for further details.

Should problems arise, contact the factory at EmpiricalLabs@gmail.com or use the “Contact” button on our website. If it becomes necessary, pack the unit up well*, enclose a note explaining the problem and return to Empirical Labs for repair. Include your name, address, phone, and the date of purchase. Send the unit with freight prepaid to the address below.

Empirical Labs Inc. (Attn Service)
41 N. Beverwyck Rd. Lake Hiawatha, NJ 07034

*Please pack the unit in original carton if possible. Otherwise, pack with bubble pack and/or foam in a thick corrugated box. Shipping people are absolutely brutal to large packages and you must take every precaution to prevent damage to the edges of the front panel. We are not liable for products damaged during shipping.

www.EmpiricalLabs.com

OTHER EMPIRICAL LABS PRODUCTS
- Distressor EL8 - Classic Knee Compressor. Used on thousands of major records!
- Distressor EL8X - The original Distressor on Steroids. Image Link and Brit Mod
- Lil FrEQ – An EQ with 8 Sections of unparalleled tonal contouring & De-essing.
- Mike-E – Digitally Controlled Mic Preamp with compression and saturation.
- DerrEsser – De-Esser and high frequency fixer for the API 500 format.
- EL500 – Versatile Powered Horizontal rack for 2 API 500 compatible modules.
- UA FATSO Plugin – Acclaimed emulation of our FATSO, from Universal Audio.

UPGRADES
There are several elements inside the FATSO which were designed to be “modifiable”. Empirical Labs may release information and hardware options that will allow owners to alter the curves and other important performance parameters of their FATSO. Most of these modifiable elements will not improve the performance, but will offer other very cool compressor variations. It may be possible for user to safely modify the FATSO and create unique sets of curves and filter options. The UBK FATSO is an example of simple compressor modifications. Check our Website from time to time for news: www.EmpiricalLabs.com

Attempting to modify or make adjustments to your FATSO may void warranty unless you have approval from Empirical Labs. There are a number of critical adjustments that cannot be made properly without the calibration tools we have here at the factory. Any sign of internal adjustment by the user will void your warranty with the exception of changing the fuses or line voltage selection. Empirical Labs Inc. takes no responsibility for the safety of anyone opening the FATSO for any reason. There are dangerous voltages present when unit is plugged in. Refer unit to properly qualified service center or return to factory.

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**WHAT IS THE FATSO?**

(Hmm, Not such an easy question!) The EL7 FATSO is a modern digitally controlled analog device that offers many of the “musical non-linearities” exhibited by the older tube, class A discrete, and magnetic tape mediums. This two channel audio processor will musically integrate frequencies and transients, increasing the apparent volume without actual increase in peak levels. In addition, two channels of famous Empirical Labs compression are provided. There are several compressor “types” with fixed attacks and releases if you want a fully controllable compressor, you will need the Empirical Labs Distressor.

Users can enhance & soften the sound of digital mediums such as DAWs, Hard Disk Recorders, CD players, MP3s etc. Mixdown engineers will have an option not to use bulky, expensive, and often flaky analog tape recorders to get the warmth and sweet high end they’ve come to rely on for so many decades. Owners of modern digital recorders can finally put a stop to complaints about the “coldness” and “brittle edge” of their mixes and instruments with the “rounded” and “musically non-linear elements” of vintage analog. Audiophiles can bring back the warmth and cuddly sound of LP’s and tapes to their digital audio mediums.

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Try the Warmth control for less subtle high end softening. This circuit is a unique dynamic filter not too far removed from de-essing except it is above most sibilant freqs and works on a different principle and filter type. (...)OK, so it is far removed!). This circuit is really useful on vocals that are bright or have 10kHz and above boosted heavily with EQ. In fact warmth is really useful in conjunction with high freq eq boost, as it will only grab the parts that are excessively bright or “plasticity” and get out of the way in less than a millisecond. Use it as an EQ tamper.

As you progress from 1 - 7 on the warmth control, more and more high frequencies will be “grabbed” and eventually you will start muffling the signal. DON’T DO THAT! Be very careful not to overuse the warmth control... 1 - 5 dB of Warmth is a lot. By now that distant, thin, vocal should be HOT and in your face. When using the compressor and warmth together, remember the interaction. Apply this same type of thinking to other sources/instruments. Don’t be afraid to use the warmth will start muffling the signal. DON’T DO THAT! Be very careful not to overuse the warmth control... 1 - 5 dB of Warmth is really useful used in conjunction with high freq eq boost, as it will only grab the parts that are excessively bright from de-essing except it is above most sibilant freqs and works on a different principle and filter type. (...OK, so it is far removed!).

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FATSO EL7X RECALL SHEET

Track/Inst ___________________________ Session/Song ___________________________ Date _____________

Notes: ________________________________________________________________________________________________

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Notes: ________________________________________________________________________________________________

Write in the Input and Output levels inside the Knobs, and color in any LED’s that are lit to indicate section status
the way of vocals because the upper, spiky, harmonics are flattened a bit. When you are dealing with an occasional peaky guitar where certain chords or notes take your head off, the dynamic action of the WARMTH control can be very useful. Don’t overdrive this though, especially while tracking.

To smooth out solos, try the Tracking compressor with TRANNY and warmth. REMEMBER TO SETUP COMPRESSOR FIRST. The WARMTH heavily interacts with the compressor.

PLUCKED INSTRUMENTS & ACOUSTIC GUITAR - Plucked instruments can benefit greatly from the FATSO’s processing. Back in 1998, a prototype FATSO was taken to Greece and used on many very troublesome ethnic plucked instruments. At Grammys, a club in ATHENS, some bizarre FATSO behavior was immediately noticed, when the extremely transient acoustic instruments “swamped” some internal circuits. The compressor needed a heavier knee with more “sponge” in the attack. The Tracking compressor (Red LED on) was tweaked first. The fast attack of the TRACK or ELEVEN Compressor can help get a “glassy” full sound since the pick noise will be attenuated and the sustain lengthened. Also the threshold of the warmth circuits were lowered so they could grab the transient picked edges easier. This allowed a solo instrument to be louder without the sharp attacks hurting.

Sometimes you may want to keep the dynamic range of a plucked instrument but need to smooth out just the hard front edge of the attack. Warmth processing is perfect here. Adjust the WARMTH until you have a smoother, more natural sound - usually 3 - 10 dB of HF attenuation is enough. It’s important to listen very softly, and very loudly to the adjusted track to be sure it isn’t too dull, or still in need of “softening”.

Acoustic guitars can be so creamy. Many times you will have an acoustic part that is very even and you can nicely brighten it up with a top end EQ (high frequencies),... except for that one part where he really bangs it! Use the Warmth control to grab those clanky brash freqs. Usually 1 - 5 dB is enough but on really brittle parts, 10 - 15 dB on peaks may be ok on extreme peaks. Again don’t over do it, especially during tracking. Listen really softly and really loud to test evenness. Its often best to roll off subs or low frequencies to prevent mud before the FATSO. This keeps the compressor from reacting to them.

DRUMS - Without any processing activated, the saturator which is always inline, will pack those peaks down smoothly giving you 2 - 6 dB more average level. Distortion indicator LEDs, the O VU and the Pinned red LED give you a good idea of what’s going on. On percussion, peaks can light up the Red Pinned LED without any nasty distortion, if they are short enough. Analog tape can not handle all the top end and will round out the sound... as will the FATSO’s warmth processor.

Use the High Frequency saturation that the WARMTH control provides on Kick drums that have the occasional clacky hit. Try putting digitally recorded tambourines etc through the FATSO and listen to the difference. That clacky front edge will become warmer and easy to listen to - like the old analog tape and vinyl.

Snares/Kicks/Toms - If you don’t want to lose the basic sound, try setting the compressor to BUSS compressor first. This is a very gentle slow compressor that will leave the transients untouched. If there are areas with over eq’d highs or unnatural transients, get into the WARMTH processing. On snares that have had 8 - 10K added and have some really overly dynamic hits, 5 - 10dB of WARMTH may fold the high back (attenuate them) and smooth out the tonality. Use the High Frequency saturation that the WARMTH control provides on Kick drums that have the occasional clacky hit.

The TRANNY will be useful also. If the Kick drum is too boomy or too thumpy without enough clarity, the TRANNY will add some upper harmonics to the low freq, while rolling off some of the subsonics that could rumble in a mix.

Overhead Mics - Also for over dynamic and brash cymbals, the WARMTH processing can be a real sweetener. To soften the edge of cymbals try WARMTH on 4 or 5 setting and turn the input up to control the amount of warmth. Watch anything over 5 dB of WARMTH as this is really attenuating a lot of high end. But if it is just the front edge of the cymbals, it can be very pleasing. Of course compression may be used but if it is, set it up first.

Room mics - Again, the most gentle compressor for the room mics will be the BUSS compressor. However, radical room compression is currently in style. The TRACK or ELEVEN compressor will be useful over a wide range from 1 dB of GR to 20 dB depending on what you are going for, and what the tracks will allow. But for over the top treatment, try SPANK! The SPANK is not the NUKE of the Distressor yet it can add some of the same sustain and intense size to it. The bargraph can be run right offscale with the SPANK type compressor, and still be a very useful sound. Fifteen to twenty dB of compression is starting to have that John Bonham thing that the Distressor can do. Watch over-heating the tracks though. Also, any loud cymbal playing will become annoying with lots of compression on the room mic. Sometimes it may help to feed a compressed room signal back to the drummer while tracking to give him a feel for balancing his cymbals and drums.

SECTION DETAILS
Details of the four processors in each channel

THE COMPRESSORS
Each FATSO compressor or compressor “TYPE” as we call them, sets the threshold, the ratio (in the standard sense of the word), the attack, and decay. This was done to provide an easy to set, yet versatile group of curves. There are essentially 4 discrete compressors with the fourth (SPANK) able to be combined with the other three.

THE FOUR FATSO COMpressor TYPES:
1. BUSS - Very gentle 2:1 type ratio with Slow attack and fast release. 1 - 4 dB of compression is usual for this compressor type. Very soft knee; Five or more dB of BUSS compression is hitting it hard!

2. ELEVEN - ELEVEN replaces the old GP Ratio, and emulates the famous UREI 1176LN in 20:1, with the slowest attack, and fastest release. This 1176 setting has been used on countless hit records through the decades. Can be used gently or aggressively.

3. TRACK - Compressor - A Distressor type compressor is that’s great for tracking instruments and vocals during the recording process or during mixdown. Mellow lower ratio than ELEVEN. This compressor now has its own LED, as the original FATSO Jr used both the GP and the BUSS LEDs to indicate the TRACK Compressor, causing some people to think it was a combination of the BUSS & GP compressors, which it wasn’t.

4. SPANK - This is a radical limiter type compressor that was specifically designed to emulate the nice squeeze of the older SSL talkback compressors from the ‘70’s & ‘80’s. Quite a bit higher fidelity though. The SSL Talkback compressor was used on “In the Air Tonight” by Phil Collins on the drums.

By combining SPANK with any of the other 3 types of compressors, one really has 7 compressor types (or ratios), although the SPANK’s aggressive nature will tend to dominate when combined. The release curve of all types is logarithmic, meaning it lets off quickly at first and then slows. This release curve is a big part of the FATSO’s compressor sound.

JUST WHAT IS A SOFT KNEE?
“A soft knee” is a compression curve where the first few dB of gain reduction occur at very low ratios, gradually increasing as the signal increases (gets louder). This makes the onset of compression very hard to detect. The knee usually extends for a few dB and gradually flattens out toward a final ratio. All the FATSO compressor types have dominant knees except for SPANK. The BUSS Type Compressor has a knee that can be as long as 15 dB, It was setup for 3 – 5dB to sound HOT like tape.

VINTAGE COMPRESSOR EMULATION
Since the unit is based on the oldest compressor topology, the unit can be made to sound similar to older classics. The nonlinear nature of the older gain control elements of opto-couplers, FET’s, pentode (or triode) tube bias or “Mu” modulation, etc., can be closely emulated if proper settings are used.

Some Examples:
- LN1176 High Ratio – The ELEVEN ratio closely emulates the 1176 on 20:1, slowest attack, fastest release. It is a deliberate emulation of this beloved setting.
- LN1176 or Distressor Lower Ratio - Use the Tracking compressor which emulates a lower ratio than the ELEVEN ratio. Good for tracking and mixing.
- DBX160 2:1 (for over easy) - Try the BUSS for gentle compression, or ELEVEN Type Compressor for more aggressive treatment, no TRANNY.
- SSL type BUSS compression - Use the BUSS type Compressor. No TRANNY.
- SSL Talk back compressor - Use SPANK. Spank that track into submission.

DIFFERENCES IN THE NEW X VERSION AND THE OLDER FATSOs
Unlike the older units, the FATSO is uniform and predictable from one unit to the next. Precise factory calibration assures that if you go from one FATSO to the next, these settings will all sound the same. The only big variable is the input and output pots, which is why we use high resolution knobs, for recall. Differences in the new X version and the Older FATSOs The FATSO Jr was redesigned to lower power consumption and heat, as well as make the interface operate more like it was originally envisioned. The controls can now step backwards one setting by holding the associated button for less than a second. This enables the Bypass to be accessed with one button press from any state, as well as compare compressor and WARMTH settings more easily.
SATURATION AND DISTORTION GENERATOR

The old, sought after vintage gear is not anywhere near as accurate (or linear) as devices made today, but certain “faults” or non-linearities are exactly the reason some sell today at 10 times their original value. They color the sound with distortion and frequency response shaping. Getting the frequency response flat to 20KHz and having distortion below .5% used to be an achievement. But even before 2000AD, there were 35 cent op amps that were flat to 3 MHz, and produced distortion below .002%. Getting things accurate in the digital age is relatively cheap and easy, but getting a piece of gear to be “musical” and fun to use is whole different enchilada.

It is well known that the triode distortion in tube circuits produces lots of 2nd and 3rd harmonics, in some what varying ratios. These lower order harmonics form “the octave” and “the octave and a fifth” to the fundamental musical tones. They are actually “musical” distortion. Harmonics above the 2nd and 3rd get increasingly harsh and unmusical, and therefore should be lower in amplitude (< 60 dB) to keep with our line of thinking. Second harmonic is considered to be the warmest and most “consonant” harmonic distortion. The 3rd harmonic is perceived more easily and often is the “BITE” that is added to midrange and the “warmth” to the low freqs by tube gear. Analog tape also saturates in this manner. The 3rd harmonic is induced in the FATSO by increasing level thru the distortion circuits. It is usually the result of flattening the tops and bottoms of waveforms. Second harmonic is also added especially while compressing in the FATSO. 10% of second harmonic can be hard to perceive.

We have provided distortion indicator lights that indicate some reference operating levels. A “0VU” yellow LED light indicates just under 1% THD and the red “Pinned” LED indicates 3% THD or more. These LED’s are an excellent guide to where the user is in the “Grunge Department” and can help to avoid turning the music into a distorted mess. You will find that the harmonic distortion is generally more obvious on overall mixes and complex programs. On individual instruments, sometimes 10% distortion sounds “fat” and “analog” and isn’t heard as distortion at all.

WARMTH PROCESSOR

The Warmth circuit is by far the most complex part of the FATSO. Basically it is a very strange high frequency (HF) dynamic filter circuit, or High Frequency limiter. It operates very fast and should be very unobtrusive in operation since it gets in and out of the way very quickly. The desired result is akin to the HF saturation that analog tape exhibits when the high frequency amplitude interacts with the tape recorder bias to produce self-erasure of the higher frequencies. We provide a very accurate display of the HF attenuation, with the upper FATSO bargraph showing the gain reduction at 20KHz. The nature of the filter allows the corner frequency to move as attenuation occurs.

We provide just one control for the warmth but there are other ways to control the overall action of this circuit. If you do decide to use the compressor, set it up first because it affects the operation of the warmth. There is heavy interaction between the compressor and warmth settings. The warmth control is a step control with 8 ranges - no warmth action (no LEDs lit), on thru the highest setting of 7. Perhaps the best way to think of the settings is as compressor threshold, with 7 having the lowest threshold, and the most warmth, responding quickly and often to high frequency content. Just remember that instead of controlling the overall level, this warmth “compressor” threshold only affects the high frequencies.

Hundreds of hours of experimentation were involved in developing the filter, to make it capable of large gain reduction at 20KHz without really dulling all the frequencies. Still, we remind you over and over in this manual to error on the side of less WARMTH… and Compression. The temptation is to say “oh wow that’s great, so fat and warm, let’s warm it more.” Resist temptation. Trust the meters when indoubt…. 3 - 5 dB is quite a bit of warmth on most signals. There may be times where over 10dB does the perfect job, but trust us that if you see all the LED’s light on the warmth bargraph - you really better know what you’re doing.

You will find the warmth to be useful all by itself many times without the compressor or TRANNY or much saturation. It can take some of the irritating ping and clickiness out of many sources. Originally the FATSO was only going to have the saturation and this warmth circuit, but as our research went on, we decided the extra circuitry of the TRANNY and compressor would provide some of the other important nonlinear elements of tape compression, and “vintage” gear as well.

THE TRANNY

The TRANNY is short for transformer. In the old days, to interconnect between audio devices with low impedance cabling (i.e. noise resistant), the audio engineer used transformers on the input and outputs. Transformers isolate two signals using wire coils wound close to each other, but not actually touching. They were never that linear and often introduced saturation and LF distortion as well as changing the frequency response. Transformer design and use was an art (as demonstrated by folks like Rupert NEVE), and there were always tradeoffs. However, it has been widely known that a good audio transformer circuit can do wonderful things to an audio signal. This was the goal of our TRANNY circuit. We have tried to emulate the desirable characteristics of the good old input/output transformers in a consistent musical way, and in a selectable fashion.

Many of the older transformers had certain low frequency characteristics that some of our newer and more linear circuits and transformers have “overcome”. As frequency goes down, the audio signal gets more like DC (i.e. slowing moving). Transformers don’t pass DC current thru them, so strange things start happening as the audio goes deeper. The addition of harmonics and peak saturation along with frequency and phase changes on the low frequencies occurs. We found that we could capture the low frequency effects of large and now expensive older output transformers in a weird, internally buffered switch-able design.

To sum up the musical results of our TRANNY circuit, there will be a little more edge in the midrange, and the super low frequencies will have been harmonically altered in a way that allows them to sound louder, even though the peaks are less than the original. Playback on small speakers will show an improved audibility of low end from the result of the psycho-acoustically-pleasanting distortion the TRANNY adds. Something really interesting we noticed… even though fundamentals below 100Hz cannot show up on the little speakers… because of the natural way a transformer saturates, the harmonics give your ears enough clues that your mind somehow fills in the fundamental. If you have the time, try this experiment… put 40Hz sine wave tone into the FATSO, and match the TRANNY level to the bypassed level, then put the output thru a small speaker. A/B the processed TRANNY signal with the bypassed signal in the small speaker. You will probably smile.

FATSO BLOCK DIAGRAM

Main Audio Path

Detector Circuits

Note the position of the Warmth (and TRANNY) circuits after the Compressor, accounting for the large interaction between their controls.
BASIC WIRING
Wiring is straightforward. Connect AC line cord to 3 prong jack, plug in XLR or phone plug ins and outs, and you’re wired.

The phone and XLR Input jacks are differential. At the output, only the XLR is differential (balanced). The output phone jack tip is wired to pin 2 of the XLR out, and therefore is in phase with that pin. The only possible problem is if you attach one of the XLR output pins 2 or 3 to ground. A separate amplifier drives each of these pins, so grounding one of them will short the associated amplifier out. Therefore if you only use pin 2 on your output cable, leave pin 3 floating (unconnected) and vice versa. The phone jack ins and outs will be out of phase with pin 3 since the unit is wired pin 2 hot from the factory (see note below). Pin 1 should almost always be grounded on the XLR cables, but there are times where a buzz can be introduced thru chassisground.

Note: It is possible to change the wiring of the connectors inside since they are hand wired. A user can therefore make XLR pin two or three hot in relation to the phone jacks. Always unplug unit before making any changes. Our company cannot be responsible for damage to unit or electric shock to anyone trying any modifications.

STEREO OPERATION & 5.1 SURROUND USE
To put the FATSO into Stereo mode, press both COMP buttons simultaneously, or in older units, press both WARMTHS. The orange link LED will light on both channels. Let up on both buttons simultaneously. There are two main link effects: 1) The compressors are linked and their gain reduction will match, provided both are enabled. 2) The “Bypass” and COMP controls now controls both channels. It is usually best to match all front panel knob and switch settings on the two “left and right” units to maintain imaging, however, unlike most units, the user has the option to treat the left and right channels differently by using the old link (Pressing both Warmths simultaneously). This allows “hybrid” compressors. The new FATS0 EL7x adds the new COMP link, making either channel control the functions, but also provides the older Link (press both WARMTHS instead of both COMPS) which enables different compressors on the two channels. Sometimes for room mics, keeping the units unlinked actually makes them sound more stereo.

For 5.1 surround where multiple units must be locked together, chain one unit to the next with a short phone plug cable in the “External Link” jacks, match controls, and put units in “Link” mode. Two interchangeable “External Link” jacks are provided to go to and from each FATSO. The gain reduction will now match on all units linked this way. For standard 5.1 processing, three FATS0es will be used.

The compressor bargraphs on the bottom will indicate that the two channels are responding together. Due to the high resolution of the bargraph there may be slight differences in the left/right bargraph response, mostly on the first few LED’s (i.e. 1dB, 2dB, 3dB of gain reduction). New FATS0s (the EL7x) match better.

A NOTE ON BYPASS AND THE MULTIPLEXED CONTROLS
Multiplexed controls allowed us to fit everything into a 1.75” height chassis, with color-encoded indicator LED’s arranged in an easy to read pattern, with Red LED’s usually indicating more radical or distorted settings. To change compressor types, Warmth threshold, and the TRANNY/bypass, press the associated button and cycle through the options. To compare two close settings, hold the associated button for one second to step backwards. Press briefly again to go to first setting. The FATSO uses a hardwired bypass relay enabling the user to compare processed and unprocessed signals accurately. When comparing the original signal from the processed signal, matching the output level with bypassed signal makes it very easy to hear the processing changes. The bypass on the FATSO is multiplexed with the TRANNY control, and on the NEW “x”version, holding the TRANNY/Bypass button will step backwards, allowing a one button press to “Bypass” from any state.

FATSO PET TRICKS
1) You can alter the standard thresholds of the FATSO by inserting a level control in the Sidechain point. By turning the gain down here, the threshold will move higher, elevating operating distortion. Adding gain here will lower the threshold and lower Distortion/Saturation. See our website for more information. www.EmpiricalLabs.com

2) It is also possible to make the FATSO have frequency dependant compression using the Sidechain insert Jack (was previously labeled INSERT on older FATSOs). Send the tip of the Sidechain jack to an EQ, and return EQ to the ring. The sidechain must not have appreciable delay nor be out of phase since it will affect the response time and possibly comb filter the control signals when in Stereo.

3) To set quick +4 tape levels, try setting output at 7.5 and “drive” input knob until compression occurs. For –10 input devices start at 5.5 to 7 output level.

TROUBLESHOOTING
UNIT FORGETS WHERE IT WAS WHEN POWER WAS SHUT OFF – Older units used a Non-Volatile memory cap that could fail after years of use, or possibly have some other type of logic failure. Contact the factory for suggestions or servicing. Newer units have a delay of 6 seconds before storing last control change. Wait 6 secs and turn off to test.

NO SIGN OF LIFE – Press any button to test. When no processing is engaged, the unit has no LEDs lit on the front panel. Check power cord for firm connection. If still no life unplug unit and open top cover by removing all top screws and check fuse toward rear near to transformer. If it is blown, pry it out and replace it with extra fuse provided in fuse holder toward front of chassis. Also, make sure your Voltage select switch is set to current wall outlet voltage (115, 230 VAC).

UNIT KEEPS BLOWING FUSES - Check internal voltage select switch for proper settings (115/230). Otherwise, suspect a short or power supply problem. Inspect internal components for burned or bulging parts. Try to make sure there is nothing trapped under the PC board, shorting to the metal case. Attention visual inspection is still the most effective troubleshooting tool available.

UNIT RUNS HOT – Leave a space above or below it, or mount in cooler rack. New FATSOs run cooler.

UNIT IS ON BUT NOT DOING ANYTHING - The unit may be bypassed or operating subtly. If bypassed, you need to press the “BY-PASS” button so red LED goes off. The input and output levels should always affect it unless bypassed.

SLIGHT GAIN DIFFERENCE BETWEEN THE CHANNELS. Pots are like snowflakes: No two are exactly alike. We select pots and then improve channel to channel match by offsetting the knobs on the pot shafts.

UNIT SEEMS NOISY - Since the FATSO is capable of lots of compression without sounding unnatural, you can often bring hiss levels up undesirably. If you have 20 dB of gain reduction on a room mic that has a 90 dB S/N, the noise floor will be raised 20 dB in quiet areas, bringing the noise floor up to 70 dB. Remember your current input level, and then test that the noise is coming from outside the unit by turning the input knob off (to 0). Try gating before compressing.

NO OUTPUT - Make sure audio is getting to the unit, and the input and output levels are turned up.

UNIT POPS OR UNNATURALLY PUMPS WITH LOW FREQUENCIES Try a different compressor TYPE.

CHANGING THE FUSE
Caution: Always unplug unit before removing Top cover! Unplug unit, remove top cover, and ensure fuse closest to rear of the unit is blown. (Note: The fuse closer to the front panel is a spare fuse and is not connected to anything. Gently pry out one end of the fuse and then the other, replacing it with extra fuse provided near battery holder in front of unit. A small screwdriver may be helpful. Before putting cover on, plug in unit, keeping hands out of the box, ensure that the fuse doesn’t blow again, indicating a possibly more serious problem (see troubleshooting). If OK, unplug unit, screw down top cover and return the unit to normal use. We use a .3A slo blo, but a .5A regular fuse should be fine, Replace spare fuse in front if available. We went to the expense to keep an extra fuse inside... you should too.

LINE VOLTAGE SELECT
Changing the voltage for 230 or 115 operation is easy, but involves unplugging the unit and removing top cover. Inside on the right (as the front of the unit faces you), is a switch with 115 or 230V showing on its face. Select the desired voltage by sliding the switch until it indicates that voltage and you’re done. Replace cover and screws.
COMMENTS ABOUT THE DISTRESSOR

“Every once in a while a product comes along with ‘classic’ written all over it. And in a certain sense of the word, this product actually is a classic already.” Mix Magazine

“Dear Empirical, I’m an LA based producer and an owner of a Distressor. The unit is really awesome! I’ve used it on guitars, bass, room mics, vocals it works great on everything. I’ve used it on records I’ve made with Beck, U2, Etta James, Hole and lots of others.” Joe Chiccarelli

“One piece of gear I definitely recommend is a compressor called the Distressor. It’s really great for just about everything and if you had to use just one compressor you could probably get away with just using that.” Mitchell Froom

“I sold a couple of 1176’s and have replaced them with the Distressors, which do a great job of emulating the 1176’s. Michael Wagener “(Ozzy Osbourne, Extreme, Metallica)

“In general, I really like where Dave Derr’s ear leads him; one of pro audios truly independent thinkers, I’m a huge fan of the box (the Distressor); I use it for bringing up the “goosh” on ambient sources, and for saturating snares, toms, and kicks.” George Massenburg

COMMENTS ABOUT THE FATSO

“In a word, the FATSO is a very good answer to what a lot of people loathe about digital recording. It smoothes out the sharp, brittle edges to exactly the extent you choose, and fills in the hairline cracks just right. I use one on almost every mix I do. I could easily use one and possibly two more.” George Massenburg

“People used to have to hunt for old, expensive gear to get the kind of sounds that the FATSO gives me.” Ed Cherney (The Rolling Stones, Bonnie Raitt, Bob Dylan, Eric Clapton, Jackson Browne, Susan Tedeschi, Etta James,…et al)

Best new Signal Processor-EQ AES Awards - “Empirical Labs FATSO took this category, despite the introduction of a variety of cool new processors. Who can resist the best aspects of analog tape combined with great compression” EQ Magazine

“The winner of the highly coveted, ‘I’m going to write you a check right after the show award’ was picked up by Empirical Labs for its FATSO processor.” Craig Anderton

COMMENTS ABOUT THE LIL FREQ

“Hey Dave… so I got the box, plugged it in on an Etta James vocal that I was having problems with… and it $#$%^&* rocks. This is a great box, my friend. I can see anybody with a DAW wanting to use this thing. I am using the shelving, DS’ing and transformer out, and I am just thrilled. Congratulations. It absolutely complements the digital crap that I am forced to use…wooo hooo.” Ed Cherney

“I finally got to hear Empirical Labs’ Lil FrEQ, a monster that will destroy the way you think about EQ. This single-channel unit has two shelving bands, tunable low cut, four parametric bands, dynamic EQ for de-essing and direct box input—all noiseless and distortion free. Best of all, its smooth processing is absolutely addictive. Sweet! “ George Peterson (Mix Magazine)

COMMENTS ABOUT THE MIKE-E

“Wow. It just dawned on me I never sent the email in my head telling you HOW FRICKIN AWESOME the Mike-E is. Its freakishly awesome and beautiful. Steve Berlin (Los Lobos)

If you’re looking for a WOW moment with a preamp, you should look into the EL9 Mike-E. I have some pretty nice gear here, and when I got one, I put in an order for another the next day (my girlfriend wasn’t pleased, but…). Seriously. True story. George Peterson (Mix Magazine)

“We have used the Distressor pretty much since its inception and now use the Mike-E like we use our lungs!!!! Thanks Dave and everyone at Empirical Labs. You are amazing !!!” Charles Roberts & Frank Cavanagh (SEIVE, FILTER)