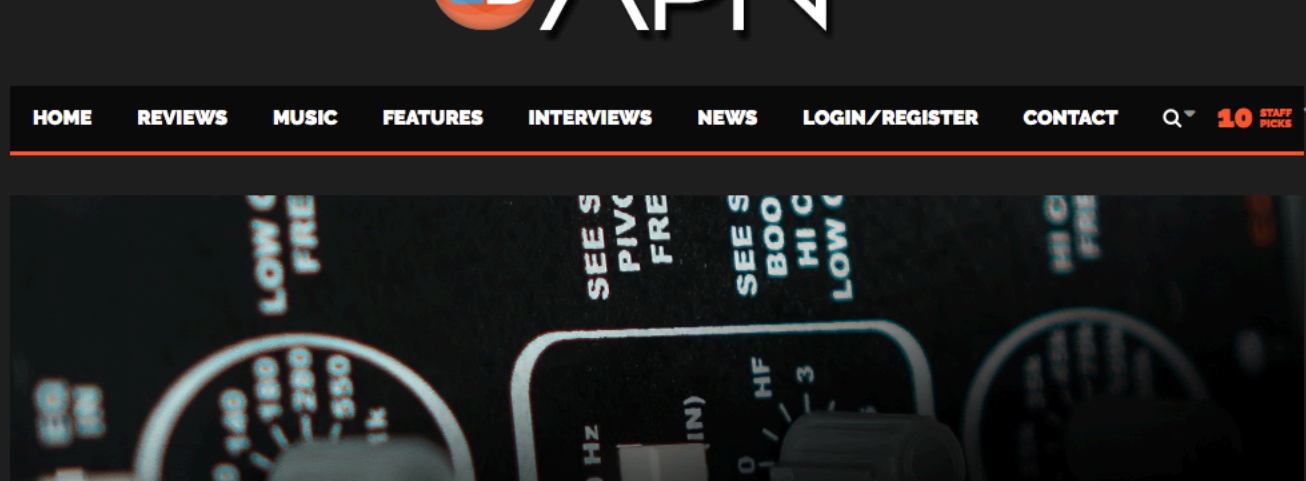

Ingram Engineering: EQ50 Review

HARDWARE REVIEW February 11, 2018 Michael Frasinelli 0

500 series › Ingram Engineering › Ingram EQ50 › Tilt EQ ›

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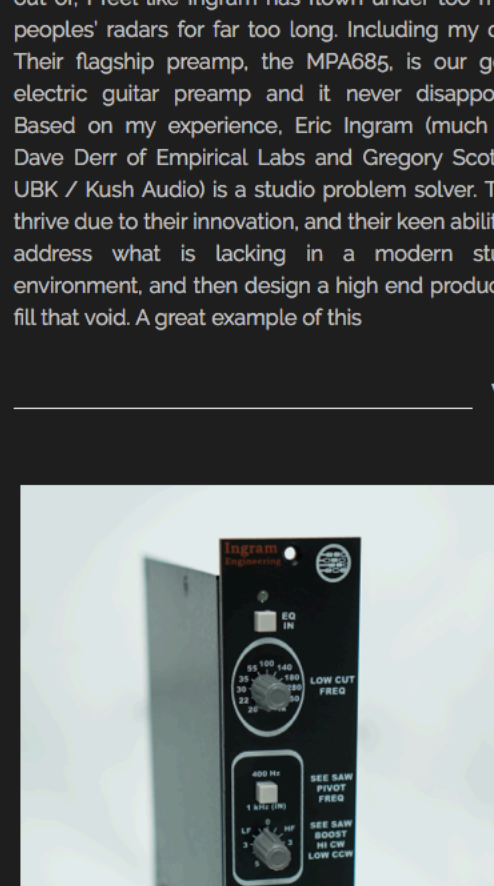
Full Tilt

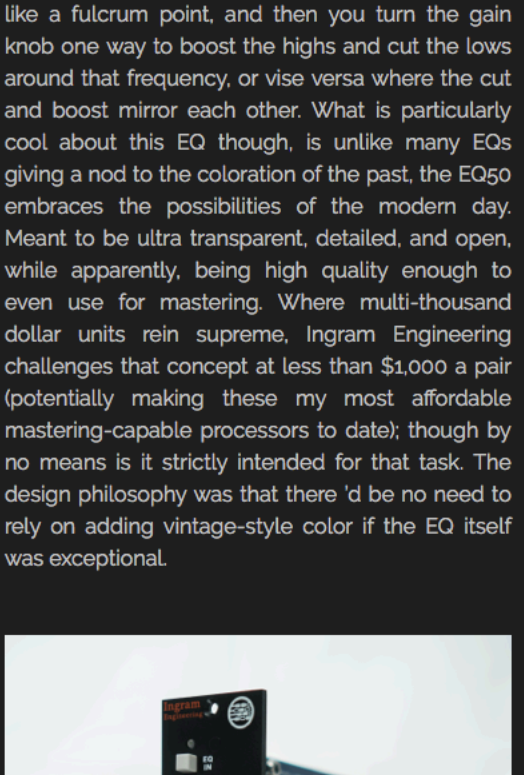
One of my favorite things about this line of work (both studio and journalism), is finding out about *fantastic* boutique companies and being able to spread the word. Ingram Engineering is one such instance and though they have long been a staple of Randy Kohr's Slack Key Studio that I regularly work out of, I feel like Ingram has flown under too many peoples' radars for far too long. Including my own. Their flagship preamp, the MPA685, is our go-to electric guitar preamp and it never disappoints. Based on my experience, Eric Ingram (much like Dave Derr of Empirical Labs and Gregory Scott of UBK / Kush Audio) is a studio problem solver. They thrive due to their innovation, and their keen ability to address what is lacking in a modern studio environment, and then design a high end product to fill that void. A great example of this is Ingram Engineering's fantastic MPA575 500 series singlewide channel strip. You heard that right – an entire channel strip in a singlewide 500 series unit, similar in concept yet drastically different in design to the Empirical Labs DocDerr module. But today we are looking at an attempt to find a different solution to a problem that has already been addressed in the past, as many times, a re-imagining is just as necessary as a ground up design. For example, isn't it cool that a 700 *megabyte* computer hard drive used to cost thousands of dollars and extremely rare to begin with like they used to be? That is less than the stock iPhone applications take up out of the box. But decades later, now that more than 10x that storage is a simple $40 Wal-Mart trip away, it is analog gear and familiar ideas that are often subject to these product refinements and recreations.

What Is It?



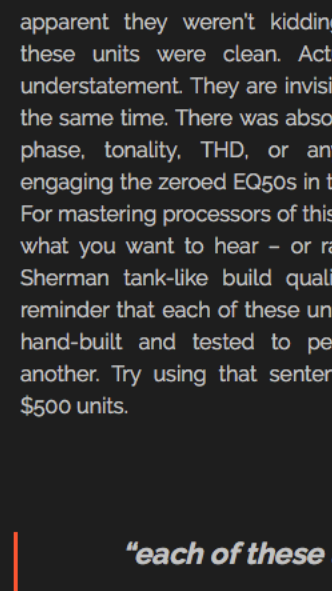
Ingram Engineering's most recent release, dubbed the EQ50, is a standalone and more feature-laden version of the EQ built into the MPA575 channel strip. What may be familiar about these EQs is that they're tilt (AKA seesaw) type equalizers, which are typically, as straightforward as it gets. Turn left, and the signal is darker and smoother. Turn right, and it is brighter and more subdued in the low end. If you're not familiar with this concept, this is a type of EQ where you pick a center frequency which acts like a fulcrum point, and then you turn the gain knob one way to boost the highs and cut the lows around that frequency, or vise versa where the cut and boost mirror each other. What is particularly cool about this EQ though, is unlike many EQs giving a nod to the coloration of the past, the EQ50 embraces the possibilities of the modern day. Meant to be ultra transparent, detailed, and open, while apparently, being high quality enough to even use for mastering. Where multi-thousand dollar units rein supreme, Ingram Engineering challenges that concept at less than $1,000 a pair (potentially making these my most affordable mastering-capable processors to date); though by no means is it strictly intended for that task. The design philosophy was that there 'd be no need to rely on adding vintage-style color if the EQ itself was exceptional.

This is what has me particularly excited, as a high end clean EQ can do things that even the best plugins in the world fall short at. In many ways, it is harder to digitally emulate the pristine clarity and air of a top notch, transparent processor versus the infinite amount of colored plugins. Considering I've said the word master a handful of times now, it only makes sense to start there. Like a lot of mastering gear, the EQ50 is a transformer-less design, which aids in it achieving near perfect transient response and zero phase smear or degradation. Hell, even at the maximum spec'd input level of 20dBu, the THD (total harmonic distortion) is quoted as being a mere .002%. That is insane! It quickly became apparent they weren't kidding when they said these units were clean. Actually, clean is an understatement. They are invisible, yet beautiful at the same time. There was absolutely no change to phase, tonality, THD, or anything else when engaging the zeroed EQ50s in the mastering chain. For mastering processors of this type, that's exactly what you want to hear – or rather *not* hear. The Sherman tank-like build quality is also a great reminder that each of these units are meticulously hand-built and tested to perfectly match one another. Try using that sentence with other sub $500 units.



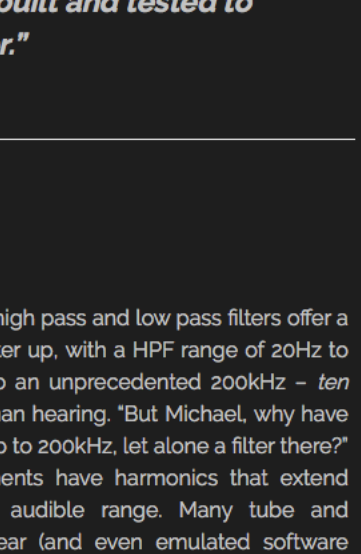
> *"each of these units are meticulously hand-built and tested to perfectly match one another."*

Anti-Aliasing



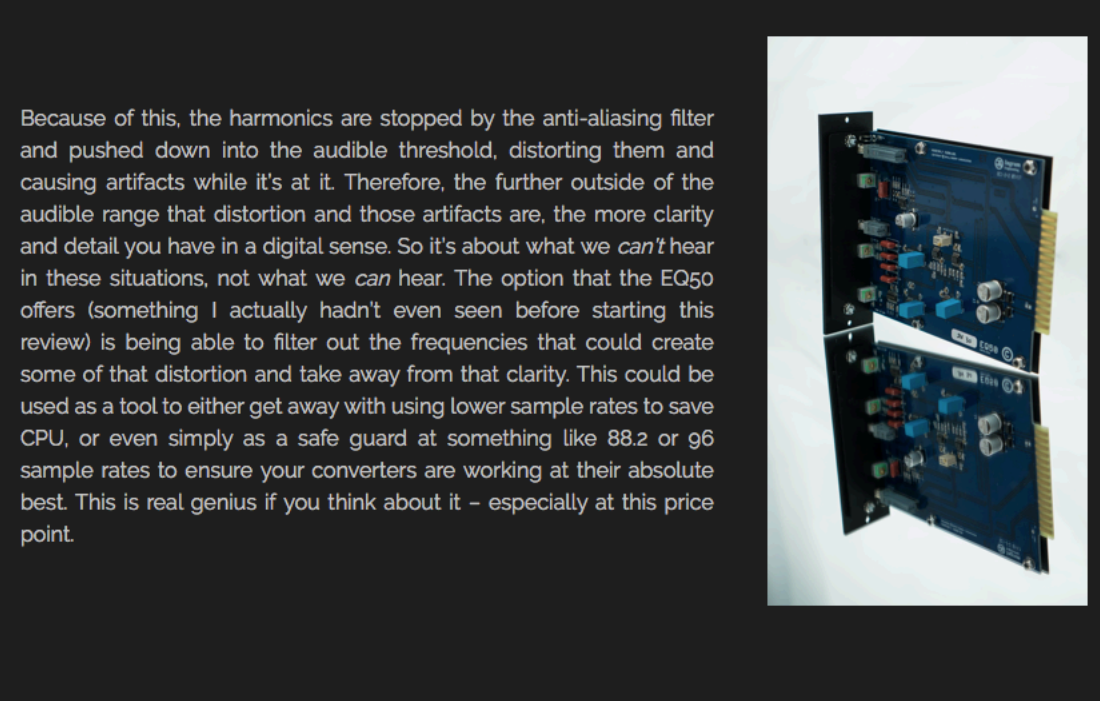
The very gradual -6dB per octave high pass and low pass filters offer a way to very precisely clean a master up, with a HPF range of 20Hz to 1kHz, and a LPF range of 5KHz to an unprecedented 200kHz – *ten times* the normal threshold of human hearing. "But Michael, why have a unit with a frequency response up to 200kHz, let alone a filter there?" Glad you asked! Tons of instruments have harmonics that extend many, many times outside our audible range. Many tube and transformer-coupled pieces of gear (and even emulated software plugins) produce harmonics that extend just as far. Your anti-aliasing filter is in place to cut off those harmonics to help your converters perform at their best. If you're working on a lower sample rate such as 44.1, the anti-aliasing filter is only around 22kHz.

Because of this, the harmonics are stopped by the anti-aliasing filter and pushed down into the audible threshold, distorting them and causing artifacts while it's at it. Therefore, the further outside of the audible range that distortion and those artifacts are, the more clarity and detail you have in a digital sense. So it's about what we *can't* hear in these situations, not what we *can* hear. The option that the EQ50 offers (something I actually hadn't even seen before starting this review) is being able to filter out the frequencies that could create some of that distortion and take away from that clarity. This could be used as a tool to either get away with using lower sample rates to save CPU, or even simply as a safe guard at something like 88.2 or 96 sample rates to ensure your converters are working at their absolute best. This is real genius if you think about it – especially at this price point.



> *"EQ50 is able to filter out the frequencies that could create some of that distortion and take away from that clarity."*

Single Knob Action



Like most things 'mastering', a little bit goes a long way. Switching between the 400Hz and 1kHz pivot/center frequency points, I was able to achieve fantastic sounding results by only applying it .5dB to 1dB across the master; extremely similar to the traditional 4 band EQ I bypassed to conduct these tests. Certain lyrics in the song were a little too 'present' but instead of adding an additional band of multiband compression, I settled with roughly -.75dB at the 1KHz pivot frequency, and it was *perfect*. The blend between the slightly attenuated hi mids and highs with the barely boosted low mids and lows really smoothed things out. While this type of EQ isn't the most surgical, it can certainly come in handy to quickly and easily make changes that would require multiple bands of EQ with the turn of a single knob.

The Sound

The EQ itself sounds fantastic, and I absolutely love the low end. Since the unit is so free of distortion, the bass stays tight and coherent, giving fat results that never get muddy. Working in perfect tandem, even the default high pass filter setting of 20Hz did wonders to ensure that the sub lows stayed under control and didn't eat up the master's headroom or crispness, even when I was playing with extreme settings. From there, you can increase the filter's frequencies to find the perfect match for the song, with the extremely gradual roll off preventing the track from sounding thin, just clean. Being the control freak that I am, I would really love some additional frequency points, possibly as a stepped pot in the center opposed to the two frequency push button – potentially as a separate version considering the fact that stepped pots are incredibly expensive and would likely drive the price up. Much to my surprise, I did not find myself yearning for results any different than what I achieved on this first test, and 400Hz + 1kHz covers a surprising amount of ground.

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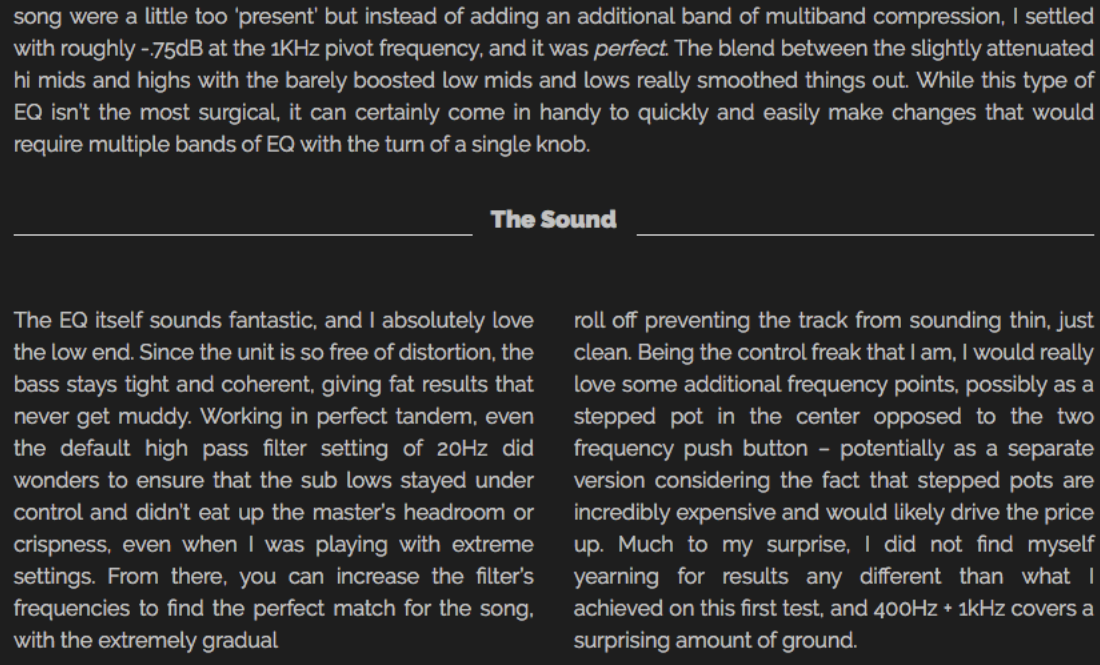


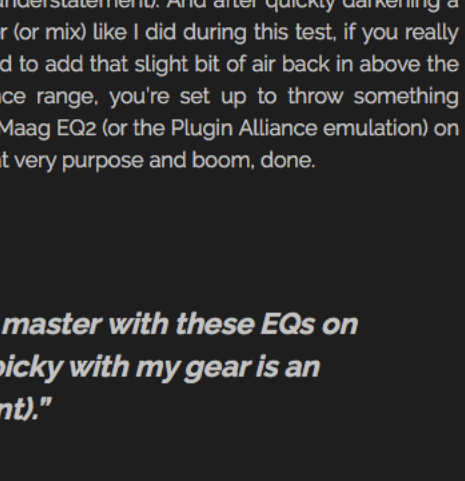
> *"400Hz + 1kHz covers a surprising amount of ground."*

The push buttons provide perfect recall of the center frequency, much like a stepped pot would and, whilst the boost/cut and filter knobs are fully variable, they have a great feel and resistance to them, so I had no issues matching the left and right channels. I compared this to a few very reputable software tilt EQ, and the results weren't even close. In comparison, the software sounded like it was almost in a box, with a top end that was far less sweet, a low end that was far less controlled, less overall dimension, and it was seemingly less responsive at the exact same settings. As I said earlier, these units are far from surgical being a tilt EQ, but these also may be the most affordable equalizers that I would confidently recommend to someone as a mastering processor. Unlike many sub $500 units, they do not jeopardize the sound quality in any way, shape, or form. They improved it, drastically. I ended up bouncing down the final master with these EQs on them, by the way (and saying I'm picky with my gear is an understatement). And after quickly darkening a master (or mix) like I did during this test, if you really wanted to add that slight bit of air back in above the sibilance range, you're set up to throw something like a Maag EQ2 (or the Plugin Alliance emulation) on for that very purpose and boom, done.

> *"I ended up bouncing down the final master with these EQs on them, by the way (and saying I'm picky with my gear is an understatement)."*

Quick Fix

I remember when I first started pursuing audio and production, I had no option but to use an affordable, overseas factory-produced microphone that had a tendency to sound bright and tinny on many sources. Even to this day with the formidable microphone collection I have built up, (in addition to the 115+ microphones I have access to at Slack Key Studio), particular microphones that are FANTASTIC on certain male voices may be too bright and/or thin for female or higher pitched male vocals. I also tend to prefer to record with dark or neutral microphones as it is easier to add high end and reduce low end than the opposite, and both of these applications are picture perfect for a good tilt EQ.



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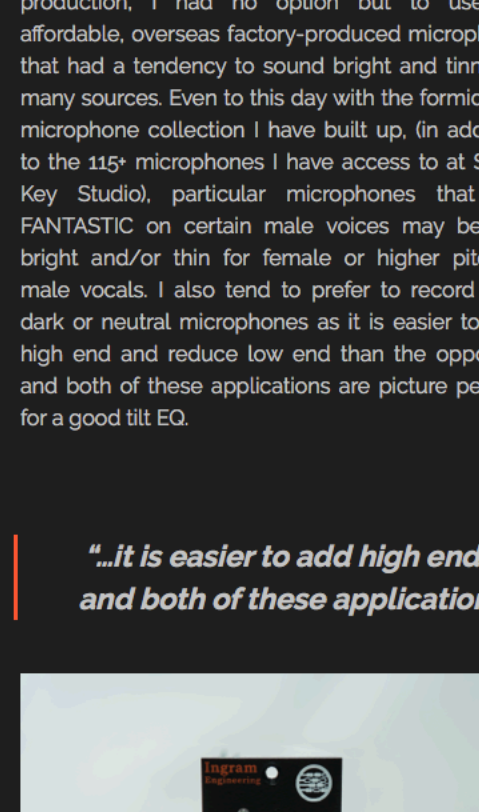

Opening a mic shoot-out I recently set up for a separate article (Delphos), I put one of the EQ50s on the one recording (using the popular Neumann TLM 103) that ended up being a tad bright and a tad thin for the singer. I also picked a track with some "pops" that persisted, even when using a Hakan pop filter. This way, we can see how the EQ50 could mask such a problem if for whatever reason, you were stuck with no other option but to try to take emphasis away from them like when mixing vocals you did not personally record. The same concept would apply to anyone recording with anything from a Rode, to an Audio Technica, to a Blue, and a slew of other affordable microphones on the brighter side. Heck, even bright high-end mics like an AKG C414, C12, Manley Reference Gold, and Sony C800G would be fair game for this technique. Ian Munsick was the vocalist, and his high tenor voice is right above the range of many of male singers, making it very easy for sibilance and harshness to become an issue if not paired with the right microphone.

Vocal Work

The EQ50 makes fixing this a one knob affair, though. What I love about this style of EQ, (and even more so with the EQ50 – as it performs better than any tilt EQ I've ever used) is that you can get fantastic results without performing massive boosts and cuts. Much like with the mastering examples, since you are bringing up the low end and low mids as you bring down the high mids and high end, it gives the impression of having carved out much more top end than you actually did as the boosted low end smoothes things out.

> *"...it gives the impression of having carved out much more top end than you actually did as the boosted low end smoothes things out."*

Because of this, I found the results of taming Ian's vocals by setting the Ingram EQ to -1dB at 1kHz far less destructive to the tonality than other ways of taming the vocal. I can see myself very regularly putting the EQ50 early in my chain for vocals (and tons of other stuff, honestly) to set the general tone and balance I want, filtering out 75Hz to 150Hz, and possibly even 17kHz or higher, that's so much of the battle already. Non-destructive is really a reoccurring theme with these equalizer, as it preserves the original and natural tone of the source while setting you up to enhance, clean, tighten and sweeten to your hearts content. Overall, covering much more ground than I would have ever thought, with 1kHz and 400Hz pivot frequencies covering different scenarios. The audio examples I posted of Ian's voice feature no processing whatsoever (besides tilt EQ and filtering), and I believe the results are day and night. Slap on some compression and the vocals would be very far along in the mixing process already – only 2 processors in the chain later! Again, the poor plugin didn't stand a chance.

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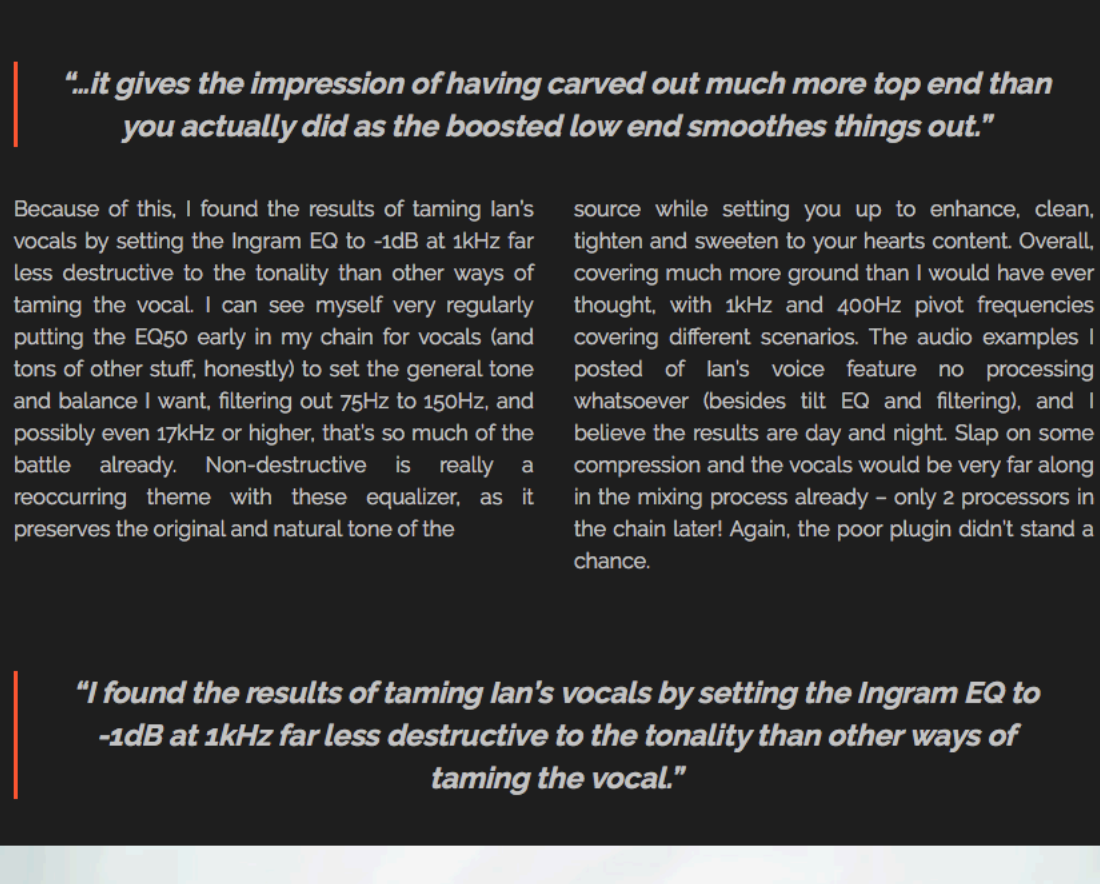
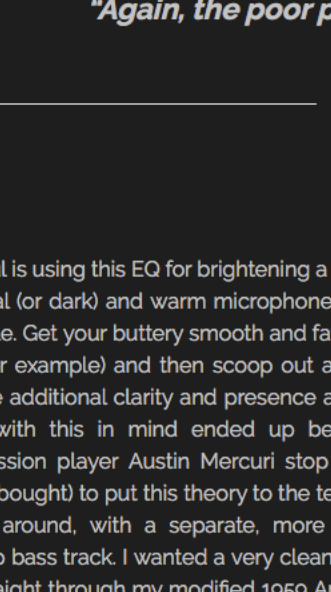


> *"Again, the poor plugin didn't stand a chance.'*

Brightening

Just as useful is using this EQ for brightening a track that was recorded with a neutral (or dark) and warm microphone. As I said above, this is more my style. Get your buttery smooth and fat U47 or RCA ribbon mic recording (for example) and then scoop out any potential mud while adding some additional clarity and presence at once. Another perfect application with this in mind ended up being bass guitar. I had Nashville session player Austin Mercuri stop by (with the Fender P Bass he just bought) to put this theory to the test. I instructed Austin to just noodle around, with a separate, more standard track plus a separate slap bass track. I wanted a very clean but fat tone, so we just recorded straight through my modified 1959 Ampex 601's tube DI, and then I blended the DI with some good ole Sound Toys Decapitator.

Big Bottoms



Putting the Ingram EQ into the chain, it became clear to me that if the bass is well recorded; these EQ50s may often be the only EQ it needs. Perhaps you'll also need to notch some frequencies out to help it get along with the kick drum, but I think an EQ50 and a multiband compressor will get you to low end paradise just fine. The Ingram is MASSIVE sounding, whilst retaining a tight, punchy low end that doesn't get messy. For both the slap bass and the regular picked bass, switching between the 400Hz and 1kHz option gave the flexibility to decide if I wanted to sculpt out some lows from the slap bass and boost the presence to help it stick out, clean up the regular bass a touch, or just fatten things up. Even turning the EQ down to -1dB yielded some beautifully thick and round sounding results. By the way, it hit noise complaint-levels of 'big'. I wouldn't be surprised if my next-door neighbors could hear this behemoth-like low-end through the layers of acoustic treatment, bass traps, and brick walls.

> *"Even turning the EQ down to -1dB yielded some beautifully thick and round sounding results."*

At 1kHz, you get some added bite in addition to the beastly low end, so both options have great uses, as 400Hz smoothes everything out and is a straight up sub blaster... in the most beautiful way possible. Likewise, turning the seesaw knob the other way produced opposite results, with 400Hz adding tons of bite, attack, and presence whilst reducing the low end, with the 1Khz sculpting out so much of the fundamentals, leaving mainly pick attack / transients and harmonics. Once you get your tilt EQ dialed in where you want it, the ultra musical HPF is invaluable – keeping the mix from losing clarity when set around 20-35Hz or so depending on the track, whilst its gradual nature prevents you losing that glorious bottom end. Finish it off with the LPF removing any unnecessary top end and you're good to go. This equalizer lets you go from James Jameson to Geddy Lee with the turn of a knob. Granted, if the bass is playing in the higher registers at certain parts you may want to add some fine-tuned high end back in with a separate EQ.

INGRAM ENGINEERING

> *"...the ultra musical HPF is invaluable – keeping the mix from losing clarity when set around 20-35Hz or so..."*

Or, if they are distinct sections, split the bass track and brighten or at least not carve out as much top end for the higher octave parts. I can even see this being a viable option when recording bass (if you want to save the EQ50s for something later on in the mixing stage). And, for the third time in a row, the plugin's results were laughable in comparison – Ingram three, software zero.

> *"...the plugin's results were laughable in comparison – Ingram three, software zero'*

CONCLUSION

The simplicity and ease of use, mixed with the second-to-none sound quality of Ingram Engineering's tilt EQ allows you to use your imagination to achieve professional grade results. Just like the previous tests, between a 400Hz and 1kHz pivot frequency, you could tame all sorts of string buzz whilst also carving out anything that may make a mix muddy with the filters. Harsh drum overheads/cymbals can be tamed in an instant, or boring ones made shimmery. Thin out an overly fat guitar track (cause guitar players typically love the bass knob on the amp) while helping it cut through a busy mix. The EQ50 is a utility tool, a time saver, and a beautiful sounding (and fun) unit all in one. For having 3 knobs and 2 buttons, I was expecting it to be maybe one of those things. I feel like the compromise between keeping the price very obtainable without jeopardizing the high standards of Ingram was done extraordinarily well.

Perhaps if word gets out about the positive influence these tilt EQs can make in the studio, Eric Ingram will release an upgraded version with more frequency points and stepped pots! Even without it though, this unit gets my full-fledged seal of approval. If you haven't yet added an Ingram Engineering unit to your roster, one (or a pair) of these EQs may be a perfect introduction. I went from not understanding why I would need anything but a plugin for these tilt applications to never wanting to use those plugins ever again.

> *"The EQ50 is a utility tool, a time saver, and a beautiful sounding (and fun) unit all in one."*

Availability

Price: $415 USD, €350 + VAT

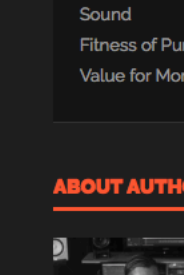
View all of Ingram Engineering's products here

The EQ50 is available for purchase at both Pepper's Pro Shop and Front End Audio

THE LOW DOWN

Summary	A simple, intuitive, fool proof, and undoubtedly mastering grade tilt EQ and filter. In a day and age where "mastering grade" is a term thrown out left and right, Ingram Engineering delivers pristine, detailed, massive sounding 3D equalization.
Positives	+ Gradual and extremely musical filters + Perfectly matched and hand-built + Zero phase smear/quality loss
Negatives	– Only two center frequencies – No option to bypass specific EQ/filter sections – No stepped parameter option
User Interface	5 of 5
Features	3 of 5
Ease of Use	5 of 5
Sound	5 of 5
Fitness of Purpose	5 of 5
Value for Money	4 of 5

ABOUT AUTHOR



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