

# TAPE OP

The Creative Music Recording Magazine

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## **JEREMY FERGUSON**

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## **DUSTY WAKEMAN**

*of Mojave Audio in Behind the Gear*

## **GEAR REVIEWS**

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**AH:** I very much prefer DB25s for multichannel I/O over individual connectors. And I love how the eight mic inputs of the *Red 8Pre* are on a single DB25 instead of individual XLRs, because I was able to connect the *Red 8Pre* to my mic-level patchbay in a matter of seconds. Same with the rest of the I/O to my line-level patchbay. Moreover, if I were using the *Red 8Pre* for remote recording, I'd purchase a DB25-XLR rack panel for connecting mics — one that I could move to the front or to the rear of the rack, or even to another rack, as needed. Given how much I/O and routing capability is built into the 1RU-height chassis, I strongly believe that DB25 connectors are the right choice.

With that said, I found it extremely frustrating that the line input channels are divided up in standard banks of 1–8 and 9–16 across DB25s, while the outputs go 1–2 TRS, then 3–10 and 11–18 DB25. This means that if you have a DB25-equipped patchbay and you use standard DB25 snakes, your input and output channels won't line up vertically — unless you opt for custom-made cables. [Fortunately, Focusrite Control 2.1.7, released after I wrote this, allows reassignment of line-level I/O to address this very issue.] I also found it mildly annoying that the analog input and output levels have different calibrations, presumably to reduce the chance of overloading the inputs during loopbacks. In Cubase, I can set send/return levels individually for analog inserts, but that functionality is missing in Pro Tools, which makes A/B'ing analog inserts difficult. For me, the odd channel-banking and mismatched I/O calibration are the two lone defects in the *Red 8Pre*'s otherwise ideal I/O.

**NM:** The DB25 channel assignments didn't bite my arse. I was using DB25-XLR breakouts where necessary. If I'm not mixing on a full-sized desk, I'm usually in-the-box, and I don't often use analog inserts on individual channels in-the-box. So, from where I stood, all of the analog I/O was easy to work with, and very flexible. I will mention that I am very much looking forward to Focusrite adding Ethernet-based remote control and I/O mapping of the Red Range interfaces to the RedNet Control application (versus Focusrite Control), for systems that lack Thunderbolt or are too far away.

At the end of the day, the *Red 4Pre* does exactly what it says on the tin, and it's amazing with Digilink, Thunderbolt, and Dante — making it one of the most flexible interfaces I've used. It's really future-proof. And the bottom line is that it sounds great.

**AH:** We should also mention that the Softube Time & Tone plug-in bundle, and the Focusrite Red 2 and 3 plug-in suites come free with both Red Range devices. Plus, registered owners of Focusrite hardware receive monthly offers for free or heavily discounted plug-ins from the likes of FabFilter, Eventide, Sound Radix, iZotope, Softube, etc. There's a lot to love here with the Focusrite *Red 4Pre* and *Red 8Pre* — great user interface; impressive sound; solid build; flexible I/O and routing; remote control; interfacing through Digilink, Thunderbolt, and Dante; and access to first-class plug-ins.

I think Neil said it best when he called the *Red 4Pre* "future-proof." In my opinion, Focusrite is making the most forward-looking recording interfaces available today. Even Pro Tools | HD users tied to the past (whether they know it or not) can take a step forward in time by investing in a Red Range interface — one that will not only upgrade the sound of their systems today, but will also allow effortless expansion in the future. (*Red 4Pre* \$2,499.99, *Red 8Pre* \$3,499.99; [www.focusrite.com](http://www.focusrite.com))

—AH & Neil McLellan <[www.neilmclellan.rocks](http://www.neilmclellan.rocks)>

## Kii Audio Kii THREE active monitors & Kii CONTROL monitor controller

This powered monitor incorporates the most impressive speaker technology I have ever experienced. It's a real game changer. The *Kii THREE*'s dispersion pattern is cardioid, even at the lower end of the frequency spectrum, where reflections from nearby wall/floor/ceiling surfaces normally wreak havoc to frequency and time-domain response. A single *Kii THREE* utilizes six drivers and six built-in Class D amplifiers (1,500 W total), while its enclosure remains compact enough so that a pair of Kiis fits easily on top of a meter bridge or on stands behind the desk. Advanced DSP algorithms do clever things with the *Kii THREE*'s array of drivers (some of which face to the side and some to the rear) in order to focus the sound in front of the speaker, while simultaneously optimizing the speaker's impulse response. My ears and my measurement mic confirm how incredibly effective Kii's technology is. For me, listening to the *Kii THREE* for the first time wasn't a case of it sounding a little bit better (or different) than anything else. On the contrary, it was a full-blown, holy-tmesis-cow moment.

Before we go on, take a seat, so I can tell you how much this speaker costs — \$11,495 per pair. Now, let me explain why this price might very well be reasonable — once you factor in potential savings in other areas of your budget. To do that, let's start by talking first about the detrimental effects of speaker-boundary interference.

Sound waves that emanate from speakers in an untreated room will reflect off the room's surfaces. When this happens, certain frequencies will be reinforced while other frequencies will be attenuated when the direct and reflected waves combine. The results are a frequency response with peaks and deep valleys, and smearing of transients due to multipath-induced delays. The two most common solutions? Treat the room to absorb reflections, and position the speakers to minimize points of reflection. That's why professionally designed control rooms have carefully chosen dimensions/angles, strategically integrated acoustic treatment, and soffit-mounted speakers. Many of us don't have the luxury of working in such rooms, so instead, we place our speakers in a listening triangle, mount acoustic treatment on our walls, and call it a day. Unfortunately, most freestanding speakers radiate sound in an omnidirectional or near-omni pattern at lower-midrange and bass frequencies; and these same frequencies are the most difficult to treat. This means that lower-frequency waves are bouncing off more surfaces, and therefore, monitoring accuracy suffers most in the lows. Have you ever wondered why the lower-midrange and bass elements of your mixes don't translate to other rooms as well as other elements do? This could be why.

If you've never taken high-resolution acoustic measurements of your room, set aside 10 minutes to try the following exercise. Pull up your favorite signal-generator plug-in and output a sine wave to one of your speakers. While sitting at mix position, sweep the frequency of the sine wave very slowly from 20–500 Hz, and listen for changes in volume. (You can even automate this sweep if you want to get fancy.) You'll hear peaks and nulls resulting from room modes, speaker-boundary interference, and even listener-boundary interference. Now, move your speaker a couple of feet to another position, and try it again. Fascinating, right? Unless your room is perfectly treated, you'll hear specific frequencies drop so low in volume that they almost disappear. When you move your speaker, some of those frequencies will change due

to the quarter-wavelength distances to the walls changing. When you do this test, note that the most problematic area of the spectrum is down low, which again is where conventional speakers radiate in all directions and boundary reflections are hardest to mitigate.

That brings us back to the *Kii THREE*. This is the first freestanding speaker that I've heard that has a cardioid output pattern that is wideband — even down to 60 Hz, according to my measurements. Additionally, Kii employs DSP-based phase-response correction and a current-drive amplification scheme to reduce intermodulation distortion. I first heard about Kii's unique approach when I read a review in *Sound On Sound* <[www.soundonsound.com](http://www.soundonsound.com)> authored by Phil Ward. In addition to being a great writer professionally (his personal blog is excellent too), Phil was a speaker design manager for several manufacturers — so he knows his stuff. His analysis of the Kii technology is definitely worth reading (and it's now freely available, even if you aren't an *SOS* subscriber). Soon after seeing Phil's review, Grace Design [*Tape Op* #61] contacted me, not only to tell me about their new distribution partnership with Kii, but also to give me the opportunity to demo the *Kii THREE* in my own studio. I quickly said, "Yes!"

When I set aside my HEDD Type 30 monitors [*Tape Op* #118] and ADAM Sub12 subwoofer [#69] to listen to the Kii speakers for the first time, I honestly said "Whoa!" out loud to myself. The imaging I heard from the Kiis was almost as sharp and as clear as what I would expect from headphones; except with the Kiis, the soundstage was *in front and around me* — not just constrained to the space between my ears. Importantly, there was still a sense of natural ambience (something that's often lost to me when listening on headphones) because there was still room reverberation to be heard — except that the reverb sounded tight and controlled. It was as if my room had gotten the perfect virtual acoustic-treatment makeover, and the speakers were no longer fighting the room.

Serendipitously, I was about to embark on a *real* makeover of my room, so I had the opportunity to pull down most of the acoustic treatment behind and to the sides of the speakers. Pressure-based resonant-panel bass traps, velocity-based traps, active bass traps, and broadband absorbers — covering over 200 sq ft of area — were removed, leaving the nearby walls, corners, and floor surfaces bare.

When I fired up the pair of *Kii THREE*s again, I was blown away a second time. Incredibly, the speakers *still* sounded amazing, despite being surrounded by untreated surfaces; and the imaging was *still* beyond reproach — better than I've heard from any other speakers in my *treated* room. Importantly, the bass and lower-midrange response remained surprisingly even too. I swapped in my HEDD Type 30 as well as my PreSonus Sceptre S8 [*Tape Op* #99] speakers to confirm that what I was hearing from the *Kii THREE* was indeed something special. I also used this opportunity to take comprehensive measurements with my Cross-Spectrum Labs calibrated mic [*Tape Op* #96].

Surrounded by untreated walls, the frequency responses measured at mix position from the HEDD and PreSonus speakers exhibited huge swings. At 72 Hz in particular, there was a 30 dB null due to the quarter-wavelength cancellation corresponding to a 4 ft distance between speaker and wall. With the Kii speaker placed in the same position, the null measured only 5 dB deep. In fact, the frequency response of the *Kii THREE*, despite the untreated surfaces surrounding it, deviated by at most ±5 dB from 32 Hz to 30 kHz — with far less bass and lower-midrange resonance displayed in the waterfall plots, compared to the other speakers. Anyone who has spent time measuring in-room frequency responses would



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agree that a  $\pm 5$  dB reading is exemplary — even in a fully treated room, no less a partially treated one. This is real proof that Kii's technology is effective not only in minimizing speaker-boundary interference, but also in reducing the amount of spurious bass energy in the room — so even the adverse frequency and time-domain effects of room modes and standing waves are tempered.

I also looked at impulse and phase responses, and again, the *Kii THREE* excelled. Of note is that Kii's phase-correction processing adds 87 ms of delay according to my measurements, which is far too much latency if you're monitoring through the speakers while tracking. But you can toggle the phase-correction off while keeping the speaker's cardioid polar pattern active, which reduces the delay to under 1 ms.

All this is not to say that the *Kii THREE* is a "better" speaker. I still prefer the highs of my HEDD Type 30, and the Type 30's low end is stronger and clearer too — given well-treated surroundings. I heard and measured less harmonic distortion in the lows from the Type 30 versus the *Kii THREE*, particularly below 60 Hz, and especially below 35 Hz. In fact, the Kii has greater harmonic distortion from 300 Hz down, as well as a bit more distortion at 13 kHz and up. But in my opinion, all that isn't as consequential as the overall experience of listening to the speaker in a room, where the Kii's unique design allows it to perform with far less interference from the room. Therefore, you could easily make the case that the *Kii THREE*'s overall accuracy of reproduction is better due to significantly less speaker-room interaction. Moreover, because you're pulling interference specific to your room "out of the mix," so to speak, you increase the chances that mixes completed on Kii's will translate successfully to other listening environments.

Now back to the *Kii THREE*'s price — \$11,495 per pair — and why I think this number would fit well into some budgets. Even without acoustic treatment behind and to the sides of the speakers, the Kii's still provided a clearer image than my other speakers with treatment in place. The cost of that treatment? About \$6,000 total for the passive absorbers alone. With the Kii's, I was also able to forgo my subwoofer, which I have positioned in one corner of the room to specifically counteract the speaker-room interaction of my stand-mounted monitors. That's another \$2,000. So, would that be a smart tradeoff — spending less on acoustic treatment and a subwoofer, so you can spend more on Kii's? Well, I can't make that decision for you, but in my case, the numbers add up very much in the *Kii THREE*'s favor — a net cost of \$3,500 for the pair. (I would challenge you to find a \$1,750 speaker — or even a \$6,000 one, for that matter — that outperforms the *Kii THREE* in a real room.) Also, if you have a room that can't take significant bass trapping or has already reached the limits of acoustic treatment, then the price of the Kii's may be justifiable.

At this point, if you are seriously considering a purchase of the *Kii THREE*, let me quickly mention the optional *Kii CONTROL*, which is a tabletop USB interface and monitor controller for the Kii speakers. It connects via a single standard UTP network cable to the back panel of the first speaker, and then you daisy-chain the second speaker. The manual recommends CAT5 or higher; and a nice CAT6 cable is included, as is a USB 2.0 cable. Power to the *Kii CONTROL* is provided from the connected *Kii THREE*, so you can forgo the USB connection, which is what I did during my loan period. (At the time, the *Kii CONTROL* wasn't yet Windows compatible. A Windows driver has since been posted on Kii's website.) The *Kii CONTROL* allows source selection between three digital inputs on its rear (USB, S/PDIF coax, TOSLINK), and one input on the back of the speakers (XLR — digital or analog). It also offers mute, dim, and speaker EQ functions using

capacitive-touch buttons and an OLED display. A large rotary encoder adjusts speaker volume. Plus, it lets you easily toggle the aforementioned phase-correction processing without having to reach behind the speaker.

At \$1,595, the *Kii CONTROL* may initially seem expensive too, but its price is half that of other "reference" monitor controllers. Moreover, its USB input supports sample-rates up to 384 kHz PCM, as well as DSD 64 and 128. (DSD 256 arrives soon in a firmware update.) There's also real value in its seamless integration with the *Kii THREE* speakers, including lossless volume control for all connected sources, as well as deep parameter control.

Let me end this review by quoting Phil Ward: "Well I could honestly finish this review in one line simply by writing that the *Kii THREE* is one of the finest speakers I've ever heard and undoubtedly the best I've ever had the privilege and pleasure of using in my own home." After playing around with the Kii speakers in my studio, I took them home for a couple of days — and my conclusion matches Phil's exactly.

(*Kii THREE* \$11,495 per pair, *Kii CONTROL* \$1,595; [www.kiiaudio.com](http://www.kiiaudio.com); [www.gracedesign.com](http://www.gracedesign.com)) —AH

## Fostex T40RPmk3 & T50RPmk3 headphones

Having worked (and played) in various recording studios since the mid-'80s, I've seen (and worn) my share of Fostex headphones. Along with AKG K240 and Sony MDR series models, Fostex cans were *everywhere* in the '80s and '90s. I remember two basic versions from back in the day. There was the inexpensive T10 model, which didn't necessarily sound great; but it was durable, comfortable, and *loud*. The T20 was nicer — more comfortable, better sounding, and with more isolation to avoid spill into a vocal mic — kind of a treat.

Fostex has never stopped refining its studio headphones, and the RP series (*RP* stands for *Regular Phase*, referring to the proprietary diaphragm design) has been running with the ball admirably for four decades now. With a replaceable, lockable cable system, the latest *RPmk3* variants win my praise for actually being user-serviceable, while many other brands of headphones have to be sent in for repair, or often are just trashed out of convenience. The *RPmk3*'s newly-redesigned earcups are super-comfortable — I would actually use the word "luxurious." At least for my head and ears, there was just the right amount of cushioning and snugness. These would be easy to wear for an all-day session.

Sound-wise, the new *RPmk3* cans, at 50  $\Omega$  impedance, are capable of significant volume (helpful for drummers struggling to hear a click track, for example). I auditioned two of the three *RPmk3* models — the *T40RPmk3*, which has closed-back earcups that provide significant isolation, and the *T50RPmk3*, which is a classic semi-open design. To me, both sounded quite good, although perhaps a bit dark — which can translate to "non-fatiguing" of course. The *T50RPmk3* seemed a bit more natural sounding, while the *T40RPmk3* provided a nice bass thump — perhaps the best bet for a drummer or bassist.

I was glad to check out these new twists on old classics and could see picking up a few pairs for my studio. Because of the slightly colored sound of the *Fostex RPmk3* series, I prefer other headphones for mixing reference. On the other hand, for comfortable and efficient studio tracking — and for headphones I won't need to repair a few times a year — my new go-to will be the *Fostex T40RPmk3* and *T50RPmk3*.

(\$159.99 each; [www.fostexinternational.com](http://www.fostexinternational.com))

—Pete Weiss <[www.weissy.com](http://www.weissy.com)>