



Krell Phantom II Preamplifier & Evolution 402E Power Amplifier

By Alan Sircom | Jun 07, 2013



In gearing up for our 100th issue, there was an inevitable look back at past issues. In the process, I found that we last reviewed the Krell Evolution 402 precisely 50 issues ago. Now in its 'evo' guise and with a new preamp in tow, what's changed and what's changed in the last six and a half years?

In some respects, it's hard to extract Krell from its own legend. Back in the 1980s, Krell was the high-end power amplifier to own. The original KSA-50, a 50W pure Class A model might not have been a thing of beauty, but it was a thing of power. Designed to drive practically anything, those original Krell amps had power supplies so forceful, they would just keep delivering the juice.

It's a different world from the 1980s, but you know you are still in the presence of amplifier royalty whenever you unbox a big Krell amplifier. The childcatcher heatsinks might have gone, and the days of high-current, low-wattage Class A designs from the brand are long passed, but there's still something about Krell. Even after the well-documented falling out with Dan D'Agostino, the Krell cachet remains (I might be in the minority for saying this, but the net result of that falling out has been of benefit for the audiophile; where once we had just Krell, we now have the choice of Krell, D'Agostino and even the Bully Sound Company from Dan's son Bret. It's all good).

The Evolution 402e differs from its 402 predecessor in a number of key ways. Physically, it's almost identical, with just the front panel sporting a little 'e'. Inside though, things are different. The original 402 was one of the first to feature

Krell's Active Cascode Topology, where the rail voltages are apportioned across a number of rows of individual output devices, each with different values for different voltage handling tasks. The latest version, which still uses seven quartet sets of Active Cascode output devices, refines this balancing act with still greater precision. It also means less global feedback is needed to deliver accurate power. The power supply has been improved too, with 170,000 μ F of reservoir capacitance and an additional 10VA toroidal transformer for the digital control circuitry, alongside the pair of 2200VA toroids used for the main power amp.

Why does a big power amp need digital control? Because the 'e' in the name stands for 'economy'. Yes, it still delivers a mighty 400W into eight ohms, which doubles down perfectly into four and two ohms (meaning it's a 1.6kW amp at low impedances), but can also be configured to run at a meagre two watts in 'green' standby mode. Or, you can run it in 'red' mode, where it sleeps at a more environment-baiting 370W (as in the original 402 model) for faster cold-starts to good sound. Press and hold the power off button on the front panel to switch between 'envirochummy' and 'polar-bear murderer' modes. In truth, 20 minutes in even a cold room, the amp sounds as good as it's going to get, even in green mode. My advice, save your fuel bills, save the planet and go green. That's a statement I never thought I'd be able to say about a Krell amp!



The back panel sports a 20A power socket and white plastic power throw switch, as well as balanced, single-ended and CAST connectors. It also features large screwthread speaker terminals that only take spade lugs (or bare wire). It still retains the mid-engine heatsinks, which channel air through the amplifier's core, but do get extremely hot.

The Phantom II preamp is a relative newcomer, the Phantoms replacing the Evo 200 series preamps. The style is absolutely identical to its predecessor, the Phantom II being the middle of three models in the range. Appearances can be deceptive though, because – casework aside – the one chassis Phantom II has little in common with the Evo 222 it replaces. It's a dual mono product, each channel with its own power supply. Yes, it still goes for a resistor ladder volume control, a 1.5MHz open-loop bandwidth and a zero feedback design (yet, surprisingly given this ultra-wide approach, it isn't plagued by cellular telephone polling signals making that unique 'papada papada' sound through the speakers). Like the Evo 402e, it can run balanced, single-ended or CAST. In the absence of an all-CAST connected system, I found myself preferring the balanced connection very slightly; the single-ended is less 'statuesque' than balanced and some might find that more ponderous, however I far preferred the overall, er, balance of balance in terms of detail retrieval and stereo imaging. It's worth trying both.



Of course, once you get some hot Krell-on-Krell action, you can also go CAST, Krell's own Current Audio Signal Transmission system. Unlike the majority of amplifiers (which are voltage amplifiers), Krell designs run in current mode (more commonly seen in video and microwave amplifiers, because of the inherently wide bandwidth required). CAST means the devices don't need to make current-to-voltage conversions backwards and forwards just for the interconnections and the Krell signal can remain in current mode throughout. Unfortunately, both a CAST source, and a full set of CAST connectors were not available for the review, but CAST is thought of as the greatest thing since sliced coax by many Krell users, although there are a few who are 'meh!' on the whole deal. Either way, it's not a deal-breaker – try it, if you like it... great, if you don't, there's always balanced or single-ended on tap.

There's an odd and uniquely British stance on big power amps that wanders in and out of fashion, and right now it's very *en vogue*. We Brits can be dismissive of high power. In fairness, there can be good reason for this – a good 50W amplifier will often sound more integrated and more natural sounding than a similarly priced but more powerful amplifier. In addition, the size and construction of our rooms lend support to the argument, because you rarely need a powerhouse to drive a pair of loudspeakers in a small room made of bricks and mortar. However, the other side of the argument is

not without its merits, as long as the power amp delivering the goods is up to the task. Ultimately, the small power amp argument could be viewed as a justification for parsimony, because making a good 400W power amp is always going to cost more than making a good 40W power amplifier, all other things being equal.

The irony to all this is the best argument for big power is their use with power hungry loudspeakers, and one of the doyens of the UK hi-fi scene – Bowers & Wilkins – makes some extremely power hungry loudspeakers. Hook this Krell combo to a pair of 800 Diamond speakers and you get to understand why Abbey Road swears by the B&W designs. We've sort of convinced ourselves that big power amplifiers are over-engineering the system today, because loudspeakers are more efficient and less demanding than they were 25 years ago. Not only is this patently untrue (alongside the 800 Diamond series, designs like the Wilson Sasha W/P can swing impedance down to 1.8 ohm, necessitating a powerful amplifier if any kind of decent listening level is required) but it masks what that power can do for almost any loudspeaker.

It's that part that brings on the shock and awe. And to listen to a big Krell amp in 2013 is to reacquaint yourself with the shock you had when you first heard what a big Krell can do. I used the Krell duo on the end of several pairs of loudspeakers, but none made so deep an impression as what they did to a pair of first generation ProAc Studio 140. These loudspeakers are very easy on the ear, but can waffle a bit in the bottom end. They often end up being used with nice, soft-sounding low power Class A amps (I routinely use them with a Sugden A21se). But hooking them to a Krell 402 was like changing the speakers for bigger, better models. The bass was far deeper, far better controlled, the dynamic range seemed wide, the sound just hung together better. I could go back, but I'm not sure I'd want to.



It would be easy to just fall back on audiophile recordings to highlight this, but it's something that transcends those sensibilities. Play something a bit more gritty - some live Rory Gallagher for example – and the loudspeakers 'nice' reputation goes out of the window. Play the dark and brooding HDTA_ *welcome oblivion* album and the world is a claustrophobic place with an underlying air of brooding malevolence. They do the same with bookshelves too; the control it bestows on the bottom end is prodigious, whether that bottom end is full range or stops well into the 80Hz region. I don't think anyone in their right mind is going to partner these babies with a pair of the excellent B&W PM1 top-end standmounters, but if they did, the level of bottom end they could muster would be something close to scary. Of course, when in its natural home of full-range loudspeakers needing a bit of poke to drive them, it really comes into its own.

It's not just about power and control. Spiderman's Uncle Ben once said "with great power comes great responsibility" (OK, it was actually Voltaire, but he wasn't played by Martin Sheen in the movie version) and the Krell delivers both in equal measure. What surprises most people about the Phantom II/Evo 402e combination is just how un-Krell it sounds. There is a perception that big solid-state (as in Krell) means steely sounding, but this has the opposite effect; it's inviting, almost analogue-like in its presentation, with a top end that goes on forever and sounds lovely doing just that. It's the ideal foil for ribbon tweeters and can even pull back raspy metal dome tweeters from the brink; neither rolled off nor blunted, this presentation just extends naturally to the upper limits of both ears and speakers. Yes, it's an analytical sound, but not in the clinical way, and not necessarily so analytical that it's in constant search of the right components; it's analytical of musical content, rather than component content. A good recording (HDTA_ again) sounds remarkable, a bad one (Gary Clark Jr) sounds execrable. Honesty does take its toll when playing the worst excesses of the Loudness War. The Krells also exhibit some of that hard-to-pin down 'musicality', in that good pieces



of music are fun to bop around to. If there's a bet, it won't accent it, but neither will it shy away from it. The accent is on detail retrieval, frequency extension and soundstage, but there's no major absence of enjoyment in the process, despite the entreaties of some of the low power set.

In fact, the downsides for the power amp are not musical ones; it's a heavy and hot thing. Fully packed, it weighs as much as Oscar de la Hoya did when he won Olympic gold, and pumps out a whopping 6,400BTU/hour at full tilt, concentrated into a box only slightly larger than carry-on luggage. That means you need a team of people to lift it, and extended listening sessions can be seen on your fuel bills. However, it's great for winter listening though, as your family can huddle round the amplifier while you hear fabulous sounds.

Most of this review has focused on the power amplifier, because it's the stronger of the two products. But let's not paint the Phantom II in a bad light; it's an excellent preamp, exceedingly quiet and exquisitely detailed to boot. And the two work really well together. However, I maintain the Phantom II is icing, while the 402e power amp is the cake. Put another way, I can envisage more people using the power amp with another company's preamplifier than I can see using the Phantom II with another brand of power amp. But I can also see many people taking the whole system option... and absolutely loving it! As a pairing, the whole is greater than the sum of the parts.

Fifty issues ago, RG was distinctly cool on the original 402 and its 202 preamp partner. Whether it's another set of ears, the changes to the Krell amps or just the way the world has changed since 2006, but I'm happy to report the Phantom II and Evo 402e report a far cleaner bill of health. The power amp in particular is a real star, but both come strongly recommended.

TECHNICAL SPECIFICATIONS

Krell Phantom II preamp

Inputs: 3x single-ended RCA (+tape in/out), 2x balanced XLR, 2x CAST

Outputs: 1x single-ended RCA, 1x balanced XLR, 1x CAST

Control inputs: 1x RS232, 1x RJ45, 1x 3.5mm remote IR, 1x 3.5mm 12V trigger

Volume Control: Balanced, current-mode, 16-bit, discrete resistor ladder

Frequency Response: 20Hz-20kHz ± 0.02 dB (0.1Hz-1.5MHz +0dB, -3dB)

Dimensions (WxHxD): 43.8x9.7x46.4cm

Weight: 14.5kg

Price: £11,998

Krell Evolution 402e

Inputs: single-ended RCA, balanced XLR, CAST stereo pairs

Outputs: 2x Krell binding posts

Power output: 400W RMS at eight ohms, both channels driven, 800W RMS at four ohms both channels driven

Output voltage: 160V peak-to-peak, 57V RMS

Peak output current: 37A

Dimensions (WxHxD): 43.8x24.8x56cm

Weight: 67.9kg

Price: £18,500

Manufactured by: **Krell Industries Inc.**

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