



KRELL POWER MEETS PRECISION

Story Stephen Dawson

In the 1950s, Hollywood churned out a science fiction movie seemingly every second week. Most were awful. One of the half-dozen that still stand up today was 'Forbidden Planet' (1956) which, as a central element of its plot, had humans trying to understand a race of enormously advanced aliens who had become extinct two hundred thousand years earlier. Those aliens were called 'Krell'.

The high-fidelity equipment maker Krell is most certainly not extinct. Established in 1980 and named after those Forbidden Planet aliens, it has focused from the start on producing ultra-high performance equipment. The first decade and a half were all about amplifiers, starting with the KSA 100.

ALIEN TECHNOLOGY

In a sense, the KSA 100 epitomises what Krell Industries does. At the time, you see, there was a great deal of suspicion about solid-state electronics, whether they could produce truly high fidelity sound, based on the use of Class-A/B designs. About Class-A, though, there was no doubt. Biasing the output stage to ensure that the signal never crossed 'zero', and thus had no opportunity to create crossover distortion, left Class-A free of those suspicions. But Class-A had a problem: the Class-A amps available were generally of low power – 25 watts or less, as a great deal of the input power from the wall socket is turned into heat in Class-A designs. Such power levels may be fine for intimate listening with carefully selected speakers, but it excluded the use of many fine loudspeakers from consideration – too inefficient for decent levels, too low in impedance for stable operation.

The first Krell, the KSA-100, was rated at 100 watts into 8 ohms. Double that into four. Double again into two, and double yet again into one ohm! It is rare enough to see an amplifier able to deliver into 4 ohms twice the power it can manage into eight. But eight times the power into one ohm? Incredible. Only when it got to half-ohm loads did it taper off to a mere 50% increase: 1200 watts.

A couple of years later the future editor of *Stereophile* magazine, John Atkinson, discovered the lower powered Krell KSA-50 and became a convert to the brand. This revealed the other half

of Krell. It wasn't just about power, nor just about virtually unconditional support of any loudspeaker load. It was also about its clear sonic advantages. At the time Atkinson was a UK hi-fi journalist, and he was saying that this upstart American brand delivered a sound-stage superior to that offered by British products.

And thus we have what might be called the three legs of Krell: raw performance at a level to match the most brutish of products, combined with a build usually termed 'tank-like' or 'bullet-proof', combined with the sensitivity and subtlety of the true audiophile product. The US alien by the name of Krell gained fame in Great Britain, and from there its fame spread back to its land of origin.

The three-and-a-half decades since has seen a broadening and development of the product line-up and, inevitably, support for multichannel sound and home theatre. Along the way the products have included the 180 kilogram, twin 15-inch Master Reference Subwoofer and the astonishing Lossless Acoustic Transducer loudspeaker range with their machined aluminium enclosures – the latest version of which is the Modulari Duo.

TODAY IN ONES & TWOS

Now in 2016 a lot has changed, yet little has changed. There are new technologies, new amplifier topologies and new networking communications. Krell has employed all of these. But it has kept the same over-built construction, the same – or better – high-end specifications, the same extreme attention to musicality.

Let's look briefly at what is now the company's top monobloc power amplifier, the Solo 575 (pictured overleaf). Introduced in a major model revamp in 2014, it continues the Class-A legacy, but features a major redesign – called 'iBias' – to reduce energy consumption. In anyone's language, this model is a monster. Over 30 kilos, with entirely discrete components throughout, it delivers 575 watts into 8 ohms and 900 watts into 4 ohms. With low distortion even at full output power, its frequency response is flat to within 0.15dB in the 20 to 20kHz range, and at -3dB at half a hertz and at a hundred thousand hertz. Unweighted signal to noise ratio is specified at 108dB. Unweighted!

◀ KRELL'S ILLUSION I PREAMPLIFIER, WITH ITS KRELL CURRENT MODE ANALOGUE POWER SUPPLY HOUSED IN ITS OWN DEDICATED CHASSIS, SITTING ATOP THE DUO 300 STEREO POWER AMPLIFIER.

▷ KRELL'S TOP SOLO 575 MONOBLOC, WEIGHING OVER 30 KILOGRAMS, 575W INTO EIGHT OHMS, AND 108dB UNWEIGHTED SIGNAL-TO-NOISE.



There's a slightly more modest version: the Solo 375 (you may have worked it out by now: 375 watts into 8 ohms, and 600 into four).

But another thing that has changed since 1980 is networking. These power amps include an Ethernet socket and can be monitored via the built-in web interface. In addition, they can send alert emails to up to three addresses should any operational concerns arise, such as excessive output current or overheating. The same essential design has been used in the stereo versions: the Duo 125 (125 watts per channel into 8 ohms, 250 watts into four), the Duo 175 (175/300) and the Duo 300 (300 and 540 watts). They also share a similarly wide frequency response and protections, including network reporting.

So far we've mostly talked about power amplifiers, but what about front ends and integrated? Krell has been producing those as well for at least twenty years. The current preamplifier models are the Illusion and Illusion II. Both visually match the Krell power amplifiers,

with their solid black chassis and face plates, with the bold aluminium swelling at the centre. The Illusion II combines analogue inputs – line level only, but two sets of balanced XLR and three regular RCAs – with digital audio. The digital formats are S/PDIF via coaxial and optical and the professional AES/EBU standard via XLR. Among the specifications is an extraordinary frequency response of 20 to 20kHz within 0.02dB, and -3dB points at a quarter of a hertz and at 1200kHz (i.e. 1.2MHz).

Of course, power and preamplifier technology has also been brought together into a single box by Krell, in the form of the Vanguard integrated amplifiers. The Vanguard Stereo Amplifier is rated at 200 watts into 8 ohms, 400 watts into 4 ohms. It includes a balanced input, along with three unbalanced ones. The frequency response extends up to 150kHz at -3dB. This analogue unit can be upgraded to digital by means of a dealer-installed digital module, adding coaxial audio and HDMI inputs, USB and network streaming, and Bluetooth.

Alternatively, the Digital Vanguard comes with some of those digital functions built in, plus the same analogue performance as the Vanguard

▽ POWER AND PREAMPLIFIER TECHNOLOGY ARE BROUGHT TOGETHER BY KRELL IN THE FORM OF THE VANGUARD INTEGRATED AMPLIFIERS. THE PICTURED VANGUARD STEREO AMPLIFIER IS RATED AT 200 WATTS INTO 8 OHMS.



Stereo Amplifier. This model is designed with video handling in mind, since it also has a HDMI output and even supports the Audio Return Channel from connected TVs.

NEW FOUNDATIONS

That brings us to Krell's product built specifically for home theatre: the Krell Foundation 4K UHD Processor. This takes us beyond the Digital Vanguard's front-end all the way into true multi-channel support – a pre-amplifier with surround functions (so you'll need one or more power amplifiers, a subject to which we'll return later).

We must start by noting that this unit fits squarely into the Krell tradition. Too often we feel that high-end products ask you to make sacrifices with regard to convenience for the privilege of enjoying their sound. That is not the case here.

For one thing, this unit has more HDMI inputs than any I have ever seen on any of the dozens I have reviewed. There are ten of them (one on the front), and four of them support 4K. Which means they also support the HDCP 2.2 'protection' scheme without which Ultra High Definition Blu-ray won't operate at UHD resolutions. There are two HDMI outputs. Krell notes that with Audio Return Channel support (on both of them), you can use your smart TV as an interface to send content from various streaming music services back to the Krell unit for proper reproduction.

We pause before going on to other inputs and facilities because of one very special HDMI-related feature. One problem with modern home theatre operation has been connection times. When you switch from another input to your Blu-ray player,

its HDMI output section must establish contact and shake hands with the input on the receiver, as well as exchange decryption keys for the HDCP copy protection. And the receiver must go through the same rigmarole with the display. So switching from input to input on the receiver can lead to delays before the picture appears and the sound emerges from your speakers.

Krell has developed what it calls 'Intelligent HDMI switching'. This stores the monitor parameters and provides them to all ten HDMI inputs whenever the unit is running. The storage is non-volatile, so it's available virtually instantly when the processor is switched on. Most importantly,

all the devices plugged into the processor basically 'think' that they're connected all the way through to the display. The result is that changing from one device to another will generally avoid the whole issue of re-establishing connections. No more missing audio at the start of a track, no more waiting for the picture to appear on the TV.

The audio supported over HDMI is PCM up to 7.1 channels, Dolby TrueHD, DTS-HD Master Audio, DTS-HD High Resolution, Dolby Digital Plus, Dolby Digital (including EX) and DTS (including ES). Dolby Atmos and DTS:X aren't currently supported.

Duty compels me to report that there are nine 'surround enhancement' modes (you know: Front Row, On Stage, Party). I cringe a little at the thought of using such a fine piece of equipment as this to inflict such things on perfectly decent soundtracks, let alone actual music. The point of Krell is purity.

The Foundation 4K supports Direct Stream Digital over HDMI as well. Of course, lots of home theatre receivers and processors 'support' DSD, but what does 'support' mean? In most cases, it means that the DSD is fed to the receiver where it is converted to PCM (hopefully at high resolution), in which domain it is processed before being converted to analogue. Which isn't really what you're after with DSD, since the whole point of it is to avoid PCM. The Foundation 4K Processor gives you three options, and explains clearly what it is doing. DSD Stereo and DSD Multi mode act in the same way, except for the number of channels of course: they do the whole PCM conversion thing. Why? Because Digital Signal Processors only work with PCM, so if you want to do things like take the bass out of the surround channel and send it to the subwoofer, you need to use the DSP. But there's a third option as well. DSD Direct converts the DSD directly to analogue, just the way that God and Sony intended. It only works with two-channel DSD, but DSD aficionados can be confident that they will get their music untainted by pulse code modulation.

There are also three optical digital audio inputs and three coaxial digital audio ones. More importantly, there are four sets of analogue audio inputs via RCA, and one set via balanced XLR. It's ready for your very high-end source.

The processor delivers the analogue audio it produces to your power amplifiers in two ways: via seven channels unbalanced (RCA sockets) or seven channels balanced (XLR). There are also two RCA and two XLR outputs for subwoofers. The signal carried by each pair is identical; they are doubled up simply for convenience. You can use any mix of outputs. You may, for example, have a high-end stereo power amp with XLR inputs for the front stereo channels and a lesser RCA-equipped five-channel amp for the other five.



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▷ THE FOUNDATION 4K PROCESSOR, DISTINGUISHED FROM OTHER KRELL ELECTRONICS BY ITS AV LOGOS AND HDMI INPUT.



There are also stereo RCA outputs for a second zone, and several system integration connections. The Ethernet port is for control via a built-in web page and for updating the firmware, but is not used for streaming audio nor for any Internet functions.

VIDEO HANDLING

The unit supports older video sources by means of component and composite video inputs, though there are no matching outputs: the processor converts the video to HDMI for output. HDMI input is left unmolested by the unit, other than overlaying it with a volume control indicator whenever that's altered. This works even with 3D and with UHD video, although it is rather small on the screen in the latter case. It can be switched off if you like.

The main menu simply replaces the picture that's showing. This provides such facilities as setting up the network, updating the firmware and of course calibrating your loudspeakers. If, that is, you want to do that manually. Krell has its own automatic system called ARES which uses the included microphone and test tones to determine the sizes, levels, and distances of the speakers. It can also optionally adjust EQ if you want. The main settings can also be made manually, or the automatic settings can be tweaked. Unusually, speaker distances aren't set, but delay times in milliseconds are entered instead, something I haven't seen for at least a decade. The calculations aren't hard (one millisecond per foot, or three per metre is good enough – remember the closest speakers need the longest delay, it's the differentials that count). A two line display on the right side of the screen shows you the video and audio standard of the current program.

The construction of the unit is, well, tank-like and bullet proof. And so, for that matter, is the construction of the remote control. This

appears to have been built from machined aluminium, with fluting down the sides and back, and anodised black. Changing the battery seems to require the employment of an Allen key. Forty keys are provided, each a 5mm diameter aluminium button. These float above the actual switches below the surface of the remote's body, quietly tinkling against the edges of the hole if you shake it.

Krell isn't quite as detailed in its specifications for the Foundation 4K UHD processor as it tends to be for its stereo components, but it does note that the signal to noise ratio for the unit (A-Weighted) is 106dB.

POWER

So, what amplifier to use? You couldn't really do better than use a Krell multichannel power amp. Released at the same time as the one and two channel models mentioned above were the Chorus 5200 and Chorus 7200 power amps. These both use the same iBias Class-A technology and both offer the same output on a per channel basis: 200 watts into 8 ohms, 360 watts into four. None of this silliness about minimum 6-ohm speakers or having to switch on a limiter to cope with lower impedances. The difference between the two: five channels and seven channels.

Both amplifiers have, of course, both RCA and balanced XLR inputs. You'd be using the latter for the best quality sound and the greatest noise rejection within the interconnects. Both amps offer the same network reporting functionality as the one and two channel models.

CONCLUSION

So here Krell has applied its tradition of producing two-channel products of excellent practicality and astonishing performance to the home theatre space, proving that high-end high fidelity need not be limited to stereo. **A**

KRELL FOUNDATION PROCESSOR

PRICE: \$13,995

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