

Hegel H190

Hegel's slimline amp is a 'Röst on steroids' but still offers a characteristically simple face to the world. But behind the minimalist fascia lurk hidden abilities and digital flexibility
 Review: **Andrew Everard** Lab: **Paul Miller**

Were there ever such a thing as hi-fi alt-culture, brands like Hegel Music Systems would be at its forefront. Although Hegel has been around in various forms for almost 30 years, of late the Norwegian company has grown in prominence in the wider hi-fi conscience as an alternative to the bigger names, producing components of simple solidity backed up with solid in-house engineering.

In fact, Hegel is extremely well established, with distribution in over 30 countries, and with products such as this £3200 H190 integrated amplifier – available in either black or white in its catalogue – it's not hard to see why. But perhaps that 'only those in the know' status here in the UK is down to its limited availability, for in practice Hegel has just five dealers, with three in London and the South East, one in Lancashire and another in Edinburgh, and they're all more boutique than high-street.

MOVING UP A GEAR

Anyway, the fact of the matter is that Hegel, for all its success (including a swathe of plaudits from *Hi-Fi News* and an EISA Award for its £2200 Röst integrated amp), deserves to be better known. The new and very beefy H190 adopts the Röst formula [*HFN* Jul '17] and moves it up a gear, taking a simple amplifier with plenty of power – 150W per channel – and adding to it network capability to allow it to play music stored on a computer or NAS drive, or indeed directly from a computer using a USB Type B connection or from legacy sources via S/PDIF.

The company describes the H190 as 'the Hegel embodiment of Powerful Design', which is the term it has chosen to encompass all the in-house technology within an amplifier that looks deceptively simple front and back. In fact all there is

RIGHT: Digital board [top left] combines Libre network and Tenor-based USB solutions with AKM upsampling and DAC chips. Massive toroid feeds separate digital, pre and power amp PSUs

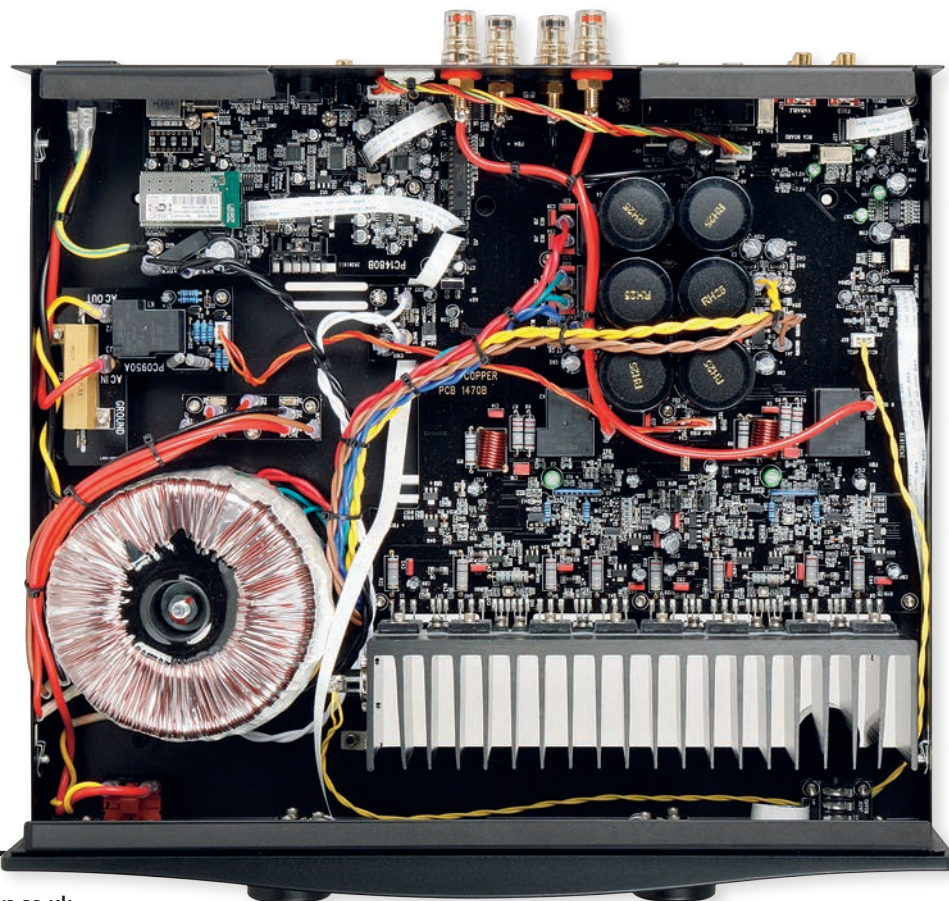
on show to the world is a source selector, a display and a volume control, and even the power button is hidden under the front edge of the fascia. The rear panel is almost as simple, with just two conventional line inputs on RCAs and one on balanced XLRs (each configurable to fixed gain for AV use), plus fixed and variable analogue preamp outputs, besides the speaker terminals.

The digital side of the H190 seems almost as elementary, with three optical and one coaxial input plus that Type B USB and an Ethernet port, which will handle files at up to 192kHz. Meanwhile the casework, sitting on three feet for stability, looks more functional than flashy, and even the remote, for all its metal-clad solidity, also keeps things pretty simple [see p63].

However, what's going on under that slightly severe textured skin is rather more complex. For a start, the H190 offers

network playback, but Hegel has taken the sensible step of not developing its own interface and app – why bother when there are perfectly good third-party offerings out there, such as the Linn-developed Kinsky, PlugPlayer, *et al* – but instead suggesting users stick to one of those extant solutions.

That said, the amp does work well with these third-party apps, so when you operate the volume control on the Kinsky app, for example, you're not chopping the digital signal to achieve attenuation, but actually operating the H190's own volume adjustment. This reliance on external DLNA control means the amp isn't quite as flexible as some rivals, but it works perfectly well as a renderer for playback, and can also work with AirPlay devices over a home network, not to mention also appearing as an endpoint for Roon users, to which music can be played from a suitable





server or computer using a Roon remote interface. That this opens up the H190 to services such as Tidal and also Internet radio is a point worth making too.

DUAL AMP TECH

In the quirky instruction manual, complete with its very Nordic colour photographs, you can read that the new model replaces the H160, the first Hegel product to win an EISA Award (2015-16). As that was unsurprisingly a bestseller for the company, updating to the H190 was clearly a challenge, but it's one to which Hegel has applied its in-house technology, dating back to founder Bent Holter's university thesis and early days building amps for his rock-metal group, The Hegel Band.

There's more on Hegel's broader outlook in the boxout below, but for this new generation of amplifiers the company has reworked its SoundEngine design. This employs a proprietary formula of 'local error cancelling and adaptive feed forward technology' rather than conventional global feedback to reduce distortions, and is said to combine all the virtues of both

Class AB and Class A amplifiers, without bringing to the party any of the drawbacks of either topology.

The DualAmp technology here is found across the Hegel range, and rather than the usual combined voltage/current gain modules, uses separate sections first for voltage gain and then current gain, with the first feeding the second, and no feedback from the current gain to the voltage. This enables the company to build its amplifiers in modular form using these 'building blocks', and of course also allows the relatively delicate signals in the voltage stage to be kept away from the heavy lifting going on in the speaker-driving current section.

In addition separate power supplies are used for the input and voltage gain sections, and then for the current gain stages. This separation goes all the way back to individual windings on the custom transformer, through independent rectification and capacitor smoothing. Combining this with the DualAmp and SoundEngine design elements is Hegel's way of achieving wider dynamic range with

'The lyrics aren't going to trouble any poetry or literature awards'

ABOVE: The H190 is an object lesson in Hegel's trademark simplicity – just source and volume controls, a 6.3mm headphone socket, and its power button hidden under the front panel

lower distortion, the company says [see PM's Lab Report, p63].

As you might expect for a product from a manufacturer with a reputation for fine-sounding DACs and CD players – both the HD30 DAC [*HFN* Jan '16] and Mohican CD player [*HFN* Oct '16] have earned Outstanding Product badges – the H190 uses Hegel's in-house digital-to-analogue conversion technology, based around the synchronised upsampling it calls 'SynchroDAC' – minimising both jitter and conversion errors. This system was developed in-house and is all part of Hegel's philosophy of controlling every element of the signal path. In practice, the H190's DAC section is based around one of Asahi Kasei's Velvet Sound AK4490 DACs, also used in Hegel's HD30, and employs the same novel upsampling regime described in detail in PM's Opinion page from the same issue.

REAL POWER

All this in-house technology pays off in the sound of Hegel's latest network amp, which is nothing short of really very wonderful, irrespective of input or playback methodology. From the off the H190 impresses with a presentation that's deliciously immediate and totally free-breathing, giving everything played a vitality and vivacity that's both immediately attention-grabbing and proving highly rewarding in the long-term.

This slimline amplifier attacks music with a sense of purpose that matches its somewhat utilitarian styling – and boy, is it powerful! That doesn't just mean that it'll go loud, regardless of the speakers with which you use it. Rather, its reserves are in evidence not just in the way it swings instantaneous dynamic peaks, making it a fine choice for dramatic orchestral music, but also in the speed and detail in its delivery of the music, meaning ⇨

HEGEL'S HELPING HAND

The attention to detail Hegel brings to everything it does is worthy of comment, not just in the design of its products but also the way the company helps the buyer. The guides provided on its website are exemplary, from providing 'walkthrough' downloads for setting up your computer with the H190's USB input to a very comprehensive guide to choosing and using a NAS drive to store your music. The advice is frank and to the point – 'We use QNAP... They are a little more expensive but are also very easy to use, fast and reliable' – and pragmatic – 'The new SSD drives are a lot faster compared to the classic 5400 or 7200rpm drives. Choosing an SSD drive assures quick access to your songs'.

Note that Hegel makes no claims for better sound from SSDs, only speed, but it's impressive that the company has taken the trouble to cover an aspect of network audio usually left to retailers, not all of whom really know their stuff in this area. So often, the new enthusiast's learning process finds its way into endless questions on Internet forums of dubious merit. The Hegel guide is very comprehensive, and a definite case of 'going the extra mile' – other manufacturers in the 'computer audio' sector would do well to take note.

AMPLIFIER/USB DAC



ABOVE: To the left of the rear panel are fixed and variable level preamp outs, plus two sets of RCA ins and one balanced XLR pair. The digital section has three optical and one coaxial in, a USB Type B and an Ethernet port for computer connection

microdynamics are handled as well as the big, obvious power plays. It's a beautifully precise sound, but with not a hint of excessive control about it, nor any mechanical quality. Whether playing music that's streamed over a network or fed in through the analogue or digital inputs, this is one of those amplifiers that simply sounds right as soon as you start listening.

ENVELOPING SOUNDSTAGE

What's more, it exerts a solid grip on the partnering loudspeakers, so the bass on Wu-Tang's *The Saga Continues* [36 Chambers/jeOne SPV285362 CD] sounded both extended and tight, impulsive and with real growl when heard through floorstanders able to exploit the H190's extension. Meanwhile the rest of the frequency range integrates seamlessly, and there's a particularly realistic bite and snap in the treble. OK, so the lyrics here aren't going to trouble any poetry or literature awards, and are indeed fairly predictable examples of the genre, and this is hardly an object lesson in recorded dynamic range, but there's no denying that this amplifier makes every word intelligible, for good or bad.

For greater clarity there's the folk-rock sound of Robert Plant's *Carry Fire* [Nonesuch 7559-79349-3, 96kHz/24-bit]. This sees the H190 playing more to its considerable strengths, with a broad, deep, enveloping soundstage around which the dense weave of instrumentation can wrap itself, and Plant's voice out front against the wash of the band in the busier tracks, and strikingly close-focused in the quieter passages. Rhythms

drive relentlessly thanks to the well-defined bass, and there's striking texturing to the various strands of the music, greatly enhancing the rewards of repeated listening. Indeed, there's not much sign of dimming of the light going on here, and the H190 revels in the richness of the soundscapes conjured up.

What's more, treat it to the simple but demanding sound of lusciously recorded piano, particularly in the hands of Leif Ove Andsnes on his recent Sibelius keyboard works set [Sony Classical 88985408502] and the H190 flexes its dynamic muscles to create an almost palpable sense of the instrument in the room.

Maybe it's an all-Nordic thing, but the way Hegel's new amplifier plays this music, with spine-tingling clarity and delicacy backed up with that power in reserve, is never less than entirely captivating, with the sound as intriguing as the composition and performance. If ever you needed a demonstration that open dynamics are about more than 'quiet, quiet, quiet, *loud*', this CD, played via the H190, could just be it – the music just flies by, and has you playing it all over again to enjoy every element. ☺

HI-FI NEWS VERDICT

The H190 is another striking addition to the Hegel roster, and it's easy to see why the brand is going from being an 'alternative' choice to a key player in the audio arena: this is a well-judged amplifier in terms of features, but manages its flexibility without any compromise to its sound. And that sound is fresh, captivating, finely controlled, never the slightest bit dull and more often than not just plain fascinating.

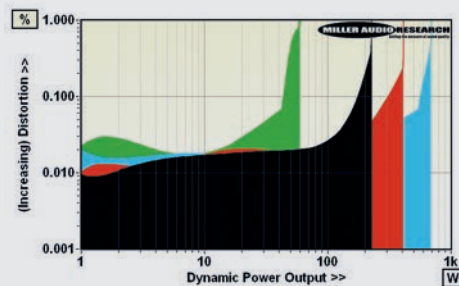
Sound Quality: 88%



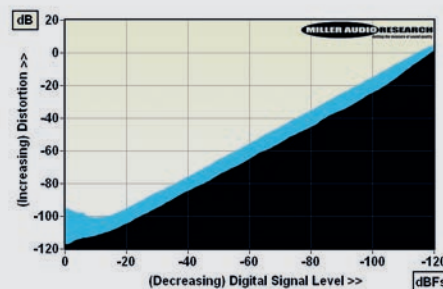
HEGEL H190

To all intents and purposes, the H190 is a 'doubled-up Röst' [HFN Jul '17], the latter's 75W specification increased to 150W here and exceeded in practice with 2x175W/8ohm and 2x280W/4ohm. Under dynamic conditions output improves to 230W, 412W and 692W (18.6A) into 8, 4 and 2ohm loads though, like the Röst, current limiting means there's only 60W permitted into 1ohm loads [see Graph 1, below]. Otherwise, the H190 offers a wide 5Hz-60kHz analogue response (± 1 dB), enjoys a healthy 90dB A-wtd S/N ratio (re. 0dBW), a sensible +31.5dB overall gain and – importantly – a tailored 0.017–0.035% distortion (20Hz-20kHz) that's impressively consistent with both output level and load impedance [again, see Graph 1].

The H190 takes its digital cues from the upsampling method revealed in the HD30 DAC [HFN Jan '16]. So, while CD/48kHz and 96kHz media all witness a treble lift of +0.14dB/20kHz and +0.6dB/45kHz, respectively, Hegel's ~100kHz resampling means that 176.4kHz+ incoming rates see a response that peaks at +0.6dB/43kHz before dropping very steeply thereafter. This technique optimises the distortion and linearity of the 'premium 32-bit' AK4490 DAC, delivering a mere 0.00006% THD through midrange frequencies via the H190's fixed-level (2.4V) preamp outputs. OK, so the 102.8dB A-wtd S/N won't set any records, just as the 955ohm source impedance is disappointingly high, but distortion holds to 0.0017% at 20kHz/0dBfs and lower still at 0.00075% for 20kHz/–10dBfs [see Graph 2]. Of most significance, perhaps, is the astonishingly low correlated and noise-like jitter of just ~10psec – in marked contrast to the result obtained with Convert's Tempus in this same issue [see p44]. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 18.6A



ABOVE: Distortion versus 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	175W / 280W
Dynamic power (<1% THD, 8/4/2/1ohm)	230W / 412W / 692W / 60W
Output impedance (20Hz–20kHz)	0.014–0.045ohm (955ohm, pre)
Freq. resp. (20Hz–20kHz/100kHz)	–0.1 to –0.17dB / –2.3dB
Digital jitter (S/PDIF / USB)	<10psec / 20psec
A-wtd S/N ratio (re. 0dBW/0dBfs)	89.9dB (Analogue) / 102.8dB (Dig)
Distortion (20Hz–20kHz, 10W/0dBfs)	0.017–0.035%/0.00006–0.0017%
Power consumption (idle/rated o/p)	30W / 510W (W standby)
Dimensions (WHD) / Weight	430x120x410mm / 19kg

