



AMPLIFIER/USB DAC

Integrated amp with network/USB inputs. Rated at 75W/8ohm
Made by: Hegel Music System AS, Oslo, Norway
Supplied by: Hegel Music System AS
Telephone: +47 22 605660
Web: www.hegel.com
Price: £2200

AUDIO FILE

Hegel Röst

Norwegian hi-fi specialist Hegel has found a new 'voice' with its Röst amp, combining USB and network audio features with 'SoundEngine' tech in a very sleek package
Review: **Nick Tate** Lab: **Paul Miller**

It's clear that, nowadays, hi-fi is metamorphosing into all kinds of weird and wonderful things. Just as car buyers of a generation ago were faced with a predictable range of products with little obvious design flair, so the same might be said for much of that period's hi-fi. Today, the situation is very different – the market is a network of niches and manufacturers are trying to satisfy them with ever more versatile products.

Gone are yesterday's generic integrated amplifiers, and in their place we see a host of designs with varying degrees of digital functionality, including USB inputs. Hegel's new Röst goes one step further, offering an Ethernet input that can play music out straight from your computer audio network. The days of one-size-fits-all hi-fi are well and truly over, it seems...

NORWAY'S VOICE

Clever stuff, but this kind of thing runs the risk of being treated as a gimmick. Not everyone either wants or needs such functionality and the obvious concern is that it has been at the expense of good old fashioned audio engineering. Has sound quality has been sacrificed on the altar of flexibility? In this case, Hegel says this absolutely is not the case, and points out that the amplifier's name is Norwegian for 'voice' (as well as being one of Norway's most beautiful islands) as evidence of this.

Actually, the Röst sports the latest, second-generation incarnation of Hegel's proprietary SoundEngine amplifier circuitry. Eschewing traditional global feedback, Hegel's SoundEngine employs a mix of local and adaptive feed-forward technology to better eliminate distortion on a dynamic basis, stage by stage, and with particular benefit at high frequencies [see PM's Lab Report, p65].

Designer Anders Ertzeid says, 'there's a worldwide patent on the technology and

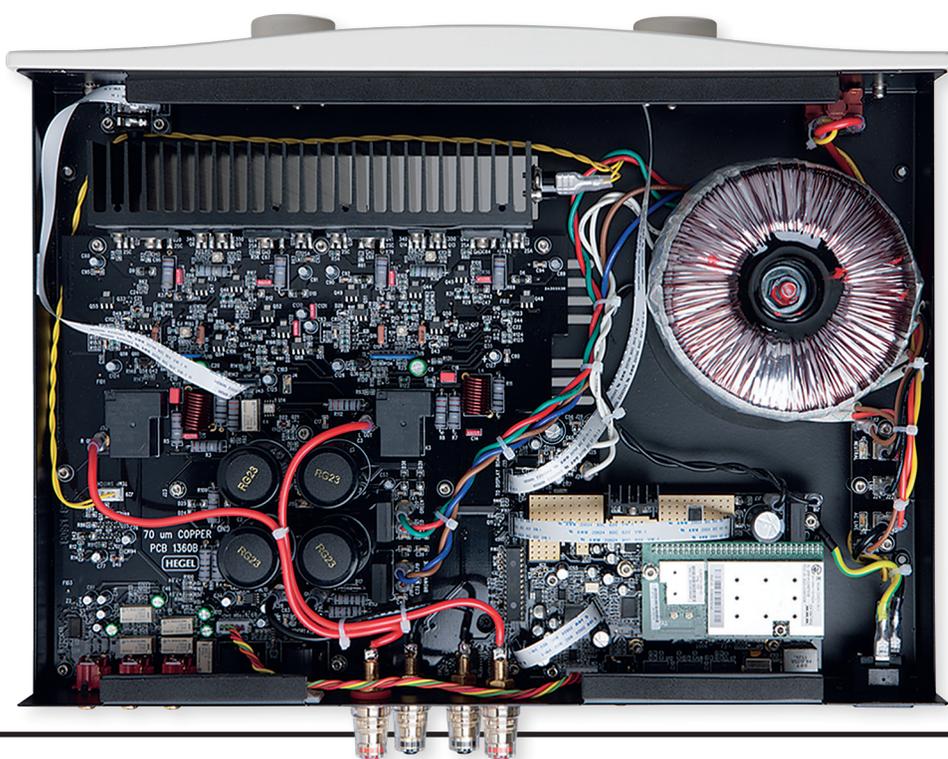
there's no one else using anything like it – it's a Class A/B design that gives the benefit of Class A with much of the low power consumption benefits of a Class D.' With some 65% lower bias than required by a conventional Class A/B amp of the same power, the Röst is also claimed to run more coolly than many rivals.

In more general terms, the Röst is an interesting mix of other Hegel products with its very own style and functionality thrown in. It has the power supply and layout of the more conventional H80 integrated, the DAC section of the more expensive H160, and the output devices and SoundEngine amplifier technology of the company's range-topping H360 integrated. The largish custom specified and built toroidal transformer lends a good deal of weight to the product, and it employs discrete Toshiba bipolar power transistors, all carefully matched. An AKM digital-to-analogue converter is specified, 'because we think they make the best chips regardless of price, at the

moment', and the company says it uses a 'quite special' volume attenuator originally designed for high frequency measuring equipment. No phono stage is fitted, because such a powerful amplifier is not a suitable environment for such a thing, argues Ertzeid. Instead, you're respectfully recommended to buy an aftermarket standalone design.

AN ERGONOMIC DELIGHT

The amplifier features one balanced input, two RCA unbalanced inputs, three optical and one coaxial digital input, plus USB. Alongside the aforementioned Ethernet socket, all this means it will hook up to everything from a CD or Blu-ray player to a computer or streamer. It handles Google Cast Audio and Apple AirPlay. This is all controlled by the single source knob and matching volume control, these situated either side of a crisp and easily-read OLED user-interface. The now obligatory headphone output is also fitted to the fascia, this time in full-fat 6.35mm format.



RIGHT: A large toroidal transformer has separate windings for the pre and power amp circuits while USB/network audio are served by a Tenor-based soundcard [lower right of picture]

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The Hegel Röst proves to be an ergonomic delight, devoid of fripperies and fuss. The power switch is concealed underneath the fascia, but is easy to reach and is one less ugly switch to put on view. The chassis is aluminium, painted in an agreeable shade of warm white. It feels sturdy and the aluminium knobs have a nice, light action. Even the rear panel – with its unusual but easier-to-use loudspeaker binding post layout – is thoughtfully done.

The remote control is milled from solid aluminium and is IP-controllable should you wish to integrate it into your smart home. Special functions are available, such as the power-up volume setting and maximum volume.

Although the company has sold amplifiers and DACs with network streaming and AirPlay since 2014, Hegel says it has spent a lot of time getting the IP control to work smoothly, and has fitted a lot of memory inside the unit. 'When we apply a new function in Hegel products it is not just the function to tick a box in the catalogue, it is a function we have worked really hard to do well,' says Ertzeid. The

'It's a grower, working to tell the whole story about the music at hand'

Röst certainly worked very smoothly during the review period and although the display is a little dim, at least it is large enough to be readable from the other side of a room.

ORGANIC CHARACTER

Any visitor to the Norwegian countryside can't help being impressed by the natural beauty of its wide open spaces, allied to the refreshingly clean air and purity of its lakes. There's something of this in the sound of the Röst, an organic quality to the way it presents music that makes you keep on wanting to listen.

Via its balanced input, the Röst proved more or less tonally neutral, for while

there's often a slight sharpness or a grey blandness to rival amplifiers at this price point, the elegant Hegel Röst came over as consummately well balanced. It doesn't give a gimmicky sound – the sort of thing that jumps out at you in a dealer demonstration – rather it's a grower and works to tell the whole story about the music it's asked to play.

Kicking off with some classic rock in the form of Aphrodite's Child's 'Aegean

ABOVE: Mute and display on/off are available via Hegel's RC8 remote control [see pic p65] alongside the volume and input select options duplicated by rotaries on the Röst's sleek fascia

Sea' [666; Vertigo 6673 001], the heavily processed lead guitar line was a joy to behold, issuing forth dreamily out of the sparse mix. The amplifier went straight to the heart of the music, capturing its spirit without stopping to deconstruct the album's obviously dated recording and production (it was a 1972 release). This combination of smoothness, subtlety and rhythmic alacrity defines its character.

CHOOSE YOUR FOCUS

Switch to more beat-driven programme material and the Röst's obvious foot-tapping enthusiasm comes to the fore. Imagination's 'So Good, So Right' [*Body Talk*; RCA ND7432] isn't everyone's idea of great early-'80s funk, but it's very percussive nevertheless, thanks to its excellent Jolley and Swain production. The Röst soon got its measure, with an unerringly bouncy sound set off by its fine handling of the interplay between the sequenced bassline and bass drum.

It served up better weight than expected from an integrated amplifier of slimline proportions, yet was surprisingly tight low-down. This made for a satisfying thump from the loudspeakers that started and stopped at the right time and syncopated well with the snare and hi-hats. In short, there's an enjoyably natural feel to the way this amplifier sews the strands of the music together.

Although not as translucent as the very best integrated amplifiers I have heard, the Röst's midband proved surprisingly clean and detailed while refusing to spit out the information at the listener. Some rivals tend to fire detail at you, whereas here you can peer inside the mix and focus on whatever you wish. Further up the frequency range I was struck by the silky way in which it handles cymbals – these instruments were delicately resolved and devoid of harshness or grain. ➔

NORSE NONCONFORMISTS

'We are defined by our curiosity in technology, and the drive to develop affordable solutions,' says Hegel's Anders Ertzeid. 'Rather than throwing expensive components at the problem, it's the only way we can deliver high performance at a low price for the consumer.' The foundations of this long-established Norwegian company were laid in the late 1980s when a student at the Technical University in Trondheim (NTNU) embarked on a project to cancel the harmonic distortion native to (transistor) amplifier circuits. Bent Holter developed the basis of what became SoundEngine technology. The new company was given the same name as his rock band, and duly built amplifiers for their PA rig. Investment from telecoms giant Telenor enabled him to grow Hegel with a range of pre, power and integrated amplifiers and DACs, sold in 32 countries. 'We never really look at what competitors do,' explains Ertzeid. 'Instead, a few times a year we sit down, drink beer, have a burger and debate how people might want to use our products in the future. Or it could be new technology that we think could do something for us. This means we often come up with different ideas. The only times we have failed is when we have tried to follow trends.'



AMPLIFIER/USB DAC



ABOVE: One coaxial and three optical S/PDIF digital ins are joined by USB B and wired Ethernet inputs. Three analogue line ins (one balanced set on XLRs) are offered along with a variable preamp out and single 4mm speaker cable binding posts

The Imagination track first alerted me to this, but moving to some classic REM in the shape of 'Maps And Legends' [Fables Of The Reconstruction; IRS Records 0777 7 13160 2 9] made things clearer still. The Röster doesn't sweeten the sound particularly, yet its subjectively low distortion made the recording's fine ride cymbal work sound realistic.

At the same time, the crunch of those Rickenbacker guitars failed to grate, and the bass guitar line came over in a warm and tuneful way, propelling the song along. The overall result was most satisfying considering that it's something of a dirge as rock recordings go, a 1985 release never really designed for audiophile scrutiny.

HEIGHTENED FOCUS

Switching to the digital inputs demonstrated that the Röster's sound is no fluke, though whether this will improve on your system's digital front-end rather depends on your current choice of source. I found the built-in DAC a surprisingly capable design, whatever digital input was selected. Playing The Associates' 'Party Fears Two' [Sulk; V2 VVR1012012] illustrated that the digital input is no mere afterthought, for this track only satisfies via a decent DAC, and so it proved here. The sound took on greater immediacy through the coaxial digital input, with a feeling of heightened focus and grip, even if it wasn't quite as sweet or as expansive sounding as a good standalone DAC with an analogue feed into the Röster.

On mediocre recordings the three-dimensionality of a top class DAC isn't missed, but when you

feed it a great classical recording via USB the Röster's slightly limited depth perspective becomes more apparent. Its skill at recreating a big, bold stereo image from the *Lento* of Vaughan Williams' Symphony No 2 [LPO/Haitink; EMI CDC 749394 2] was considerable, but in absolute terms it was still faintly two-dimensional compared to the likes of Hegel's own HD30 [HFN Jan '16].

Nonetheless, this is pretty much par for the course at its price, with few rivals doing better here. The overall result was still highly engaging, the Hegel Röster capturing the music's brooding quality and majesty of the playing.

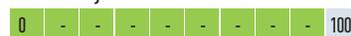
Running at high listening levels, it became apparent that this amplifier can't deliver the swingeing dynamics of a larger and more expensive muscle amp – it's not an out-and-out headbanger able to summon up vast amounts of power without blinking.

Keep the levels sensible, however, and it turns in a great sound from all sources, even AirPlay sounding enjoyable. Indeed, whatever music you choose to use, this amplifier rewards with a characteristically bouncy and animated sound, allied to real clarity. ☺

HI-FI NEWS VERDICT

A deceptively minimalist product, Hegel's Röster offers its own special combination of Scandinavian style, future-oriented functionality and satisfying sound quality – all done to a very high standard. In trying to be all things to all men, it doesn't perhaps shine in every area yet is unexpectedly enjoyable to live with, all the same. Partnered with reasonably efficient speakers, it will form the heart of an elegant system.

Sound Quality: 84%

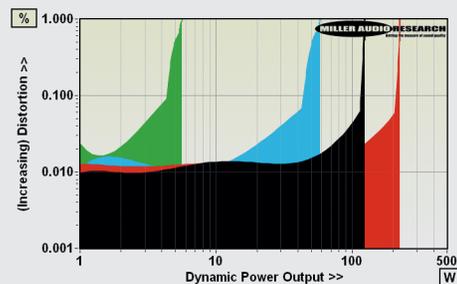


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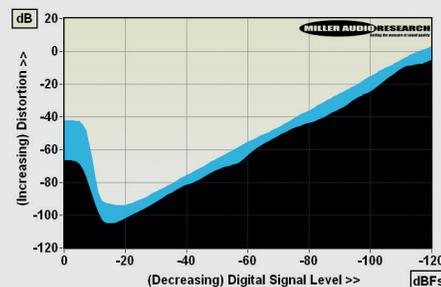
HEGEL RÖSTER

Temperature plays a more significant role in the performance of the Röster than with many of its contemporaries. During the 10W 'burn-in' test, distortion first fell from 0.0025% to 0.00195% as the amp stabilised but then rose to 0.0045% over the next 10mins, to 0.0082% over 20mins and 0.011% over 30mins, the internal heatsink temperature exceeding 60°C at this point. In practice the Röster will deliver rather more than 10W, besting its 75W specification at 2x90W/8ohm and offering a substantive 2x135W/4ohm, though I'd not recommend it pushed to these outputs for any length of time! Under dynamic conditions there's enough voltage headroom to sustain 124W and 225W into 8/4ohm but *current* limiting means there's only 59W and 6W permitted into 2/1ohm loads [see Graph 1, below, but also note the Röster's very consistent THD *regardless* of load]. So speakers that include dips to low impedance are best avoided (by way of reference all HFN speaker lab tests include this information). Otherwise, the Röster is a 'widebandwidth' amp with a 5Hz-80kHz response (re. -1dB), enjoying a healthy 90dB A-wtd S/N ratio (re. 0dBW) and encompassing a total +31.5dB overall gain – far more sensible with today's 2V line sources than the typical figure of +40dB.

On the digital front, Hegel has implemented a version of the non-standard sampling technology we saw in its HD30 DAC [HFN Jan '16], the maximum response being -3dB/49kHz with 192kHz inputs. A full 2.4V preamp output is offered at 0dBfs/max volume but, due to stress on the unmuted output stage, distortion is a high 0.25-0.35% (20Hz-20kHz) only falling to the anticipated level at -15dBfs (430mV out) [see Graph 2, below]. Jitter is very low at <70psec (all sample rates). PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) loads. Maximum current is 7.5A



ABOVE: Distortion (preamp output, max vol.) versus 24-bit/48kHz digital input (1kHz, black; 20kHz, blue)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	90W / 135W
Dynamic power (<1% THD, 8/4/2/1ohm)	124W / 225W / 59W / 6W
Output impedance (20Hz-20kHz)	0.016-0.047ohm (645ohm, pre)
Freq. resp. (20Hz-20kHz/100kHz)	-0.12 to -0.10dB / -1.45dB
Digital jitter (48kHz/96kHz)	55psec / 65psec
A-wtd S/N ratio (re. 0dBW/0dBfs)	90.0dB (Analogue) / 100dB (Dig)
Distortion (20Hz-20kHz; 0dBW/0dBfs)	0.009-0.028%/0.027-0.35%
Power consumption (idle/75W)	30W / 307W (1W standby)
Dimensions (WHD) / Weight	430x100x310mm / 10kg