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Grado S950 vs HP100 SE
ITW Gilad Tiefenbrun LINN

DIGITAL-TO-ANALOG CONVERTER

HEGEL D50

Laurent Thorin

Two years separate the release of the two best digital sources designed by Hegel. In both cases, the Norwegian company wanted to adhere strictly to the initial specifications, i.e., the Red Book for the first and HiRes for the second. We loved the first one. We loved the second one. And we're going to explain why, point by point!

The new Hegel D50 converter made its official debut in Munich under the code name Raven. We had received a lot of information beforehand, but due to an embargo, we had kept it secret. The least we can say is that the new Hegel digital source has little in common with its predecessor, the HD30. But it's also true that several years have passed between these two machines, during which time the Norwegian company's expertise in streaming has grown significantly. Unlike the HD30, the D50 is a pure DAC with no streaming capabilities. This is where the break with the past is most evident. Why such a radical choice at a time when streaming has become the dominant source?

**ORIGIN**

Norway

PRICE

€ 4 895

DIMENSIONS

430 x 305 x 99 mm

WEIGHT

6.6 kg

ANALOG BANDWIDTH

0 Hz-100 kHz

SIGNAL-TO-NOISE RATIO

>100 dB

BACKGROUND NOISE

-150 dB

DISTORTION

<0,0002 %

LINE OUTPUTS

1 x fixed unbalanced (RCA), 2.5 V

1 x fixed balanced (XLR), 2.5 V

DIGITAL INPUTS

1 x AES/EBU S/PDIF, 24/192, DSD64(DoP), MQA 8x

1 x coaxial (BNC) S/PDIF, 24/192, DSD64(DoP), MQA 8x

1 x coaxial (RCA) S/PDIF, 24/192, DSD64(DoP), MQA 8x

2 x optical S/PDIF, 24/192, MQA 8x

1 x USB 32/384, DSD256 (DoP), MQA 8x

The answer can be found in part in the press release: *«We wanted to create a dedicated device that does one thing exceptionally well: convert ones and zeros into music. To achieve this, we avoided anything that could introduce noise. This means there is no network input, streamer, or preamplifier. By focusing solely on converting digital signals into music, we have created a device that far surpasses the competition.»*

We will, of course, leave the responsibility for this last sentence to Hegel. Although our extensive testing of this device has convinced us of its excellent value for money.

Furthermore, according to the Norwegian company, the D50 is not just a new DAC, but an exploration of the possibilities offered by technology when reduced to its essentials. Here we see Bent Holter's obsession with the purest technical choices, which are not necessarily the easiest to implement.

The D50 uses an aluminum case reminiscent of the Viking, with no components except for the matrix display. The milled aluminum front panel conceals three buttons under the front. The D50 features an advanced input detection system that identifies a digital signal and automatically reactivates the device. You can customize how it responds to new signals, whether it's changing inputs or simply turning on. Auto standby saves energy when the music stops, while a screen dimming option keeps you focused on what's important. The D50 offers all the connections

you could possibly need, with USB, optical, coaxial RCA, coaxial BNC, and AES/EBU inputs. On the output side, it features truly balanced analog and unbalanced RCA connections.

Hegel's 20 years of experience in digital development has given it a pragmatic vision for the project. It has selected ESS Technology's latest high-end achievement, the ESS9039, a sophisticated tool with immense potential. This is where the challenge lies: in how the manufacturer exploits this technology. To begin with, this chip is installed on a separate board, positioned above the other electronic components. This arrangement reduces interference and shortens signal paths, thus limiting the risk of electromagnetic contamination and loss of quality.

In the same vein, the printed circuit board design has been meticulously thought out to ensure the best possible performance. For example, the track routing features rounded corners to minimize impedance drops and reduce radiation.

The real innovation lies in the way the D50 processes incoming digital signals before converting them to analog signals. The AES/EBU input is equipped with a unique RS422 receiver balanced by a transformer, allowing it to flawlessly process both weak and strong signals without jitter.

For S/PDIF inputs, signals are received on a specially designed board that decompresses I2S data. Although this process is inherently noisy and prone



to synchronization errors, the D50 resolves these issues with precision. The decoded signals are then resynchronized using three dedicated master clocks: one for S/PDIF signals and, for USB, separate master clocks for 48k and 44.1k sample rates. Strategically placed to minimize noise, these clocks provide a perfectly synchronized signal to the DAC chip, enabling the purest and most accurate digital-to-analog conversion possible.

The D50 has undergone radical power management measures designed to eliminate noise and provide clean power to every part of the device. Advanced filters on the power input eliminate noise from the mains, and when connected to a grounded power outlet, this filtering can even improve the performance of other equipment on the same circuit. In its day, the HD30 featured a similar device. To further eliminate electrical noise, the D50 uses two low-noise toroidal transformers. One powers the noisier digital protocols and standby functionality, while the other is dedicated to sensitive analog and digital components. Both transformers are shielded by a thick steel plate and placed away from any sensitive electronic components. Their output is also filtered, ensuring that the D50 operates with a clean power supply.

SET UP

The D50 is generously equipped, giving you plenty of connection options. We used it extensively with the Wattson Emerson network transport and the Atoll DR 400 SE CD transport. We alternated between S/PDiF and AES/EBU connections, with a slight preference for the latter. That said, you'll need to test it at home, as every environment has its own constraints. Like any high-quality source, the D50 is sensitive to external vibrations and the quality of the electrical current. It will therefore need to be installed on a suitable platform, and above all, one on which it stands alone.



Don't even think about stacking it with other devices. A good cable is also necessary, although the D50 will not require you to spend a fortune to get it to work perfectly. We have obtained excellent results with the Puritan Ultimate, among others. When it comes to analog and digital modulation cables, choose according to your preferences, but if possible, opt for the same brand on both models.

THE SOUND

Installed alongside the Viking, its spinning cousin, the D50 may be from the same family and have the same designer, but it is by no means a copy/paste of the sound. It is a second digital source, the fruit of its own gestation. Bent Holter didn't even use the same chip, let alone the same circuit. However, beyond the technical differences, there is undoubtedly a sonic family resemblance between the Viking and the D50. And this connection is clearly identifiable in terms of the thickness of the timbres and the density of the message, its materiality if you'll pardon the expression. Indeed, in this area, and in both cases, we are clearly on Hegel's favorite ground. And it is our twenty years of collaboration with the Norwegian brand that allows us to be so assertive. While the Viking was designed to scrupulously comply with the Red Book and its 16-bit/44.1 kHz standard, the D50 was developed to exploit files with the highest standards



such as DSD256. However, the first impression is not necessarily one of excellent resolution, which the D50 can boast, but rather a natural ability to deliver recorded music with a particularly well-crafted physical envelope. Indeed, it is not so common for a DAC to offer such a rich listening experience. This notion of substance has its first effects on the architecture of the soundstage, which reveals itself to our ears in a truly three-dimensional way. The perception of the sound image is often an abstract concept that music lovers sometimes find difficult to grasp, except when the system is truly capable of demonstrating it. In this case, there is no debate, just the pleasure of enjoying a listening experience that builds before your eyes and ears in a palpable and gradual way. The D50 paints an extremely precise picture of the musical performance thanks to an innate sense of perspective in which we can identify the obsessive work of its creators on the phase. The extreme attention paid to the clocks pays off immensely.

The D50 is not only a comfortable and delightful source, but also incredibly incisive and capable of reproducing an astonishing amount of detail. It is thanks to this high precision that it offers such a smooth balance. The more precise a converter is, the richer it is in harmonics, and the more pleasant and natural its balance. High precision guarantees realistic timbres. The D50 easily demonstrates this

on all acoustic messages, on vocals and piano, which are complex instruments par excellence. Listening to Joël Grare's "Des pas sous la neige" is a revelation in this respect. Packed with unconventional instruments and imposing percussion, this album is a perfect playground for the D50, which combines power on impact, density on strike, control in the extreme low frequencies, and delicacy in the highest frequencies. This little melodic gem is to be savored in its entirety, your ears as intoxicated by the fluidity of the message as by the richness of the sound sensations provided by a lively, palpable, and powerful listening experience.

Finally, there is the rhythm, a perfect ability to accelerate and decelerate to reproduce the musical message in its exhaustive velocity. A cardinal virtue of Hegel electronics, the D50's dynamic behavior is expressed with an inimitable mastery of tempo. We are not in the realm of the spectacular, but in that of respect for the piece, and that is what is striking. The D50 can be perfectly delicate and "slow" to enhance a languid passage, and phenomenally responsive when the score demands it.

OUR CONCLUSION

The least we can say is that this converter has been a long time coming. Hegel has taken its time to develop it and offer us a fully mature machine. It has not escaped our notice that the D50, a pure DAC, is a clear break from its predecessor, the HD30. True to its philosophy, the Norwegian company has made no compromises, simply refusing to include any Ethernet connection in its new digital source. By keeping it sacred, it offers us a converter in its simplest form, and in one of its very best interpretations. Priced at a level where competition is rare, the D50 is a standout product in its category. Whatever your digital needs, it's a product to be reckoned with. ■