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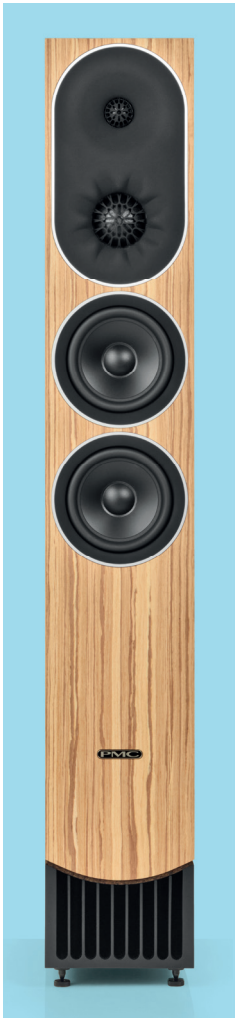
Exclusive: Chord Electronics Ultima 3 mono power amplifiers

September 2025 **247**

TECH TALK!

















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WE DISCOVER WHAT GOES INTO TODAY'S MOST INNOVATIVE AUDIO

Gold Note HP-10 Deluxe
headphone amplifier

Ed Selley

Companies that make complete systems from source to speaker are always a rarer thing than those that specialise in a smaller collection of components. Even amongst this smaller group of companies, Gold Note is more unusual still. Not only will the company build you a system that goes from the tip of the stylus on a turntable to the cone of a speaker driver, but they can also do the same with digital. Even though electronics is only one of the areas that Gold Note focuses on, they make some extremely sophisticated devices.

The HP-10 headphone amplifier is a case in point. Taken at face value, it's a relatively conventional headphone amplifier. At the back, you will find inputs to receive an audio signal, and at the front, a selection of headphone connections - 3.5mm and 6.35mm single-ended and 4.4mm and four-pin XLR balanced - to make use of them. What goes on between those two points is more notable, though, and marks the HP-10 as an uncommonly flexible bit of kit. For starters, there are three different versions: a 'classic' version featuring exclusively analogue inputs (HP-10), a version that adds Bluetooth (HP-10 BT), and the version here, which adds a USB audio input (HP-10 Deluxe).

Not simple

Even the 'simple' HP-10 isn't anything of the sort. At the front of the unit is a touchscreen display, which might seem overkill for a device with a single function, but is somewhat necessary when you start to realise how many different parameters you can adjust. Some of these are pretty predictable; you can choose the input on the rear panel and output on the front and adjust the balance to handle any irregularities in your hearing. »



> Using the 'Damping' function helps to keep everything sounding fast and tight, and from the moment I turned it on, I had no desire to turn it off again.



From here, though, things become rather more sophisticated. There are mono options; you can choose to listen to the sum of the channels (L+R), or just one of the channels (L or R) and reverse the stereo channels should you need to. There is then a complete suite of functions that Gold Note refers to as Studio. This gives you four different crossfeed settings (something I regard as hugely beneficial for headphone listening), ranging from none to effectively dual mono. There are also adjustment options around the Harman curve of headphone equalisation, along with a damping factor and a 'Superflat' setting that linearises the response of the headphones. For good measure, you can then assemble different profiles, either for various pairs of headphones, other user preferences or even for different styles of music. Even the standard HP-10 is a highly sophisticated thing.

As standard, the HP-10 has RCA and XLR inputs and a matching set of outputs. These can run as a bypass if the source outputs are required by more than one device. The HP-10 BT adds an ESS Sabre DAC to handle a suite of Bluetooth, including Apt-X. The HP-10 deluxe retains Bluetooth connectivity and adds a USB input via a USB-C connector, which is dealt with by an AKM4493 DAC chip. This gives the HP-10 the ability to handle PCM to 768kHz and DSD512, which means it could be employed as a single input DAC as well, should you require.

This extensive feature set is squeezed into a half-width chassis used by a few different devices in the Gold Note range. I will happily admit that with some members of the range, I'm not sure the aesthetic is compelling, but here I think it's effective. There is a combination of compactness and businesslike qualities in the HP-10 that's hard not to admire. The casework is finished to a very high standard, and you also get a remote control. The remote can be used to fully control the unit, including the Studio menu with all its features but it does mean that the level can be adjusted without constant trips up to the unit itself.

Power up!

One last feature of the HP-10 wasn't supplied for testing but is still potentially interesting. As standard, the Gold Note receives power via an IEC socket on the rear panel. Still, an upgrade is available in the form of the PSU-10 EVO power supply, which offers four transformers, three of which are entirely dedicated to the power supply and 1 to the inductive filter. At an extra £1,200, it's a significant additional cost but gives further scope for upgrade.

There is a degree of trepidation getting stuck into the sonic section of this review because the actual sonic properties of the HP-10 are enormously variable, thanks to the sheer number of adjustable increments. The review sample arrived with a selection of gain and Harman EQ adjustments that had been working for someone. Still, it resulted in the resident pair of Focal Clear MGs sounding overblown and lacking in the refinement and subtlety that I know they are capable of.



» Switching everything 'off' and working from there saw me apply 'Crossfeed 2' and activate the 'Damping' setting, but otherwise leave everything else alone. The Focal is not a tricky headphone to drive, and even without the gain boost, I never exceeded 45 on the 99-step volume control. The suggestion is that, with the gain boost still in reserve, the HP-10 should be able to drive most headphones to the point of detonation.

Initially using the USB-C input, there is a great deal to like about how the Gold Note goes about making music. The most immediately arresting aspect of what it does is the sheer amount of detail it effortlessly extracts from material. *Paul's Boutique* by the Beastie Boys [Capitol] shows this off to exceptional effect. This album is layers of samples, intertwined to astonishing impact with the trio's high-speed lyrics spread across them. The Gold Note never loses the relationship between vocals and samples, but it's easier to understand the interplay and just how much is going on.

Conventionally 'hi-fi'

Play something more conventionally hi-fi like Agnes Obel's *Philharmonics* [PIAS], and the HP-10 demonstrates excellent tonal realism coupled with enough dynamics to ensure that a real sense of the constrained force in her piano is conveyed in the recording. This is aided by excellent bass extension. The Focal is not and never will be a truly seismic headphone (for me, the trade-off is the truly magnificent dynamic speed they possess), but the Gold Note does a better job than most headphone amps of coaxing a little more low end from them. Using the 'Damping' function helps to keep everything sounding fast and tight, and from the moment I turned it on, I had no desire to turn it off again.

The crossfeed function also works exceptionally. Some years ago, I sat through a 90-minute presentation from a company that had introduced a product of theirs and remember leaving none the wiser at what they were gunning for. Spending five minutes with the HP-10 yields »



» a more eloquent explanation than the presentation ever could. Listening to Mazzy Star's *So Tonight That I Might See* [Capitol] ensures that when Hope Sandoval begins her stunning vocal turn in *Into Dust*, she's in front of you and not simply singing into each ear. For me, it aids the suspension of disbelief in a way that almost no other single function can.

Decent decoding

Good though the internal DAC is, it is only fair to point out that, if you already have decent decoding to hand, the standard HP-10 might be a better bet. The resident Chord Electronics Hugo Mscaler and TT2 connected via XLR were able to increase the soundstage further and improve the already excellent tonality beyond what the digital stage of the HP-10 could do. This is hardly momentous news- after all a dedicated £7,500 digital front end should exhibit benefits over one built into a £2,300 headphone amp- but what is interesting is the headphone section of the Gold Note is still better than the TT2 used as a headphone amp when the Focal is switched over to its 6.35mm connection (as the Chord does not have a four pin XLR out). The actual headphone amp of the HP-10 is more than a bit special.

What seals the deal here though is knowing that if my – possibly slightly puritanical – take on turning on all the bells and whistles doesn't work for you, they are all there waiting to be played with and it is highly likely that some combination will deliver the sound that you desire, making this very close to a one size fits all recommendation. Gold Note might spread their resources over many categories, but they still know how to deliver a winner. +

Technical specifications

Headphone Amplifier: Class-A Dual/Mono

Analogue Inputs: 1x unbalanced RCA (5 Vrms max), 1x balanced XLR (8 Vrms max)

Digital Inputs: 1x USB-C up to DSD512 and PCM 768kHz (HP-10 DELUXE),1 x Bluetooth 5.1 HD aptX (HP-10 DELUXE, HP-10 BT)

Headphone Outputs: 3.5mm jack (unbalanced), 6.3mm jack (unbalanced), 4.4mm jack (balanced), 4-pin XLR (balanced)

Line Outputs: 1x unbalanced RCA, 1x balanced XLR

Headphone Power Output: 10W Max

Frequency Response: 20Hz-20kHz ± 0.3dB

THD (Total Harmonic Distortion)+N: <0.015% @ 1kHz

SNR (Signal to Noise Ratio): 110dB

D/A Converter: AKM AK4493 (HP-10 DELUXE) or Sabre ES9023 (HP-10 BT)

Bluetooth: 5.1 HD aptX (HP-10 DELUXE, HP-10 BT)

Crossfeed: Adjustable (full spectrum or lows/mids / highs)

Analogue EQ: Adjustable Harman Curve, Superflat

Damping Factor: Adjustable (High/Low)

Phase: Adjustable (0/180)

Dimensions: 200mm W | 80mm H | 260mm D

Weight: 3.5kg

Price: £1,800, €1,890, $2,199

Manufacturer Gold Note

www.goldnote.it

UK distributor Airt Audio

www.airtaudio.co.uk +44 (0)754 879 6832

TECH TALK

Gold Note HP-10

You might reasonably ask how Gold Note, a company still best known for turntables, turned its hand to the HP-10 and the technical wizardry contained within. Dig a little deeper into how the HP-10 works, and this makes a little more sense, although, if anything, it makes the HP-10 even cleverer than you might at first assume. It began as an after-hours development project of senior engineer Giovanni Rialti. As the project progressed, other resources were brought in to evaluate and incrementally improve the audio performance, including our CEO Maurizio Aterini, who spent hundreds of hours in listening tests.

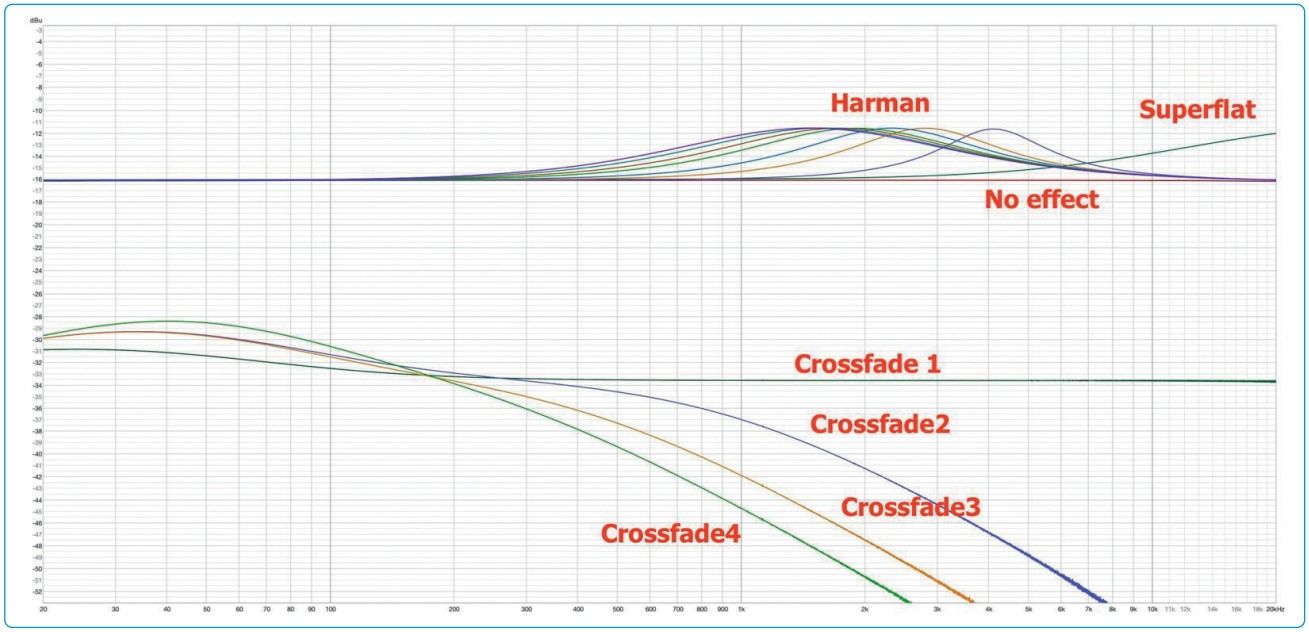
The amplification section is derived from a study on high-end power amplification that the company had been undertaking as part of wider product development in the field of high end amplifiers. The HP-10 is a fully dual-mono design making use of components derived from that research, including single sealed relays of both traditional and reed types. Gain transistors have been selected to minimise NFB values. The bias is controlled by quad-tracking circuitry.

Quad-tracking

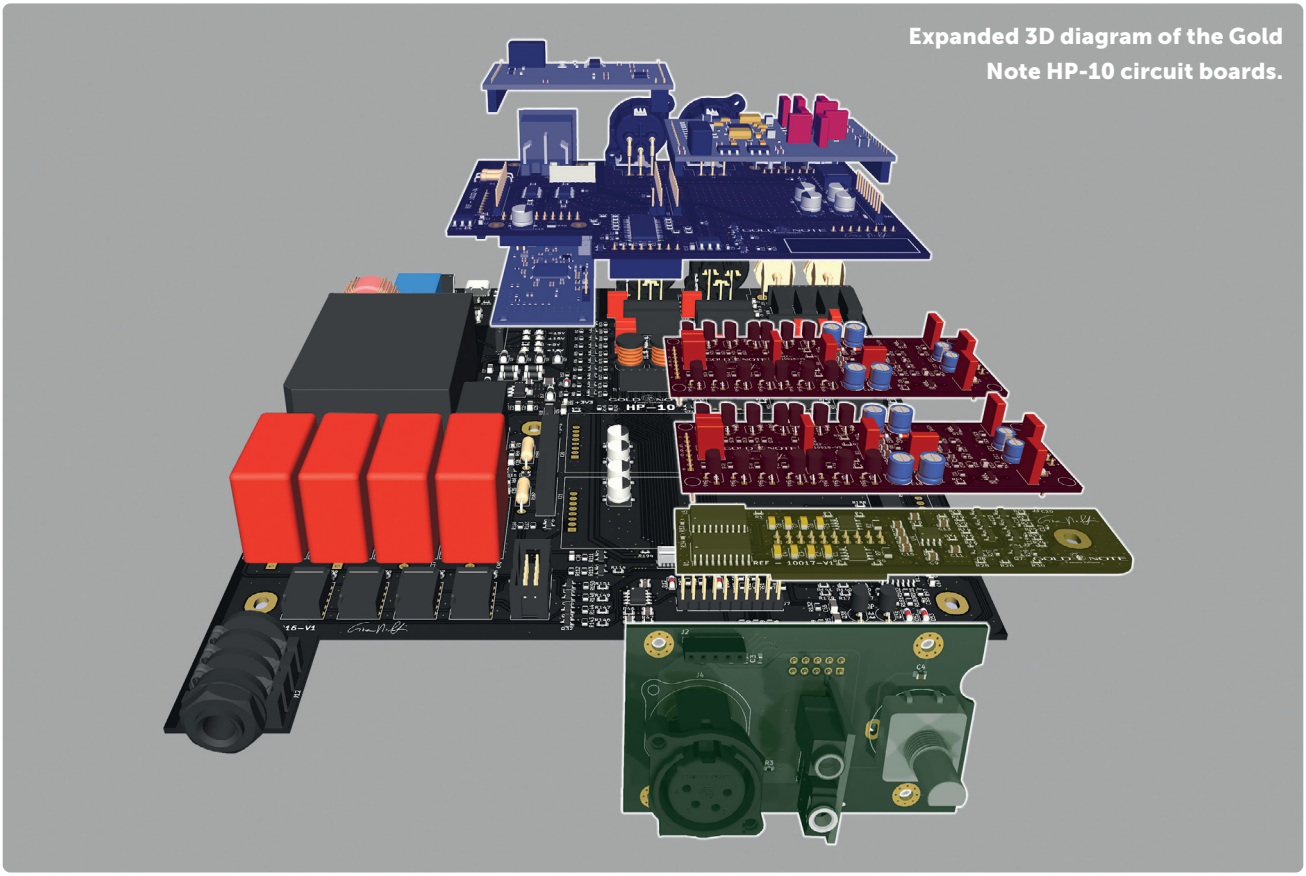
A key element of the brief was to be able to drive any headphone on the market except electrostatics (and don't worry, Gold Note has plans in that direction too). While some of the gain settings feel like overkill in the context of the Focals the company uses for testing, the idea is that the Gold Note has the reserves available to handle even the stiffest of planar magnetic designs on the market. The chances are that most owners will never use the gain boost, but a subset of users will be extremely grateful that it is there.

Gold Note's best practices also influence some aspects of the design in other areas. This includes the variable damping factor technology that the company has been working on for over 10 years now. The feature evolved from the desire to offer possibilities to customise the listening experience (that have also resulted in the development of standalone valve buffer units). It then evolved to embody the Gold Note philosophy: to provide a flexible and high-performance audio reproduction tool. The ability to adjust the damping factor helps to broaden the number of devices that the amp will partner with and the principle is the same with headphones.

Something else that can be missed if you casually glance at the HP-10 is that all of the extensive selection of adjustments are incremented in the analogue domain. The menu driven interface at the front is the only part of the process that is digital. Even in the case of the HP-10 Deluxe with its onboard decoding, the digital to analogue conversion takes place beforehand, and adjustments are made to the signal from there. There are no DSPs nor A/Ds - it's all good discrete components and precise engineering. The signal audio is entirely analogue and all the adjustments are implemented »



The curve and crossfade options for the Gold Note HP-10.



Expanded 3D diagram of the Gold Note HP-10 circuit boards.

» in the analogue domain. This is how the standard HP-10 can still implement the functionality that it does with only analogue connections on the back.

Some of these adjustments genuinely warrant the term unique. Gold Note's crossfeed implementation differs from many rivals which tend to offer a varying degree of information from the full bandwidth being fed from one channel into another. Instead, it focuses on allowing one or more parts of the frequency to be fed into the other channel rather than increasing the amount of information being sent across. This also applies to the Harman Curve adjustment, which is broken down into different parts of the frequency response that can be summed together to give the whole curve. This is topped off with the 'Superflat' function designed to linearise the high-frequency response.

No 'one size fits all'

Gold Note's position on the 'correct' settings for the plethora of adjustable options on the HP-10 is refreshingly candid. Tommaso Dolfi; Gold Note's Marketing Manager notes;
"We believe that there's no "one size fits all" solution when it comes to audio. Some audiophiles love to see a 3D soundstage in front of their eyes, others crave the feeling of being surrounded by the music or enjoy the classic headphone experience. The goal of what we do as a manufacturer is to make components that can take audiophiles a little closer to the moment when music becomes magic. Spatial Audio, EQs, and Room Correction can all prove valid technologies when they let audiophiles move towards their ideal experience. Part of the beauty of what we do is knowing that there are countless ways to get there, and that each technology will satisfy a specific group of audiophiles but not all of them. So we embrace advancements in these fields as long as they don't turn into marketing or gimmicky tricks."

The design of the HP-10 is also entirely modular. This allows for upgrades to be purchased by replacing or adding boards. While there are no updates planned at the moment (hardly a terrible state of affairs given the extensive functionality already present), an essential aspect is the future-proofing of the product, which helps to keep it relevant for as long as possible. The presence of the external PSU also gives the HP-10 more potential upgrade stretch, changing the operation over from a switching PSU to a linear one that incorporates components that would be too large to fit in the HP-10 chassis.

The clever part is once you have applied the settings that work for you, the HP-10 allows you to better focus on the material. It can be very easy to build devices as comprehensive as the HP-10 and have it become something of an 'effects box' where you hear the differences it makes to the signal. Gold Note has ensured that the HP-10's functionality is a means to a brilliant end rather than a distraction. Combined with the vast potential gain, you have an enormously flexible headphone amp. +