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vol 34

CB.audio



streamer/integrated amplifier B.audio Alpha One

Author: Josef Bruckmoser Photography: Rolf Winter

French-style gourmet cuisine for audiophiles

"These are two exceptionally bright new jewels in the high-end sky," was the verdict in *image hifi* 6/2019 about the DAC and power amplifier from B.audio. The Bermann family (father and two sons) have not rested on their laurels. Now they have put all their expertise into their first Alpha One integrated streaming amplifier. What do you get "all-in-one" from B.audio?

In his Tech Talk, Gérard Bermann speaks openly from the heart. The new Alpha One streaming integrated amplifier should have been on the market two years ago. In fact, the digital section, which is derived from the French family firm's large DACs, was already complete. "Nevertheless, we were still not convinced by the overall concept. In the end, we completely redeveloped the amplifier." It is easy to understand why this was the case, given the special requirements that the first all-in-one device from B.audio had to fulfil. Among other things, the two power amplifiers had to be housed in a dual mono design in the stylish housing provided. The usual long and thick cooling fins were therefore not an issue. On the other hand, the Alpha One also had to make do with smaller cooling surfaces and not overheat its proud owner's home. This could only work if the class A component of the A/B amplifier was not too high. So what should be done? Sacrifice sound? "No, this was precisely the challenge we had to face," says the company's "father" in the most literal sense of the word. "We continued to refine the A/B circuit until it met our high requirements." There was a good reason for this painstaking endeavour. Back in 2019 it was the DAC in particular that left a lasting mark on the sound. Now, however, an all-in-one device is only as good as its weakest component. "Therefore, the task was to utilise the strengths of Class A/B and at the same time achieve perfect linearity of playback," explains Gérard Bermann. The primary means to an end were local feedback loops in the critical stages. It is clear that too much is at least as bad as too little - which in turn explains the lengthy additional development period. The manufacturer is convinced that "ultimately, the dual-mono design can now offer comfortable performance values with a high current reserve, so that it can even supply demanding speakers with a large bass reserve,". Whatever the case, a look inside the Alpha One is utterly convincing. On the upper level of the housing, sitting directly on the back panel is the input board, on which the digital and analogue inputs are neatly separated. On the main board below, the central micro-processor from Texas Instruments, which is responsible for the entire control system, is not the only outstanding feature. The

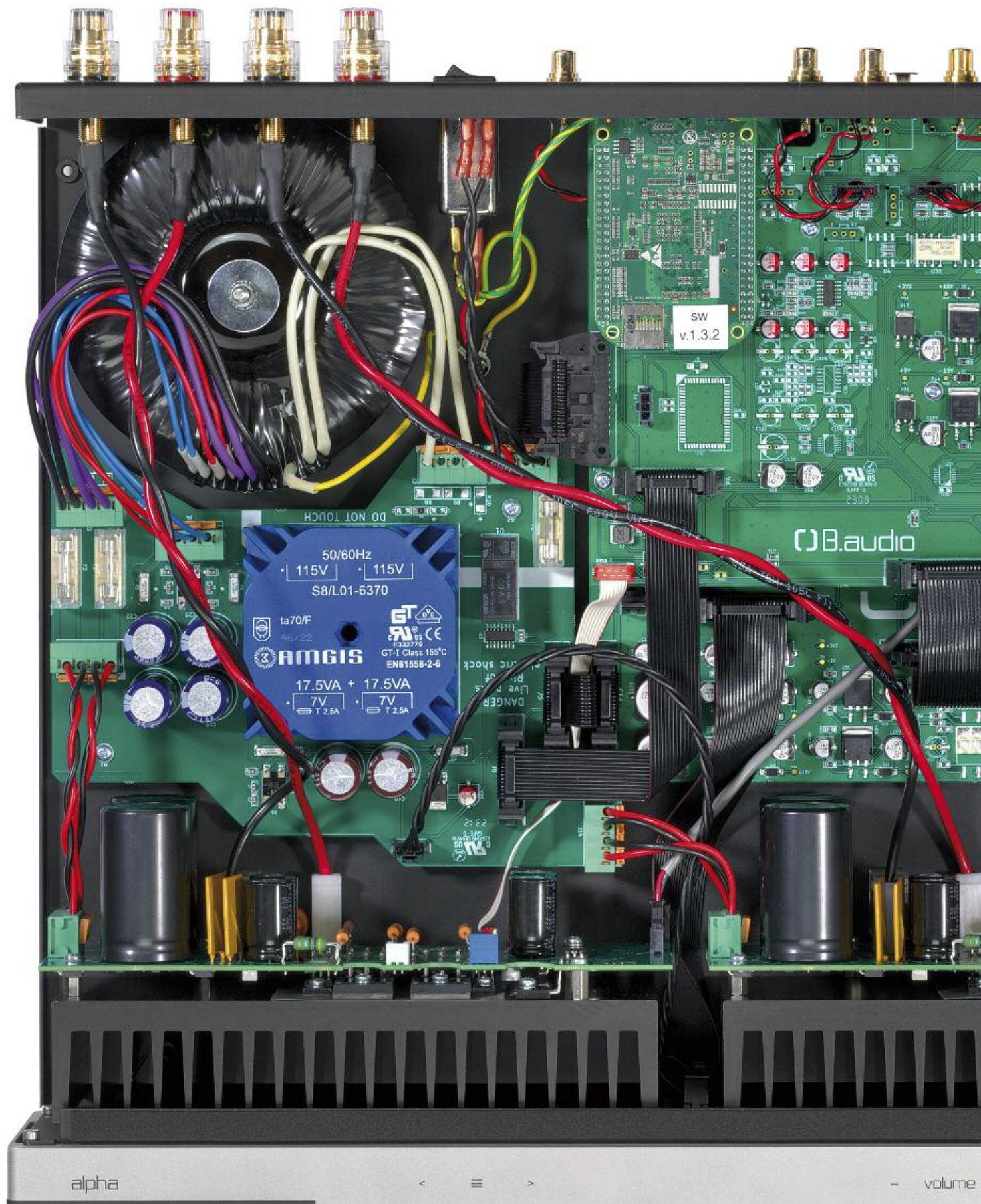


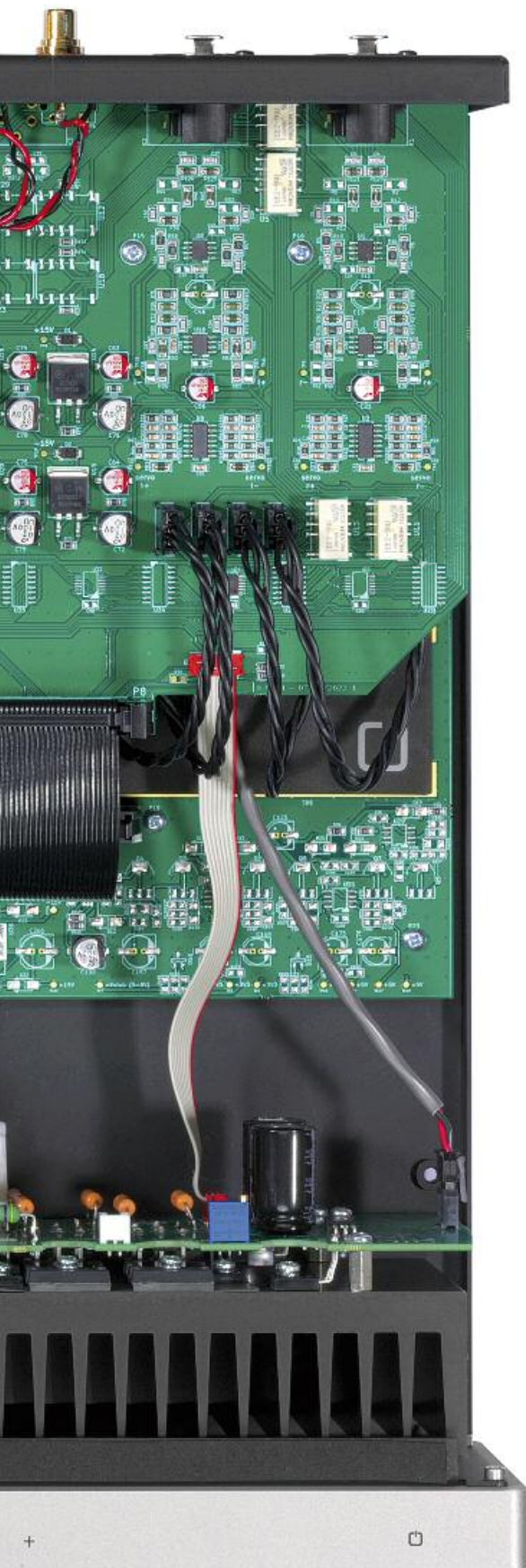


extremely complex volume control is particularly striking, with seven relays per channel switching a whole battery of mini Melf resistors. Every time you change the volume, it makes a charming click and, when necessary, it rattles through so quickly that you can make large level jumps just as easily as with a rotary potentiometer. The only difference is that the analogue resistor network in the Alpha One works much more precisely, and every value can always be reproduced using the discreet light blue digits on the display. This makes adjusting the volume via the neat little solid aluminium remote control really convenient. Speaking of the remote control: it only has seven buttons, although it is also responsible for controlling the numerous menus and submenus. This is where it pays off that the brothers Cédric and Sébastien Bermann are not only experts in electronics and signal processing, but have also learnt industrial design at Mercedes-Benz, among others. Thanks to their experience,

the device itself, with its simple elegance, requires only six buttons: 1 x on/off, 2 x source selection, 2 x volume control and 1 x menu button. The latter leads to the menus and submenus, in which the parameters of numerous features can be defined in detail via the remote control: UPnP/MPD, Squeeze-lite (LMS protocol), Roon (RAAT protocol), HQ Player (NAA protocol), Airplay and Spotify. Does this sound like confusing tech-speak? Don't worry, in practice everything works quite simply. For example, the Alpha One automatically switches to the USB input when you play music from a hard drive (in my case from a MacBook). If the music comes from Spotify, the streaming input also recognises this immediately; and even the connection to the home router via the Ethernet input works without any problems.

The only additional operating requirement during the test period was a suitable app. B.audio was also aware of this. They told us that the com-





pany's own app was already well under development. Nothing comes off the shelf from the French company. They didn't even want to become dependent on Roon: the Alpha One can do Roon, but with its own software. This tenacious in-house philosophy for all the software makes the device independent in the digital sector, and therefore as future-proof as possible.

B.audio has carefully concealed the multibit sigma-delta DAC under a metal shield. This not only keeps out interference, but also prying eyes that would like to see which converter chip is being used. Empty signal: that remains a secret entirely for the French. Their patented SJR technology (Source Jitter Removal), which combats jitter immediately at the input, is well known. The multibit sigma-delta design was chosen because it was the best compromise "between an R2R ladder DAC, which is known for its fluidity, and a 1-bit sigma-delta DAC, which is known for its attention to detail". Incidentally, B.audio has also equipped the Alpha One with eight acoustic correction filters at DSP level - which can of course be switched off - for room adaptation. The developers came up with the idea because they were often unhappy with the acoustics at trade fair demonstrations. So the range now includes high-pass, low-pass, band-pass, notch (sharp cut-out of certain frequencies) and a type of loudness, albeit not a predetermined one, but one in which, like all these filters, users can set all the parameters (cut-off frequencies, curve) themselves in an extensive sub-menu. Is B.audio not worried about any loss of sound quality? No, says Gérard Bermann, because the signal runs through the digital signal processor (DSP) anyway. In this way, it can be channelled in the desired filter direction without any negative effects. "We had a customer near Vienna with a large glass window. Thanks to our filters, we were able to eliminate the

Separate and powerful: the black toroidal transformer at the top left supplies 400 VA to power the output stage modules. The small blue transformer delivers 35 VA and supplies the digital circuits. In total, the filtering of the power supply exceeds 60,000 μF . The large input board is mounted directly above the main board at the inputs. It receives the digital signals on the left and the analogue signals on the right. Above it on the left, a small SW v.1.3.2 board handles the network connection and some of the streaming and server functions. These run on the in-house (!) B.audio OS software suite, the centrepiece of the EX module, a factor that gives the French manufacturer's products network and DSP functions. At the front of the cooling fins are the two power blocks in double-mono design



resulting sharpness in the treble." There is no need to emphasise that these special features in a high-quality system - and the Alpha One is built for such a system - require the utmost caution in order to avoid making things worse. It is also logical that this digital acoustic correction cannot be switched on for the two analogue inputs. This is because the analogue signals would have to be digitised. That would be far too complex and probably not in the interests of analogue fans. Analogue remains analogue in the Alpha One, and that's good.

It goes without saying that the digital filters were tested to ensure that they work in the specified direction. However, in order to achieve comparable results with previous tests, everything remained beautifully linear during listening. As has been tried and proven many times in DAC tests, CDs were played in a three-step process, first via the in-house Theta converter - an R2R design from the very beginnings - then via the internal B.audio converter and finally a few of these albums were also played from the MacBook as HiRes files. One example was Abraxas by Santana (COL 489543 2, Reissue (Original 1970), EU 1998, CD). The Alpha One with its DAC was able to demonstrate its sparkling qualities in CD playback for the first time with "Incident At Neshabur". Although the stereo imaging always remained at the level of the loudspeaker surface and behind it and never thrust anything forward, everything had a sparkling clarity. In the quiet part, Santana's guitar sang and shone before the piano on the right came in powerfully. On track 6, "Mother's Daughter", the clarity of the voice was surprising, making every word understandable - an asset of the B.audio that became a favourite over the course of the weeks of testing. And something else was immediately apparent with "Black Magic Woman": that the drums had more space in the right channel, both in width and depth. The same went for the organ on track 4. This asset, an almost infinite spatial depiction, especially in the depths, was also repeated from CD to CD and was particularly noticeable on albums that were listened to frequently. A good

example was Eric Clapton's Unplugged (Reprise, CDW 45024, EU 1992, CD). Even before the intro began, the applause was remarkably lively because the venue was extremely spacious. Many individual cheers had their very own place. Even after the first number, the applause and cheers were highly differentiated. The listening notes tell us that "this DAC conveys an enormous amount of micro-information".

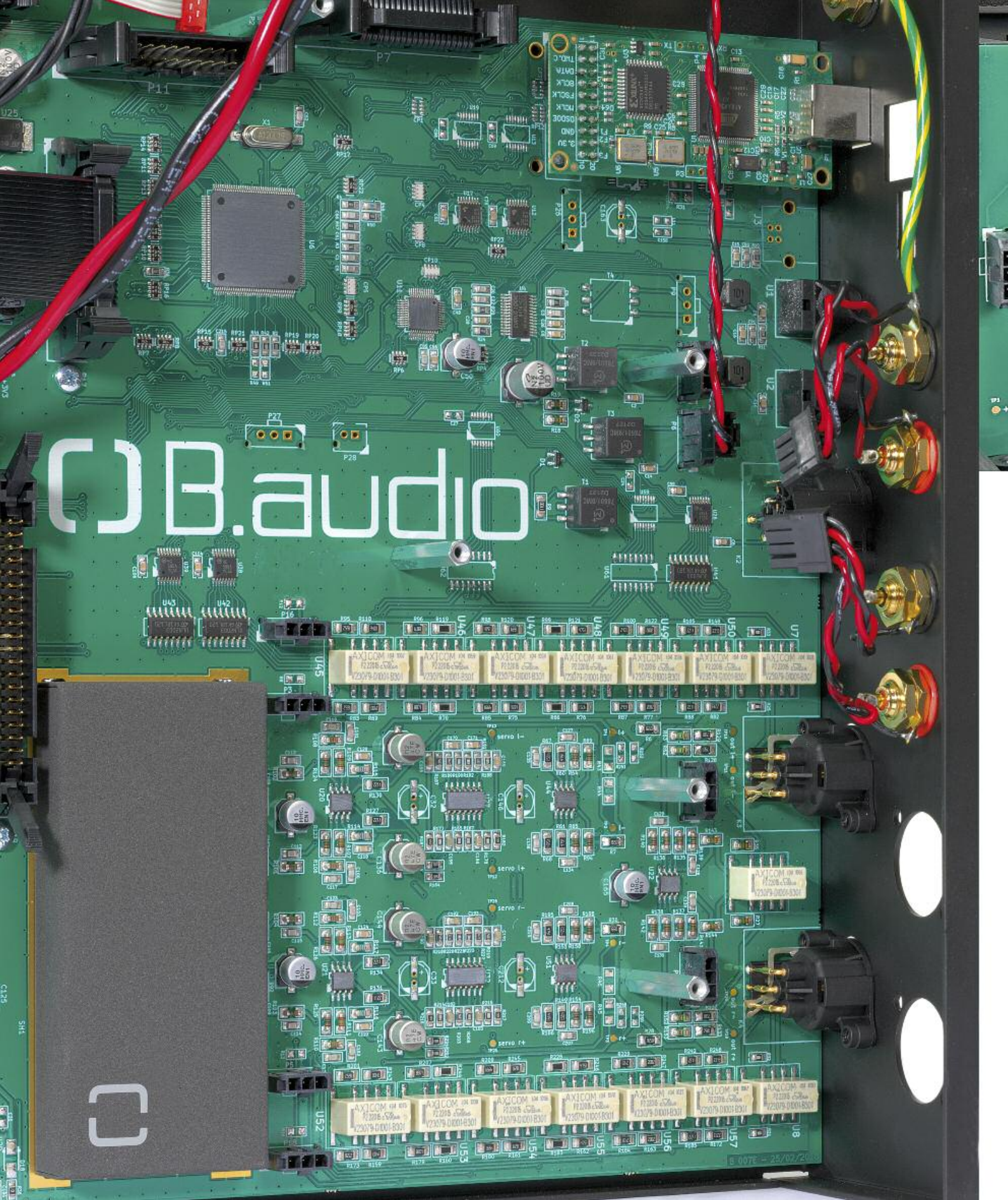
And just so I don't forget, because it wasn't so crucial in the test of the CD belonging to a friend: by nature, the HiRes files (Abraxas 24 bit 88.2 kHz, Unplugged 24 bit 48 kHz) were a touch more homogeneous, integrated and somewhat calmer in the background. The clapping and cheering on the Clapton recordings had a little more expressiveness, and the percussion was a little clearer in its own setting behind the solo guitar. But these distinctions were very slight. So strikingly slight that I cannot emphasise enough how extremely sophisticated the quality of the Alpha One is when playing back CDs. I have already tested several DACs from renowned manufacturers, some of which I can recall well. To date, I have always had the oppressive feeling that, yes, my CD collection sounds much better. But real HiRes files sound even better. The frustrating realisation is that if I were to buy such a device, I would have to get rid of my CDs and buy all new tracks in HiRes format. Because whenever I played a CD I would always have in the back of my mind that "it would sound even better as HiRes". The Alpha One saved me from having to go through all this. Not only did it completely rediscover my CD gems, which were in danger of gathering dust. No, the French gadget gave me the exhilarating feeling that it was simply playing CDs at an excellent level. So clearly luminous and emotionally musical that I was completely satisfied and didn't have to think every time that it could be much better. Long after this memorable listening experience, I was confirmed in my impression by a conversation I had with Gérard Bermann who told me: "We initially focussed all our attention on play-

ing back the Red Book CD. If you do it really well, it's the best basis for reproducing HiRes files."

But it's not just the DAC that plays a part in all this; the preamplifier and power amplifier also play a decisive role. To check this, one of my reference discs for spatial imaging was played on the Kuzma drive: Don Giovanni conducted by Ferenc Fricsay (DG SLPM 138 050/52, reissue (original 1959), D 1965, 3-LP). Don Ottavio appears at the start of side 6. He comes forward from the rear centre until he is in focus in the left channel. I have repeatedly noted in tests that this voice is first "rear centre" and then "front left". Any coherent system can distinguish this. With the Alpha One - and here we are only talking about its amplifier section, not the DAC - in addition, the acoustic ambience was clearly differentiated. At the outset the voice is heard in a slightly diffuse, minimally reverberant environment. The singer slowly emerges from this sphere to the front. Once he has reached the left side, the

Players

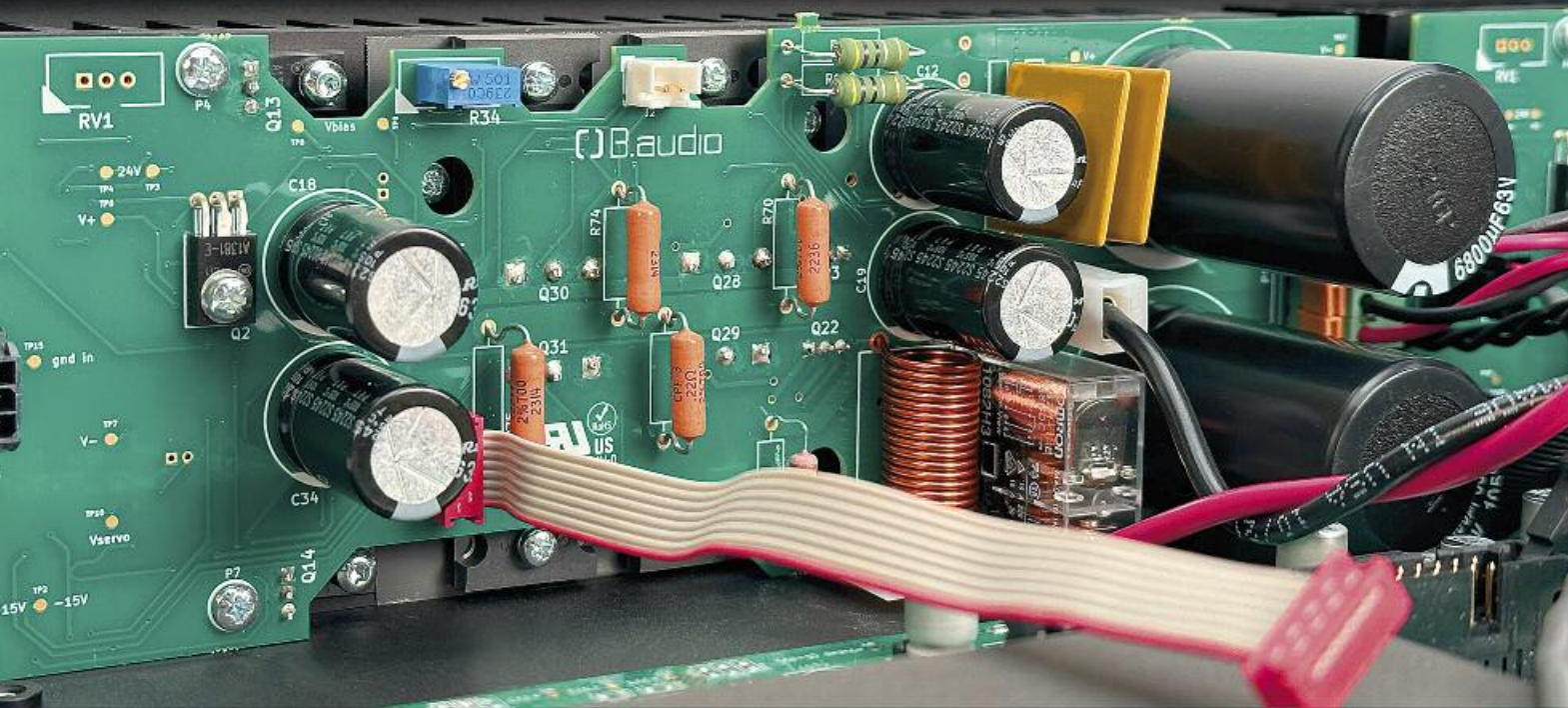
Turntable: Kuzma Stabi Reference, Transrotor Connoisseur **Tone-arms:** Kuzma Stogi Reference, Graham Ceramic 2.2 **Cartridges:** Burmester MC B1, Benz Micro Ruby open air, Benz LP, Audio Technica AT Art 9 **CD drive:** Theta Data Basic (Philips CDM9 Pro. **D/A converter:** Theta DSPro Generation III **HiRes formats:** MacBook Pro with Amarra player software **Phono stage:** Jeff Rowland Cadence **Preamplifier:** Jeff Rowland Synergy II **Power amplifier:** Jeff Rowland Model 12 **Speakers:** Trenner & Friedl Parker 95 (update beryllium tweeter 2017) **Cables:** Cardas Golden Reference, Cardas Neutral Reference, Cardas Clear (phono and line); Brodmann Acoustics, Audiodata LS CU4 (loudspeakers); Hijiri Sound Matter 2M2R-Limited Power Cord, Einstein (mains), Einstein power strip **Accessories:** SteinMusic H2 room acoustic system, Econaudio PWR 3000 power manager/mains filter, Econaudio absorber feet, bFly-audio PowerBase, Dereneville Magic Mat, SID Analogue (sound improvement disc "A"), SIC (sound improvement coupler), Clearlight Audio RDC cone, Audioplan Sicomin Antispikes SIAS



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Left: On the large main board of the Alpha One, the left-hand section (pictured above) is responsible for digital-to-analogue conversion. A large square microprocessor controls numerous functions such as oversampling, DSP with eight parametric filters, set-up management, display, automatic source recognition and automatic sleep/wake-up etc. A small circuit board in the picture above is responsible for processing the digital information. You can see the large chip for asynchronous USB control, the small chip for DSD/PCM multiplexing and the two oscillators for 44.1 kHz and 48 kHz and their multiples. Almost half of the circuit board on the right (pictured below) is taken up by the complex volume control, which is crucial to the sound. Seven relays per channel switch the resistor network, which enables a very fine and precise adjustment of the volume. The heart of the D/A conversion in the picture on the bottom left is concealed under a cover that protects it from electromagnetic interference and prying eyes

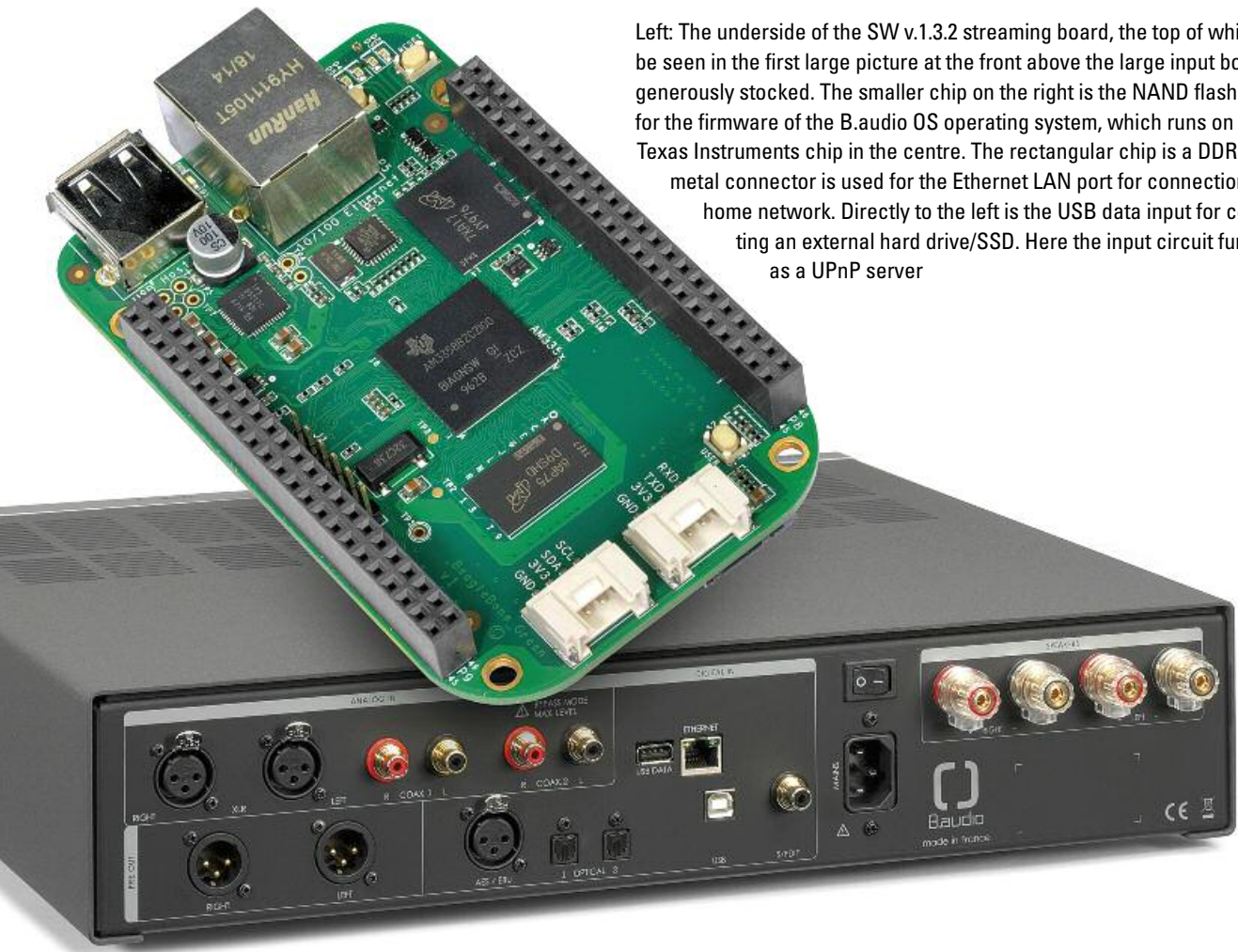
Above: A detailed view of an output stage. Two pairs of bipolar transistors with high current carrying capacity provide the amplification for each channel. The filter capacitors of the power supply, the protective elements (relay and coil), the quiescent current setting (blue component) and the non-inductive Vishay emitter resistors can all be seen. Other essential components of the amplifier stage, which is taken directly from the B.audio reference power amplifiers, are located on the other side of the board

voice is crystal clear, as if the singer were now standing right next to the microphone. The extreme precision of the reproduction was astonishing, not to say unique! The two years that B.audio took "too long" to develop the Alpha One's preamplifier and power amplifier were obviously worth their weight in gold. And there was something else that flattered the ear in this exemplary Don Giovanni recording: how round and almost gentle Donna Anna's voice sounded, even in the highest treble ranges. There

are passages of enormous intensity where even slightly treble-emphasised devices or speakers immediately fall into the sharpness trap. Any hint of sharpness is alien to the Alpha One. Incidentally, the bass qualities of the all-in-one device were also tested using a record, which was a particular focus during the development of the new power amplifier. The object of desire was once again the powerful left hand of Daniil Trifonov on Destination Rachmaninov - Departure (Piano Concertos 2 & 4)



streamer/integrated amplifier B.audio Alpha One



Left: The underside of the SW v.1.3.2 streaming board, the top of which can be seen in the first large picture at the front above the large input board, is generously stocked. The smaller chip on the right is the NAND flash memory for the firmware of the B.audio OS operating system, which runs on the Texas Instruments chip in the centre. The rectangular chip is a DDR chip. A metal connector is used for the Ethernet LAN port for connection to the home network. Directly to the left is the USB data input for connecting an external hard drive/SSD. Here the input circuit functions as a UPnP server

All inputs and outputs are clearly organised at the rear of the housing: XLR and RCA sockets for the analogue inputs at the top left, with the analogue XLR pre-out below left. To the right are the digital inputs: XLR, 2 x Toslink, USB data, LAN/Ethernet, USB type B and cinch

(DG 4835362, D 2018, 2-LP) via the analogue XLR input. This piano concerto has many catchy melodies, which the Alpha One - like Donna Anna's voice - allows to flow wondrously beautifully (nota bene: not "embellished"!) into the listening space. But the heavy piano chords at the beginning are

reminiscent of the depressive period that Rachmaninov went through before his therapist "persuaded" him under hypnosis that he could write a wonderful concerto. These chords are carried by powerful strokes in the left hand, which the B.audio reproduced with pressure and expression, depth

and conciseness. With plenty of bass reserve, as the manufacturer put it.

When asked about B.audio's sound ideals in the Tech Talk, Gérard Bermann replied, "Everything in a hi-fi device must always be well seasoned". It goes without saying that this immediately brings to mind gourmet French cuisine. The men at Bermann obviously know how to cook. At least in the figurative sense when it comes to seasoning their high-end devices. As the DAC and power amplifier test in autumn 2019 proved, the ingredients are perfect anyway. The real challenge with the Alpha One was to pack all the ingredients into an all-in-one device in the right dosage. In fact, the overall package sounds as if it has been cast from a single mould. The DAC with its convenient streaming functions, the preamplifier with its perfect volume control, which is so important in terms of sound, and the power amplifier with its new, subtle tuning in Class A/B mode interact superbly. The Alpha One stands out from the crowd with its impressive characteristics. It can produce powerful bass tones and wonderfully silky trebles. With its fascinating microdynamics, it turns a room into a new kind of experience, even on familiar CDs or LPs. And for all its coarse-dynamic expressiveness, it always remains highly cultivated.

The Alpha One is far more than a downsized version of its big brothers. It delivers an independent performance that is highly coherent both digitally and analogue. The first all-in-one device from B.audio is simply as appealing as its creators. Voilà, dear Frenchmen, truly well-seasoned! □

streamer/integrated amplifier B.audio Alpha One

Operating principle: Streamer DAC with integrated amplifier in dual-mono design **Inputs:** 1 x S/PDIF (PCM 44.1 – 192 kHz), 2 x Toslink (PCM 44.1 – 96 kHz), 1 x AES/EBU (PCM 44.1 – 192 kHz), 1 x USB B (PCM 44.1 – 384 kHz, DXD, DoP, native DSD to DSD256), 1 x RJ45 (PCM 44.1 – 384 kHz, DXD, DoP, native DSD to DSD256), 1 x USB Data (storage medium connection, SSD disc) **Streaming protocols:** UPnP, MPD, LMS, NAA, Roon, Airplay, Spotify **Line inputs:** 2 x RCA asymmetrical (including one bypass for home cinema) 1 x XLR symmetrical **Input impedance:** 47 kOhm **Preamplifier output:** 1 x XLR symmetrical **Output power:** 120 watts into 8 ohms, 200 watts into 4 ohms **Frequency response:** <1 Hz to >200 kHz **Output impedance:** 100 ohms **Distortion:** < 0.001 % (1 – 100 W, 8 ohms) **Special features:** Speaker terminals compatible with forks, bare cables and banana plugs Multibit Sigma Delta DAC, B. audio EX network module, access to streaming services (Qobuz, Tidal, Spotify...) via compatible iOS and Android applications, integrated music server, UPnP/Openhome-capable, 64-bit acoustic correction via DSP, 8 parametric filters with automatic gain adjustment, passively cooled dual-mono amplifier, optimised local feedback, fully balanced preamplifier, volume control in 64 steps via relay-controlled analogue resistor network **Accessories:** Remote control made of solid aluminium **Dimensions (W/H/D):** 45/10.2/39.5 cm **Weight:** 15.5 kg **Guarantee:** 3 years **Price:** 16,990 Euros

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