



SOUNDREBELS

## Extraudio DAC2



Holidays, holidays, and after the holidays, which means we should finally be able to rest from the myriad of comparative ads and holy wars between fans of a specific mayonnaise, soda manufacturers, or, for example, direct confrontations between popular discount stores that flood the press, social media, and mass media. However, these are just wishful thinking, because in our audiophile backyard, the orthodox acolytes of digital and analog, of hearing cables or not, and even converter circuit providers don't need any specific occasion to start another crusade proving that, quoting the classic, "I am right and it is a sacred reason. Because even if it's yours, mine is more mine than yours. That precisely my reason is the most mine!" (for the uninitiated, "The Day of the Odd Bug"). And it is this latter theme that I would like to address in this epistle, since according to the principle that where two fight, the third benefits, increasingly bold in the market are those producers who, tired of winking at fans of AKM or Sabre "sound", decide to take their own path and, in the process, freeing themselves from the whims of the mentioned hegemonies, choose the third variant, which are more or less proprietary solutions like the Ring DAC (by dCS), or R2R ladders – including Aqua Acoustic Quality, Esoteric (Master Sound Discrete DAC), Rockna, Sonnet Audio. And to this group, which follows its own paths, joins Extraudio, known to us for the orange preamplifier and power stage set, which through the courtesy of Quality Audio – the brand's distributor, had the pleasure of gracing us for the last few weeks with its cutting-edge digital-to-analog converter aptly named DAC2, for which we cordially invite you to try.





As can be perfectly seen in the previous images, the DAC in question, unlike its sibling, arrived to us with a slightly less "citrusy" paint job, meaning, instead of the striking orange, its casing is covered in a distinguished black, which also replaced the silver front panel of the previous model. Everything is made from precisely machined aerospace-grade aluminum and coated with a special ceramic coating. However, to prevent it from being too monotonous and boring, the Dutch decided to liven up the design by gilding not only the source selector knob located on the left side, but also the central power button and the small filter selector on the right. In addition to these, especially when illuminated, attention is drawn to the presence of seven mini LEDs assigned to specific inputs, and another LED that indicates in colors the selected filter, along with six others indicating the sampling frequency of the decoded signal we are dealing with. The biscuit motif or infinity symbol of the Extraudio logo and the switch were transferred to the top in the form of dense perforations ensuring free air circulation inside the casing. Equally distinguished and elegant, which is not exactly the norm even at the strictly high-end level, are the backside panels, which not only surprise with the abundance of all kinds of digital inputs, but also with the duplicated sets of ... analog outputs. However, this plethora does not arise from desperate attempts to confirm its own uniqueness, but rather it is a derivative of the converter's topology itself and, therefore, the ability to offer the user both purist outputs - derived directly from the R2R XLR and RCA circuit, as well as their twin pairs, but this time, thanks to the use of a high-end BJT transistor output stage operating in Class A, in a high-level version. Returning to the interfaces dedicated to digital, Extraudio tempts potential buyers not only with standard inputs - optical, BNC, coaxial, and AES/EBU, along with the obligatory USB in today's times, but also with I<sup>2</sup>S in LVDS (HDMI) standard and RJ45, as well as with high-resolution Bluetooth wireless connectivity supporting Aptx HD and newer versions. As for the internals, it is worth noting that the DAC2 was built using modular technology, so it is prepared for future upgrades. Additionally, as mentioned earlier, it is based on the patented Quad R-2R Ladder design, which consists of four ladders containing approximately 600 Vishay Foil Resistors<sup>®</sup> of the highest quality with a tolerance of 0.01%, ensuring 32-bit resolution. Everything operates under the control of several FPGA circuits responsible for conversion, linearity correction, sampling frequency, input selection, and conditioning of digital signals (this is already the task for FPGA ARM). By the way, all digital inputs are galvanically isolated. Moreover, USB and I<sup>2</sup>S handle both PCM signals up to 384kHz/32bit and DSDx8 (DSD512), while the rest stop at 192 kHz/24bit. Digital filters are also available: red, orange, and green, which can of course be deactivated. The power supply was treated with the same attention, where three low-noise, patented quadruple medical-grade transformers, 18 Schottky diodes, and an impressive capacitor bank with a total capacity of ... 60,000 µF were found. Quite impressive for what might seem like a low-power-demand DAC, don't you think? Moving on to the listening part, we can only thank the distributor for providing us with a thoroughly warmed-up sample for testing, which allowed us to shorten the adaptation process to the necessary minimum and almost enjoy the full capabilities of the titular device from the first turn-on. Of course, for peace of mind and ingrained habits, the first few days were spent getting acquainted with the guest and ensuring its well-being through a series of more or less spontaneous changes in cable configuration in search of the optimal setup. This was especially important, as having two versions (standard and high-level) of the outputs, in the end I had to decide on one option or the other, and ultimately I opted for the directly connected XLR and RCA outputs to the R2R, as with the high-level outputs the sound could become noticeably livelier and more dynamic, although the DAC2 itself did not quite get along with my Vitus integrated amplifier, which didn't appreciate it when someone/something tried to overload its input. Communication issues also applied to the USB connectors, as the custom, fortunately programmable, controller of the aforementioned interface could also make its presence known, for example, by not recognizing French Esprit cables. However, when it came down to it and everything reached a certain stability (which in the case of a review system usually has an eminently transient character), it became clear that the digital face of Extraudio, while retaining the known sweetness and musicality of its analog amplification sibling, clearly leans towards resolution and an almost infectious dynamism. Thanks to this, on the one hand, there is no deepening of the company's characteristic tendency to overfeed the message, which could lead to its overexposure, and on the other hand, there is a complete flexibility of configuration with third-party systems. Therefore, the "Asfâr" by Le Trio Joubran sounded incredibly realistic and emotional, where the intriguing atmosphere of Palestinian melodies is built from refined oud and local percussion parts. There is something magical in these compositions, a freedom and a multitude of layers that build the narrative, but also captivate the listener more effectively than walking through marshes, a nostalgia difficult to define. However, while with devices that mainly focus on the melodic aspect, we quickly come to the conclusion that it is a pleasant background for listening, although not very demanding, ideal for tasting Arabian cuisine dishes, the DAC2 from Extraudio.

The DAC2 not only provides the listener with easy access to an extraordinary wealth of sounds but also showcases the mastery of the musicians themselves. However, this is not a form of unreflective perfectionism but rather an exciting picture with a very tangible flow, joy derived from shared music-making, and the synergy present among the brothers and the occasional guest (for example, on "Douja") Dhafer Youssef. There is breathing, freedom, and extraordinary precision in focusing on the apparent sources with a clearly marked graduation of planes, free resonances, and dynamics both on a micro and macro scale.

However, it is worth noting that shining in ethereal climates characteristic of the realm of softness does not mean that Extraudio cannot show its strength in a much less civilized repertoire, as if such "push" reaches its inputs, it can easily unleash true hell. For example, as happened on "AfterLife" by Five Finger Death Punch, the joyful creativity of the girls from Black Spikes, or the equally expressive Alissa White-Gluz with her team, Arch Enemy ("Deceivers"), where sharp guitar riffs and drum blasts give way to growls and screams that make the blood boil. It became clear that instead of caressing our senses with delicate oud chords, the DAC2 is capable, without scruples, of maintaining the original aggression and destructive force of heavier rock genres (if melodic death metal can be considered as such) without attempting to soften or civilize them in any way. Well, not entirely, as the selection of the "green" filter rounded and smoothed out the roughness of the top a bit, but it was not a native and permanent feature of the converter itself, but simply a conscious choice of its user, so it was only necessary to switch to another option for everything to sound as it should. Additionally, I never managed to catch the resident Dutch DAC2 showing signs of excessive aggressiveness or an artificially sharp interpretation of the message. Even if the aggression clearly emanated from the speakers, it only came from the source material and not from the colorations and (over)interpretations of the DAC.

In summary, half seriously, half jokingly, it could ironically be said that despite the very serious and distinguished tone of the DAC2 sound, surprising reserves of vitality fully deserving of the well-known finish of XP5 & XP-A1500 can be found. And speaking seriously, it seems logical that owners of the aforementioned Extraudio pair should automatically test how the DAC2 performs in their systems, and all other audio enthusiasts seeking a strictly high-end converter, unless they prefer truly rounded curves and "fluffy" drowsiness, should not overlook this device either. It is worth noting that, although Extraudio, at least for now, is not a top-tier brand, once again it demonstrates that even in this demanding segment, there is no reason to tremble or feel complex, facing off on equal terms with a notably more established competition.

Marcin Olszewski

The system used during the test:

- CD/DAC: Ayon CD-35 (Preamp + Signature) + Finite Elemente Cerabase compact
- File player: Lumin U2 Mini + Farad Super3 + Farad DC Level 2 copper cable + Omicron Magic Dream Classic; I-O Data Soundgenic HDL-RA4TB
- Turntable: Denon DP-3000NE + Denon DL-103R
- Phono preamplifier: Tellurium Q Iridium MM/MC Phono Pre Amp
- Digital source selector: Audio Authority 1177
- Integrated amplifier: Vitus Audio RI-101 MkII
- Speakers: Dynaudio Contour 30 + Acoustic Revive SPU-8 pads + Base Audio quartz platforms
- RCA interconnects: Furutech FA-13S; NEO d+ RCA Class B Stereo + Ground (1m) phono
- XLR interconnects: Vermöuth Audio Reference; Furutech DAS-4.1
- Digital cables: Fadel art DigiLitz; Harmonic Technology Cyberlink Copper; Apogee Wyde Eye; Monster Cable Interlink LightSpeed 200
- USB cables: Wireworld Starlight; Vermöuth Audio Reference USB; ZenSati Zorro
- Speaker cables: Signal Projects Hydra + SHUBI Custom Acoustic Stands MMS-1
- Power cables: Esprit Audio Alpha; Furutech FP-3TS762 / FI-28R / FI-E38R; Organic Audio Power + Furutech CF-080 Damping Ring; Acoustic Zen Gargantua II; Furutech Nanoflux Power NCF
- Power strip: Furutech e-TP60ER + Furutech FP-3TS762 / Fi-50 NCF(R) /FI-50M NCF(R)
- Wall power socket: Furutech FT-SWS-D (R) NCF
- Switch: Silent Angel Bonn N8 + Silent Angel S28 feet + Farad Super3 power supply + Farad DC Level 2 copper cable
- Ethernet cables: In-akustik CAT6 Premium II; Audiomica Laboratory Anort Consequence, Artoc Ultra Reference, Arago Excellence; Furutech LAN-8 NCF; Next Level Tech NxLT Lan Flame
- Anti-vibration platform: Franc Audio Accessories Wood Block Slim Platform
- Table: Solid Tech Radius Duo 3
- Acoustic panels: Vicoustic Flat Panel VMT

## Opinion 2

As surely some of our loyal readers will recall, just over a year ago we had the opportunity to face the proverbial bull with this manufacturer. Naturally, I refer to the preamplifier and power stage set Extraudio XP5 & XP-A1500, which at that time stood out for its finish referencing the national colors of the Dutch football team, with a very striking orange tone on its casings. This set turned out to be very interesting, as it offered an impressive power of 1.5 kW and 90 Amperes per channel, making it clear that there were no speakers in this world that it couldn't handle. The test proved to be so intriguing that we immediately began discussions about exploring the rest of the product catalog. Additionally, according to the distributor's information, the engineering team was finalizing work on the latest incarnation of the digital-to-analog converter DAC1 and DAC2. And just when it seemed that things were going to progress quickly, more than a year passed from the start of those conversations until the culmination of today's meeting. Fortunately, from our ephemeral perspective, time passes quickly, and before we knew it, thanks to the diligence of the Chełmza distributor, Quality Audio, the Extraudio DAC2 QUAD R-2R Ladder converter, imbued with the latest technical ideas from its creator, arrived at our modest facilities.





Regarding the appearance and technical specifications, what can be mentioned about our protagonist? As expected, the design of the housing for the intricate electronic circuits of this converter is inspired by its predecessors. It is a high-gloss black box with rounded sides, which is pleasing to the eye. Interestingly, the front, made of a thick 20mm aluminum panel, is also painted the same color, with the only difference being the input selector knob on the left side finished in an elegant 24-karat gold-plated golden color to add a touch of visual style. On this same front, we find an illuminated switch shaped like the brand's logo, which in this case resembles a biscuit or infinity symbol, a series of light-emitting diodes indicating the task they are performing, properly labeled: different versions of digital inputs and the signal sampling frequency, as well as a button to select one of the four patented filters and a tri-color LED indicating the selection made: green, orange, red, or the lack of illumination. As in previous models, the top of the housing is perforated with a series of "biscuit infinity symbol part of the brand logo" holes to ventilate the electronic components. At the back, fulfilling the task of handling different digital signal standards, it offers the potential buyer a series of digital sockets in optical version, USB, AES/EBU, SPDIF, BNC, HDMI, I2S, two types of analog outputs: High Level and Direct R-2R Ladder, as well as an IEC power plug. To conclude this paragraph, where I could detail many interesting technical aspects due to the modernity of the construction, I will only mention some of the most important ones. Among them are the use of a high-precision digital motor, a patented modular concept, programmable audio oscillators, the use of three medical standard quadruple transformers, a patented USB 2.0 power module, and a proprietary module with two I2S and Bluetooth inputs, LDAC, APTX-HD, APTX-LL. Make no mistake, the subject of advanced technological development is serious, and this is just a very summarized version of the technical data. Therefore, if you are interested in the finer details, I invite you to consult the table below our texts. I assure you there is much to dive into.

When we reached the part describing the sound of the DAC2 converter, it was time to address the most pressing questions. Was it worth implementing the technical innovations articulated in the previous paragraph? And if so, how does this affect the sound aesthetics of the audio set that utilizes it? Honestly, I really have no idea which technical treatments influenced this aspect of the musical presentation, so I'll say that, looking at the issue as a whole, it was worth waiting a year to get acquainted with the latest proposal from the Dutch. The reason is the overall freedom of presentation, which, thanks to two types of analog outputs, High Level and Direct R-2R, along with four steps of signal filtering, could be tailored to one's taste without needing to change the wiring and accompanying electronics. How do I know? Well, at first, not knowing how it would sound, I tested both analog outputs, which I then adjusted with the appropriate filtration. As a result, it turned out that my fixation on a more essential and slightly calmer music presentation eventually led me to use the signal through the R-2R protocol. High Level also showed its good side, but for me, it was too distinctive. Without crossing the line of good taste, that is, without a painful scream and nervousness, but with an emphasis on the speed and assertiveness of the dynamic presentation. As I wrote, it was no drama, however, the direct output of R-2R brought the expected pinch of calm and roundness, automatically making it the protagonist of this showdown. In such an edition, the transmission offered good weight, resolution, energy, and the mentioned scope in the creation of virtual entities. Without exaggerating any aspect, just showing the material with a slightly more complete essence level, giving equal importance to each subrange. Is it wrong to be so subtle? After all, many of us love a saturated midrange. Not at all, because acting in the field of excessively increasing its presence often makes the component less versatile. Meanwhile, the basic premise of such projects should be to avoid situations that impose their style on the rest of the setup. And in my opinion, that is precisely the biggest advantage of our protagonist. It skillfully does the amount of music in the music, so that the set, even if for someone it's a bit more heated, remains in good tone. As I wrote at the beginning of the paragraph, in the Extraudio DAC2 we can slightly adjust the tone in two ways, that is, use one of the two analog outputs or play with the digital signal filtering section. In my case, I opted for R-2R and the filter with green color, that is, the calmest and smoothest I could achieve with basic settings. As a result, I achieved a good consensus between the reception of calm and challenging music. Calm like the iconic trio: K. Jarrett, Gary Peacock, and Jack DeJohnette at the "Live At Montreux" concert, where the system not only excellently showed how the musicians understood each other on a stage that requires total concentration to avoid errors among an audience absorbing every touch of the instrument but also the virtuosity of the musicians and the polyphony and agility of the sound of each sound generator. Treating the midrange of this type of music too strongly can end up in an unwanted weight that often consumes the brightness and claw needed to highlight each instrument, while treating it too lightly can result in a distortion by showing only the attack without the very important resonances. Our "little DAC," of course, came out of this battle with its head held very high. It played appropriately light, but with good color and freedom, making the record sound excellent. And what about the more rebellious material? Don't worry, it also went well. In fact, even increasing the weight of rock recordings like Metallica's "Master Of Puppets" too much often doesn't cause major problems because they are simply more pleasant to listen to, but the truth is

There's also the fact that it lacks the proper sharpness to capture the artists' intentions with the speed of signal rise and the ferocity of the attack in the foreground. Therefore, it's better in the Extraudio style to saturate the message more delicately, rather than too strongly, because the reception will be more pleasant anyway and at the same time, it won't lose unpredictability. That's why there are two types of output to choose from according to each listener's taste. Personally, I prefer the mode presented by the Scandinavians, so, without exaggerating the facts, I claim that, similar to jazz, rock also turned out expectedly well.

Does the Extraudio DAC2 converter from the Netherlands have the chance to perform positively and fit well in any potential equipment setup? It might sound too bold, but I am inclined to believe that the probability of success is very high. The reason, of course, is its considerable versatility in shaping the final sound. A sound that is sometimes sharper, other times fuller in mass, but in every variant follows the path of a reasonable consensus between the weight and the immediate response to the information package contained in the music. The described project is so interestingly conceived that it should largely be able to handle the expectations package of literally any buyer. Both the corpulent and the anorexic. And if so, it would be a sin not to check it out. Therefore, if you're looking for something exceptional in the digital signal processing (DAC) section, one of the strong candidates, in my opinion, should be the Dutch black and gold, the focal point of our discussion.

Jacek Pazio

System used in the test:

- - transport: CEC TL 0 3.0
- - streamer: Lumin U2 Mini + switch Silent Angel Bonn N8
- - digital/analog converter: dCS Vivaldi DAC 2.0
- - reference clock: Mutec REF 10 SE-120
- - reclocker: Mutec MC-3+USB
- - Shunyata Research Omega Clock
- - Shunyata Sigma V2 NR
- - preamplifier: Gryphon Audio Pandora
- - power amplifier: Gryphon Audio APEX Stereo
- - speakers: Gauder Akustik Berlina RC-11 Black Edition
- - speaker cables: Furutech Nanoflux-NCF Speaker Cable
- - IC RCA: Hijiri Million "Kiwami", Vermouth Audio Reference
- - XLR: Hijiri Million "Kiwami", Furutech DAS-4.1
- - digital IC: Hijiri HDG-X Million
- - LAN cable: NxLT LAN FLAME
- - power cables: Hijiri Takumi Maestro, Furutech Project-V1, Furutech NanoFlux NCF, Furutech DPS-4.1 + FI-E50 NCF(R)/ FI-50(R), Hijiri Nagomi, Vermouth Audio Reference Power Cord, Acrolink 8N-PC8100 Performante, Synergistic Research Galileo SX AC
- - rack: BASE AUDIO 2
- Accessories:
  - - fuses: Quantum Science Audio Red, Synergistic Research Orange
  - - anti-vibration: Harmonix TU 505EX MK II, Stillpoints ULTRA MINI
  - - anti-vibration platform SOLID TECH
  - - power: Harmonix AC Enacom Improved for 100-240V
  - - power strip: POWER BASE HIGH END, FURUTECH e-TP80 ES NCF
  - - acoustic panels Artnovion
- Analog path:
  - - turntable - Clearaudio Concept
  - - cartridge Dynavector DV20X2H
  - - phono preamplifier RCM Big Phono
  - - record clamp DS Audio ES-001
  - - reel-to-reel tape recorder Studer A80

Distribution: Quality Audio

Manufacturer: Extraudio

Price: 102,000 PLN

Technical data

Type of converter: Extraudio patented R-2R DAC topology. Frequency

response: +/-0dB 5Hz to 750Khz

Signal-to-noise ratio: >132dB

THD @ -1dB: <0.004%

Supported formats

- - SPDIF: up to 24 bits / 192 Khz
- - USB/I2S: up to 24 bits / 384 / 768 Khz
- - DSD-DXD: up to DoP DSD64/DSD128/DSD256/DSD512
- Digital filters: red, orange, green, off
- Streaming service support via Bluetooth and USB: Spotify; Apple Music; Tidal; Qobuz; Amazon Music HD; Deezer; Pandora, and others
- Input selector: 18-step optical rotary encoder ALPS
- Digital inputs (galvanically isolated): 1 RCA SPDIF; 1 BNC SPDIF; 1 XLR AES EBU; 1 optical; 1 Audio Class USB 2.0 / Type B; Bluetooth 5.0 Aptx HD or newer; RJ-45 / HDMI LVDS (I2S)
- Outputs:
  - - a pair of RCA (50  $\Omega$  / 2.3 V) and XLR (3  $\Omega$  / 4.6V) directly from the R2R ladder
  - - a pair of RCA (50  $\Omega$  /  $\geq$  6V) and XLR (3  $\Omega$  /  $\geq$  12V) from a BJT type transistor stage in Class A
- Dimensions (W x H x D): 44 x 12 x 40 cm
- Weight: 18 kg

Link do tekstu: [Extraudio DAC2](#)