

## Review - May 1, 2018 - Text: Wojciech Pacuła

### NORMA HS-IPA1

NORMA is a brand belonging to OPAL ELECTRONICS, which designs and builds electronic devices. The products of this Italian company based in Cremona are supposed to be a combination of solid engineering and passion for music - the company's motto praises the synthesis of technology and love for music ("Technology and Love for Music").



According to company materials, Norma Audio Electronics aims to achieve a riproduzione musicale, ie musical reproduction. It's to be based on neutrality, lack of artefacts, as well as taking care of the high dynamics and tone of the original musical event. The way to do this is a minimalistic approach, that is, the smallest possible manipulations of the original signal, for example due to a short signal path, because the original music already brings

BEAUTY, which evokes EMOTIONS in the listeners. The basis of this Italian company's lineup are devices from the Revo series. These are beautifully made, multi-functional products with a characteristic Italian style, or its modern version. With the introduction of the HS-DA1 digital-to-analog converter some time ago, however, another door has been opened. The device was designed in such a way, that the user could in the future add a module adjusting the output voltage level (HS-DA1 Var), and then go to the full preamplifier with the headphone working in class A (HS-DA1 Pre). It was hardly an innovative approach because, after all, it had been known for years - see Accuphase - but it's been a step in the right direction. The thing is that there is no longer one "audio system" model. Currently, there are as many systems as many are there owners and more and more often one hears talk about "custom" systems, build to meet particular customer's needs. After all, not everybody uses headphones, some prefer vinyl, others digital recordings, and some want to have it all. | HS-IPA1 DAC1/HEAD HS-IPA1 extends this series by adding an amplifier - a modular amplifier. At its core there is the classic "integrated" (PLN 10,990), which can be upgraded with a phono preamplifier (PLN 990), a digital-to-analogue converter (PLN 2990) and a headphone output (PLN 990). For this test we received the version with "DAC" and headphone output. It is obvious that neither the DAC nor the headphone amplifier are as good as the separate HS-DA1 Pre. The idea is that the amplifier itself is an "open system" and it evolves with the user. And if these additions over time prove to be insufficient, you can always add an external converter, right? The HS series devices are different from classic full-size audio components. Their front panel has a width of 215 mm, which is half the classic dimension of 430 mm; The HS in the name should be read as "Half Size". Their front is stylistically pure, as a modern product should be, and on the other hand it appeals to the primal ("reptilian") part of our audiophile brain - indications and information from the menu are given not on the fancy OLED display, and on alphanumeric LED modules and small LED diodes. The fact that this is a practical choice - LEDs are less noisy - is one thing, but I'm sure it's also an emotional one, because it's very retro. Enrico Rossi, the owner of the company that rarely introduces new products, has been working on this amplifier for a long time and I do not believe he left anything to chance. HS-IPA1 delivers a really high output - 75 W at 8 H, but more important is that at 4 H it doubles it. Which means that it will have a good control over the speakers, even those with a difficult impedance curve. It will also provide music with high dynamics and speed. The amplifier section features MOSFET (Metal-Oxide Semiconductor Field- Effect Transistor) transistors in push-pull configuration. The device features four RCA line inputs, one of which can be set in the menu as an (non-adjustable) output to use, for example with an external headphone amplifier or

- that's my guess - for recording. The DAC1 module adds five digital inputs, including USB, two RCAs and two optical TOSLinks. USB accepts PCM signal up to 24 bits and 192 kHz, as well as DSD64 (DoP) signal. This is a world premiere of this amplifier which is why there is no information about it on the manufacturer's website yet. That's also why I do not know parameters of the other digital inputs.

## Testing methodology

The amplifier was tested in the "High Fidelity" reference system, replacing the Ayon Audio Spheris III preamplifier and the Soullution 710 power amplifier to which it was compared. I used three different sources with it. The main player was the Ayon Audio CD-35 HF Edition <http://highfidelity.pl/@main-716&lang=en> SACD player, and additionally also Lumīn T1 as a file transport and the TechDAS Air Force III <http://highfidelity.pl/@main-667&lang=en> turntable with two Schröder CB arms and In terms of tone, we are in Tuscany in full summer, and in terms of dynamics at Cape Horn during storms. This is a unique combination. The depth of the sound is, for this money, outstanding. There is also a dense low midrange and a nice, well-differentiated bottom. But before I'll get back to it, I would like to say few words about spacing. It is a derivative of tonal choices. The foreground is close to us and actually even bit closer than usually. Even if it was set by the sound engineer a bit further, the sound intensity will create an impression of it being closer to us. Reverbs, acoustics, etc. are great and you can hear that this is an extremely resolving device. However, they do not build a large "bubble" of space, but rather support the volume of sound in the center, ahead of us on the axis. I started my listening session with the soundtrack from the Blade Runner on the Audio Fidelity SACD release. The presentation had a momentum and it was just big, spacious, deep. It was clear that the unified soundstage is presented here, without cutting out the individual sound sources, without clearly differentiating the sound layers, in what it resembled what is characteristic of SACD discs in general, not only for this particular one (CDs sounded similar). It was smooth, fluid, free presentation without "barriers", i. e. without a "strain" indicating some limitations, with a slight rounding on the edges. There are some limitations obviously, but they are placed behind the event and not in front of us. It's all about the high emotional temperature of all recordings. It is an amplifier that tries to infect us with its enthusiasm and heart for music. For this purpose, it enlarges the phantom images on the axis and brings them closer. It is very pleasant, but not completely neutral approach. With the Vega CDs I've mentioned, with minimalist recordings from Opus 3, with pop and rock records, with electronics - with each of them I listened with a smile on my face. But we should realize that in terms of imaging, construction of the sound stage, etc., Norma averages the presentation. Listen then to something else, like one of the recorded by means of a pair of Brüel & Kjær microphones, Denon album from the "Mastersonic | One-Point Recording" series and the piano will be placed close to us, almost at our fingertips. And in fact it is

shown from a distance, with a lot of reflected sounds, i. e. reverbs.



However, this is a part of the choices made by Mr. Enrico Rossi, there is no such thing as a "perfect product". The more so because the tested Norma amplifier is not a particularly expensive device. In this case, the key thing we need to remember is that these choices were made by a man who knew what high-end sounded like and what was the music played at home, who understood the specificity of "mechanical reproduction". That is: something new, independent of the original event, which is to recall those emotions,

and not that "sound". That's what Norma does excellent. The designer coped with the bass issue in a similar way. It was the Achilles' heel of most amplifiers utilizing MOSFET transistors in the output - their sound was too warm and bass too soft. Here, too, it is warm and soft, there is no doubt about it. However, it is perfectly coordinated with the lower midrange, it never occurs as something separate, does not try to attract listener's attention. The tonal balance is set low, it's not a "thin" sounding device

- on the contrary, it's a rich, dense sounding one. This "compatibility" was achieved without pushing the lowest bass to its limits, without trying to pretend that everything can be done at an equally high level. The lowest octave is therefore gently withdrawn and sounds in the background of the upper part. I will offer a beer, however, to anyone who can realize that within first minutes of listening to this amplifier (without knowing about it up front). The whole presentation is so complete that without a direct comparison with a bigger and more expensive amplifier, one won't even notice that. Both Jarre's electronics and the low-pitched Starboy and Kendrick Lamar recordings were played with the momentum and the punch they deserve. | DAC1 The digital-to-analogue converter, an optional card that can be added to the Norma amplifier, has a tonal balance set slightly higher than the amplifier itself. It also delivers an open sound with good dynamics and nice timbre. It's about showing details in a pleasant way, conveying recording's ambiance, keeping everything under control. It is a very likeable presentation. Interestingly, the sound stage is wide, and the foreground is not as close to us as when using an external CD or file player. For example, the sound of Lumin T1 was much warmer and more velvety. In turn, DAC in Norma was faster and more open. It's a nice DAC, with no ambition for super-resolution or differentiation. It offers a smooth, open, very pleasant performance that will work with any type of music and any source. | HEAD I would treat the headphone output as a supplementary element of the amplifier. If you often use headphones and this is an important way listening to the music for you, then you should know that the "Head" option will not replace a dedicated external headphone amplifier. However, if it is something extra for you, even with good Miyajima Labs Madake <http://highfidelity.pl/@main-562&lang=en> and Suzaku Red Sparrow cartridges. I used the full cabling of Acoustic Revive from the Triple-C series: an analog interconnect, a digital cable, a speaker cable and a power cable. Because I did not have any space on the Finite Elemente rack anymore, I set up a separate space for Norma. I used the stand for Sonus faber speakers with Acoustic Revive RST-38H anti-vibration platform placed on top of it. On top of the amplifier I placed the Verictum X-Block <http://highfidelity.pl/@main-601&lang=en> passive EMI/RFI filter and Acoustic Revive RIQ-5010w discs. I used headphones HiFiMAN HE-1000 v2 <http://highfidelity.pl/@main-710&lang=en> and Sennheiser HD800 to evaluate the headphone output. NORMA AUDIO ELECTRONICS in HF.

## Sound

Recordings used for the test (a selection)

- Arne Domnérus, Jazz at the Pawnshop. Vol. I, II & III, Proprius/Lasting
- Impression Music LIM UHD 071 LE, 3 x UltraHD CD + DVD (1976/2012)
- Bottleneck John, All Around Man, Opus3 CD 23001, SACD/CD (2013)
- Jean Michel Jarre, Essentials & Rarities, Disques Dreyfus/Sony Music 62872, 2 x CD (2011)
- Kendrick Lamar, To Pimp a Butterfly, Top Dawg Entertainment |
- Interscope/Universal Music Japan UICS-1287, „Sample“ CD (2015);
- Miles Davis, Bitches Brew, Columbia/Mobile Fidelity Sound Lab UDSACD 2-2149, „Special Limited Edition | No. 1229“, 2 x SACD/CD (1970/2014)
- Schubert, Sonata for Piano in G Major, Op. 78 D894, „Fantasie-Sonate“, wyk.
- Valery Afanassiev, Denon Co-78923, „Mastersonic | One-Point Recording“, CD (1993) w: Welcome to the Concert. The High End Reference Sound, Denon Co-78921-25, „Mastersonic | One-Point Recording“, 5 x CD (1994)
- Starboy, Starboy, XO
- Republic 5727592, CD (2016)
- Suzanne Vega, Close-Up. Vol.1, Love Songs, Amanuensis Productions |
- Cooking Vinyl COCKCD521, CD (2014)
- Vangelis, Blade Runner, Atlantic Records/Audio Fidelity AFZ 154, „Limited Edition | No. 2398“, SACD/CD (1998/2013)

The usage of MOSFET transistors in the output system was once an act similar to profession of faith and admission to a specific worldview. Their supporters emphasized that design-wise these resembled tubes and that a simpler, more elegant amplifier can be made with them. The downside was that in push-pull systems it was not possible to accurately match the transistors with N and P channels,

because even the equivalents differed in the characteristics. This was often solved by using a quasicomplementary system with transistors of one type. I am reminding you of this, because utilizing these transistors was aimed at using one basic advantage of MOSFETs: their warm, "analog" sound. Looking at this period from the perspective of the following years, I have to admit that indeed in many cases it was possible to obtain such a sound characteristic, much more pleasant and more "physiological" than what amplifiers featuring traditional transistors, i. e. bipolar ones, were able to offer. But something else is even more obvious now - this "warm-sound" was the effect of a specific application and had less to do with the type of transistors than it seemed to the designers and their enthusiasts at the time. Such an insight was possible only after passing the "newborn" period of this technology and understanding the best way to use these transistors. I think the reviewed Norma amplifier has shown me the "mature phase" of this trend for the first time in such a distinctive, clear way. Despite the fact that it is not particularly expensive component - as for today's standards of the audio industry, because it is objectively expensive - yet it delivers an extremely mature sound. Do you want the warmth of mosfets and tubes? - Here ou go. Do you expect a tangible, large sound from the amplifier? - Voilà, there it is. But there is yet something more - in truth - much more than this type, quite basic and - forgive me, but it is true - primitive features. Norma's sound is very deep and perfectly balanced. In fact, compared to most other amplifiers - maybe apart from the recently tested Consonance Reference 150 MkII <http://highfidelity.pl/@main-3248&lang=> - its sound will be perceived as warm at first. After listening to a few albums, you will realize that there is also a strong, open top, so the cymbals are powerful and, if necessary, even very distinct, and there is a lot of details, too. Listen to the opening track on the First Impression Music final reissue of Jazz in the Pawnshop, the Limehouse Blues, and you will be amazed, because a "warm" amplifier does not sound like that, does not convey drums so precisely, accurately and naturally. Then play All Or Nothing At All from John Coltrane's Ballads, preferably on the Platinum SHM-CD, and you'll be surprised how well, considering the price of this amplifier, the close-up recorded, sometimes distorted metal cymbals can be presented. Speaking of distortion, let's just add that it's an amplifier that treats musical and extramusical elements, which is what we call the "presentation" as a whole, in a really mature, tasteful way. Analogue distortion/overdrive, i. e. ones created at the stage of recording or mastering the material in the analogue domain, are often hardened by digital sources, sound harsh, are shown as "dirt". PCM systems rarely deal well with them. The Norma shows this type of things same way as one hears them on an analog master tape or on SACD discs. That is, we get information about this type of event ("coloring"), but it is part of the presentation, not something that disrupts it. headphones you will get a satisfying sound. Its tonal balance is set higher than when playing with loudspeakers, so a selection of proper headphones will be important. I would start with those with a warmer than usual sound. The resolution is OK, but - as I say - it is about expanding the amplifier's functionality rather than suggesting that we get "two in one" device. Podsumowanie The Norma amplifier is a modern device. My point is that its sound suggests that its designers really gave a thought to limitattions of individual solutions and - more importantly - offered a concrete proposal on what to do about it. Because we get a warm and dense sound that is dynamic and open and resolving. Which means that the qualities of MOSFET transistors are well utilized but without their drawbacks, such as limited resolution and slowing down the sound. And the only thing that could not be solved, i. e. well-defined lowest bass, was bypassed by the skilful shaping of its timbre. This is a great example of the fact that techniques that seemed to have fixed set of qualities and downsides attached to them can be used in a much more creative way, thus bringing the listener closer to the music. Hence, a deserved RED Fingerprint Award.

## Design

The HS-IPA1 amplifier is part of the HS series and is referred to as a "modular amp". At its core there is a classic integrated amplifier that delivers 75 W to 8 H load and 150 W to 4 H. Doubling the power while halving the load impedance suggests a highly efficient power supply. The device has different proportions than those commonly used - it is narrow and deep. The housing is made of aluminum - a



chassis is made of bent sheets, and the front of a brushed lobe. This amplifier features aluminum feet with a felt bottom. Front | The front of the device is in fact a row of large, visible from a considerable distance (hurray!) LED displays with a blue filter. These allow user to read volume level, the selected input, and after installing the extension cards also the parameters of the digital signal (DAC) or gain (phono preamplifier). The display also serves to visualize the commands we issue in the menu. One can use the buttons on the front panel to navigate through it. Same buttons allow us to adjust volume, and the small ones, just below the display, activate the appropriate options - headphones, DAC and phono preamplifier. Rear | The rear of the device in the version we received for the test is fully filled. You can see the division into individual sections. At the top, there is a digital part, next to an analog one, and loudspeaker outputs underneath. All sockets feature gold-plated contacts. There are five digital inputs: two RCAs, two TOSLinks and one USB. There are four line input and two of them can be reconfigured for other use: input No. 2, after installing phono module changes into a phono input, and input No. 4 can be turned into fix signal linear output using proper option in a menu. In the tested version, the headphone output was already "on board", hence the presence of headphone output - unfortunately placed on the back panel. This is not a convenient solution, unless the headphones are permanently attached. That is a viable option due to the configuration of the device - when playing through the loudspeakers, the headphones are inactive and are only switched on after pressing the "Head" button on the front panel. Then the loudspeaker terminals are disconnected. Inside | Due to its unusual design, the device has a rigid, vibration-resistant structure. Additionally, it is reinforced inside with the screen separating the power supply transformer from the electronic circuits and a large heat sink. The electronic circuit is assembled on one printed circuit board, and the power supply on the other - in truth the power supply looks most magnificent. It starts with the aforementioned 300W toroidal transformer that features three secondary windings, separate for each section of the amp. The signal filtering is supported by many capacitors by the Italian company Itelcond. The electronic system is primarily about a short signal path and proper care for the temperature control of the active elements. The signal goes first to the relays that allow user to select active input. The next stage is attenuation - Norma decided to use a Malachite Alps potentiometer with a motor. Its axis is coupled with a small encoder that sends a signal to the display on the front panel. It shows the gain in 1 dB steps. The signal prepared in this way goes to the preamplifier section. It was built on small board enclosed in black plastic cans (do you remember HDMI Marantz modules?). The last step are the control and output transistors. The former were bolted to the current ones to even their temperature and reduce distortion. At the output there are two complementary pairs of MOSFET-type transistors per channel. The amplifier is protected against overdriving, overheating and DC voltage at the output.



**Modules** | The amplifier is called "modular" because it can be equipped with three optional modules. In the tested version it was a digital-to-analogue converter and headphone output. The DAC and preamplifier modules are screwed to the main PCB via metal pads and the headphone output to the rear panel. The DAC section is placed on two PCBs, and the headphone output on just one, really tiny. The Xilinx circuit operates in the USB input. D/A processing is done by the Burr-Brown DSD1794 chip. Next to it you can see

two nice word clocks separate for 44.1 and 48 kHz (and their multiplications). The analog section of the DAC sits on a separate board. The signal is buffered and amplified in integrated circuits. Next to them you can see many high quality passive elements - this note applies to the whole amplifier - good job!



Which translates into the credibility of the music we listen to. Because if the amplifier works so well with difficult elements, then it will surely play other recordings, that even a small box with Bluetooth bought in the supermarket, plays well. What will be sound interesting delivered by this "plastic" box will become fascinating with an Italian amplifier. A great example of how rich, dense and at the same time well-differentiated sound was this new Norma amplifier able to deliver was for me a Suzanne Vega disc from the

"Close-up" series. This is a series of albums recorded by this artist after parting with the former label in order to preserve the copyrights to her works. The albums were recorded quickly, in almost domestic conditions. The advantage of this approach was a minimalistic, very simple recording system, not much of a post-production processing and usually an individual approach to each track, which is something that we love recordings from the late 1950s and early 1960s for. A downside is usage of a lot of compression and often perceptible clipping. The final result, and therefore all these elements put together, is however very convincing and simply nice to listen to. With the tested amplifier – even more so. Remote | The amplifier is supplied with the RC-43 Alu remote control. It's a nice, solid system remote, working with all other Norma devices. For this reason, you need to familiarize yourself with it, because some buttons are contextual – there is an impressive manual for this remote you should read. Summary | It is a well-made, extremely pleasant to listen amplifier in which good engineering meets with attention to detail. In addition, it is a very functional amplifier that can "grow" with our needs. I could not resist its raw simplicity of expression - I like such audio.

## Technical specifications (according to manufacturer)

- Input impedance: 10kH
- Input sensitivity: 480mV for 75W/8H
- Gain: 34dB
- Frequency range: 0-800kHz (at max volume)
- Output: 75W/8H | 150W/4H
- Dimensions (W x H x D): 215 x 126 x 350mm
- Weight: 10kg