Stand mount speakers

JBL
STUDIO MONITOR 4429

Manufacturer: Harman International Industries, Inc.
Price (in Poland): **23 800 zł/pair**

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REVIEW

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The model 4425 Bi-Radial studio monitor is designed for use in smaller studios and for a variety of demanding audio production applications.

This is what we read in the company literature on the 4425 monitors that I am going to talk about this time. So, how did they get into the pictures showing audio systems of Japanese (but not only) audiophiles? How did they find their way to my system? This is the case where the pros of studio monitors allowed them to cross the Rubicon and be adapted to consumer audio systems. I mentioned Japan only because horn loaded JBL designs are cult objects that are almost worshiped there. I do believe that this country holds the record for the number of working speakers of that type. The older and weirder looking the better. The most wanted are those which used to be part of a cinema setup. In that context the application of a studio speaker at home is not such a weird thing after all.

Even less so as the 4429 speakers are quite close to what we call "vintage audio". Their proportions are nearly the same as those of the Harbeths M40.1, but a tad smaller. The weight of both designs is similar, though. The fact that the JBLs are a passive design also helped them to enter the living rooms. Music lovers then have the option to use any given amplifier – usually a tube one.

A SHORT HISTORY OF JBL STUDIO MONIOTR

However, it was impossible to put the finger on the exact spot where the lower midrange was emphasized. This is very interesting as in many such cases when a certain frequency range is favored, with the right test-track selection it is usually possible to quite precisely assess its size, level and even quality factor (Q factor). I did that repeatedly and it always worked with a very narrow error margin. In the case of the American speakers I was helpless. I heard what I heard but I could not tell "why". A little light was shed by the album with Isabelle Faust playing the Stradivarius and performing J.S. Bach's *Sonatas and partitas*, where the artist's breath was enlarged and deepened. This is an information about boosting the range of several hundred Hz. But even with this information at hand this slight deviation was so well integrated with the rest of presentation that it was impossible to talk about it in isolation from the whole.

I am not even quite sure whether the term "deviation" is the right word here. It directly implies negative connotations and forces the reader to recall similar cases, most of which are associated with other errors. In this case, the "deviation" brings about positive results. This logical conundrum happens in audio from time to time, is desired and results from a proper application of designer's knowledge. I cannot hear any downsides of that solution (solution in the sense of design choice), apart from a slight warming of sound, increased volume and saturation, which are all positive.

Now I can say, as the context is clearly laid, that these speakers offer superb midrange that is the most important range here. This contradicts everything we can see, as their most prominent feature is a huge bass driver and two horn loaded tweeters. The former

The story of the 4429 Studio Monitor goes back to 1968 and the 4310 speaker. The 4310 were designed to be used as near-field monitors in recording and mastering studios – placed above the mixing console or in the recording room window. It is not certain who is responsible for their design, but Ed May was a central contributor while Bart Locanthi provided analog computer analyses (quoted after *Development of an Industry Standard - JBL 4310*, "Audioheritage.org", see HERE). During the 1970s this monitor could be found in a greater part of American studios, including Hollywood. After the company was sold to Jervis Corporation it was still manufactured as a home edition under the name L100, with a chessboard grille.

1983 brought the end of production of the Paragon, i.e. JBL's "Second Project" and marked the start of "The Third Project" – the DD55000 Project Everest speakers. Together with the latter, JBL designed a speaker to replace the 4310. Both speakers, the DD55000 and the 4425 studio monitor, were presented in 1985. There was little left of the latter's predecessor except the dimensions. This time it was a 2-way design with a horn loaded Bi-Radial tweeter (more information on the Bi-Radial system can be found in the article by D. Smith, D. Keele, Jr., J. Eargle, *Improvements in Monitor Loudspeaker Systems*, Journal of the Audio Engineering Society, Vol. 31, No. 6, June 1983). To make it short, the point was to shape the sound wave in such a way as to control its dispersion.

The third monitor from this series, bearing the symbol 4429, was presented in 2011. It was a 3-way speaker which, in a sense, meant going back to the origins but with horn loaded midrange- and super-tweeter, both Bi-Radial. Their grille is blue as is the front baffle and the bass driver is a 300 mm paper cone monster. Hence a very serious speaker weight – 32.5 kg apiece.

evokes associations with a low fat bass and the latter with a ticking, powerful and even piercing treble. Neither is the case here. It is rather obvious that both the low and high end play the key role in building such a saturated midrange and such beautiful vocals. The bass evokes depth without being too obtrusive. It is responsible for such a convincing sound of Faust's violin, Fitzgerald's voice, Tatum's piano, Baker's trumpet and Depeche Mode's electronics – the list can go on and on. The sound was not of an "audiophile" type, but simply mature and good. The Japanese can seem strange at times but one thing cannot be denied, they have a knack for discerning good things. They love JBL speakers for the qualities I have just mentioned and thanks to them JBL can continue building better horns for domestic application. I say domestic, because even though the 4429 is called "Studio Monitor" it is used mainly in fully loaded audio enthusiast systems, bringing to them extraordinary dynamics and rarely seen level of refinement.

So what are the shortcomings? What is it that the 4429 cannot do equally well as the reference speakers or the S3900 I compared them to, or the best speakers I know? First of all, the bass is not as precisely defined as to bring out everything that recordings can offer. While it is not something disturbing during the audition, when we talk objectively and compare it to a reference model(s) we cannot cut any slack here. At the very bottom the speakers may "relent" a little and even though they extend really low they sound a little forced. The bass is quickly damped so there is no problem with its overly prolonged decay but that does not help definition. The soundstage depth could be improved as well. Inasmuch as the issue of bass is a direct result of certain design factors and cannot be improved in the current form, the way of creating soundstage results from a conscious choice and is part of the artistic vision of the people responsible for these speakers. The thing is that the foreground is saturated and dense due to shortened perspective and promotion of first planes. So much is happening there (not at the level of detail but of information) that each instrument and vocal demands our attention. The soundstage is quite crowded, which makes for absolutely wonderful and convincing presentation. It is not strictly accurate according to the hi-fi "dictionary" but is very natural, which is what we expect.

The resolution is great, but the best speakers like the Hansen Audio Prince V2, the Amphiony Krypton3, my Harbeth M40.1 or the Sonus faber Electa Amator (I) and Guarnieri Evolution do it better, combining saturation and better definition of sounds while offering a significantly deeper soundstage.

I find it interesting how the S3900 and the 4429 stand against each other. The larger speakers offer a bigger sound with higher dynamics. Their bass does not extend audibly lower but is freer and better controlled at the bottom end. This is the advantage of larger cabinet. The only thing is that the smaller JBLs are less "made up". It seems to me that they are better integrated internally,

JBL products in “High Fidelity”

SOUND

Albums auditioned during this review

- Alan Parsons Project, *I Robot*, Arista/Sony Music Japan SICP 30168, 2 x BSCD2 CD (1977/2013).
- Art Tatum, *Piano Starts Here. Live at The Shrine*, Columbia/Sony BMG 8697-22218-2, “Zenph Re-Perfomance”, SACD/CD (2008).
- Charpentier & Luly, *Te Deum*, wyk. Le Poème Harmonique, Capella Cracoviensis, dyr. Vincent Dumestre, Alpha 952, CD (2013).
- Chet Baker & Art Pepper, *The Route*, Pacific Jazz/Capitol CDP 7 92932 2, CD (1989).
- Chet Baker, *Chet Baker with Fifty Italian Strings*, Riverside/ZYX-Music OJC20 492-2, “Original Jazz Classics”, CD (1959/?).
- Chet Baker, *Chet Baker with Fifty Italian Strings*, Riverside/JVC VICJ-60513 , “Heritage of Jazz – II/Riverside 50 [43]”, K2 Mastering, CD (1959/2000).
- Depeche Mode, *World in My Eyes*, Mute Records CD Bong 20, SP CD (1990).
- Ella Fitzgerald & Louis Armstrong, *Ella and Louis*, Verve/Lasting Impression Music LIM UHD 045, UltraHD CD (1956/2010).
- Grigori, *Sinas*, Naim Edge Records 97537 11922, EP CD (2013).
- J.S. Bach, *Sonatas & Partitas. Vol. 2* BWV 1001-1003, wyk. Isabelle Faust, Harmonia Mundi HMC 902124, CD (2012).
- Kraftwerk, *Live on Radio Bremen*, Philips 2561971, Bootleg, CD (2006).
- Krzysztof Duda, Przemysław RudŁ, *Four Incarnations*, Soliton.pl SL 328 2, CD (2013).
- Louis Armstrong, *1925-1926. The Satchmo Era*, Weton-Wesgram LA005, CD (2001).
- PMC sampler, *Closing The Loop*, Metropolis MPMC1, CD (2013).

Japanese editions of CDs and SACDs are available from cdjapan.co.jp

Putting together in my head all I had heard and read about the 4429 studio monitors I thought that I might be able to describe their sound using only one album, or actually a maxi single, and hence more balanced. They do not have to prove anything, while the S3900 carry some 'obligations' arising from the expectations of users who want to feel the magic of the top Everest for sensible money. Here, everything happens effortlessly. Just to make myself clear: the S3900 ARE better speakers. However, if I had to choose and did not have a very large room, I would go for the 4429.

Conclusion

These speakers are limited by their size, the choice of cabinet design and driver units. Their limitations translate directly into their sound. I must say here, however, that they are the second pair of speakers (after the Hansens) I had at home and wished they stayed longer. I would gladly accept their limitations to enjoy everything they bring to the system. That includes sound density and high dynamics, really low bass and nice treble tonality. The latter is more open and has a better tonality than that of the Harbeth, which fact I find harder and harder to justify. The vocals, electric guitar, saxophone, piano and violin – they all take on new timbre and colors and are defined anew.

TESTING METHODOLOGY

The JBL speakers are slightly smaller than the Harbeth M40.1 that are part of my listening system. Their mid-high range driver is, however, located at exactly the same height as the Harbeth midrange driver. Hence, I could put them on the Acoustic Revive stands that had been custom made for me by Ken Ishiguro (Acoustic Revive). This positioning was perfect for me. That's pretty interesting as the manufacturer claims that the speakers need to be raised a few centimeters for a proper listening experience. In practice, you need to allow about 40 cm from the bottom edge to the floor. The speakers were toed-in to point directly at me. I was driving them by the Leben CS-300 XS [Custom Version], the Jeff Rowland Continuum Integrated SII and the Soulution 710. It seems to me that a fairly capable tube amp will be a great match for them. They will be even better paired with a high-powered solid state unit. Pairing them with the Jeff Rowland resulted in a beautiful sounding system. Their weak point is speaker terminals jumpers. Do yourself a favor and swap them for jumper cables from a recognized cable manufacturer.

DESIGN

The great S3900 I reviewed some time ago were a 4-driver, 3-way speaker design. Despite significant size difference, the 4429 are a very similar design, with one 300 mm woofer instead of the former’s two 250 mm units. It should be noted here that some descriptions speak of a 2-way design with an additional super-tweeter. I might agree with that, provided that the mid-high tweeter is not crossed over on the top end. It looks like it is, though.

The top end is handled by the JBL 138Nd ultra-high frequency compression driver with a 19 mm titanium diaphragm. Its frequency response extends up to 45 kHz. The same material was used for the 50 mm dome of the JBL 175Nd-3 mid-high compression driver. The company literature refers to it as a "high-frequency driver" but that is not correct. Since its operating range is between 800 Hz and 7 kHz, it is more appropriate to use the term mid-high frequency driver. Both transducers are mounted in a one-piece JBL’s patented Bi-Radial horn assembly, precision-molded from extremely dense and rigid, proprietary SonoGlass material. The bottom range is handled by the powerful JBL

Depeche Mode *World In My Eyes*. This might make for an interesting exercise for me and a hard one for readers. It could be possible for two reasons. One, because I know this single quite well and it was mastered by respectable Nimbus Records (yes, quite a few singles came from capable hands and they are the best sounding Depeche Mode versions from that time). The second reason is fairly simple as well. The JBLs quickly showed what they are and what they are not. I listened to them as long as it was possible, threw all sorts of “inventions” at them but in the end it turned out that my first impressions were confirmed and even reinforced. Using just one album is a bit extreme, maybe another time.

It must be said, though, that I had my fears before the audition. The first had to do with my professional experience with studio monitors and stage speakers, including JBLs. When I read “studio monitor” I seem to hear the sound coming out of it. Even though they vary among themselves they have many things in common. The first infamous place takes ultra-selectiveness and too high energy of the treble. It must always be compensated at the mixing console and even then you have no guarantee that decreasing treble would not translate into worse dynamics. This way of music presentation, even though completely unacceptable from our standpoint, serves its purposes. The sound engineer has to hear as much as possible. If he misses anything he will have the devil to pay in terms of lost time and money. Nobody can afford that.

The monitors under review are nothing like that, not even close. They are warm if anything. No doubt about it. But “warm” in a good sense of that word. Without any loss of selectiveness and without flattened treble and dynamics, I got the kind of sound often dreamed of by people who listen to music several hours a day. Selectiveness, openness and detailness are all wanted features that are hard to come by in the right proportion. They have to be backed up by thickness and body in order not to kill or poison the listener. The JBLs which I put on my Acoustic Revive stands did it exceptionally well. If I allowed myself some exaltation for a second I would have ventured as far as to call them perfect. Their tonal balance shows a slight emphasis of part of the lower midrange. Vocals are big and saturated, as are electric guitars. Ella Fitzgerald’s and Louis Armstrong’s vocals sounded exactly the way one could wish for – dense, with a big volume. Quite substantial and showed exactly on the speaker line, with a slightly emphasized foreground, they truly came out of the “confines” of an audio system and were not enslaved by the equipment.

1200F-8 woofer with a 300 mm pure-pulp cone with a corrugated surface that resembles former designs. The front suspension is classic rubber, though. The woofer has a fantastic huge and very rigid die-cast basket and massive ferrite magnet. To show its size I took a picture of it next to a CD. The connecting wires are not soldered but secured by screws to gold-plated terminals, similar to speaker terminals used for connecting speaker cables. The woofer is front ported and the two vents are located on the front baffle, near its bottom edge.

The cabinet is made of MDF panels braced from the inside. The interior is loosely damped with mineral wool on the side walls. The blue front baffle is characteristic for studio monitors from this manufacturer, and the other surfaces are finished with walnut veneer. Under the woofer we find something that has not been used for years in home speakers and that was a characteristic feature of the Altus and Alton speakers from Polish Tonsil (and not only them): controls for medium and high frequencies (JBL consistently uses the terms "high" and "ultra-high"). The two knobs can be used to boost or attenuate midrange and treble. Unfortunately, I could not found any information on the control level and exact frequency ranges. The speakers feature dual speaker terminals. The crossover network is mounted on two very large PCBs, separately for the low- and mid-high range sections. The former is mounted to the cabinet bottom. It sports two oversized air-core inductors and capacitors, and resistors from Bennic. Polypropylene capacitors from the same manufacturer are used in the mid-high section whose board is mounted to the side wall. This one also features air-core inductors. The cables connecting both sections are rather thin twisted pair of silver plated copper.

Technical Specification (according to the manufacturer)

Frequency Response: 55Hz - 20 kHz (-3 dB)
Frequency Response: 40 Hz - 45 kHz (-6 dB)
Maximum Power Input: 200 W
Sensitivity (2.83 V / 1 m): 91 dB
Nominal Impedance: 6 Ω
Crossover Frequencies: 800 Hz, 7 kHz
Dimensions (HxWxD): 635 mm x 400 mm x 300 mm
Weight: 32.3 kg / piece

Galeria Gallery

HighFidelity.pl

Associated equipment

ANALOG SOURCES
- **Turntable:** AVID HIFI Acutus SP [Custom Version]
- **Cartridges:** Miyajima Laboratory KANSUI, review HERE | Miyajima Laboratory SHILABE, review HERE | Miyajima Laboratory ZERO (mono) | Denon DL-103SA, review HERE
- **Phono stage:** RCM Audio Sensor Prelude IC, review HERE

DIGITAL SOUCES
- **Compact Disc Player:** Ancient Audio AIR V-edition, review HERE
- **Multiformat Player:** Cambridge Audio Azur 752BD

PREAMPLIFICATION
- **Line Preamplifier:** Polaris III [Custom Version] + AC Regenerator, regular version review (in Polish) HERE

AMPLIFICATION
- **Power amplifier:** Soulution 710
- **Integrated Amplifier:** Leben CS300XS Custom Version, review HERE

LOUDSPEAKERS
- **Stand mount Loudspeakers:** Harbeth M40.1 Domestic, review HERE
- **Stands for Harbeths:** Acoustic Revive Custom Series Loudspeaker Stands
- **Real-Sound Processor:** SPEC RSP-101/GL

HEADPHONES
- **Integrated Amplifier/Headphone amplifier:** Leben CS300XS Custom Version, review HERE
- **Headphones:** HIFIMAN HE-6, review HERE | HIFIMAN HE-500, review HERE | HIFIMAN HE-300, review HERE | Sennheiser HD800 | AKG K701, review (in Polish) HERE | Ultrasone PROLine 2500, Beyerdynamic DT-990 Pro, version 600 - reviews (in Polish): HERE, HERE, HERE
- **Headphone Stands:** Klutz Design CanCans (x 3), review (in Polish) HERE


1"径UHFピュアチタン
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ドライバー045Ti
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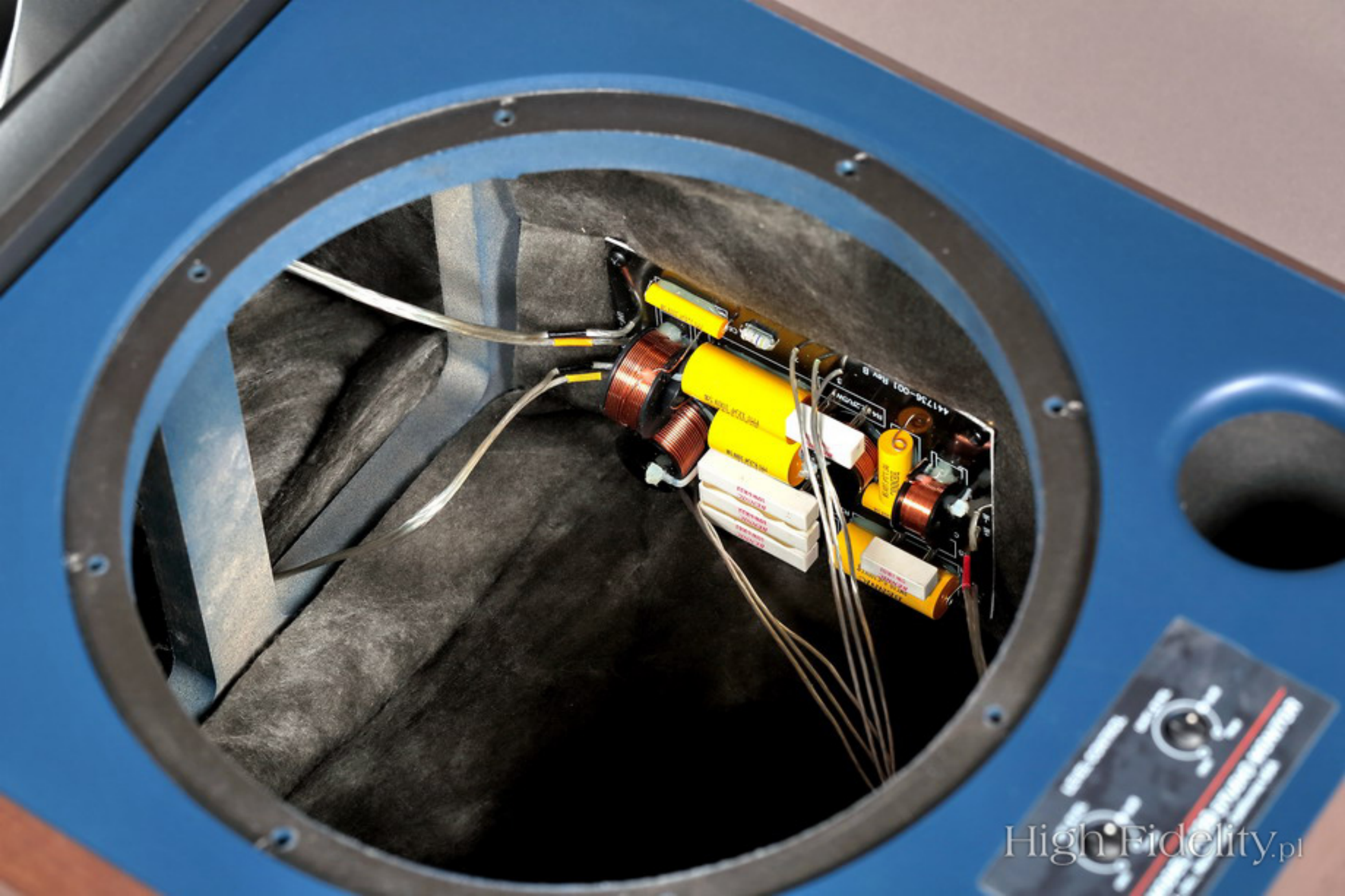
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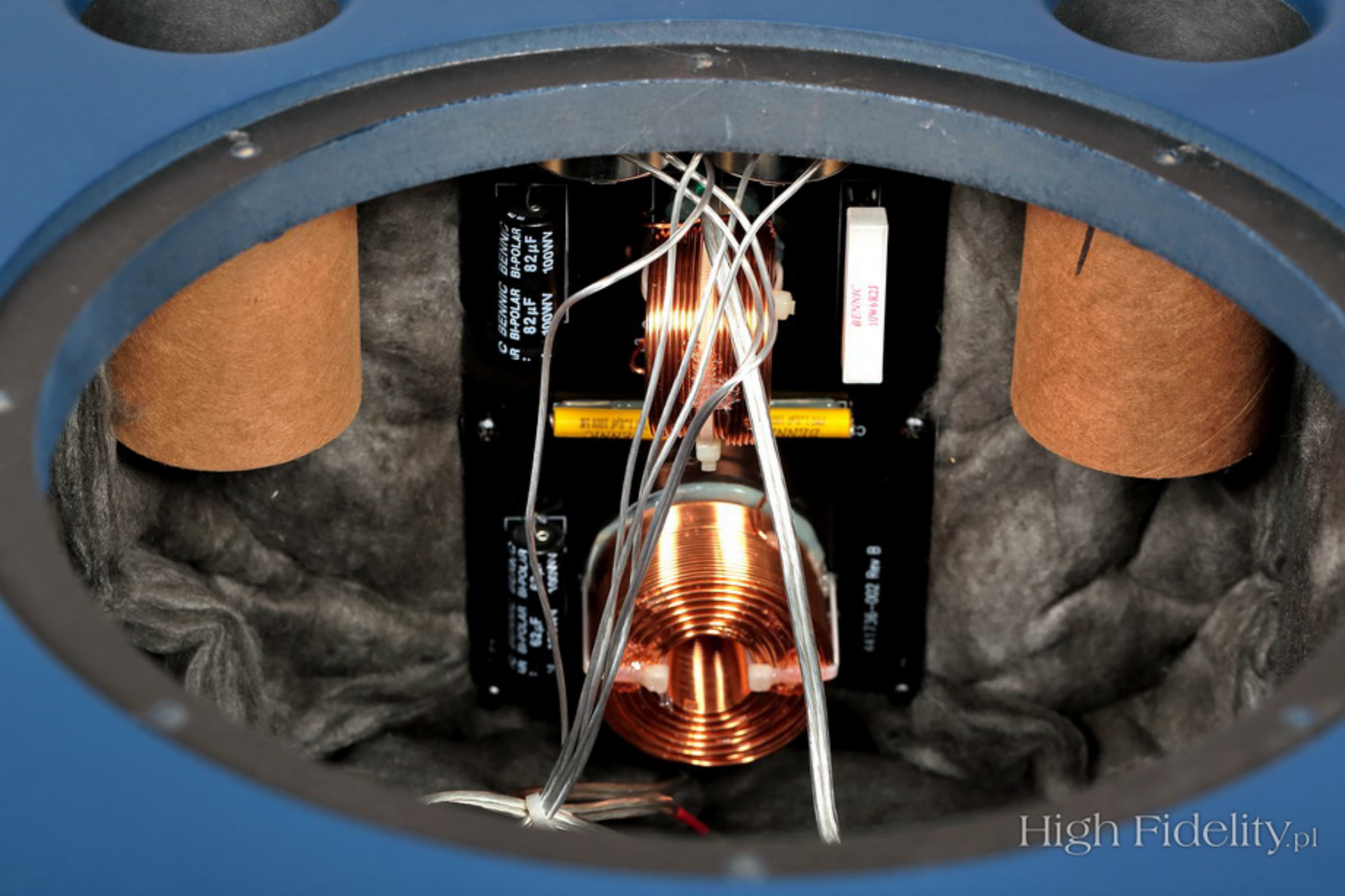
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