

FREE DOWNLOAD! STEREO-MAGAZINE.COM

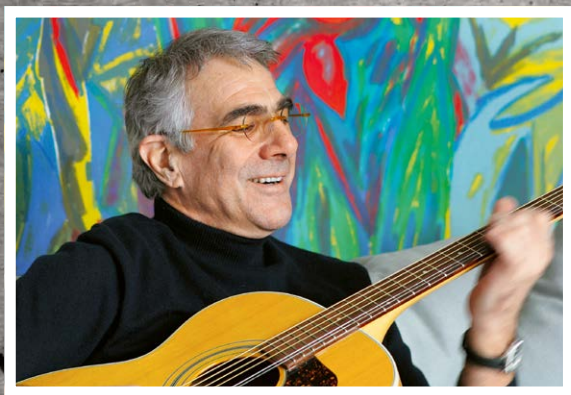
STEREO

GERMAN HIFI MAGAZINE

ISSUE #1 2015

› High End Sensation

**NEW B&W
802 D3**



› German Legend

**Dieter
Burmester**



**REVIEWS: FOCAL SOPRA NO. 2 +++ NAGRA JAZZ +++
ELECTROCOMPANET ECG 1 +++ PS AUDIO DSD-DAC +++
HiFiMAN HE 1000 +++ EMT TSD75**

REVOLUTION



How could we improve the T+A R Series? After painstaking analysis, the only option was to start again from the ground up, using the latest techniques developed for our multi award-winning HV Series. Ultimately, the only facet that remains unchanged is the name, together with the original great idea: to design a collection of devices perfectly matched to each other, representing in terms of sound and technology the absolute extreme of what is possible in keeping with the R Series stylish yet compact form. The amplifiers of the new R-series are of symmetrical construction, exploiting the double-mono principle and our High Voltage technology. The Multi-Source player features separate High-Resolution converters for DSD and PCM formats, whilst the audiophile turntable can be fitted with various tone arms and cartridges. The previous R-series was considered the standard of perfection in casework, so we have raised the standard even higher, with the whole case now consisting of machined thick-walled aluminium. But even better than reading about our new R Series is to listen to it, and your specialist T+A dealer is already looking forward to seeing you.

For more information please contact:

T+A

WE JUST DO IT



The established German Hi-Fi magazine STEREO, being for over 40 years one of the leading Hi-Fi magazines in the German-speaking world, launches its first international edition of STEREO MAGAZINE.

From now on, we will inspire all Hi-Fi fans and music lovers around the world in a bimonthly interval for our common passion.

According to our attributed German thoroughness all products must not only prove their quality for our test reviews in our own modern and fully-equipped measuring laboratory, but also in our acoustically optimized listening rooms - the only way to assure neutral and comparable assessments about the sonic qualities of the tested components. With a critical eye, we take a look beyond the front panels and also into the interior of the components. If you want more than mere brochure information, you will appreciate STEREO MAGAZINE as an indispensable companion!

Our in-depth test reviews and reports, authored by experienced and qualified journalists, will show Hi-Fi and music, its production and reproduction in all its manifold facets. Professionally, critical, independent and incorruptible, but full of joy and passion. Workshops in stores and at trade shows will complement our reports and comprehensibly demonstrate their outcome for the reader.

In short: STEREO MAGAZINE with its independent and quality journalism will be different from others.

We would highly appreciate if you read through STEREO MAGAZINE with as much pleasure as we had in working on it.

Hear you soon!



Michael Lang

editor@stereo-magazine.com



B&W 802-D3

B&W presents the next generation of the 800 series. The 802-D3 is completely new. But is it really better?



Headphone-Contest

Checking several models from the mid to upper price range, and evaluated them in terms of sound quality, workmanship, and comfort.



Musical Fidelity

Small but smart? Musical Fidelity's V90-LPS.



Avantgarde Acoustic Zero

Avantgarde Acoustic builds horn loudspeakers. A portrait of the German manufacturer and its head, Holger Fromme.



Electrocompaniet

Electrocompaniet's first turntable is intended as a perfect match for Norwegian electronic line. It is almost too good to play in its own family only.



Dieter Burmester

was one of the most respected names in the industry and a pioneer in high-end audio, he passed away in August. We look back at his life's work.



EMT

The arrow in the EMT logo points upwards. Our thumbs do as well. The new MC Cartridge TSD75 sounds musically mature and intoxicating.



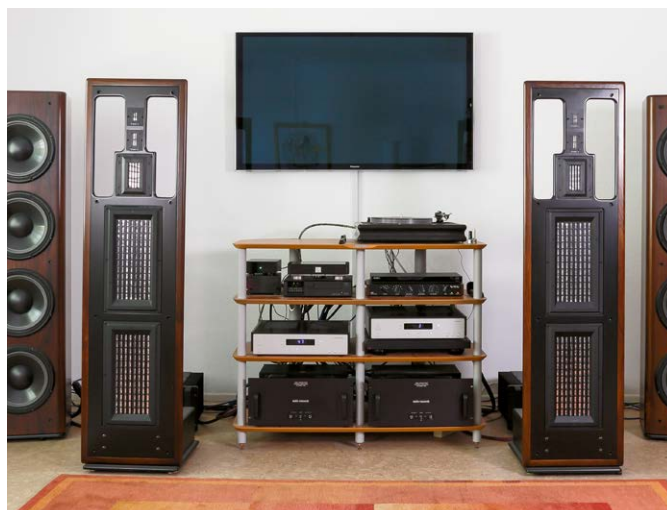
Focal Sopra No. 2

Focal, known far beyond the borders of France, stirs up the upper middle class with the bold Sopra 2.



Nagra Jazz

Interested in jazz? We bet yes. If you've read what the Swiss manufacturer, Nagra, has achieved with their new and sonically fascinating preamp, 'Jazz'.



Infinity Beta

A real man's toy and a large pinch of performance: read what we experienced with an Infinity IRS Beta loudspeaker system!



PS Audio DSD DAC

The digital world also has its charms, in this case very skillfully presented by PS Audio's DSD DAC.

INNOVATION BEATS TRADITION

When the world's most successful loudspeaker series is fundamentally re-invented, the ears of music lovers around the globe prick up. STEREO secured a factory-fresh pair for the first test.

As soon as we found out that a pair of brand-new B&W 802 D3 speakers would reach the editorial department in time to test for this issue, it was clear that a concerted effort of the photography studio, measuring lab and editors was required in order to go over the speakers with a fine-toothed comb and appropriately illustrate the also optically slick re-design of the 802.

While the 802 rolled into the photo studio on a ramp integrated into its shipping carton, the editorial staff members and product reviewers at STEREO were extensively informed about the impressive magnitude of changes in the improved 800 series. More than 600 parts were modified or newly developed from scratch. Except for a few screws, the connecting terminals and the diamond tweeter dome, no traces of the old series can be found in the DNA of the 802's 3rd generation equipped with diamond tweeters.

Kevlar is retiring after 40 years

The most striking change revolves around the brand identity of B&W, the heart of the

principles cultivated since 1974: The yellow Kevlar drive unit has served its time! Whoever engages in such a paradigm shift has to be damn sure of what they are doing so that customers remain loyal and the whole thing doesn't backfire on you. However, after discovering a material at the B&W Steyning research establishment in 2007 and since then developing and improving it in more than 70 parameters, which in the truest sense of the word left Kevlar looking outdated in all relevant characteristics, they had no choice but to banish the yellow cones from the new top series. Even the dozens of details in the yellow chassis improved over the years are now useless.

The name of the new, patent-pending miracle material is Continuum and it shines in a noble silver-gray. Until the patent is granted, one can only guess at what it's composed of.

Unmistakably a member of the 800 Diamond Series: B&W's new 802 D3 harmoniously blends classic design elements with a further development of the stylistic idiom. ►



Optimized or Compromised?

Experience both! With the brand new OCTAVE **HP 700**



With the unsurpassed flexibility and completely high end performance of the OCTAVE **HP 700**, one doesn't have to sacrifice personalized customization to enjoy perfect sound quality.

Octave designed the **HP 700** preamplifier for music lovers with the highest standards who's requirements also include optimal connectivity. The **HP 700's** eight available input modules are more than a luxury; for the most discerning listeners they are a necessity.

Crystal clear reproduction with incredible detail and complete accuracy make the **HP 700** the natural choice for those seeking audible perfection. The OCTAVE **HP 700** – designed precisely for you.

OCTAVE



Featuring the highest grade, heavy duty components



Available audiophile tone control option



Perfectly optimized optional input modules

Flexible and yet rigid

While previously the English tried to control unavoidable resonances, with the soft and flexible-feeling Continuum they succeeded in steadying the remaining few membrane resonances in half the time required by Kevlar. The only real downside of this material is its price – similar to the diamond tweeter, its use in the more inexpensive series is inconceivable for the foreseeable future. Not only that, the die-cast baskets were also fundamentally re-engineered, resulting in higher stability. From a mechanical standpoint, the midrange speaker is as cool as a cucumber.

Also in the lows there is news to report: Rohacell is history in the 800 series – the new magical material for the lower frequencies is Aerofoil, which is significantly lighter and thinner, yet more stable than Rohacell and is also patent-pending. Of course it is not the material alone that benefits the sound but several factors. Up to the membrane shape and varying thickness in different places, multiple parameters were optimized for best results.

Finishing touches on the diamond

What remained is the diamond tweeter – however, from this, only the dome survived, which is now protected from misuse by a stable, sound-permeable grille. Everything behind it was designed from scratch.

Through the new solid-body aluminum Nautilus tube, the voice coil temperature could be decreased by an incredible 30°. Aluminum will also replace the characteristic Marlan head in the future, in which the midrange driver finds its home. Computer simulations showed that deformations can be even more effectively avoided with the new aluminum head. Another sacred cow has also had a dip

in the fountain of youth – the Matrix for the reinforcement of the housing has been newly calculated and constructed. Thick, multilayered birch wood, aluminum and ten-millimeter steel as well as foam inserts ensure peace and quiet. Now the Matrix front is also equipped with aluminum, which has the positive effect of allowing both woofers to be bolted directly to it. According to the B&W way – very solid with eight bolts per speaker – that is if we haven't miss-counted.

New, yet recognizable

They also did a great job optically – the recognition effect is there but also an evolution in the design elements. This feat is otherwise only managed by ambitious carmakers, with whom B&W has more in common than you'd think when it comes to quality standards, production technology and logistics.

Beginning with the rear panel made of aluminum, the housing for the midrange speaker christened the "Turbine Head" which is now almost completely detached and only minimally fitted with damping material, and the tweeter compartment sitting on top of it, down to the new plinth – here, they worked highly consistently and everything that was metrologically verifiable was improved and finally sound-checked. Higher rigidity, fewer deformations, better heat dissipation, lower distortions, a higher degree of efficiency, a newly designed reflex opening of a record-breaking length, a more linear frequency response which has been extended to the lowest ranges, optimized omnidirectional sound – wherever we looked, we couldn't find anything lacking in the to-do list to be checked off by the engineers.

Now you can justifiably ask why, considering all of the advantages of aluminum, did they only partially use this



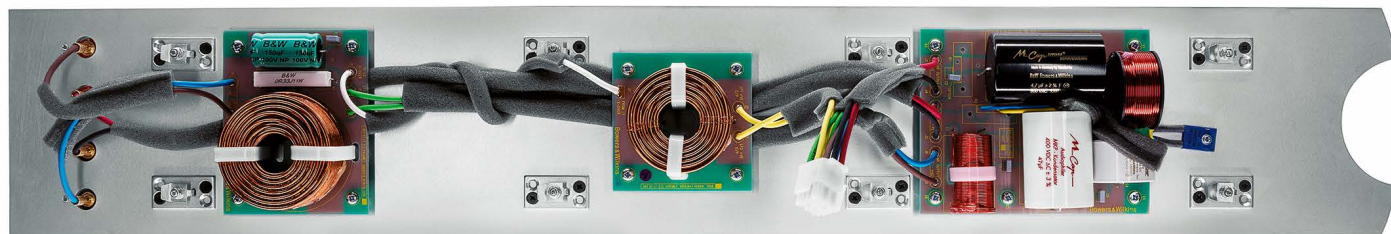
▲ The magnetically adhesive ring hides the bolts that secure the woofers in the solid Matrix structure.



▲ Roll on castors to the listening position, unscrew the spikes, done. Included in delivery are also magnetically adhesive, solid floor protection plates – a clever solution.

material and not go for an entire housing out of aluminum? For this, B&W gives an honest and factual answer: Because we are not talking about a cost-no-object speaker but a whole series of speakers that are constantly manufactured in comparably high numbers and which, although very close to the technically feasible, should remain affordable. But the theoretically possible, very last refinements would make any

A 6-dB crossover of quality workmanship that is mechanically, cleanly decoupled and mounted directly to the rear aluminum panel for perfect heat dissipation. ▼



price range explode – and that’s exactly what must not happen with this series. Rather, they should follow in the footsteps of the Nautilus/800 series that have sold by the hundreds of thousands since the first edition in 1998 and set the standard in sound as well as value for money.

Nothing remains as it was

But honestly, we weren’t really interested in the whole background information in the first place, more so extremely curious about what kind of performance these speakers could deliver in our listening room.

In the first round with a T+A 3000 CD player, Levinson 585 amp and complete INAK cabling, the openness and vividness of the speakers stunned when playing any Keith Jarrett recording, which made the illusion of the instrument actually standing freely in the room seem very close to reality. The speakers completely disappear and enable an inspiringly realistic focusing. Now €22,000* is a big stack of cash, but in the world’s elite, where there is often no fear of six-figure asking prices, it is almost like a bargain.

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

The aluminum rear panel gives extra stability and offers space as well as more than enough cooling for the crossovers. The transport lock for the “Turbine Head” can be found under the round cap. ►

If you add up just the working hours that must have been necessary for the development and consider the many coats of paint including the multiple times of wet-sanding, polishing and drying, it will furrow your brow. The complex housing construction including the Matrix reinforcement, high-quality transducers – all produced on-site with the highest level of manufacturing constancy - expensive crossover components from Mundorf and others, mechanically extremely clever and sturdy castors and spikes all boost the respect for the calculation of the English, who see the new 800 series not as an evolutionary development but a real revolution.

Whoever should surrender to the belief that only the tiniest steps forward could be made in the topmost league of high-end



REFERENZ SELECTION

APPROXIMATES THE IDEAL OF PERFECT CABLES AS CLOSELY AS NEVER BEFORE.



REFERENZ LS-2404



REFERENZ NF-2404: AIR HELIX CONSTRUCTION



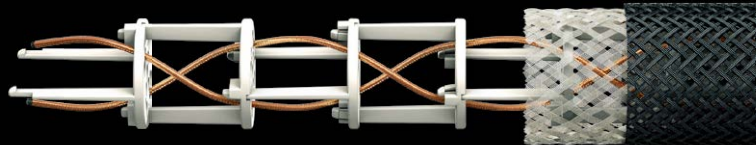
“Without a doubt, in-akustiks LS-2404 is one of the best speaker cables that STEREO has ever tested...”

stereo 01/2015

“The authentically innovative structure of in-akustiks new interconnect Referenz NF-2404 has propelled it right to the top of the class.”

“Listening to this air cable will take your breath away!”

stereo 09/2015



When it comes to high-end applications, air is still the best insulator currently available as it achieves low capacities and low losses. To meet this, in-akustik has designed a special clip. Inside the cable, many of those clips are arranged to form a special helical support holding two symmetrically arranged conductors freely in the air while maintaining the exact distance to the shield.

inakustik

KABEL | LAUTSPRECHER | MUSIK

WWW.IN-AKUSTIK.DE



▲ B&W Chief Executive, Joe Atkins, gave his engineers the freedom to develop in all directions.

may want to hear these speakers in comparison to their predecessors. Let's contemplate the core area of every playback – the midrange: what happens here gives even the seasoned listener doubt as to whether everything's been done above board. The tonal naturalness and energy distribution leaves many a result from various competitors sounding like the

out-of-control exercises of a sorcerer's apprentice.

The slamming door

Next to the excellently captured and positioned voices, there was also a squeaky and slamming door to be found in the radio drama clip on the Manger CD. Since the day I heard that clip for the first time, it was always clear – well recorded, but canned. Now with the slamming, my eyes inevitably turned toward the listening room's door. The energy set free here literally explodes from the speakers; tone sequences as well as impulses and sounds are projected immediately and unprecedentedly fast.

Thanks to a sensitivity of nearly 90 dB), no mammoth wattage is needed for listening pleasure. The Octave V80SE, with a superior sense of rhythm and truer reproduction of the wood content in Jarrett's grand pianos, showed the Levinson 585 here that it was by no means willing to let the American powerhouse lead the field. How B&W succeeded in pulling down the frequency range to 20 Hertz with this kind of efficiency is beyond me, but testifies undoubtedly to the skill of the developers – like the whole concept surrounding the new miracle cone made of Continuum. Whoever wants to fully exploit the potential of the 802 dynamically and at the lowest frequencies can invest any amount in adequate electronics. These could be the usual suspects from Accuphase to T+A, but also tube amps with a bit more muscle than 2 x 5 Watts – hardly any properly designed amplifiers are confronted with unsolvable problems. Rather, the competition is faced with these because B&W have set the bar damn high and they will have to go out of their way and push themselves if they want to keep up.

Michael Lang

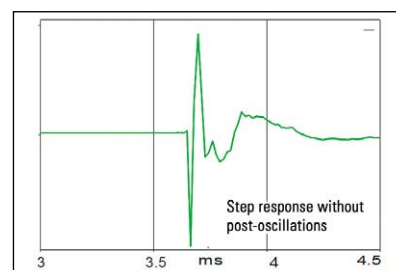
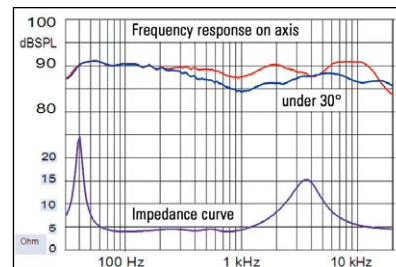


BOWERS & WILKINS 802 D3

Pair € 22,000* (Rosenut, Gloss Black or Satin White)
Size: 39 x 121 x 58 cm (WxHxD)
Warranty: 10 years (with registration)
Contact: B&W
Tel.: +49 5201 87170
www.bowers-wilkins.de

No matter what it was that kept you from getting involved with a B&W – You should reconsider and listen to these speakers!

MEASUREMENT RESULTS



Nominal impedance	4 Ω
Minimum impedance	4 Ω at 100 Hertz
Maximum impedance	24 Ω at 40 Hertz
Sound pressure level (2.83 V/1m)	89.4 dB SPL
Power input for 94 dB (1m)	5.7W
Lower cut-off frequency (-3 dB)	20 Hertz
THD at 63 / 3k / 10k Hz	0.3 0.1 0.1 %

LABORATORY COMMENT

The frequency response is not bred for maximum linearity but still extensively balanced when angling to the listening position. Despite a high degree of efficiency, the bass ranges extremely low and is without super elevation. The step response is very good, which is also confirmed in the listening test. The impedance curve is not critical, the distortion values in the bass very low, in the mid- and high-frequency range below our measurable limit. The speakers should be slightly angled at their listening position.

STEREO-TEST

SOUND QUALITY	98%
PRICE/PERFORMANCE	
★★★★★	
OUTSTANDING	



◀ The new Matrix: less, but thicker wood as well as metal/aluminum reinforcement

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

Small, smart and very simple Xeo 2

We want the full sound. Everywhere, all around.

The Xeo 2 is the perfect combination of effortless enjoyment and high-quality sound. It is Dynaudio's smallest wireless speaker system yet – without any compromise of the completely high-end audio sound. It is small, smart and unbelievably versatile. It is all you need.



Xeo 2 Footstand optional

DYNAUDIO

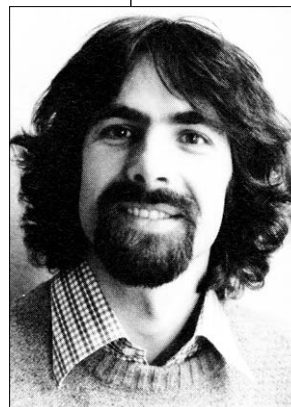
STORY DIETER BURMESTER

LEGENDS OF PASSION



Enthusiasm and dedication – this is what drove Dieter Burmester. His devices stand for high-end precision and are resplendent in a chromium finish.

The maestro passed away in August. We are taking a look at his life's achievements.



THE START NUMBER WAS THE "777"

The history of Burmester Audiosystems started in 1977 and is one of the typical hi-fi founder stories. The newly graduated engineer Dieter Burmester with a penchant for music and good recordings, as well as a latent interest in the – at the time still young – High Fidelity was not happy with

the sound of his system and, without much ado, decided to build his own pre-amplifier, the 777 (middle). The number was a reference to the month and year of completion of the still rather clunky looking unit with its excess of operating elements. Since then, Burmester has continued with this system of designating the equipment.

He proudly presented his creation to his friends, some of whom promptly wanted to have a 777, so that Burmester started production of a small series. This started the ball rolling. At

A Burmester can be recognized from a mile away. On the one hand, this is down to the design elements of the equipment from Berlin which have been refined for a good three decades and also, of course, it's characteristic chromium-plated front panel. Hardly anything else more clearly symbolizes the high-tech ambition which stands behind the products. Others, when confronted with the antiseptic sheen of the surfaces, are inclined to think of dental surgery equipment.

This is not entirely misplaced. Because at the beginning of his career, Dieter Burmester – who died in mid-August at the

knitted jumpers for the band like our idols wore, and Dieter converted an old radio into a simple guitar amplifier. Then the Beat Boom came along, and we performed at school parties as 'The Outsiders'."

Today, Schütte smiles at these first "guitar strums", but soon their desire to make music became more regular and, with two "older musicians" who were just about in their early 20s, the two formed "The Echos". They played to teenagers, and in 1966 even spent a year touring as professionals, making a living from their concerts.

"Dieter had talked me up to others as an excellent singer and guitarist", muses



some stage, the first hi-fi dealer laid his hands on the Pre and encouraged the newcomer to refine the concept of the 777 and to create a "real" product. This is how the newly formed Burmester Audiosysteme started with the 785 pre-amp (below), which was accordingly completed in May 1985 and already featured the typical Burmester looks – through to the silvery reflective front panel (which was also available in a brass finish).

In August 1980, our well-known sister magazine "HIFI exklusiv" published a test written by Klaus Renner who himself has become a legend. He described all of the details of the pre-amplifier with a price tag of DM 3,350, commented extensively on its measured values – which Burmester considered very important even in those early days – and came to the verdict "top class".

GOOD MOOD, NEW IDEAS AND STAGE PRESENCE

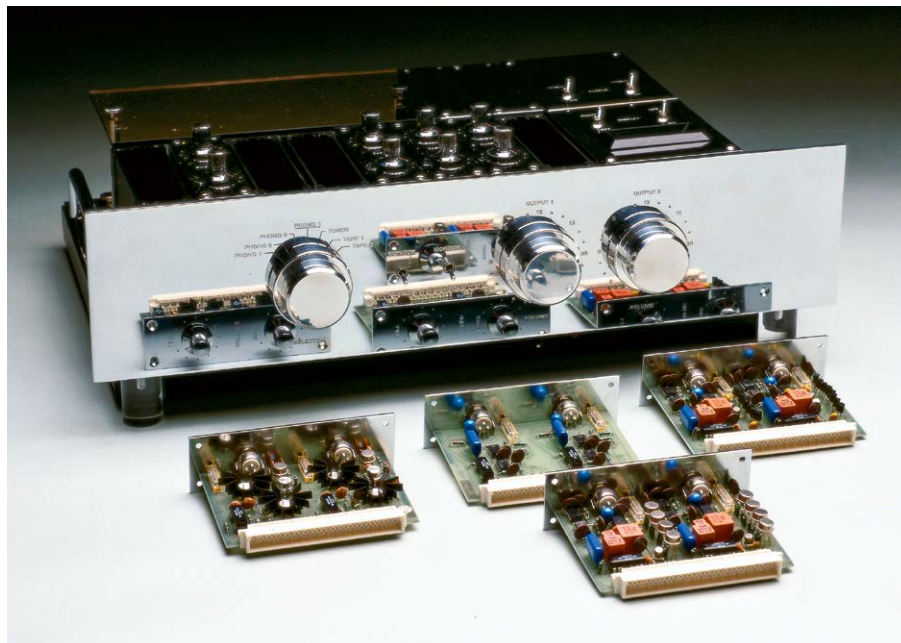
age of 69 – actually developed medical technology. The fact that he diverted to the audiophile path had to do with his love of music. But Burmester was not only a listener – he also played bass guitar in a rock band since his teenage years in Lüchow, where he moved soon after being born in Austria in 1946.

His old bandmate and friend, Wolfgang Schütte, remembers vividly: "Dieter and I knew each other by sight; we went to different schools in Lüchow. One day he talked to me in the market square: he said that he played in a skiffle band and asked whether I was up for joining them. So I started playing the washboard with 'The Young Ones'. That was in 1961, and we admired the 'Shadows'. My mother

Volker Schütte. "In fact, I had never touched a guitar in my life." None of that mattered. Even in those days, Burmester was convincing with his catching enthusiasm for music and for the shared venture. This was a crucial facet of his character mentioned by many of those who knew him, and it always helped him to start even those projects, which at first seemed

With the 785, Dieter Burmester started his "Audiosysteme" company. The shallow Pre already had many of the typical functional and design elements. ►





◀ Burmester's modular 808 pre-amplifier landed like a bombshell. In front are the plug-in cards for various applications.

In any case, there was no fame in sight at the beginning, and Dieter Burmester considered medical technology to be his career path. However, at that time he had already developed an audiophile's awareness and took delight in records being particularly well recorded; rather than just listening to music, he assessed the sound of his system. And that was worth improving. The young engineer was excited by the idea of taking a hand in that himself and developing a high-class pre-amplifier. En route to the 777 (see box) he immersed himself deeper and deeper into the fascinating world of amplifier wiring and its many different options. In short: he tasted blood and started to consider it more and more as a potential job. At that time, general interest in high-quality music reproduction literally exploded and hi-fi electronics were the ultimate of what a normal person could experience in terms of high-quality technology.

By founding Burmester Audiosysteme, the newcomer created the basis for what is today a worldwide renowned

much too large, with a lot of enthusiasm - for example, the step into the automotive field.

The two moved to Berlin, where Burmester started his university course in electrical engineering. There they shared an apartment and the student, together with other musicians, performed as "Odd Persons", which later became "Birth Control". But at that stage, he was no longer part of it.

After a longer break from bands during which Burmester mostly preferred to play for himself, he - together with Schütte - became a founding member of "Past Perfect" in 1999. "Dieter was always in a good mood, had new ideas and a fantastic stage presence", reports the singer, "and he didn't mind carrying crates of beer up the steps to the rehearsal room" - in a nutshell, a really good mate.

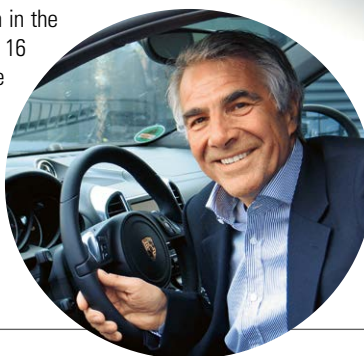
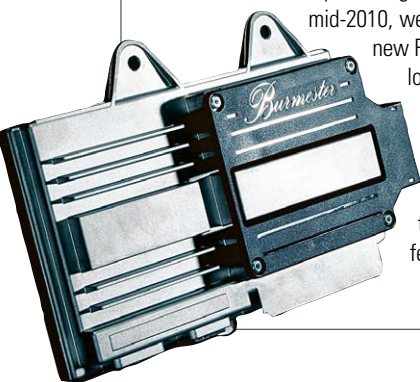
THE MOBILE CONCERT HALL

Research has shown that for many people the car is the only place in which they can be by themselves and can do things like listening to music they like and at a volume that perhaps is not possible at home. High earners especially make intensive use of their time in the car. Drivers of a Porsche Cayenne or Panamera, or of a Mercedes E- or S-class have the option of a special hi-fi system adapted to their vehicle.

Having gained some experience with the Bugatti Veyron, Dieter Burmester (middle) competed for a tender by Porsche - and won the contract. Matthias Renz, Head of Audio-Acoustics at the sports car manufacturer from Zuffenhausen, remembers with delight the development phase whwch, again, was inspired by Burmester's personal commitment. When he recounted a story about his "Reference" system he also told us that he "was really keen on music and any challenge associated with it". Well - here it was. In

mid-2010, we tested the Burmester system in the new Porsche Cayenne. No less than 16

loudspeakers are fitted inside the cabin (above); an extensively adjustable controller that controls the 16-channel power amplifier (left) and the 300-watt active subwoofer beneath the trunk ensures



excellent sound on all seats and a surprising spatiality for the driver. Just like Burmester's domestic sound equipment, his high-end car audio system follows audiophile principles - even in extreme situations. You can hear it: like the others, this audio system was built with passion.

In the larger CD drives and players Burmester opted for belt drives and weighed down the disk with an additional puck.►

and respected company. The first proper product was the Pre 785, which already had many of the design elements of subsequent units – it was flat and purist because its shiny front panel only had few operating elements for the most important functions. While equipment from the Far East or the USA were dripping in buttons, Burmester saw himself as a trendsetter of a new simplicity with a firm focus on sound.

But the founder of the company knew that the most success he could expect with



feeding in mono sound. The area of the sockets was protected against dust by an acrylic panel and the overall appearance was as extravagant as it was overwhelm-

of a continuous sliding action. This was new at that time – and was there for a good reason. Dieter Burmester was a precision fanatic and the channel deviations of conventional potentiometers were a thorn in his side. Especially in the lower level range, these could easily amount to a few decibels – which is absurd when even a few tenths or hundredths mattered in other places.

The developer tackled the issue at its roots, and fitted step switches with fixed resistors which have the added advantage that they are not prone to aging. Just how involved this was in practice can be seen in the lead image.

This shows the volume control of the 897 “the pre-amp for everybody” dating

DIETER BURMESTER WAS ON A MISSION IN FAVOR OF SIGNAL SYMMETRY

the 785 was recognition. That was OK to begin with, but Dieter Burmester wanted more; he wanted to show what ideas he had and launch a product that would turn the heads of hi-fi fans, raise international awareness and thereby attract attention to the young company, as well as generally shifting the benchmark. He achieved this with the groundbreaking 808 pre-amplifier, which is still available today in an MK5 version that has undergone several optimizations, and which is considered to be the eternal high-end icon.

Older hi-fi enthusiasts have not forgotten the stir this modular pre-amplifier caused when it was launched in 1980. Anybody who hadn't heard of the Burmester name by that stage was familiar with it after the launch of the 808. It was different from anything that had been produced before. Instead of the usual inputs there were sockets for symmetrical or un-symmetrical high-level modules i.e. phono MM and MC inputs so that everybody could configure their preferred combination. The plug-in cards with their narrow chromium covers had channel-separated pre-level controls.

It was possible to use the digital display to meticulously level both channels when

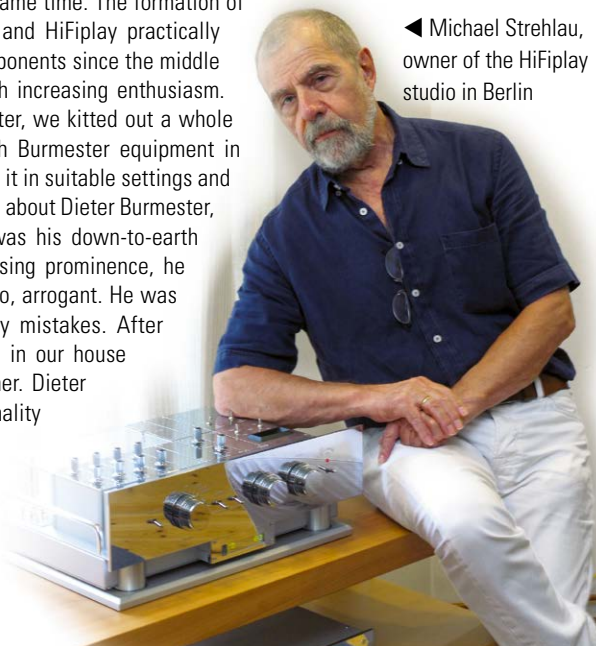
ing. The 808 was simply a sensation!

When you operated your volume control – again, there was one for each channel – you noticed that they functioned step-by-step with a distinct click instead

“I MISS HIM ALREADY!”

Dieter and I started at the same time. The formation of Burmester Audiosysteme and HiFiplay practically coincided. We stocked his components since the middle of the Eighties – and that with increasing enthusiasm. For this reason, a few years later, we kitted out a whole apartment in the building with Burmester equipment in order to be able to demonstrate it in suitable settings and optimum acoustics. What I liked about Dieter Burmester, who was a friend of mine, was his down-to-earth attitude. In spite of his increasing prominence, he was never aloof or, even less so, arrogant. He was also able to apologize for any mistakes. After quite a few shared campaigns in our house we went out for a beer together. Dieter Burmester combined professionalism with personal warmth. I miss him already!”

◀ Michael Strehlau, owner of the HiFiplay studio in Berlin





◀ In the mid-Eighties, milestones in design and technology were the super shallow, fully symmetrical 838 phono pre-amplifier and the high-level 846 companion unit.

from 1989, in which the resistors for the two channels are fitted in sequence.

This Pre also features a chromium-plated solid metal knob, which conveys the feeling of quality just from touch. The surface with its technoid reflective finish soon became the sign by which you recognized a Burmester, and contributed outwardly to the high-tech image. Others tried to copy the style, although this tended to help emphasize the value and uniqueness of the original rather than competing with it.

With its unique solutions, know-how but also those spectacular components,

Burmester Audiosysteme established an excellent reputation for itself. The company grew and from a one-man band soon developed an internationally active company. But Dieter Burmester was never the administrator of success, but searched for further improvement opportunities for his ambitious equipment which, over time, he offered in almost all product groups.

The Berliner conducted a sort of campaign in favor of symmetrical signal transmission. What had been the standard in studio technology for a long time was also to benefit "house music", i.e. minimizing

interference and noise by using double, phase-shifted signal routing – also for phono. He passionately explained this for the hundredth time to puzzled distributors, customers – and us editors.

Sometimes we were simply too slow for the ideas and thought processes of a Dieter Burmester. Fortunately, the guitar collector was firmly rooted to the ground of physics and electrical engineering.

Nevertheless, the engineer was well aware of the intermediate world in which simple things happen that you can

THE NOBLE ART FOR THE DEMANDING EAR

Art for the ear" – this is the motto used by Burmester to sell his precious equipment. It is intended to emphasize the aesthetic qualities of the components – in terms of both design and sound. Technical pieces of art you might say. In 1997, the guys from Berlin brought this principle to an extreme when they presented their ultimate system to the international high-end community.

Including the man-high B97 loudspeakers, the 948 power conditioner which filters any interfering direct current components from the mains current, a fully equipped 808 MK5, even two Mega power amplifiers of type 909 with bridging to mono – here already in MK2 version – and complete wiring, the "Reference Line" had a price tag of DM 325,540.

STEREO visited the then newly completed listening room at the company's premises in Berlin. What Burmester's "Audiosystem" produced there was simply phenomenal. Even just the explosion-like dynamic, without any audible start sound, took your breath away. "You should get startled when the guitarist plucks at the strings", explained the developer as being one of his most important aims.

The immense technical input generated sound images full of radiance and energy, but also lets the listener hear every nuance, thus supporting the "live" character of the performances. The quality of the sound was such that you forgot that you were "only" listening to sophisticated electronics.

From Quincy Jones' incredibly deep "Places You Find Love", to Händel's "Mariengesänge" – which "were so beautiful they moved you to tears" – through to Jeff Beck's electrifying "Brush With The Blues" recording, all types of music were deeply impressive and made it very clear: Burmester is now for the first time playing at the very top.



The 111 music center, which is part of the ultimate "Reference Line", sets the standard in the modern field of streamings. The manufacturer's name was engraved into the thick cover. ►

experience and which yet you can hardly explain. For example, that the condensers and other components of certain manufacturers with identical values sound better than those of other suppliers. Or that good sound is helped when you drive the CD with a belt, like a platter of a record player. In theory, it shouldn't matter at all under what circumstances the pits are read. But it does!

But here, Dieter Burmester, who subjected each item of equipment to a day-long test run upon completion, had enough character to jump over his own shadow. Rather than foregoing sound quality in his high-value drives and players, he was prepared to expose himself to the ridicule of the "orthodox brigade". Compromising on quality would have been going against the grain for this purist and was therefore out of the question.

Beyond his fame within the local and national hi-fi scene, in which Dieter Burmester became the much admired and envied icon during the nineties and advanced to the ambassador of "High End made in Germany", he knew that this circle was limited and he had to plow new fields if he wanted to bring the "Sound made by Burmester" to more listeners.

And then something unexpected happened at the beginning of the noughties because, as we know, fortune favors the brave: a manager from the automotive industry called and asked whether he could imagine developing the sound system for the most exclusive car of the world – the Bugatti Veyron. Hearing that, the master – who had just gone for a relaxing windsurfing break at his holiday home on Fehmarn – did not hesitate and thereby opened the door to a business field which has since become an important branch of Burmester Audiosysteme: car hi-fi.

Or better: high-end car audio; because this idealist did not compromise on his standards. For months he tried various things, measured and tested, fitted and re-fitted. When he had finished, the Veyron had a sound system fit for its class on board. Soon afterwards, Burmester won a Porsche tender so that today you can



order the Porsche Cayenne SUV and the Panamera Limousine with a sound system from Berlin, and more recently this is also true about the Mercedes E- and S-class. A huge success!

Until the systems were ready to install, some Herculean tasks had to be resolved because the interior of a car presents quite different challenges to a sound system than a living room. Again it needed a lot of enthusiasm, commitment and Burmester's proverbial passion, which his business partners rave about.

And if anyone feels that Bugatti and Porsche are a little too basic, they can equip their yacht with Burmester components.

For this purpose the company offers special fitting racks and holders so that the

precious objects stay where they belong even when the sea gets rough.

This report could touch on many more aspects because the deeper you dive into Burmester's history the more you discover about the many facets of his character and the diversity of the company's enterprises. Burmester would have liked to accompany these enterprises a little while longer, although he did recently plan to reduce his time input. This could have been an alarm signal by the legendary workaholic. Dieter Burmester's spirit lives on in his devices, many of which have become legends reminiscent of the man's passion for music, sound and technical perfection.

Matthias Böde

WHAT NEXT?

When a company is so strongly shaped by its founder and boss – including its name – as Burmester, you are concerned even more, after that person's departure with the question: what will happen next? Rumors could already be heard that the jewel of domestic high-end technology would perhaps be sold to the Chinese.

"All nonsense" is the comment by step daughter **Dina Hoenge** (photo) who, seven years ago, joined the company with its approx. 50 members of staff, some of whom are highly specialized: "Burmester remains a family-owned company." Back in 2010, Dieter Burmester, who considered the company to be his life's work, informed us that – although he was still fully creative, devised equipment and took a hand in the design – he was no longer working on development: "That's what I have the team for." And that will continue to act in the late master's spirit. Stefan Größler, Head of the Development Department, wrote to us and the high-end community: "Over the years, Dieter Burmester has built up a highly motivated, dynamic development team. Based on this heritage and the fact that he has conveyed his approach and his visions to his employees, his developers will continue the path chosen by him towards a creative, technological and audiophile future."





NIGHTHAWK

AROUND-THE-EAR SEMI-OPEN HEADPHONES



audioquest®

When headphones have a price tag of €2,000* one has every right to expect an awful lot. What advantages do classy versions have compared to their more economical competitors? Or is the claim that more expensive options are superior to cheaper units just clever marketing ploy?



STAR PARADE

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

NANO FOR BETTER SOUND

Ultra-thin diaphragms are hidden behind the huge ear cups of the HiFiMan HE 1000. We explain their effect on the sound.

A few years ago, nanotechnology was considered to be an extremely hot topic for the future – from car paint to food, these tiny particles seemed to make everything better. Today, science is no longer so firmly convinced that this is true for everything. However, in high-tech applications such as those of the sound-transducing diaphragms in the HiFiMan HE 1000, their positive influence is indisputable. The thinner the diaphragm between the two repulsing magnets is, the more precisely it can respond – in principle – to the signal, and therefore transmit music signals to the listener's ear quickly and without distortion. However, this is assuming that it nevertheless is stable enough to avoid unduly fluttering about of its own accord – one of the eternal conflicts of interest.

The American team around the boss, Dr. Fang Bian, has had quite a few ideas which ensure that the sound is absolutely perfect, and all that with a diaphragm that is so thin that the human eye cannot detect it when seen side-on.

The effort required for the production of these headphones, weighing in at 480 grams is enormous and contributes to the immodest price tag of €3,500*. It includes the extremely precisely made

chassis, classy driver grilles with defined sound penetration and also the three high-quality connection cables for all applications that are supplied with the package.

Fine? Wild? Both!

In order to fully comprehend the sound quality of these headphones, you need time and the best source equipment you can get – although you can also use them with a computer. However, when used in combination with the MalValve headphone amp, they prove to be of a caliber that puts them on par with our reference unit, the Stax SR 009. Absolutely gripping when listening to the dynamics of Chris Barber's St Louis Blues, giving you goose-bumps during the amazing feats performed by the bassist Charlie Haden's alongside Jan Garbarek and Egberto Gismonti in the album „Magico“. You could hear every sound, every little pluck – even the most extremely subtle – swinging in and out with such intensity, that in spite lacking the spatial depth compared to good loudspeakers it still sounded extremely realistic. The HE 1000 is a dream in terms of touch, finish and sound, and they are even very comfortable to wear thanks to the huge soft cushions! You could not imagine anything more right now - though this also applies to the price.



▲ The adjustable stainless steel rod is extremely well made and the perforated leather strap very comfortable and airy.



▲ This fulfills all connection requirements: replacement cables are part of the package.

HIFIMAN HE 1000

About €3,500*, guarantee: 3 years
Contact: Sieveking Sound
Tel.: +49 421 3784984
www.sieveking-sound.de

The price tag of the HE 1000 has been very confidently set, but the unit has the benefit of fully exploiting the sound options to the limits of what is feasible today! Useful accessories are included and the workmanship has a feel of eternity about it.

STEREOD-TEST

SOUND QUALITY 100%

PRICE/PERFORMANCE



GOOD

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

PIONEER'S MASTERPIECE

Since the Sony MDR R10 Japan hasn't produced any further dynamic world-class headphones. Pioneer has really pulled out all the stops in order to change that.

The „Pioneers“ are serious about their claim to the throne in the world of headphones. From the choice of material to the exquisite finishing of the headphones, which are produced by hand in more than 100 work steps, it is clear that the Japanese are aiming high. Even details such as the exchangeable tension rods with different pressures, and the high-quality plug-in cables which, for a surcharge, are also available in XLR version, are impressive.

However, the heart of the Master1 is its wafer-thin ceramic-coated aluminum membrane with a proud diameter of 50 millimeters and with plastic ribs to reduce resonance, which celebrates its world premiere here. The capsules which house the drivers consist of 3.5 mm thick aluminum. According to the Japanese, the reason is that this helps to reduce the resonance of the driver units. The objective of this development was to make the actual recording studio tangible. The idea was also to create both a tool for music lovers and a monitor for professionals – with the prestigious Air Studios assisting with the final tuning. The people there obviously know a thing or two about wearing comfort, because you won't come out of hours of concentrated listening sessions with hot or squashed ears.

Inconspicuous chameleon

We plugged the audio jack into our array of music sources. It became immediately clear that the Pioneer is a master in the art of hiding – it completely withdraws from the music performance by translating extremely neutrally what is supplied to it. Nevertheless, it has a wealth of talents, including fine dynamic incrementation, as well as a full-sounding bass, which nonetheless are subordinate to the whole and do not push into the foreground at the expense of the overall homogeneous impression. For example, though where perhaps the female voices are a touch more convincing than the male grumble, voices in audio dramas and audio books sound very natural. What is also really impressive is that the Master1 was able to bring across the different acoustics of the recording studios. In view of the time and effort employed and the first-class finish, the price is reasonable; only the surcharge of € 329* for the XLR cable is rather steep.



▲ Plug-in cables with color distinction that do not get tangled up – alternatively also as XLR version.



Two tension rods are available to adjust the pressure, depending on head size, shape and preference. ►

PIONEER SE MASTER 1

About € 2,500*, guarantee: 2 years
Contact: Pioneer & Onkyo Europe GmbH
Tel.: +49 2154 9130
www.pioneer.eu

The Pioneer, which weighs almost 500 grams, is excellently suited to long evenings of listening because its tone rendition is neutral, it plays dynamically and benefits from good wear comfort. Headphones for professionals, connoisseurs and the discerning.

STEREO-TEST

SOUND QUALITY	94%
PRICE/PERFORMANCE	
★ ★ ☆ ☆ ☆	
GOOD	

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

GENTLEMEN'S HEADPHONES

The manufacturer from southern Germany, Ultrasone, promises a fat techno-package with its Edition 5 Unlimited model. Does the sound fall short of its classy looks?

Titanium-coated sound transducers, ruthenium-coated capsules, laser engravings, individual serial number – the Edition 5 by Ultrasone doesn't hold back regarding its secondary virtues. Exchangeable high-quality cables, a leather storage case, soft leather cushions at the ear cups and tension rod, and a few technical tricks which should raise the reproduction of spatiality in the enclosed headphones to an exceptional level, for which some marketing designations have been dreamt up – some more attractive than others. These are additional features of the sound supplier, produced entirely by hand in Germany, and it comes with a price tag of about € 2,000*.

Components, looks, technology

The units are produced in closed construction, which is commonly associated with two characteristics: a powerful bass foundation with quite a bit of force as a positive on the asset side, but also a treble rendition that frequently leaves the path of virtue behind and develops a vivid life of its own as a negative on the liability side.



▲ Cushions and cables can be replaced; three sets, including one for mobile phone/PC with remote control, are included.

The technical components for unadulterated sound already mentioned include the sound transducers, which are not arranged in the middle but decentralized, radiating forwards, down, in the shape of a funnel. This is not just meant to enable neutrality similar of that of studio monitors, but it also creates a particularly spatial sound image.

A strong character

On the sound side it soon becomes clear that the Edition 5 is not simply an imitation of something else, but has its own character – not dissimilar to a very good dynamic-sounding horn with an ever so slight change in tone color. Even with a normal computer it runs fine, but really comes into its own when the sound has first been lifted with devices such as the Dragonfly DAC/headphones amplifier by Audioquest or the completely new American „Jitterbug“.

With these extra devices the headphones are enormous fun, pumping even thunderous bass pulses cleanly into the ear, for example when playing to Marla Glen's „Cost of Freedom“. In that case, the voice does not sound quite as open as usual, but is marvelously distinct from the surrounding soundscape. You can also effortlessly distinguish between different grand pianos, although it is a little harder to distinguish between different grand piano manufacturers than it is with the even more expensive participants of this test array.

Having said all that, in spite of the closed construction they really are very comfortable to wear, and the dampening of external noise makes it possible to hear the slightest differences even at



lower levels than those of the competitors. Details in the medium and treble ranges, which are probably mostly perceived subconsciously, are easily disentangled. True proof of German engineering!

ULTRASONE EDITION 5 UNL.

About € 2,000*, guarantee: 5 years
Contact: Ultrasone
Tel.: +49 881 9011500
www.ultrasone.com

This test specimen with the lowest weight of only 280 grams features neat workmanship, also works well in a loud environment and with low levels, and even sounds good when used with mobile devices!

STEREO-TEST	
SOUND QUALITY	90%
PRICE/PERFORMANCE	
★ ★ ☆ ☆ ☆	
GOOD	

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

CONCLUSION



Michael Lang
Managing Editor

Clearly with this array of headphones we are moving at price ranges where outsiders might want to reach for the thermometer in order to check the health of the person who is seriously considering investing a not-insignificant four-digit figure in his or her personal listening enjoyment. On the other hand, there is hardly any other category of equipment where the pinnacle of sound can be reached at similarly reasonable prices. Or do you have a tip for an uncompromising state-of-the-art loudspeaker that you could acquire for between €2,000* and €3,500*? If so, please let us know immediately. At this stage, we don't even want to mention the expensive power amplifiers that are usually needed for top sound.

Because when looked at in the cold light of day, headphones fulfil exactly this function: they replace the loudspeaker in the living room – at least for as long as the family is around, and sometimes even until the children have left home. And this stand-in function is fulfilled by more and more models, amongst them the three contenders in our test array. The Ultrasone – at €2,000* at the lower end of the price range of these select candidates – appeals with its dynamic playback, cracking bass, good wear comfort and superb „Made in Germany“ workmanship. In addition, the fact that it scores well in terms of space rendition, is fun even when used with a smartphone and is convincing in a loud environment thanks to its enclosed design more than compensates for the fact that it is not quite as neutral and open as the two headphones produced in Asia.

The Pioneer does justice to its name, Master1, because it really masters everything that comes its way in terms of musical challenges. Its Japanese makers and developers have not cut short on anything in order to create the impression of solidity and longevity, combined

with a sound that will excite even the most demanding of music lovers. The development goal – to leave a permanent mark in the field of headphones – has been fully achieved.

This leaves the last of the three, the HiFiMan HE 1000. In terms of sound, you can't ignore it. If you are interested in high-class headphones playback, you should not attempt to make a reasonable judgment without having tried the American headset made in China. This also brings us to our only serious criticism: in spite of its convincing sound and its neat workmanship, there is the question as to whether Dr. Fang Bian and his crew have somewhat lost touch with reality in calculating the price tag. Because indisputably, Ultrasone and Pioneer are of comparable quality in terms of workmanship and sound, but are produced in Germany and Japan where the wages are high, so that their price calculation can be understood and appears fair. Perhaps its makers in the USA should reconsider locating production at the place where the concept was created. There should be a big enough margin in the price tag to do that.

ARE HEADPHONES BETTER LOUDSPEAKERS?

As early as thirty years ago when the likes of us began to engage with hi-fi issues, a good set of headphones was considered the benchmark or even the measuring stick and a magnifying glass for the sound.

In those days, owning a STAX or AKG K340 was, without a doubt, the pinnacle. In contrast to the former, the latter were electrostatic (!) headphones that could be connected to the usual headphone socket.

There was, and is, no doubt that this top model is on a par with the best loudspeakers available on the market. Although, at the time, for much less money than, for example, a Duntech Sovereign, a Dynaudio Consequence, an Infinity Beta or a very large T+A. For around 250* or 300* Deutschmarks you could own top-class equipment.

The reasons for the technical superiority of headphones are still the same today, irrespective of progress in the two types of sound transducers. There is direct contact between the driver and the ear without external interference; the driver has nearly

no mass and, in addition, only has to perform very small lifts. All of that can be achieved in a very linear fashion and with low distortion – in other words, cleanly and comparatively economically – as there is superb control of the conditions.

My generation was the first to discover headphones on a broad basis (keyword: Walkman), also for mobile use, and thereby discovered the differences in sound. For today's young people, i.e. the smartphone generation, the former applies even more so, only that the knowledge of good sound is largely absent. Any experience of live concerts, hi-fi? No chance. Nevertheless, evolutionarily speaking humans are not used to shutting themselves off with ear cushions or even earplugs in a way that almost seems autistic; the normal sound experience does not take place directly at the ear. Of course, you can determine the degree of seclusion yourself by selecting an open, semi-open or closed set of headphones, or even headphones that include the reduction of external noises.

The physical rendition of bass, as we know it from live events, can also be enjoyed via high-quality systems, i.e. via the boxes. The feeling of spatiality, plasticity and localization, which can be reproduced by loudspeakers and by stereo „illusion“, is restricted and circulatory with headphones, and can sometimes even be perceived as „localization in the head“.

I personally prefer playback via loudspeakers, but use headphones when I don't want to disturb neighbors or those at home, or when travelling, or when it is necessary to distinguish very fine language nuances, for example in an interview in English. People who play music in public via their mobile phone's loudspeaker in my view only demonstrate that they are not blessed with an understanding of quality, or good manners.

Ultimately for most people it's not a question of loudspeakers or headphones. They both have their strengths and their reason for existence. Even, and above all, alongside each other.

Tom Frantzen

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

Raidho acoustics

X-1



DON'T CALL ME TINY

The X-1 is an elegant and compact stand-mount mini monitor. The speaker is built with the Raidho Ribbon Tweeter and a bass/mid-range driver with a ceramic membrane. The midrange driver features our newly developed neodymium based magnet system, long throw and low compression.

"Best sound of the show gold Award"

Peter Breunninger, AV Newport 04-06-2014

"I was absolutely blown away by the tiny Raidho X-1"

Robert Harley, The Absolute Sound, Newport Show 04-06-2014

"Best sound for the money"

"I'm smitten, The quintessential mighty mite Raidho X-1 is a little sweetheart of a loudspeaker"

Neil Gader, The Absolute Sound, Newport Show 06-06-2014

"The Raidho X1 was mightily impressive, Vocals had fullness and imaging was spot on"

Home Theater and High Fidelity, Newport Beach Show 2014

"Only the second time in my reviewing career that I have purchased the speaker under review, they are superb"

Anthony Kershaw, Audiophilia 16-07-2014



Find a list of Raidho dealers at:

www.raidho.dk

Meet us at facebook:

www.facebook.com/RaidhoAcoustics





MUSIC LESSON

In order to be able to finally be one of the top players in the pre-amplifier world, Nagra has created the „Jazz“. In the test, the vacuum tube Pre turns out to be not only highly musical, but also a work of solid engineering.

Without any doubt, these high-end devices which measure just under 28 centimeters in width, are something special. The Swiss brand Nagra, known for the highest standards, has used them since 1997 to complement its legendary studio electronics. These days, they are developed and produced at Audio Technology Switzerland in Romanel-sur-Lausanne - just like before on Lake Geneva and by the old team.

Whether the CDC CD player, the VPS Phono-Pre or the famous 300i vacuum tube amp – we mostly had to acknowledge the benchmark status of the Midi components, the design of which looks like a mixture of professional straightforwardness and a touch of retro.

Not so, however, with the PL-P pre-amplifier (with phono), which at one time was the Swiss company's first hi-fi product. It sounded very good, but not

exceptional, which is why Nagra is now taking it out of its range, as well as the PL-L high-level version launched in 2001. They are being replaced by two completely new developments, with the connections that previously were fitted to the side of the unit – which might have been practical for reconnecting but looked like the cables were an ugly growth from the side – moved to the rear.

And there was another change: instead of the three-letter abbreviation, the new Pres are now given proper names. In addition to „Jazz“, the larger high-level pre-amplifier fitted with vacuum tubes, there will soon be the cheaper, transistor-based „Melody“ (from €6,500*), which can be fitted with an optional

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

phonostage which corresponds to the battery-operated BPS.

Beyond that, the new model remains true to the Nagra concept known for a certain purist approach, and despite the solid aluminum housing complete with a 14-millimeter-thick front plate milled from a solid block, it has an extremely lightweight build with clever details. Without its external power supply unit, the Jazz weighs as little as 3.3 kg and has just a few operating elements: on the right is the input selector in the typical Nagra style, which has also been applied to the level selector with a decibel scale. The input selector is used to switch the unit on or off. It can be used to select five inputs from "A" to "E" – one with XLR sockets and four with cinch contacts. In addition there is an XLR connection option to the symmetrical output should the pre-amplifier be used as part of an AV chain.

A precise "modulometer"...

The total of three outputs – two cinch (which make bi-amping easier) and one XLR – are subdivided into two groups and can be selected via a small toggle switch, another feature that is common for the components from Switzerland. The rest is quickly explained; should the output voltage of a source device not be

The unit comes with a total of five. The XLR input internally has an asymmetrical layout and can optionally be made symmetrical using a transfer board (about €1,450*). The „bypass“ input(s) bypass(es) the volume control. There is an additional mass terminal for grounding. ▼

sufficient on occasions, it can be pushed by 12 decibels. In addition there is a mute switch and a mono function, which always comes in handy. Since the balance control only moves the levels of the two channels very gently, we will forgive the fact that it doesn't have a central arrestor.

And of course, we can't do without the famous "modulometer", with its pale yellow back-lighting and several stages dimming function through to full switch-off, which indicates the output voltage for the channels separately using two hands above each other. Obviously, you need a pretty loud setting to generate any significant reaction from the precisely calibrated needles. If you enter an identical, uniform sound level into both channels of the Jazz and turn the volume to -10 dB, the needles lie exactly above each other. If you now reduce the volume by 6 decibels on the scale, the value indicated by the hands reduces simultaneously by this amount. When turning the balance between the maximum values, they also shift by the same degree and when the mono button is operated they immediately return to the position above each other. This means that the modulometer is much more than a rough "estimating device" and can also be used for assessing the signal source.

The potentiometer for volume and balance, as well as the input selector, are motorized so that this function can also be controlled with the remote control unit, which comes as part of the package and works reliably from almost any angle and greater distances. In addition, the shaped

KEYWORD

Connecting through: Then an AV pre-amplifier takes care of volume control. In this way, the hi-fi chain is used for both front channels in a simple way.

NAGRA'S "SMALL FAMILY"

These small units have it in them! The high-end series of the Swiss manufacturer includes the two CDP CD players (upper image) and the CDC equipped with head-set output and complete pre-amp (about €12,500*/14,500*). A top-quality adaptable phono pre-amplifier for high-class record players is the VPS (middle image, from €5,750*), which amplifies using vacuum tubes amongst others. You can connect two cartridges. The MSA (lower image) power amp comes with a switchable power supply unit; price about €7,950*. Output: 2 x 60 watt sinus/eight Ohms. But they have it in them!



plastic device gives access to the mute function and direct selection of inputs. Furthermore it is possible to "sensitize" the Jazz for Nagra's large metal transducer by carrying out a small adjustment inside.

Precision and emotion combined

All well and good, but what can the Jazz really do considering that the standards set by the other Nagra Midis are very high? No fear, this Swiss unit works with the precision of a watch-maker, while nevertheless giving out the self-assured charm of a noble lord. You rarely hear music produced by a machine that is as permeable, cohesive and holistic.

One secret of the Jazz is its correct timing. Example – the piano. The sounds are so firm in themselves, the entire rendition



*All prices listed are German retail prices incl. VAT valid at the time of evaluation.



▲ The vibration-free support (VFS), consisting of two aluminum plates individually dampened via polymer buffers and special spikes, is available for €1,650* as an accessory for all Nagra Midi components.

is so conclusive that it nearly takes your breath away. The instrument does not sound soft, not hard, not like glass, pointed or even out of tune or whatever other attributes a listener might think of when the sound mix is even just a little bit distorted.

The bass is another indicator – this is not your average “hi-fi bass”. It expands

freely, is neither dry nor juicy, nor gnarly or cottony, but just as it should be. After I don’t know how many records and CDs, I can’t tell how the Nagra “sounds” in this range. Somehow it does not interfere, and allows the music to take its course.

We are rewarded by the fact that the qualities of other components have a stronger impact on the result than is the

norm. I have hardly ever been so clearly confronted with the distances between cartridges, players, even the NF cables, as with the Jazz. The reason for this is its enormous resolution capability, which subdues very little – if at all – and generates a radical openness in an uncontrived way and with the best possible tonal correctness.

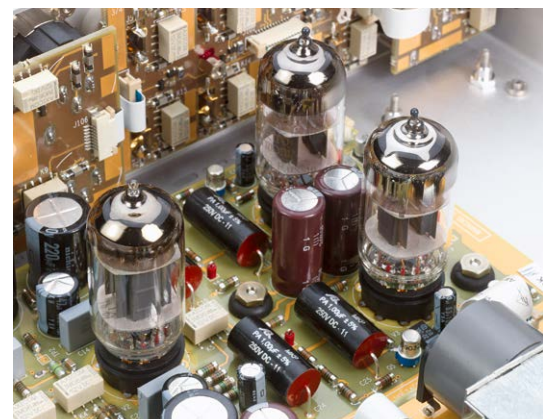
The magic of the Jazz is difficult to explain. As with a live performance, everything exists with equal right side-by-side. If, while listening, your attention jumps here and there, it is as if small information windows open like pop-ups on the PC screen touched by the cursor, and you find out what happens below the surface of the sounds.

This naturalness and almost dreamy grace emerges in full splendor via the symmetrical output – just like the stage rendition which recedes by just a small step and therefore appears all the more

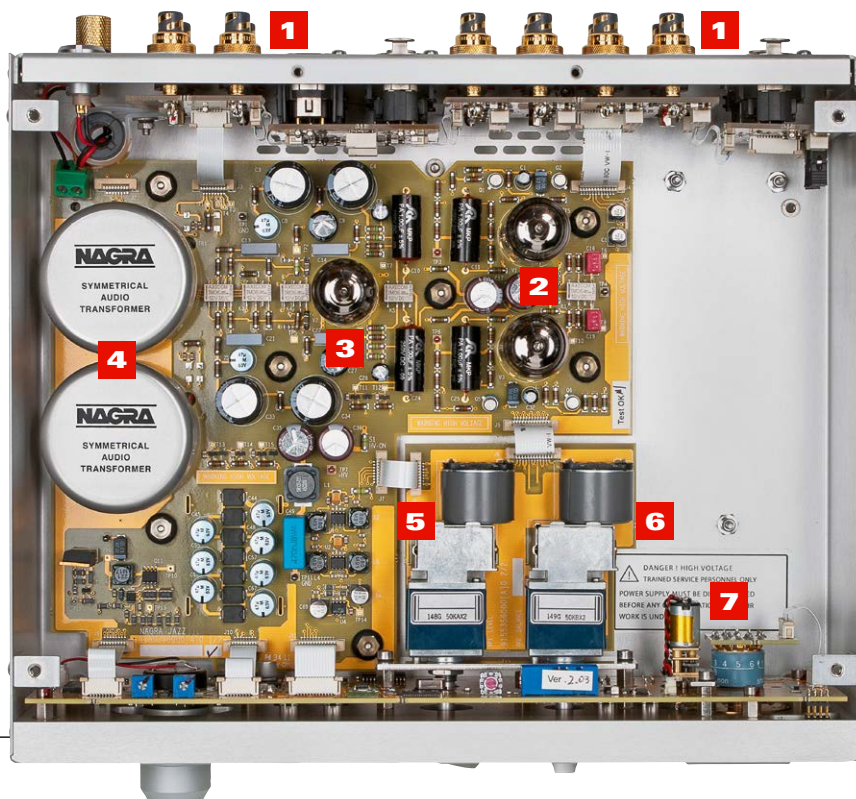
Technical sophistication

The four-layer, gold-plated, epoxy resin motherboard of the Jazz meets military standards and is crammed full of high-class components such as polypropylene condensers and intelligent solutions. The design ensures the shortest possible signal routes. Elastomer

damping elements beneath the board cushion against unwanted vibrations. The result can be seen right at the connections: all cinch sockets (1) are of the „Next-gen” type by the supplier WBT and are resistant to eddy currents and support superior sound rendition.



▲ Three mercilessly selected vacuum tubes form the Nagra Jazz’s two amplifier stages.



They make a „floating” contact, which means that their grounding is not connected to the mass of the housing, thereby effectively preventing ground loops.

Generally, the high-quality input relays only make contact with the selected source, therefore disconnecting all other contacts from the hot pole and the mass. This is a rare but

◀ There is a short signal route from the input (r.) to the output sockets (l.). The motors for the volume (5) and balance potentials (6) as well as for the input selection (7) can be clearly seen.

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

realistic. Via cinch, the Jazz is still top though not with quite the same perfection and crispness. For this reason, the XLR cable to the power amplifier is recommended.

This is how the stupendous, contagious musicality of the Jazz, which affects the transition chain as much as the listener, comes fully to bear. It reveals the emotional impetus of the piece, whether it is pop, blues, opera, symphony or even jazz. For example, when the Marcin Wasilewski Trio in its "Song for Swirek" (ECM) quite suddenly increases the tempo and tension from its loose bouncy play only to immediately fall back to innocent lightheartedness, then it feels as if the musical muscle of a large, quietly breathing animal,



contracts briefly and then pleasantly relaxes again. The music becomes something you can physically feel.

The Nagra performs the compulsory high-end exercises without breaking sweat. Its freestyle element is the "atmosphere" it conveys. It abducts the listener into the world of music, fully engaging him with the performance – that is the fascinating encore of the "Jazz" concert, while activating the rest of the chain, that is, accessing the potential of the source and driving downstream members to maximum performance. With this, Nagra now finally represents the benchmark for pre-amplifiers too!

Matthias Böde

important feature, since this is the only way to avoid interactions with the mass of other connected devices.

Is this why the Jazz emphasizes the character of different components, such as cables, so clearly?

The first amplifier stage is a double triode of the type 12AX7 (ECC83) for each channel (2), working in a symmetrical configuration, which in turn is formed by transistors and is intended to support extraordinarily stable operation and, at the same time, reduce background noise. In fact, the signal-to-noise ratio achieved by the Jazz is immense, and not only for a vacuum tube amplifier (see laboratory values). The manufacturer calls this "The Sound Of Silence", borrowing the title from a famous Simon & Garfunkel song.

However, the subsequent 12AT7 triode (3, ECC81) takes care of the larger part of the overall amplification, being affected by resistances that are controlled via the front 0/+12 dB switch.

According to Nagra, all components were selected for their sound quality. The vacuum tubes are subjected to a 48-hour burn-in procedure. Afterwards, they are assessed with respect to the criteria of amplification, noise and sensitivity to vibrations; according to the Swiss manufacturer, about 60 percent of tubes fail the test. Then the tubes are arranged in pairs in the matching process.

In order to secure their quality for as long a period as possible, the tubes are very gra-

dually „booted up“ for 20 seconds during the switch-on delay of the Jazz, which takes about two minutes in any case, thus significantly prolonging their service life.

The secret techno-stars of the Jazz ensemble are hidden in screening mu-metal sockets. These are the transformers (4) for the symmetrical outputs that are developed at the Nagra factory. These transformers are some of the most expensive components of the audio-electronics, because they are the most sophisticated and involved parts. Owing to its long experience in the studio sector and with tape machines, where transformers are needed in many places, the Swiss manufacturer has enormous know-how and yet only very few of its „chosen ones“ are allowed to produce them.



▲ The very high-value, encapsulated transformers are located directly in front of the symmetrical outputs.

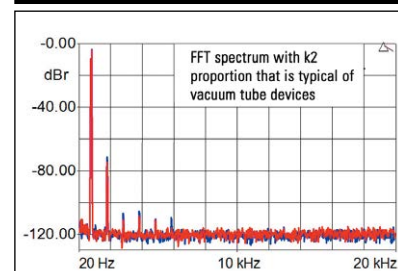
NAGRA JAZZ



Around €10,750* (input transformer €1,450*)
Dimensions: 28 x 8 x 33 cm (WxHxD)
Guaranty: 3 years
Contact: NAGRAVISION SA
Tel.: +41 21 7320311
www.nagraaudio.com

With the Jazz, Nagra is extending its small but fine high-end series. What this pre-amplifier reveals in terms of natural aura, musicality and wealth of details is sensational. The loving finishes and top measured values make the high price of the vacuum tube Pre bearable.

MEASUREMENT RESULTS



Maximum output voltage (1 kHz, 1% THD) 7.2 V

Distortion factor at
0.03|0.3|1 Volt 0.01|0.003|0.008 %

Intermodulation at
0.03|0.3|1 Volt 0.003|0.002|0.008 %

Signal-to-noise ratio CD (500 mV, 1 kOhm) at
0.03|0.3 Volt 80|94 dB

Channel separation at 10 kHz 79 dB

Upper limit frequency (-3 dB) >80 kHz

Connection values to suit conditions

Output resistance at 1 kHz 135 Ohms

Cross-talk attenuation tuner/CD at 10 kHz 99 dB

Clocking error volume control
up to -60 dB controllable

Power uptake
Off|Standby|Idling 0|-|18 Watts

LAB COMMENTARY: First-class values, not only for a vacuum tube pre-amplifier; the very low distortion and excellent signal-to-noise ratio are outstanding. The effective channel separation is also great. Is this the secret behind the large stage of the Jazz? Conclusion: a terrific performance in the laboratory.

FEATURES

Five inputs and three outputs, of which one each in XLR, connection option, dimmable output level display, balance control, mono switch, mute function, remote control.

STEREO-TEST

SOUND QUALITY 100%

PRICE/PERFORMANCE

★★★★☆
VERY GOOD

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

THORENS[®]

SWITZERLAND



www.thorens.com

OPEN SECRET

The name V90 initially reminded me of a motor vehicle of Swedish origin. But Antony Michaelson, Musical Fidelity's design guru, provided enlightenment.



With the 'V90' designation, Michaelson is alluding to the fact that this new phono pre-amp utilizes a circuit that has been rotated 90° in relation to his previous design, the V-LPS. The connections are now on the rear, so you can actually display this diminutive unit on a shelf. What else has changed? The entire circuit now utilizes SMD (surface mount) technology, which shortens the signal path and should reduce microphony.

30 years of experience

The secret behind this small box? It's not sorcery, but a proven circuit, 30 years of experience, and careful attention to detail. 'We needed to coax better measurements out of a few places, but how to do it, and at what price? My idea was very clean RIAA equalization, low distortion, very high signal to noise ratio and great channel separation, as well as practical overload protection—all at a popular price. Every analog fan can afford this product; which will give his buddies with expensive equipment something to think about.' From a technical standpoint, Michaelson argues that you really don't need a much more expensive product,

and that a lot of people tend to 'listen with their eyes'.

Excellent in primary virtues

I listened most of the time with my eyes closed. Frankly because this magic box's presentation, with a Clearaudio MM set-up as the front-end, Symphonic Line RG 9 integrated amp, HMS cabling, and B&W CM10s was actually put together to immerse you in music. As for annoying hum and noise on silent grooves—none. Incidentally, same results even when changing over to an Audio Technica Art1. Dynamics, tonality, and the musical exuberance from Billy Joel's 'Zanzibar' were all there, and how! And for just under €180*, retrieving those tiny voltages from the Clear Audio front end and delivering this kind of performance—all this sheds new light on the question of the price/performance ratio. Suzanne Vega's 'Tom's Dinner' was finely articulated, crisp, but without being too steamy in the upper registers. Bass was clean, although lacking that last little bit of punch, but delivered with stunning flow, and unbridled enthusiasm. We certainly grew very fond of this small component. You won't want to go anywhere else!

Michael Lang



◀ Everything you need and a bit more. Separate inputs for MM / MC cartridges were still in the budget.

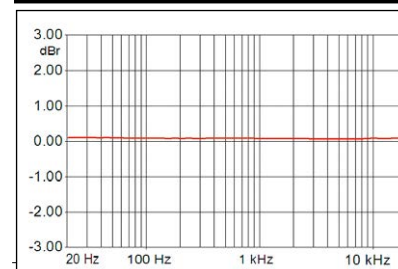
MUSICAL FIDELITY V 90-LPS



Price: around €180*
Size: 18 x 5 x 17 cm (WxHxD)
Warranty: 2 years
Contact: Musical Fidelity Limited
Tel: +44 20 8900 2866
www.musicalfidelity.com.

While its predecessor was perhaps more reminiscent of an accessory, the new V90, in simple but elegant garb, can now be placed at the front of the shelf. And sonically that's where it belongs!

MEASUREMENT RESULTS



Distortion at 5 mV/1 kHz/1 kOhm(MM)	0.03 %
Intermodulation at 0.8 mV/8 kHz/60 Hz	0.001 %
Signal-to-noise ratio	
Phono MM at 5 mV/1 kHz/47 k Ohms	81 dB
Phono MC at 0.5 mV/1 kHz/100 Ohms	72 dB
Channel separation at 1 kHz	72 dB
Headroom MM/MC	22/3.4 mV
Connection	practical
Output impedance at 1 kHz RCA	450 Ohms
Power consumption	
Off Standby Idle	0 / 0 / 2 Watts

LABORATORY COMMENT

In the lab, the V90 was at least good, sometimes excellent in all disciplines. The frequency response is linear, noise for all practical purposes is non-existent, distortions are negligible, and headroom is reasonable. The output impedance is low, the power consumption very low.

FEATURES

Separate RCA inputs for MM and MC cartridges, separately switchable. RCA outputs, ground terminal, impedances pre-set at 47 kOhms for MM and 100 Ohms for MC. External power supply. Owner's manual.

STEREO-TEST

SOUND QUALITY	82%
PRICE/PERFORMANCE	
★ ★ ★ ★ ★	
OUTSTANDING	

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.



Blue Ice White, Kent Engineering and Foundry Edition

THE PERFECTIONISTS

Once in a generation we design and hand build loudspeakers of such stunning quality they set the standard by which all others are measured for years to come. For perfectionists who demand uncompromisingly accurate sound, capturing the full emotional range, depth and detail of the original performance, **THE REFERENCE** delivers an experience without equal.

GP Acoustics GmbH
Telefon +49 (0)201 17039-0 E-Mail sales@gpaeu.com

KEF

OBSESSED WITH HIGH RESOLUTION

HARMONY IN MARRIAGE IS OVERRATED



It was the outstanding best seller when it came to high-priced speakers during the late eighties – and with its four 165-centimeter-tall columns, the nightmare of many wives.

Back then it was a true battle of materials, which the legendary developer, Arnie Nudell, had come up with by creating the second largest model of the IRS range below the top-range Infinity Reference Standard. A loudspeaker designed to reproduce even the deepest frequencies in large rooms at high volumes, and all at a price that appeared ridiculous when compared to the current requirements for large speakers – depending on the dollar exchange

rate, between DM 35,000 and DM 45,000 were due if you wanted to load the four large boxes, plus one small one, onto a van. It had to be a van because the manic developer, trained mathematician, physicist and amateur clarinetist showed a willful blindness to the monstrous dimensions for optimum sound in order to uncompromisingly design the Beta purely according to tonal quality.

Due to the marketing strategy chosen by the former importer, Achim Grigg, prices

as low as DM 20,000 were possible. These days, you'd be lucky to find a Beta for this price on the secondhand market, being, though, more or less in need of repair.

Could there be something more?

What was it that turned the Beta into something special that made customers become patrons at Hi-Fi studios and regularly caused people to check out the speakers in stores that had them on display – and still makes the experienced high-end customer nervous even today?

We already talked about the five boxes that made up the delivered set: two bass columns each with four 30 centimeter woofers whose membranes are made of

a polypropylene/graphite mixture, as well as two midrange and tweeter panels with a dipole design – meaning the sound radiates from the front and back. These are equipped with a whole armada of various magnetostats that can play down to around 100 Hertz. The 5th box contains an electronic crossover that also includes a servo control unit for the bass unit, which is yet another special feature of the system. Beyond that, it offers a variety of settings to ensure optimal bass reproduction and a homogeneous connection to the tweeters and midranges.

Sophisticated in every way

That the Beta needs a lot of floor space due to its four columns is clear. It should also be clear that the bass energy available on demand as well as its spatial reproduction

capabilities could hardly unfold its inherent power in small rooms. At least 30 square meters are needed as well as enough space on all sides. But the Beta welcomes even twice or three times as much space.

However, this speaker has a few more pitfalls, at least before the makeover from Bayer Soundworks, which make dealing with it a challenge – a factor which led to heated discussions between supporters and opponents of the former Superbox during its “active” time from 1987 to 1992: opponents eagerly pointed out the completely ramshackle construction, which beyond that was also poorly manufactured, while the enthusiasts from their perspective praised the sheer limitless qualities.

And both parties were right: A speaker with such poor efficiency of about 83

A total of six midrange and tweeter units need to be wired up and adjusted to their optimal operating range using crossovers housed in the base. The individual tweeter units are only slightly dampened to the rear; there is an Emit tweeter on the front and the back. ▶



Infinity IRS Beta

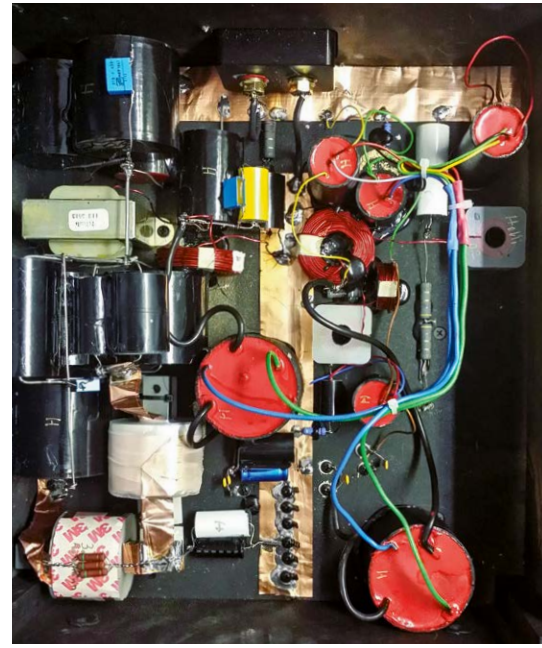
Production period: 1987-1992

Manufacturer: Infinity, USA

Price: approx. DM 35,000 – 45,000

Price today from € 8,000*

Unrestored



▲ The passive crossover, after it was completely rebuilt by Bayer.

◀ By separating the bass section from the midrange/tweeter section, the optimal placement for each unit can be found.

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.



◀ A woofer with a new foam bead and stiffer dust cap than in the original.

Nelson Pass, who formerly built Threshold amps, or his colleagues from Audio Research to Mark Levinson up to Jeff Rowland – enter into a technically challenging but financially rewarding golden era. Nudell himself always openly favored the products from Pass and Johnson, but of course every Infinity dealer had his own secret tip, which explains many a demonstration with moderate to sad quality and various plumes of smoke rising from amplifiers.

And now you think that's over and done with? Unfortunately I have to give you another bitter pill to swallow: The construction with the active crossover – you remember the fifth box – resulted in the technical necessity of the so-called bi-amping operation, in which one amplifier was responsible for the Infinity proprietary development in the magnetostatic panels while its colleague was in charge of driving the bass columns in a controlled

and powerful way. Therefore two stereo power amplifiers were the minimum requirement, or rather four mono-amplifiers, if you really wanted to be part of the uncompromising group of enthusiasts.

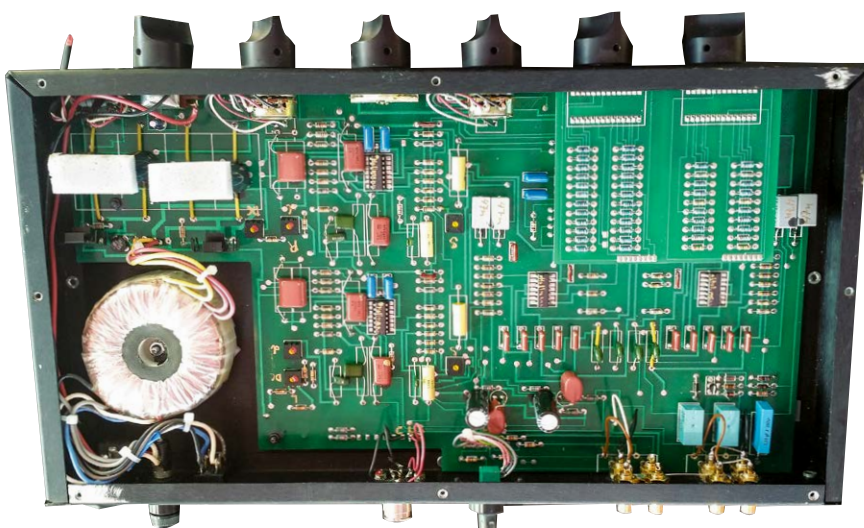
Now it is also becoming clear that the Beta, although expensive, yet ultimately worth it given the time and effort put into it, in the end became quite costly if you wanted to get the most out of it. This is because you could easily spend twice as much for the electronics. In this context, there is certainly no need to mention that you also had to go big when it came to source components and cables.

Those who now managed to sonically blend the bass, midrange and tweeter units into a harmonious whole through diligent setup and correctly cabled as well as carefully matched adjustments in the crossovers – up to the adjustment of the bass amplifier's gain factor to the feedback loop of the servo circuitry for the bass – was pretty damn close to a high-fidelity heaven and could be sure of becoming the destination of many a pilgrimage for their friends. It was the golden era when

decibels of course required power. Since the impedance of 1.1 Ohms ran in the middle-high frequency range near the zero line and on top of this there were phase shifts, which were not far removed from gyroscopic rotations, the power plants had to enforcedly provide current delivery capacity which was only achievable with strong power supplies.

In effect, this led to the best and thus almost automatically most expensive representatives of the amplifying craft being capable of sounding out the tonal merits of the Beta system. Ultimately, Nudell's constructions (because even the smaller models of the Kappa series were very sophisticated) helped developers – like

Many new high-quality capacitors and ICs can be found in the active crossover after the renovation. ▶



The original cheap connectors have been replaced, and the color-coding now matches the channels. Another new feature is the continuous adjustment to the bass amplifier. ▶





▲ The active crossover allows the optimal adjustment of the woofer towers to room acoustics and „satellites“.

at least the male part of the population still got together often to listen to music, while the vast majority of their female counterparts retreated into an internal emigration and attributed, disapprovingly but powerlessly, the passion of men and their buddies to mental confusion and a lack of aesthetic style.

Points of failure and wear and tear

Just imagine that, a quarter of a century ago, you bought a car or a watch or made some other high-value acquisition that you regularly used but never let be inspected or serviced. How much of the original quality would have diminished over the years? It is no different for a loudspeaker whose drivers have been moved countless times, exposed to UV radiation as well as changes in temperature and humidity – and yet in most cases a workshop is only first sought out when nothing functions anymore, the speaker or its individual components refusing to work. Hartmut Bayer, former product manager of Infinity in Germany, specializes in such cases. From all over Germany and its neighboring countries, owners of old, high-quality Infinities come to him in order to bring their dusty treasures back to life. Bayer is aware of the flaws that occur over the years as well as some structural weaknesses of the speakers and the crossover. He also casts a competent glance at the innards and replaces parts, some of them with components made especially for him. About 80 hours of pure bench time are required by the native Hessian to renew the bass beads, rid the magnetostats of rust pitting and equip them with new magnets, completely rebuild the components of the passive crossover – such as inductors and capacitors that are partially protected by a

patent – housed in the base of the dipole columns, to plant a number of new components and cables into the active crossover together with a new set of speaker terminals, drill holes for threaded bushings to take the floor-spikes and much, much more. In short, the Beta is given a second life and made fit again for another estimated 20 years – at least.

When faced with such a long lifespan, who can be bothered with monstrously bureaucratic words like the ‘disposal of old appliances’? “Since we have the original schematics and know the speaker from dozens of setups, we can eliminate its real or presumed weak points.

Many stories were simply made up about the Beta in order to create a bad image and sell more user-friendly speak-

ers. But whoever was able to hear them under optimal conditions will certainly never forget this experience,” says Bayer in favor of the Oldie.

Monroe instead of Moss

If you listen to a Beta now, after years of experience with numerous high-quality and even more expensive speakers, it’s like meeting your childhood sweetheart again. You can hardly resist the tonality of its charm; its musical smile is too wide, open and honest to complain about its tiny wrinkles. It whispers softly in

your ear, laughs loudly and boldly, whereby the laughter never sounds fake and easily sweeps the listener away. All of this assuming you are not into asceticism with regard to music, because the Beta is still a loudspeaker that paints opulent pictures with broad brush strokes, portrays the

flesh and blood of the instruments and artists and is adverse to the skinny-obsessed world. Definitely more Marilyn Monroe than Kate Moss.

It is not at all surprising that Paul McGowan, owner of PS Audio, friend and former business partner of Arnie Nudell, indulged himself by using a Beta for his presentations in a permanently over-crowded room last year during the Rocky Mountain Audio Show.

Michael Lang

FRESHLY RESTORED, THE BETA IS STILL FASCINATING TO THIS DAY

“We have replaced sound-quality compromising and worn-out components such as open wire wound potentiometers for fine tuning the mids and tweeters called Semit, Emit and Emim with sound-neutral and wear-free step switches, secured all diaphragms without sound interference against overload and exchanged cost efficient parts that were installed during mass production with elaborate and long-lasting solutions. That does not mean shoddy equipment was used back then, but that not a lot of attention was paid to every last detail. With respect to all of the manual labor

LINKS

www.bayer-soundworks.de

www.davidsaudio.com

www.bobbyshred.com/infinity.html



Gryphon Kalliope

Reference DAC



www.gryphon-audio.com · email: sales@gryphon-audio.dk



US distributor invited



DISHY DECK

Its multilayered sandwich chassis is what catches the eye with Electrocompaniet's first turntable, the ECG1. The company has opted for visually attractive acrylic. A transparent maneuver?

With most high-end suppliers, the issue of turntables is something of a moot question. As a rule, nothing is produced under their own steam. Neither by Accuphase or Burmester, MBL or Nagra. At least they provide an honest answer to the question of why there is no equivalent record player that matches the design of the electronics line: „The analog specialists can do that better than us“. Some purchase almost complete turntables from one of those specialists and, like McIntosh, print their name on it. Exceptions such as T+A, whose turntable models are designed in-house – tonearm and cartridge are also produced externally – are rare.

Why is this of interest here? Because the Norwegian company, Electrocompaniet, which is known for its electronics with a sophisticated, powerful sound, has also opted for developing its first turntable fully in-house. Hardly any vinyl player in the market visually matches its components with the thick acrylic front panels with anthracite gray backing. Discussions with the normal suppliers did not have the desired result. „Then we'll do it ourselves“, is what the Scandinavians decided, who also build sound-oriented Blu-ray players and are now completing their range of source components with the ECG1.

The fact that the ECG1 turned out to be so good-looking makes you wonder whether the showy deck is somewhat lacking in its audiophile substance. In fact, this

is precisely the purpose of the slick three-layer chassis, in which an aluminum plate is sandwiched between two 20 millimeter thick acrylic plates. Electrocompaniet points out that the strong internal damping property of the acrylic combines perfectly with the strength of the aluminum. This is not new. Other manufacturers too have opted for this material mix, which has been systematically adopted here.

What you don't see: the handsome frame with the four brass-colored push-buttons for the three rotation speeds, which even includes 78 revolutions for old shellacs, rests on three feet made by Soundcare in which internal spikes ensure a defined coupling to the integrated floor protection pads. Electrocompaniet uses these successfully with other equipment too.

Good tonearm, poor cable

The three centimeter high platter also consists of acrylic. When looking at it side-on, you can hardly detect that it rotates. Acrylic is very similar to vinyl. The idea is that the 750 gram-weight presses the record on the platter under it forming a quasi-unit with it. Its drive unit consists of a flat belt driven by an external motor unit, the pulley of which sticks up through an opening at the rear left-hand corner. The Norwegians use a smooth running, powerful, 24-volt synchronous motor.

In order to prevent tilting moments, the bearing of the platter has been inverted. It

„hangs“ from a stainless steel ball inserted in the upper counter-bearing and is supported by a bearing shaft made of hardened carbon steel.

The ECG1 comes with an economical tonearm that is nevertheless well known for its high quality – the ten inch long SA-750EB by the Japanese supplier, Jelco. This S-type arm with simply replaceable headshell can be easily adjusted in height and, at the counterweight, features a precise scale for setting the correct stylus pressure; it has also been tried and tested in thousands of applications. Only its pink original cable should be replaced



▲ The transparent acrylic provides fascinating insights. The turntable even offers a 78 rpm speed).



▲ The Norwegians left a hole at the rear left of the sandwich chassis to accommodate the freestanding 1.3 kg „motor block“. A PC cable connects it with the speed selection buttons.



▲ This thick, short pivot supports the acrylic platter. It is called an inverse bearing because the center of rotation is at the top.

by a better one, because it limits the spatiality and reproduces the higher frequency range a little sharply. This can have a detrimental effect on the sound of Electrocompaniet's class turntable – it is a bit like fitting slender tires to a sports car.

In addition to cartridges we are familiar with, we also listened to the ECG1 with Gold Notes' Machiavelli Red, a high-output MC cartridge for about €1,450*, which was brought along by Matthias Roth from Electrocompaniet's local distributor, MRV, because it was said to fit well with the ECG1 in terms of sound and technical characteristics – as had been found during a few demonstrations.

We've got nothing against it! We are grateful for any tip. And, with the "Phono Cable Plus" from the aforementioned Italian manufacturer known for the distinct musicality of its products, we also found a replacement for the lousy Jelco cable. Although it costs €580* on its own, MRV will put together an "EC Sound Set" with cartridge and cable for €5,250* instead of just under €5,700*, so that it is almost free-of-charge.

It is no surprise then that Roth, who has been caringly distributing Electrocompaniet since 1992, is so keen on Gold Note, seeing that both ECG1 and cartridge fit so perfectly with the favored sound philosophy up there. The Norwegians' electronics are known just as much for the gripping dynamics and the dry, solid bass as for the clear, unpretentious reproduction of the treble – and for a sonic performance which derives its fascination not least from a smooth, nuanced range of key tones.

Clean, stable and crisp

How that all comes together for the Scandinavians, when it comes to the

performance, was demonstrated by the ECG1 when playing Reference Recordings' Chadwick's – in every respect high-class – "Jubilee" recording.

The orchestra stood large and extensive in the listening room, and yet still outstandingly organized. All instruments were in their place, both clearly defined and placed at the correct depth.

The performance had breath but was also disciplined, and was very finely detailed while still keeping the whole in view. With this mature performance, the Norwegian distinguishes itself from cheaper record players.

With the lively titles from Diana Krall's "Live In Paris" album, the ECG1 demonstrated its responsiveness and ability to differentiate down to the lowest bass lines, so that even minute bass increments could be heard. No doubt the elaborate feet play a part in that. And the sandwiched deck revealed relaxed timing without slowing down the rhythms. It didn't come across as deliberately "propulsive", nor as "measured", but conveyed a clean and stable impression – just what Electrocompaniet is known for.

Thanks to the quick-lock at the Jelco arm, we were able to change swiftly to other cartridges. With Ortofon's MC Cadenza Red (around €1,150*) the presentation became a touch brighter, but not more dynamic than with the Gold Note, which slightly dims the presence range and therefore appears sonorous though never subdued or flat, because the treble is playing on it's full.

The MCs Benz Micro ACE SL and Ortofon Quintet Black (around €890*/800*) cartridges with their customary top all-round qualities were a convincing choice. The Clearaudio MM Maestro V2, for just under €900*, put a bit more emphasis on the mid-range, thereby giving a little boost to beautiful voices. So in conclusion, the marriage with the Gold Note – though of course higher priced – turned out to be the most harmonious, while not lacking passionate"fire").

For this reason, it would not be a bad choice to go for the attractively priced Complete Set. This will buy you a top turntable – not just for use with Electrocompaniet's equipment.

Matthias Böde



▲ The Jelco tonearm fits with many high-quality cartridges with a weight of between four and twelve grams. We have successfully tried out a number of different MM and MC cartridges with it. With the Machiavelli Red from Gold Note recommended by Electrocompaniet, the ECG1 performs perfectly within its manufacturer's sound philosophy.

ELECTROCOMPANIET ECG1



Around €3,650* (with tonearm/without cartridge; as „EC Sound Set“ with high-output MC Gold Note Machiavelli Red and Gold Note Phono Cable Plus around €5,250*)

Dimensions: 46.5 x 13 x 36 cm (WxHxD)

Guarantee: 3 years

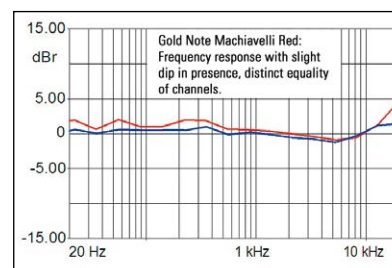
Contact: ELECTROCOMPANIET AS

Tel: +47 51 74 10 33

www.electrocompaniet.com

Some way to start! Electrocompaniet's first turntable appeals with its unique, comprehensive concept, its high-quality parts with a first-class finish as well as its succinctly natural, refined sound, which justifies the ambitious price.

MEASUREMENT RESULTS



FEATURES

Separate motor block with electronic controls, external power supply unit, three platter speeds, platter puck, high-quality feet

STEREO-TEST

SOUND QUALITY 92%

PRICE/PERFORMANCE



EXCELLENT

TEST-COMPONENTS

TURNTABLE: Avid Diva II SP/Dynavector DV-20X2L, Clearaudio Ovation/Talismann V2, Transrotor Rondino nero/Figaro

CARTRIDGE: Benz Micro ACE SL, Clearaudio Maestro V2, Ortofon Quintet Black/Cadenza Red

PHONO STAGES: Brinkmann Edison, Electrocompaniet ECP2

PHONO CABLES: Furutech Silver Arrows, HMS Gran Finale Phono

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.



IN ADMIRATION OF MUSIC

PURE, AUTHENTIC SOUND REPRODUCTION

- delivered by the DALI RUBICON series

Producing a wonderfully wide dynamic range and imaging so real, you'll believe that you are right in the middle of the original performance.

Small but perfectly formed, the RUBICON 2 stand-mount speaker delivers defined audio detail, with a naturally rich and full sounding bass response. The RUBICON 2 is the perfect blend of compact speaker size and cabinet inner-volume creating a sound that belies the beautiful speaker's dimensions. This perfect construction places the ultra-light soft dome tweeter and 6-5-inch wood-fibre low-loss driver in the optimum environment to ensure an unforgettable listening experience.



For more information on the RUBICON series: www.dali-rubicon.com

THE NEW Form OF LISTENING

Traditional audio values and modern lifestyles find themselves blended perfectly in Avantgarde Acoustic's ingenious Zero 1 Pro horn loudspeaker. With it, STEREO tests the most important high-end innovation we've seen in a long time

The term ‘sensation’ is no exaggeration when it comes to the Zero 1 from horn specialists Avantgarde Acoustic. They have actually earned this acclaim. Available in black or white, this exciting active loudspeaker has seen this accolade documented multiple times, including winning the prestigious ‘Red Dot Award’ for design. Its special character is the result of a mixture of technical sobriety and a very innovative, modern look. With it, a message has been delivered. This is a speaker for a new era in high-end audio!

A radical high-tech concept

In point of fact, the Zero1 differs markedly from usual loudspeaker designs. It isn’t in the use of customized amplifiers for each of the drivers. There are a quite a few examples of this. But even industry experts are astounded when they learn that except for the two power cords, there isn’t the usual array of cables. This is because the innovative Avantgarde Acoustic design implemented in the Zero 1 accesses desired music wirelessly via Apple TV, or Apple Express. There is just a single fiber optic cable from the ‘air-play’ receiver to the concealed connection box—hardly even worth mentioning.

The Zero 1 normally receives signals in digital, which isn’t the case with most active loudspeakers. Additionally, it doesn’t work when you try to connect both speakers. An RF link is wired into the left speaker to its right counterpart,

which transmits right channel information to that speaker. This happens automatically when you turn on one of the two remotes; and during our tests there were no errors or failures in the RF link as a result of supposed vulnerabilities to external influences. Not even with broadband high bit rate files in formats up to 24-bit / 192 kHz. Hat’s off! Those who still prefer a cable connection, or who just don’t like having RF around, can always drag a LAN line between the two speakers.

The Zero 1 can, through the use of an optional A/D converter board, be set up to operate in a balanced analog mode-via XLR sockets in the narrow input panel. Three-pole XLR connections are also provided for the digital mode. All in all, a lot of possibilities. For full wireless operation, you can even use a Bluetooth adaptor in the analog mode, as long as this—and so much has already been said about it—doesn’t undermine the quality of the speaker. We, as you can understand, only used a selection of high quality, high resolution sources for our test.

Its massive amount of technology notwithstanding, unpacking these 110 cm tall sound sculptures turned out to be pleasantly straightforward. If necessary, you can do it alone, because except for tilting the speaker slightly backward and attaching a metal bracket to its stand, there is



◀ Two remotes are included; the plastic unit is more practical because it allows direct input selection

nothing to do. Just connect to any digital source, and start listening.

A white light near the manufacturer’s logo on the bottom edge of the front indicates operating status. When the Zero 1 is in standby, this light pulsates slowly, like a MacBook, between light and dark. After ‘wake up’ the system is ready to go in no time. Perhaps in deference to the purist, Avantgarde Acoustic has refrained from displaying input and volume—the idea probably being as little visible technology as possible.

You can change the inputs at this time; but the initial volume is automatically reduced to a low level, which makes sense. In coming to terms with the Zero 1’s extreme limits, we observed that these speakers, which are only about 20 centimeters deep, can make a chamber orchestra as quiet as a whisper in a room environment, but at the same time reproduce a big band close to the original volume.

PLENTY OF CHOICES FOR INPUT CONNECTION

An electronic module, bolted to the rear side of the Zero 1 and normally concealed by a plate, contains the aggregate technology and provides a number of inputs for digital sources. Since it would be easy to get lost, here is a list of your options:

- From a computer, without further signal conversion, you will use the USB port (1).
- Since most digital devices output their signal coaxially, the connection panel features two coax inputs (2). They are complemented by a Toslink optical input (3) and an XLR socket (4) for balanced transmissions.
- The Zero 1 receives analog audio signals via a pair of XLR inputs (5). The optional internal A/D module which converts analog to 24-bit / 88.2 kHz digital, costs an additional €680*.
- The connection of a LAN cable (6) involves the only combination of both speakers instead of the RF link.
- The small dip switch (7) allows adjustment of bass levels by ± 4 dB in one dB steps.



AC phase on the test unit

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

From restrained politeness to the power of a sound reinforcement system, the Zero 1 demonstrates its exceedingly wide boundaries.

The reason, the Zero 1 remains so effortless and delineated at even obscene levels, is a function of several things. One is the fantastic sensitivity of the mid and high frequency horn systems molded into the

baffle-'loaded' by conventional drivers. Avantgarde Acoustic reports 104 dB, or even 110 dB sound pressure levels for the tweeter and midrange (1Watt at 1 meter). Admittedly looking a little puny at first, the 50 Watt amps, working in pure Class A to one Watt, soon came to be seen in a very different light (see box). Frequencies under 250 Hz are handled by a 30 cm (12

in) bass driver driven by a 400W class D amplifier, which ultimately sets the maximum level.

Phase stability thanks to DSP

All signal processing is accomplished via DSP. Avantgarde Acoustic utilizes the extensive potential afforded by the active approach to optimize natural reproduction. This processing applies to frequency response which is as a result very level and uniform from the lowest lows to the very highest frequencies. Phase is also addressed. The latter describes the temporal sequence in which different frequencies reach the ear. Ideally, all sounds should arrive at the same time, which is the only way to achieve perfect dimensionality and holistic homogeneity.

In multi-way loudspeakers such as the Zero 1, this is difficult to achieve, particularly since the drivers are located at different depths behind the baffle. To address this, the Zero 1's **FPGAs** (field-programmable gate arrays) are programmed specifically to compensate for these timing errors, taking into account the forward positioning of the tweeter in relation to the midrange driver, and creating a time coherent waveform.

For the most demanding situations, there is the 'Pro' version, which hits you up for an additional € 1,900* over the basic version; but which has special software, and phase linearity guaranteed down to 10 Hertz. We have tested it; and the company recommends it to high-end enthusiasts. In normal use, the performance of the Zero 1 below 200 Hz is tolerable, but due to the reduced processor performance there is less signal delay, which is an important parameter for home theater use.

How well it works in the frequency domain is shown by our laboratory measurements (see diagram). At the same time the driver's behavior can be trimmed via digital technology to address the steep edges at the ends of their transmission range—something that would be impossible using conventional methods. Bass can be dramatically extended this way, without the woofer cone fluttering uncontrollably or the speaker bottoming out at subsonic frequencies. These issues are filtered narrowband. A dip switch allows the precision adjustment of the lower frequencies by a scale of plus or minus 4 dB to deal with room acoustics.

"Our Zero 1 can be placed easily, and

"WE'RE BRINGING THE HIFI FASCINATION BACK!"

STEREO: The Zero 1 differs in design and technology from your other horn speakers. Why?

Fromme: Because with it, we want to address a new clientele who might find our other models too imposing, visually too striking, or simply just too conventional. And this customer is perhaps not even a high-end enthusiast.

But who, if I might ask, other than an audio enthusiast would start off with these € 10,000* speakers?

Anyone who wants to hear really good music, but is uncomfortable with the usual terms and conditions of the process. You really don't need to be a car fanatic to purchase a Mercedes. And although the Zero 1 is a high-tech product, it is often perceived quite differently, namely through its visual presentation or, alternatively, its sonic performance. When people then learn that it's compatible with a variety of widely used modern media technologies, most are really fired up.

Audiophiles and high-end enthusiasts often have reservations about digital signal processing and chips.

What do you say to them?

That we're surrounded today by processors which make everyday life easier and improve so many things—from our TV pictures to driving a car. Why shouldn't you take advantage of these technical opportunities to optimize sound? Especially if a similar improvement or precision isn't achievable through conventional means. Today this technology is simply state-of-the-art. And consider this—earlier audio was perceived by everyone as being at the leading edge of the day's technology, which was in large part the basis its fascination and the hobbyist interest. Meanwhile, computers, smartphones, digital cameras, and flat panel TVs have displaced audio in this regard. Products like the Zero 1 bring some of it back, because its sound and appearance convey the sense of a new era which can be experienced even if you aren't interested in the overall technology.



HOLGER FROMME

Avantgarde Acoustic

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

positioning is not all that critical”, thus promised Holger Fromme, Avantgarde Acoustic CEO, during delivery. The main reason is that a horn speaker makes no special demands on its environment. But as with other top tier speakers, we found the Zero 1’s overall sound and imaging, as well as its tonality and sharpness varied considerably with each fraction of a centimeter as we moved it around the listening room.

The power supply also requires attention. The standard power cables supplied with the Zero 1 are really only good for a function test. We replaced them with 2.5 meter long Mudra Akustik cables, which clearly sounded more audiophile and relaxed. You should also check to make sure the AC mains phasing is correct. Otherwise voices take on an ‘electronic’ tone, and in the case of Maria Phils’ forceful and colorful ‘Malvina’ (STEREO test CD VI), the looming synthesizer swath was barely resolved by the speakers.

While this was our experience in this instance, the Zero 1 was impressively well-defined when everything was right. Beat Kaestli’s stunningly lifelike ‘Day In Day Out’ from the same disc extended beyond the speakers laterally. And that’s how it should be. A little care in the set-up and attention to the power supply will be richly rewarded by improved performance.

Given its modernity and visual refinement, the Avantgarde Acoustic certainly runs the risk of being seen as a hip fashion product. However, anyone who experiences it properly won’t cling to this misconception very long. In fact, you’ll be amazed at what it can do, but above all, that all this is possible at this price.

This is because the Zero 1, with its multiple capabilities, competes mostly with more expensive designs from the passive side of the market, which then require an additional outlay for power amplifiers and cables, yet still can’t match the technical precision of the Avantgarde Acoustic.

But let’s first be realistic. Because every deduction about sonic phenomena drawn from technical features or theory should really be ignored. Better to see what a perfectly positioned Zero 1 can actually do. In addition to the previously mentioned Apple connection, which has material up to 24-bit / 48 kHz, we also fed these beauties high resolution, high bitrate data from a PC via a USB / SPDIF converter. It turned out that these very smooth speakers

EFFICIENCY: 50 WATTS CAN BE AS LOUD AS 4000

With cars, nobody asks about the volume of the tank. What matters is how much fuel the engine uses. The same holds true with amplifier power. You should actually ask about the speaker’s efficiency. Because in practice a monster amp driving an average sensitivity speaker may not generate the volume level of a weaker amplifier on a high efficiency transducer. A speaker with the usual sensitivity of 86 dB (1W / 1m), for example, would need a

whopping 64 Watts to reach a level of 104 dB, while the Zero 1’s HF drivers would require one Watt. With its full output power of 50 Watts, the Zero 1’s horn would reach an ear scorching level of 123 dB. To achieve this same level with an average loudspeaker, you’d theoretically need 4000 Watts. In practice, the one Watt Class A operating range of the Zero 1’s amplifier for its mid and high frequency drivers is more than sufficient

resolved the differences between the various formats, and easily unraveled the Chesky recordings from the STEREO Listening Test Edition III, ranging in resolution from 320 kilobit MP3 to 24/192 PCM.

So it was with ‘We’ll Be Together Again’ by the Jimmy Cobb Quartet. With increasing bit rates, more and more air appeared between instruments, music seemed rhythmically more vibrant and alive, and delicate shadings were revealed—just as with electronic

KEYWORD

FPGA: Field Programmable Gate Arrays are far-reaching freely programmable devices which are ideally suited for special applications.

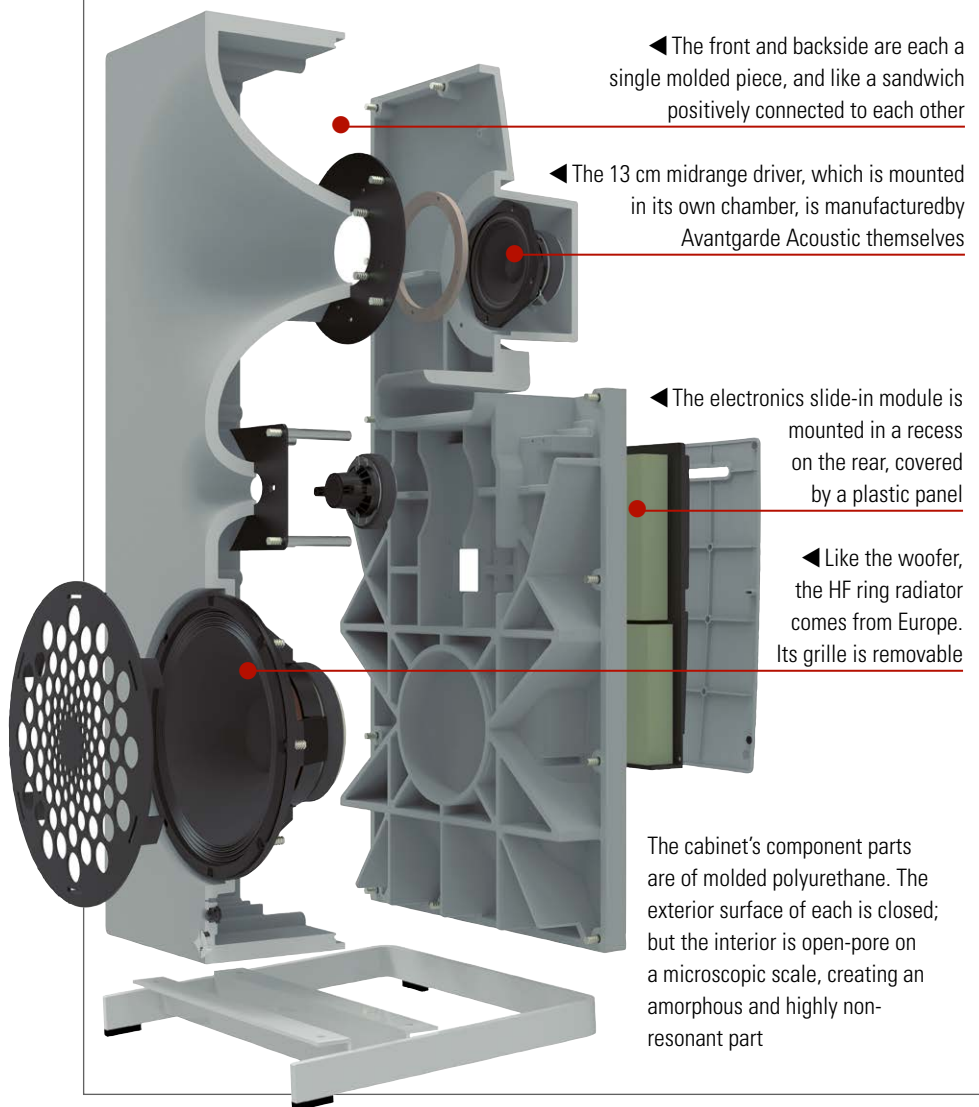
equipment. The kind of energy the Zero 1 can unleash was very convincingly conveyed with powerful pieces like ‘Homeward Bound’ by the Blues Company, a song built on a heavy bass foundation, or Monty Alexander’s crisp ‘Moanin’”, where pulses were produced with a snap. These active speakers offered performance that was both gripping and opulent; they operated with an ease, with nothing wasted, and with a seeming pleasure in event itself.



◀ The Zero 1’s polyurethane cabinet is also available in matte black; and, as a plus, its rear-side is very attractive. A magnetically attached plate covers the connections and electronic block. Very living room friendly



THE CONSTRUCTION OF THE ZERO1 IN DETAIL



Darling and Rocker Bride

The ability of these Avantgarde speakers to place singers in front of a backdrop carved out between the speakers, to create a precisely tiered depth relief where the arrangement of musicians is immediately apparent, is totally amazing. There's only a handful of loudspeakers beloved as works of art by the audiophile community for their exceptional phase linearity. The Zero 1 deserves to be among them!

However, its artistry wasn't developed exclusively to be an audiophile's darling, but also a free-spirited roll-your-sleeves-up rocker bride. The Zero 1 represents the manufacturer's profound and brilliant sonic statement, with bass modules as

tall as a man, drivers stacked, and horns attached with openings the size of small children.

Avantgarde Acoustic's claim to fame with the Zero 1 is to have created and perfected a high-class loudspeaker with brains—an unusual speaker solution that on the one hand seamlessly integrates classic high-end virtues with modern forms of listening to music, and whose appearance is also able to appeal to music lovers who would never bring an ordinary looking floor-standing loudspeaker into their room.

And the best part—you don't have to understand its complicated technology to have a lot of fun with the Zero 1.

Matthias Böde



AV. ACOUSTIC ZERO1 PRO

Approx. price: €11,900*/pr (Basic €9,990*/pr)

Size: 49x110x20 cm (WxHxD)

Warranty: 2/5 years (Elect./Drivers)

Contact: Avantgarde Acoustic

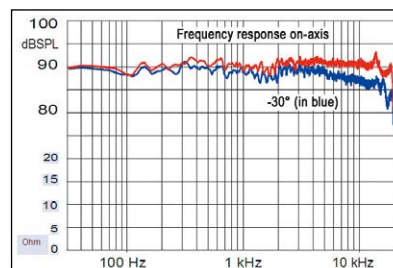
Lautsprechersysteme

Tel.: +49 6254 3061 00

www.avantgarde-acoustic.de

The Zero 1 opens the gate to high-end audio for modern wireless speakers. It appeals equally to the obsessive audiophile, the design oriented music enthusiast, and techies. In practice it is a blend of stability and reliability. Only one question remains—how can Avantgarde Acoustic do it all for this price?

MEASUREMENT RESULTS



Low frequency extreme (-3 dB)

20 HERTZ

LABORATORY COMMENT

'Until now, I really haven't measured a loudspeaker in the deep bass region' exalted our lab manager. The Zero 1 at first seemed to misbehave. This was due to its signal processing time delay, which confused our meter. We then switched to 'white noise', which has the same level at all frequencies, and shows how linear the transfer process is in this DSP-controlled active loudspeaker.

STEREO-TEST

SOUND QUALITY

100%

PRICE/PERFORMANCE



OUTSTANDING

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

MUSICAL FIDELITY

NU-VISTA 800 AMPLIFIER



State of the art design for reference level reproduction

The Nu-Vista series is a passionate labour of love for all of us at Musical Fidelity.
We hope that at least you get a chance to hear this combo because we
consider it the ultimate expression of our art.

Experience it for yourself at your local Musical Fidelity dealer.

THE DUAL DAC



Three letters make the audio world sit up and take notice—DSD. With their new 'DirectStream DAC', PS Audio introduces a D/A converter that not only creates analog from digital, but first converts all data streams into the SACD format

Has the world really gone mad? While SACD has had a miserable existence with us, it has for some time now excited the international audiophile community as the data format known as 'Direct Stream Digital', or 'DSD' for short. And this has especially been true for high resolution music downloads for PC processing and network storage. Important albums from the past are now on servers, available at your beck and call.

The fact that a respected label like Opus3 is offering its present analog tape catalog exclusively in DSD, or even as a 'double DSD'—with a double bandwidth of 5.5 MHz—is further fueling the hype. Compared to high bit PCM, such as 24-bit / 192 kHz, listeners describe a special naturalness, a homogeneity, rhythm, and flow with DSD **Bitstream processing** when it's done at a minimum of 2.8 MHz.

It seems almost like a marketing coup that Boulder, Colorado based audio

specialist, PS Audio, has just introduced an expensive 'DirectStream DAC', at just under €6,000*, clearly riding the DSD wave. It is the replacement for the company's successful 'PerfectWave DAC'.

Data transfer in the DSD format

It's not at all uncommon for current D/A converters, especially high end models, to process DSD data. Thanks to the work of a group of DSD enthusiasts within the digital audio community, there has been a concerted 'DoP' ('DSD over PCM') movement since 2012. One of the results of this effort has been the manipulation of PCM circuits so that they transmit DSD data streams without prior conversion to PCM. This of course keeps costs down.

But the new DirectStream DAC from

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

◀ The remote control, carried forward from the Perfect Wave DAC, controls many functions even from long distance



PS Audio, which is equally as unique and innovative, is different. Its special feature is that it converts all incoming digital formats to Bitstream. This is done at 10x the normal DSD sampling rate, i.e., 28 megahertz, since this is the first common sampling rate multiple in the range of 44.1/48-, 88.2/96-, or 176.4/192 kHz that doesn't require interpolation in the upsampling.

This, of course, wouldn't be possible with conventional chips. Which is why scientist and audiophile, Ted Smith, whose background is in the specialist digital field, fundamentally conceived and designed the DSD DAC from ground up utilizing the user-programmable Spartan 6 FPGA (Field-Programmable Gate Array) chip from Xilinx. It took seven years and hundreds of hours of listening to determine the correct algorithms for the transfer process. PS Audio president, Paul McGowan, says of Ted Smith's work and development that at first he followed it casually, but then decided after understanding its potential to turn Ted's DSD DAC design into a finished product—a

development project that turned out to be the longest in PS Audio's history.

To its credit, the final product features a highly accurate central clock for clocking its extremely low jitter—Americans tend to be very nervous about 'time error' due to interference—and it processes virtually every one of today's digital formats. From MP3 to PCM high bit-rate files up to 24-bit/192 kHz; and DSD data files at rates of 2.8 and 5.6 MHz ('DSD128').

As for PCM sources, upsampling takes place on a 50-bit basis, so the fine steps span a wide range of volume control. The DSD DAC controls the output stages directly; and very importantly, attenuation is done without degrading resolution. It is only after the conversion to DSD128 that attenuation takes place, and where a steep 24 dB low-pass filter is implemented to roll off frequencies above 80 kHz. This, according to Smith, is because a higher threshold would generate the dreaded clocking error, and in turn jitter.

Part of the low-pass filtering is performed by a broadband, balanced transformer at the RCA and XLR outputs, which also works in conjunction with the high-current, exciting, very fast amplifier. Because the DSD DAC adds a passive

output stage, decoupling the electronics and in practice providing a low output impedance, long cable runs can be used to the pre or power amplifier—an added benefit.

Touch display and IR transmitter

You could easily fill pages with descriptions of the innovation and brains jammed into the DSD DAC. For convenience, it can be controlled by a full-function remote control, which conveniently provides a button for each digital input and a variety of other inputs, as well as options such as a three position switch for adjusting display brightness (which itself is a very functional touch screen). When the remote's batteries are low, you can easily control the DAC via this touch screen. For an extra €895* you can integrate the DAC into your home network via a 'bridge'. For our evaluation, we 'fed' the unit via the USB input, designed for computer interface, and the coaxial and XLR inputs.

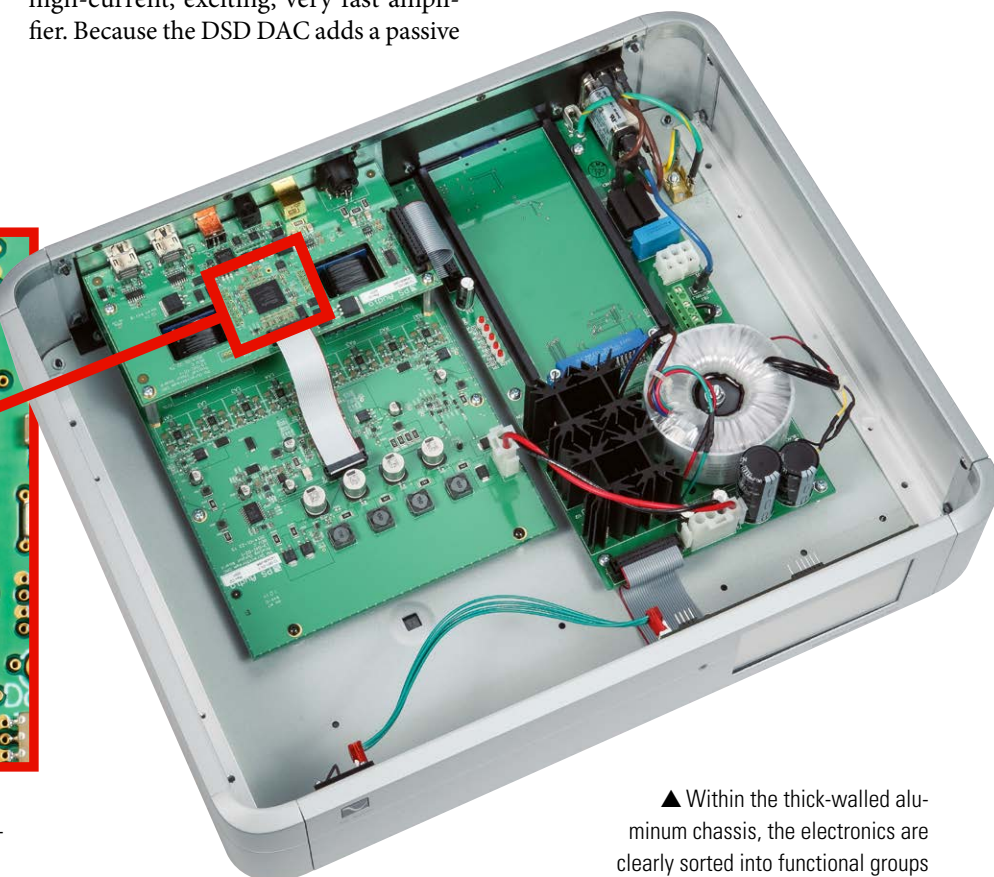
If you work with a Windows PC, you can download the appropriate American

KEYWORD

Bitstream processing: Unlike PCM formats in which data is bundled into packets, DSD runs in a constant, unstructured datastream, where all bits are equivalent.



▲ This programmable chip contains elaborate algorithms for the conversion of PCM to DSD, puzzled out after extensive computation and listening



▲ Within the thick-walled aluminum chassis, the electronics are clearly sorted into functional groups

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

TEST-COMPONENTS

STREAMER/PLAYER: T+A MP3000HV
 CD-Drive: Musical Fidelity M1 CDT
 D/A Converters: Accustic Arts TUBE-DACII, MBL 1511F, T+A MP3000HV
 PRE/POWER AMP: Accustic Arts TUBE-PREAMP II-MK2/AMP II-MK2
 LOUDSPEAKERS: DALI Epicon 6, Dynaudio Contour S5.4, Verity Audio Leonore
 CABLES: HMS Gran Finale Jub. (NF, LS (Bi-Wire), Audioquest Diamond (Digital USB), Purist Audio Design Aqueous Aureus (Digital coax)

USB drivers for the DirectStream DAC from the PS Audio website. We used an ASUS laptop, including 'Foobar', plus WASAPI drivers for PCM file playback. An Apple PowerBook played these and additional DSD formats with single or even double bandwidth via the appropriate 'Audirvana' software.

The manufacturer claims that the new DSD DAC 'reveals all the information that for years has been missing in our digital audio media.' Quite a claim. Actually what became immediately apparent was how precise and richly detailed—in typical PS Audio fashion—this D/A converter sounded. And by this we don't mean just a coarser microstructure. This device basically has unprecedented depth; it renders the intrinsic character of instruments clearly, and presents its sophistication as a matter of course.

However, the DSD DAC's performance doesn't really come off as spectacular or triumphant, despite all of its sophistication. It's really the unit's straightforward simplicity that stands out, and it does so because it arises from perfection. Compared to our top references in the D/A converter category, we were amazed at how

clean and focused the unit was. Where others slightly clouded individual notes, the DSD DAC not only didn't give in to that inaccuracy, it revealed even more tiny facets of the music that created the impression of undisguised clarity and genuine authenticity to the listener. As if it simply peeled one more layer off the onion.

Tailor-made for high-bit audio

These kinds of experiences don't require high-bit rate sources. Even moderately recorded CDs can take advantage of the DAC's precision from Boulder. The tracks from the various STEREO Listening CDs, which we've heard numbers of times, were reproduced with exemplary finesse and photo-like razor sharpness. As a result of its radical resolution and definition, the DSD DAC is extremely well suited for the information and data flow of modern high-bit media.

'We'll Be Together Again' by the Jimmy Cobb Quartet from the STEREO Listening Test-Edition III, which we played in different resolutions, proved the DSD DAC's ability to unravel sonic images without dissecting them, and to deliver music that's both homogeneous and cohesive. Everything else would also have destroyed the enchanting mood of Ella Fitzgerald and Louis Armstrong's 'Moonlight in Vermont', which was a 2.8 MHz DSD file. In addition, the converter had no problem reproducing the differences between the PCM standards with respect to room size or fine detail.

At the conclusion of our listening sessions and comparisons, one thing was clear—the PS Audio DirectStream DAC is one of the best products of its kind. What will please owners of the PerfectWave DAC is that for €3,000* there's a complete upgrade kit! **Matthias Böde**

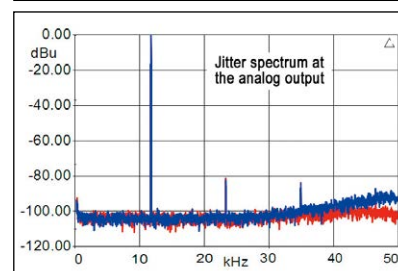
PS AUDIO DSD DAC



Price: approx. €5,995*
 Size: 44x10x42 cm (WxHxD)
 Warranty: 3 years
 Contact: PS Audio, Boulder
 Tel: +1 720 406 8946
 www.psaudio.com

PS Audio's DirectStream DAC is not just another high quality D/A converter. Its singular concept gives it a special status. Whether with PCM or DSD files, it renders an immensely detailed, very genuine sonic image.

MEASUREMENT RESULTS



Maximum frequency deviation	under 0.1 dB
Square wave/impulse behavior balanced	ok
Signal to noise ratio	95 dB
Quantization noise (24 Bit)	94 dB
Quantization noise (16 Bit)	92.6 dB
Distortion -60dBFS / -9dBFS / 400Hz	1.6 / 0.01 %
Converter linearity at -90 dB	0.2 dB
Output impedance (RCA/XLR)	125/290 Ohms
Output voltage 0 dB (XLR)	2.8 V
Power consumption Off standby idle	0 17 20 W

LAB COMMENTARY: The DirectStream DAC exhibits no weaknesses on the bench, although the SNR did not turn out to be ultimately high. While potentially a negative, it didn't seem to make its presence felt. Because of the low output impedance transformer, a power amp can be driven directly with long cable lengths.

FEATURES

Inputs: coaxial, optical, AES/EBU, USB, and 2xI²S for PS Audio's PWT drive, SD card slot for firmware updates. Outputs: one balanced (XLR) and one unbalanced (RCA) Accessories: power cord, remote control

STEREO-TEST

SOUND QUALITY **100%**

PRICE/PERFORMANCE

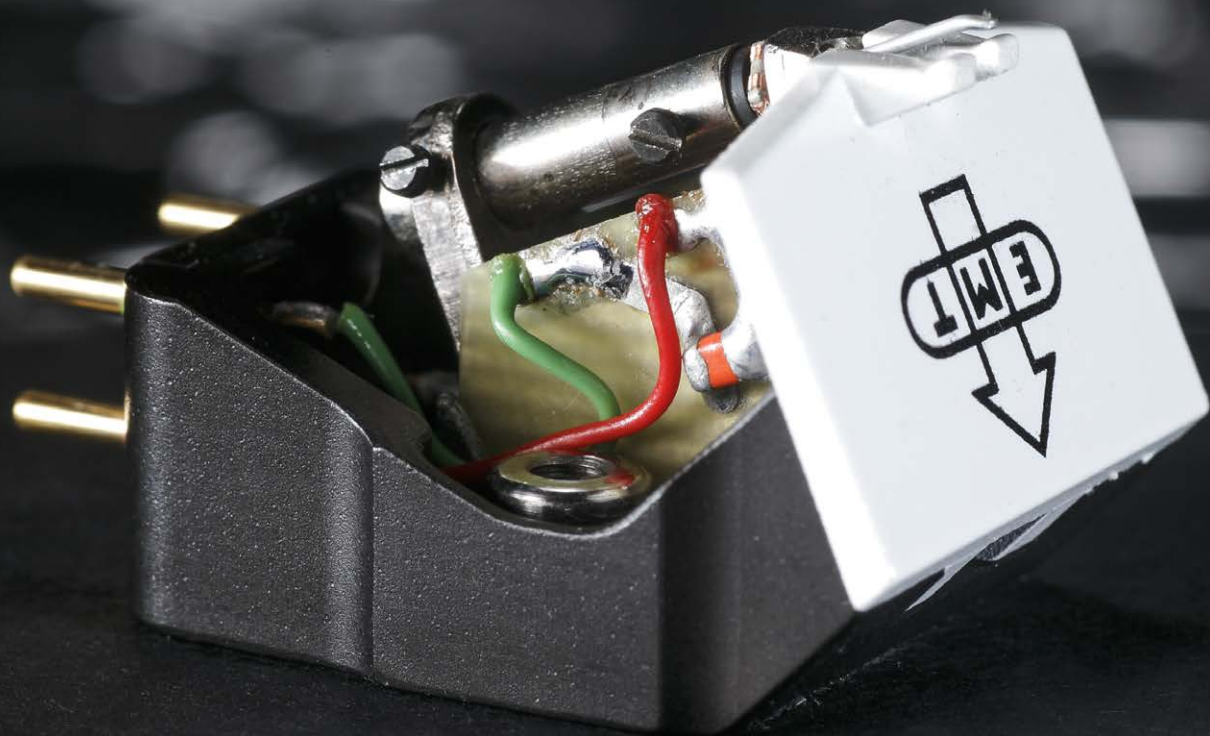


OUTSTANDING



▲ Comprehensive range of digital inputs. The slot for SD cards is for updates

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.



FOLLOW THE ARROW...

...because it goes straight to the heart of the music. With the new TSD 75, the analog legend EMT launches an exceptional MC cartridge

Now listen up boys! If you're looking for "flair" and audiophile "bling-bling", you're in the wrong place. Because the TSD 75 hails from the work sphere of the analog sector,

rather than from its gallery of fine arts. It is firmly rooted with both legs – sorry, with its Fine Line diamond – to the floor of music, and plays straightforwardly. In this form, it can only come from the

analog specialist "Elektro-Mess-Technik", i.e. EMT, in Switzerland, whose 75th birthday it's celebrating.

And it just wouldn't be right if the Jubilee MC of all things were not to tow the company line. Even from the outside, you can see where the design is heading – it's not your usual luxury outfit. With its functionally designed aluminum body, the most economical EMT to date is dressed

in its dungarees, so to speak, with nothing on top, as the armature is unconcealed. Are we seeing a grafter here, rather than an artist?

The fact is that the company has always supplied cartridges to radio stations and for professional purposes where working tools are required, rather than as delicate jewels for listeners who play records for pleasure. Nevertheless, we thoroughly enjoyed the rustic charm of the TSD 75, because it understands music and offers a gnarly groove. Where other MCs let the acoustic bass in "Bewitched" by the Earl Klugh Trio run along as if incidental, the EMT accentuated it with drive and force, pushing the piece passionately out of a deep black underground.

That immediately changed the musical perspective of the title from relaxed, cultivated background sound to a seductive piece that you can't get out of your head. Not the only occasion on which the new EMT seemed to almost inject the music intravenously. The "Blue Pacific" album by Michael Franks is a typical studio production: present, clean and smooth in the best sense. With the TSD 75, its colors were particularly radiant and strong. The cartridge applied them with a broad brush, concerned less about fine details and more about the whole. The EMT let

the backing singers drift like a warm summer breeze from the background, and rendered Franks at the edge of the stage with pristine precision and a pleasantly sonorous tonality.

A glance at the frequency record shows that the TSD 75 does not move along the ideal line of linearity, but that its curve in the higher frequency range smoothly yet steadily slopes downwards. This leads to – as a concession to "artistic freedom" – a slight dip in presence and muted treble. This doesn't mean that high notes sound subdued or even muffled, but a little tamer than those of most competitors and hence absolutely "analog". The recipe in short: less glamour, more glory.

This rendition makes the nice "loud" EMT, which is also available as a mono version or with a more elaborately detailed stylus cut made by Van den Hul, the ideal all-rounder that could be said to suit all records. In particular also older records with less perfect recordings. Aged Deccas will sound more emotionally charged, guitar music will be brimming with energy and crispness, because this MC is not a soft egg but a gutsy representative of its craft. If you are looking for just that, then you are well advised to follow the EMT arrow to the TSD 75.

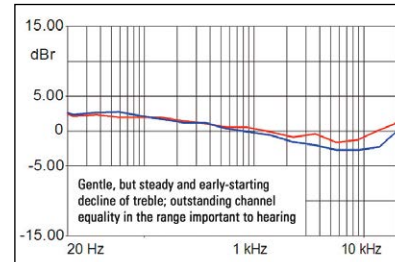
Matthias Böde

EMT TSD 75

Price: about € 1,475*
Fastening: half-inch, weight: 12 grams
Stylus force: 23 to 25 millinewtons
Terminating impedance: 250 to 400 Ohm
Output voltage: 1 mV (5 cm/sec)
Compliance: 12 µm/mN (for medium-weight arms)
Guaranty: 2 years
Contact: EMT Studioteknik
Tel.: +49 7825 87947 0
www.emt-international.ch

An MC with musical instinct that appeals with strong colors, intensity and gutsy force. The one thing it doesn't do: leave its listener cold.

MEASUREMENT RESULTS



FEATURES

Small brush, three sets of screws, mini-screwdriver

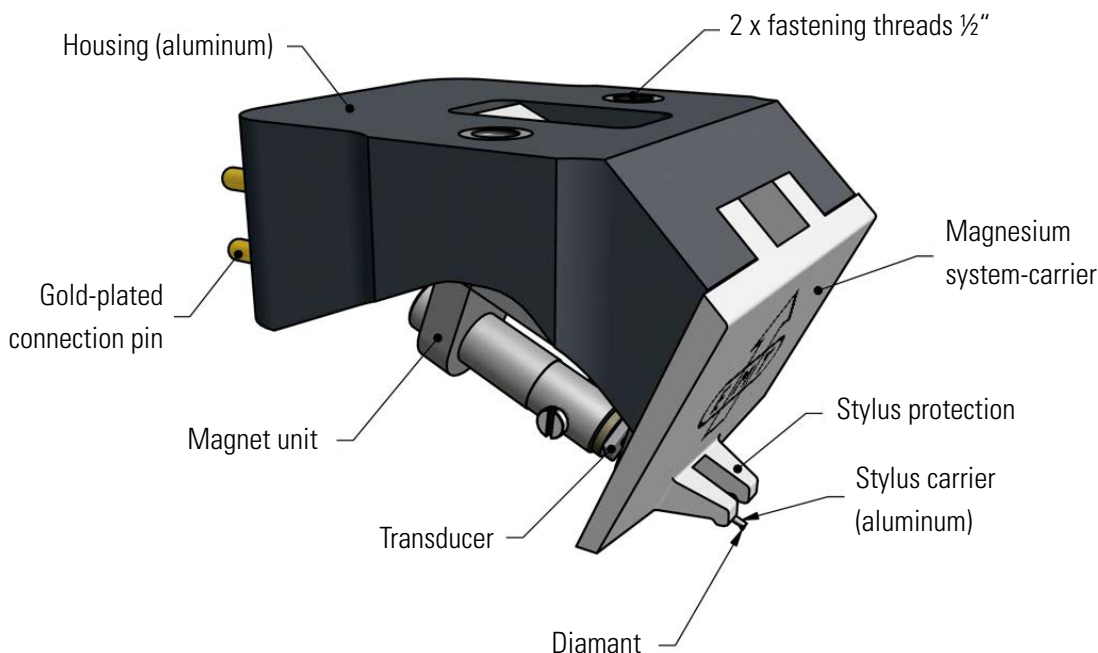
STEREO-TEST

SOUND QUALITY **85%**

PRICE/PERFORMANCE



VERY GOOD



*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

THE JOURNEY TO UTOPIA

Is such a trip even possible? With the newly introduced Sopra No. 2, Focal is sending a speaker down this path - a speaker which after a determined development effort is knocking at the door with respect to the great Utopia Series. This exclusive STEREO test report, however, wasn't a walk in the park for them.



It's a safe bet that this speaker will stir and electrify the high-end audio community. And it doesn't even need to be presented in its garish 'Electric Orange' shock color, as seen on the left. The new Sopra No. 2, whose name means 'superiority', is positioned just below the sophisticated Utopia line, sharing more than the same visual character. The ambitious task facing the development group at Focal was to create a floor standing loudspeaker offering the essential qualities of top-of-the-line Focal models, but in a more compact size, and at a lower price.

Not a simple task. Because in addition

to their unerring precision, the massively large Utopias derive a large part of their sonic fascination from the ease with which they move air in the lowest registers. Anyone attempting to accomplish this in a smaller cabinet will see themselves, as the French would frankly say, caught in a vicious audiophile cycle. Smaller enclosures mandate small woofers. This then requires lower efficiency, which in turn creates a demand for more power from the amplifier to achieve the

same levels—in and of itself a disadvantage—and leads to longer cone excursions for the bass driver. Distortion increases, and what the French describe as 'blurred sound'—smeared and undifferentiated reproduction—is the consequence.

Performance with a high-end flair

So, in juggling these various issues, the Sopra No. 2's performance at the outset, was about as far away from a razor sharp Blu-ray image as a blurred vacation photo. You curious readers who have already jumped to the lab results will have seen, however, that Focal ultimately managed to successfully combine high sensitivity with exemplary low frequency response, outstandingly low distortion, and, thus, finally break the vicious cycle.

It helped that as a vertically integrated speaker specialist, Focal was capable of utilizing sophisticated software simulation in the design process. In addition, they not only build their own drivers in-house, including the unique ultra-light and ultra-hard beryllium tweeter used



▲ The beryllium tweeter is a Focal highlight that the Sopras share with the great Utopias.



◀ The cabinets for Focal's Utopia, Sopra, and Electra Series speakers are all assembled in France, seen here being sanded, painted, and polished. Then finally, drivers are inserted.

A clear view of the tweeter module from behind (right). With 'Infinite Horn Loading' the rear sound components are directed away to eliminate interference. ►

TEST-COMPONENTS

TURNTABLE/PHONO-AMP: Clearaudio Innovation Wood, Universal, Stradivari V2/Absolute Phono

SACD PLAYER: Accuphase DP-550

INTEGRATED AMP: Symphonic Line RG 9 MK4 Reference HD

PRE/POWER AMP: Acoustic Arts TUBE PREAMP II/AMP II

LOUDSPEAKERS: DALI Epicon 6, KEF Reference 5

LS-KABEL: In-Akustik LS-1608/LS-2404, Silent Wire LS16 mk2

in the Sopra, but they also manufacture their own cabinets. Focal's new production facility had also just opened, which allowed them to immediately implement important changes and fine adjustments to the speakers. This turned out to be of critical importance.

Believe it or not, but as a reviewer you get a feeling about a loudspeaker when setting it up. By observing whether it is sensitive to small variances in the set-up, or how the sound takes shape when the channels lock into place with that final millimeter-exact adjustment, you begin to understand the extent to which the manufacturer has truly gotten into the tonal structure. And, what can I say—we felt the new Focals, because of their precision and response to even the smallest change, actually tested us and our ability to get perfect performance out of them.

Everything turned out to be optimized when we set the Sopras up just above the shoulders of the middle listener, with vertical alignment confirmed by a carpenter's level, and utilizing the integrated spikes built into their glass bottomplate. The team simply marveled at their beautiful sound quality.

The 'soundtrack' used in positioning the Sopras was once again Maria Phils' 'Malvina' from the STEREO listening test CD VI, heard hundreds of times before. With their mixture of spaciousness and sharp focus, powerful but contoured bass, and crystal clear rendering of voices, they delivered beautiful music that

came across without an artificial touch. They balanced all parameters, and accomplished this in the least compromised way possible.

In the end, the performance was so elevated that the Sopras remarkably seemed to disengage from the room, and 'Malvina' appeared—in all its facets, and also as a coherent whole. All this was accomplished with the distinguished and dominating flair that differentiates real high-end, and in so doing moved the Sopras closer to the Utopias, which they formally emulate in terms of driver complement—bass and midrange, as well as the beryllium tweeter placed in between.

And with the Red Norvo Quartet's 'Saturday Night'—another classic listening test—the Sopras were thrilling in the way they captured the dry, highly dynamic vibraphone bursts and attacks, and at the same time the soft voices in the background—the random audience noises—placing these sounds at the correct distance from the band with rarely heard clarity. Hat's off!



▲ One pair of binding posts are sufficient for the Sopra - and us as well. Connect to a high quality amp, and off you go!



Fight the eddy currents!

But the Focals can also grab. And they did so with Monty Alexander's 'Moanin', where they delivered the taut and powerful bass with authority—and at virtually any volume. There's no question that besides the ability to gently reproduce sublime accents with sensitivity, the Sopra No. 2 can deliver crisp and abrupt passages with the force of a hammer—and with its efficiency, only moderately challenge the amplifier. And certainly none of this really mattered to the massive Acoustic Arts power amp which was used for this exercise.

Despite all the power, you have to wonder how the Sopras do it. Although their new 18 cm bass driver offers the same sophistication found in the mid-range transducer, and was adapted specifically for the 'Sandwich W' diaphragm

The spikes which are integrated into the glass bottom plate are both delight and simple to adjust. The package includes floor protectors. ▼

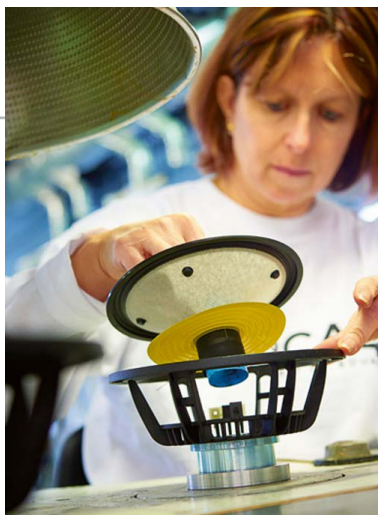


The compact No. 1 is part of the Focal Sopra line. Its price including stands is around €8,000*/pr. ►

configuration (made up of a synthetic foam core and a fiber glass film), its motor assembly was redesigned during the development process.

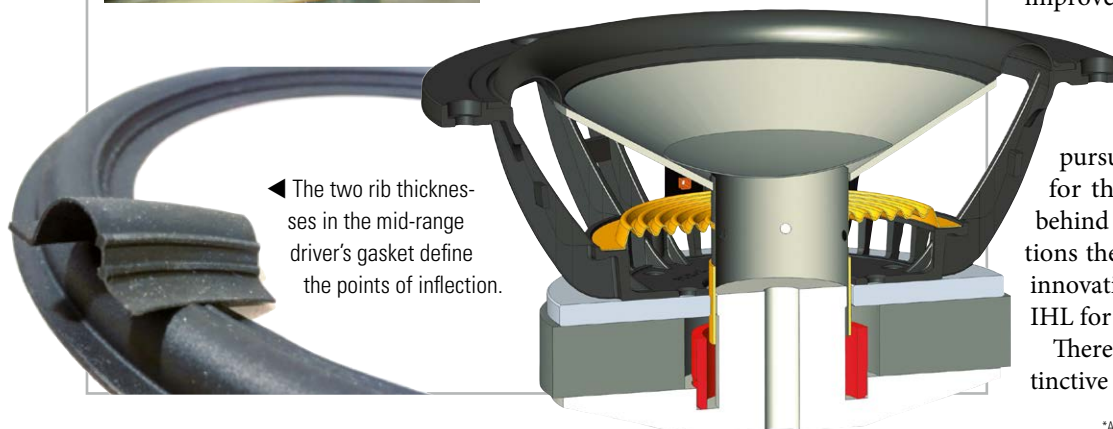
The manufacturer, which employs more than 200 people, spent many years experimenting with the problem of complex interactions involving multiple factors in a dynamic driver's electromagnetic system. These interactions manifest themselves in many different ways and are affected by the location of the voice coil in relation to the magnetic field. An important part of what Focal did over this period was to run elaborate computer simulations and practical tests to gain an understanding of electromagnetic eddy currents, their harmful effects, the mechanisms by which they impede the movement of the diaphragm, and ultimately finding a solution.

The key turned out to be a Faraday ring in the magnet assembly. This, isn't in and



◀ Focal manufactures Sopra's drivers at the company location in Saint-Étienne, France. Here, a voice coil/cone assembly for a midrange driver is being mounted into the magnet system and frame.

In this cut-away drawing of the woofer you'll see the Faraday ring (highlighted in red), which is used to counter disturbing eddy currents. Its position is the result of extensive computer simulation and practical testing. ▼



◀ The two rib thicknesses in the mid-range driver's gasket define the points of inflection.

of itself actually an innovation, however, and is used by other manufacturers to counter phenomena described long ago. But in diving deeper, Focal found that the ring should sit very specifically at the bottom of the pole piece, without any physical contact with the pole piece itself or the magnet.

Is this ultimately why the Sopras' sound so lifelike and relaxed? After all, these qualities have long distinguished Focal, but they may now be even slightly improved. Ultimately, at this high level, the French fight for every ounce of improvement.

As a consequence of this kind of commitment, Focal also pursued and came up with a solution for the braking compression effects behind the dome tweeter, and the reflections they generate. The remedy was an innovation called Infinite Horn Loading, IHL for short.

There may be a question about the distinctive silvery lattice on the Sopra's back

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

panel. It's not a cover for a bass reflex port, as you might suspect. (The port itself is actually located on the speaker's underside and integrated into the glass base.) This particular opening allows the dome's rear radiation to escape into the open air and dissipate—eliminating any possibility of interference. As part of its design, the manufacturer built a complete module, isolating and separating it from the bass and midrange chambers.

Incidentally, I can't help but offer this thought regarding midrange—'in the land of charming language you love beautiful voices'. So not surprisingly, with the Sopra, Focal also introduced a new feature called the Tuned Mass Damper (TMD), an innovation implemented in its 16.5 cm midrange driver. It consists of two carefully calculated rib thicknesses in the driver's gasket to assist in the precise deflection of the membrane. Not worth talking about? Well, Focal reports that they went through more than 100 iterations before settling on the right combination.

Unity & resolution



▲ He should certainly be proud. Focal-grand seigneur Gérard Chrétien, who guided the Sopra-project.

These are the most important elements of the technical description as it relates to the Sopra series (there is still a compact model in the line called the No. 1). But before totally losing ourselves in the no. 2's technical innovations, we preferred to listen to music. For our evaluations, we decided to remove the guard over the extremely fragile beryllium tweeter, which was held in place by two tiny socket screws. Admittedly, this step only provided a touch more transparency and naturalness, but what the heck!

The fact that the No. 2 is outfitted with only one pair of speaker terminals didn't really bother us. This avoids the issue of a discontinuity—a loss of sound—when using a single cable for dual terminal bi-wire connection, misaligned jumpers, or entirely unsuitable sheet metal bridges. As for the cable, while the Sopra clearly revealed differences between cables, it showed no preference nor dislikes. Depending on the amp, room acoustics, and listening preferences, the listener should be able to adequately choose cables for his particular situation. With these things in mind, his choice should be just fine.

Even though the Sopras can easily work with and motivate playing partners, including smaller amplifiers, they really appreciate perfection. The Sopras were in top form as described above, when we used them with our best reference components. They were never overstated; and they presented themselves as honest, extremely transparent portals for virtually every kind of music. Sol Gabetta's lively interpretation of Baroque cello concertos, for instance, radiated from their membranes with delicacy and softness, while the low frequency pulses at the beginning of Carolin No's 'Still Waters Run Deep (Listening Test-CD VIII) were convincingly succinct and uninhibited.

Two advantages in particular should be pointed out from among this speaker's strengths—its ability to create credible sonic images and present them as a tightly knit whole; and then its radical openness, which reveals itself in the most delicate ways. Listening to the Sopra no. 2 was pure pleasure—and a journey right up to the sonic cosmos of the Utopias.

Matthias Böde

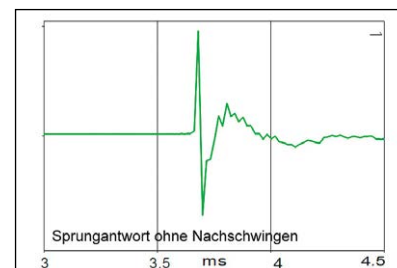
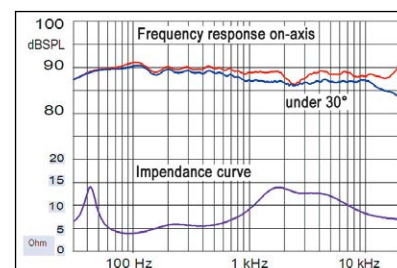


FOCAL SOPRA N°2

Price € 12,000*/pr (four lacquers and one veneer)
Size: 36x119x54 cm (WxHxD)
Warranty: 10 years
Contact: Focal
Tel: + 33 477 435 700
www.focal.com

The new Sopra is imbued with technical highlights such 'Sandwich W' composite cones, alongside the company's famous beryllium tweeter. Smart design details and extremely careful coordination make the Sopra an absolutely top tier product.

MEASUREMENT RESULTS



Nominal Impedance	4 Ω
minimum Impedance	3.4 Ω at 90 Hertz
maximum Impedance	14.2 Ω at 1800 Hertz
Sound Pressure (2.83 V/1 m)	90 dB SPL
Power for 94 dB (1 m)	4.7 W
Low frequency extreme (-3 dB)	33 Hertz
Distortion at 63 / 3k / 10k Hz	0.3 0.1 0.1 %

LABORATORY COMMENT

Excellent linear on-axis frequency response (red line), with a very gentle drop towards the low frequency range. The small narrow band intrusion between two and three kilohertz is irrelevant in practice, since it disappears at an angle (blue line). High efficiency, and a non-critical impedance curve. The minimum at 90 Hz will not scare any amp. Excellent step response. Drivers reaction is almost coincident with the impulse, and ringing is nearly non-existent.

STEREO-TEST

SOUND QUALITY	95%
PRICE/PERFORMANCE	
★★★★☆	
EXCELLENT	

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

ELAC expands the Air-X family



The latest addition to ELAC's AIR-X family is the AIR-X 409 - the wireless version of the FS 409. The two 18 cm woofers are fired by a 300-watt „ICEpower“ power amp, while the 15 cm midrange and the JET 5 tweeter units are driven by Class A/B power amps. The AIR-X 409 retails for € 3.990* per piece. The AIR-X system comprises the amplification unit AIR-X AMP and the base station AIR-X BASE. The BASE serves as a control centre for miscellaneous sources. The digital audio transmission is effected on a lossless 24-bit/48 kHz basis. The AIR-X system is multiroom compatible, whether an entire apartment is filled with sound in party mode or various rooms are provided with different types of music.

Contact +49 431/647740 or
www.elac.com

Lehmannaudio Linear D

Lehmannaudio has extended its series of headphone amplifiers. Besides having a further upgraded analog section of proven Class A circuitry now using six mica capacitors, the new amplifier highlights a state-of-the-art Sabre DAC from ESS, capable of handling data up to 24-bit/192 kHz and additionally featuring a sophisticated filter section. Signals can be received via Toslink or RCA. Two Neutrik headphone jacks on the front as well as an analog input and a pair of output sockets on the back make the Linear D a full preamp for up to three source components. In combination with a power amp or active speakers it forms the basis for a minimalist hi-fi system. The Linear D rests on three CCS absorber feet. The gain is switchable in three stages - an already known and practice-oriented feature. Sonically the Linear D stays a genuine Lehmann product. Having used three high-quality headphones of different impedances for the listening test as well as a selection of music from Bruckner to the Stones, its character always remained the same: neutral and highly detailed, suitable for long-term duties and always with the music. In short, it does everything that did make his two brothers famous - and perhaps even a bit more. Price: € 1,249*.

Contact: +49 2202/2806240 or
www.lehmannaudio.com



BeoLab 90 for € 70,000*

For their 90th company jubilee B&O presents a speaker in a class of its own: The BeoLab 90 is equipped with no less than 18 Scan Speak drivers, which are fired by 14 ICEpower and four additional Class D amplifiers with a total of 8,200 watts. The „Active Room Compensation“ allows not only to adapt the sound to the room acoustics, but also to any desired listening position - not just for the sweet spot.



Adjustment is done by means of an app or the supplied remote control. The BeoLab 90 involves a master-slave arrangement where the electronic section in the master box can be analogously or digitally controlled. 65 kilos of aluminum were processed by B&O in each

speaker, and they rest on a curved wooden base. Extraordinary is also the price: about € 35,000* per piece. The BeoLab 90 will be available towards the end of the year at selected Bang & Olufsen retailers.

Contact: info@bang-olufsen.com or
www.bang-olufsen.com



Naim NDX

Naim streamer: updated to DSD

With an extensive firmware update Naim lifts their fleet of network players up to date. Thereafter, all models will be able to stream Spotify Connect in multi-room mode. The models ND5 XS, NDX, NDS and SuperUniti will then play the 2.8 MHz DSD format as well, while the NAC-N 272 has been already DSD compatible. As from now newly produced units from the series ND5 XS, NDX and NAC-N 172 XS will be shipped including Bluetooth with aptX decoder. Consequently Naim will be raising the prices slightly.

Contact: +44 1722/426600 or
www.naimaudio.com

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.



**The perfect service
for demanding music
lovers and fans
of true sound quality**



**Offer the gift of
music this christmas**

- Offer a streaming subscription or a gift certificate for downloads
- Specify the amount of your choice
- Give your gift immediately or at the time of your choosing
- Add a personal message to your gift
- Customize the design of your card!

Go to qobuz.com/givemusic



Qobuz is a digital music service that gives you access to millions of songs in CD quality. Qobuz also has the world's largest catalogue of Hi-Res music to download.

www.qobuz.com

Blumenhofer renovates FS3

Speaker-builder Blumenhofer has transferred their concept of „harmonic construction“ also to their model FS3. The MK2-2 version of this speaker now comes with a newly designed horn bracket and horn course as well as a new 25 cm woofer (instead of the 20 cm unit) and a floor-pointing bass reflex port. What remained unchanged are its well-known benefits such as a high efficiency and a good-natured impedance response. The price is € 9,750* per pair.

**Contact: +49 8239/7394 or
www.blumenhofer-acoustics.com**



Rosso Fiorentino Giglio

The relatively young Florentine company Rosso Fiorentino, founded in 2006, presents with its Giglio model a nobly finished 8 ohm two-way bass-reflex speaker in the classic tradition of Italian loudspeaker manufacturing. Side walls and baffle are covered with black or white deer leather, the baffle itself is with its lateral cheeks slightly wider than the rear panel. Bottom and top plates are shaped correspondingly trapezoidal. Internally the cabinet is elaborately damped and remains surprisingly quiet in operation. The connectors (single wire!) come as solid screw terminals made of nickel-free, hundred percent pure copper, suitable for both bananas and spades. The internal wiring is supplied by van den Hul. The two transducers, a 165 mm coated fiberglass woofer and a 25 mm dome tweeter, fit neatly into the baffle, the reflex port is on the back. Placed on the optionally available speaker stands, and giving them according to their size a listening distance of about two meters while angling them in, these speakers perform very clear and balanced by spanning a clear-cut soundstage paired with precise positioning. Detailed, not peevish at all, with a properly contoured bass and surprisingly reaching deeper down to the lows than the size of the box may have suggested. In its price range of about € 1,800* the Giglio is certainly a candidate you should listen to. The robust stands and enough rear space to the back wall are mandatory.

**Contact: +39 055/696963 or
www.rossofiorentino.com**



Rejuvenation for Octave V80

Octave's integrated tube amp V 80 has received an entirely new amplifier architecture - comprising a new driver stage, a new power supply and an updated output transformer to adapt to the higher output power of 130 watts per channel. Also, the headphone amplifier has been completely redeveloped. The V80 SE is now available at dealers for € 9,250* in silver or black. As usual, a phono board (MM or MC, each per € 90*) can be installed as an option. Loyal V 80 customers can benefit from a special upgrade package, which renews the driver stage and retails for € 1,595* (€ 1,895* with KT150 tubes). The conversion is performed by Octave and comes with a full two-year warranty.

**Contact: +49 7248/3278 or
www.octave.de**



*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

Denon DCD-50/PMA-50

Denon has introduced at the HighEnd show in Munich an extremely attractive conceptual compact hi-fi system. Available to date are the integrated amplifier PMA-50 (€ 600*) and the CD player DCD-50 (€ 400*), both of which show up in a high-quality, matt aluminum look. The CD player has a slot loading mechanism, and both components can be positioned either horizontally or vertically, thanks to the self-orienting OLED display. The

digital connection in conjunction with the accurate DAC Master Clock Design and Denon typical technologies such as „Advanced AL32 Processing“ is intended to offer a high sound quality. The USB-B port on the Class D amplifier PMA-50 transforms the small system into a full-fledged modern sound station for a connected PC or Mac, and also allows access to their hard drives, including DSD audio performance. Bluetooth ensures easy connectivity also for mobile devices. Besides the sophisticated operating and design concept, we liked the small Denons' lively performance. Attention should be paid to combining them with neutral to slightly warm sounding speakers, otherwise the tangy duet might possibly sound a little too bright. The Denon components are available in Premium Silver/Black.

Contact: www.denon.com



Nagra Classic Amp

Entry level“ is a term that should be interpreted carefully here, as Nagras Classic Amp, launched at the HighEnd show in Munich and now introduced to the market, costs a whopping € 14,900*. Nevertheless, this stereo power amplifier, operatable also in a bridged configuration, replaces the MSA, yet having been the smallest amplifier from this Swiss manufacturer located at Lake Geneva. With its 28 centimeters of width and 17.5 cm of height, the Classic Amp is somewhat bigger than the MSA, but still compact. The uncluttered front panel is adorned with the typical „Modulometer“, showing the power of each output channel. An LED warns against overload. With around 100 watts of continuous power per channel into eight ohms, the power amp in each of its output stages is moderately equipped with a pair of special MOSFET transistors. But during the first trial run on Focal's Sopra No2 it astonished with particular neutrality in the mid range and an unexpectedly dry punch in the lows. Voices unfolded with touching authenticity, drum kicks jumped out resiliently. The performance was extremely relaxed, neatly organized and diversified, and so it made a very laid-back impression, while responding seamlessly to dynamic jumps. Even with only a little of burning-in time a very promising piece of gear! A test review is definitely on the cards for a future issue.

Contact: +41 21/7320311 or www.nagraaudio.com



Phono preamp by AVM

The Baden High End manufactory AVM is now offering a new phono preamp for MM and MC cartridges. The P1.2 is housed in an all-aluminum casing that is designed to minimize microphonic effects. Signal paths are reduced to the absolute minimum. Phono load adaptors of 100, 200 and 1000 ohms are included in the scope of delivery. Bundled with an external power supply, the P1.2 retails for around € 700*.



Contact: +49 7246/4284 or www.avm-audio.com

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.



ELECTROCOMPANIET

If music really matters...



ECG 1 Turntable and
ECP 2 Phono Stage

*The voice of your
records collection*



Tel. +47 51 74 10 23

sales@electrocompaniet.com

www.electrocompaniet.com

Made in Norway

Amplifier with IR transmitter

Pro-Ject adds an amplifier to their BOX series, which allows the control of the entire hi-fi system via an app. The MaiA DS (around € 800*) receives its commands from smartphones via Bluetooth and transmits them via infrared beam to other hi-fi components operating a conventional infrared control system, including those from other manufacturers. The app is available at no-charge in the Google Play Store - an iOS version will follow. Three line sources and a MM or MC cartridge can be connected to the MaiA DS, furthermore three S/PDIF sources (1 x RCA, 2 x optical) as well as a PC via USB-B. Accordingly,



the MaiA DS processes PCM data up to 24-bit/192 kHz and DSD data up to 11.2 MHz. A motor potentiometer controls the volume. Pro-Ject specifies the output power with 2 x 55 watts into 4 ohms.

Contact: info@project-audio.com or www.project-audio.com

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

Top universal player by **Cambridge**

The already excellent Blu-ray player Azur 752 BD from Cambridge Audio is now yet bettered: Their new top model is named CXU and retails for around € 2,000*. The novice plays all disc formats including SACD, DVD-Audio and CD and features five Wolfson WM 8740 DACs. The proprietary audio upsampling technology ATF converts all signals up to 24-bit/192 kHz. The CXU can also serve as a DAC: It offers two HDMI inputs, both an optical and a coaxial S/PDIF input, and three USB-A ports for connecting storage devices, as well as a LAN port. Also a wireless dongle is enclosed. For direct connection to a power amp the line outputs can be switched to adjustable volume control.

Contact: info@cambridgeaudio.com or www.cambridgeaudio.com



Player for 70,000 Swiss Francs

Solution from Switzerland comes up with a super-class CD/SACD player: The 746+ uses an external power supply unit which is equipped with five separate power supplies for both digital and analog circuits, as well as for the SACD drive section coming from Esoteric. Four digital inputs (S/PDIF RCA, S/PDIF BNC, Toslink and AES/EBU) accept PCM data up to 24-bit/192 kHz and DSD bitstreams up to 2.8 MHz (over DoP). The analog output stages are identical to those in the Solution 725 preamplifier. The 746+ is produced in a limited edition of 20 units and retails for 70,000 Swiss Francs. For the SACD players 745 and 746, the manufacturer offers an upgrade to 746+.

Contact: info@solution-audio.com or www.solution-audio.com



KLUGHOERNER

THE LEGEND IS BACK
Handcrafted Multicell Horns
made in Germany



WWW.KLUGHOERNER.DE
KLUGHOERNER@GMAIL.COM

Worldwide shipping

Soltanus: Two-way electrostatic speaker without crossover

The Serbian manufacturer Soltanus Acoustics has developed a full-range electrostatic loudspeaker, which operates two dipole transducers for the bass and one for the treble, thus without requiring any crossover. It is called „Virtuoso“ and is recommended for amplifiers with an output power of 25 watts and more, while the damping factor should range above 25. For the horizontal dispersion Soltanus specifies an angle of 35 degrees. The tweeter can be adjusted to different room acoustics. In addition to the Virtuoso, Soltanus presented the „Cricket“, a particularly slim electrostatic speaker, which uses a dynamic driver for handling the low frequencies. The prices per pair range at € 9,950* for the Virtuoso and € 5,750* for the Cricket. The distribution for Germany, Austria and Switzerland is carried out by IBEX Audio.

Contact: +38 164/8251464 or www.soltanus-acoustics.com



Soltanus Virtuosos (r.) and Soltanus Cricket (l.)

DALI activates Zensor models

Active loudspeakers are in vogue, and so DALI has been offering as from mid of August the models Zensor 1 and Zensor 5 also in an active version following the master-slave concept: The active speaker is driven analogously via mini jack, digitally via Toslink or wirelessly via Bluetooth using the aptX-codec. Amplification is done by a 2 x 50-watt power amp. The supplied speaker cable is then connected to the second, passive speaker. The Zensor 1 AX is a two-way bookshelf speaker for the set price of € 600*, while the Zensor 5 AX shows up as a floorstanding model instead, equipped with a second woofer, retailing for about a thousand* euros. Also new to the DALI family: the Zensor Pico and the compact center speaker Zensor Pico Vokal. Its baffle is sized as small as a DIN A5 sheet, and they cost € 120* each.

Contact: www.dali-speakers.com

Zensor 1 AX (left) and Zensor 5 AX



Sennheiser's statement in headphones

Dramatic music plays, a curtain falls, and there it is: Sennheiser's new world-class headphone system. As if by magic the tubes glide out of its eight-cylinder block into the air and start glowing, while a smoked transparent glass cover opens up and provides a view on the headphone. Nearly 25 years after the debut of the famous „Orpheus“, then selling for approximately DM 30,000 and comprising an electrostatic headphone and a tube amplifier, thus being at that time the world's most expensive headphone system, the managing directors Daniel and Dr. Andreas Sennheiser from Wedemark's specialists announced with a ceremonial act their next coup de main. And they made it thrilling. Only just a few paltry pieces of information were disclosed. The housing is made of Carrara marble, the frequency range of the just 2.4 microns thick, platinum-vaporized diaphragms is said to reach beyond 100 kilohertz. But, no name, no price, no further technical details. These will now be communicated bit by bit through the website. What already could be seen: The amplifier has analog inputs and outputs as well as inputs for digital sources. We assume that Sennheiser again uses the electrostatic principle for their new headphone model. At least this could be evoked by the multi-pin connector, as this transducer type requires additional supply voltages. And, there is also a connection for a second headphone. Currently, there is not much more to report about. Unfortunately, this milestone could not be admired at this year's IFA.



▲ Daniel and Dr. Andreas Sennheiser present the new world-class headphone system.

Currently, there is not much more to report about. Unfortunately, this milestone could not be admired at this year's IFA.

Contact: +49 5130/6000 or www.sennheiser.com



*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

V.d.Hul The Crimson S.E.

The Crimson S.E., the enhanced version of the third-best model of „Old Master“ van den Hul's selection of cartridges, showcases an open wooden body and comes personally hand-built by the master himself. You hardly dare to touch the whopping €4,790* expensive gem, for fear of accidentally snatching and damaging the defiantly protruding boron cantilever carrying a sharply contoured VDH1S stylus with 2 microns of lateral stylus rounding. And the needle guard? No chance! Just following



the motto: No risk, no fun. And fun we really had with this elaborate tracker whose relatively high compliance appears quite unusual, but works perfectly on medium-weighted tonearms like the Reeds 3P (see photo) or the SME Series V. And that with just a tracking force of 15 millinewton, rendering even supercritical passages clearer than the majority of its classmates did on five to ten more millinewtons. But what really spices things up is the exceeding virile sonic performance,

shimmering in finest detail and vitality, and breathtaking right from the start even for the most hard-boiled reviewers around. The Crimson S.E. builds up a tingling musical tension, always appears as on the go, yet playing extremely spacious, sorted and sovereignly relaxed. This cartridge is a real stunner. And by the way, favorably „loud“, too. Analogue hearts - what more do you want from life?

Contact: info@vandenhul.com or www.vandenhul.com

New MC cartridge from **AIR TIGHT**

Company founder Atsushi Miura has developed a new MC pick-up: The PC-7 operates on a completely new concept and replaces its predecessor PC-3. Its body consists of high-density aluminum, the cantilever is made of boron, and the stylus shows a Microridge shape. The manufacturer recommends a tracking force of about 2 grams - and a retail price of €2,990*.

Contact: +81 72/6780064 oder global.airtight-am.net



*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

The

SkyScraper ESAT+

DVB-S/S2 satellite audio only radio

fotos: www.photocase.de



Emotions are expressly permitted if you are talking about RESTEK.

RESTEK is the term for conscious, critical listening, aesthetic and extremely high technological level.

RESTEK represents a new understanding of music and life in the range of high end audio. Design and production product quality scales what high end high end audio lovers are demanding of a premium brand, longevity, reliability, recoverability and repairability.

RESTEK[®]

Headphones made of aluminum and stainless steel



The Japanese manufacturer Final launches new circumaural headphones in an extravagant price range: „Sonorous VIII“ (around € 2,800*) and „Sonorous X“ (around € 4,600*) are equipped with transducers with titanium diaphragms as well as with an enclosure made of aluminum and stainless steel. Incidentally, the company no longer names itself „Final Audio Design“, but simply „Final“.

Contact: info@final-audio-design.com or www.final-audio-design.com

Dynaudio streams

Both active speaker models Xeo and Focus XD from Dynaudio have already been wirelessly controlled. For this purpose Dynaudio has been offering the wireless transmitter named „Hub“, which provides inputs for analog and digital sources. Now Dynaudio has taught this little piece of gear how to stream: The new „Connect“ is able to access DLNA servers in your home network via WLAN and thanks to Spotify Connect retrieves music from the internet. Music from smartphones comes via Bluetooth. The Connect is capable of transmitting audio to the Focus XD speaker on a wireless 24-bit/96 kHz high-resolution basis. It is now available for € 350*.



Moreover, Dynaudio launches the new entry-level loudspeaker series „Emit“ in the market: two shelf models, a floorstander and a center speaker, available in semi-gloss black or white. Prices start at € 600* per pair.

Contact: [+49 5201/87170](tel:+49520187170) or www.dynaudio.de

Tangential tonearm by Clearaudio

Tangential tonearms offer clear advantages, but are often very expensive. This autumn Clearaudio releases with the TT5 one of those parallel tracking tonearms, but for



just under € 2,000*. Adequate stability comes from a sturdy aluminum construction. The stiff carbon tube runs on precision rollers on a glass rod. There is no tilt mechanism; for changing a record it has to be moved just below the cantilever. Also new in the Clearaudio range of products: The phono pre-amps Basic+ and Balance+. Both offer external power supplies, a switchable volume control for connecting them directly to power amplifiers, and a headphone output, while the top model even offers balanced inputs and outputs. A battery-based power supply is available as an option. Prices haven't yet been fixed.

Contact: [+49 1805/059595](tel:+491805059595) or www.clearaudio.de



Magico's growing family

The Californian loudspeaker expert Magico is expanding its S series to the floorstanding S7 (58,000* U.S. dollars the pair) and the subwoofer S-Sub (as from 15,000* U.S. dollars). Both models use a closed cabinet with a body made of bended, 13 mm thick aluminum. The 3-way model S7 houses three 25 cm aluminum cone bass drivers, a 15 cm midrange driver whose cone material is formed of a combination of multi-walled nanotubes and Nanographene, and a tweeter featuring a diamond-coated beryllium diaphragm. The crossover includes components from Mundorf of Germany. The subwoofer S-Sub was launched in August. He is equipped with two 30 cm woofers, which are fired by 2,500 watts of amplifier power.

Contact: [+1 510/6499700](tel:+15106499700) or www.magico.net

Zeppelin - all new and counting

Eight years ago it started as a „docking station“ for the iPod and it's siblings - today it's called „Zeppelin Wireless“ and is already in its fourth generation. And it is more than ever a real Bowers & Wilkins: equipped with two 25 mm tweeters with a double-layered aluminum dome as it also appears in the CM series, two 90 mm midrange drivers with FST technology, the likes already doing service in the 800 Diamond series, and an up-sized 150 mm woofer. To the fiberglass-reinforced housing B&W now even added more stability to prevent vibration, while the electronic section now operates internally with a 192 kHz clocking. The Zeppelin Wireless no longer offers a docking facility, but it can be fed with music via AirPlay, Bluetooth with aptX and Spotify Connect. New as well is an app to control all playback functions. Launched back in October the Zeppelin Wireless retails for around € 700*.



Contact: sos@bwgroup.com or www.bwgroup.com

*All prices listed are German retail prices incl. VAT valid at the time of evaluation.

STEREO

STEREO-MAGAZINE.COM

REINER H. NITSCHKE Verlags-GmbH

Eifelring 28, 53879 Euskirchen

Telefon: +49 2251 65046 0

Telefax: +49 2251 65046 49

Herausgeber und Chefredakteur:

REINER H. NITSCHKE

Geschäftsführender Redakteur:

MICHAEL LANG

Sonderaufgaben:

MATTHIAS BÖDE

Redaktion:

CARSTEN BARNBECK, ANDREAS KUNZ,

TOM FRANTZEN, Dipl.-Ing. ULRICH WIENFORTH

STEREO-Messlabor:

Dipl.-Ing. ULRICH APEL

STEREO-Fotostudio:

JOACHIM ZELL

Grafische Gestaltung:

HILGA PAULI, DANIEL SCHIEPE

Redaktions-Assistenz/Korrektorat:

CORINNA KRAMER, LUIS FERNANDES

Objektleitung:

VOLKER PIGORS

Anzeigenleitung:

ILHAMI DÜZGÜN

Telefon: +49 2251 65046 20

Telefax: +49 2251 65046 29

email: marketing@stereo-magazine.com

Anzeigenabwicklung:

ANDREA ENGELS

Telefon: +49 2251 65046 22

Telefax: +49 2251 65046 29

email: andrea.engels@nitschke-verlag.de

Mediadaten:

Media-STEREO-Magazine-2015/2016_EN

Media-STEREO-Magazine-2015/2016_DE

Copyright für alle Beiträge, Messdaten, Diagramme und Fotos bei der REINER H. NITSCHKE Verlags-GmbH.

Das Magazin und alle in ihm enthaltenen Beiträge, Messdiagramme und Abbildungen sind urheberrechtlich geschützt.

Mit Ausnahme der gesetzlich zugelassenen Fälle ist eine

Verwertung ohne schriftliche Einwilligung des Verlags

strafbar. Für unverlangte Einsendungen keine Gewähr.

Namentlich gezeichnete Beiträge unserer Mitarbeiter stellen

nicht unbedingt die Meinung der Redaktion dar.

Weitere Verlagsobjekte:

In der Reiner H. Nitschke Verlags-GmbH erscheinen die

Zeitschriften STEREO, FONO FORUM, drums & percussion,

TOURENFAHRER, MotorradABENTEUER und Motorradfahrer

STEREO ist
exklusives
deutsches
Mitglied im
Audio-Panel
der EISA

