

STEREO

THE GERMAN HIFI MAGAZINE

ISSUE #14 2018

AVANTGARDE ZERO 1A



**NO MATCHING:
ONE SPEAKER
TO MAKE ANY
SYSTEM SHINE!**

AMPLIFIER SHOOTOUT PURE OR PACKED? HOW TO CHOOSE YOUR NEXT AMP



**REVIEWS: MARANTZ SA-10/PM-10 +++ GAUDER VESCOVA MKII
+++ QUAD ESL-2912 +++ BATMAN'S TURNTABLE? AND MORE!**



IN ADMIRATION OF MUSIC

SHARE THE MUSIC YOU LOVE. ANYWHERE!



DALI SOUND WITHOUT BOUNDARIES

The DALI KATCH strikes the perfect balance between portability and performance, offering true audio DNA in a handy, elegant design.

WHAT HI-FI?
AWARDS 2016

PRODUCT OF THE YEAR
Best portable wireless speaker £200+
DALI KATCH

www.dali-speakers.com/katch

Express yourself
Available in three colours:



Dark Blue • Cloud Gray • Green Moss

HIFI MEANS LIVABILITY



Visit us at:

facebook.com/stereo.hifi.magazine



HiFi has, without a doubt, got lost in translation: these days it's no longer a main focus for those one might like to think are its potential customers. Even worse, compared to where it was in the 70s and 80s, where every new student wanted to go to college with a hi-fi system, it's now been almost completely replaced by iPhones, PCs, flatscreens, bigger cars or other obvious signs and toys of prosperity. HiFi has become more of a „hidden treasure“ – or maybe even a „guilty pleasure“

These days a hi-fi system is no longer a central feature of our living spaces: instead, while music is everywhere, it's not seen as that important – rather it's taken for granted. Equipment is becoming either cheap 'does it all' plastic crap that is hardly joyful, or extremely expensive devices designed to keep the revenues up as the numbers diminish. In some cases the latest thing is no better than its predecessor, but costs a lot more. And people coming back after years to see what happened since they bought their (really good) systems are shocked by the prices. Mainstream customers are satisfied with Bluetooth from their phone, or digital radio with data rates far below FM quality – yes, some want to have a turntable on display, but how many actually use it much?

HiFi and High End have more than one problem: other products can appear sexier, and while the kids are still into music, up-and-coming generations really don't have an idea of really exciting music reproduction. Even worse, it's hard not to conclude that even some older generations have lost sight of great sound, too.

So is there any chance for a return to high-quality sound? Is there any light at the end of what looks like long, dark tunnel? Well, there are still very good manufacturers and retailers, and remarkable, mindblowing electronics and loudspeakers – some even resisting the ridiculous prices which push all of us too deep into the world of the “fool on the hill”!

So how do we bring together these remarkable products and those lost listeners? Well, by demonstration: we need to expose people to extraordinary and impressive experiences in music reproduction. There's no room for theory: we need more, not fewer, of these “live“ demonstrations and experiences, creating enthusiasm and “must haves“. In other words, we need to give them music – and sound, of course – to die for.

For most people, the audiophile lives in another, unknown world. Only if someone experiences and wants to own a product does the price become less important – after all, people will spend big on their phones or TVs when they know what they can do. Most consumers literally have no idea what they're missing. We all know that – so, if those in the HiFi industry, and we enthusiasts, want to win them back, it's our mission to show them. Let your visitors listen to music, give them an exciting presentation, guide them into a better music world. There is no harm in quality and livability – and they at least will understand you better.

Tom Frantzen

editor@stereo-magazine.com

All prices listed in this magazine are German retail prices incl. VAT valid at the time of evaluation.



'STATIC - AND ELECTRIFYING

QUAD reinvents its classic design with the new ESL-2912 speakers, a world-class design set to become a STEREO favorite

HORNS OF PLENTY

AVANTGARDE delivers a striking-looking speaker with a remarkable sound – and the Zero TA is amplifier-friendly, too



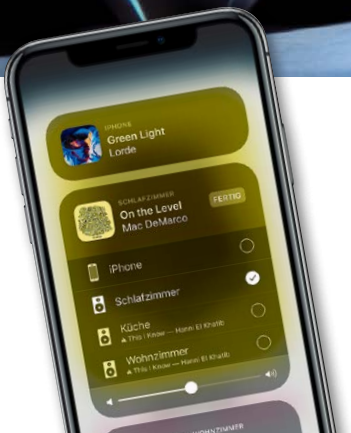
THE NEW REFERENCE

MARANTZ claims that for its 'DAC-less' SA-10 player and all-analog PM-10 amplifier: the remarkable performance agrees



MORE POCKET POWER

APPLE has launched its best-ever iPhone – and with both FLAC and Airplay 2, maybe at last it has true HiFi potential



DIRECT TO DISC

Behind the scenes of an ambitious project, recording all four Brahms symphonies straight to LP with the Berlin Philharmonic

SIMPLE OR SMARTER?

AMPLIFIERS – want them stripped back or fully loaded? Rivals from Audio Analogue, Exposure and Musical Fidelity shoot it out



POLISHED PERFORMERS

GAUDER refines its speaker design further with its latest Vescova series model, a classic example of knowing your materials



PERFECT FOR DARK KNIGHTS?

SME's Model 15 is low-slung and matt black, and what looks like Batman's turntable has scintillating sound to match its style



"Nyquist Streamer/DAC..."

Digital So Good, Only an Analog Expert Could have built it"

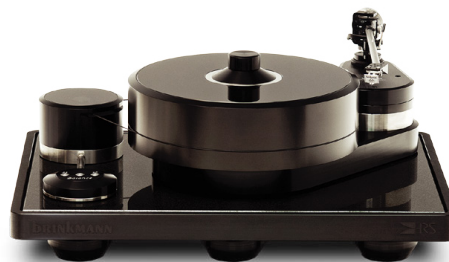


„But best of all, the Nyquist is extremely compelling musically...“

Robert Harley, The Absolute Sound, December 2017

*MQA streaming and playback, PCM up to 384kHz, DSD up to 4x
Supports Roon Music Management and Tidal, Qobuz and Deezer Streaming Services
User-Replaceable Digital Module makes Nyquist the finest DAC available today ...*

...and tomorrow!



BRINKMANN

"The World's Finest Turntables ... and more!"

brinkmann-audio.com



STATIC ELECTRICITY

Being the descendant of a legend can mean you have quite a lot to live up to – but the new Quad ESL-2912 speakers are a dream!

Our first impressions of the new electrostatic speakers from Quad? They weigh 44 kilograms apiece; are a modern design in real wood and black; have an aluminum composite frame and timelessly elegant form; need a power connection (of course), and deliver a spacious, but still room-friendly radiating surface. In other words, they look very unlike the original ESL 57 model of 60 years ago!

Nevertheless, the new ESL heir to a HiFi legend is like no other – apart from the Klipschorn, perhaps. Hmmm, a dipole radiating to the front and back in an acoustically prepared listening room with limited reflection – the thought

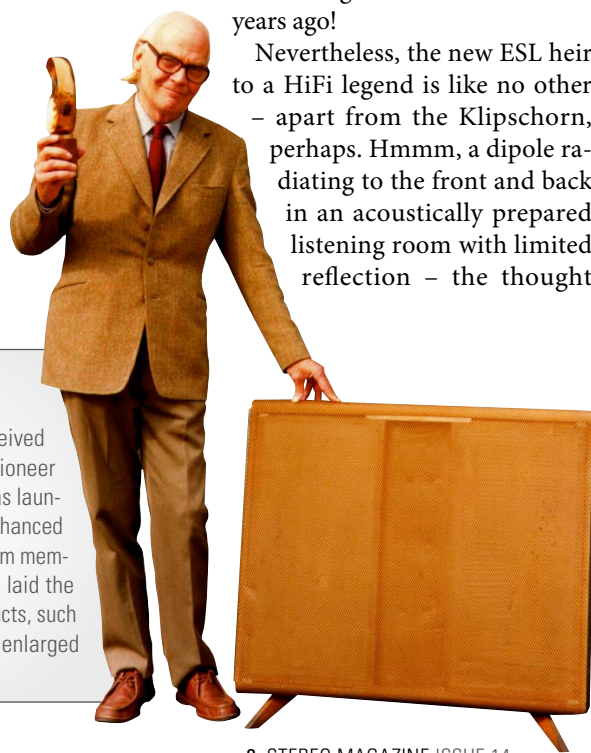
shoots through my head that this isn't going to be easy.

In fact, the feared set-up and positioning drama is completely absent. The freshly unpacked electrostatic, which has been acclimatized in the corridor for two days, is placed in just a few minutes and only with a quick visual thumbs up, to be played in – and is immediately convincing.

Installation: Unexpectedly simple

From experience, we slightly tilt the Quad tilted backwards by three degrees to the listening position, but the omnidirectional beam pattern proves to be quite uncritical: the stereo sweet spot is far from small and the off-axis drop in tweeter level hardly pronounced, as measurements later. This is all attributable to the sectional membrane surface – six Mylar panels in this latest version – with its concentric rings, which minimizes 'beaming' and also contributes to the fascinating sound experience through a kind of time correction.

Every detail of the Quad electrostatic design has been optimized over the decades: only recently the entire circuit topology has been renewed to eliminate any interference between the components. Thanks to new materials and designs, it was possible to make the overall



ESL HISTORY

The first Quad ESL was conceived by Quad founder and HiFi pioneer Peter Walker (1916-2003) and was launched in 1957. The significantly enhanced refinement with the segmented film membrane was launched in 1963 and laid the foundation for all successor products, such as the ESL-2905 and the current, enlarged and improved ESL-2912.

construction considerably more tolerant of high input levels, even more transparent and efficient – in other words, even better-sounding

The connection panel is in the base of the stand, where a flap can be removed for wiring and then reinserted for aesthetic reasons, so we soon have them up and running, before the arrival of IAG’s development manager Peter Comeau as well as Thomas Henke and Krey Baumgartl from the German distributor IAD have announced their visit. When they turn up, they find a pair of speakers already performing outstandingly.

Though not exactly a diva, the ESL does require a good, fast and powerful amplifier, and according to the experience of the sales department, a Quad Artera power amplifier with its current dumping circuit works very well. No surprises there(!), but in the STEREO listening room, the top reference Accoustic Arts AMP II Mk 3, which is more or less in permanent residence, takes over the task of taking the ESL on a short leash and driving it to maximum sound performance. And how!

Sound: Breathtaking

We are overwhelmed and literally amazed at how naturally and vividly these 12,000-euro speakers project the music into the room, but even that’s not the whole story – the sound is simply completely different. It’s effortless, blunt and airy, but supported by a solid foundation we hadn’t expected, and with none of the sense of

TEST-COMPONENTS

- CD PLAYERS: Lua Appassionato Mk III GS NOS, T+A MP 3100 HV

- PREAMPLIFIER: Accoustic Arts Tube-Preamp II Mk2

- POWER AMPLIFIER: Accoustic Arts AMP II Mk3, Quad Artera

- CABLES: Supra, HMS, Progressive Audio

ELECTROSTATIC SPEAKERS – THE TECHNOLOGY BEHIND THEM

In the electrostatic full range loudspeaker (ESL), which today usually works according to the push-pull principle seen here in the Quad, a thin, light and strong membrane – made from an electrically conductive or appropriately coated plastic foil – is clamped tightly between two very stable stators, which serve as grid electrodes. These stators are electrically insulated.

Now the music signal is applied to the stators with different polarity and the membrane foil is charged to a constant charge by means of a (pre-) voltage source, so that the high-impedance membrane oscillates with the music signal.

Operation does not actually require a high current flow, but rather high voltage, and of course the high-voltage electronics mean an electrostatic speaker always requires a power supply.

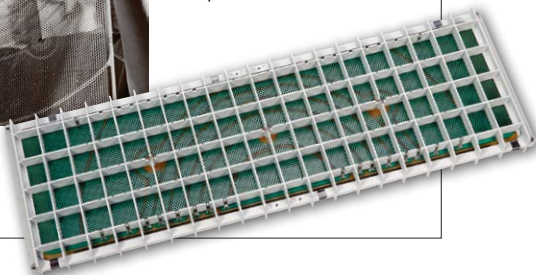
Due to the low moving mass and the rudimentary, very precise control, music can be transmitted extremely quickly and accurately. It is even said that an electrostatic speaker, in contrast to other loudspeakers, is able to reproduce an extremely

steep rectangular signal in a recognizable way, and has particularly low distortion due to the homogeneous electric field.

In the the Quad ESL from model 63 onwards, concentric rings of the transducer structure, and specific delays, have been used to simulate a point source, apart from Quad, well known advocates of the technology include Martin Logan in the speaker arena, and Stax in headphones.

Tube amplifiers, and solid-state amps with output transformers, are traditionally regarded as advantageous partnering components for electrostatics, but this is not a prerequisite. In principle, any good amplifier is suitable.

This is what the Quad-ESL looks like in the neckline. Still, as you can see in the box picture. ▼



boxes usual even with excellent dynamic loudspeakers.

In fact, all other aspects of cabinet sound, such as resonances, are completely absent – that’s a surprise, even if it doesn’t “shock” us, as it was predicted by Peter Comeau. Now he’s smiling at us almost insolently and proudly – and knows why.

It is not only the lightness with which the Quads conjure an imaginary stage into the room and fill it with life and incomprehensibly fine details: they always remain supple, even graceful and never sound analytically sterile, even from new. But even more striking than that is the unexpected physicality with which they do it all.

Where the hell did this kick, this low bass come from? This is an electrostatic speaker: aren’t they supposed to be smooth, and prime candidates for the addition of a subwoofer? Seems not: the physical pressure with which the Quads deliver anything up to about 30 Hertz is supposed to be beyond speakers of this kind, as the driver doesn’t allow large strokes. Here, however, the sheer size of the membranes used seems to make almost anything possible, and great things also happen in terms of timing, which is easily noticed on instruments like Stanley Clarke’s or Ray Brown’s bass or Jim Keltner’s shooting gallery of percussion.

What distinguishes good from very good bass reproduction is not only the response in the low register, but also the interaction with the sudden plucking, tapping and impact noises, the attack in the mid-high range. If all this comes together synchronously and seamlessly, instead of lagging – as it is presumed to do with the combination of dipole panels with conventional woofers – some sensitive listeners react to this kind of temporal precision with occasional flinching of their eyes.

These are protective instinctive mechanisms that cannot be switched off, but actually have a lot to say about the impulse and transient behavior of loudspeakers.

Recommendation: Listen!

If 12.000-20.000 Euro is compatible with your budget for speakers, and you have a suitable room – not too small – and good electronics, then listen to these transducers for heaven's sake!

Let's put it like this: the Quads convinced, seduced and inspired us, having us playing more and more music. That's fascinating, but one never gets enough of favorites among the protagonists and soundtracks and the whole thing is accompanied by the symptoms of rocking feet and goosebumps. Nobody talks about work anymore.

The enormous resolution of the latest generation Quad ESL goes hand in hand with a slight restraint that was deliberately incorporated. You can see this intention in the frequency response and it promises an enormous long-term capability. The flood of detail delivered by the speakers will always fascinate, but never overtax – the sound isn't over-emphasized to impress, but always remains committed to the goal of an effortless musical enjoyment.

If you believe Peter Comeau, the development was based on component design and lengthy listening sessions until the required level was reached. That's

»AN ONGOING TASK«



IAG CHIEF DEVELOPER PETER COMEAU and STEREO editor Tom Frantzen, with a sample of the Quad ESL-2912 electrostatic panel.

STEREO: Theoretically, an electrostatic loudspeaker (ESL) has some advantages due to its extremely low moving mass and the large controlled membrane area. What are the main problems?

Peter Comeau: As with all loudspeakers, there are problems with integration into the room acoustics. It helps to make the loudspeaker as large as possible, since this makes it easier to „control“ the room - and that's what we did with the additional panel on the 2912. This also improves the bass energy in the room, because the larger loudspeaker approaches a „line source“ more closely.

It should be noted that the ESL is a dipole, which radiates backwards as well as forwards and therefore also takes up space in the rear. In practice, however, it is not difficult to set up an ESL in the room and achieve excellent results: it helps to get closer to the side walls.

The precise manufacture of the panels to achieve consistent results is also a challenge. For this purpose, we use processes and routines for assembly based on the original tools and test equipment of Quad founder Peter Walker.

STEREO: In which disciplines do you consider the electrostatic principle to be almost unbeatable?

PC: Oh, the list is long - the response/pulse behavior caused by the low mass, the level of detail over the entire frequency range, the extraordinarily low distortion, the lack of resonance; you can hear all of this instantly the first time you listen to an ESL. It sounds so breathtakingly natural. The lack of cabinet resonances in particular is almost a shock that many people have to get used to. We are so used to listening to music from „boxes“ that initial exposure to an ESL can make us feel insecure. But, once you've heard electrostatic

speakers, it's difficult to return to boxes and voice coil drivers.

STEREO: Apart from the modern design, what are the main improvements of the new Quad ESL compared to the classic models? And what else do they have to do with each other?

PC: The original Quad electrostatic, called ESL 57, had two bass panels and a central panel for mid-high. Peter Walker's later design, the ESL 63, used two bass panels flanking two mid-high panels, driving concentric rings to form a point source of sound – all Quad ESLs have followed this principle since, but have been mechanically amplified to further improve transient reproduction. In addition, we have recently refined the internal circuit-board layout and components to provide even greater musical detail.

STEREO: Did Quad ever come up with the idea of a hybrid concept with dynamic bass drivers, whether passive, active or also as dipole?

PC: At Quad, we are constantly looking for ways to further improve the performance of the ESL, but the combination with voice coil drivers or subwoofers has never been successful. The reason for this is that the ESL is a dipole and the majority of subwoofers are not, and the ear is able to perceive this break. The use of dipole subwoofers may be possible, but these would require such an enormous amplifier power for signals below about 35 Hertz, which the ESL achieves in the room anyway, that this would probably not win much. To be honest, we prefer to find better ways of integrating the ESL into the room and its acoustics, and this is an ongoing task.

IAG chief developer Peter Comeau and STEREO editor Tom Frantzen, with a sample of the Quad ESL-2912 electrostatic panel.

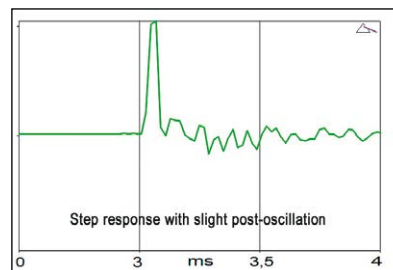
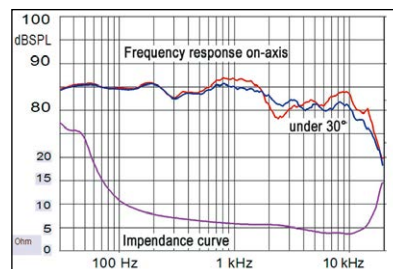
QUAD ESL-2912

around 12000 €
 Dimensions: 69 x147 x38 cm
 (WxHxD)
 Warranty: 5 years
 Contact: IAG
 Phone: + 44 1480/452561
 www.iaggroup.com



The current Quad ESL is a top-class electrostatic flat-panel loudspeaker - and a worthy legacy of the ESL legend. It offers an exceptionally fine, high-resolution, three-dimensional sound image of exceptional clarity and freedom from distortion, delivering amazing bass and solid level capability. It has an enormous „must-have“ factor – just listen!

MEASUREMENT RESULTS



DC resistance	4 Ohm
Minimum impedance	4 Ohm at 10000 Hz
Maximum impedance	33 Ohm at 30 Hz
Sound pressure level (2.83 V/m)	86.4 dB SPL
Power for 94 dB SPL	17 W
Lower cut-off frequency (-3dB SPL)	33 Hz
Distortion factor at 63/3k/10k Hz	0.2/<0.1/<0.1 %

LABORATORY COMMENT:

No easy to interpret measurement result, because of dipolar radiation, but surprisingly well-balanced with a restrainedly tuned high frequency range and an unusually low bass (33 Hertz) for a full range ESL. The efficiency is about average at 86 dB (2.83V/1m), the step response is outstanding, without phase shift and with only slight oscillation. Remarkably low distortion.

STEREO-TEST

SOUND QUALITY 95%

PRICE/PERFORMANCE



OUTSTANDING

The speaker is supplied with feet and spikes, both adjustable in height. ▶



something I would have like to witness: as proven by our measurements, the distortion behavior here is almost supernatural.

From AC/DC to Zubin Mehta we were quickly convinced of the all-round suitability of the Quads: of course, this is not a party box or a hard rock specialist, but it's astonishingly stronger than we thought in such disciplines. Indeed, with the SACD version of "War Of The Worlds", with Richard Burton as narrator and high-class musicians, it pulls us out of the chair with the sheer authenticity of the way the ensemble comes to life and how well it draws us into the plot of the musical.

The enormous quality provides pure emotion. This is very big cinema, created purely with audio.

Electric Trick

In dealing with this dream, I remembered again that I was allowed to give an extensive physics lecture about loudspeakers – also the Quad ESL – in the 10th grade (1982). And the legend is alive!

There is no doubt that these latest Quads will end up on the list of my personal favorites of all time – a list that also includes Mission's Pilaastro speakers, which were also created with Peter Co-meau's significant participation. I am electrified – and I'm sure Peter Walker would also be, if he could hear this latest evolution of his ingenious creation!

Tom Frantzen



◀ The connection panel has really been thought through: there's an elegant cover, a fine-wire fuse accessible from the outside if necessary, and the front illuminated logo is infinitely dimmable!

THE NEW DM 5:

QUALITY,

INSIDE AND OUT.

A small soundbar with a big sound: The new DM 5 has impressive internal and external qualities.

Outside: A stable and elegant cabinet that looks good in any setting – in front of your TV, on a shelf or mounted on the wall.

Inside: A fully digital 100 watt amplifier, virtual surround and Bluetooth® with the latest aptX® technology – outstanding sound for your favourite films and music.

55 x 6,4 x 9 cm
W x H x D



Available now from retailers and in our online shop at
www.canton.de

CANTON®
German loudspeaker tradition



LACQUERED, NOT VARNISHED

Making good things even better – that was the task faced by Roland Gauder in his quest to develop the „Vescova“ as a means of driving his speaker line forward

Since 1989, Roland Gauder has been involved in the professional development and manufacture of loudspeakers. The physicist and enthusiastic music lover began his career at Isophon, and the Avalon, Odeon, Indigo and Vertigo models, introduced in 1992 and 1993, have enjoyed a good reputation to this day.

Time for ceramics

By 1997, Isophon had long since drifted into OEM car HiFi production and Gauder decided to set up his own business under the brand name. As he used isophone drivers at that time, this made sense, but since the end of 2012, the topic of isophone has become history, both in the drivers used and consequently also in terms of naming.

These days it says on the boxes what's inside: Gauder: after all, the bass technology is not the only determinant of the sound, as many vendors have proven in the past. Gauder has long since become an ardent and committed fan of Accuton's ceramic and diamond drivers, which have made him famous for their timing and sound qualities.

And he knows how to use them more skilfully than usual, as we will see later. He is particularly enthusiastic about the ceramic transducers' outstanding impulse behaviour. He explains that soft membrane materials usually showed very good frequency response but poor impulse behaviour, and hard materials the opposite, but since music is made up of impulses he has focused his research there, leading to ceramic becoming the material of choice.

Here we take a closer look at Gauder's two and a half way speaker, the original

version of which was launched in 2008. Over the past few years, the physicist has worked intensively on the symmetry of his extremely crossover technology in the development of his top models, the Berlina RC3 and RC7. The "Vescova Black Edition" benefits to a considerable extent from the knowledge gained, as well as using purely analog crossovers with a filter slope of 50 dB.

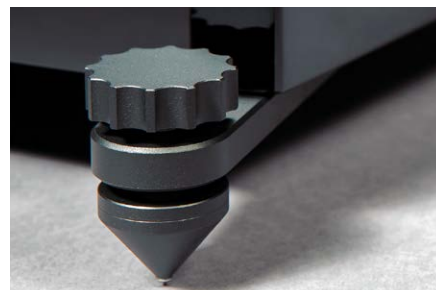
Most speakers use either sealed enclosures or a bass reflex (or ported) design, each design having its advantages and disadvantages. Gauder, seeking a way to reconcile the positive aspects of both principles, came up with a loudspeaker that had both: a closed cabinet for the upper bass frequencies, handled by an 18cm ceramic driver only working down to 130Hz, and a downward-venting bass



▲ High-quality bi-wiring connection panel with proper cable jumpers - excellent!



▲ The three-stage bass adaptation is as well-thought-through as the stabilising outriggers with their massive spikes.



▲ The „Vescova Black Edition“ underlines its claim with high quality materials.

reflex enclosure for the lower bass driver, another 18cm ceramic unit. In this way Gauder prevents the reflex tube from having an influence on the eminently important midrange, and thus coloring the sound, and there's also a three-stage bass adjustments on the crossover.

genetic material

It was decided to make the Accuton chassis black in order to emphasize the latest developments in design and not interfere with the elegant housing, which is made of several layers of slotted MDF, plywood and quartz sand, finished with piano lacquer. Even the aesthetics are only your second

or third consideration when buying speakers, they look pretty cool – that was the unanimous editorial opinion on the floor-standing speaker: completely dressed in black, they're shapely and almost dainty-looking. What you can't see is that all the drivers are strictly handpicked to an accuracy of three percent – an elementary prerequisite for convincing spatial representation, especially when accompanied by an equally strict and uncompromising crossover design process.

In this, Gauder consistently follows the path that studio equipment suppliers set out many years ago on the basis of the requirements of broadcasters: nothing beats production consistency and selection. It's worth mentioning that Mundorf's "Black Edition" crossover uses further improved components, as well as the fact that it uses a biwiring block equipped with the latest WBT 0703 terminals and high-quality cable bridges instead of cheap but widely used metal rails.



▲ Beautifully shaped and designed for sound: the cabinet with its curved walls and elegant cantilevers, including height-adjustable and fixable spikes.

Sturdy so-called "spike extenders" increase the stability and provide a rigid home for the massive spikes, and the spikes themselves are easily adjustable and can also be fixed solidly. At around 25 kilograms and just under 110cm tall, the speakers are easy to move and position optimally.

What's more, should you suddenly get a tax refund, a bonus or just experience your ship coming in, Gauder offers a conversion to diamond tweeters instead of the standard ceramic fitment at a price of 5600 euros for the pair. In our test, however, we concentrated entirely on the ceramic tweeter version, its treble driver running down to 3500 Hertz, which means that the price of the speakers ends up at just under 11,000 euros a pair.

Worldwide recognition

There's the biblical saying, ascribed to Jesus himself, that 'A prophet is not without honour, but in his own country, and among his own kin, and in his own house' – with 24 active dealers in Germany, that's not a problem Gauder recognises, but remarkably he sells about 2/3 of his production abroad, his creations enjoying an excellent reputation worldwide.

The Vescovas were driven in our listening room by Audionet's "Planck" and "Watt", using an SME turntable and Accustic Arts' reference phono preamplifier, and we were instantly impressed with the way the speakers were able to present Miles Davis's "Bitches Brew" – no easy fare at all – in a comprehensible way, creating access and revealing the structure of the music. Dave Holland's deep double bass sounded crisp and dry, and Bennie Maupin's bass clarinet stood freely in the room, open, airy and harmonious. That was fun!

On an analogue record by David Wilson with Julie Steinberg on the Steinway Model D concert grand and David Abel on a Guarneri violin, fluidity and warmth went hand in hand with the best impulse fidelity, while the final round was played by Queen's "Made in Heaven", released four years after the death of frontman Freddie Mercury. Nothing was annoying, the bass was tight and clearly defined, reaching deep when required without any, and Mr. Mercury was standing in the room, focused and realistically scaled. Wonderful stuff.

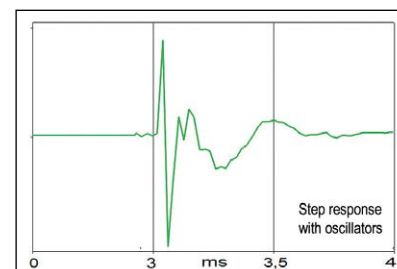
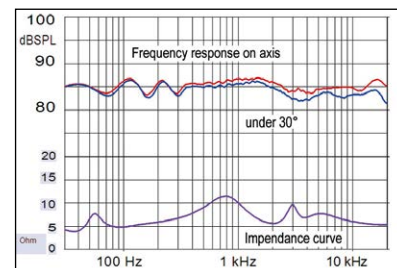
Michael Lang

GAUDER VESCOVA MK II BLACK EDITION

from 11000 €
 (with diamond tweeter: 16000 €)
 Warranty: 10 years
 Contact: Gauder Akustik
 Phone: +49 7159 920161
 www.gauderakustik.info

The strictly selected ceramic drivers of the two-and-a-half-way speaker are the cornerstones of the sound experience. Despite a compact size, the speaker sounds dynamic, deep and crisp, is easygoing about placement, and delivers a solid spatial representation.

LAB MEASUREMENTS



DC resistance	8 Ω
Minimum impedance	4,5 Ω at 36 Hz
Maximum impedance	12 Ω at 800 Hz
Sound pressure level (2.83 V/m)	87.1 dB SPL
Power for 94 dB SPL	5.8 W
Lower cut-off frequency (-3dB SPL)	32 Hz
Distortion factor at 63/3k/10k Hz	0.3/0.1/0.1/0.1 %

LAB COMMENTS: 8-ohm speaker with balanced impedance response and frequency response. Efficiency average, distortion very low. Very uniform and wide coverage – toe-in to the listening position is hardly necessary. Despite its compact dimensions, the speaker goes down to an astonishing 32 Hertz. The step response shows oscillators.

FEATURES

Bi-wiring terminal, boom with height-adjustable and fixable spikes; three-stage bass response; reflex port radiates to the floor; tweeter interchangeable with diamond model

STEREO-TEST

SOUND QUALITY **92%**

PRICE/PERFORMANCE

★★★★☆
EXCELLENT



R

Raidho

Acoustics



D-1.1

It is an
extreme
performer

Meet us on facebook

STRONG CAST



The whole amplifier world seems to be talking about Class D and switching power supplies. All the world? Not quite – the developers of the three amplifiers we have here see it quite differently.

By Tom Frantzen and Michael Lang

In recent decades, the integrated amplifier has clearly replaced the classic stereo receiver as the basic component and control centre of a hi-fi system. Of late, however, connections for the surprisingly revived turntable have found their way back into many amplifiers, and we have seen the addition of digital connectivity for numerous new sources such as streamers, PCs or satellite receivers, either

in the living room or as part of a networked system. In this test Musical Fidelity and Exposure take both trends into account with amps at 1550 euros apiece, while Italian purist Audio Analogue focuses exclusively on the analogue world – as you might expect from the name – and presumably strives for its own music room with correspondingly specialized partnering components.

ON TEST:
AUDIO ANALOGUE AACENTO
EXPOSURE XM 5
MUSICAL FIDELITY M5SI

MOLTO VIVACE

This purist amplifier from Audio Analogue is designed to combine pure emotionality and sheer power to create an absolute musical experience. Does it succeed?



Audio Analogue's new integrated amplifier, part of its Pure AA series, is entirely designed in Italy, where it's also manufactured by hand. This is a purely analog audio concept, with no sign of any digital inputs. Yes, there is digital technology onboard, but only for volume control – of which more in a moment.

Its power at 1% (THD+N, i.e. distortion plus noise) is 2x100 watts at 8 ohms, 2x200 watts at 4 ohms and 2x330 watts at 2 ohms (!). A power rating at 2 ohms is rare, as such low impedances are dangerous for most amplifiers and they can even start smoking at such a load – Infinity's infamous Kappa 9 sends greetings. It is therefore a sign of self-confidence, but above all of the current delivery capability of an amplifier, when it is published, and here owes much to the use of a hefty 500VA transformer

The inputs, which include an MM/MC phono stage with switchable subsonic filter, are selected using relays, and the volume is controlled by digital technology without the use of operational amplifiers. A Class A headphone amplifier with variable impedance is also onboard, and the components, which can be seen under the

housing cover in a functionally superlative circuit design (see picture on the next page), are consistently of high quality and even seem to be oversized, in the positive sense. Four high-level connections, one of which is balanced, provide connectivity, preamplifier outputs – an additional mono version for subwoofer outputs – extend the possible application spectrum as well as the possibility of direct power amplifiers, and there's also a unity-gain option for use with an AV processor, for example.

A special feature of the 14 kg amp Italian, whose older brothers "Fortissimo" and "Puccini Anniversary" we already had the chance to test, is the renunciation of global feedback in both the preamp and power amp sections – instead, only local feedback is used in selected areas of the circuitry. According to the developers, this should increase the input impedances, lower the output impedances, stabilize the gain factor and the operating points of the circuit, reduce interference to the power supply and reduce distortion overall. The purpose of this design is to create a particularly light-hearted and dynamic – but still stable and very powerful – reproduction of music.

KEYWORD

Feedback: Common circuit design to help amplifiers achieve low distortion and higher attenuation factor.

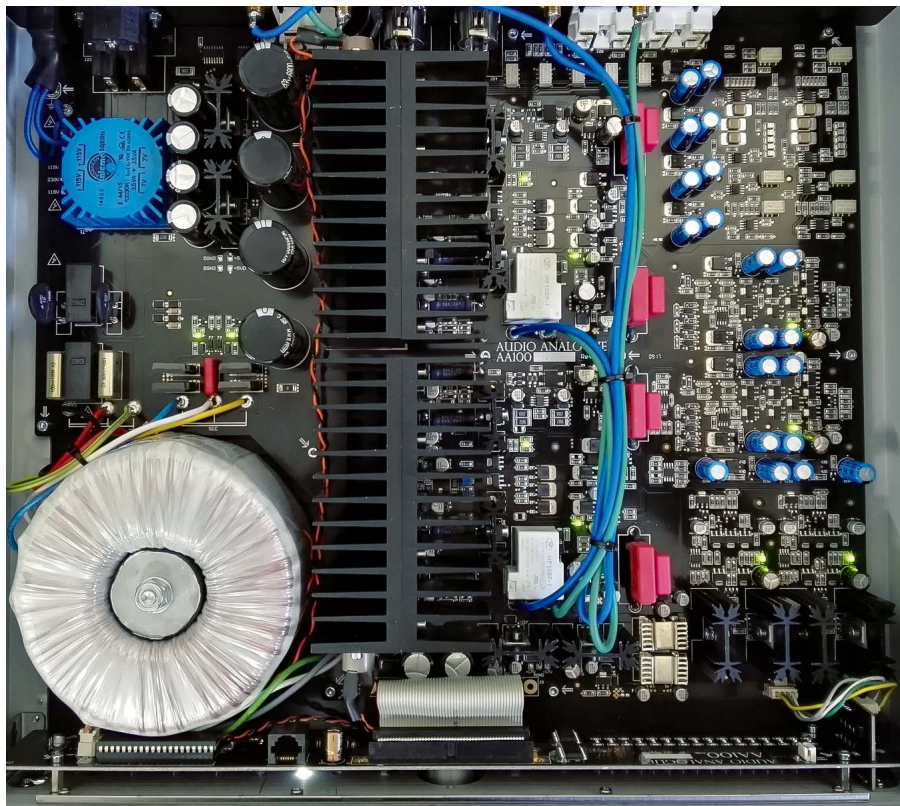
The remote control unit of Audio Analogue is beautifully finished and controls the most necessary functions.▶



The operation of the amplifier is also quite smart, even if it does take a little initial familiarization. For example, a short press on the volume control switches the device off and into standby, while four different selectable characteristics are available for the volume control itself, which makes sense depending on the efficiency of the speakers and listening habits used. For example, with very sensitive speakers one can set the volume control to give finer control in its initial rotation, or conversely to ramp up output quickly for harder-to-drive designs.

This increased user-convenience sets the PureAA line apart from the purist Anniversary series, but as we will see, soundwise they are still quite close. This is inherent in the company's design, including that rejection of global feedback, and the "family sound" of certain brands is also due to the fact that the same

An object of style from Italy: the majesty of sound originates here. ▶



developers act according to their own sound preferences under the same conditions and with the same philosophy.

It was to be expected that the distortion values in the STEREO measurement laboratory would be somewhat worse than competitors of a more restrained design, at least on paper, but would of course be completely uncritical. It's not so much the zeros behind the decimal point that are captured in the lab, but rather whether a device touches and convinces during dynamic music playback.

Pure emotion

The development approach, to achieve high current capability almost without the infamous panacea of feedback, works perfectly with the Analogue Audio, because this amplifier starts like a champ, sweeping temperamentally and powerfully through scores, developing timbres that are usually denser than those delivered by tube amplifiers. The AAcento delivers both coarse and fine dynamics, is a real treat and has loudspeakers – in this case B&W 802D3, DALI Epicon 6 and the Wolf von Langa “Son” – under control in an exemplary manner. The fact that it

delivered a virtually balanced shootout with the Symphonic Line Edition, one of our preferred tools in this class, is a definite compliment to the developers.

Due to the spectacular development of force and energy, the image is large, expansive and vivid, which not only benefits large orchestral works, but also particularly dynamic tracks such as “Thunderstruck” by AC/DC. Nevertheless, with Tori Amos’s “Winter” the AAcento seems delicate and refined, maybe almost soft, and with “Friday Night in San Francisco”

No digital: The Italian has a well thought-out, purely analog connection concept, which includes an XLR input and sub/preamp outputs. ▼

extremely fast, precise and taut, making it easy to follow Paco de Lucia, Al di Meola and John McLaughlin and the sounds of their characteristic guitar virtuosity. It's undoubtedly a very “emotional” and multifaceted device, this AAcento.

This is a simple amplifier and, in the truest sense, incredibly empathetic and adaptable, supple and full-bodied, making the music live and breathe while letting you forget the technology behind it. It helps that the soundstage image is virtually detached from the speakers and that the height and width impression is superior – yes, you need speakers able to allow this, but the Audio Analogue definitely plays its part. Outstanding!

Tom Frantzen



SHRUNKEN BRIT

Technically, the compact housing of the new XM 5 integrated amplifier conceals an old acquaintance, the Exposure 2010 S2D, with its analogue/digital possibilities.



The new baby from Exposure, which sells for around 1500 euros, is based on the well-known, full-sized 2010 S2D amplifier, the only major differences being that its output stage has been reduced in size for space reasons and the XM 5 weighs just five kilograms in total. We don't know whether it was the success of the competition, or more precisely the British competitors, that made it necessary to create this compact series of devices conceived and made in England, but this could be the thinking here.

However, there's no corner-cutting in terms of facilities: in addition to an input for a turntable with moving magnet (MM) cartridge – these days once again an almost obligatory specification – there's a complete digital/analog converter onboard to switch and source digital source devices. Again this is part of many a modern amp, making them fit for the digital era, and here it even includes a USB socket, making the Exposure a high-quality external sound card for a computer and accepting computer PCM and DSD signals.

Technically, the BNC digital inputs will undoubtedly be advantageous for most users thanks to their 75 ohms impedance stability, but will probably require RCA/BNC adapters for many sources. Meanwhile the space-saving recessed loudspeaker connections only accept banana plugs, not bare wire ends or spade connectors – it's a common trait of British amps, and just as inconvenient here. Pre-amplifier outputs for biamping or subwoofer operation, as well as an A/V input for home cinema applications, round off the package, which naturally also includes a remote control.

Class AB and linear power supply

Under the bonnet of the high-grade aluminum housing, we find a good 200 VA toroidal transformer, which seems to follow the rule that the quality of an amplifier is largely based on its power supply. In the Exposure it provides about 60 watts

of output power per channel at eight ohms, with our measurements showing a high efficiency current delivery capability with reserves even into a four ohm load, probably be attributed to the cascode circuit of the power amplifier.

Despite the compact dimensions of the amplifier hinting at Class D power amplification, Class AB is the order of the day – as one might expect given Exposure's track record. In fact, the close technical relationship to the 2010 S2D model can't be ignored: they sound (almost) like twins – but more of that later.

The quality of the other components and layout, including Toshiba's bipolar power transistors, is also convincing, and shows that the signal pathway hasn't been pared back: true, we missed Bluetooth to connect our phones, and a headphone jack, but we can live with these omissions – especially since it's possible to add Bluetooth both easily and cheaply.

The Exposure comes in a choice of silver

KEYWORD

Class AB: Compromise between low-distortion Class A and more economical B operation with push-pull amplifiers

A classic, potent 200VA toroidal core transformer provides the power supply. ►



or black, and is supplied with a three-year guarantee, as part of a range also including the XM 7 preamplifier, XM 3 phono preamp and XM 9 mono power amp. Only source components are missing.

In the listening room

Neither is the Exposure lacking when it comes to performance: indeed, as already mentioned it comes very close to the 2010 S2D, one of the best amplifiers available between 1000 and 1500 Euro. We'd suggest the performance loss is no more than 20 per cent which, given the price differential, means the XM 5 offers excellent

value. On top of that, the XM 5 comes fitted with a phono stage, usually a 150-euro option: a paid upgrade would probably not have made much sense with the XM concept, as it would have brought the two amplifiers closer in price.

Both amps sound tight, lively and fast, the power in the lower registers making the enormous dynamics and energy balance of Pink Floyd's epic sound painting "The Wall", for example, seem balanced and effortless across the entire frequency spectrum.

Nevertheless, temperament and authority should go with this power to make the

most of the speakers in use, ensuring particularly agile and open instruments are delivered with a stirring, musical and possibly ruthlessly sincere character, rather than smoothed or blurred.

In the end it is always the overall combination – the composition – that counts, and with an Exposure amplifier that insight and 'rightness' is very much present. This is why the company's 1010, 2010 or 3010 amplifiers – and now the XM 5 – are among the most popular working and comparison devices used by the STEREO editorial staff.

Compact with potential

Exposure gets it right – it's that simple: if you're looking for a more compact system that is up to date and without compromises, you will find what you are looking for from the Sussex company.

If there's room for improvement, then a supplementary signal source in the form of a CD or network player, or both in one housing – without the need for an externally accessible DAC, since the amp already has one on board – would be desirable in order to complete the portfolio into a system, but that's all.

In any case, this attractive XM series has our full attention, and despite its compact size is recommended for high audiophile requirements. Wow!

Tom Frantzen



▲ The two coaxial digital connectors are of the BNC type, and in addition there are two optical inputs and one USB socket for PC/Mac. Phono is also available, and the speaker connections are via banana sockets only.

NOT A GRAM OF FAT

Priced exactly between the M3 and M6 series, the Musical Fidelity M5si is said to sound very close to the 2600 Euro M6si – for only 1800 Euro.



Over the past 30 years, it's become clear that British company Musical Fidelity knows how to build amplifiers. With the legendary A1, introduced in 1984 – a low-power Class A amplifier whose case warmed up to such an extent that there was speculation about using it to fry eggs! –, company boss Antony Michaelson laid the foundation for the lasting success of his company. Since then he has focused on a whole range of affordable devices with an outstanding price/performance ratio, the capabilities which have been proven time and again by numerous tests - not least in STEREO.

Clever cost savings

Michaelson isn't one for making a big splash with his products: the former concert clarinetist prefers to draw attention by means of facts and the presentation of logical, albeit not always immediately obvious, contexts.

Ask him, for example, where the red pencil was drawn to achieve the price of the M5si we have here, he looks questioningly and then humorously explains that he is an Englishman and not a Scotsman, so he doesn't save money – his secret, he

explains, lies primarily in the fact that he produces very efficiently. Making products in comparatively large quantities; using the same housings and assemblies for several devices; and cost-conscious manufacturing in the Far East under British control – all ensure that the prices remain competitive, without impacting on the performance.

Cost-effective design

The 5-series from the inside may not be a feast for the eyes, but it shows the will of the developers to do their job carefully – and properly. On the one hand, the phono stage (for moving magnet and high output moving coil cartridges) catches the eye on its separate circuitboard in the back left-hand corner; on the other, attention is drawn by the generous toroidal transformer placed directly in front of it, which is indispensable for Musical Fidelity's claim of stability into difficult loudspeakers of fluctuating impedance. Another striking feature is the strict double mono configuration of the power amplifier, using four power transistors per channel.

Too much slimming down compared to the 6-series was actually not in order,

but rather simplification in production. To assemble everything on one circuit board takes costs less time than strictly separated circuit boards for the preamplifier and the two power amplifiers: the fact that the case is a little more compact also saves money; and the target price of less than 2000 euros also encouraged Michaelson to set production figures more ambitiously - money can hardly be saved more effectively.

Yet some elements have been simplified: a USB port allows the buyer to enjoy music from a computer, of course in asynchronous mode and with a maximum data rate of 24 Bit/96 kHz, but other digital sources are not included. Balanced inputs are also absent and, instead of two pairs of speaker terminals – as is sometimes the case with the competition –, the M5si is content with one pair, albeit with high-quality terminals. And there are preamplifier outputs, so if you're looking for even more power later on, or if you want to explore biamping, you're all set.

Saving without suffering

But the testers' curious ears paid little attention to such commercial matters: just

A fat toroidal transformer, a very elaborate phono circuit board and four power transistors per channel - the Musical Fidelity is more "go" than "show". ▶



as it should be of minor importance for potential customers when they decide to buy a amplifier of the 2000-Euro class, whether a product is 100 Euro above or below it, our listeners' main criteria were more to do with the sound, workmanship, equipment and facilities on offer.

We were able to assess the sound with speakers including the Wolf von Langa "Son" and also the wonderful and very inexpensive B&W 705 S2, with T+A's universal MP 1000E as a source, and cabling from Viablue and Audioquest.

The test program started with Lionel Monnet's skilful interpretations of Mozart and Chopin on a Steinway concert grand piano, captured in outstanding recording quality. The man plays as powerfully as he can when required, and the Musical

Fidelity delivered the impact without sharpness, but at the same time the sound was finely resolved, with a very slight tendency to a sweet and slightly warm timbre. That makes it an ideal partner for a multitude of loudspeakers, avoiding as it does the temptation of detailed resolution to stray into overbright treble. The weight of the instrument was never in doubts with this recording, and the deepest notes lived, breathed and swayed in and out finely, sounding credible but at the same time juicy rather than dry as dust.

A heart for the blues

Blues lives from feeling, from the groove, and 69-year-old Dutchman Hans Theessink is one of the few Europeans to be taken seriously as a blues musician by

international standards. In cooperation with Terry Evans on "Delta Time", the guitarist shows that his distinctive voice lends a certain something to some songs – as the saying goes, "It's the Singer, not the Song". This also applies to the Musical Fidelity M5si: it may not be the most neutral of amps in absolute terms, the charm and melodiousness it adds is a perfect way of refining this music, especially when it comes to playing emotional blues.

It makes extended listening enjoyable - and at a very tasty price.

Michael Lang

Anything the audiophile heart desires, but nothing more: the M5si unites analog and digital worlds. ▼



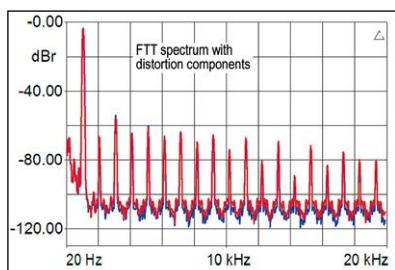
AUDIO ANALOGUE AACCENTO



around 3250 €
 (available in black or silver)
 Dimensions: 45 x 10 x 40 cm (WxHxD)
 Warranty: 2 years
 Contact: Audio Analogue
 Phone: +39 0572 030964
 www.audioanalogue.com

Extremely emotional and musical, this powerful amplifier from Italy offers MM/MC phono, and very careful technical conception (without over-all feedback) and build. This is a device designed to make great friends.

LAB MEASUREMENTS



Continuous power (8 Ohm / 40hm)	102 W/148 W
Pulse power 4 Ohm (1kHz)	200 W
Distortion at 50mW/5W/1dB Pmax	0.4 %/0.2 %/0.4 %
Intermod. 50mW/5W/1dB Pmax	0.3 %/0.06 %/0.1 %
Signal-to-noise ratio at 50mW/ 5W	7.8 dB/95.2 dB
Phono MM (5 mV for 5 Watt)	79.3 dB (A)
Noise ratio Phono MC (0.5 mV for 5 Watt)	61.4 dB (A)
attenuation at 4 Ohm (63Hz/1kHz/14kHz)	100/83/60
Upper cut-off frequency (-3dB/40hm)	>80 kHz
Crosstalk Line 1 > Line 2	67.6 dB
Synchronization error volume at -60dB	0.1 dB
Stereo channel separation at 10kHz	77.8 dB
Power consumption Standby/Idle	0.5 W/39W

LAB COMMENTS: Good to very good measured values: the low feedback is "betrayed" by the only moderate but uncritical distortion values – but not by the damping factor, which remains high.



FEATURES

Remote control, Phono-MM/-MC, balanced high level input, switchable volume characteristics.

STEREO-TEST

SOUND QUALITY	82%
PRICE/PERFORMANCE	
★★★★☆	
EXCELLENT	

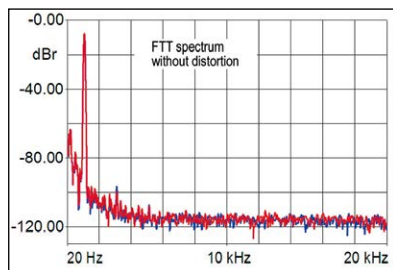
EXPOSURE XM 5



around 1500 €
 (available in silver or black)
 Dimensions: 22 x9 x41 cm (WxHxD)
 Warranty: 2 years
 Contact: Exposure
 Phone: +44 1273 423877
 www.exposurehifi.com

The compact Exposure is based on the full-size 2010 S2D, and according to the manufacturer only loses a little power to fit into the smaller housing. It has generous features (MM phono/DAC/USB), and is also a real Exposure in terms of its lifelike, tight audiophile sound.

LAB MEASUREMENTS



Continuous power (8 Ohm / 40hm)	63 W/94 W
Pulse power 4 Ohm (1kHz)	122 W
Dist. at 50mW/5W/1dB Pmax	0.02 %/0.005 %/0.02 %
Intermod. 50mW/5W/1dB Pmax	0.006 %/0.02 %/0.3 %
Signal-to-noise ratio at 50mW/ 5W	75.4 dB/82.4 dB
Phono MM (5 mV for 5 Watt)	81 dB (A)
attenuation at 4 Ohm (63Hz/1kHz/14kHz)	100/90/80
Upper cut-off frequency (-3dB/40hm)	45 kHz
Crosstalk Line 1 > Line 2	86.8 dB
Synchronization error volume at -60dB	0.3 dB
Stereo channel separation at 10kHz	56.4 dB
Service recording Stby/Idle.	(at) /18 W

LAB COMMENTS: Consistently very good in all signal-quality-related matters, decent output power and particularly good distortion values.



FEATURES

Remote control, MM phono, DAC, USB, preouts. The speaker outputs are designed exclusively for bananas and hollow bananas.

STEREO-TEST

SOUND QUALITY	66%
PRICE/PERFORMANCE	
★★★★☆	
EXCELLENT	

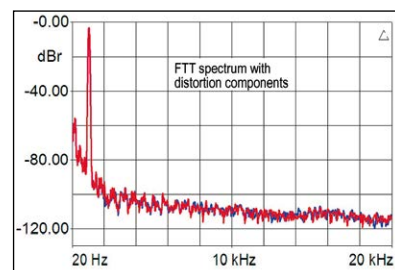
MUSICAL FIDELITY M5Si



around 1800 €
 (available in silver and black)
 Dimensions: 44 x 11 x 41 cm (WxHxD)
 Warranty: 2 years
 Contact: Musical Fidelity Limited
 Phone: +44 20 8900 2866
 www.musicalfidelity.com

In terms of price close to the junior M3si, the M5si is conceptually and sonically on the heels of its big brother, the M6si. A powerful, more musically and warmly drawn amplifier that harmonizes with most loudspeakers.

LAB MEASUREMENTS



Continuous power (8 Ohm / 40hm)	133 W/203 W
Pulse power 4 Ohm (1kHz)	256 W
Dist. at 50mW/5W/1dB Pmax	0.02 %/0.002 %/0.003 %
Intermod. 50mW/5W/1dB Pmax	0.03 %/0.004 %/0.05 %
Signal-to-noise ratio at 50mW/ 5W	73.1 dB/87.7 dB
Phono MM (5 mV for 5 Watt)	74.2 dB (A)
attenuation at 4 Ohm (63Hz/1kHz/14kHz)	20/25/40
Upper cut-off frequency (-3dB/40hm)	>80 kHz
Crosstalk Line 1 > Line 2	71.5 dB
Synchronisation error volume at -60dB	0.012 dB
Power consumption Stby/Idle (at)	<2 W/33 W

LAB COMMENTS: A shining example in the measuring laboratory, with only the damping factor rather modest. Impressive channel separation and high performance go hand in hand with low distortion, and the volume potentiometer is extremely accurate.



FEATURES

4 x line-in, MM phono; USB input for computer; home theatre function; preouts; trigger connector.

STEREO-TEST

SOUND QUALITY	78%
PRICE/PERFORMANCE	
★★★★☆	
EXCELLENT	



MP 2500 R



The ultimate multi-source player



The MP 2500 R is the newest and most sophisticated Multi Source SACD player and PCM / DSD DAC in our R-Series range. Its unique design philosophy makes it the perfect device to reproduce virtually every imaginable digital source in total High-End quality. With the addition of an FM / DAB tuner, Bluetooth interface and streaming client for accessing music streaming services, the MP 2500 R really is the ultimate source. What more could you possibly need?

T+A

 HIFI EXCLUSIVE FLOORSTANDING SPEAKERS



ONE SPEAKER, ANY AMPLIFIER

Efficiency means freedom, and that's what Avantgarde Acoustic's new Zero TA delivers - the freedom not to have to worry about the critical interaction between amplifier and speaker!



Are you using a tube amp full of character with a power output in the single-digit range of watts, a versatile midrange amplifier or a real powerhouse? Whichever it is, Avantgarde Acoustic's new Zero TA doesn't care: it can cope with any amplifier and make the most of it. With this characteristic, the new Partial Active overcomes the only point of criticism that would have crossed our minds with its great role model, the Zero 1.

But first let's refresh our collective memory: almost two years ago, Avantgarde Acoustic, based in the southern-most German state of Hesse, launched its groundbreaking full active model, the Zero 1. Exciting for its extraordinary appearance, which can even withstand demanding design environments, the Zero 1 also has DSP-controlled frequency response linearization, giving it



▲ One knob, two push buttons: With this minimum configuration you can easily jump through the countless preset memories of the Zero TA. The filter programming is better done on a PC.

an extraordinarily clean and coloration-free character to convince even critical high end users. And last but not least, the use of three powerful amplifiers in collaboration with two horns (for treble and midrange) provides performance data beyond question. It is not without reason that the Zero 1 has been the

undisputed top reference in its loudspeaker segment since it was tested in STEREO 9/14.

However, a full-active approach poses a fundamental problem for potential customers: despite all the technical sophistication offered by the onboard electronics and DSPs, it may make the much-loved

PROFESSIONAL HELP FOR OPTIMUM SPATIAL SOUND

In principle, the bass optimization of the Zero TA can also be programmed with a little practice and sensitivity directly at the back of the speaker. There are ten freely definable equalizers with adjustable filter quality (should the EQ work narrow or broadband?) as well as one high and one low pass. However, the result will hardly reach the perfection we experienced in our listening room, as room acoustics consist of more than just the frequency response. One has to consider, for example, that a bass boost, no matter how narrow-band, has an effect on frequencies with which it has a harmonic relation.

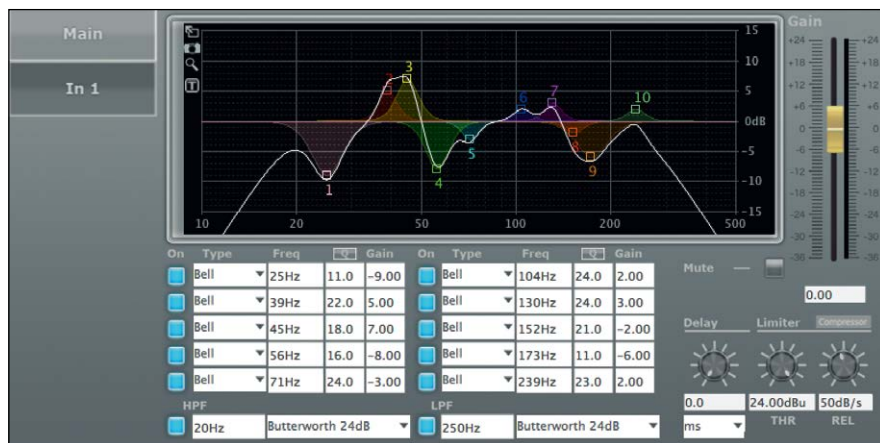
In short, experience is required to be able to estimate where correction makes sense and when it simply tortures the amplifier. In order to leave no doubt about this, we relied on the professional help of Avantgarde Acoustic's Armin Krauss, who assisted us from the multi-point recording of our room to the installation of the correction functions. This service is, of course, also available to customers and should be noted if looking for a 100 percent solution.

However, the correction always refers to the current spatial conditions, so if you are renovating or even moving your listening room, the

process should be repeated – which is why it's worth asking the about costs and practicalities before buying.



▲ Armin Krauss from Avantgarde Acoustic captured acoustic fingerprints of our large listening room from a total of five different positions.



◀ Based on these frequency gradients, he created individual bass corrections for each of the two loudspeakers, which we were able to load into the Zeros via the free app.

integrated amplifier superfluous – which is exactly where the Zero TA comes in.

Externally it's only distinguished from its sister by tiny details – the dimensions and finish are absolutely identical, right down to the chrome-plated base – and as with the fully active model, the enclosure of the TA (the abbreviation stands for partial active) is made up of two cast polyurethane segments that are perfectly interlocked, and whose complex inner bracing ensures maximum damping and rigidity. The two large horn openings, for the 25mm tweeter and the midrange dome driver, are molded directly into the front panel, with the funnel of the remarkable 12.5 cm midrange driver protruding so far into the cabinet that the actual driver is fixed to the rear of the cabinet, with a separate cover standing proud of the rear panel. In the profile photo at the bottom right you can see how far it projects out of the loudspeaker.

In accordance with Avantgarde's CDC (Controlled Dispersion Characteristic) concept, the midrange dome has been tuned so precisely to its area of application that it regulates itself exclusively via its natural bandwidth limitation. The driver plays up to about 2.5kHz before gently rolling off, handing over to the 25 mm Mylar dome tweeter. This means that, unlike most other speakers, The Zero TA needs no crossover in the crucial mid/treble region, bringing audible advantages in terms of timing and phase linearity.

active bass

If the new Zero passively had been all-passive, it would probably have become a very challenging load for most amplifiers, for while the midrange and treble horns deliver excellent efficiency, the amp would have had to work hard to deliver adequate bass, and not just low-powered ones such as the APPJ tube model in our lead photo – even significantly more powerful amps could stumble in the face of such a combination.

That's exactly why the developers decided to use their XD bass module, also employed in the company's larger models: specifically, the module here is the XD-500, where the number corresponds

TEST-COMPONENTS

CD-PLAYER/STREAMER:

Audio Data Music Server MS II, T+A MP3000HV

D/A-WANDLER: Brinkmann Nyquist

FULL AMPLIFIER: APPJ PA901A, NAD C388, Luxman LX-380, T+A PA 3100 HV

LOUDSPEAKER:

DALI Epicon 6, Dynaudio Contour 60

CABLE: Avantgarde Acoustic (current), In-Acoustic LS-2404 (LS)

to the wattage of the integrated amplifier, driving a 30cm woofer with an impregnated paper cone.

As well as giving DSP low-pass filtering, which can be bypassed using a switch to allow the speaker to be connected to amplifiers offering a dedicated filtered subwoofer output, the TA is also equipped with the same room processor that we introduced in detail during the Uno XD test in STEREO 10/16. The computing unit can straighten deficiencies in the frequency response up to 500 Hz. This isn't full range correction, but even those with only a rudimentary familiarity with room acoustics will know this should cover the majority of circumstances. And there's plenty of scope for adjustment: the DSP allows a lift or cut of up to 24dB.

The speakers are connected in the classic way via conventional cables into the sockets of a concealed terminal panel, which also provides an XLR input for those amps with a subwoofer output. There's also a USB connector, not for audio signals but to allow programming of the DSP.

Integrated room processor

After the measuring procedure, which was carried out by Avantgarde Acoustic's customer support professional Armin Krauss (see box), the analyzer created an individual correction function for each speaker, which we transferred to the loudspeaker via a laptop and Avantgarde's free control app. The whole process took less than five minutes, helped by the fact we already knew the procedure from the Uno XD.

In the system memory of our Zero TA, the new spatial adjustment was arranged in a phalanx of 20 ready-made combinations of crossover frequencies and bass accentuations or attenuations, and even without the expert's input, you can still draw from a rich pool of ready-made presets. With a little bit of skill, you can also create your own specifications using the software or the control panel attached to the back of the housing. The Zero TA's preset memory offers ample space for experimentation.

However, we felt that there was no need for more work on the correction functions, as the linearization settings for our acoustically very good STEREO listening room concentrated on a few well-known room modes. With a total of ten equalizers, the



▲ Slim silhouette: The outstanding cover conceals the midrange driver built into the back of the cabinet.



▲ The large fabric dome of the midrange driver lies in a horn opening measuring 40 centimeters at the outer edges.

system was able to dampen this problem excellently, while a slight lift at 47 Hertz compensated for the subtle bass drop. In the screenshot on the previous spread you can see the final correction function.

Exciting dynamics

The first few minutes after activating the bass correction we can record as a real aha-experience. In fact, the DSPs made sure that a quiet clatter that we occasionally hear from our ceiling tiles at high listening levels had disappeared completely. In addition, voices and solo instruments stood out much better from the rest of the sound. For example, Natalie Merchant's haunting vocals on "Diver Boy" (STEREO Hearing Tests CD IV) were placed with a razor-sharp outline

between the speakers, while the instruments took up an astonishingly wide stage behind them. This solidity and fluidity even remained unimpaired when the deep bass and the dramatically rebelling instruments at the end of the title merged to form an impenetrable web.

We found a fantastic demonstration of the speed and stability and level stability of the TA in the punchy "Green Chimneys" from "Monk - A NYC Tribute": the Zero carried the deep percussion from the intro cleanly into the pit of our stomachs, with rapid attack and without any trace of compression. The solo saxophone, with its metallic-bright character, forms a strong contrast and whips out of the loudspeakers without ever appearing oversharp or even brash, the Zero succeeding in relentlessly revealing every detail of the music without becoming fatiguing.

And those active bass electronics mean the speaker's dynamic capabilities are completely independent of the power and load stability of the amplifier used. Even with our tiny mini tube amp with just under four watts of power, the Zero clenching its fists and hit hard, but most of the time, the TA played in the listening room on the end of Luxman's 17-watt LX-380: like the tiny one, this contributed a good portion of tube charm, which the Avantgardes underpinned convincingly. The combination with Audionet's extremely spatial "Watt" was both incredibly fun and probably the most dynamic of all the combinations tried.

As I said: Avantgarde Acoustic's uncomplicated Zero TA knows how to perfectly show off every amplifier – and do so without limits. **Carsten Barnbeck**



▲ One speaker input and a separate subwoofer-in. The USB socket is only used for programming the EQs. Incidentally, the enclosed power cable has a phase marker.

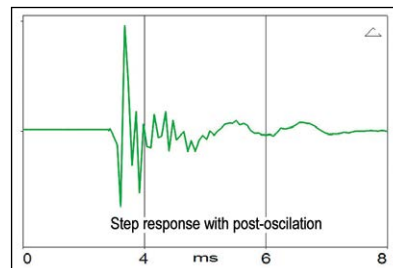
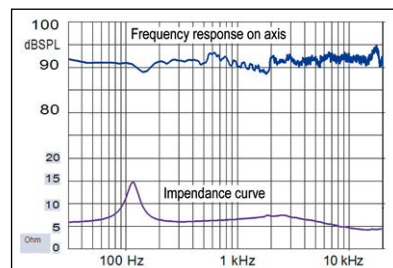
AVANTGARDE ACOUSTIC ZERO TA



at 10500 €
 Dimensions: 49 x104 x32 cm (WxHxD)
 Warranty: 10 years
 Contact: Avantgarde Acoustic
 Tel.: +49 6254 306100
 www.avantgarde-acoustic.de

Super workmanship, timeless design, level without end and a turning on character - the Zero is also partially active a hit!

MEASUREMENT RESULTS



DC resistance	4 Ohm
Minimum impedance	4,5 Ohm at 15000 Hz
Maximum impedance 1	5 Ohm at 125 Hz
Sound pressure level (2.83 V/m)	93 dB SPL
Power for 94 dB SPL	2.2 W
Lower cut-off frequency (-3dB SPL)	adjustable Hz
Distortion factor at 63/3k/10k Hz	0.3/0.1/0.1/0.1 %

LAB COMMENTS: Due to their DSP delay, we had to measure the TA with noise. The frequency response with deactivated EQ proves to be of exemplary linearity, and its impedance response uncritical. The step response is typically horn-like, naturally, but all three drivers work accurately. The two reverberations of six milliseconds are down to room acoustics.

FEATURES

Banana LS inputs, XLR-in, USB (programming only), 12V trigger input; power cable included

STEREO-TEST

SOUND QUALITY **91%**

PRICE/PERFORMANCE



OUTSTANDING

QUIETER AND STRONGER



In many audiophile circles, it is commonly believed that power conditioners and various other power-line accessories often do more harm than good, robbing the music of its vitality, color, and that oh-so-important, wildly intangible “boogie factor.”

AudioQuest’s **Niagara Low-Z Power Noise-Dissipation Systems** are designed to do the exact opposite. Niagara kills the noise while *honoring* the music, so that the listening experience can be exactly as it should be: compelling, immersive, *fun*.

“The difference was huge. AudioQuest’s Niagara 1000 not only cleaned up the power, it did everything that is the *opposite* of killing the boogie.... It was as if my system had gotten a heart-shot of adrenaline.”

— Herb Reichert,
Stereophile,
April 2017



audioquest®



THE DARK KNIGHT

Batman's record player? SME's stealthy matt black Model 15 turntable and tonearm remains unobtrusive, but musically it strikes a hard and fast blow for audiophile justice!

Made in England": once it was understood as a warning rather than a promise, as many of the island's products – to say the least – suffered from quality defects. However, even at that time, back at the beginnings of SME's 70-year history, the standard of the tonearms and later complete turntables of the Sussex-based company stood out positively. Whether on functionality, precision, finish or longevity, SME products were, and are, beyond reproach, and the famous SeriesV, introduced in the mid-1980s, has since been regarded as the tonearm par excellence.

The 309 used here, also sold as the Transrotor 5009 (with a special internal cabling system) by the Rake HiFi distribution company here in Germany, was directly derived from the SeriesV, and like that model, it has an extremely stiff, low-resonance magnesium tube, from which the headshell – of the same material – can be

removed for easier mounting and alignment of the cartridge. Instead of the massless support force adjustment by spring tension of the SeriesV, in the 309 this is



▲ The one-piece platter clamp is screwed onto the spindle and fixes the record in place.

done classically via a sliding counterweight, which is then fixed by means of a set screw.

We have been working with and listening to the "TR 5009" for years, because it has a firm place on our Transrotor Rondino nero reference turntable, which consists of shiny aluminum and bright acrylic parts. Next to the Transrotor, the compact, matt black SME model looks like "Batman's turntable", while reminding others of the US Air Force's stealth bombers. The moral of the story? Be inconspicuous and achieve a more sustainable effect – or possibly "Walk softly and carry a big stick"!

So what does catch the eye about the Model 15? Well, could be the three turrets with ten short rubber rings, or the sub-chassis weighing more than eleven kilograms including platter adjustment, which also decouples the tonearm base from external vibrations. This simple and effective solution, in which a central

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

dampening system made of tough gel controls all movements, comes from SME's superior Models 20 and 30, and the low centre of gravity of the suspension construction means that tumbling and tilting effects are minimal.

Powerful & sensitively controlled

Each of the three towers is supported by a height-adjustable foot, which sits on a rubber ring. Internally, it is cleverly designed, because in the interest of uninhibited energy dissipation, a small steel ball ensures an intimate, defined transition to the base plate. The spike-bearing motor rests on three hard rubber discs, which on the one hand prevent the drive from slipping and on the other hand precisely dictate its distance to the subplatter. The small, quiet three-phase motor drives this via a flat belt.

An external power supply unit with a rounded and slightly slanted control panel carries out speed control. Its elongated housing is filled with electronics, whereby a microcomputer drives the motor with

up to 1.5-ampere peak current by means of a potent MOSFET power semiconductor. The signals for this are generated by a microprocessor from the quadruple-high frequency of the ten-megahertz quartz, which in a sense sets the clock rate. The three Hall sensors of the motor provide permanent, high-precision feedback for the control loop so that setting and actual values can be matched.

After pressing one of the three speed buttons – in addition to the usual 33.33 and 45rpm speeds, the Model 15 also offers 78rpm – the 4.5 kg platter spins up and stabilizes quickly, with the “Lock” light of the electronic unit flashing for a few seconds until the speed is right, at which point it shines steadily. Even a tiny disturbance, such as the insertion of a tracking brush or gently touching the screwable plate clamp, is sufficient to disrupt the closely monitored symmetry, and again it flashes for a short time until the target value is correct again.

If one of the speed buttons is held down for a longer period of time, the selected speed can then be fine-tuned in steps of 0.01 percent. With the stroboscope disc on top, the speed can be brought up to the optimum with super-exact precision – to match the overall impression of the SME.

Setting up the turntable raises no questions or problems: we align the base plate, with the adjustable feet and a circular bubble, on our rack. After that, the we move one floor higher up to the subchassis, where the simple procedure was repeated, except this time the three suspension towers had to be raised or lowered using the supplied tools. A spacer plate defines the distance to the lower cylinders, which enclose the holding domes, so that the subchassis neither hangs too high nor too

low at the end, but works in the range of its optimal effectiveness.

An attractive offer

Since everything functions precisely, the necessary adjustments are neither a challenge nor as an effort, but rather a pleasure, also allowing the owner to familiarize themselves with the new turntable. The motor unit can of course also be acquired



▲ The subchassis is suspended with ten rubber rings apiece from each of three domes. These rings last for a decade and are easily replaceable.



▲ The small motor unit stands on three spikes in hard rubber bearings (r.). The distance between the subchassis level (o.) and the bolts around the supporting domes (l.) is specified exactly.



▲ The motor does not have firm contact to the platter and arm – instead the pulley peeps through a hole in the subchassis.

◀ The external electronic unit supplies and controls the motor with high precision at up to 78 revolutions per minute.

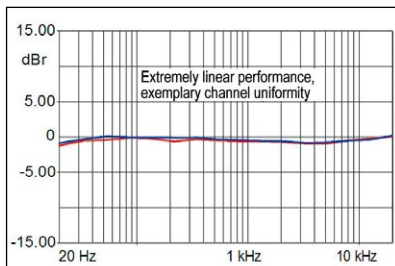


SME MODEL 15

around 12850 €
 (drive solo around 7950 €, complete price with tonearm SME 5009 and MC-pickup Transrotor Figaro)
 Dimensions: 45 x18 x36 cm (WxHxD)
 Warranty: 2 years
 Contact: SME
 Phone: +44 1903 814321
 www.sme-audio.com

An elaborately crafted turntable designed down to the last detail, which benefits from the manufacturer's decades of know-how and transfers essential design features of the large SME turnery machines to a more favorable price range. Extremely neutral, refined and audiophile sound.

MEASUREMENT RESULTS



FEATURES

External motor control with electronic speed change including 78 revolutions, phono cable, dust cover, various accessories, operating instructions

STEREO-TEST

SOUND QUALITY 100%
PRICE/PERFORMANCE
 ★ ★ ★ ☆ ☆
VERY GOOD



◀ Open up the electronics compartment and you reveal expensive components used for the supply and control of the drive motor.



▲ SME's Model 15 had to head its class against the well-proven Transrotor Rondino nero equipped with the same tonearm and cartridge.

without tonearm, but this should only be considered if you have an alternative of equally high quality as the SME 309 or TR 5009. And of course, the cartridge must also be the finest, which is why Transrotor pre-assembled us its "Figaro" MC, which costs 2500 Euro solo, has very similar performance to our very close to our reference and is only 2000 Euros when bought with a motor unit and arm. Since the TR 5009 will then cost 2900 euros instead of 3230 euros, the total the buyer will save is 830 Euros.

The model 15, equipped in such a first-class way, proved to be a high-end premium straight away. What does that mean? Simply that the SME produced, from the first note, enchantingly coherent, completely unaffected and yet emotionally engaging sound images of extraordinary three-dimensionality and elasticity. Forget the low-slung, slightly weighty looks of the SME: its sound is mobile, firm and sinewy up to the lowest positions of the frequency register, and entirely bereft of fat.

It doesn't show the solid character of heavy mass drives, but finds its own way to a dry and fine tautness, a finely graduated and always audible nonchalance, which seems to be extremely natural. Does that sound more like a description of a wine than a drive? Perhaps so, but then the SME is provoking such comparisons.

Perfectly balanced

The neutrality of its representation unfolds an attractive side, since the sound images do not lean in any "direction", but remain strictly on the path of audiophile virtue. This tonal balance and finds its mechanical counterpart in a short pull

cable to the right underneath the sub-chassis, which compensates for the opposite moment created by the belt tension and thus prevents the board suspended on the suspension struts from tilting towards the engine.

The concentrated energy of the performances avoids slipping into the sober or even trivial: rarely have I heard Alex de Grassis playing the guitar from his debut album "Turning: Turning Back" in such a concise and honest way and therefore all the more catchy. The instrument had body, radiance and authentic elegance. In addition, the sometimes hefty, sometimes filigree impulses bubbled off the strings as fluidly as water. The Model 15 also sets standards when it comes to timing.

With Anne Bisson's outstanding "Four Seasons in Jazz" direct to disc production, where no mastering engineer of any kind was able to influence the beat, the SME revealed its entire grandeur by fine-tuning the pianist and singer as well as her companions with breathing vitality, down to the tiniest details and projecting them into the listening room in an extremely authentic manner.

Even our reference turntable had trouble keeping up. As mentioned, the Transrotor Rondino nero was equipped with the same arm and cartridge, with the geometry, arm height, contact force and antiskating matching on the dotted line. Yes, the German 'table always sounded more present with a certain nuance and for this reason it even seemed a bit slicker, but didn't get into the groove or grip as well as the unity of the "Dark Knight". Ultimately, it would be all about taste.

Conclusion: Batman's stealth turntable SME Model 15 hides its talents from the outside world, and thus has surprise on its side.

Matthias Böde

BASIC RESEARCH

FINKTEAM WM4 LOUDSPEAKER



Karl-Heinz Fink
Maxstraße 75
45127 Essen
Germany

Phone: +49 201 236412
Fax: +49 201 236413
E-Mail: Karl-Heinz@finkteam.com
Internet: www.finkteam.com

TOP TEN

When a brand like Marantz replaces its flagship models after more than a decade, attention must be paid. And it's clear no effort was spared with the new Premium series „10“

By Tom Frantzen

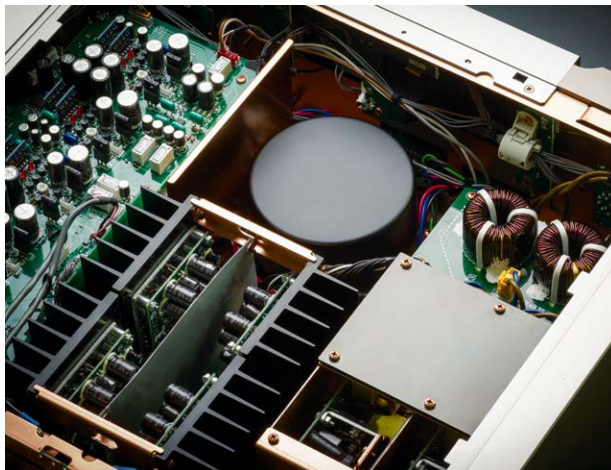
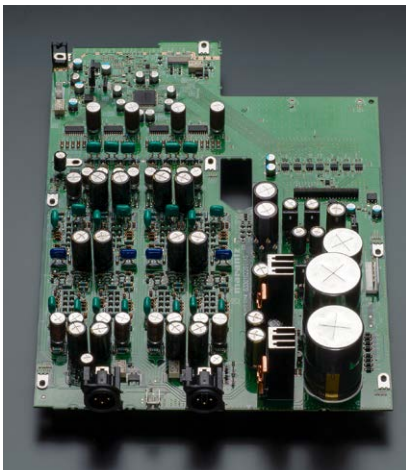


Ten. It's the number of human fingers, and thus the logical basis of both our mathematics and the way we count everything from dimensions to wealth – but also it's also a sort of perfect, magical number, often denoting the absolute, the order, the limit. (Unless you have an amplifier that 'goes to 11', of course!)

In Marantz history, ten has an even more special meaning, since the 10 B was once the best and most sought-after tuner made by the company. Now the number is experiencing a renaissance, being selected for the company's flagship products, ranking it above the previous Premium Line, which ends with „11”.

Marantz describes its new top-class duo of player and amplifier „The New Reference“ and – as is customary for this manufacturer – the new SA-10 player is naturally superb at reproducing both CDs and SACDs. Yes, the previous SA-7 was able to do the same, but the boom in high-resolution formats made a model change in favor of a broader architecture inevitable: as a result the SA-10 (around 7000 euros) now also offers what's said to be a top converter for external digital sources, able to play back HD formats from DVD-R, USB sticks or other sources including a PC. All that's lacking on the SA-10 is an integrated network connection.





◀ The „heart“ of the player is the analog output stage, of course equipped with Marantz HDAM modules (left).

◀ In addition to the latest technology, you can also find something tried and tested in amplifier construction – and high-quality, custom-made toroidal transformer, with separate windings for the pre and power amp sections.

DAC or no DAC

The real highlight here, however, lies in the thoroughly revolutionary technology behind this wide-ranging ability: developed by a team including Marantz veterans Ken Ishiwata and Rainer Finck – see panel –, the SA-10 is described by Marantz as a player/DAC as a player without DAC!

How so? Well, the SA-10 converts every played audio signal into a DSD bitstream with quadruple resolution (DSD256 with 11.2 megahertz sampling rate). Two master clocks guarantee jitter- and

rounding-error-free clock upsampling for 44.1/88,2/176,4.352,8 or 48/96/192/384 kilohertz, which are actually transformed into DSD with 11.3 or 12.3 megahertz.

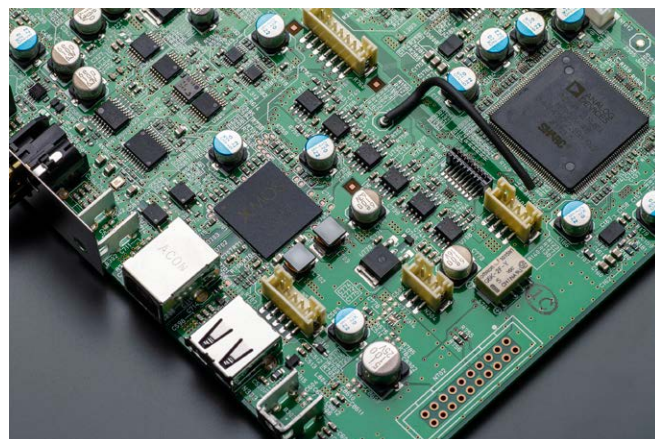
In simplified terms, these 11.2 million samples per second allow such a fine gradation of the extrapolated signal – especially when compared to CD – that there’s hardly any question of a digital approximation to the original analog signal. In effect, the signal is an analog of the original waveform, and so – as with the PWM technology in Class D amplifiers (also the PM-10) – instead of conventional

conversion back to analog, all that’s required is a low-pass filter that filters out the sampling frequencies and noise shaping. What this delivers is a reconstructed analog signal of amazing precision.

In addition, the owner of the SA-10 can intervene in the sound process with two different filters, one providing a slow roll-off and very short impulse response, the other offering the option of a medium roll-off with short pre-ringing and longer post-ringing. These are essentially the same as those found in the SA-11 disc player and NA-11 network music player,



▲ The SA-10’s CD/DVD/SACD drive is the third generation of an in-house design – no off-the-shelf thinking here.



▲ The DAC board contains the Marantz Musical Mastering stream and conversion processes, i.e. DSD up-sampling and analog reconstruction.



◀ In the highest Marantz device class, the D/A converter remains in the player, meaning the amplifier is resolutely analog-only. It also has a very high-quality phono stage, and a separate headphone amplifier.

implemented at a much higher over-sampling rate, thanks to that upconversion to quad-DSD. We mostly opted for the latter (Filter 2): the difference is audible, but sometimes subtly so.

The enormous weight of over 18 kilograms does not come by chance, it is due to the non-microphonic, massive construction, along with appropriate material selection, the in-house SACD-3 drive as well as complex shielding including additional copper plating of the housing.

Amazing performance

The aim for the new PM-10 integrated amplifier (around 8000 euro) was simple: Marantz designed it to surpass even the SC-7/MA-9 preamp/mono power amplifier combination! Ambitious? Seems not: even before we listened, the PM-10, its power derived from four Class D monoblock amplifiers, was already amazing us in the measurement laboratory. In the first few minutes we were confused by the distortion measurement at low powers with an audible sound from the speakers. We suggested an analysis of the connected load and its inclusion in the feedback or at least a frequency response correction, because the usual Class D difference

BEHIND IT ARE CLEVER MINDS

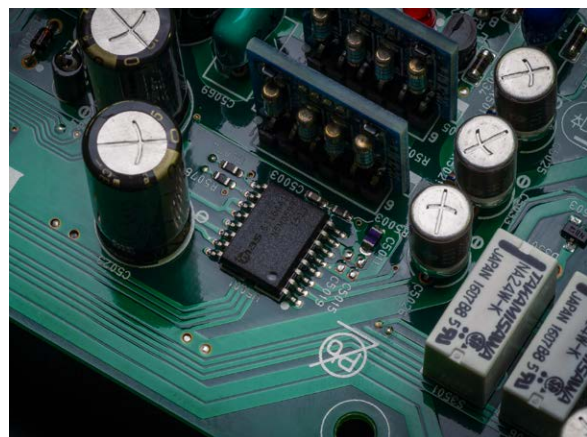
Ken Ishiwata, Marantz brand ambassador, has been responsible for numerous special editions of proven components (KI, SE, OSE), and has been involved for a long time in the sonic tuning of the company's top-of-the-range devices. For the Series 10 he worked closely with colleague



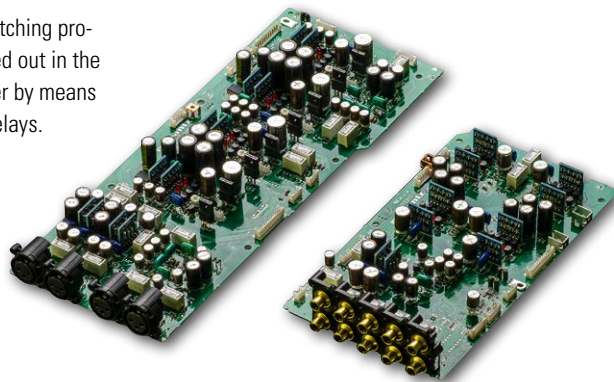
Rainer Finck, a proven developer and technology expert who left his unmistakable fingerprint on the Series 10. Finck worked at Philips and later Marantz at the time when the companies were involved in the design and implementation of the basic bitstream technology, and later worked intensively on the further development of DSD/SACD, digital technology and switchable filter algorithms. His knowledge and experience were key to realising the Marantz SA-10 and its practically converterless architecture via „Marantz Musical Mastering“.

„OF COURSE IT'S EXPENSIVE, BUT IF WE WANT TO MAKE SOMETHING EXTRAORDINARY, WE HAVE TO DO IT.“

KEN ISHIWATA



◀ Important switching processes are carried out in the Marantz amplifier by means of high-quality relays.



▲ The input/preamplifier section is built with discrete components including with HDAM modules: it features balanced working for extremely low noise and distortion.



◀ The fully balanced architecture of both components makes the most of balanced connections between the two.

between four and eight ohms does not exist here, and after a few minutes this behavior, initially misunderstood as a spurious signal, completely disappeared.

However, our test sample was able to achieve more than 400 watts per channel, far exceeding its manufacturer's claimed performance, into both 4 and 8 ohms loads!

The amplifier also features phono and numerous other connection options, with the extremely low-noise preamplifier also providing unbalanced input signals. And if the performance should not be enough for you, you can switch to bi-amping with a second PM-10.

The star of this top-class Marantz duo is the player: it's not only a super CD player but also one of the best SACD players and can even upgrade high end „foreign“ systems as a DAC, using its unconventional conversion technology.

The first bars in the listening room made it clear: this Marantz duo deserves to be considered in the very top class of hi-fi components. The staggering detail reproduction as well as the power of a large orchestra in Dvorák's 9th Symphony under Fritz Reiner (Living Stereo SACD) was delivered with enthusiasm, and the same was true for multifaceted voices and rock music à la Metallica. Both the player and the amp have plenty of punch, which means that they can build up physical pressure in deeper layers.

They combine high resolution, well-balanced temperament and dynamics with fine spirit, calm and a dash of warmth to create harmonious musicality that is typical of the brand – but all at a new, previously unattained level. „Top Ten“? Definitely! Congratulations!



▲ This is what one of the four Marantz adapted mono power amplifier modules looks like.

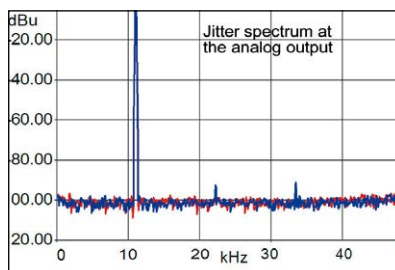
MARANTZ SA-10



for 7000 €
 Dimensions: 45 x 13 x 46 cm (WxHxD)
 Warranty: 5 years,
 Contact: marantz
 +49 541 404660, www.marantz.de

Top-of-the-range CD/SACD player with „converterless“ DAC, which converts all PCM data formats into a high-resolution DSD bitstream. Unprecedented material battle with a self developed drive that also reads HD formats on DVD. Top workmanship and top sound.

MEASUREMENT RESULTS



Signal-to-noise ratio compared to 24 bit	91.7 dB
Signal-to-noise ratio ref. to 16 Bit	90,2 dB
Signal-to-noise ratio Digital Zero	92.0 dB
Distortion factor at -9dBFS	0.006 %
Distortion factor at -60dBFS	2.2 %
Jitter	1.8 ns
Deviation from fs	-6 ppm
Amplitude of the data stream	532 mV
Reading time	14 s
Output resistance RCA/XLR	47 Ohm/90 Ohm
Output voltage RCA/XLR	2 Volt/4 Volt

LAB COMMENTS: Absolutely phenomenal values, hardly surpassable in noise, jitter, distortion, transducer precision and output resistance. Only the reading time – typical for SACD-players – is a bit long at 14 seconds.



CONNECTIONS

Plays CD/SACD/DVD discs with HD audio formats, balanced and unbalanced connections, DAC/AC/DVD with USB, Toslink and coaxial connections, headphone jack, remote control.

STEREO - TEST

SOUND QUALITY CD	95%
SOUND QUALITY SACD	95%
PRICE/PERFORMANCE	
★ ★ ★ ★ ★	
EXCELLENT	

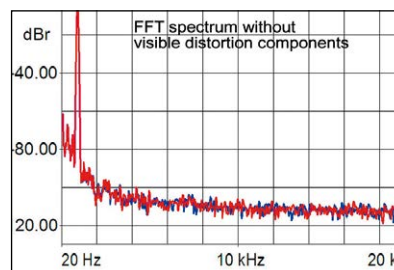
MARANTZ PM-10



for 8000 €
 Dimensions: 45 x 17 x 49 cm (WxHxD)
 Warranty: 5 years
 Contact: marantz
 +49 541 404660, www.marantz.de

With 2 x 400 watts, this is an extremely powerful, modern amplifier of the absolute top class. Technically very sophisticated design with four bridged monoblocks (two per channel). Superior-balanced and yet fine, very harmoniously balanced sound on the slightly rounded, warm side.

MEASUREMENT RESULTS



Continuous power (8 Ohm / 40hm)	427 W/423 W
Distortion at 50mW/5W/1dB Pmax	0.08 %/0.001 %/0.001 %/0.001 %
Intermod. 50mW/5W/1dB Pmax	0.008 %/0.02 %/0.04 %
Signal-to-noise ratio at 50mW/ 5W	77 dB/87 dB
Phono MM (5 mV for 5 Watt)	86.4 dB (A)
attenuation at 4 Ohm (63Hz/1kHz/14kHz)	333/250/166
Upper cut-off frequency (-3dB/40hm)	60 kHz
Crosstalk Line 1 > Line 2	83.4 dB
Volume synchronization error at -60dB	0.002 dB
Power consumption Stby/ Btr	- W/51 W

LAB COMMENTS: Excellent values. Very high power at both 8 and 4 ohms load, extremely low distortion and extremely low noise values as well as a very high damping factor. In addition, very low crosstalk between the inputs, very good channel separation and excellent synchronisation of the volume control.



CONNECTIONS

Remote control, 2 x balanced and unbalanced connections (Phono-MM, CD, 2 x Line in, Recorder, Main In), recorder output and outputs for headphones/two pairs of speakers. No pre-out, bi-amping possible.

STEREO - TEST

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

MUSICAL FIDELITY

NU-VISTA 800 AMPLIFIER



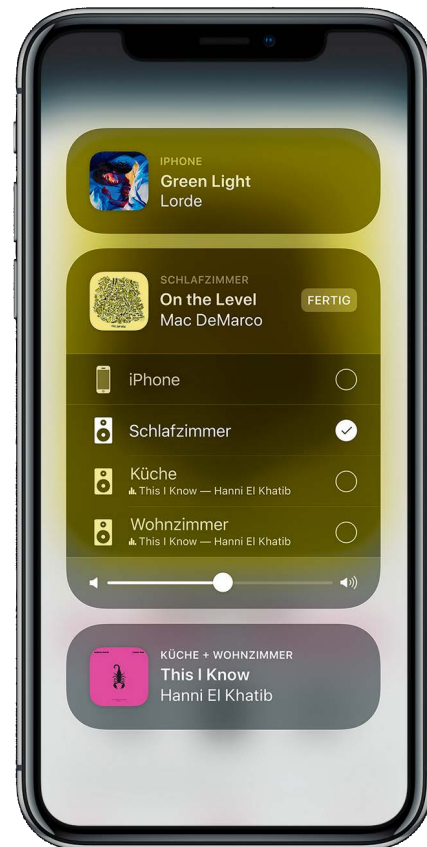
State of the art design for reference level reproduction

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.

IPHONES ADD FLAC & AIRPLAY 2

A surprise from Cupertino: the new iPhone X plays FLAC files. And thanks to iOS 11 with Airplay 2, you can send music to multiple speakers at the same time.



▲ Multiroom capability thanks to Airplay 2: the iPhone X with iOS 11

Until now, Apple had always refused to decode FLAC, but now the popular lossless format is supported by the iPhone X, in a move largely unnoticed by all the hype surrounding the new model. However, for the other iPhone and iPad models, as well as for the iPod, FLAC is - as yet - not on the data sheet.

Another advance in the new iOS 11 is Airplay 2, which can now stream music from iOS devices to several loudspeakers simultaneously – at least provided that they are Airplay 2-compatible. Previously, this was only possible from the iTunes player on a Mac or PC, and in Airplay 2, the music is also streamed at high speed to the speaker, where it is handled by a much larger buffer, meaning even longer his means that even Wi-Fi drop-outs can be covered, in recognition that multiroom systems aren't always the ideal wireless environment.

iOS 11 with AirPlay 2 is available as a free software update for the iPhone from 5s, all iPad Air and iPad Pro models, iPad 5G, iPad mini from 2G and the latest iPod touch 6G. However, iOS 11 only runs 64-bit apps, so before updating you should ensure your apps are compatible (see screenshot) – especially important audio apps such as Onkyo's "HF player".

Apple has remained true to the Lightning port on the new iPhones, in the face of speculation it would switch to USB-C, but iPhone X (i. e.: "ten") has adopted the much rumored frameless display – a first for OLED technology – which now occupies almost the entire front panel. Instead of the mechanical home button, one swipe from bottom to top via the display, while infrared-based facial recognition replaces the fingerprint sensor for authentication.

Wireless charging according to the Qi standard is also new on both the X and the iPhone 8. The iPhone X starts at 1150 € (for the 64 GB version), while the iPhone 8, with 4.7in display, starts at 800 euros (64 GB) and the "8plus" with a 5.5-inch display at 910 euros. iPhone 7 now costs 630 Euro with 32 GB of memory.

Ulrich Wienforth



▲ Bang & Olufsen is one of the first manufacturers to support AirPlay 2 wireless speaker systems. In the picture BeoSound 35



▲ To find out whether your apps are compatible with iOS 11 (i. e. 64-bit apps), see iOS 10.3 under Settings>General>Info>Apps.

In the technical data of the iPhone models X, 8 and 7 - with iOS 11 - the „supported audio format“ for the first time also includes „FLAC“. ▶

audio reproduction

Supported audio formats: AAC-LC, HE-AAC, HE-AAC v2, Protected AAC, MP3, Linear PCM, Apple Lossless, **FLAC**, Dolby Digital (AC-3), Dolby Digital Plus (E-AC-3) und Audible (Format 2, 3, 4, Audible Enhanced Audio, AAX und AAX+)

User definable maximum volume level

40 YEARS OF EXCELLENCE



Loving music

The best active concept

Visit us at High End 2018



Turntable: concept active wood
Tonearm: concept
Cartridge: concept MC



10. – 13.05.2018



Clearaudio dealers
Find our dealers on our website:
<http://clearaudio.de/en/dealer/dealer.php>
Or scan the QR code.



aufsess.com



Clearaudio electronic GmbH
Spardorfer Straße 150 | D-91054 Erlangen | Fon: +49.9131.40 300 100 | Fax: +49.9131.40 300 119 | info@clearaudio.de | www.clearaudio.de
Made in Germany | Only available from authorized Clearaudio dealers. www.analogshop.de

Levinson improves its integrated

Mark Levinson showed a revised integrated amplifier at CES, the 585.5 replacing the 585, and having an integrated phono stage taken directly from the reference preamplifiers 523 and 526. This allows gain, impedance and capacitance to be adjusted - even from the remote control, and being fully discrete should be extremely quiet.

In addition, the 585.5 has a high-quality DAC, built-in, able to handle DSD in native form, while Clari-Fi restoration aims to bring back to life data-reduced, compressed music. The 585.5 delivers 200W per channel into eight ohms and 350W into four, but the price is yet to be fixed.

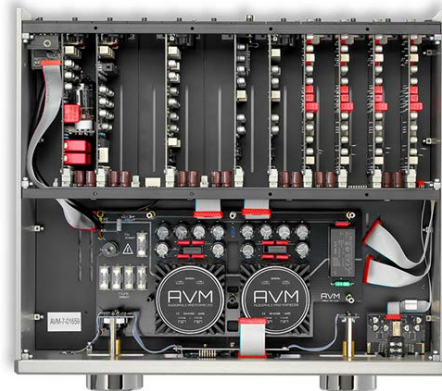


www.marklevinson.com

STEREO
MAGAZINE
NEWS

New from AVM: PA 8.2 modular preamplifier

Thanks to plug-in card technology, AVM's new Ovation PA 8.2 preamp can be adapted to the user's requirements, adding a digital module, a phono pre-amplifier and even a tuner plug-in card. There's also output flexibility: In addition to the classic transistor stage, a tube module is also available. The PA 8.2's headphone



amplifier operates in Class A technology, and the linear power supply provides separate supply voltages for digital and analog sections, with a separate high-voltage power supply unit for the tube stages when fitted. The basic PA 8.2 costs just under 6000 Euros in black or silver, with a chrome fascia available as an extra-cost option, while adding the tube output module, XLR/RCA inputs and tone controls can bring the price to around 9,500 Euros. The new plug-in modules are downward compatible with the previous model PA 8 from AVM.

www.avm-audio.com

Perreaux adds Phono and DAC options



New Zealand manufacturer Perreaux has revised its Eloquence 250i integrated amplifier: the new top-of-the-range 255i model uses even higher-quality capacitors and has an improved display. With three power transformers, it delivers up to 530W per channel into 4 ohms. Six high level inputs (XLR, 4 x RCA, 1 x mini jack) are standard, and it can also be equipped with phono and DAC modules. The DAC module uses the

ESS9038-Pro converter and offers 2 coaxial and 2 optical S/PDIF inputs, plus a USB-B port for a computer, and can also be retrofitted to the 250i and 150i models. The Perreaux 255i is 8500 Euro (without modules).

www.perreaux.com

Phono-preamp with balance control

Cartridges don't always have ideal channel balance, so to compensate for the two new phono preamps from Cambridge Audio have a small knob on the rear panel to adjust the balance by 4 dB. The „Solo“ (175 Euro) is a pure phono MM preamp, while the „Duo“ (300 Euro) offers separate inputs for MM and MC pickups, and is also equipped with a headphone jack and volume control. Thanks to auto standby, both devices reduce power consumption to less than 0.5 watts after 20 minutes of idle time. They are now available in specialist shops and via www.cambridgeaudio.com.



New premium series from **Piega**



Further development of the Piega Premium series from the shores of Lake Zurich: the new generation comprises two floorstanders – the Premium 701 (from 2650 Euro each) and Premium 501 (from 1850 Euro) – and the bookshelf Premium 301 (from 1050 Euro). The machines aluminum housings have been improved,

with the grilles now flush fitted into the gently curved, C-shaped profile, and so have the drive units. For example, the new LDR 3056 tweeter is now used in the top model, and the improved MKII LDR 2642 in the two smaller speaker, with Piega saying the numerous details of the bass/midrange drivers have also been improved. www.piega.ch

Sound United buys **Classé Audio**

Consolidation continues in the hi-fi industry: last year, Californian company



Sound United acquired the Denon and Marantz brands, and now it has snapped up Canadian high-end manufacturer Classé Audio, previously part of Bowers & Wilkins. Classé specializes in pre-, power- and integrated amplifiers for stereo and multi-channel systems, and CEO Dave Nauber continue to lead the brand under its new owners. Sound United, which also owns Polk Audio, Definitive Technology and Boston Acoustics, is backed by Boston-based private equity firm Charlesbank Capital Partners.

www.classeaudio.com

Purist Mini DAC from **Chord**

At CES at the beginning of the year, Chord Electronics announced the replacement for its compact 2QUTE DAC, the „Qutest“. Based on the technology of the Hugo 2, the new model offers neither a headphone amplifier nor an integrated rechargeable battery, and is designed purely for use with a home system. It accepts PCM signals up to 768kHz and DSD at up to 22.4MHz via its galvanically isolated USB B connector, and also has one optical and two BNC-S/PDIF inputs. Four different digital filters can be selected. And the solid housing is machined from a single piece of aluminum. The Qutest is built in England and goes on sale from February at 1550 Euro.



chordelectronics.co.uk

GAMECHANGER!

Reviewer's all over the world can't be wrong!



WOW XL

ACOUSTIC SIGNATURE

Teutonic engineering.



Acoustic Signature
www.acoustic-signature.de
info@acoustic-signature.com
 Made in Germany

Krell DAC with volume control option

Krell's new D/A converter, the Vanguard Universal DAC, is now available at 5900 Euro. It accepts PCM signals via S/PDIF coaxial and HDMI up to 24/192, and via S/PDIF optical up to 24/96, and DSD only over HDMI,



and can also play all common sound formats, including high resolution, from USB memory devices. Bluetooth with aptX is also provided, and the Vanguard can also access Tidal and Deezer and is Roon-ready – subject to appropriate subscriptions –, while Krell's dedicated app for iOS and Android controls network audio. Inside is an ESS9018 DAC chip, feeding a balanced, fully discrete Class A analog circuit, and if the preamplifier option is activated in the menu, the output volume can be adjusted to allow the Vanguard to be used directly into a power amplifier or active speakers. An aluminum remote control is supplied as standard.

www.krellonline.com/

Affordable Magico

Until now, the US loudspeaker manufacturer Magico has been known for offering „HiFi for the happy few“ – highly desirable products beyond the means of most.



However, its new A-Series is intended to widen its appeal, with the 1.12m-tall floorstanding A3 speaker just under 10,000 euros a pair in the USA. The closed-box cabinet is made entirely of aircraft-grade aluminum with a brushed, anodized finish, and the speaker uses a pure beryllium

dome tweeter, a 15 cm midrange driver with a carbon fiber cone and a layer of „XG Nanographs“ and two bass drivers with Magico's „Graphen Nano Tec“ cones. The voice coils of the midrange and bass drivers are made of pure titanium wire, and the 24dB/octave crossover, uses Mundorf components. With an impedance of 4 ohms, the new model is launched in the first quarter of this year – initially in the USA.

www.magico.net/

Sonoma: novel electrostatics

American/British company Sonoma Acoustics is debuting a new electrostatic driver system: called HPEL (high-precision electrostatic laminate), it comprises consists of many small cells operated in parallel, without the stator grid usually found in drivers of this kind. The patented technology makes its debut in the M1 headphone system, which comes complete with a power supply/DAC providing both high-resolution USB and S/PDIF inputs and analog RCA and mini-jack connections. Analog input signals are digitized with an AKM A/D converter, and the integrated DSP optimizes the amplitude and phase response for the HPEL transducer. The headset itself has magnesium housings and sheepskin upholstery, is designed to reproduce frequencies up to 60 kHz and weighs only 300 grams without cables. However, the price is less lightweight: the M1 is now on sale at 5700 Euro for the complete set.



www.sonomaacoustics.com

T+A completes Series 8

Not all hi-fi components are 43 cm wide, and now T+A is expanding its 'just over half width' 8 Series into a complete system. The 27cm-wide range started with the DAC 8 converter, which was later supplemented by the AMP 8 power amplifier; now there's the MP8 source module, which is based on the 'full size' MP 2000 R



MKII. It has a CD drive and FM/DAB+ radio on board, and also acts as a network player, accepting PCM files up to 24/192 kHz via Ethernet or Wi-Fi. It also provides access to Internet radio and streaming services such as Tidal,

Deezer and Qobuz, can also receive Bluetooth signals with aptX, and allows the connection of external digital sources via S/PDIF coaxial and optical, a PC via USB-B and two USB memory devices via USB-A. However, there's no onboard digital conversion: instead, the MP8 outputs to an external DAC – such as the DAC 8 – via USB-A, or can connected to other DACs via S/PDIF. An infrared remote control is also included, or an entire Series 8 system is controlled via the MP 8 using the T+A app. The MP8 is now available for 3150 Euro.

www.ta-hifi.de/en/

Unequal partners: LG cooperates with Meridian

Opposites attract, they say – and this certainly applies to the recently announced partnership between Korean consumer electronics giant LG and British high-end manufacturer Meridian. To date LG hasn't been known for its audiophile ambition, while Meridian has had little involvement with the mass market – but now, in order to provide „more people around the world with access to high-quality audio“, Meridian make its know-how available for the development of LG products. The two will work together on a variety of LG products, including sound bars and wireless speakers, but there's no talk of technology transfer in the opposite direction – so probably no Meridian OLED TVs on the horizon!



www.lg.com, www.meridian-audio.com/

THORENS®



TD 907 | TD 905 | TD 903

TEP 302



MM 008 / MM 008 ADC



MM 002



TD 206



TD 203



GENUINE



A premiere: for the first time, the Berliner Philharmoniker recorded live in front of an audience using the direct cut method. The result appears exclusively on LP.

A new recording of the Brahms symphonies by the Berlin Philharmonic Orchestra is nothing unusual – indeed it follows a tradition, in that the great composer himself conducted the orchestra several times. Technically, however, this new recording is extraordinary, being based on an extinct technique from the beginnings of audio technology: direct cutting.

A century ago, Enrico Caruso sang powerfully enough into a sound funnel to set up vibrations in membranes that deflected a cutting head, scoring the sound into the grooves on a wax surface. And this basic principle, albeit technically refined, has remained unchanged to this day, as Rainer Maillard, the sound engineer responsible for the Berlin Brahms project, explains. “A single pair of stereo microphones mounted directly above the conductor’s desk converts the sound into electrical oscillations. These vibrations are transmitted directly to the head of a vinyl cutting machine via a cable,” he says. “As the music is played in the Great Hall of the Philharmonie, the LP master – , which serves as a model for the pressing of the records – is cut in real time. There is no shorter - more direct - signal flow for the production of a sound carrier.”

Maillard, and his colleagues from the renowned Emil Berliner Studio, are probably the only ones in the world with

extensive experience of this process, but even so the session with the Berliner Philharmoniker in September 2014 was also something special: “We had to think about how to transport the sensitive and heavy vinyl cutting equipment into the Philharmonie. For the first time it was a direct cut recording outside our studio, and during a live concert. The biggest challenge was to change the master plates between the symphony movements, which takes about 40 seconds even at ‘F1 pit-stop speed’. That’s why we turned on a red light every time we needed to change the slides, so Sir Simon Rattle knew he had to wait.”

The plates were sent to the Optimal pressing plant, where they were used as masters for pressing the records, with no editing possible – something Rattle describes as an “absolutely terrifying and satisfying experience at the same time”. Since each work was recorded at the dress rehearsal and two concerts, it was possible to choose between three versions for each side of the album. Tape recordings recorded in parallel were used for monitoring, because listening to the masters would have destroyed them.

Only two ‘A’s

In view of this background, we were intrigued when the vinyl box finally arrived: it’s heavy, and on the cover there is a photo of Sir Simon Rattle engraving

his name abbreviation on the masters. At the bottom left is the reference to the purist production methodology: “AA”, for analogue recording and analogue master, the third ‘A’ – for subsequent analogue mixing – irrelevant for this direct cut technique.

Inside the box, one first sees the certificate signed by Rainer Maillard, guaranteeing that “this edition represents the optimum analogue sound recording”, followed by two black-and-white photos showing the recording set-up in the Berlin Philharmonie from a bird’s eye view as well as the lathe for cutting the “primal record”, a Neumann VMS 80.

There’s also a 72-page, large-format hardback book with information on the recording process and the works: When was the premiere? Why is Brahms the legitimate heir to Beethoven? It’s a pleasure to browse: thanks to the well-researched, comprehensible and easy to read texts – another advantage of the larger analog format! Remarkable illustrations also adorn this book and some – such as a photograph by Johannes Brahms himself – are even removable!

We put on the B-side of LP 2, and hear extended silence, then beautifully singing woodwinds followed by revelatory strings – the sound gets under your skin, and you wish it would never end. It’s a feeling difficult to describe, as if one had actually achieved the impossible: to capture the aura of the moment, but in no time at all, the side is over and you have to force yourself to adopt an analytical approach.

The aura of the moment

In comparison, a recording of the same works by Kurt Masur and the New York Philharmonic for CD (Warner Classics) sounds harder in the strings, more

LINKS

Available at:

www.berliner-philharmoniker-recordings.com

Price: 499 € (+ shipping costs)



1



2

1 The Berliner Philharmoniker under Sir Simon Rattle recorded the symphonies of Johannes Brahms in September 2014. 2 Direct-to-Disc was recorded using the Neumann VMS 80 cutting machine, the cutting head of which engraved a lacquer. 3 Cutting engineer Maarten de Boer checked their quality.



3

PHOTOS: MONIKA RITTERSHAUS

samples available to us were flat and, since they were recorded at high levels, had minimal rumbling and hissing, even though crackling will never be completely avoided in a record. In reference to Brahms' year of birth, only 1833 copies were pressed, and the recordings will not be available as CD or download.

Olaf Maninger, principal cellist of the Berliner Philharmoniker and managing

director of Berlin Phil Media GmbH, sums up the project in a nutshell: "When perfection is most important to you, you end up with digital recording techniques. But the Brahms box comes closer to the live experience than any other recording I've ever heard."

Sir Simon Rattle agrees: "In my opinion, this is the most honest recording of our orchestra." **Andreas Kunz**

„BEST POSITION“

Sound engineer **RAINER MAILLARD** on the direct cut vinyl project



STEREO: How did you set up the microphones?

I opted for a system often used in orchestral

recordings in the 1950s: setting up two microphones with a figure-eight characteristic at an angle of 90 degrees, so that the stereo impression is only created by level differences. During the orchestra rehearsals I found out the best position, one meter behind Sir Simon's head and four and a half meters above.

What are the special features of direct vinyl cutting?

Normally LPs are written with the so-called Fill script, in order to make optimum use of the space consumption depending on level, phase and frequency response and to avoid bleeds at the same time. For this reason, a preview signal is required in addition to the modulation, which arrives 900 milliseconds earlier at the cutting system and helps to calculate the optimum propulsion. Analogue

input from the tape is triggered by a second playback head, while digital input is triggered by digital delays. Since both are not possible with a pure direct cut, my colleague Maarten de Boer had to adjust by hand the drive and depth of the groove - a tremendous achievement. Meanwhile, I had a hand on the level control to pull back noisy passages and boost quieter ones - a natural way of compression. I studied the score and orientated myself on a digital recording we had made during the rehearsal. Even though the tempo was not exactly the same, we knew how loud it would be.

Were there other challenges?

The longer the playing time of a set, the more difficult it becomes to place it on a lacquer. The longest continuous section - 3rd and 4th movement of Brahms's first symphony - has a duration of 21.30 minutes. Cutting an LP without the usual filling script on an LP is a challenge: at the dress rehearsal we didn't manage that, and at the first concert the groove became so thin that the needle would have jumped out when playing the record! In the second concert it succeeded - and that was fortunately also the best version musically.

angular in the wind instruments and somewhat "sharp" in the treble. Rattle and the Berliners on vinyl, on the other hand, sound much more three-dimensional, warmer and rounder, with strings and other instruments vibrating more naturally. And this despite the fact that the CD is a very good recording from the Avery Fisher Hall in the early 1990s!

The Beethoven symphonies, performed by the Deutsche Kammerphilharmonie Bremen under Pavo Järvi, serve as a benchmark for recent vinyl recordings. Both sets sound exceptional, but while Järvi/Beethoven's sound tends to be tight and analytical, the Rattle/Brahms sound is more holistic. The reasons for this are manifold and not only due to their repertoire and orchestral sound. The recording room (Tonstudio Nalepastraße vs. Berliner Philharmonie), the microphone arrangement (multi-miked vs. one-point stereo), and not least the recording process - all play a role, along with the fact that the Järvi/Beethoven is a digital recording that was only subsequently transferred to vinyl.

There's nothing to complain about in the production of Brahms disks: the

Lebenslänglich



unique high end audio

www.mbl.de

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

Sonderaufgaben:
MATTHIAS BÖDE

Geschäftsführender Redakteur:
MICHAEL LANG

Redaktion:
CARSTEN BARNBECK, ANDREAS KUNZ,
TOM FRANTZEN, Dipl.-Ing. ULRICH WIENFORTH

STEREO-Messlabor:
Dipl.-Ing. ULRICH APEL

STEREO-Fotostudio:
JOACHIM ZELL

Grafische Gestaltung:
DANIEL SCHIEPE

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-2017/2018_EN
Media-STEREO-Magazine-2017/2018_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



No compromise!



If you're really honest with yourself, you have to admit it: you've let yourself go.

That system is a little bloated now. The speakers are dated and too big; there are too many components; it's a nightmare to dust...

You've seen fancy wireless systems, but they just don't look right. You want speakers, not a dock. You want a simple life – not hours spent configuring apps, widgets, antimatter containment systems and whatever else 'they' come up with next. You just want to listen to music when you get home from work.

You want Dynaudio Focus XD.

It's active, hi-res, digital and wireless. And it's still a traditional hi-fi speaker. Each driver is powered by

its own perfectly matched, DSP-optimised digital amplifier for super-clear, super-accurate sound. That means your 24-bit/192kHz files – or any other source you connect – sound exactly as their creators intended. It means no wires. And because the speakers adjust automatically to the room they're in, it means you'll never have to tweak (unless you want to).

So if you really must quarrel, let it be about the next song. Not the stereo.

See the new Focus 20 XD, Focus 30 XD and Focus 60 XD at dynaudio.com



DYNAUDIO