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# STEREO

**THE GERMAN HI-FI MAGAZINE**

**ISSUE #12 2017**

**> TANNOY:  
PRESTIGE GRF  
CLASSIC STYLE  
AND A WORLD  
CLASS SOUND**



**> LUXMAN  
ONLY THE LOOKS  
ARE RETRO IN THIS  
SUPERB CD PLAYER  
AND AMP PAIRING**



**REPORTS: VINYL HEAVEN +++ SAMSUNG'S SOUND LAB  
REVIEWS: MELCO SUPER-SERVER +++ KEF'S SYSTEM IN A SPEAKER +++  
ACCUSTIC ARTS TUBE PHONO II AND MORE!**

# Lebenslänglich



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# TECTONIC SHIFTS



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No, things will never be the same: the landscape of the hobby we share is in a period of upheaval, albeit with great national and continental differences.

What am I talking about? On the one hand, the modern way of listening to music is via streaming, but then both computer and network knowledge is needed to elicit even one note from such a system - or at least a retailer who is experienced and service-oriented and offers his customers an all-inclusive service.

After all, often this way of accessing music goes hand in hand with the desire to be able to see as little as possible of the effort required for audio reproduction: no stacks of equipment with separate devices for each function, but rather all-in-one devices, or – ever more frequently these days – computers and active speakers. The listener may even want the speakers built into the wall, almost completely invisible, and with sound available in every room – so a retailer with good knowledge of ‘digital plumbing’ is going to be a must-have.

On the other side of the coin, however, there’s the continuing renaissance of vinyl, which shows no signs of flagging – complete with turntables, amplifiers, man-high speakers and huge record collections occupying entire walls of the listening room. And in the mid-ground between these extremes sits the CD, which is likely to prove more durable than some would have you believe, not least due to the billions of discs out there in music-lovers’ collections.

So where is the journey going? If you want to sense the trends in modern hi-fi, you can’t look past Europe at the moment and take a direction from the ISE in Amsterdam, which takes place annually at the beginning of February. This show is the fastest growing event of its kind in the world, combining professional PA technology, classic and high-end hi-fi, home cinema and custom installation – and it has a huge audience, not to mention attracting companies with new concepts for business areas as yet untapped. It had 65,000 professional visitors last time, and expectations for 2018 are even higher.

Meanwhile more classical high-end music lovers, whether professional or enthusiast, will certainly not regret a trip to the world’s largest show of its kind, the High End in Munich in May.

Events such as this ensure the hi-fi world remains in motion, following all its myriad paths, and with one certainty: music will always be part of our lives!

**Michael Lang**  
 editor@stereo-magazine.com

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



**Luxman**

Classic style meets up-to-the minute technology in the Japanese company's new D-380 CD player and LX-380 integrated amplifier



**Accoustic Arts**

A new reference: the Tube Phono II does just what the name suggests, but does so in spectacular style and with a winning sound



**Samsung**

What makes a soundbar? Behind the scenes of Samsung's state-of-the-art California audio lab, we find out how designs and tunes



**KEF**

The LS50 Wireless is not just a speaker, but a complete network audio system



**Tannoy**  
Created for the Scottish company's 90th anniversary, the Prestige GRF is a world-class loudspeaker in retro clothing

**Melco**

Still think all music servers are the same? The new N1A/2 will make you reconsider



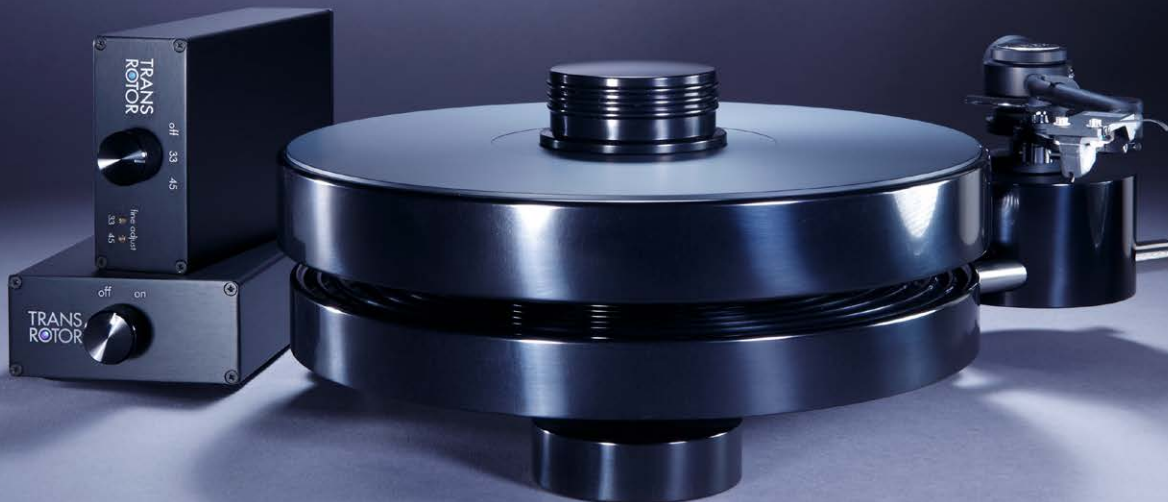
**Utrecht Record Collectors' Fair**

Visitors from all over the world flock to the Netherlands for this massive music event – we think you should, too



**Transrotor**

The Max nero comes as a complete money-saving package, including arm and cartridge. But it's the sound that makes it a steal



# R

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# RETRO REVISITED

High quality brushed metal fronts, rosewood veneer casework, and the magic of tubes: Luxman's new „Classic Series“ creates an aura of timeless elegance and nostalgic charm. But does the sound of D-380/LX-380 deliver what the styling promises?

**S**ome components are simply too good for testing: it's almost a shame to play them off against competitors or to get to the bottom of them with measuring instruments. That's exactly how I felt when I looked at Luxman's D-380 CD player and its LX-380 integrated amplifier partner, with which the Japanese high-end manufacturer – one of the world's oldest hi-fi brands, by the way - is expanding its "Classic Series". Now that series is already off the beaten track when it comes to general awareness, and perhaps only known to the

cognoscenti, so perhaps submitting it to 'normal' test scrutiny is already committing sacrilege.

However, you don't have to be an insider or a Luxman fan to realize something special's going on here, due to the retro look, including the wooden cladding for the sturdy metal chassis which evokes the spirit of long gone days, and the toggle switches and squiggle logo. Amps looked like this 40 years ago, and really only the tiny window for the signal from the infrared remote control indicates there's something modern about this one.

## High-tech in vintage clothing

True there were no CD players at that time, but even the D-380 player makes every effort to fit into the frame of solid nostalgia without appearing squeezed in. It impresses with its simple elegance and minimal controls on the elegant shimmering front panel, while the amp retains the wide range of functions usual on older



▲ If you buy both 380s, you also have two remote controls, but the amp's one will control all essential player functions.



▲ Just like in the past, when hi-fi fans wanted to adjust more than just the volume and inputs on their amp, the LX-380 has differentiated tone control with three switchable frequencies for the bass and treble controls.

▲ The D-380's double-triode tube is visible through the window, the digital outputs can be switched off, and the display can be switched to large numerals from the remote control by pressing the „Zoom“ button (above).

Japanese amplifiers and those “retro-styled” – something this Luxman shares with, for example, models from Accuphase.

So the LX-380 has a switchable tone control with three selectable input frequencies for the bass and treble controls, a phono section that can be used with moving magnet or moving coil cartridges, a switchable subsonic filter, tape monitor, loudness control and a headphone output.

Inside, it combines a tried and tested tube power amplifier design, in which three ECC82s control four 6L6GC power tubes, with what's said to be the first lossless volume control: the “Luxman Electric Controlled Ultimate Attenuator”, or LECUA for short.

This sits on its own circuit board and converts the music signal from voltage to current, adjusts the desired gain by combining several stages according to the

## TEST-COMPONENTS

TURNTABLE: Transrotor Rondino nero with arms from Jelco and SME

CARTRIDGES: Clearaudio Charisma V2 (MM), Transrotor Figaro (MC)

CD PLAYERS: Lua Appassionato MKII GS, T+A MP3000HV

AMPLIFIERS: Accuphase E-270, Accustic Arts POWER I-MK4

SPEAKER: DALI Epicon 6, Dynaudio Cont. 60, Q Acoustics Concept 500

volume knob, and then performs current/voltage re-conversion. The manufacturer says that as this runs over its entire range without any impedance change, LECUA has no negative influence on the signal-to-noise ratio or the frequency response of the LX-380. All of that is invisible to the user: rather everything simply works perfectly and precisely.

The D-380 CD player's handset offers a choice of modes: you can use the transistor output, or also connect a double triode ECC82 stage? The tube is located behind a small window, kept warm at all times and discreetly illuminated at the rear as soon as the small rocker switch, which is positioned below it, is operated.

It's logical that, despite the vintage flair, the developers used the latest technology for their purebred D-380, which, contrary to today's trend, only plays CDs and offers

▲ The L-68A, which is around 35 years old, was one of the models for the LX-380's design. The transistor amp cost around 2500 marks at that time.

no digital inputs. Texas Instruments' PCM 5102 DAC chip, with jitter reduction and selectable filter characteristics is used, and the dimmable and completely defeatable display can be switched to a large display of tracks and time data, which can then be read from a distance of a few meters.

If you are looking for signs of retro, you will find further refinements in the LX-380's elaborate transformers, but the “fascination of technology”, however sophisticated it may be in detail, kept in the background: upfront is the joy of the styling – and of course the sonic experience.

### The amp's the star

The player spoiled us with silky accuracy, sounding anything but mechanical: even in the transistor mode, the details in Eleni Karaindrou's “To Vals Tou Gamou” were woven delicately into the sound picture and created an almost floatingly light grace, but the player also grabbed the heavier sound of the Blues Company in full-blooded manner.

Switching to tubes, it was as if the upper midrange was highlighted more



energetically – although nothing is apparent in the frequency response measurements – with the effect of making voices and strings a little more present and striking, and the strike on guitar strings more prominent. Switch to the time-optimized Filter2 via the remote control and, depending on the quality of the recording, you get a more spatial representation, albeit at the expense of a sometimes somewhat brittle overtone. Which filter setting fits better and which one is more pleasing is a matter of personal taste- they're easily selected from the listening position for quick comparisons.

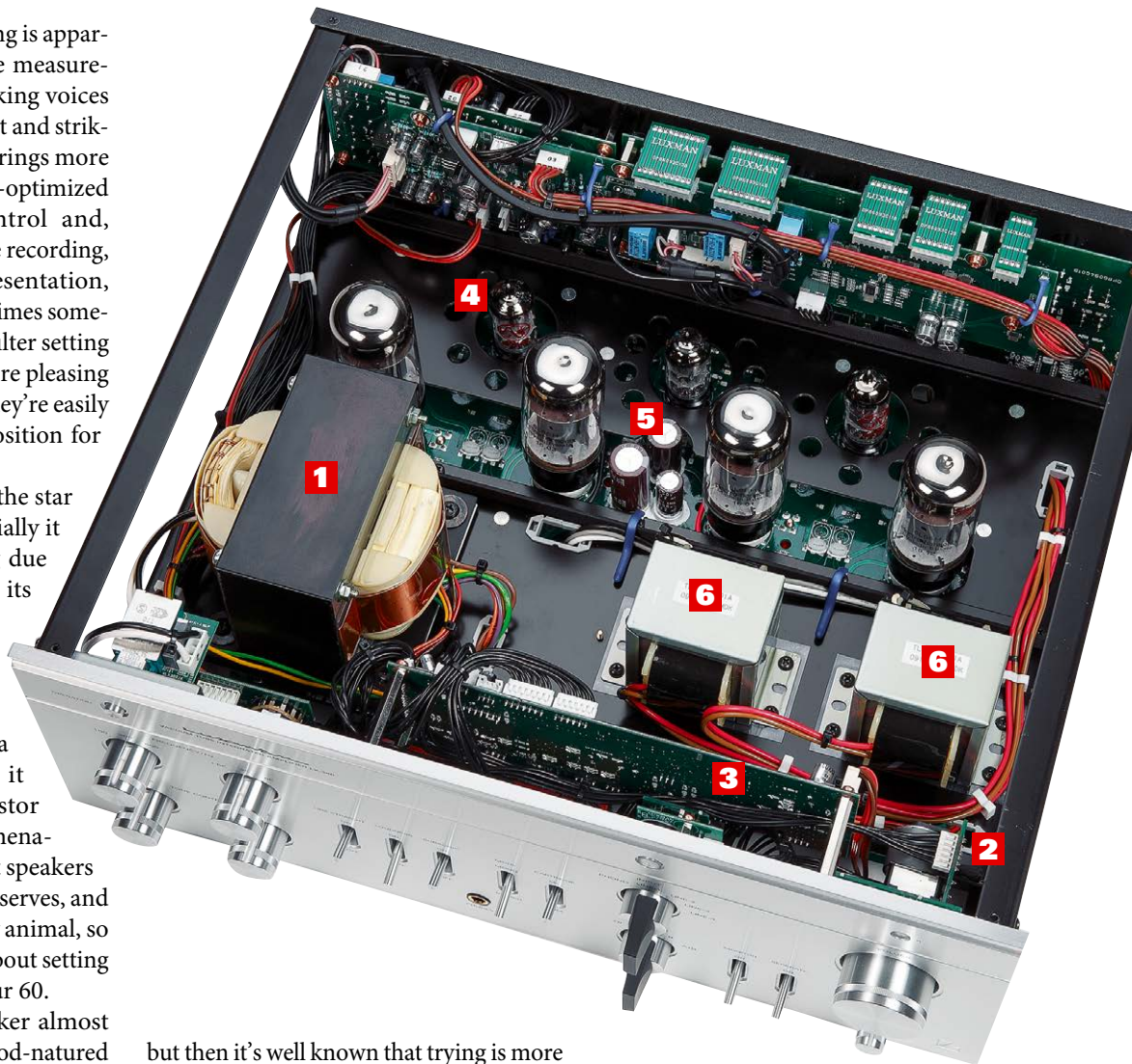
So far, so convincing – but the star of the set is the amplifier. Initially it doesn't sound too promising due to its low power, but it uses its approximately 20 watts per channel so skillfully that it can bring tears of enthusiasm to the.

The choice of speaker plays a more important role than it would with a potent transistor amp, which would be more amenable: the LX-380 needs efficient speakers that won't exhaust its power reserves, and would be unsuitable as a party animal, so we initially had some doubts about setting it up with Dynaudio's Contour 60.

Although the Danish speaker almost 90dB/W/m sensitivity and a good-natured impedance response, it might not be considered a favorite for use with a tube amp,

On the connection side, there are only RCA sockets (including tape loop) as well as outputs and inputs for the preamplifier/power amplifier section. If not assigned, use the short circuit caps on the phono sockets (l.) ▼

but then it's well known that trying is more vital than studying. Even so, it was surprising how easily, confidently and enthusiastically the Luxman partnered with the speakers, raising Maria Pihl's "Malvina" over her deep, colorful and radiant backing. It unraveled the dense web of band and audience on the Red Norvo Quintet's "Saturday Night" with ease, letting the mallets over the succinctly struck



▲ The main transformer **1** supplies the LX-380 with energy. The pulse generator behind the volume knob **2** informs the „LECUA“ circuit **3** of the desired gain. Three small double triodes of the type ECC82 **4** control the four main tubes **5**, two per channel. These transmit their power to the loudspeakers via output transformers **6**.

vibraphone with relish, gave the swing free rein and at the same time conveyed the sense of the audience in the background. A better sense of live atmosphere and instinctive, joyous playing is rare.

Maybe even more exciting was the way the amplifier matched with DALI's Epicon 6. This design is three decibels "quieter" than the Contour, but its impedance is straightforward at the five-ohm mark, which is something amplifiers generally like, tubes in particular.

The Luxman had an easy time with it, let the sparks sparkle and made Ray Brown's acoustic bass on "Exactly Like



You” sound superb. Using this record we checked the phono input, which is well up to the standard of the rest of the amp, with different cartridges, concluding that even top-quality partners are brought to life with a three-dimensional sense of space and tonal color. That’s great – after all, tube fans usually also like vinyl.

**Tubes and filters according to taste**

Compared to transistor rivals in the same price range, the LX-380 was extremely airy, light-footed and agile, but at the same time less “dense”. Where others paint in opaque oil, the Luxman has more dazzling watercolors in its palette - not untypical for tubes. Nevertheless, it delivers the fat groove of “Homeward Bound” of the Blues Company in full and dominant fashion, belying the myth that tubes are soft, warm and cozy.

Considering how dry, contoured and dynamic is the manner in which the LX-380 delivers the bass, one might start wondering whether it’s best via the highest possible damping factor, to take the speakers woofers under a tight rein, or whether one should let the bass run unbridled. Yes, the Luxman is looks on paper to be a complete failure in terms of damping, but still doesn’t sound mushy or spongy. Rather, the airy and diversified diction of midrange and treble is also prevalent in the low frequency range. Wonderful!

Whether you operate the player with or without tube participation, and which digital filter you choose, is down to taste, and may even vary from track to track. We haven’t reached a definitive judgment on this – to be honest, we’ve been enjoying too much simply listening to the 380s.

The system even worked superbly with the Q Acoustics Concept 500 speakers, in a manner making it easy to forget that there’s only 20 watts per channel on tap. Luxman makes the best of its power, and while these retro components may not be aimed at those who want ultimate level, those who appreciate something really fine are likely to adore them.

*Matthias Böde*

**Contact:** Luxman  
www.luxman.com

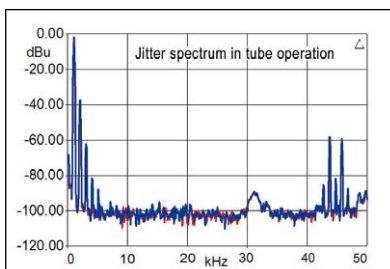
**LUXMAN D-380**



at € 4790  
Dimensions: 44 x 17 x 34 cm (WxHxD)  
Warranty: 2 years

For some hi-fi fans, the CD itself is retro. This player gives it a solid platform, and is technically and sonically up to date. The tube option on the output makes it particularly interesting.

**MEASUREMENT RESULTS**



Signal-to-noise ratio digital 0	103 dB
Quantization S/N ratio (400 Hz/0 dB)	96 dB
Distortion factor (400 Hz/-60 dB, trans./tube) 0.1/0.3 %	
Converter linearity down to -90 dB	0.1 dB
Sampling reliability	very good
Reading time	7 s
Output resistance RCA / at 1 kHz	300 Ω
Output voltage RCA/XLR at 0 dBFS	2.1 V
Channel deviation	0.2 dB
Jitter	7.2 ns
Deviation from sampling frequency	+36 ppm
Power input	
Off   Standby   Idle	0   -   13 Watt

**LAB COMMENTS:** All measured values are very good to excellent and meet today’s standards – only the outer appearance of the D-380 is retro. The data for the signal-to-noise ratios and the output resistance apply to the transistor output. However, when the valve stage is activated, the deviations are a maximum of two decibels or ohm and are therefore negligible. That’s why this one is so great!



**FEATURES**

Pre-adjustable tube in the output stage, dimmable and switchable display, time and track display with large display, two digital filters, digital outputs, remote control

**STEREO-TEST**

**SOUND QUALITY 92%**

PRICE/PERFORMANCE

★★★★☆

**EXCELLENT**

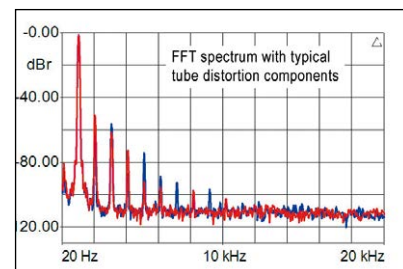
**LUXMAN LX-380**



at € 6990  
Dimensions: 44x20x46 cm (WxHxD)  
Warranty: 2 years

In a world of purist, minimalist tube amps, the luxuriously equipped Luxman gives the „full range“. And it combines its tube output stage with a high-tech volume control. First class sound!.

**MEASUREMENT RESULTS**



Continuous power at 8   4 Ω	18   17 W per channel
Pulse power into 4 Ω	21 W per channel
Distortion factor	
at 50 mW   5 Watt   Pmax -1 dB	0.04   0.4   0.9 %
Intermodulation	
at 50 mW   5 Watt   Pmax -1 dB	0.02   0.4   0.9 %
CD signal-to-noise ratio at 50 mW   5 Watt	68   88 dB
Phono MM (5 mV/1 kohm/5 W)	81 dB
Noise ratio Phono MC (0.5 mV/10Ω/5 W)	65 dB
Channel separation at 10 kHz	63 dB
Damping factor at 4 Ω	1
Upper cut-off frequency (-3 dB, 4 Ω)	70 kHz
Connected load values	practice-oriented
Crosstalk Tuner/CD (10 kHz/5 kHz)	72 dB
Synchronization error Volume control up to -60 dB	0.3 dB
Power input	
Off   Standby   Idle	0   -   104 Watt

**LAB COMMENTS:** The low output requires sensitive speakers. Distortions remain low, so do the noise values. Virtually no damping factor, good channel separation.



**FEATURES**

Four high level inputs plus one phono input (MM/MC), subsonic filter, mono button, tape out, pre-/power stage separable, loudness, remote control

**STEREO-TEST**

**SOUND QUALITY 94%**

PRICE/PERFORMANCE

★★★★☆

**EXCELLENT**

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# THE SCIENCE OF ART

Accoustic Arts has long since established itself among the top German manufacturers. Will the new TUBE PHONO II phono preamplifier live up to this exalted reputation?

The components of high-end specialist Accoustic Arts often occupy the top positions in our tests and as a result can be found among the top references, as is the case with the TUBE PREAMP II/AMP II preamp/power amp or the TUBE DAC II D/A converter, the company's current "Reference Series". Now it has a newcomer with similarly lofty ambitions, the TUBE PHONO II phono preamplifier at just under 9,000 euros.

As is usual with the company's products, the black or silver casing of this 12kg unit is made from thick aluminum profiles, with a "tube" logo milled into the lid. Together with the typical large and flawless chrome-plated knobs on the front panel, this is a real eye-catcher, and an external statement of the efforts made within. Two pushbuttons allow temporary muting of the device and activate or shut down a tube stage (see box), which is as sophisticated as it is artfully integrated into a matrix of top-quality op-amps. That way the solid-state electronics, which are not affected by continuous operation, can

remain warm, while the tubes are protected against unnecessary wear, LEDs indicating the operating status.

## Practical values

The switch for MM and MC cartridges, for which separate RCA sockets are

provided, is recessed into the rear panel of the TUBE PHONO II: the owner should choose between them before connecting the cable, because the simultaneous connection of two turntables isn't permitted.

However, the separate adjustment according to capacitance (MM) and

## TUBE HYBRID TECHNOLOGY: HOW THE PHONO II TUBE WORKS

Accoustic Arts' Phono-Pre is a three-stage concept, in which incoming connections from moving coil cartridges first meet an extremely low-noise operational amplifier (OP) from Linear Technology, which raises their level by about 20dB. After that, a Burr Brown amp, which is set to the MM impedance of 47 kilo-ohms, boosts the signal by a whopping 35 dB. MM cartridges avoid the first stage. The passive RIAA equalization is done with only one resistor in the signal path, the remaining components working against ground. The equalization „swallows“ about 20 dB level, which is more than compensated for by the following tube stage – in fact two carefully

selected tube stages, which are matched in pairs and supplied by a separate toroidal transformer. The „medium impedance“ RIAA circuit is ideal for controlling the tubes, which finally serve the actual low impedance output stage, which acts as a potent impedance converter. There are two separate signal paths, so that the TUBE PHONO II can be connected to conventional unbalanced and XLR cables simultaneously. Accoustic Arts cites a broad range of features of the „tube-hybrid“ structure as the reasons for the seamless dynamics and ultra-smooth sound, with fine detail as well as an extremely low and good-natured distortion spectrum.

resistance (MC), which is done via the substantial outer buttons, is a good idea. With selectable 60, 160, 260 or 360 picofarad capacitance, the moving magnet input can be used even with bright-sounding cartridges, but while 100, 235 and 475 Ohm input impedance is offered for moving coil cartridges, some might still wish for a few more intermediate steps in this adjustment. The uppermost value is, by the way, twice as high: with the switch in the “V1” position it is, like the smaller impedances, applied directly to the RCA-MC input, but in the “V2” position it combines with the capacitive load between the first and second amplifier stages, which should enable the opening up of the sound image of high-impedance

moving coils without the slight tonal brightening usually associated with them. Yes, the Accustic Arts engineers may be real bean counters, but clearly they fought for every bit of sound quality from the TUBE PHONO II.

The 40 and 60dB basic amplification for MM/MC are chosen correctly, but for the MC input you can also increase or decrease this standard value, which is best suited for average cartridges giving average levels, in 3dB steps via internal DIP switches. That’s because a larger widening of the MC gain range would have required unacceptable compromises in the circuitry – but, on request, the customer can have the preamp set up for a different basic value. You want 68 dB for your quiet

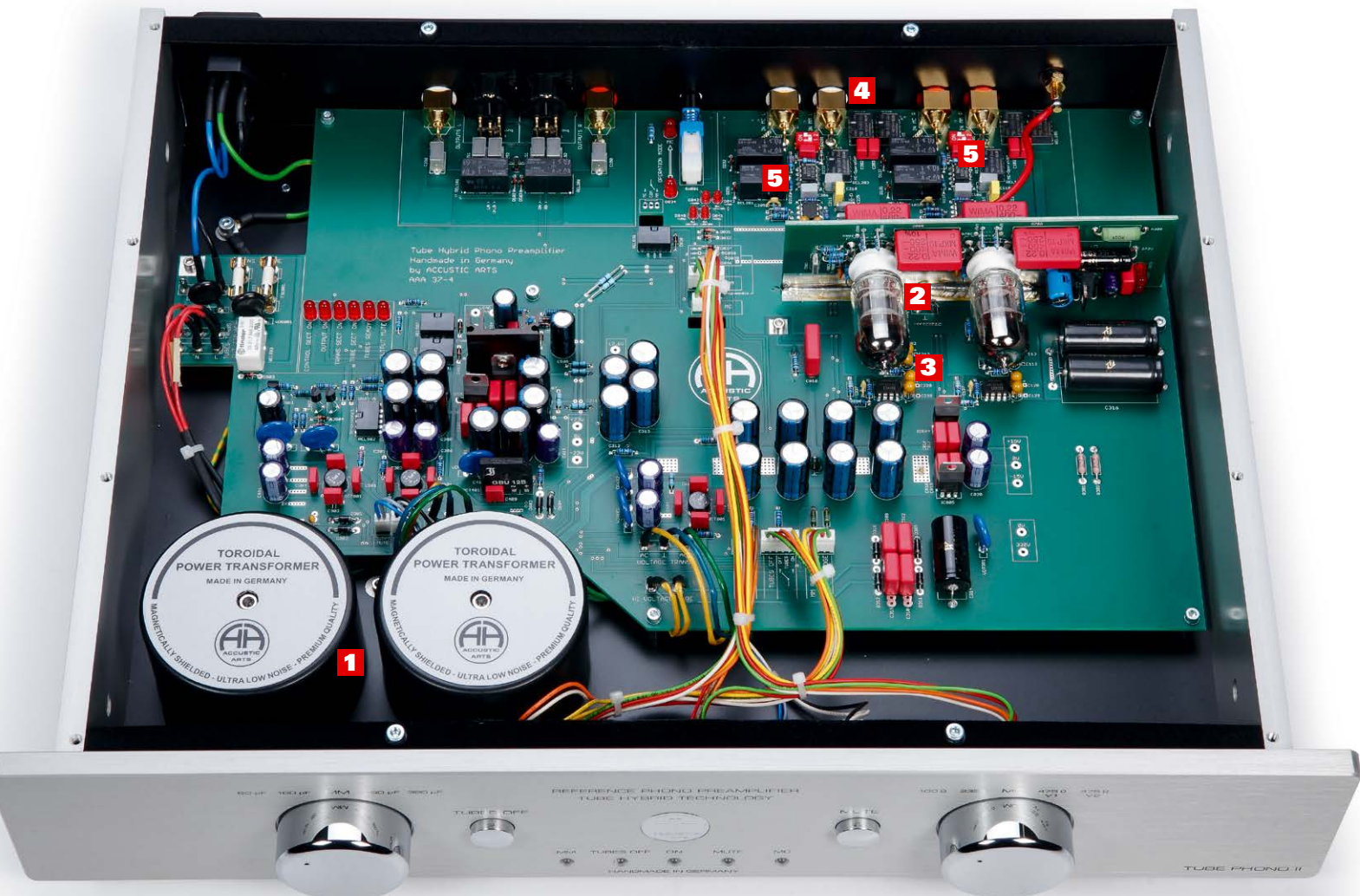
Audio-Technica ART1000 or 54 dB for a comparatively loud EMT TSD75? No problem – and the +/-3dB switching remains. We like that – the freak in us is once again satisfied!

Set up was quite straightforward, as is usual for the brand’s components: a red adhesive dot marks mains phase, and with the preamp connected and warmed up, off you go! No buzzing, no noise – the TUBE PHONO II did exactly what was expected of it.

**Every disc in top style**

Our expectations, raised by the price and our inspiring experience with the other “references” of this manufacturer, were entirely met. First on the turntable was Lyn Stanley’s brand-new album, “The Moonlight Sessions Vol. One”, a 45rpm disc pressed in a quality-conserving” One Step “process. Things couldn’t get any better, not least because the record revolved on Transrotor’s Rondino Nero, with an SME 3009 arm carrying the turntable manufacturer’s top MC cartridge,

Two toroidal transformers **1** power the TUBE PHONO II, the right one exclusively serving the tube stage **2** on the circuitboard, which is designed for short signal paths. Below this are the four op-amps **3** of the „impedance converter“, the complex circuitry having eight individual voltage regulators. Small DIP switches **5** are located directly at the input sockets **4** for sensitive adjustment of the MC gain factor, while the use of low-noise operational amplifiers means the main board doesn’t need to be overloaded with corrective components. ▼





▲ There are separate inputs for MM and MC cartridges, but only one should be connected at a time; for this purpose, the RCA and XLR outputs can be assigned simultaneously.

the “Figaro”, the “Fine Line” diamond stylus of which slipped smoothly through the flawlessly cut groove. In fact, the Accustic Arts made this audiophile jewel shine with all its sparkling, shimmering vitality and elegant grace, outlining the almost perfect analog recording in its full three-dimensionality and making clear the distances between the musicians. We have rarely heard vinyl sounding so good!

Everyone in the room immediately realized that something special was happening, and so we put on one after another of our oft-heard test favorites: Chadwick’s brilliant “Jubilee” projected a sweeping orchestra into the listening room, followed by Diana Krall’s sometimes cheerful, sometimes melancholic “Love Scenes”, while the Vivaldi violin concertos, which rushed from fragrant and lively to forceful, plunged into the expressive world of the baroque. Throughout, the TUBE PHONO II maintained a dignified aura of unassailability and perfection, effortlessly conveying every mood and thus underlining its musical range. With this phono stage, anything goes, even hard rock, as it proved with “Jacob’s Ladder” by Rush.

**Accustic Arts does it all.**

And how does the TUBE PHONO II deal with moving magnet cartridges? Just as well: as Diana Krall’s famous “Live In Paris” album revolved on the Transrotor, now fitted with Clearaudio’s Super-MM Charisma V2, the Accustic Arts created a very transparent image between the

**TEST-COMPONENTS**

Turntable: Transrotor Rondino nero/SME 3009/Transrotor Figaro plus Transrotor S800/Clearaudio Charisma V2, AMG Giro/9W2/Teatro

Cartridges: Audio-Technica AT-ART1000 and AT-VN760SLC, Benz Micro ACE SL, Dynavector Karat17D3, Ortofon Cadenza Red  
Reference phono stage: Brinkmann Edison

Phono cable: Sun Wire Phono Reference, HMS Gran Finale Phono, JIB Silver Galaxy

loudspeakers with the lively “Deed I Do”, its nuances underlying the unrestrained joy, verve and sure handling of the track. The phono stage gave free rein to the driving rhythm of the fast-paced piece, but also did not forget all the filigree reverberations and lip noises: sometimes suppressed by lesser amplifiers, they’re, essential for the realistic spatial representation and the natural fluidity of the performance. Here, they were all present and correct – and how!

Speaking of competitors, the Accustic Arts has few to fear; for our testing, our hitherto solitary top reference Brinkmann Edison was used as a benchmark, and there was no need for any further comparisons – the two were on a par. While Edison was a bit more committed, the TUBE PHONO II delivered even the finest. There’s no question about it: the art of sound comes from skill and science – and that’s just what Accustic Arts delivers!

*Matthias Böde*

**ACC. ARTS TUBE PHONO II**

Price: around 9990 € (black or silver)  
Dimensions: 48x10x39 cm (WxHxD)  
arranty: 3 years (with registration)  
Contact: Accustic Arts Audio  
Phone: +49 7133/974770  
www.accusticarts.de

This is, quite simply, a magnificent phono preamplifier. Thanks to its ingenious technical concept, which congenially combines selected solid-state devices and tubes, as well as high-quality components, the TUBE PHONO II achieves a superlative sound image in every respect.

**LAB RESULTS**

<b>Distortion factor</b> at 5 mV/1 kHz/1 kOhm (RCA)	0.1 %
<b>Intermodulation</b> at 0.8 mV/8 kHz/60 Hz	0.08 %
<b>Signal-to-noise</b>	
Phono MM at 5 mV/1 kHz/47 kOhm	69 dB
Phono MC at 0.5 mV/1 kHz/100 Ohm	66 dB
<b>Channel separation</b> at 1 kHz	65 dB
<b>Overdrive resistance</b> MM/MC	114/12 mV
<b>Connected load values</b>	practice-oriented, variable
<b>Output resistance</b> at 1 kHz RCA/XLR	66/53 Ohm

**Power consumption**  
Off | Standby (Tubes off) | Idle 0 / 5,7/15,6 Watt

**LABORATORY COMMENT:** Low distortion and high signal-to-noise ratios prove the quality of the circuitry, as does effective channel separation. Stable output stage with low impedance for cinch and XLR.



**EQUIPMENT**

Separate RCA sockets for one MM and one MC cartridge, selectable capacitance and impedance, simultaneously assignable RCA and XLR output, mute switch, ground terminal.

**STEREO-TEST**

<b>SOUND QUALITY</b>	<b>100%</b>
<b>PRICE/PERFORMANCE</b>	
★ ★ ★ ☆ ☆	
<b>VERY GOOD</b>	



*Burmester*

## B18 Loudspeaker

*The new B18 loudspeaker is a universal sound talent: space-saving, yet at the same time extremely musical and dynamically thrilling. The high-frequency reproduction benefits from the ring radiator which is custom-made for Burmester and guarantees optimum clarity and resolution. The drivers for the mid and low frequencies complement the tweeter perfectly, resulting in an impressive sound performance.*



# UNDER THE CALIFORNIAN SUN

In Valencia, about 45 minutes' drive north of Los Angeles, Samsung operates an exquisite audio lab. We were allowed to look around its sacred halls.

**W**e were amazed to learn that Samsung wanted to acquire the Harman Group by buying a massive amount of shares in the fall of last year. The giant realized its plan at a breathtaking pace: in March 2017, they had already completed their eight billion euro shopping tour despite some legal quarrels. The interest in the Harman Group, which will continue to operate as an independent group of companies, is primarily based on the American automotive sector, according to the official statement. This accounts for about one third of all Harman sales. However, there are other areas of the business that can be used to gild the acquisition, including Harman's extensive expertise in HiFi - after all, companies such as JBL, Harman/

Kardon, Infinity, Mark Levinson, Revel and AKG are part of the Group. And this is exactly where we discover a connection that makes us doubt the supposedly spontaneous takeover of the company.

As early as 2013, more than three years before the big deal, the Koreans founded a research institution called "Samsung Research America", a kind of company-owned "think tank", wherein clever minds produce new technologies for future hi-fi equipment. Charismatic Canadian Allen Devantier, who, after joining Plateau-Camber in the early nineties,

worked in development for JBL and Infinity before taking over the supervision of Harman's measurement technology in 2003, heads the laboratory.

In order to breathe life into the new laboratory, Devantier picked up developer luminaries from the various Harman companies, and filled the gaps with a number of promising university graduates. 23 engineers, programmers, cabinet-makers and market researchers were employed by the laboratory during our visit in June, but tenders are underway to expand the team by up to forty more before the end of the year.



▲ Jimi sees you: In order to remember what its acoustic research is all about, the members of the Research Lab decorated their surroundings with record covers.

## Ambitious objectives

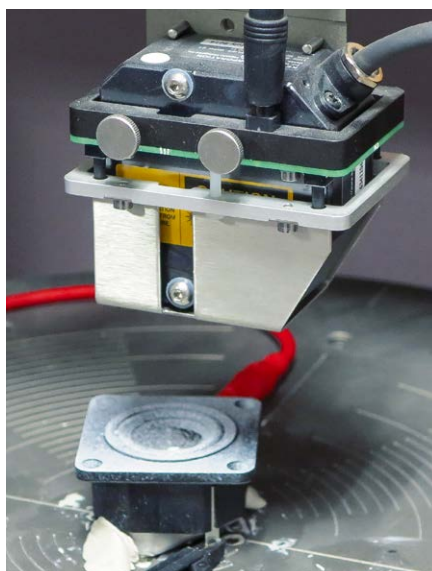
Samsung's goals are no less modest than the equipment of the new audio lab: simply, in the coming years, it would like to become the market leader in hi-fi. Yet industry leaders such as Burmester, Naim and Dynaudio don't have to tremble: for Samsung, HiFi means soundbars, Bluetooth loudspeakers and multiroom concepts à la Sonos. But such products require enormous development efforts, since physics has to be outwitted in order to obtain top-class sound from compact enclosures.



The team is currently working on a soundbar, which will be launched in autumn as the HW-MS 750, complete with Bluetooth subwoofer. Since the production of the components is spread over half the planet, computer scientist Andri Bezola developed a simulation program that maps the physics and behavior of the drivers used down to the last detail, enabling problems with the voice coil and magnet of the small drivers to be detected and eliminated even before manufacturing.

Pascal Brunet also played a major role in the sound of the MS 750, analyzing the distortion characteristics of the drivers and Class D amplifier modules, and designing a sophisticated DSP program that pre-processes the audio signals so that they are always reproduced in an optimal and distortion-free manner despite the influence of the amplifier. Only after this preparatory work were components commissioned and verified in the in-house laboratories, using Klippel analysis as well as measurements in one of the two impressive soundproof rooms.

Finally, the soundbar was fine-tuned, a process in which we were able to participate with our auditory impressions. The close proximity to the film industry enabled the Samsung Research Lab to build a tricky listening room for double blind tests, in which neither those in the auditorium nor the projectionist know which test candidate is currently running behind the acoustically transparent curtain. A light barrier protects the systems from unwanted or manipulation.



▲ With laser scanning (left), the Klippel system observes the displacement and distortion of the drivers at different frequencies and amplitudes. On the right is one of the two huge soundproof measuring rooms with its multi-point microphone system.



In several rounds we compared the unfinished soundbar with Genelec studio monitors and an unknown competitor's product, and we were amazed how close the MS 750 is to the unquestionably superb monitors. The richness and spatial representation of the soundbar are already impressive.

Before such listening sessions, volunteers have to pass a test to classify their hearing experience. Allan Devantier moderated us through the entertaining procedure in which we had to recognize which frequency bands within a demo song were being lifted or lowered. With high and low pass filtering this worked out quite well,

but with three or more bands it quickly became trickier, although our group of journalists performed well on average.

In case you want to try it out for yourself, Harman makes the software available free of charge for Windows and MacOS at [harmanhowtolisten.blogspot.de](http://harmanhowtolisten.blogspot.de)

We are quite impressed by the passion and meticulousness with which Samsung's research team conducts its basic research, and how directly the results flow into new products. The former Harman people seem to be visibly at ease with their new task, and we can't wait to see what they will come up with in the coming years.

*Carsten Barnbeck*



▲ Samsung's test room with its computer-controlled revolving wall enables blind comparisons of several systems. An acoustically transparent curtain (pictured) serves as a screen.



▲ Allan Devantier, head of the Research Lab, tested our hearing practice with a simulation program.



# THE DATA SPECIALIST

Melco's servers are optimized for audiophile music enjoyment.

The new N1A/2 is much more than a pure data memory.

It may sound crazy in view of their technical complexity, but actually Melco's audio servers were originally a hobby project. In Tokyo, Makoto Maki had tried his hand at his own amplifiers and turntables in the mid-seventies before his passion for microelectronics prevailed and he founded his company, Buffalo. But he remained attached to his audiophile passion: Buffalo's Link-Station was the first network mass storage device whose modified version of Twonkymedia server enabled the DSD format to be streamed.

Of course, IT professionals like Maki also know that a ready-to-use NAS is only of limited suitability for music playback, which is why he wanted to build an optimized server for home use, an undertaking that culminated in the founding of Melco...

The company's specialist audio servers can hardly be compared to Buffalo's "read and butter" machines. Even our entry-level model N1A/2, which is offered with 6TB of storage, is a music server refined down to the last detail, as is clear from the deletion of facilities such as "private clouding", automated data backup and similar unnecessary ballast. Its operating system has been kept so slim that even the simplest NAS models look like overloaded monsters and, although you can access your data from your PC, the N1A/2 is still unsuitable as a mass storage device for storing backup copies of your Word documents, spreadsheets and the like. Instead, its drives want to be fed with AIFF, WAV, FLAC, Apple Lossless, DSD and the rest of the format family.

## Audio preferred!

Melco's core strength lies in hardware. Maki and his engineers have experience in the development of computers, so they didn't modify off-the-shelf hardware, but developed their own motherboard, its layout designed to separate everyday traffic from the digital audio signal processing.

The two separate network connections are the most impressive example of this: the socket marked "LAN" is, as usual, intended for connection to a router, and thus to the Internet, but the player socket is for a direct connection to a network audio playback device. It's electrically isolated from other data traffic, while a processor prepares the network audio signals for optimal reception in the streamer by arranging the data in the correct order

## ARE HARD DISKS BETTER THAN SSD MEMORY?

In principle, the Melco range consists of three models, offered in different memory sizes. Our N1A/2 is the entry point, while above it is the N1ZH (around 5000 euros), which is also supplied with hard disks. The top model is the N1ZS (around 9000 Euro), which is equipped with 2TB of SSD memory. However, although it's possible, the manufacturer advises against retrofitting the two less expensive models with SSDs.

There are several reasons for this, for example that the speed increase - the main argument for solid-state technology - is irrelevant for music reproduction. In addition, SSD memory has a limited durability. To limit write access to individual memory cells, the drives'

control units scatter data across the entire media and move it regularly. This leads to data fragmentation, so the server has to work hard to put everything back in the correct order.

Another argument is data compression: SSD memory is extremely expensive so, order to make optimum use the capacity, the data is reduced during storage. This happens without any losses, but it requires computing power to decompress it when required again.

The flagship N1ZS has special mechanisms - especially faster processors - to circumvent these weaknesses and even take advantage of SSDs. However, for common NAS drives and the smaller Melco models optimized for hard disks, SSD storage is not recommended.

and bundling them into optimally transferable packets - bite-sized portioning, so to speak.

If you want to operate additional multi-room zone players, they must use the network router: the ultra-clean player connection is reserved for the premium streamer in the audiophile HiFi chain.

The close interaction with the streamer naturally requires that the audio server be placed directly in the system. As it is housed in a 43-centimeter metal housing with a brushed aluminum front, the N1A/2 meets more than just the minimum aesthetic requirements, looking more audio component than computer hardware - which of course is just what it is.

Our T+A MP 3000 HV played in a noticeably more relaxed and nuanced manner connected via the Melco's "Player" port, when compared to a normal network connection. Although the source of the music was still the N1A/2, via our TP-Link router it sounded more two-dimensional and less agile: we still have no idea how

this works on a binary level, but when it comes to processing music data, Melco definitely adds its own magic.

And the transmission quality can be improved even further: in the device menu, it is possible to deactivate CIFS (Common Internet File System), the component of the UPnP protocol that controls data exchange with computers. With this done, the N1A/2 can no longer be addressed from the PC, but the sound of its data was even more contoured via T+A's superplayer and gained an impressive depth gradation as well as finer structures.

We already know this effect from Audiodata's MusikServer II, which has also been relieved of every unnecessary function: computers whose processors are unstressed by unnecessary idle data traffic, also play in a more relaxed fashion.

The LAN and USB ports of the Melco N1A/2 are optimized for their respective applications. ▼

And we haven't yet found a more relaxed digital music device than the Melco.

### Simple operation

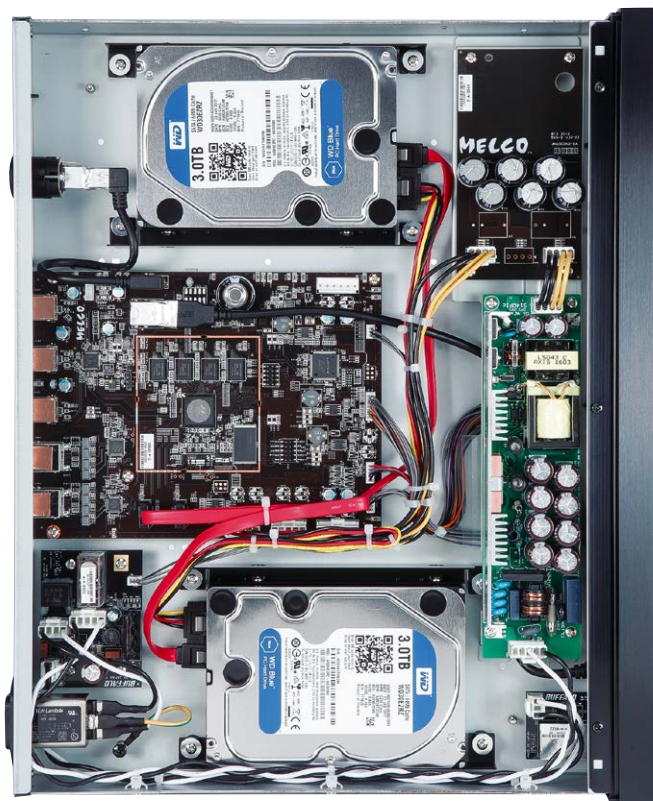
At first the Melco's user-interface seems like its weak spot, having a small display with hard-to-read legends and just four buttons. However, the operation of the unit is so well thought-through that this isn't the drawback it seems: the N1A/2 does most of thinking for you.

Plug an optical drive into one of its "USB 3.0" sockets on the back or front of the device and insert a disc, and the server searches for metadata in the well-known web databases and rips the music into the FLAC format. The fresh files can then be easily found, as they are stored in a separate "CD Import" folder. Connect USB storage medium with already ripped files, and the display asks whether the titles found should be imported into the library, before placing them in the global "Import" folder.

Conversely, you can attach a USB hard disk to the "backup" port, and the device will ask you if you want to make a full backup. Those who frequently access the server from the computer - CIFS must be turned on again - will appreciate the fact that the N1A/2 displays the IP network address permanently in its main display.

For convenient automated editing of meta data, Melco offers a discounted version of the powerful software tool "SongKong" ([www.songkong.net](http://www.songkong.net)), which searches the net for ID tags, detects better cover images and even renames the music files according to the tag specifications and sorts them into new folder structures. With a future update - for which there is as yet no ETA - this more than helpful tool with its one-click function is to be embedded directly into all Melco servers.





◀ Each module on its own board, generous power supply and two hard disks complementing each other to form six terabytes of total memory. Melco builds the motherboard in the center especially for its servers..

Melco's in-house UPnP server service, which reacts extremely swiftly and offers interesting sorting options such as the display of all titles staggered according to sound formats and resolutions, takes care of serving files to the network. At the same time, the Minim-Server is installed, which is a bit more complicated, but can be configured completely freely via its web mask - the user decides what he prefers.

In the middle of the test, a software update to version 3.50 was carried out, with which both UPnP services can now output all sound formats up to 768kHz and DSD 512 to networked streamers, and access to Qobuz and Tidal streaming was added.

OpenHome compatible remote software such as Linn's free "Kazoo" allows you to select both services as streaming sources and forward their audio signals to all network players in the house. The N1A/2 takes care of the login procedure and the data transfer, and is also able to register with the Berlin-based HighRes Audio shop and download digital purchases directly into its music library.

### Playback included

As if all that wasn't enough, the Japanese added their own playback software, which

supports all lossless sound formats and delivers their PCM signals to the reserved DAC output USB socket. As with the LAN ports, the USB port is isolated from the data traffic of the other four USB sockets, and designed only for connection to a DAC. In general, the Melco works with every device that is "class compliant" (ie virtually all), whereby you can choose different options in the menu for handling DSD files, but if the DAC is noticeable due to occasional clicks, the pre-buffering can be changed.

However, when used in this way the Melco lacks its own remote app for playback, the company pointing out that Linn's outstanding Kazoo software is also available for Windows and MacOS in addition to iOS and Android. We were able to handle this combination excellently during the test without any problems.

In addition to the T+A, we also operate used the N1A/2 on Hegel's Röst (see page 28) and Auralic's Altair streaming digital preamplifier. In all cases, the music was more enthralling and vivid, offering noticeably more internal structure and tidiness than our standard servers, a QNAP TS-219P II and Buffalo LinkStation 420. In this price range, we can only think of one potential competitor for the N1A/2, the already mentioned Audio Data

## MELCO N1A H60/2



from 2495 € (6 TB)  
Dimensions: 44 x 6 x 35 cm (WxHxD)  
Warranty: 2 years  
Contact: Melco  
www.melco-audio.com

Impeccable workmanship, comprehensive range of functions and yet simple and intuitive operation: Melco's N1A/2 is the personification of an excellent network storage device with many sophisticated additional functions.

### EQUIPMENT

**Connections:** Two LAN ports (one of which is galvanically decoupled as a pure audio output with separate data processing), and five USB ports: one for DACs, one for backups, one for external memory extensions and the other two for peripherals such as ripping drives or USB data storage.

**Features:** Access to Qobuz and Tidal (via „OpenHome“ software like Linn Kazoo), Auto-Downloader for HighResAudio.de, discounted offer for SongKong (around 45€), Melco- and Minim-Server transfer all sound formats up to 768 Kilohertz as well as DSD 512, player function with USB audio output

MS II, which sounds quite similar in its high-end mode.

But one thing is clear: anyone who wants to use streamer heavyweights such as Naim's NDX or T+A's highest-level MPs can hardly avoid a rendezvous with Melco.

**Carsten Barnbeck**

The N1A/2 can be extended via USB with peripherals. The number of sockets can be increased via a USB hub. ▼





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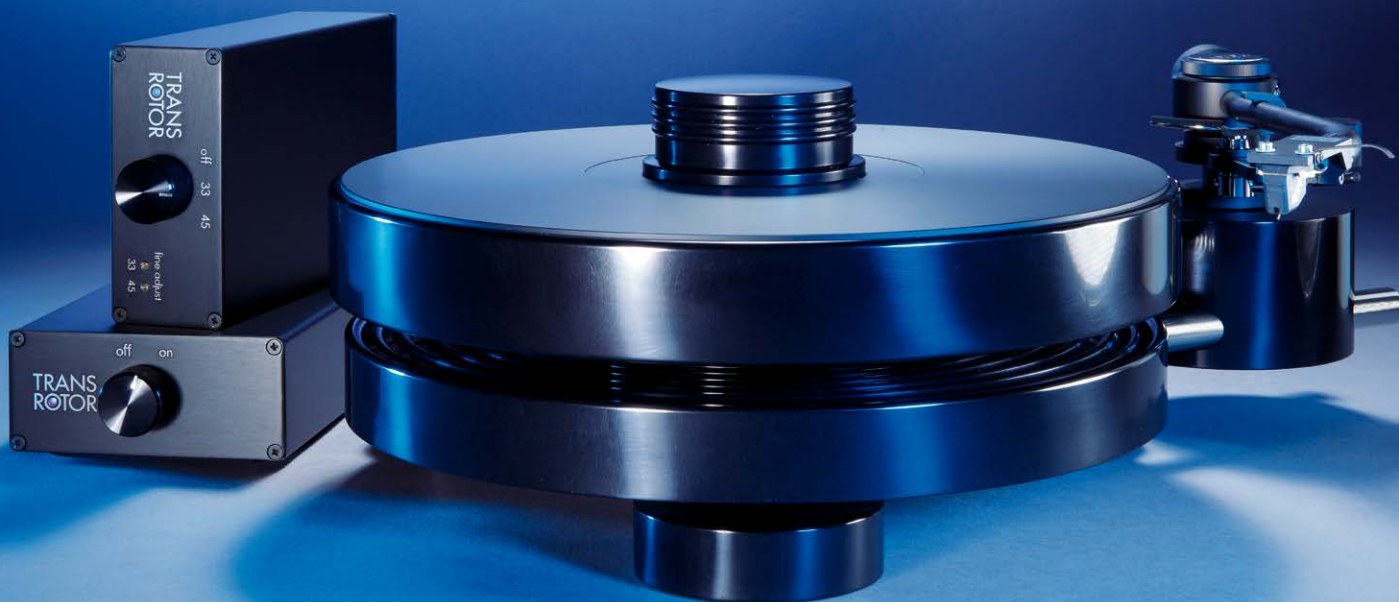
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# BLACK MAGIC



Man, Transrotor's „Max nero“ looks good! And it's supposed to sound just like that, the review sample being an all-inclusive package seemingly as well-calculated as it is uncompromising. Can it deliver?

The saying that a whole can only be as good as the sum of its parts is a truism, and one particularly applicable to turntables: combining three main functional parts – motor unit, tonearm and cartridge – there's plenty of opportunity for the weakness of one to undermine the performance of the whole. With packaged turntables, that chink in the armor is often the cartridge, because a cost-saving design has been chosen to keep the total price within reasonable limits. Even Transrotor equips some of its models costing thousands of euros with a moving magnet cartridge in the 150-euro league – that's fine, but an upgrade should be budgeted for, at least in the medium term, to unleash the turntables true potential.

### Special package price

However, in order to make it easier for his customers to advance to higher sound classes, the Bergisch Gladbach-based analogue specialist here has put together a

complete package at a special price for the beautiful Max nero. In fact, it even includes the motor control/power supply and a phono preamplifier – parts are usually only purchased some time later in the course of an “upgrade”.

The turntable is polished up before anodizing and therefore shiny black, and comes as standard with a simple power supply hidden under the platter as part of the motor block. But although simple, this solution is somewhat cumbersome, offering no fine adjustment and also requiring the removal of the six-kilo platter the switching the short belt between pulley to achieve speed-change; the “Konstant Studio” electronic control unit is not only more convenient but also it sounds more mature, because it is more spatial, rhythmically sensitive and more gravitational.

The supply unit is included in the package at 495 Euro, saving 55 euros on the price when bought alone, while the Transrotor “Merlo” moving coil cartridge, supplied by

the British manufacturer Goldring, is also 20% less expensive in the package at 640 euros. The same reduction applies to the Japanese-made S-shaped Jelco-S 800-S tonearm, which costs 800 euros here.

Add in the “Phono Studio” equalizer/preamplifier, at 495 euros instead of 550, and you have a package at just under 5000 euros, saving around 450 euros – you get a lot of nice records for that.

The solid base of the brace is connected to the base plate by two strong steel rods. ▼





▲ British specialist Goldring manufactures Transrotor's "Merlo" MC cartridge.

### On the trail of the Rondino

So this "Max pack" is all you could need – but is it the best set-up for the money? We stood it up next to its big brother, the "Rondino nero": one of our top references, and full of sheer mass and innovative technology. After all, Transrotor boss Jochen Rake had reported that the junior model had succeeded particularly well and gave him unexpected levels of listening pleasure, making it sensible to compare it to the top model. Both models had the same tonearm installed, making it easy to swap the Merlo-M between them.

And Rake hadn't over-promised: his black Max played openly and vividly from the off, offering a gnarled, firm bass and extending a confident spatial panorama in front of the listeners. Even with the furious, extremely complex opening of

The shaft runs in a bronze bearing; the motor stands free in a recess in the chassis. ▼



Chadwick's orchestral work "Jubilee" it was undaunted, delivering the grandiose recording of US label Reference Recordings with a neutral tonal balance firmly in the footsteps of the Rondino nero.

Hats off, then – and in order to achieve such a result, you don't have to have tweaking skills or secret knowledge: give the Max a stable support, align it exactly horizontally by means of the three luxurious, height-adjustable feet and use gloves when putting on the short belt. That way the drive remains grease-free to avoid slippage and thus imprecision. Do those few simple things, and you are already on the right course.

In addition, it's absolutely necessary to maintain the correct mains phase for the power supply unit and at the phono pre-amplifier (see notes), if the sound isn't to lose its tact and naturalness (power supply) or spaciousness and smooth homogeneity (Phono-Pre). But then these things cost nothing save a little attention, even though they should be considered as an important "part" of the whole, like the motor unit, arm or cartridge.

And since we're already in the process, you should pay attention to the channel-separated DIP-switch benches on the underside of the Phono Studio. With these the phono-pre can be adjusted to suit the

### TEST-COMPONENTS

TURNTABLE: Transrotor-Rondino nero/SME 5009/Transrotor Figaro, Clearaudio Ovation/Unify/Talismann V2

PHONO-PRE: Brinkmann Edison, Musical Fidelity LX-LPS

PRE/POWER AMPLIFIER: Accustic Arts Tube Preamp II-MK2, Ampli-MK3

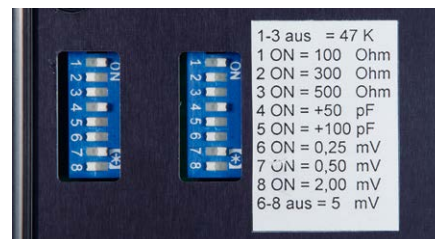
INTEGRATED AMPLIFIER: Symphonic Line RG9 MkIV Reference

SPEAKER: B&W 802 D3

PHONO CABLE: HMS Gran Finale, Sun Wire Phono Reference



▲ The correct phase of the power supply of the phono pre is as marked here. On the underside of the latter are DIP-switch banks for adjusting it to suit the cartridge in use.



cartridge in use, and for the Merlo we chose 100 ohms terminating impedance plus the second highest sensitivity, even though that means a value below the maximum gain for this MC, which is "loud" at best. Loading of the input with additional capacitance (pF), which is also possible, is only relevant for if one were to use a moving magnet cartridge.

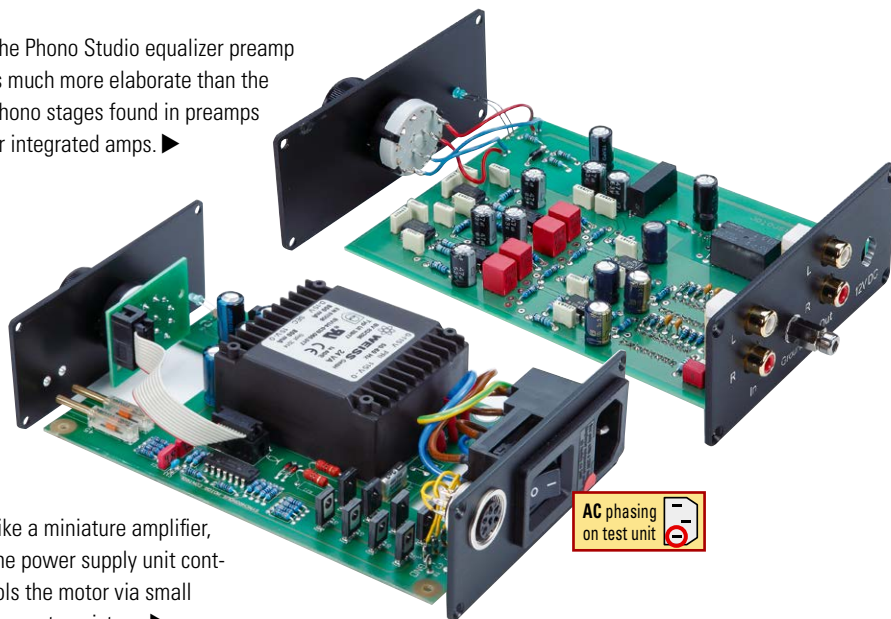
Thus accommodated, Transrotor's MC cartridge can unfold properly, sounding lively and dynamic, spatial and nuanced – ready for vinyl delights such as Lyn Stanley's current "Interludes" 45rpm double album (a cheerful 70 Euro), whose precious recordings are best only entrusted to exquisite, perfectly adjusted turntables.

### Preserves the magic

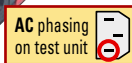
"More Than You Know" is the title of the second track, and Max nero succeeded in spreading the music between and behind the loudspeakers. The perfect recording, produced and mastered by the luminaries Al Schmitt and Bernie Grundman, can sound sensational, but immediately loses its appeal if the turntable undermines details. With the Max nero and the Phono Studio, the audiophile magic was preserved in the form of a floating.

A new recording of Carl Nielsen's violin concerto by Acousence was a real challenge, as Kolja Blacher plays his instrument with a glowing intensity, and the Duisburg Philharmonic is pushing hard. Here, the turntable must be able to build up energy and tension musically and sound-wise, and hold it over other melody

The Phono Studio equalizer preamp is much more elaborate than the phono stages found in preamps or integrated amps. ▶



Like a miniature amplifier, the power supply unit controls the motor via small power transistors. ▶



arcs. To the consolation of all Rondino owners, it should be noted that this time Max turned out to be the lesser Transrotor, not quite reaching the stringency and forcefulness of the three times more expensive model, which doesn't create "drama" but rather pleases by straightforwardness and loudness, leaving the emotion of the music to the listener.

However, the Max is a true Transrotor, whose clarity of concept and precision in the mechanical execution are reflected in a pronounced stability, which even in fortissimo shows the exact distances of the musicians to each other and prevents the lower layers from clouding the waters. We

are familiar with the Max nero's sister models, such as the "Fat Bob" and the ZET1 turntables, which are closely related to the materials used here, as well as the "Dark Star" made of POM plastic.

When we switched in Brinkmann's "Edison" ultimate phono-pre in place of the Phono Studio, there was no shock. Although the performances with the Transrotor phono stage seemed less refined, natural and bright, for not much more than 5% of the price of the Edison the Phono Studio fits perfectly with the demands and quality of Max and Merlo. For cross-checks within the price league, it proved to be absolutely on par with the

## TRANSROTOR MAX NERO

around €4980 (incl. tonearm 800-S, Merlo moving coil cartridge, Konstant Studio power supply and Phono Studio equalizer/preamplifier)

Dimensions: 41x15x36 cm (WxHxD, without electronics)

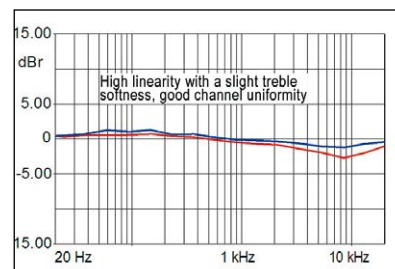
Warranty: 2 years

Contact: Råke HiFi/Distribution

Tel.: +49 2202/31046 www.transrotor.de

With this set built around the small, black and strong Max nero everything is done everything right. Even if you already have a good phono preamplifier, add the Konstant Studio power supply to the motor unit!

### FREQUENCY RESPONSE



### CONFIGURATION

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

### STEREO-TEST

SOUND QUALITY **84%**

PRICE/PERFORMANCE



EXCELLENT



## YOU WANT A SECOND ARM? A TWELVE-INCH ONE WILL FIT

On the opposite side to the tonearm mount on the right hand side, the drive has two tapped holes in the metal, to which you can attach an additional tonearm base. These are available for all kinds of arm: tone shown on the left has a long SME arm, which requires different assembly preparation than Jelco's. The round base is fixed from below with the two steel support rods, on which it can be pushed forward and backward comfortably with loosened screws. This is handy because

most headshells only have a short fore and aft cartridge-mounting adjustment. In the case of a twelve-inch tonearm like the one shown here, a shiny plaque adorned middle section suppresses the last remnant of vibration tendency in the supporting rods. The shorter bolts for normal nine-inch arms, such as the J-800S in the test package, don't need such a „resonance brake“, and there or such a case, there would not be enough space between the underside of the chassis and the arm pedestal. Anyone who wants to expand with a second tonearm can retrofit it at any time - in any length. The prices are 620 euros for the nine-inch and 680 euros for the twelve-inch version.

competition, although it should be noted that the phono stage shouldn't be used too close to the Konstant Studio power supply as there is a danger of light humming in spite of the metal housings.

Transrotor's complete range of products combined with a sense of reason for the requirements of first-class record reproduction, shone brilliantly on all of our discs and showed no weaknesses whatsoever. In the medium term, the tonearm cable could be replaced by a higher quality one. But even with the one fitted the sound is more than respectable.

Transrotor's refined little black model definitely qualifies for a hearty recommendation – yes, all those parts have come together very nicely indeed.

Matthias Böde



# 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*.

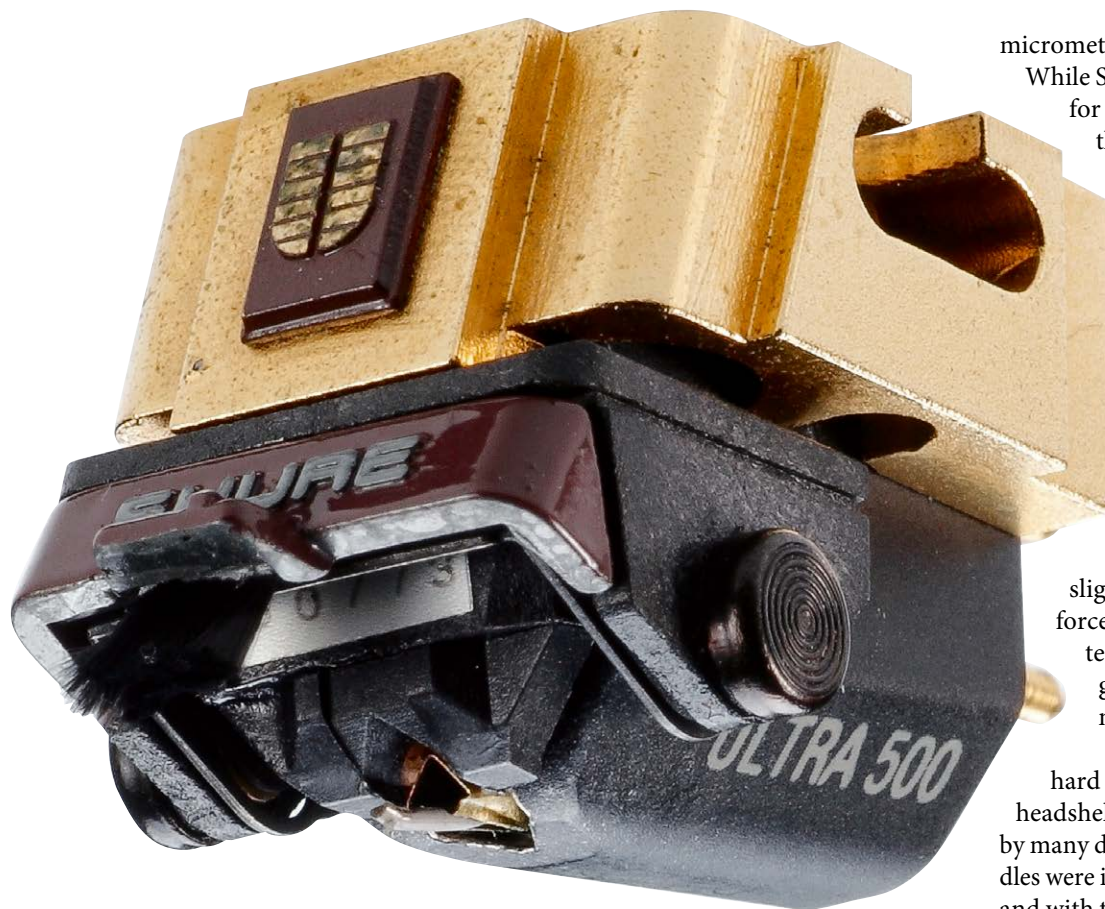
“The difference was huge. AudioQuest’s Niagara 1000 not only cleaned up the power, it did everything that is the *opposite* of killing the boogie.... It was as if my system had gotten a heart-shot of adrenaline.”

— Herb Reichert,  
*Stereophile*,  
April 2017



**audioquest**®

# ULTRA. REFINED.



micrometers and low distortion.

While Shure systems were well known for their vivid and bright sound, the Ultra 500 was supposed to achieve this while maintaining a neutral frequency response. An American HiFi magazine stated at the time that the generator was at least electrically in terms of coil inductance and internal resistance, output voltage and optimum connection values, but that the differences were due to the gold-plated connecting pins of the Ultra series, a slightly higher optimum contact force and a significantly higher system weight – 9.3 instead of 6.6 grams – due to the solid full metal body of the 500 series.

This also offered a perfect hard coupling of the system to the headshell, a mounting method favored by many developers. In addition, the needles were interchangeable with each other and with the V15 series, which brings us to the actual occasion for this report: the 500 cc we found lying dormant in the drawer may have been physically unharmed, but stylus insert wasn't, having become a victim of time and possibly also of impetuous contact.

## New life, not disposal

However, simply junking it was out of the question, so we started looking for sources for new stylus inserts. Already we knew that, in Germany, Axel Schürholz has been a “needle doctor” for many years, and Mijnheer Arlt van den Hul also breathes new life into old pickups, even with a diamond cantilever if necessary; however, this time we decided to put Jico, the Japanese manufacturer less-known in Germany, to the test after a long time of consideration.

The Japanese, who have been in the diamond stylus business for almost 60 years, offer three different inserts for the Ultra 500: with aluminum, sapphire and ruby cantilevers, all with a variation of the Shibata stylus, which they call SAS.

How do you turn a cartridge from the first half of the 1980s into a contemporary product with retro charm?

For several years now, the Shure Ultra 500 has been more or less unnoticed in the drawer with other discarded cartridges, even though the Shure Brothers created a milestone moving magnet design in the 1980s – and, as time has shown, a classic.

Basing the design on the commercially extremely successful V15 models, the Shures put a lot of effort into countering the emerging MC cartridge wave with high-quality MM models. The “Ultra” model series consisted of the Ultra 300, 400 and top model Ultra 500, which is the object of consideration here. The

Ultra 500 made it clear, with its price of about 1500 DM, that it was not in any way willing to leave to moving coil designs the field of top cartridges.

But what made the Ultra 500 the legend it is today?

In contrast to the V15s, every model was created with painstaking manual work, with consistency assured by precision alignment of the diamond aligned for each system. Carried over from the 15 series, on the other hand, were the micro-ridge stylus-grinding, the cantilever and, very conspicuously, the multi-tasking-capable “dust catcher” in front of the stylus a dynamic damper with a small brush, which cleared the stylus-path of dust and also acted as a protector and reduced static charges. The tracking force had to be increased from 1.2 to 1.7 grams when using this damper, which also effectively attenuated the tonearm/pickup resonance, in order to ensure the desired high tracking capability of more than 80

Prices from Japan – excluding taxes, shipping costs and customs duties – range from 250 to around 500 euros. We ordered the sapphire and ruby versions and after a few days we received a small package with two stylus assemblies inserts packed very modestly in plastic boxes, of course with the original multifunctional brush at the front.

Of course, the Japanese didn't have the design possibilities that Shure's developers had three decades ago, because today a stylus assembly was only to be planted on a recognized high-quality body and 'generator'. The Americans had a very complicated hollow metal tube, thinner than a human hair, into which an equally wafer-thin beryllium foil was pushed; the Japanese are now trying to make it with sapphire or ruby.

### Constructive differences

The micro-ridge used by Shure has become a "Super Analogue Stylus", which is supposed to offer an even longer and extremely narrow contact surface. Bearing in mind that the force with which the needle enters the groove is comparable to that of a fully loaded 747 jumbo when landing, it becomes clear why the utmost care is required in production and installation. So please do not install according to your eyesight instead of using a template and hearing test/metering platter. If you have any doubts about their precision mechanical qualities or your eyes, go to a qualified dealer who understands analogue technology. Then you will be delighted to discover how modern analogue technology in general and the Ultra 500 in particular can sound.

The frequency response in the measurement laboratory showed significant differences. Equipped with sapphire cantilever, a clear rise in the treble is apparent – quite attractive and familiar for fans of the V15 series –, while the ruby version is very balanced.

How does that express itself sonically? Well, we listened to music from the time the Ultra series was created and experienced some surprises. True to style with a top-of-the-range turntable of time, a Sony PS-B80, we started with the sapphire cantilever model equipment and "Driver's Seat" by Sniff n' the Tears.

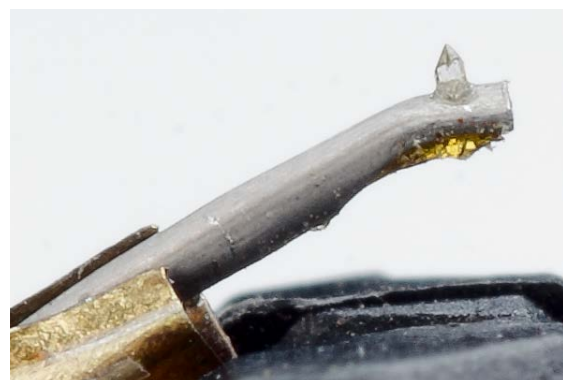
### Sound Merits

The sound was extremely dynamic and contoured, the bass neither superficially bold nor washed out, but crisp, taut and very clean. The soundstage extended out beyond the loudspeakers, and the emotionality of the reproduction was surprisingly positive. The love of detail matched that of modern MM cartridges of the 400 Euro class, which we used for comparison, but high frequencies were striking and, in the long run, rather hard work: voices, percussion, high piano positions had a touch too much brilliance. Terence Trent d'Arby's "As Yet Untitled" bit hard in our high-resolution system: if you like this or want to spice up a rather mildly tuned set-up in the upper frequencies, you might find this suits.

At first, the ruby version seemed to be quieter than the sapphire version, but this turned out to be a miscalculation both in terms of measurement and, after a few minutes of intensive listening, acoustically speaking. The first impression had something to do with the different energy distribution over the entire frequency spectrum: both deliver about 2.0 mV and thus considerably less output voltage than the original, which was 3.2 mV.

The Ruby version made any acoustic performance sounded much more physical and vivid, and it was even more astonishing how much voices gained in naturalness. Mr. Trent d'Arby only sounded biting when this information was on the record – as we know from our many listening experiences with much more expensive cartridges.

Details, for example the mouth-shape of the singer and the occasional spit, were now presented without any artificial overtone richness, and there were also several



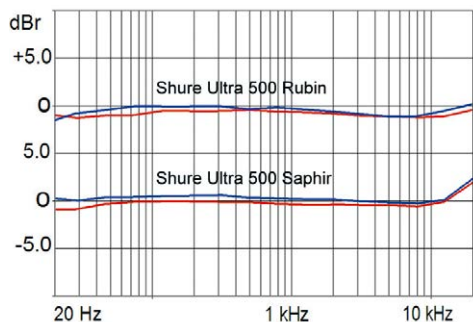
▲ This is how the original Ultra 500 cantilever looked: hollowed-out precious metal, lined with beryllium inside. It was a masterpiece of production technology.



▲ The Jico sapphire version convinced with dynamism and liveliness and reminded us of the virtues of the V15 series.



▲ The most expensive solution by far is the ruby cantilever – but it's also the more honest, and therefore preferable.



▲ The frequency response of the two Jico needle inserts differs quite markedly: The ruby version sounds as balanced as the frequency writing system would expect, while sapphire shows a distinctly higher treble.

subtleties. Impulses were also more credible because the ruby version was able to show the physical origin, the source of the impulse.

The only conclusion is that Jico offers skillful solutions in different price ranges for the revival of old Shure cartridges, making them sound contemporary again. Information: [www.jico-stylus.com](http://www.jico-stylus.com)

Michael Lang

HIFI EXCLUSIVE FLOORSTANDING LOUDSPEAKER

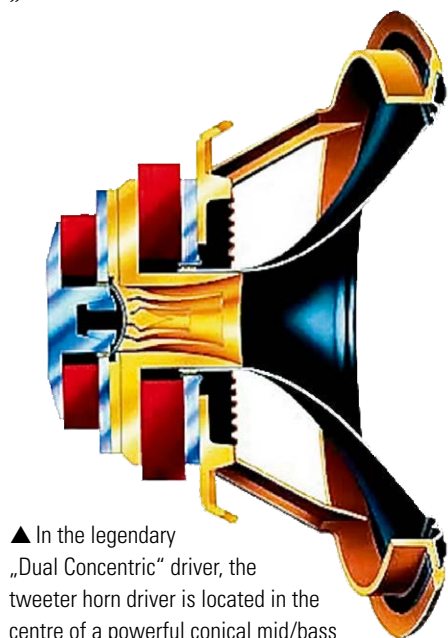
# TOP CLASS COAXIAL



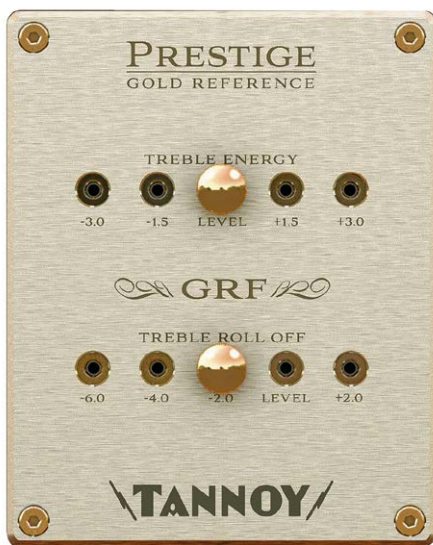
With its new Prestige GRF, created for its 90th anniversary, Scottish manufacturer Tannoy presents the most modern version of a living legend, combining enormous dynamics with a natural presentation of even the finest tones.

**A**t 90 years old, Scottish company Tannoy is not only the world's oldest and most traditional loudspeaker manufacturer, but also possesses a technologically remarkable arrow in its quiver with the coaxial „Dual Concentric“ driver. Used for the first time in 1947, this driver, which consists of a powerful, long-throw cone paper cone with impregnated textile surround for the bass, and a centered mid-treble horn, is closer to the spatially temporal ideal of a point source than almost any other speaker driver system. The offset sound generation centers are synchronized by the pressure chamber behavior and the longer path of the mid-tweeter at a listening position of about three meters.

And the directional effect of the horn prevents the comb filter effect caused by the 'funnel' effect of the surrounding membrane, the „Pepperpot“ version used here getting its name from the well visible and precise perforation at the horn opening. This minimizes phase errors due to „atomization“.



▲ In the legendary „Dual Concentric“ driver, the tweeter horn driver is located in the centre of a powerful conical mid/bass driver and thus comes close to a point source of sound.



▲ Depending on the room and taste, this „control panel“ allows considerable sound adjustments.



▲ Even the type plate is something special on the top Tannoy models.

In addition, the „Pepperpot“ design also brings into play a particularly powerful (and expensive) Alnico magnet system, in contrast to the more conventional magnets used in the „Tulip Waveguide“ version of the Tannoy coax used in other series.

### Memorable experience

I have unforgettable Tannoy memories: when the STEREO invited the company's huge Prestige Kingdom for test almost 20 years ago, the outdoor facilities of

Burg Veynau were not quite finished, meaning the two loudspeakers, each of which weighs over 210 kilograms gross, had to be loaded one by one from the 40-ton truck into an excavator for transport over the drawbridge to the castle gate, and thence into the building by means of an external pulley block to the listening room level.

With the GRF, which – thanks to the extremely stable high-density fiberboard/birch plywood/walnut cabinet – achieves a net weight of more than 62 kilograms, and a modern publishing building with its internal elevators, the whole thing is simpler today.

The GRF, which was originally planned in small numbers as the anniversary model GRF „J“ and then put into series production, appears to be a decidedly domesticated variant within the Prestige series. The housing appearance has also been modernized considerably, and while it may be an ideal match for glass/aluminum, it's still well-suited to many warmer living environments – such as ours.

In the minds of Tannoy fans circles, the 30cm coax driver is considered to be the most balanced, yet it goes deep enough, offers spectacular dynamics and embeds the lower tweeter horn in a „environment“ that is perhaps a bit less compromised than that in a 38cm driver. A second-order softness with low-temperature treated components ensures perfect coupling, and Tannoy attaches great importance to the possibility of bi-wiring and bi-amping, along with a fifth terminal to enable to speakers to be grounded to the system with which they are used.

### What a speaker!

One can argue long and hard about details but, as soon as the GRF sends the first notes into the room, every discussion ends. The reaction is instant: „Oh my God!“

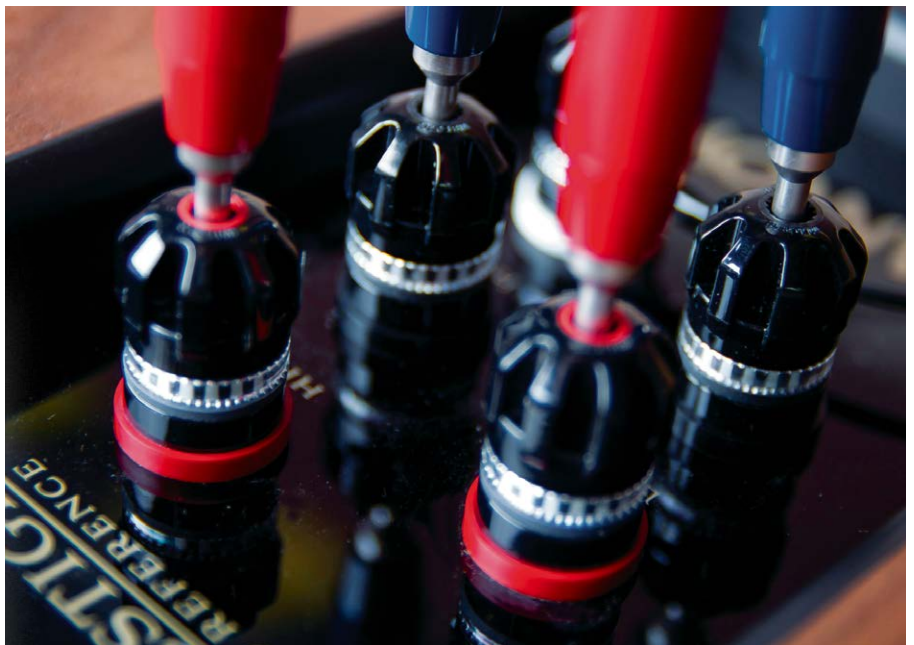
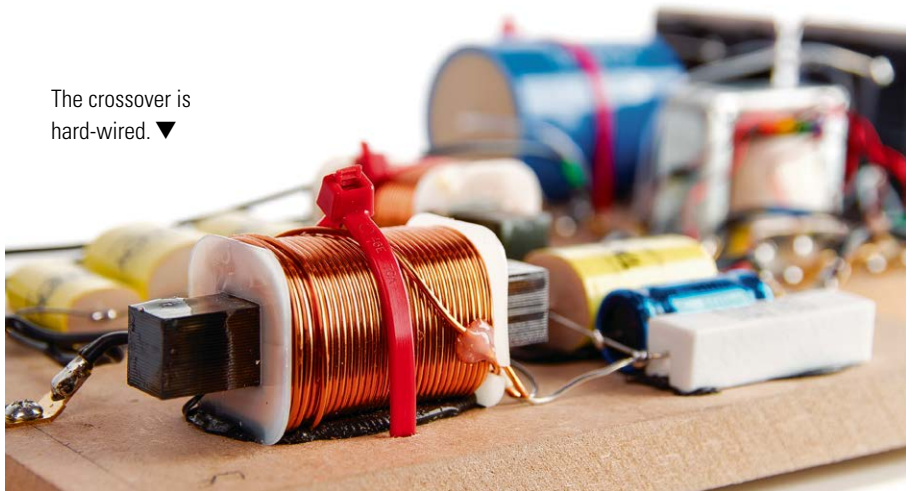
Eric Clapton, for instance, seems to have written his blues for these speakers,

to the extent that it would seem a shame if the musicians were unable to experience them for themselves.

Carolyn No, with Carolyn and Andreas Obieglo, is also overwhelming with „Still River Run Deep“ from our listening test CD VIII, especially as the low frequencies of the GRF really do make the room tremble and their temperament sweeps the listener away. Apart from the fact that I have to control my affinity for wood – and especially for the solid wood here, which matches my 50-year-old Wenge-parquet flooring, I have to say the Tannoy inspires me both visually and to the touch, not to mention sounding fantastic.

After several hundred hours of play-in time (!), it has a spectacular dynamic sovereignty that immediately leads to thought-provoking work, as one could easily imagine keeping something like this

The crossover is hard-wired. ▼



▲ The bi-wiring terminal is of high quality and even offers the possibility of earthing.



something like this on the aforementioned Wenge parquet, marriage and financial crises notwithstanding!

The Tannoy has a special status within the high 20,000 Euro class due to its optical uniqueness and the sum of its properties. In contrast to its even larger brothers and sisters, this GRF is also housed in a housing-friendly manner. A dream loudspeaker!

By the way, Tannoy recommends a free-space installation, some 40cm from the rear wall, to achieve a balanced frequency

response – not least due to the two large-caliber bass reflex ports to the rear of the speaker. Not only does the Tannoy reach down below 30Hz, it also does so quite noticeably, both acoustically and physically. At higher levels, the room shakes – on which subject, this isn't a speaker for small rooms, though the average German living room of just under 25 square meters should be enough for you to be able to enjoy its full sonic splendor. Any less space and we'd recommend you consider the smaller Stirling.

### Emotion plus dynamics

What the Tannoy does in an inimitable way is to capture and support moods and atmosphere. Of an evening, with an open fire in the living room grate, one might

◀ Two bass reflex ports equalize the pressure and a special knob makes it easy to remove the cable.

not want to listen to any other transducer. The sound is pleasant, clear and yet warm, extremely confident and effortless. Even the tweeter of the latest design looks refined and golden, as a colleague called it: in the past, such tweeters went beyond „tinselly“, and simply sounded biting not here, helped by a front terminal panel allowing some tuning of the treble to the space and personal preferences.

We were slightly amused by the strange feel of the handle - or nipple - for assembling and dismantling the front cover: although we would remove the grille permanently for optical reasons and only install it if we had expected a more violent visit, we might hope for a less pragmatic, but definitely more attractive solutions. But that's just a minor point.

Back to the listening test, and rarely have we developed such curiosity about how the coax reproduces the music. Of course, this exceptional driver with an internal horn is not free from coloration, but it is quite far ahead in terms of timing and positioning, and its character such that you hardly notice it.

The musical presentation is extremely rich and spatial, with an effortless, casual superiority, creating a three-dimensional sound with an abundance of filigree details. These are maintained at low levels, and not lost even in widely dynamic music.

The Tannoy kicks into Michael Bubl 's „Feeling Good“, complete with big band, with almost 93 dB of bouncing liveliness, supported by an abyss-deep, rhythmically springy bass able to leave some of its rivals helpless, while the time errors of many other horn constructions, which disturb many sensitive listeners, are completely eliminated. It all fits together precisely and four-dimensionally.

This loudspeaker is certainly not a sensible choice, even though it is the softened version of the even more voluminous Tannoy Prestige models, and neither is it cheap, but it has its own peculiarities – in the form of pure emotion, fun and enjoyment! And that's what this is all about, isn't it?

I could live very, very well with this dream speaker.

**Tom Frantzen**

The accessory box in the same veneer contains no cigars, but the paperwork, feet and good cable links. ▶



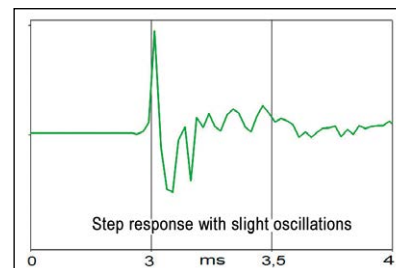
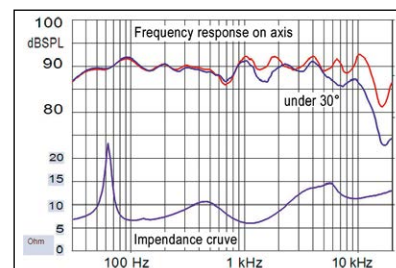
**TANNOY GRF**



at 21,000€,  
Warranty: 6 years, Contact: Tannoy  
www.tannoy.com

Tannoy's GRF is basically the living room version of the Prestige legend. With the 30cm coax driver and the latest generation of tweeter horn, this dream loudspeaker plays and grabs the listener's attention emotionally in an almost irresistible way. Great - listen!

**MEASUREMENT RESULTS**



<b>DC resistance</b>	6 Ohm
<b>Minimum impedance</b>	5.8 Ohm at 1100 Hz
<b>Maximum impedance</b>	23 Ohm at 62 Hz
<b>Sound pressure level (2.83 V/m)</b>	93 dB SPL
<b>Power for 94 dB SPL</b>	4 W
<b>Lower cut-off frequency (-3dB SPL)</b>	27 Hz
<b>Distortion factor at 63/3k/10k Hz</b>	0.3/0.1/0.1 %

**LAB COMMENTS**

The frequency response is generally balanced, even if it also shows typical horn ripples. The efficiency of the Tannoy is above average at just under 93 dB at 2.83 V. The impedance is good-natured; the step response shows small oscillations.

**STEREO -TEST**

<b>SOUND QUALITY</b>	<b>97%</b>
<b>PRICE/PERFORMANCE</b>	
★ ★ ★ ★ ☆	
<b>EXCELLENT</b>	

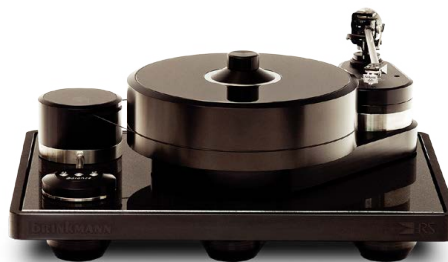
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## Klipsch goes back 40 years with the Forte MkIII

Speakers of the 1970s and 1980s weren't the slender columns we see today, but rather used a "wide but shallow" cabinet format. Klipsch is going back to those proportions with its "Forte" model, part of its Heritage series, as a MkIII version. Using a 30cm woofer, a 38cm passive diaphragm and horn speakers for the midrange and treble, the Forte III is finished in real wood veneer in black, cherry, walnut or oak, and arrives in the autumn at €2200 apiece.



[www.klipsch.com](http://www.klipsch.com)

## 30th Anniversary Kalista set



Metronome Technologie, the parent company of #Kalista, is celebrating its 30th anniversary with a special edition of its famous DreamPlay CD transport and Kalista DAC. It comes in Diamond finish and its feet are Smoke-Chrome plated, giving an extraordinary elegance to the devices. The DreamPlay is the most recent model in the Kalista range, with a customized version of the famous CD-Pro mechanism, and power from the offboard Elektra supply. The Kalista DAC offers four choices of operation, with two DAC systems supporting 24 bits/192 kHz and 32 bits/384 kHz

respectively, and a choice between solid state and tube outputs. Only 30 sets of this 30th Anniversary model have been produced.

[www.kalista.audio/en/](http://www.kalista.audio/en/)

## Meridian's MQA-equipped streamer/amp

The Meridian „251 Powered Zone Controller" takes the company's existing „218 Zone Controller" and adds to it power amplifiers delivering 2x100W into 4ohms, making it a complete amplifier with DAC and network player functionality for Meridian's Sooloos system. Digital sources can be connected via S/PDIF optical or coaxial or via Meridian's proprietary „Speakerlink" connection, and in addition there's a line input, and a LAN port for connection to a home network.

The analog outputs can also be used to feed a subwoofer if required, and the Meridian 251 features the built-in MQA decoder. It's controlled either via a browser interface or infrared remote control.



[meridian-audio.com](http://meridian-audio.com)

# Single Ended or Octave?

With the Octave **V16** Single Ended headphone/integrated-amplifier, you can now enjoy both!

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With three inputs, one balanced

## McIntosh announces the MA7200 Integrated Amplifier and MAC7200 Receiver

Available exclusively for countries outside the US and Canada, and offering



200W per channel and 14 inputs, the space-saving McIntosh MA7200 Integrated Amplifier is designed as the core of a two-channel home audio system. It has five unbalanced analog inputs, one balanced and separate moving coil and moving magnet phono inputs, plus six digital ins – two coaxial, two optical, USB and the proprietary MCT for use with the company's SACD/CD transports.

The digital inputs are in a DA1 Digital Audio Module, designed to be replaced if required to keep the MA7200 current with the latest digital audio technologies: it uses an eight-channel 32-bit Digital-to-Analog Converter configured in quad balanced mode, while the USB input accepts PCM signals up to 32-bit/384kHz, DSD256 and DXD 384kHz for high resolution audio playback.

The MA7200 is part of the company's next-generation integrated amplifier line-up, and features many design improvements including new, more powerful control microprocessors; the latest audio-grade circuit components; and the addition of our Headphone Crossfeed Director (HXD®) technology. Other McIntosh technologies are also used, including Autoformers to deliver the full 200 Watts to each of your speakers regardless of their impedance, Power Guard®, Sentry Monitor™, Home Theater PassThru, Monogrammed Heatsinks™, bass and treble

tone controls, High Drive headphone amplifier and gold-plated speaker binding posts. Please contact the McIntosh distributor in your country for local pricing.

The MAC7200 receiver is available worldwide, and builds on the MA7200 with the addition of AM/FM radio from the illustrious line of McIntosh tuners, able to pick up radio stations with unparalleled clarity and realism, free from noise and distortion. Its advanced signal quality monitor can display the multipath and noise levels of the incoming RF signal to help fine tune antenna placement for optimal reception, while dedicated preset and tuning controls enable easy radio operation. The FM tuner includes Radio Data System (RDS) support, allowing it to display optional information sent by radio stations such as the station's name and call letters as well as the name of the artist and song being played, there are 20 presets for each radio band, and the MC7200 comes complete with a remote AM antenna. The MAC7200 is available worldwide, selling in the US for \$7000.

[www.mcintoshlabs.com](http://www.mcintoshlabs.com)

## From two-way to three-way system

The new Dynaudio "Sub 6" subwoofer allows the company's two-way speakers to be transformed into perfectly integrated three-way systems, being pre-programmed with the characteristics of the existing loudspeakers, which can be selected in its menu. This



done, the frequency "hand-over" is perfectly matched to the loudspeaker model with which the sub is used.

In the Sub 6 can be time- and phase-aligned with the speakers with which it's being used, requiring only the input of the distance between the sub and loudspeaker, from which information the subwoofer automatically adjusts both signal phase and signal delay. A parametric three-band equalizer is also provided, with which room modes can be selectively attenuated, all of these functions being implemented in DSP.

Equipped with two 24 cm drivers on opposite sides of the cabinet, and a 500W amplifier, the Sub 6 sells for 2500 euros. There's also a simpler and more compact subwoofer, the 1500-euro Sub 3: it uses a single 24cm driver and a 300W amplifier. Both models are available in silk black or white.

[www.dynaudio.com](http://www.dynaudio.com)

## Technics direct-drives for the top

Shown at IFA in Berlin as a prototype, the new Technics SP-10R flagship turntable is expected to launch in the early summer of 2018. It's a re-imagining of the 1975 SP10 Mk2 and 1981's SP-10 Mk3 from 1981, both of which have long been part of the basic equipment of professional broadcasters. As on the SL-1200G, Technics uses its twin-rotor direct drive on the SP-10R, but delivers even higher torque with additional stator coils. It drives a 7kg platter of a sandwich structure, comprising brass, die-cast aluminum and anti-vibration rubber layers. Powered by an external



switching power supply, the SP-10R will initially be launched purely as a motor-unit, with a complete turntable package with tonearm to follow.

[www.technics.com](http://www.technics.com)

## One-driver for the Entire range



Swedish manufacturer Keyofd has introduced an unusual range of loudspeakers designed to reproduce the entire audio frequency range with a single full-range driver. Rather logically called „Entire“, the range initially consists of four models in different sizes, from the „Entire S“ (430 euros apiece) with a 6cm full range unit to the „Entire T“ (around 1800 euros), which uses a 17 cm driver. A fifth model, the „Entire TX“, is planned. The loudspeakers have a matte, scratch-resistant rubber surface and are available in five different shades of grey in the company's Online Store.

[store.entirespeakers.com](http://store.entirespeakers.com)

## Changes at **Audio Physic**



**W**olfgang Lücke (right), 52, has taken over the management of loudspeaker manufacturer Audio Physic, succeeding Dieter Kratochwil (left), who is retiring after almost 15 years as managing director, but remains as a shareholder and advisor to the company. Lücke studied business administration, and was for 17 years director of the Frankfurt Musikmesse: he'll focus on the maintenance and expansion of the company's German dealer network as well as international sales. Audio Physic, which distributes its products both directly and through hi-fi retailers in over 45 countries, makes all its speakers at the company's headquarters in Brilon. [www.audiophysic.de](http://www.audiophysic.de)

## Spotify clocks up 60m paying customers

**I**n July 2017, Spotify announced it has over 60 million paying subscribers – about 10m more than in March and almost twice as many as competitor Apple Music. When you include users of the company's free service, that number rises to 140m active users are still active, and if the current subscription trend continues, Spotify will soon have half of its users on a paying basis. Despite that, Spotify is still in the red, with the Financial Times reporting that it plans to go public in the fourth quarter of 2017. Before that, the company has still to reach agreement with Warner Music on a long-term contract, which would relieve it of the tax burden on the label: such contracts have already been signed with Universal and Sony Music. [press.spotify.com](http://press.spotify.com)

## New MDC Modules from **NAD**

**M**odular Design Construction is NAD's specialty, allowing its products to be brought up to date with the latest technology or to add additional functions. The new VM 130 and VM 300 modules allow older AV receivers to be equipped with the latest HDMI interfaces with HDR and 4K video support: the VM 130 can only be used with the T 757 and T 758 AV receivers, while the VM 300 is suitable for other NAD models. Customers who have purchased and registered a compatible NAD device as part of Dynaudio Germany's „4K promotion“ will receive the module for 559 Euro or 659 Euro, while Dynaudio Germany also covers the installation costs for the top-of-the-range Masters M17. Both modules can be upgraded with the optional BluOS upgrade kit (229 Euro) to include hi-res music streaming and access services such as Spotify, Tidal and Deezer. It will also deliver Internet radio, and allow a multiroom system to be set up with Bluesound's all-in-one loudspeakers. [www.nad-electronics.com](http://www.nad-electronics.com)



## Harman snaps up **Arcam**

**T**he hi-fi industry's consolidation continues: according to reports in the British media, Harman International has acquired hi-fi and home cinema manufacturer Arcam, after having itself been taken over by Samsung at the end of last year. Arcam will become part of Harman's lifestyle audio division, which already includes AKG, Harman Kardon, Infinity, JBL, Lexicon, Mark Levinson and Revel. Arcam boss Charlie Brennan told custom installation journal Inside CI that Arcam's acquisition won't change anything: the team in Cambridge will remain intact and no big announcements are planned – it's „business as usual“.

## ELAC's **Discovery** adds new features

**W**ith a firmware update and an update of the Roon Essentials app, ELAC brings numerous new features and performance enhancements to its Discovery music server/streamer. New multiroom capabilities allow it to stream music to Sonos network speakers, while the management of playlists, archiving of the database and display of titles have also been improved. New tagging options have been added, as well as volume compensation and dynamic range display, connection should be faster and importing and editing should be faster. The update to firmware version 1.3 is now available, with the Roon Essentials app is available in version 1.3 on the Google Play Store and Apple's iTunes Store. [www.elac.com](http://www.elac.com)



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## EISA spreads its wings

EISA – the „European Imaging and Sound Association“ – is a joint project of European test magazines in the field of image and sound, and every year presents its coveted Awards for the best equipment in each category. STEREO is Germany’s representative in the Audio Panel. Now, for the first time, EISA is including magazines from outside Europe in its exclusive club: John Atkinson, perhaps the best-known and most influential hi-fi editor in the world, has agreed to participate with the US magazines „Stereophile“ and „Sound and Vision“. This means that the EISA „Specialist Groups“ for HiFi and Home Theatre will be given considerably more weight than before. Welcome to EISA, USA!



[www.eisa.eu](http://www.eisa.eu)

## All-new internals for Bowers & Wilkins 700 S2 series

The exterior appearance of the new Bowers & Wilkins 700 Series speakers is very similar to that of the CM Series it replaces, but inside almost everything is new. All seven models - three floorstanding speakers, 3 bookshelf models and 2 centers - use the



Continuum cone launched in the 800 Series Diamond range, with its high internal damping, tear-resistance and woven structure, in a new mounting system to improve decoupling. In the three-way models the company uses a variant of the 800s’ Aerofoil cone for the bass driver: it still has a sandwich construction, but with paper instead of the carbon fiber used in the 800 models, and a simpler foam core.

As in the 800 Series Diamond, the tweeter-on-top design of the 705 S2 and 702 S2 models mounts the treble drivers in a decoupled 1kg aluminum housing machined out of solid material, while the tweeter itself, used across the 700 series, is a dual dome design with a carbon coated aluminum dome reinforced with a thin carbon ring.

The ‘bookshelf’ models range from 500 to 1100 Euros apiece, the floorstanders from 1200 to 2000 Euros per unit, and the two centre speakers are 750 and 1150 Euros, with all models now available in high-gloss black, semi-gloss white or walnut red

[www.bowers-wilkins.com](http://www.bowers-wilkins.com)

## T+A updates its “Cala” network receivers

Compact hi-fi without frills: that’s the idea behind T+A’s Cala SR and Cala CDR network-compatible stereo receivers, which the company has updated. Both models can receive FM, DAB+ and Internet radio, access high-resolution music on the home network and streaming services such as Deezer, Qobuz and Tidal, and stream from smartphones or laptops via Bluetooth. Local sources can be connected via Line, moving magnet phono, S/PDIF or USB-A inputs.



The Cala SR (2500 Euro) has a 2 x 55Watt power amplifier built-in, the while Cala CDR (3500 Euro) adds a CD drive and increases the power to 2 x 100 Watt. Both models are optionally available with a Bluetooth transmitter to feed wireless headphones or speakers, and are operated via infrared remote control or the „T+A Control“ app, while the base can be illuminated in different colors on request. Both versions are available now, and will be tested soon.

[www.ta-hifi.de](http://www.ta-hifi.de)

## Focal headphones now Listen wirelessly

In STEREO 5/2017 we tested the Focal „Listen“ headphones – now there’s a 250-euro wireless version, the „Listen Wireless“ with Bluetooth and aptX. Like the original „Listen“, the „Wireless“ is a closed-back, foldable design, with the microphone and buttons for controlling the phone located directly on the earpiece. The integrated battery is charged via USB and should last 20 hours, and the headphones can also be operated classically using the mini jack-terminated cable. Also new from Focal is the in-ear „Spark“ with aluminum housings, available with a flat cable and integrated headset (around 70 Euro) or as „Spark wireless“ with Bluetooth aptX (around 100 Euro). Focal offers both models in three colors.



[www.focal.com](http://www.focal.com)

## Audia Flight preamp uses three toroidal transformers

Italian manufacturer Audia Flight has launched a more compact stablemate for its top-of-the-range Strumento preamplifier: the new FLS 1 (around 6,000 euros) is based on the same circuit concept and operates with three separate power supplies, each with its own encapsulated toroidal transformer.

All stages use a symmetrical double mono structure, and instead of the Strumento’s complex volume regulation with relay-switched individual resistors, the FLS 1 uses an IC-based solution. Line level sources can be connected via three pairs of RCA and two pairs of XLR inputs, with each input having variable gain, or fixed gain, for example for home cinema applications. Preouts are available on both RCAs and XLRs, there’s a record output, and the headphone section is said to deliver up to 12W into 8ohms.



On the back of the FLS 1 are two slots for optional boards – a phono board for MM and MC cartridges, and a D/A converter board, are under construction – and a metal-clad remote control is supplied.

[www.audia.it](http://www.audia.it)

# AVID

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# VINYL OVERDOSE



Do you like to dig in record boxes? Then your Eldorado is Utrecht, in the Netherlands. Twice a year the international record-collecting scene meets there – and it’s happening again soon! On November 11th and 12th the 48th Mega Platten & CD Jaarbeurs Utrecht opens its doors.

**N**ot far from Utrecht’s main railway station is the huge “Jaarbeurs” exhibition centre, and when we visited the 48th “Mega Platen & CD Jaarbeurs” in April, a flea market was running parallel to the event, so a hall full of art and junk had to be crossed before we reached your destination. It was worth the trek: the world’s largest vinyl exchange – it also has CDs and all other sound carriers that exist, or existed – is gigantic. During our last visit we discovered a booth with Japan imports with a wide range of Laserdiscs (2). Oh yes – there’s something for everyone there!

This fair is different from local or regional ones: it attracts dealers and customers from all over Europe as well as from all over the world. But the world

is becoming a village, so Anke and Wilfried Schlieper from Cologne are the first ones to cross our path, having travelled just two and a quarter comfortable hours by ICE train. Wilfried has been collecting CDs since the format was introduced in 1983, and his main focus is manufacturer promo-discs: he’s almost bursting

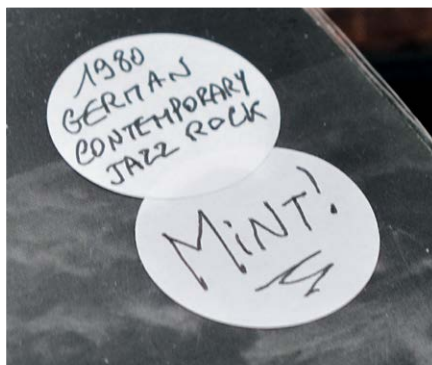
with pride at having snaffled a Luxman double CD the day before, and for just five euros. “That’s why the trip was worth it!”

Wilfried has reason to be happy about his bargain, because although there are records starting from 1.50 euros apiece (3), the prices for well-preserved vinyl are quite “punchy”, corresponding to what one might expect to pay in the well-heeled second-hand vinyl trade. Ten to 15 euros is the going rate for an album good enough for your high-quality turntable, with some selling for three, four or five times as much.

There’s no upper limit, though we have to admit we didn’t run from stand to stand like trophy hunters asking for the most expensive LP and then getting upset



◀ Daniel Alvarez had travelled to Holland from Mexico to offer an extremely rare Beatles compilation for 500 Euro (1.). The „Niagara” original at „Yupressings” was looking for a customer with 240 Euro.



„We've been coming to Utrecht for years. It's a real treasure trove for hunters and gatherers – especially when it comes to vinyl, of course. But CD fans can also find plenty of prey!”

**Anke & Wilfried Schlieper**



**The meeting place for vinyl junkies**

In addition to the sheer flood of vinyl, mugs, T-shirts and other devotional items printed with well-known motifs are also much in evidence. Even doormats with the prism of Pink Floyd's Dark Side of the Moon or the iconographic Stones tongue on them are available for a few euros (4). With this you can show your visitor at the door what you think of him or that he has nothing to expect within in terms of taste. Perhaps it would be better to use one of the artistically imaginative objects that Henk Zielmann makes from vinyl records under the label "Recordart" (5).

We're more interested in the booths with all kinds of accessories for the vinyl hobby, including outer and inner sleeves in different sizes and qualities. Some people get their rice paper liners from Japan,



and we observe customers with wheeled suitcases buying 100 at a time – a sure sign the collector intends re-dressing his newly acquired discs. I buy ten outer sleeves for five euros because I can think of a few LPs with covers I want to protect, and in so doing reveal myself as an outsider due to the small amount.

Washing liquid and carbon brushes are passing over the counter at Otto Schulte, who otherwise serves his customers by mailorder (6) – clearly, vinyl listening becomes more beautiful when accessorized!

Many banners and displays are set the tone of the whole environment: we weren't aware of how everything can improve your hobby, but the most important thing, of course, remains the records, even if just for. Wondering whether you should buy gold in the face of the prevailing low interest rates? No, buy vinyl, as is confirmed by a large banner (7).

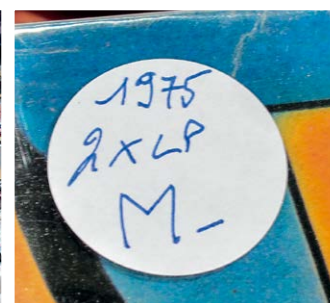
Like addicts around the dealers, the vinyl junkies dig through the crates and work their way through the supply. Some of them stumble abruptly, take an album, pull out the disc and take a critical look at it, then signal their interest to the waiting salesman with a brief nod that they are going to buy, their the hunting instinct is satisfied – but only until the next delivery.

It's hard not to be infected with the rummage-fever, and I'm already thinking about what I might be missing. This market not only satisfies needs, but awakens them at the same time, but I had come forewarned: a colleague told me beforehand that he had had to visit the ATM six times last time "Utrecht". At the time I'd just smiled: now I'm beginning to understand.

**Records from all over the world**

But maybe you should just listen less and read more – about music, of course. The team of Medium Music Books (8) provides the material for this, and its stand is as thronged as the rest, but this time with people interested in backgrounds, biographies and rumors. Or those who simply want to know more about "the fifth Beatle", as a title promises. Sir George Martin, perhaps?

Speaking of the Beatles, the Vam Records troupe travelled to Utrecht from Mexico, their exhibitor sign – each stand





has one – identifying them as specialists in Jazz, Bossanova and “funky”. Their jewel, however, is an album released in the mid-60s in the South American country with the first three discs of the Fab Four. “Such a publication is unique in the world,” explains Daniel Alvarez, and for 500 euros, he would part with the rarity: “It’s usually 1000 euros!”

I believe him, but decline – but then didn’t I also miss the chance to get into gold when the troy ounce was still bobbing up and down the track? I’ve probably just made the next cardinal mistake in capital growth, but then I feel wealthier from stand to stand as I see what prices being asked for discs already in my collection. And mine are often in better condition.

Pictures and music are brought together on one stand, with exhibited specimens dating back to the 1930s. Unfortunately, photography isn’t allowed, and sociologist Christiane Deneke, who accompanies the stand owner, does not want to be photographed with one of the fascinating “picture plates” either. To comfort all of us, she shows a single with music by St. Pauli – of course in bright “local color”.

In general, this is the place for specialists: on the stand of Belgian Jacques Ketels there are only singles from 50 years of rock and pop (9) – thousands of them! “In vinyl we trust” announces an open-hearted pin-up girlie with a turntable from a T-shirt (10): size XL is already out

of stock, so we suspect that it is mainly guys who buy it.

But above all, they carry their freshly dug vinyl finds home, though I leave it at the protective covers and an old record of the guitarist Sigi Schwab for a tenner. Phew, just escaped the vinyl addiction again!

Matthias Böde



INFO

Want to indulge in some vinyl madness? The next „Mega Beurs” in Utrecht takes place on the weekend of November 11/12, 2017, and is open 09.00-17.00 on Saturday, and 10.00-17.00 on Sunday. The entrance fee is 14 Euro (advance booking 12,50 Euro). For more information visit [www.recordplanet.nl](http://www.recordplanet.nl).

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# SPEAKERS? OR SYSTEM?



With D/A conversion, Bluetooth, DLNA streaming and intelligent DSP equalizers, KEF's LS 50 Wireless blurs the boundaries between active monitor and compact system



◀ From the outside, it is hard to see how the complexity of the UniQ driver in the LS50 Wireless.

One analog, one digital, USB and a subwoofer-out, plus LAN, WLAN and Bluetooth – the connectivity of the system is comprehensive. ▼

The growing appetite for active loudspeakers is boosting the variety of the species, to the point where we are increasingly confronted with self-amplified transducers that could replace a complete HiFi chain. The Avantgarde Acoustics Zero 1 and Dynaudio's superb Focus 20 XD are just two of the more prominent examples, but KEF's new LS 50 Wireless goes one step further, taking the concept of the digital/analog all-rounder with Bluetooth, and adding to it full streaming functions including access to subscription services.

In size, the compact speaker differs only slightly from the original LS 50, unveiled by the British manufacturer in 2011 on the occasion of its 50th anniversary. In fact, look at both from the front and you might think they were the same – but then all the clever stuff is round the back.

### Proven qualities

In the last five years, KEF's designers have made a few fine improvements to the cabinet design, most notably the rear-venting elliptical bass reflex port: it consists mainly of flexible foam, the micro-porous



surface of which drastically reduces undesirable airflow noises.

However, they have left untouched the signature feature of all KEF speakers, the famous UniQ drive unit, which places the tweeter in the 'throat' of the mid/bass unit in an attempt to get the drivers closer to an ideal, coherent, 'point source'. The tweeter has waveguide fins to broaden its beam pattern, and the arrangement of the single UniQ unit in the centre of the baffle is of crucial importance, as the unavoidable reflections at the edges of the cabinet are thus distributed evenly, contributes to the homogeneous and extremely direct character of the LS 50 – according to the manufacturer. In addition to the dark red driver in a 'Titanium Gray' enclosure, as supplied for this review, the LS 50 Wireless is also available with a deep blue driver and a gloss black enclosure, or gloss white with a lustrous copper color to the drive unit.

Each is striking in its own way, and we wish more speaker designers would occasionally show a spark of such flair.

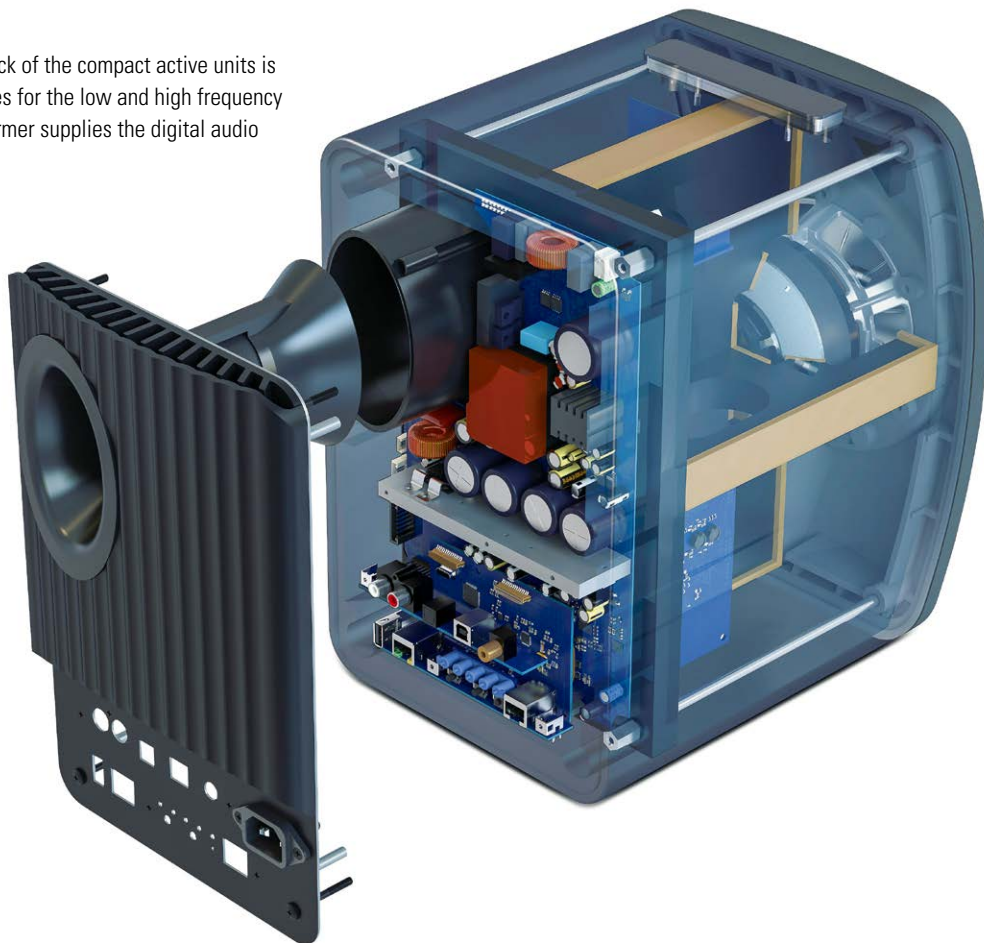
Despite all its similarities, the new wireless offers a number of advantages over its passive 'donor speaker' – not least is that, thanks to its built-in digital signal processing, it can do without an analog crossover. The digital equivalent overcomes all the weaknesses and losses an analog network causes, including the negative effect on the timing of a loudspeaker: the software-controlled equivalent with its phase-locked digital filters ensures a perfect melding of high frequencies and low/midrange sound. In addition, distortions in the driver and amplifier modules can be compensated for using digital correction.

Each speaker uses two amplifiers, with a 30 Watt Class A/B amp for the treble driver and 200W of Class D amplification for the mid/bass, although experience with the passive LS 50 suggests it wouldn't be a problem using this driver with even more amplifier power. However, here the DSP has a further advantage, in that the software knows exactly how the coaxial chassis behaves in the respective frequency ranges, allowing the wattage supplied at any time to be adjusted to the requirements, with a limiter available to



◀ The LS 50 Wireless can be controlled via remote control and touch-buttons even without a smartphone and app. However, you will not be able to access the DSP-EQ, and streaming is much simpler with the app.

A good part of the electronics at the back of the compact active units is to do with power, with separate supplies for the low and high frequency amplifiers. A third switch mode transformer supplies the digital audio section and DSP. ►



back off the power as soon as it becomes critical for the drivers.

All of this gives these active speakers a tone of voice richer, more voluminous and more dynamic than one would ever expect from a speaker of this size, an impression confirmed by our measurements. The bass ranges down to 48 Hertz, meaning that while a subwoofer output is provided, such assistance will hardly be needed in small and medium-sized rooms.

The two speakers in the system look different from behind, although both share heatsink fins for the built-in amplification: while the right-hand speaker offers a full range of analog and digital inputs, the left-hand speaker only has a LAN-style socket and a handy balance control for manually compensating for any level differences caused by the setup. Each speaker has its own phalanx of processing and a Wolfson WM8740-DAC from Cirrus Logic, which converts the signals from the signal processors with 192kHz/24bit precision and passes them on to the two power amplifiers.

### Many input formats

Among the inputs for external sources there are one analog (cinch) and one for a digital player (optical, max. 24/96) are possible. This may seem a bit lean at first, but in practice it should be enough – after all, the number of digital connections can be increased by using separate switch boxes such as those from InLine (by 30 to 50 euros).

A USB Type B asynchronous connection for a computer is also provided, able to handle content at up to 192kHz/24bit: KEF provides a free driver for Microsoft and MacOS, and once this is installed, the LS 50 will accept from Windows PCs

the fine sounding ASIO, kernel and WASAPI drivers.

### Double setup

However, the main inputs are likely to be the LAN connection and the invisible dual-band Wi-Fi antenna, allowing easy integration of the speaker into any home network. In addition to DHCP (automatic allocation of the network parameters) it is also possible to impose a static IP address by entering the network address of the 50s - which you can find out in Explorer or in the Finder of a networked computer - in a web browser. The same view will also allow you to allocate a name to your pair of speakers, which is handy if you run multiple LS 50 Wireless systems on the same home network.

To gain access to all parameters of the loudspeaker, you need to install KEF's free "LS 50 Wireless" app on your Android or iOS smartphone or tablet: from this you can manage several pairs of boxes in

parallel and define all necessary environment variables in two different menu levels. These access to identical parameter sets, but they are prepared for beginners and professionals in terms of labeling and complexity: while beginners can simply specify how large their listening room is, whether the speakers are on a desk or

stands, and the distance they are placed from a rear wall, experienced users can, for example set the exact frequency at which the high-pass filters should operate.

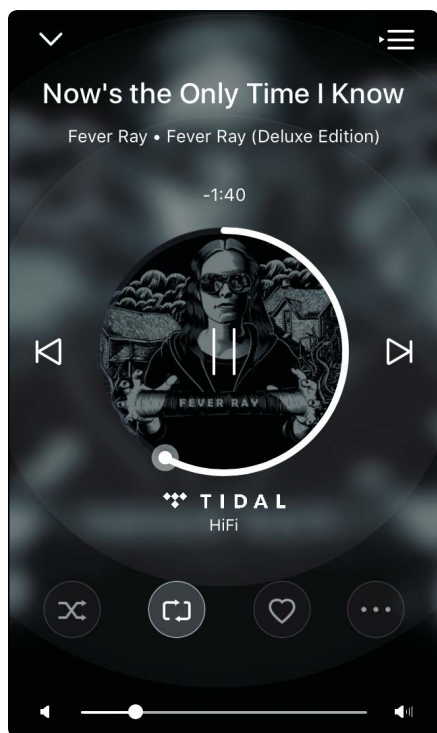
The complex equalizers, which even take into account the distance to the side walls, allow the precise adjustment of the active monitors. For example, we operated the LS 50 on one of our editorial desks with an extremely short

distance to the wall behind them wall distance, and just a few simple steps in the app were enough to tune the EQs such that the sound was so light-footed, transparent and focused it was as if there was no wall. However, in such near-field

#### KEYWORD

##### COAXIAL DRIVER:

This is the term for loudspeaker drivers in which several drive units are combined – as here, where the tweeter is 'nested' inside the throat of the mid/bass driver. Some loudspeakers combine up to four drivers: for example, in Geithain loudspeakers individual drivers are overlaid on each other.



▲ The remote app for the LS 50 masters DLNA streaming and also accesses Tidal.

situations, it can be worthwhile to invest in 'studio style' foam angle pads on which the LS 50 can be tilted slightly backwards. Thomann and other studio equipment manufacturers are already offering such a package for 20 to 30 euros.

### Wide-angle sound

In general, we noticed that the KEF doesn't concentrate the sound on a restricted listening position: as you can see in our measurements on the right, the frequency response is almost identical right on axis and at an angle of 30 degrees. This is really unusual for a coax driver, since the surrounding woofer/midrange driver acts physically like a horn opening for the central tweeter. The KEF developers have really done a lot of work, meaning we didn't have to worry too much about angling the speaker.

All this also applies to use in the listening room, although course, the active 50s can easily be adapted to suboptimal locations such as shelves or sideboards with their sound controls. We were amazed at how transparent, open and

punchy the 50's are when you adapt your EQs to a near-wall position with just a small adjustment, but of course the speakers sound best on stands with a suitable distance to the wall, which bring its drivers to eye level.

So positioned, they projected Carolin No's "Still Waters Run Deep" from our hearing test CD VIII into the small STEREO listening room, the voice of the singer having incredible presence and conveying a high degree of emotion. The synth bass resounding in the background sounded full and deep, but without any compression effects – we could hardly believe how dynamic and steady these little speakers sounded.

### Streaming aboard

LAN and WLAN are there to do more than merely connect the LS 50 Wireless with the App: their actual task of network access is streaming, and the KEF can be networked with any UPnP and DLNA server via its app, swallowing everything up to 24/192 – although not DSD or MQA.

It also works with Tidal, one of the two lossless subscription providers, and a patch is planned for Spotify, meaning LS 50 Wireless owners should occasionally look for software updates on the manufacturer's homepage, which may contain further interesting features and improvements in detail. Updates can be carried

out using a Windows computer only at the moment, but a Mac OS updater is on the way, we're told.

If you don't have a Tidal subscription, no need to mourn: audio signals from smartphones, computers and tablets can also be directed into the loudspeakers via Bluetooth, and sound awfully good thanks to aptX. In particular, the data of lossy services such as Apple Music is transported into the loudspeaker via Bluetooth without any discoloration, the annoying artifacts and the digital frenzy of earlier Bluetooth standards having long since disappeared.

With the combination of its lively sound and extensive features, the LS 50 Wireless is definitely a multimedia monitor of the highest quality. This smart active approach virtually guarantees great entertainment!

*Carsten Barnbeck*

#### KEYWORD

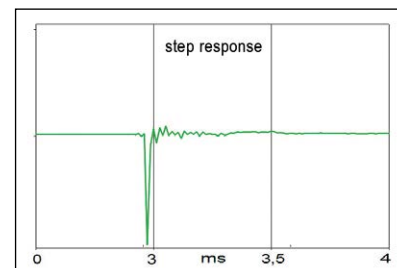
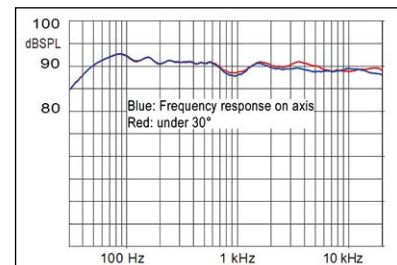
**WASAPI:** Just like „Kernel“, a WASAPI driver bypasses the Windows operating system's own mixer console. The audio signals are therefore not converted (Windows works internally with 24bit/48kHz), and in WASAPI exclusive mode, additional audio signals from the computer (system tones, etc.) are also suppressed. This gives the best possible playback from a computer.

## KEF LS50 WIRELESS

Price: € 2300  
 Warranty: 2 years  
 Dimensions: 20 x 30 x 31 cm (WxHxD)  
 Contact: KEF  
 www.kef.com

Conclusion: Excellent active loudspeaker with a lively sound, covering a huge range of applications from desktop monitors to multimedia hi-fi speakers.

### MEASUREMENT RESULTS



Lower cut-off frequency (-3 dB SPL)	48 dB
Distortion factor 63   3k   10k Hz	1.0   0.3   0.1 %
Power consumption	
Standby   Idle	0.5   13.4 Watt

**LABORATORY COMMENTARY:** Balanced frequency response, superb step response. In bass the cabinet reaches down to 48 Hertz.

### CONFIGURATION

**Functions:** Active loudspeakers with internal level control and flexible DSP-controlled equalizers: simple room presets can be set via buttons on the rear of the right speaker, with more extensive adjustment available via a free remote app (Android/iOS).

**Connections:** analog input, optical input (24bit/96kHz), USB audio (24bit/192kHz), LAN, WLAN (dual band), Bluetooth 4.0 incl. AptX

**Sound formats:** FLAC, AIFF, LPCM and Ogg up to 24bit/192kHz, WAV up to 24bit/48kHz, MP3, WMA and AAC up to the maximum data rate in each case

**Accessories supplied:** remote control, USB cable, power cables, two Ethernet-type cables for LAN and connection between the speakers

### STEREO-TEST

SOUND QUALITY **63%**

PRICE/PERFORMANCE

★ ★ ★ ★ ★  
**OUTSTANDING**

# STEREO

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