

STEREO

THE GERMAN HI-FI MAGAZINE

ISSUE #20 2019

**» HI-FI EXCLUSIVE
VIMBERG MINO**

RESOLUTE RESOLUTION



» HIGH ALTITUDES

TRANSROTOR ALTO

**REVIEWS: DEVIALET EXPERT 220 PRO +++ KIRMUSS AUDIO KA-RC-1 +++
EFUSE +++ CAMBRIDGE AUDIO EDGE A +++ B&W 606 +++ QUAD ERA-1
+++ NAIM NDX 2 REPORT: MQA CD**

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PASSION OR LUXURY TOY?



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Has our industry come to a cross-roads? While the sales figures for high-quality hi-fi and high-end products are declining or are even about to collapse in large parts of the Western world, more and more manufacturers are opting to not simply advertise their products for sound quality and first-class workmanship, but to deliberately position them in the conflictive area between art and luxury.

If that's where we are headed, we need to ask ourselves some critical questions: if HighEnd is to be considered as art, will the expenditure for development and production only be arbitrarily proportional to the final retail price?

Does "art" then also entail the departure from serial production and the turn to individualization or even to the production of unique pieces?

Will one still look at these works of art with regard to their tonal qualities or will it only be a matter of offering the potential customer something that is then no longer available to others?

Will these devices then be passed on as objects of speculation at Sotheby's & Co from "collector to collector" with substantial price surcharges?

Already today this development shows its effect in quite a few cases. For example in Designs that are so exclusive they only seem to fit halls rather than conventional living rooms, or in workmanship that could at best even satisfy the demands of watch collectors and fans of

other noble things among the upper ten thousand. This seems somewhat more bearable when those manufacturers who actually meet these highest standards in production and service, do so in order to complement their portfolio and thus generate the income that has been lost due to declining quantities in the traditional market segments.

However, we also frequently experience at hi-fi shows that adventurously botched together exhibits are labeled with completely abstruse price tags.

With both future models, we should all be aware that the classic retailer is largely ignored – he almost never has the capital to pre-finance the necessary sums. Consequentially, the manufacturer has to maintain one or more showrooms as well as service teams that take care of the logistics and professional installation at the customer's premises. Also, how well is this going to work across countries or even continents?

Finally, how are those many audiophiles who are not a member of this exclusively wealthy circle going to be able to get access to highest quality music reproduction and be inspired?

I am looking forward to your suggestions and opinions.

Michael Lang

editor@stereo-magazine.com

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



B&W 606

It doesn't happen everyday that you find the same materials in a below 1000€ compact speaker as in some of the best speakers in the world. B&W has done just that in the 606.



DEVIALET EXPERT 220 PRO

Devialet managed to take their already unique and revolutionary amplifier technology to the next level.

TRANSROTOR ALTO

This turntable can distinguish itself by means of its extremely sensitive height adjustment and the trio of motors – can it beat the reference Rondino Nero?



QUAD ERA-1

The Era-1 is Quad's first ever head-phone and they managed to immediately enter this heavily contested market with a product to be reckoned with.



NAIM NDX 2

The NDX 2 is without a doubt one of the best streamers we've ever had the honor to hear and due to Airplay2 and Chromecast its flexibility is also outstanding.

VIMBERG MINO

Derived from the exclusive Tidal Audio speaker „Akira“, the Vimberg Mino costs only one ninth of the original, but retains many of the qualities the Germans have always been famous for.



KIRMUSS AUDIO KA-RC-1

This record cleaning machine from the USA combines an attractive price, great performance and easy use.



EFUSE

The fine-wire fuse has always been a weakness of HiFi devices – in terms of safety as well as sound. EFUSE wants to replace them for good.



CAMBRIDGE AUDIO EDGE A

For their 50th anniversary, Cambridge rewarded themselves and their fans with this brilliant integrated amplifier.



MQA CD

MQA has been around for some time already but never before on CDs. Universal Music Japan has now launched the “Ultra High Quality”-CD to change that.

Personalizable Bluetooth in-ears from **Beyerdynamic**

The MOSAYC sound personalization from Mimi Defined is finding its way into more and more headphone models from Beyerdynamic. The latest addition is the deluxe in-ear „Xelento



Wireless“ (1200 Euro). It was originally announced in the middle of 2017, but is only now coming onto the market – right away with the calibration function. After a short listening test with the Beyerdynamic app, the correction values are stored in the receiver’s memory and are then also available at other sources. The Xelento Wireless can decode Bluetooth signals with aptX HD and AAC. The electronics and battery are contained in a slim aluminum cylinder that can be clipped to the clothes. From there, silver-plated cables with an aramid fibre core lead to the in-ears. A remote control with microphone and headset function is integrated in the cable.

global.beyerdynamic.com

Gold note: new turntable power supplies

Two new external power supplies for turntables come from Florence, Italy: the Gold Note PST-10 (950 Euro) was inspired by the PSU-10, the power supply for Goldnote’s PH-10 phono preamplifier. It contains four power transformers that



deliver secondary voltages of 12 and 5 volts for logic control and 18, 26 and 34 volts with inductive noise suppression. Also new is the PST-1 (180 Euro), which is now standard on the Mediterraneo and Giglio turntables and is optionally available for all other turntables.

www.goldnote.it

Ruark reduces its flagship’s size

What used to be a „table radio“ is now a complete hi-fi system with CD player and streaming function. The British manufacturer Ruark is specialized on this kind of devices. Now



they shrunk the dimensions of their flagship R7, which will from now on be called R5. The 52 cm wide cabinet consists of glass and metal components and a fabric covering on the front, behind which the two full-range loudspeakers are hidden. An additional subwoofer provides powerful bass. Via LAN or WLAN, the device can access Spotify, Tidal, Deezer and Amazon Music as well as Internet radio and music stored locally in the home network. It receives music from the smartphone via Bluetooth. It also has phono, line and optical S/PDIF inputs. The R5 receives terrestrial radio via FM and DAB+. Even multiroom playback is possible in combination with other Ruark devices. It is controlled via the included radio remote control or the app for iOS and Android. The R5 is available for 1200 Euro grey lacquered or real wood veneered in walnut.

www.ruarkaudio.com

Cyrus updates DAC module

Anyone who owns an integrated or preamplifier from the British manufacturer Cyrus can now have it updated to the



latest standard with a new DAC-module. The card is called QXR and replaces the previous „QX Card“. It is equipped with an ESS DAC chip and can handle USB PCM resolutions up to 32 bit / 768 kHz and native DSD bit streams up to 22.4 MHz.

The upgrade also improves the quality of the headphone output. The upgrade-card is compatible with numerous Cyrus products that are up to 10 years old. It costs 750 Euro and can be installed at your Cyrus dealer

www.cyrusaudio.com

McIntosh: Turntable with tube amplifier

From McIntosh comes a real all-in-one turntable: the MIT 100 contains not only a phono preamp, but a complete integrated amplifier with analog and digital inputs, even including Bluetooth. The phono pre is specially encapsulated, the actual



preamplifier works with two unmistakably placed tubes, while the power amplifier works with semiconductors in Class D. The manufacturer specifies the output power at 2x80 watts at 4 ohms. In addition to stereo speakers, a subwoofer and headphones can also be connected. The 3.2-kilo aluminum turntable is driven by a motor whose speed is synchronised with the mains frequency. The speed can be changed from 33 to 45 rpm by turning over the belt. A Sumiko Olympic magnet system is pre-installed as pickup. Complete with infrared remote control, the MIT 100 costs around 8400 euros.

www.mcintoshlabs.com

Affordable speakers from Wharfedale



Wharfedale offers a series of extremely low-priced loudspeakers: the D300 series consists of two 2-way shelf speakers (pair prices 200 or 250 Euro), a 2.5-way floorstanding speaker (600 Euro/pair) and a centre for 230 Euro. The developers from the Diamond 11 series have adopted a number of design details, such as the UV-resistant foam surround in the mid/bass range and the bass reflex port on the underside of the loudspeaker. This allows the speakers to be placed close to a wall. The D300 models are available in black or white and in walnut or rosewood look.

www.wharfedale.co.uk

Active,
smart and
wireless



SMART SOUND FOR HIFI AND HOME CINEMA

Feel the breathtaking high-end sound of the future – for goose bump moments with music and TV sound. With 600 watts of music power per speaker, the **Smart Vento 9** is a complete wireless audio system with everything today's modern hi-fi heart desires. The wireless transmission between the loudspeakers and the smart expansion options from multiroom to a complete home cinema set make these audiophile design loudspeakers perfect for impressive music, streaming and film enjoyment.

More information about the Smart Vento 9 and the entire Smart product family can be found at your Canton dealer and on our homepage at www.canton.de

Audio-Technica wireless and low-noise headphone

Bluetooth and active noise cancelling are the two killer features of current headphones. At the CES, Audio-Technica unveiled the ANC900BT, which will be available in spring for 300 euros. It is equipped with multiple microphones to monitor ambient noise, and three different noise cancelling modes (including aircraft mode). The intensity can be controlled via the free Audio-Technica



Connect app for iOS and Android. Thanks to the energy-saving Bluetooth version 5.0, the ANC900BT's battery should last for 35 hours in wireless mode with noise cancelling activated. Music and telephone functions are operated via touch control. The headphone can decode Bluetooth signals with aptX and AAC. Another new noise-cancelling Bluetooth handset from Audio-Technica, the ANC500BT, only supports the standard SBC codec. It costs 100 euros, as do the ANC100BT in-ear BT headphones, which also have noise cancelling.

www.audio-technica.com

Series 8: Aluminum Speakers from T+A

Step by step, the compact individual components from T+A are transforming themselves into a complete series: after the DAC 8, the MP8 multi-source player and the Amp 8 power amplifier, the compact B8 two-way loudspeaker in a matching design will be launched in February. It has a bass reflex cabinet made of hand-brushed anodised aluminum, which is only 19



cm wide and 30 cm high. The drivers are based on Criterion loudspeaker technology: 20 mm fabric dome for the tweeter and a 15 cm woofer. The power handling is said to be 150 W, the impedance 4 Ohm and the price per pair 1980 Euro.

www.ta-hifi.de/en

Fishhead Resolution as shelf speaker

Christoph Winklmeier's company Fishhead Audio presents a compact version of the floorstanding speaker Resolution 2.6 FS which was released in 2017: the new „Resolution 1.6 BS“ is just 22 cm wide and 42 cm high, but, like its big brother, it



is built in a proper three-way configuration: an Air Motion Transformer for the high frequencies and an 8 cm midrange and 16 cm woofer, each with carbon fibre cones. The bass reflex-cabinet has 3 cm thick front and rear panels and is painted matt white with a magnetically attached matt black front panel. Fishhead specifies the lower cut-off frequency of the 4-ohm speaker at 55 Hertz (-3 dB). The Resolution 1.6 BS is available for 800 Euro a pair only direct from www.fishhead-audio.de.

www.fishhead-audio.de

Sony and Panasonic flee from Brexit

Britain's withdrawal from the EU is casting its shadows ahead: Sony has announced that it will move its European headquarters from Weybridge in the south of England to Amsterdam to „avoid cumbersome customs procedures“ in the event of a disorderly Brexit. The agency afp reports this with reference to a Sony spokesman. But it was only a formality in order to leave the official seat of the company in the EU. The employees in England are not to be affected. Panasonic had already relocated its European headquarters from the United Kingdom to the Netherlands last year.

SONY

www.sony.co.uk
www.panasonic.com

Google cancels its Chromecast audio adapter

With the adapter from Google for around 40 Euro you were able to make any HiFi system Chromecast compatible and give them access to several music streaming services via smartphone. Now Google wants to discontinue the „Chromecast Audio“, as the technology blog 9to5Google announced. Google now offers a range of alternative products that also support the audio functions. The background for discontinuing the Chromecast audio adapter is probably that,



unlike newer products, it is not compatible with voice commands. However, the Google spokesman has confirmed that Chromecast Audio Adapters can still be used and will continue to be supported. It receives the music signals from the Internet via WLAN and outputs them via a combined analog and digital-optical socket.

store.google.com

Cambridge Audio direct drive with Bluetooth

To transmit phono signals via the data-reduced Bluetooth radio, is a sacrilege for many vinyl-junkies. Such turntables are usually aimed at beginners who have rediscovered the LP



as a hip retro medium. Cambridge Audio, however, addresses a quite fastidious clientele with its new „Alva TT“, costing 1700 euro. It has a body, which is milled from a single aluminum block, a directly driven platter and comes complete with pre-assembled moving coil pickup from own development. The built-in preamplifier is not bad either: it is based on the in-house Solo and Duo models. If desired, the Alva TT can also be operated wired. Via Bluetooth, it can be connected for example to the Cambridge Edge A and Edge NQ components, supporting the aptX-HD codec. Cambridge also offers the MC pickup individually for 500 Euro.

www.cambridgeaudio.com



Introducing

Selekt DSM

Hi-fi with the human touch

Remember when music was something you could touch? Selekt DSM makes listening to digital music a tactile and beautiful experience. It's better in every sense. And it'll make you fall in love with music all over again.

We can't wait for you to hear it. Book a demo now.

www.linn.co.uk



LINN

27,000 Euro pure silver cable from In-Akustik



The „LS-4004 AIR Pure Silver Reference“ is a new version of the In-Akustik Loudspeaker Cable with „Air Helix“ construction. They do not use a solid as dielectric, but air as insulator between the individual conductors. Now, the conductors are also made of pure silver. In-Akustik manufactures the cables to customer specifications in the desired length. 2x3 meters cost 27,000 Euro. If you don't want to spend so much, you can choose the version „Reference LS-2404 AIR Pure Silver“. It does not contain quite as many single conductors as the LS 4004 and costs 16,000 Euros at 2x3 metres.

www.in-akustik.de/en

Onkyo updates on Tidal Masters and Airplay 2

For spring 2019, Onkyo announced a firmware update that will enable selected network-capable components to support Apple AirPlay 2. With Airplay 2, you can stream music from iPhone & Co. to multiple compatible devices in your home. The update will be available for the TX-L50, TX-NR686, TX-RZ730

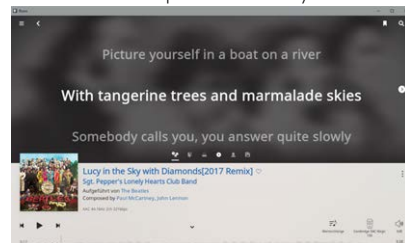


and TX-RZ830 AV receivers, the LS5200 home theatre system and the TX-L20D and TX-8270 network stereo receivers. In December, Onkyo released an update that allowed some devices to decode Tidal's „Masters“ streams. These are the NS-6170 and NS-6130 network audio players, the R-N855, TX-8270 and TX-8250 network stereo receivers, and the CR-N775 and CR-N775 D network CD receivers. As of now, the Tidal app is also MQA-compatible for Android, so it can decode the master files, as MQA announced on the CES.

www.onkyo.com

Roon integrates Qobuz

Since the lossless streaming service Qobuz has extended its reach to the USA, it is supported by more and more player applications. It all started with Audirvana+, recently followed by the US software Amarra Luxe, and now the Roon player also offers integrated access to Qobuz. Users can therefore choose between playing from their own locally stored music collection or streaming from Tidal or Qobuz – provided they have the appropriate subscription. The „Roon Radio“ function has also been completely renewed in version 1.6, which is now available as a free download for all Roon customers. On the basis of its own music collection, it proposes further titles from the streaming services. Another new feature is the display of song lyrics, which now run across the screen synchronously to the music, highlighting the current text line. However, this only works for the more popular titles.



www.roonlabs.com

Four new turntables from Audio-Technica

The biggest trend at this year's CES are turntables. At least in the audio sector. No other HiFi genre is so much at the centre of the novelties show. Audio-Technica is presenting four new models: to start with, there will be a direct drive DJ turntable with USB port, which will be available in stores from February for 280 euros. Further a fully automatic turntable with belt drive for beginners, which is also available with USB output, with Bluetooth transmitter or with built-in headphone amplifier and costs between



130 and 200 euros, depending on the version. The most interesting models for HiFi use are the two models with wooden cabinets: the LPW40WN (350 Euro, from January) has a dark walnut body and a sensor-controlled drive motor, while the LPW30TK (300 Euro, during the spring) is teak veneered. Both models are belt driven. All new Audio-Technica turntables have integrated preamplifiers with switchable phono/line outputs and pre-assembled MM pickups – from the company's own range, of course.

www.audio-technica.com

Mofi ELECTRONICS

GET CLOSER TO THE ORIGINAL MASTER RECORDING

Mobile Fidelity
UltraDeck Turntable



Isolated AC Synchronous Motor

UltraDeck's stepped-pulley 250RPM AC motor provides excellent speed stability for pitch accuracy and rhythmic drive.



Ultra Tonearm

The 10-inch straight, aluminum, gimbaled-bearing tonearm uses smooth ball bearings for low friction and Cardas Audio wiring to maintain complete signal purity.



Anti-Vibration Feet by HRS

Developed in conjunction with the engineers at Harmonic Resolution Systems, anti-vibration feet isolate UltraDeck from ruinous vibrations and interference.



READY FOR TAKEOFF

Devialet launches the next stage of its revolutionary line of amplifiers. Can the new Expert 220 Pro reach high-end orbits?

There was quite a hype after the Paris-based company Devialet presented itself to high-enders in 2011 with their amplifier D-Premier and its subsequent models. Since then, excitement about the revolutionary amps somewhat dwindled. The reason being that the French were entirely focusing on their – well, what exactly is it? – integrated system named “Phantom”. Although the two devices seem to have nothing in common

at first glance, they use the same technologies and complement as well as benefit from each other.

For example, both make use of the “analog-digital hybrid” amplifier (ADH), which was the starting point and basic innovation behind Devialet. It stems from the brain of the technological genius and mastermind Pierre-Emmanuel Calmel, who presented the first truly new amplifier concept in half a century. Calmel’s

achievement was to combine a low-distortion class-A amplifier with a powerful and effective switching class-D amp. A real challenge because these concepts would usually not fit together at all. It was only by dividing the signal processing into four 90-degree phases that he could merge them. As a result the Expert 220 Pro, which is particularly flat and weighs less than six kilograms, shows two zeros behind the decimal point of the distortion



▲ The sockets and interfaces on the rear of the amplifier are tightly packed. There is a Wlan antenna as well as a ground terminal for the input, that handles phono signals unless otherwise configured. At the top left is the slot for the individually programmed SD card.

and intermodulation values in our lab protocol. That is even more impressive as we measured at a total impulse power of nearly 900 watts at four ohms.

When using the Devialet one quickly gets used to superlatives, which is not least due to the sophisticated control concept. In comparison a “normal” amplifier looks like a handaxe to a smartphone. That is hardly exaggerated, as a device would usually be controlled via buttons and switches, while the progressive Expert manages almost completely without them. The very few it does need it has outsourced to its wireless remote control. Via the remote’s central wheel, the volume can be precisely varied in tenths of a decibel steps. The amp always follows the tiniest turns as meticulously as if it was a potentiometer

directly on the device. All other commands from the remote control work equally well and it can be programmed as extensively as the Expert 220 Pro itself.

The highlight is, however, that the amplifier can be adjusted to the used speakers via “SAM”. If a turntable is connected, you have not only the choice between MM and MC. Rather, absolutely all parameters, such as for example the gain factor or the input impedance and capacitance, can be adjusted. If you are unsure, a comprehensive list of the most common pickups can be found on the Devialet website. Simply click on your model and the appropriate values will be displayed. On top of that, there is a selection of various equalization curves, making this digital wonder-amp turn out to be a true phono specialist. It can even sonically deliver what the sophisticated software promises. The Expert Pro really seems like it was coming from a different hifi-dimension and rather resembles a computer than a traditional amp.

By the way, all mentioned values can even be adjusted during playback. This allows rather simple fine tuning, without the SD card having to be moved back and forth between the PC and the amp. It turned out that the phono performance is even more coherent, relaxed and homogeneous if the sensitivity is set around 20 percent lower than recommended, i.e., for example, to five instead of four millivolts. However, once you have found the optimal setting, you have to save it on the SD card, which is easily done. Otherwise, the amp will revert to the previous values the next time it boots.

At Devialet, almost everything revolves around chips and software. Calmel enthusiastically talks about his time in a leading position at Nortel Networks, supplier for

YOU DETERMINE THE FUNCTIONS OF YOUR AMPLIFIER

The extensive possibilities to configure a Devialet amplifier are unique. After the online registration you have access to the „Advanced Configurator“. The inputs can be switched on or off. You can limit the performance, for example to prevent misuse by the party crazy offspring, call up the „SAM“ system (see above) or assign the buttons of the remote control entirely according to your own wishes. Same holds true for the „Line“ sockets. These can be used as a high level input or as a second phono input, depending on your taste. Or you can switch them to become two more S/PDIF coaxial digital inputs, because the



other two are used as outputs. The possibilities are almost unlimited. Of course, the phono input can also be switched for CD players, tuners, etc. Otherwise, the phono stage can be minutely configured in regard to sensitivity, impedance, capacity and even equalization. If you are overwhelmed by the abundance of options, simply call up your pickup model in the menu and the Expert 220 Pro automatically sets all values to match it. Finally, the configurations are saved on an SD card and inserted into the amplifier.

TREBLE
 -16.0 dB

BALANCE
 23%

PHONO PRE-SETS
 MUTE : OFF
 PHASE : [+]
 SUBSONIC : OFF
 ICM : OFF
 DPM : ON

GENERAL SETTINGS
 CHANNELS STEREO
 EQ CURVE RIAA 1976
 MAX LEVEL 5.00 MV
 LOADING HIGH Ω
 100 PF

EXPERT 220 PRO
 SN 16734 64727F2
 HW 6.2 SW 13.0.0
 DOS 2.2.2

◀ Phono pre-sets, which can also be changed without a PC, sound and balance control, general settings or software modes – all this and more can be called up via the round display.

TEST-COMPONENTS

Turntable: Transrotor Rondino nero
 Pickups: Audio-Technica AT-ART9, Benz Micro ACE H, Brinkmann Pi, Ortofon 2M Black
 Multi-player: T+A MP3100HV
 Pre/power amplifier: Accustic Arts Tube PreampII-MK2/AmplII-MK3, Nagra Jazz/MSA
 Integrated amplifier: Symphonic Line RG10
 Loudspeaker: B&W 800D3, DALI Epicon 6, Dynaudio Contour 60
 Cables: HMS, In-Acoustic, Purist Audio Design

telecommunication companies. There he had “access to every kind of technology one could only dream of”. Devialet, on the other hand, was simply too small in the beginning to have full access to all chips from all major manufacturers. Calmel comments “they don’t even talk to a small start-up like us.” In the meantime the French have, however, reached a size that allows more doors to open for their purposes. This was the prerequisite for the current “Core Infinity” signal processing board, which is on the latest and most advanced standard in terms of

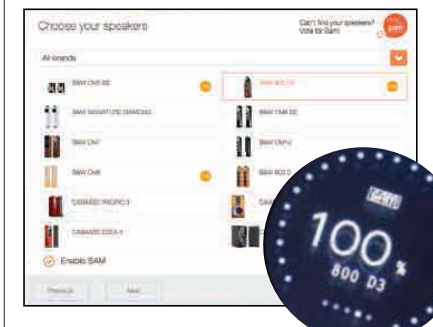
connectivity, bit perfection, jitter, and clock precision. It should not only provide the owner of an “Expert Pro” amplifier with advantages in comfort and connectivity, but also increase the sound quality compared to the previous model generation.

We wanted to find out if they can keep their promise, especially since the just replaced Expert 200 can be upgraded to an Expert 220 Pro by updating it in the spotlessly clean production. The upgrade, however, has its price, costing a proud 3490 Euros. On the other hand, it might be worth it as the sound gain is indeed surprisingly obvious. The 220 immediately sounded smoother, more relaxed, less technical and more musical than its predecessor, which already played astonishingly velvety and homogeneous. All that, regardless of whether the sampling rate of the internal data level had been configured to 96 or 192 kilohertz at 24 bit word widths. Yes, the Expert 220 Pro sounded even more sonorous than our “conventional” reference amps, while still offering finest resolutions.

Maria Pihl’s “Malvina” appeared physically, shone in rich colors and was wrapped in a supple, high-end garment, all the way from the full, but concise bass

PERFECT MATCH FOR MANY SPEAKERS

Usually, an amplifier would treat all speakers exactly the same. Devialet, however, invented SAM. Thanks to this „Speaker Active Matching“-system, the amp knows which speaker is connected and can compensate for its weaknesses. Devialet has analyzed not only the frequency response, but also the timing of more than 800 loudspeakers to date. An overview is provided on the website. Sometimes even crossovers had to be dismantled and measured for the correction curves. Within the configuration (see below) you select your speaker, and the respective data is saved on the SD card, so that the amplifier knows what to do. Of course, SAM can also be switched on and off during operation so that it is easy to comprehend the changes. If you think the correction is too strong – for example in relation to the usual bass boost of compact speakers at low volumes – it can be reduced in percentage steps (see display). In our experiments with SAM the improvements ranged from „slight“ to „oho!“ depending on the quality of the loudspeaker. Speakers sometimes played much tighter and more precisely. SAM is a free online service for Devialet customers.



▲ It’s hard to believe how little space is needed for the complex digital electronics and the powerful ADH amplifier, thanks to latest technology.

to the homogeneous mid-range, and the delicate treble and draining synthesizer waves backed into the depths of the stage. The 220 could do this in a more natural way when the “Dynamic Power Management” (DPM) was switched off. Just how minute, dynamically differentiated and impulsively the flat powerhouse works was demonstrated in the bone-dry vibraphone strokes in “Saturday Night” by the Red Norvo Quintet. They plopped up steeply and strikingly in front of the sparsely arranged background, while never sounding artificial.

It didn’t matter whether we presented the music analog or digital to the extremely level-resistant Devialet, who unstrainedly activates its power-reserves

when needed. Also its phono stage is outstanding. MMs like MCs offered proper analog feeling. I would bet that in a blindfolded listening comparison, nobody would identify the Frenchman as a fully digital amp. Latter confirms that stepping into the world of digital media processing – especially as done here on a high-res basis – is no problem at all.

While speaking of high-res, of course the Expert 220 Pro is perfect for the world of new media. It understands all

common PCM and DSD formats and is a perfect streamer, thanks to its UPNP capability. At lower data rates it can also be used via Wifi. Any unfulfilled wishes? Yes, we would have appreciated a headphone jack and a standby mode that really shuts down the amp instead of keeping it lukewarm. But maybe that's exactly what fans appreciate. What's certain is that, with "Core Infinity", Devialet has launched yet another revolution in their up-and-coming amplifiers.

Matthias Böde

SPARKLING CLEAN PRODUCTION BY THE SPECIALISTS

As the first ever German journalists, STEREO was allowed to visit Devialet's production facility at Vire in Normandy. Not their own company, but the service provider Seprolec, Pierre-Emmanuel Calmel (2, with Expert Pro-Board) won over for his start-up from the very beginning. High-precision machines place parts in the circuit boards (3). Someone hands us a small box. But what's in it? Sand and dust particles? Not quite. In fact they are tiny technical components. We're certainly familiar with state-of-the-art technology, but we haven't seen anything like that before. Work here consistently meets highest standards. Some areas are even restricted and veiled. Military and satellite technology? Sorry, no comment. The finished boards are examined under a microscope (1). A machine even x-rays them because this is the only way to detect hidden contact faults (4). They would be annoying in a Devialet, but catastrophic in a satellite. Now we know where the Devialet's spotlessly clean processing comes from. This perfection is exactly what the French company demands.

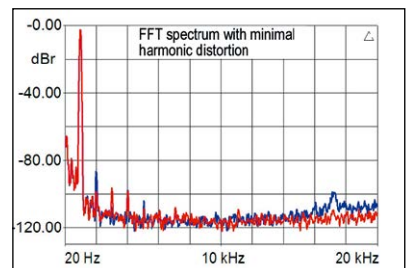


DEVIALET EXPERT 220 PRO

Price: around 7990 €
 Dimensions: 39 x4 x38 cm (WxHxD)
 Warranty: 5 years
 Contact: Devialet
 Phone: +44 808 168 49 44

Devialet takes its revolutionary amplifier technology to the next level with "Core Infinity". The ingenious operating concept has been further refined. The practical and comprehensive online configurator and „SAM“ make the Devialet unique anyway. Superb sound!

MEASUREMENT RESULTS



Continuous power (8 Ohm / 4 Ohm)	173 W/343 W
Pulse power 4 Ohm (1kHz)	438 W
THD 50mW/5W/1dB Pmax	0.007 %/0.003 %/0.07 %
Interm. 50mW/5W/1dB Pmax	0.005 %/0.003 %/0.08 %
Signal-to-noise ratio at 50mW/ 5W	76 dB/95 dB
Signal-to-noise ratio Phono MM (5 mV for 5 Watt)	82 dB(A)
Signal-to-noise ratio Phono MC (0.5 mV for 5 Watt)	74 dB(A)
Attenuation at 4 Ohm (63Hz/1kHz/14kHz)	450/350/230
Upper cut-off frequency (-3dB/40hm)	96 kHz
Crosstalk Line 1 > Line 2	97 dB
Volume synchronization error at -60dB	0.1 dB
Stereo channel separation at 10kHz	69 dB
Power consumption Stby./idle (at) 13 W/30 W(222 Volt)	

LAB COMMENT



The excellent values together with high power and signal-to-noise ratio as well as very low distortions confirm Devialet's technical amplifier concept. Even the channel separation of the ultra-compact amp is lavish.

FEATURES

Freely configurable inputs and outputs, balance and tone control, phono preamplifier (MM/MC), digital interfaces including USB, control app for IOS and Android, radio remote control

STEREO-TEST

SOUND QUALITY **95%**

PRICE/PERFORMANCE

★ ★ ★ ★ ★
OUTSTANDING

TOUGH LADIES



Derived from the legendary Tidal speakers, the Vimbergs' diaphragms are made of ceramic or even diamond.

The decoupled baffle for the 30mm and 90mm ceramic diaphragms is milled from solid aluminum. ▶



Tidal Audio has a huge reputation in the hifi industry. That is no surprise, as their speakers, most of which are hand-made near Cologne, are always built without the slightest compromise. Highest grade mechanical as well as electrical engineering meets top acoustics, with both being joined together using only the very best materials. The sinfully expensive drivers with diamond diaphragms are exclusively made by Accuton, which is located just around the corner. They are, of course, manufactured and modified according to Tidal's specifications and carefully selected – nowhere else are deep black Accuton drivers to be found!

For each individual driver there are extensive measurements available, as all of them have been archived – and whilst speaking of perfection, just take a look at the finish of a Tidal Audio: three millimeters of perfectly hand-applied piano paint!

This cannot be cheap! And indeed, their flagship “La Assoluta” is in fact located in price-regions where you'd rather expect to get a house than a loudspeaker in



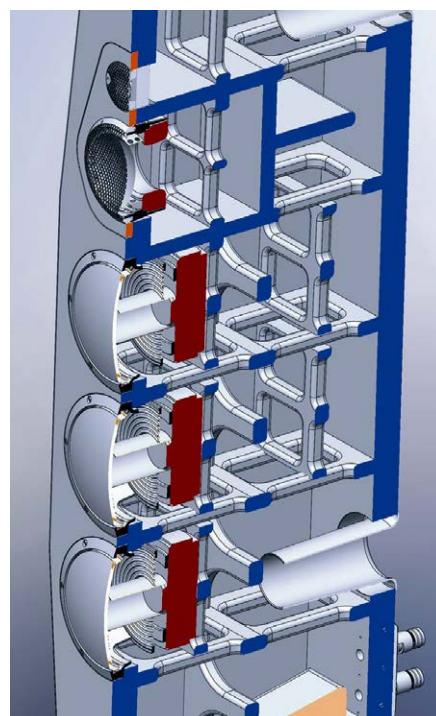
▲ The rear legs of the Vimberg Mino are made from such a block.

return. 490,000 Euros are due for the pair, while even for the smaller “Akira” still 189,000 Euros are to be estimated. However, first of all one has to bear in mind the costs for the chassis alone as well as for “only” the internal components, like e.g. the five kilogram Duelund cast-silver capacitor. Further considering the quasi-individual production, the seemingly outrageous price is put into perspective – at least slightly. After all, hardly anyone is upset about Bugatti, Leica or Lange & Söhne prices, although they are only affordable for some very few people.

Following the frequently expressed wish to offer loudspeakers at prices well below those of the Tidal portfolio, mastermind Jörn Janczak decided to make targeted savings where there is as little compromise as possible. For example, a special machine was purchased for applying a finish which is half as thick as on the originals, but nevertheless still looks outstanding. For “socio-ecological” reasons, it was out of the question to purchase the 34 mm HDF cabinets from China. The polished stainless steel was replaced with aluminum and in the standard version the drivers now use ceramic instead of diamond diaphragms which come from the Accuton standard portfolio. Further, some parts of the development have already been done for Tidal and don't have to be charged again. These considerations led to “Vimberg”, a kind of “little sister” to Tidal Audio. So far there is the floorstanding loudspeaker “Tonda”, which was directly derived from the Akira and can therefore be easily compared in paper form, as well as the slightly smaller “Mino” with a 30mm-ceramic dome, 90mm-ceramic midrange



▲ A picture from the production shows how well equipped the crossover of the Mino are.



▲ A stabilizing skeleton is found in the usually hidden interior of the Vimberg.

driver and three 168mm-ceramic sandwich drivers – latter of which STEREO brought into the listening and measuring rooms for our test.

With base prices of 27,000 euros and 22,000 euros respectively, the “Vimberg Tonda” is at one seventh and the “Mino” at almost one ninth of the price per pair that is quoted for the original – although still with most careful planning and production. Tidal has always been, is and remains a “cost-no-object” brand, in

THE TOP OF THE FEASIBLE?

Tidal Audio was founded in 1999 by Jörn Janczak and Swen Wasserrab. Even though after 2003 the founders separated their businesses, not least because they moved to Hürth, they remained close friends, and Wasserrab occasionally checks in at the Leipzig branch, which is responsible for the cabinets and paintwork with four employees. Development and final assembly are carried out in Hürth, where, in addition to the male and female bosses, a further four workers are employed. The company also has showrooms and two listening rooms (photo) in which various setups of Tidal and Vimberg



loudspeakers, including their own electronics, are ready for demonstration.

which first the best possible result is realized and only then calculated into a final price. Vimberg's development is, for the first time, based on a target price. Silver connections and Mogami wiring are there anyway! Vimberg is to be sold exclusively through selected specialist dealers. In the listening room we never had the feeling, not even for a fraction of a second, that we were dealing with "slimmed down" or "economy" model. Actually, quite the opposite!

Everything here is designed for accuracy and timing. The speaker should omit nothing, while also never reinterpreting or adding color to anything. Janczak doesn't even want to add a hint of warmth, as to him that is the task of musicians and sound engineers: 100 % resolution, 0 % sound!

Therefore, the engineers dedicate themselves with admirable enthusiasm to the transient response and the corresponding tuning of the drivers, which is visible from the absolutely outstanding step response, not only for a three-way system. In addition, the characteristics of the individual drivers, such as the resonance behavior in the mid-range, are analyzed and specifically corrected via a suction circuit in the crossover, without the impulse

behavior suffering overall. Instead of a foam plug supplied with many loudspeakers, Vimberg provides each one with a very precisely closing plug with handle, which is mounted as standard and can be removed to vary the bass reflex tube. Without, it may seem a little less precise, however e.g. Supertramp profited considerably from the gained "Boom" – a matter of taste. The Mino's bass is extraordinarily precise and contoured, you could call it slim in comparison, however that is not really the case, as visible in the frequency response. Rather it is honest, and that's what distinguishes the entire speaker. It embodies pure neutrality. The timing of "In My World" by half of the Fleetwood Mac line up Buckingham/McVie, for example, is almost unbelievable, as is the attention to detail and the pinpoint accuracy over the entire transmission range. Seamless dynamics, but also exquisite tonality should please the fans of classical music.

"Every developer gets the amplitude frequency response, but the timing is also absolutely crucial for perfect, unadulterated music reproduction," says Janczak. In fact, this speaker is sensationally accurate, making it exciting and extremely fun!

For 7000 Euro surcharge you can also get the Mino with 30mm diamond dome. However, you really don't have to, as it is also a 72 kilogram dream of a loudspeaker in complete ceramic equipment. Further – as a, so to speak, "Tidal light" – for some it's a dream much more realistic than its role model, however playing a lot closer to the "original" than one might expect for a good ninth of the price. What an experience!

Tom Frantzen

TEST-COMPONENTS

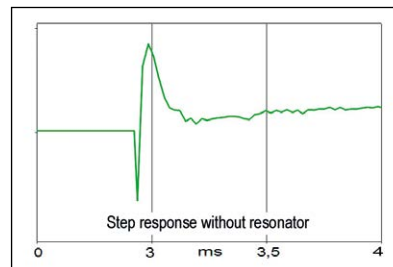
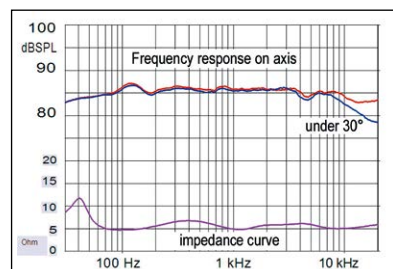
Turntable: AVM Evolution 5.3
 CD player: T+A MP 3100 HV
 Preamp: Octave HP 700
 Preamp: Accoustic Arts AMP II Mk3
 Loudspeaker: B&W 800 D3
 Cables: Cardas, HMS, In-Acoustics, Supra

VIMBERG MINO

Price: from 22000 €
 Dimensions: 43 x 126 x 53 cm (WHxD)
 Warranty: 10 years
 Contact: Tidal
 Phone: +49 2233 9669226
 www.tidal-audio.com

Vimberg speakers offer almost the same quality as their expensive Tidal sisters, but at a fraction of the price. In fact, the losses are manageable, and the extremely neutral and precise Mino plays in the uppermost echelons. Plasticity, dynamics and accuracy in exquisite material quality.

MEASUREMENT RESULTS



DC resistor	4 Ohm
Minimum impedance 4.3 Ohm at	90 Hz
Maximum impedance 8 Ohm at	52 Hz
Sound pressure level (2.83 V/m)	89.4 dB SPL
Power for 94 dB SPL	7.1 W
Lower cut-off frequency (-3dB SPL)	37 Hz
Distortion factor at 63/3k/10k Hz	0.3/0.1/0.1 %

LAB COMMENTS

The frequency response documents the extreme balance, which also applies to the slightly angled speaker. The impedance is uncritical, the efficiency slightly above average. Such a step response is absolutely outstanding, not only for a three-way speaker, and shows the excellent timing.

STEREO-TEST

SOUND QUALITY **97%**

PRICE/PERFORMANCE

★★★★☆
EXCELLENT

Lebenslänglich



unique high end audio

www.mbl.de



With its new top-line, Cambridge Audio is pushing into unprecedented price and sound dimensions. Finally, we were able to welcome the integrated amplifier „Edge A“ into our listening room.

Have you already had the opportunity to hear an amplifier from Cambridge Audio? The CXA80 perhaps? An 851A? Then you won't be surprised about what I'm going to say over the next few lines: the new flagship blends harmoniously into the British manufacturer's tradition and radiates musicality all the way down to its circuitry. To be honest, what else would you expect from a company that garnishes the business cards of its employees with the most emotional moments of their favorite songs and runs a live club at its London headquarters? These gentlemen live their passion and transfer that spirit to all their components.

As familiar as the character of the "Edge A" seems, as extraordinary it is. Cambridge Audio is firmly anchored in our minds as a brand that offers great value for little money. When technical director

Dominic Baker and marketing director Mark Whiteman visited our editorial office last autumn they whispered to us that an amplifier for 5,000 euros was coming up. Initially we believed there must have been a misunderstanding. However, just a few moments later the first pictures of the huge new level control flickered across the computer screen, and it dawned on us that the two of them suffered neither from a lack of oxygen nor coffee. Celebrating their 50th anniversary, Cambridge Audio wanted to reward its developers for their great work by giving them the "go" to design a dream amplifier. And promptly they sketched a concept full of contrasts that comes across as modest on the outside, but is in fact full of technical finesse on the inside.

The Edge A has a single button that switches it on and off. There is auto standby, which can be turned off using a

rear switch. The central control element is the highly visible and lavishly dimensioned controller consisting of 31 individual parts, whose linear control path ensures perfect handling of the 195 watt continuous output. Only at twelve o'clock does the amp reach a slightly-above-normal volume. So there is plenty of room to minutely fine-tune the quieter levels. Just as everything else on this amplifier, the encoder is handcrafted. For stepless transitions, the British use a digital converter called MDAC on the inside, which calculates more than 65,000 level steps and forwards them to a resistance network as control instructions. This network is located at the rear of the case directly in the preamplifier – even though it is digitally controlled, the signal remains analog at all times.

On the shaft of the controller there is a handy ring which switches through a total of nine



◀ To underline the Edge's uncompromising appearance, Cambridge Audio designed an indestructible metal remote control.



British company to a physically tangible level and wrapped it in an equally charming design. Cambridge at its best!

Carsten Barnbeck

▲ The stable signal connections reveal the Edge A's symmetrical double mono construction.

inputs. Here is also our only small point of criticism about the Edge's fascinating design. Since the inscription of the ring-shaped diodes is already impossible to read from just one meter of distance and because there are no direct selection keys on the remote control, you'll have to learn by heart which device was connected on which input.

On the other hand, the Edge's connectivity is flawless. It offers two gold-plated chinch inputs and a balanced XLR input. The built-in D/A converter accepts optical or coaxial signals and has a computer connection in USB 2.0 format. The HDMI connection for the TV ARC is rather unusual but appreciated. The integrated Sabre-DAC processes signals up to 24/192 and has a fixed tuning, so you don't have to deal with any digital filters. With the preselected settings, the converter plays extremely musical, focused and atmospheric. The package is rounded off by Bluetooth in aptX HD format with a bandwidth of 576 kilobits. Of course, it also accepts normal aptX, MP3 and AAC.

There are outputs in form of single-wire terminals, as well as two pre-outs, which are first and foremost intended to be used with the stereo power amp "Edge W" (around 3000€). Together with the Edge A, a combination of "Edge NQ" controller preamplifier (for 4000 euros including network player) and the mentioned power amplifier was launched. Latter was derived directly from the Class AB power plants of the Edge A and is therefore also recommended as a perfect bi-amping supplement.

With nearly 200 watts and impulse peaks of up to 250 watts, the Edge is a

proper powerhouse. Thanks to its over-powered network topography, it even plays as confidently and powerfully as if it had twice the power. At its heart are two huge toroidal transformers located, which are mounted in opposite phase on top of each other, thus terminating part of their magnetic fields. A third transformer feeds all of the digital circuitry. The output stages are located directly next to the power supply and have open, rail-like power lines. Although the superbly crafted aluminum housing can be opened by loosening just two screws, an amateur should definitely leave his fingers away from the delicate inner workings. The headphone output on the front panel completely switches off the power amplifiers and thus saves a lot of energy during use.

Due to the substantial reserves of power, the Edge A filigree works out dynamic fine gradations. It is a fast, high-precision amplifier for which interferences such as distortion and intermodulation are entirely unknown. If you want it to, it can blow properly bone-dry and pumping bass waves into the listening room, for example on speakers like DALI's Epicon 6. However, such a spectacle is not its primary profession. It much

prefers to express a brilliance and soul to voices like Leslie Feist's in the enchanting "Graveyard", letting the listener melt away completely. Silky timbres and a tickle of finest undertones are masterfully depicted! Our speakers disappeared entirely as a source of sound and one could completely surrender to the illusion of the instruments and voices standing on a real and huge stage.

As I said in the beginning, you'd not expect any less from Cambridge Audio. With their Edge, however, the unleashed development-team actually succeeded in bringing the beguiling sound world of the

KEYWORD

TV ARC:

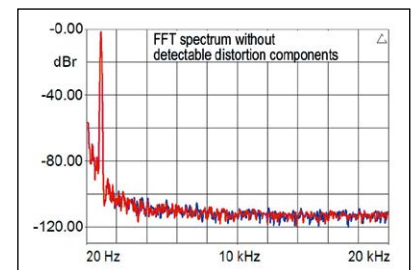
Modern TVs can often send their audio signals via HDMI to amplifiers. This „Audio Return Channel“ (ARC) also transports control signals, to enable controlling the amplifier's volume via the TV remote control.

CAMBRIDGE AUDIO EDGE A

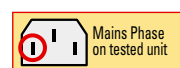
Price: around 5000 €
 Dimensions: 47 x16 x47 cm (WxHxD)
 Warranty: 5 years
 Contact: Cambridge Audio
 Phone: +44 20 7940 2200,
 www.cambridgeaudio.com

Cambridge Audio is rewarding itself for 50 years of good work and gives its fans the best amplifier the British have ever designed: musical, colorful and unmatched dynamics!

MEASUREMENT RESULTS



Signal-to-noise ratio referred to 24 bits	97.6 dB
Signal-to-noise ratio referred to 16 bit	88.2 dB
Signal-to-noise ratio digital zero	98.2 dB
Converter linearity at -90dBFS	0.1 dB
Continuous power (8 Ohm / 4 Ohm)	117.4 W/195 W
Pulse power 4 Ohm (1kHz)	248 W
THD at 50mW/5W/1dB Pmax	0.01 / 0.001 / 0.002 %
Intermod. 50mW/5W/1dB Pmax	0.0003 / 0.0006 / 0.8 %
Signal-to-noise ratio at 50mW/ 5W	71.4 dB/91.2 dB
Attenuation at 4 Ohm (63Hz/1kHz/14kHz)	100/90/50
Upper cut-off frequency (-3dB/40hm)	>80 kHz
Crosstalk Line 1 > Line 2	92.4 dB
Synchronization error Volume at -60dB	0.08 dB
Power up. Stby./idle (at)	<2 W/160 W



LAB COMMENTS: Very good, unshakably stable performance data meet exceptionally low distortion and modulation values as well as a high signal-to-noise ratio.

FEATURES

3 analog inputs (2 x Cinch, 1 x XLR), 3 digital inputs (1 x coaxial, 2 x optical) USB audio, HDMI In (TV ARC), Bluetooth incl. AptX HD, single-wire terminal, 2 pre-outs (Cinch/XLR), remote control

STEREO-TEST

SOUND QUALITY 89%

PRICE/PERFORMANCE

★★★★☆

EXCELLENT

HIRES ON CD?

Currently there are plenty „UHQ“ CDs with MQA encoding coming from Japan. Does the CD sound high resolution now? We’ve checked it out.



Japan, the country of perfectionists, is once again bringing us a new “audiophile pressing”: after the “SHM-CD” in 2010, Universal Music Japan is now bringing out the “Ultra High Quality”-CD. It is made of a “photopolymer” that hardens faster under special light than the usual polycarbonate, therefore supposedly producing more precise pits. The technology comes from the Japanese company Memory-Tech and was already introduced in 2015. Universal Music Japan is now releasing more than 100 albums, mostly international classics from pop/rock, jazz and classical music, as UHQ CDs (see box).

The physical manufacturing process is one thing – the sound format on these CDs is another: they are “MQA” encoded. They are not CD-ROMs with FLAC files, but audio-CDs that can be played on any player. Their full potential, however, only unfolds when they are played back – on any CD player – via S/PDIF using an MQA-compatible converter. Or on a player with an integrated MQA decoder, like they are available from Meridian or Oppo.

How is it possible to squeeze high-resolution audio content into the 16-bit format of the audio CD you ask? After all, MQA usually works with 24-bit FLAC files that are streamed or played back on

the PC. Thereby MQA dispenses with the lower eight bits and uses digital transformation to hide the HiRes components, i.e. the audio content above 20 kHz, there. But how should this work on the CD, where only 16 bits are available? You can’t really omit eight out of 16 bits.

MQA Ltd. is responding cryptically about this wonderful bit-multiplication. They say, they’d hide a “narrow data channel” underneath the noise layer and can, therefore, at least store audio components up to 35 kHz. In addition, pre-ringing is suppressed during encoding, which is why MQA CDs should sound better even without MQA decoders.

KEYWORD

pits
The data on the CD consists of „pits“ and „lands“ (the spaces in between). The pits reflect the laser beam differently than the lands during scanning.

Let’s see if we can reproduce that in a hearing test, using the sampler “Rock & Pops” from Universal Japan. The set contains two CDs with identical recordings: one UHQ CD with MQA and a standard CD without MQA. We play both discs

on a T+A player via the MQA-compatible “Nyquist”-DAC from Brinkmann.

With surprisingly definite results: even the pure stadium atmosphere on the live title of The Band sounds noticeably more

spacious and live-like in the MQA version. “I’m In Love” by 10cc sounds beautifully silky from the MQA CD – without the sometimes sharp S sounds of the normal CD.

Is the MQA decoder to thank for this? For the countercheck we played both CDs directly via the analog output of the T+A player, i.e. without decoding. The differences are no longer quite as clear, but even now the MQA disc sounds smoother and more spacious than the normal CD. This may be due to the special “UHQ” production, but apparently the MQA mastering also has a positive effect. The MQA decoder only adds the icing on the cake.

Ulrich Wienforth

MORE THAN 100 UHQ-CDS

Universal Japan offers international album classics as UHQ CDs. Here is a selection of the best known:

The Rolling Stones: Sticky Fingers, Exile on Main Street, It’s Only Rock ,n’ Roll

The Who: Tommy, Who’s Next, The Singles

The Beach Boys: Pet Sounds, Endless Summer

Queen: A Night at the Opera, The Game

Steely Dan: Pretzel Logic, The Royal Scam, Aja

Dire Straits: Dire Straits, Love over Gold, Brothers in Arms

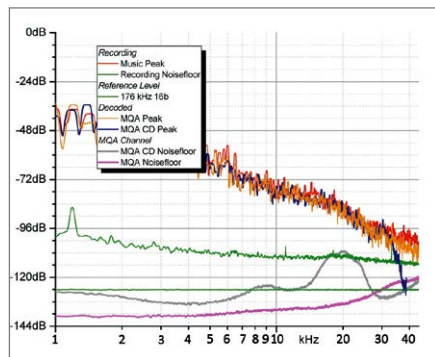
Stevie Wonder: Talking Book, Innervisions Songs in the Key of Life

John Coltrane: A Love Supreme, John Coltrane and Johnny Hartman, Ballads, Blue Train

Herbert v. Karajan/

Wiener Philharmoniker: R. Strauss: Ein Heldenleben, R. Strauss: Also sprach Zarathustra, Holst: The Planets

Also numerous other titles from pop, classical music and jazz. The prices vary between 20 and 49 Euro. The following samplers are particularly interesting for comparisons: „Rock & Pops,“ „Jazz,“ and „Classic.“ They contain a standard CD and a UHQ CD with MQA encoding and the same titles.



▲ The useful signal spectrum (blue) of the decoded MQA CD reaches up to about 35 kHz, while the original master (red) and a 24-bit MQA file (orange) extend beyond 40 kHz. Below, the noise layer of the MQA CD (grey), the 24-bit MQA file (purple) and the analog noise (green).



▲ Sampling rate and MQA logo appear on the Nyquist DAC display. The dot behind it stands for „MQA Studio“, the authenticated version.



R

Raidho
Acoustics

D-1.1

It is an
extreme
performer



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HIFI Eins Neu KG · Severinstr. 199 · 50676 Köln · Web: www.schoene-musik.de

MY SOUND GmbH · Würmstraße 4 · 82319 Starnberg · Web: www.my-sound.net

LIFE LIKE Hi-Fi-Studios MÜNCHEN · Oberföhringer Strasse 107 · 81925 München · Web: www.life-like.de

TORBY PLOP



A new, exciting record cleaning machine comes from

Kirmuss Audio in the USA. The KA-RC-1 uses ultrasound – and the

power of bursting bubbles.

It was a popular analogue highlight at the 2018 HighEnd show: the new “Ultimate Ultrasonic Vinyl Restoration System” KA-RC-1 from the American manufacturer Kirmuss Audio, which is largely unknown in Germany. In fact, audio-nerd Charles Kirmuss, who started out as a hobbyist, has already been professionally working in the field of HiFi since the seventies, when he was building loudspeaker cabinets and tube amplifiers. Today he is best known for his elaborate cables.

That is, however, soon going to change, because for three years the born Canadian, whose company is based in Denver, Colorado, worked and experimented together with analog specialist Dr. Eric Watson on his “Vinyl Restoration System”.

It had long been clear to both of them that contactless high-frequency cleaning is a good idea. In their opinion, it was, however, necessary to devise a process that is specialized on the vinyl, in order to achieve an optimum cleaning result and avoid damage. Also, their record cleaning machine should be versatile as well as affordable.

The result is a 54 centimeter wide, light grey device with a plastic cabinet, practical grips, a display and an anthracite cover featuring four slots of different lengths. Underneath is a stainless steel tank that holds around six liters of distilled water, which is mixed with 40 milliliters of 70% isopropyl alcohol – that’s it, no expensive ingredients are necessary. The five-liter canister of distilled water was available in our closest DIY store for around 1.50 euros; 200 ml of the alcohol mixture cost us around seven euros, but is enough for five fillings, which usually last for 25 to 30 rather dirty records. If the discs are in normal condition, it may be sufficient for even more before the “waste water” has to be drained, using a lever on the front side, a lateral connection piece and a rubber hose.

KEYWORD

cavitation:
The term describes the formation and dissolution of vapor-filled cavities in liquids, i.e. bubbles.

The Kirmuss’ highlight is, however, that it can clean up to four records simultaneously: two LPs, one single and one shellac disc. Underneath the cover is a patented construction of gears and belts, driven by a small motor that slowly rotates the discs through the water bath. Slim foam wipers at the outlets prevent the discs from taking the liquid up with them and possibly draining it over the label.

In fact, the “Vinyl Restoration System” is quite simple to use, but still requires a few manual actions from its user. After switching on, the display in the upper right corner automatically jumps to five minutes. If desired, this can be reduced or extended to up to 15 minutes. Our experience showed that with heavily used second-hand discs at least 10 minutes should be estimated.

It’s, however, worth it, as playing the first disc after the procedure might very well be nothing short of a delightful revelation, with all the crackling being considerably reduced and the ultrasonically cleaned vinyl sounding softer, more airy and, above all, a lot more three-dimensional. With 35 kilohertz at a defined amplitude, Mr. Kirmuss and Mr. Watson supposedly have determined the perfect frequency for precise record cleaning in a long series of tests. After all, what works for earrings, glasses and technical components does not necessarily have to be suitable for delicate vinyl grooves.

In fact, the Americans explain that the cleaning effect of the ultrasonic bath

The control panel with display and control buttons allows washing times of up to 15 minutes. Also sufficient for heavily contaminated records. ▶



▲ Typical American? This funny sticker decorates the front of the Kirmuss machine. Apart from that everything about it is meant seriously.

is not based on the movements of the high frequency generated by the three ceramic generators. Rather it is based on the fact that frequencies generate bubbles in the water that absorb energy and then burst at a certain point. Due to this **cavitation**, a pressure wave extending at speeds of up to 500 km/h is created, which “kicks” dust, grease and the like out of the groove – “Top by Plop!” so to speak.

The frequency decides how much energy the bubbles release during their implosion. According to Kirmuss Audio, the dirt remains unaffected, if it is too little, while it can even damage the audio information if it is too much. The optimum level is at 35 kHz, or 35 degrees, as the washing process automatically heats the liquid. The washing procedure goes as follows:

- ◆ After refilling or restarting, the fluid must be “degassed”, which is done within 90 seconds by pressing the “Pulse” button twice.
- ◆ Then insert the record(s) into the slot(s) and press the “On/Off” button, whereupon the cleaning process starts under buzzing noises and ends after the specified time, while the display is counting down to zero.



The delivery includes a soft cloth with bunny pattern, **1** a small felt mat **2** on which the record is to be placed after washing in order to wipe it with the microfibre cloth **3**. A velvet wiper **4** removes the last moisture from the groove. Then the treatment with antistatic spray **5** and camel hair brush **6** follows. Even a needle cleaner **7** is included. ►

◆ Then the hardly damp plate is taken out and placed on the soft cloth with the rabbit heads. Any remaining water drops are removed, using the included microfiber cloths. Finally, a velvet wiper removes the last bit of moisture from the grooves.

◆ Last but not least you apply a small splash of antistatic spray onto the extremely soft camel hair brush and move it in a circle over the disc – done!

Granted, it does sound like a lot of work, but it's actually quite fun. Some colleagues who initially complained about the effort and said they'd prefer classic brushing machines with suction, were seen as they stealthily dragged small piles of vinyl into the washing corner and couldn't get enough of the wiping and spraying, cleaning and caring. But wait: after a good half hour, the KA-RC-1 should be allowed to cool down for ten minutes. In fact, the washing water was well warmed subsequent to an afternoon of cleaning, which was certainly not only due to the extremely hot climate. The obviously robust mechanics showed nevertheless no weakness and tirelessly rotated disc after disc through the cleaning liquid.

The results of the high-frequency cleaning attacks were consistently positive. Even stubborn crackling was often significantly reduced afterwards. Sometimes it was,



however, necessary to repeat the cleaning process, but people who want to rush through washing dozens of LPs in as little time as possible wouldn't enjoy the Kirmuss anyway. Here, care is celebrated!

In parallel, we washed the records on Clearaudio's luxurious "Double Matrix Professional Sonic" for a whopping 3950 Euros, whose cleaning power is beyond doubt and which relieves the user of doing absolutely anything. Remarkably, one and the same disc tended to sound more robust, more fundamental and more compact, after having been washed on the Clearaudio, while after the Kirmuss treatment they tended to sound more spacious, more relaxed and more brilliant. Maybe a result of the different cleaning fluids?

Not only, but also because of its price, the brushless KA-RC-1 represents an interesting enrichment in the field of record cleaning machines. Further, also the operating costs remain low – and the dirt is simply "plopped" away.

Matthias Böde

KIRMUSS AUDIO KA-RC-1

Price: around 1200 € (without liquids)
 Dimensions: 54 x34 x28 cm (WxHxD)
 Warranty: 2 years
 Contact: Kirmuss Audio div of
 Kirmuss & Associates, LLC
 Phone: (303) 263-6353
 www.kirmussaudio.com

The „Ultimate Ultrasonic Vinyl Restoration System“ works great. It takes longer to clean the records than with a standard brush machine, but then again it works completely contact-free. And the necessary „after-treatment“ of the discs satisfies the analog desire to play. Huge recommendation!.

FEATURES

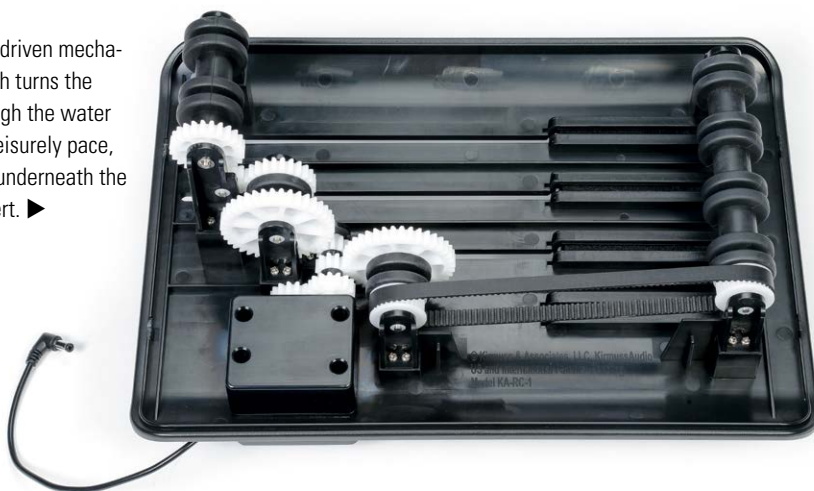
Flexible time setting up to a maximum of 15 minutes; simultaneous washing of up to four discs, including two LPs; six-liter stainless steel tank with valve and drain connection plus supplied rubber hose; extensive accessories .

STEREO-TEST

PRICE/PERFORMANCE

★★★★☆
EXCELLENT

The motor-driven mechanism, which turns the discs through the water bath at a leisurely pace, is located underneath the record insert. ►







MASTER LINE SOURCE 3

PIEGA presents the Master Line Source 3 (MLS 3). A new master crafted high end dipol loudspeaker perfected with passion. Equipped with two 180mm UHQ drivers and with four line source ribbons, this speakers brings outstanding sound into each living room. Expect more.

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PIEGA
SWITZERLAND

HEY, LITTLE SISTER

B&W's top technology is now also benefiting the entry-level 600 line, making the 606 a real star!



Everything new at B&W. The groundbreaking Continuum membrane material gives reason to now also update the popular 600 series. Its predecessor, the 685 S2, was a damn good loudspeaker – and of course it still is! However, the B&W engineers apparently find it difficult to withhold their obviously superior technologies once they exist. Especially since the transfer of innovations to affordable regions, by means of the quantity of diaphragms and drivers, will pay off the development costs more quickly. Further, synergies can be created through the **component-shelf policy**, not to mention the substantial advantages in marketing and competition.

Only 700 Euro per pair are to be paid for B&W’s legitimate successor of the 685 S2. The 606, which is the larger one of two compact speaker models and is equipped with a 165 woofer, is even exactly the same size as its predecessor.

For the smaller version, which is called 607 and is equipped with a 130 bass/midrange driver 530 Euros are due for the pair. They are a reasonable choice, if a

smaller room is to be covered and one can do without some of the authority and a few Hertz of low end response. The bass reflex port of the 606 forms a unit with the bi-wiring terminal and was moved to the rear of the speaker, as opposed to its predecessor. So far the obvious...

The use of a surround-less midrange driver is out of the question in a compact speaker, as the low-frequency range has to do hard work, which is why a walking surrounding is indispensable. The new Continuum cone in surround-less design is therefore only available in floorstanding speakers with at least three drivers, i.e. the floorstanding speaker 603, which works with four drivers. Nevertheless, the

new diaphragm material, which B&W is known to have researched to perfection for around eight years and initially made available in the 800 and 700 series, has an enormous effect. Okay, you might not recognize the B&W from a distance anymore, because the distinctive yellow of the Kevlar web structure gave way to a rather discreet silver, but the “Continuum” sounds more open, more neutral,

KEYWORD

component-shelf policy:

If a manufacturer uses the same parts or assemblies for different products, the higher number of units results in advantages for production and economics.



▲ The new membrane material “Continuum” is woven and shimmers silver – and it sounds neutral, without its own signature, considerably better than Kevlar.

indeed, it practically doesn’t change the tone-color at all. We were able to convince ourselves of this in the 800 series and then also in the 700 series. Since their birth, the 800 and 802 D3 have been amongst the most regularly used tools of our editorial staff for tests – if not for anything else, as benchmark.

The double-layer aluminum dome tweeter, which was already used in the S2, was now equipped with a neodymium drive, a different grille and was moved slightly forward. Also the individual



◀ Even the decoupled double-layer aluminum dome tweeter now uses technology from the 700 series. It has now got a neodymium drive and underwent a timing adjustment.

components of the crossover have been upgraded – the 700 series sends its greetings. The cabinet, which is available in matt black or matt white, is practically the same as on the 685 S2 with the exception of the reflex opening, B&W, however, gave the 606 a more elegant, magnetic fastening of the cover. To summarize: progress where ever you look, even for the eyes.



▲ Even the 600 series allows bi-wiring, the bass reflex terminal is flow-optimized like a golf ball.

The musical performance of the currently second smallest B&W is of a clarity and self-evident authority, as well as of a plasticity that could very well be called “surprising” in view of the price. A “must-listen” – even for those who may not have been convinced by the older B&W models.

As I said before, I already found the 685 and the improved 685 S2, both well known to me from tests and the living room of a good friend, to have been great. The 606, however, puts the icing on the cake and outclasses both in terms of naturalness. Especially in the ranges where most of the music takes place – in the high-mid range. But the 606 also appears a bit faster, as well as more immediate and dynamic in the bass, thus continuing to mark the top of the 800 Euro class.

It conveys both three-dimensionality and atmosphere of the band, which recorded “Come Away With Me” together with Norah Jones, convincingly, staggers credibly into the depths and knows, despite all the tonal accuracy and musical flow, how to devote itself to details and to depicting even surprising impulse peaks unerringly. Thanks to the good tuning, the bass reproduction reaches down to below 50 Hertz and delivers a well-balanced foundation between crisp and deep black.

The performance of the 606 is the sum of some large and countless small improvements in detail. One would like to write: “the result of experience and competence”. And it is worth every cent, not least because of its similarity to the higher-ranking model series. We believe that it could even hold its ground beyond its price range. Recommended!

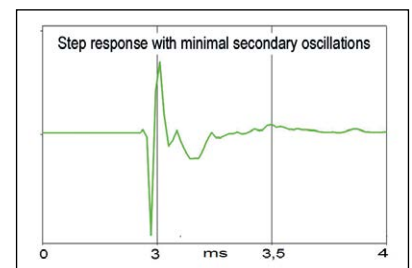
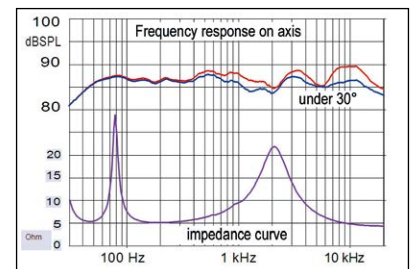
Tom Frantzen

B&W 606

Price: around 700 €
 Dimensions: 19 x35 x30 cm (WxHxD)
 Warranty: 10 years
 Contact: Bowers & Wilkins
 www.bowerswilkins.com

Technology transfer makes it possible for the Continuum membrane material to be included in B&W’s entry-level series. Although the 685 S2 was already very good, it is clearly outclassed by its younger sister, the 606. An audiophile killer in this class!

MEASUREMENT RESULTS



DC resistor	4 Ohm
Minimum impedance 5 Ohm at	200 Hz
Maximum impedance 28 Ohm at	77 Hz
Sound pressure characteristic (2.83 V/m)	86.1 dB SPL
Power for 94 dB SPL	10.6 W
Lower cut-off frequency (-3dB SPL)	46 Hz
Distortion factor at 63/3k/10k Hz	0.3/0.1/0.1 %

LAB COMMENTS

Quite balanced response down to below 50 Hertz, especially with straight positioning to the listening position. At around 86 dB, the efficiency is approximately average, and the distortion behavior is exemplary. The impedance never falls below four ohms, the step response shows very good timing.

STEREO-TEST

SOUND QUALITY **83%**

PRICE/PERFORMANCE

★ ★ ★ ★ ★
OUTSTANDING



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.

NEW ERA

With their first headphones, the Quad engineers break with their long electrostatic tradition and instead follow the magnetostatic principle in the Era-1.



One could hardly have chosen a more appropriate name, as the Era-1 indeed heralds a completely new age for the British manufacturer. However, their advance into the world of headphones can not be declared as a long shot. After all, the developers of the ultra-thin foils used in the elegant, open headphones were able to draw on decades of experience in building **planar dipoles**. So it's no surprise that, despite its virginity, the Era-1 is technically absolutely mature.

The used foil is thinner than a human hair and weighs less than the air it lets vibrate. However, it is supposed to nevertheless be extremely stable and elastic. Coupled with the precisely aligned mag-

netic field, which distributes the force evenly across the entire driver surface, and a patented technology that suppresses non-linear distortion, Quad aims to achieve the best possible performance and a clean frequency response. The strictly selected drivers are supported by the metal housing, which was specially developed for optimal acoustics.

Not only at first glance latter looks very noble. In fact, it also makes a grand impression on closer inspection and is immaculately finished. The enclosed adapter for 6.3 millimeter jack is a particularly positive feature. It is screwed on with a thread – a feature that can not be taken for granted.

Despite its solid appearance, the Era-1 is not amongst the heavyweights of its class. On the contrary, weighing in at 420g it is rather light, at least for a magnetostatic headphone. As far as comfort is concerned, it is great anyway and can score with pleasant pressure, a comfortable wearing position and exchangeable ear cushions. Regarding latter, the author tends towards the supplied genuine leather models. Absolutely long term suitable! Tip: when changing the cushions, make sure that the slant points in the right direction. The thick side is supposed be at the back.

The included ear pads are, besides the already mentioned jack adapter, pretty much all the accessories you can find in the elegant box. In this respect, only the high-quality Y-cable and the practical transport box remain to be mentioned.

Soundwise the Quad does all honor to its well-established brand. Starting with "Swans" by Laura Carbone, it was quickly clear that the ERA-1 could not only impress on paper. Full-bodied and powerful it positioned the voice of the German singer/songwriter naturally centered on a wonderfully deep stage. Its character tended slightly towards being rather warm and sonorous, which contributed to its outstandingly accessible and natural performance.

David Gilmour's "The Blue" in the "Live at Pompeii" version only confirmed this impression. Without ever appearing

TEST-COMPONENTS

Network player: Lumin X1
 Amplifier: Exposure XM HP
 Cable: WBT, Audioquest

thinned out or even lean, the Era-1 framed the bass guitar line behind the generous solo voluminously and precisely. Low frequencies, which generally appear punchy and powerful, were altogether integrated well into the overall musical happening.

With The Glitch Mob's "We Can Make The World Stop" the Quad goes to work rather with sovereign calmness than with "biting" attack. Thereby it conveys a hint less control than some competitors, which you, however, wouldn't miss, as this trait fits perfectly to the natural and colorful spectacle on offer.

Also this, of course, doesn't mean it would ever lose track. In fact, it also gets along with demanding electronic compositions, like the mentioned Glitch Mob song and conveys the abundance of musical impressions lively and engaging – impressively without the slightest tendency to annoy.

An excellent debut – we are looking forward to more!
Julian Kienzle

KEYWORD
Planar Dipole: generic term for magneto-, electrostatic- and bending wave transducers

QUAD ERA-1

Price around 700 €
 Warranty: 2 years
 Contact: IAG Group Ltd.
 www.iaggroup.com

Quad's first headphones are open and magnetostatic. Absolutely convincing sound that is powerful and versatile. Suitable for mobile use due to low impedance.

FEATURES

Removable, high-quality cable; very low impedance of 20 Ohm; high efficiency of 94 dB; weight 420 g; 6.3 mm adapter with thread and transport box included in scope of delivery

STEREO-TEST

SOUND QUALITY **89%**

PRICE/PERFORMANCE

★★★★☆
EXCELLENT



IN ADMIRATION OF MUSIC

**“The way we listen to music has been transformed.
But the reason we listen remains the same”**



At DALI, we believe that digital music should deliver convenience and choices without compromise on sound quality. That's why we've re-imagined hi-fi for the 21st century with the CALLISTO Wireless Speaker System.

Stream, beam, and control music from almost any source and enjoy the stunningly detailed, transparent reproduction DALI is celebrated for.

SECURE THAT

A new development wants to replace the fine-wire fuse – with higher safety and better sound.

STEREO once discovered, as one of the first specialist magazines, that a device's fine-wire fuse is a sonic bottleneck. As a wafer-thin wire between two contact caps, it can impair the sound and even reduce the damping factor of an amplifier – which can be proven by measurements. In addition, it sometimes reacts much too sluggishly, even insecurely, to protect expensive electronics in the event of an overcurrent.

Creative engineers like from AHP, HiFi-Tuning, Padis or Phonosophie have thought about the sound-problem and provided us with fine-wire fuses that have copper and silver guides and caps, are gold- or rhodium-plated and have special extinguishing fillings as well as low-resonance ceramic bodies. They actually brought audible improvement, which hardly anyone would doubt nowadays, even being reflected in the default

equipment of some devices. In the event of a malfunction, it may take 0.2 seconds for the (inert) fine-wire fuse to blow at ten times the rated current according to **DIN**. At lower overcurrents even whole minutes may elapse – enough time to possibly cause permanent damage.

Now the company EFUSE GmbH from Solingen, already to be seen as an exhibitor at the 2018 High End, wants to conquer the HiFi and High End world by offering better protection as well as sound. In the simplest case, a small, practically resistance-free and highly conductive solid copper pin with a rhodium-plated surface replaces the fine-wire fuse in the device, while a corresponding cable with comparator and switch-off electronics ensures safety by disconnecting the device from the mains a lot faster in the event of a

fault. The maximum current to be drawn from the mains can be gradually pre-selected, and the EFUSE always switches off within about 0.1 seconds of exceeding this threshold value. It can then be reactivated at the push of a button, as the fuse doesn't blow.

We already had the opportunity to listen to a prototype and try it out in practice in spring 2018. Our impressions and suggestions found an open ear with the physically highly competent development team and were reflected in the current product. For example, an integrated inrush current limiter now prevents the fuse circuit from responding to an inrush pulse even in devices with large transformers and electrolytic capacitors, such as integrated and power amplifiers. Further, a clever combination of the milled plug geometry

KEYWORD

DIN: German industrial standard, a comparatively strict, national standardization and regulation.



▲ Rhodium-plated copper bolts replace the bottle neck fine-wire fuse.



▲ A modified device may only be operated with the special EFUSE cable, a modified molded part ensures this.



◀ Equipped with high-quality mains cable and plugs, EFUSE provides more energy during operation and extremely fast and safe shut-down in the event of a fault by eliminating the fine-wire fuse.

The EFUSE includes an inrush current limiter and a comparator circuit parallel to the mains for the permissible current that can be set via a jumper. It switches off extremely fast in the event of a fault. ▶



and a plastic insert in the modified device is intended to prevent the owner from operating a device without a fine-wire fuse using a cable other than the special EFUSE cable – like a lock-and-key principle. In fact, we really like the solution, because, contrary to our expectations, we did not find a mains cable in our extensive

stock that would have enabled an operation. It was not even possible to force it into the device equipped with the molded EFUSE part.

Charging from 1585 Euro (1785 Euro with inrush current limitation) for the external cable solution, from 1285 Euro for the integrated solution and respectively from 2885 for the power strip with inrush current limitation, the pleasure is certainly not a cheap one. However, depending on the treasure that comes after it, the considerably higher

protective effect can pay off immediately and the increased sound-quality guarantees lasting enjoyment over the long-term. While a STEREO engineer was particularly impressed with the trigger electronics, two testers could hear the increased image size and bass-thrust compared to an already tuned fine-wire fuse in the Audionet WATT integrated amplifier in our listening room. Definitely an interesting product, especially for the uncompromising High Ender!

Tom Frantzen

Kontakt: EFUSE GmbH
Phone: +49 212 2494 0
www.efuse.de

Brinkmann Audio Marconi Mk II

The New Classic

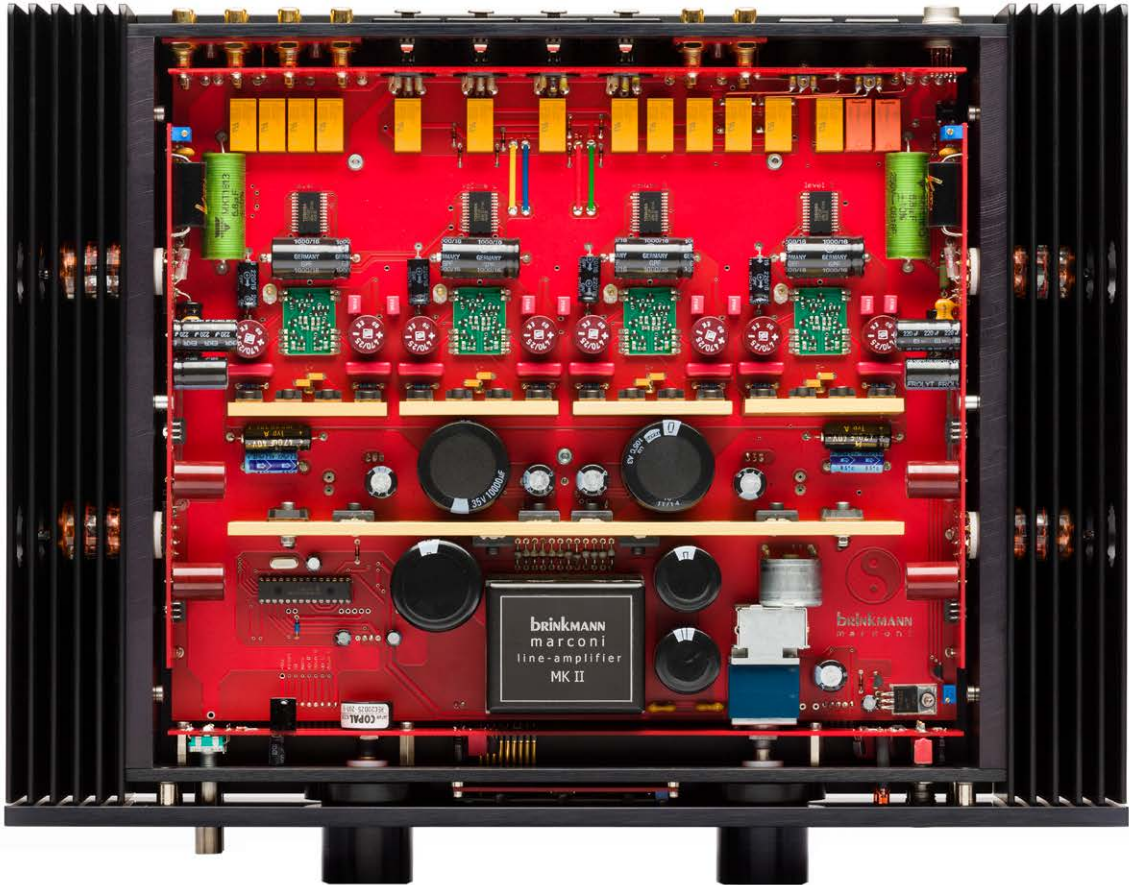


Photo © MichaelRasche.com 2018

In an industry where products often change like fashion, Marconi has defied obsolescence, remaining relevant for more than 15 years and becoming a High End classic. Now, Brinkmann proudly announces Marconi Mk II, destined to define a new standard of sonic excellence.

The “Mk II” redesign required two completely new Printed Circuit Boards and hundreds of hours of painstaking fine-tuning have yielded an instrument that communicates music with greater realism, enabling closer connection between system and listener.

Owners of the original Marconi can upgrade their unit to the Mk II standard.

BRINKMANN

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

brinkmann-audio.com



ALTO EXTREME

The specialty of the Transrotor Alto is its extremely sensitive height adjustment for the tonearm base. To find out what it has to offer and what the turntable's other perks are, we used its most extreme configuration with three motors.

A few thousandths of a second faster, a nose length ahead: for those who fight in the very top leagues, such supposed trifles become hours and kilometers – not only in sports. HighEnders are constantly pushing to improve their systems in areas and dimensions that would usually remain unnoticed and of which “normal” listeners wouldn’t suspect they were of any importance.

For example the cartridge adjustment. In regard to overhang, azimuth or tracking force, comparatively tiny changes can make the difference. Ultra-precise stencils, measuring records, electronic scales and other aids help us with the adjustment. But what about the tonearm height? The analogue listener is usually left with only the specification that the arm tube should run parallel to the plate surface when the needle

is lowered. However, at least insiders know that the diamond is, then, often not at the correct angle of 20 degrees in the groove. Also frequently the focus and tonal balance are only optimal when the tonearm base is one to two millimeters above “nominal zero”.

KEYWORD

Line Contact-Cut: Collective term for diamonds that approach the shape of the cutting stylus and trace more information in the high-frequency range.

This can only be determined in a listening test, because general recommendations for pickups of one or the other brand show, at best, a general direction. Also there are, of course, tolerances within the production which require deviations in the adjustment. “One size fits all” is not the way to go.

The intricate **line contact-cuts** of the diamonds of high-quality pickups, however the various brands may call them, further “sharpen” the problem in the truest sense of the word. For example, I recently discovered, how, when testing

Audio-Technica’s first-class AT-ART9 moving coil pickup, which is equipped with a delicately faceted “SLC” diamond, its slight brittleness only turned into smooth grace when tilted slightly forward.

And what happens when changing from a normal to a thicker 180-gram pressing? Strictly speaking, the tonearm would have to be raised or lowered by a small amount. Of course, nobody does that because it’s fiddly and annoying. Instead one would look for a compromise setting. The emphasis is, however, on “compromise”, because not only the ART9 changes its sound with a slight change in height.

Which brings us to the Transrotor Alto. This turntable makes a virtue out of necessity by allowing its height to be adjusted via a solid metal wheel on the bottom of its tonearm base – even while playing! This is done extremely sensitively, because a notch in the rim equals just a tenth of a millimeter. Also, the chrome-plated disc feels so smooth and creamy that one loves turning it. It conveys the fascination of precise mechanics and is lots of fun. Once the adjustment is done, it can be fixed with a screw located at the front of the tube. A pithy detail on the Alto, which is as solid as it is finely crafted, but actually superfluous, because nothing here is going to shift by itself.



1



2

1 The solid tonearm base, which can be used for nine- to twelve-inch arms, can be sensitively adjusted in height via the lower ring. **2** The inversely supported TMD bearing, which magnetically decouples the plate from the drive pulley and to which three motors are connected via belts, sits enthroned on the massive full metal base. **3** Thanks to its internal ball bearing, the feet of the drive can be adjusted in height easily and effortlessly. **4** A nice detail is the storage for the plate weight, which is available for an extra charge.

The newly developed arm base is as stylish as it is refined. Below a cover, the arm cantilever runs in three round guides. If you turn here, you have the basic setting for the usual nine-inch arms and the longer twelve-inch arms from stop to stop. For demonstration purposes, Transrotor mastermind Jochen Råke had the test-device equipped with the M2-12R, also manufactured by the English manufacturer SME, in addition to the proven and highly recommended TR 5009.

The Alto, which is derived from the successful Fat Bob model, could even hold a total of three tone arm bases simultaneously. At the place of the third one there was a flawlessly made rest for the plate weight. As you know: with every change

of a record you don't know where to put the thing. For an additional 130 Euro Transrotor attaches this seat for the noble weight with engraved "JR"-logo to the Alto.

Its solid metal base rests on three newly designed feet. Thanks to the integrated ball bearing, they can be easily adjusted in height via their shiny outer ring to render it perfectly level.

Including a round motor block with metal base, the TMD bearing, which magnetically decouples the belt-driven platter, a tonearm base, the smallest of Transrotor's high-quality mains and control parts "Konstant Studio", and the plate weight, the Alto drive costs 5000 euros. Additionally, the TR5009 tonearm and Transrotor's top MC scanner Figaro, which cost 2900 and 2000 Euros, are included in the test unit. These are preferential prices reduced by 20 percent compared to the individual costs if acquired as a set. If you buy the Alto in the depicted "Extremo" version, you have to invest exactly 16,863 Euro.

In addition to the second arm base plus M2-12R arm and in this case the additional MC pickup Merlo Reference (subsidized by 1100/2340 and 960 Euro), you then have two additional motors for 680 Euro each, as well as the now necessary and equipped with a soft-start automatic large power supply Konstant FMD (1075 Euro surcharge) and the neat weight storage on the bill.



3



4

Now one inevitably asks oneself at this point, what advantage the three-motor-drive should have. After all, one should be sufficient to keep that full nine kilogram heavy plate in motion with corresponding mass-momentum, while the TMD bearing, in addition to the flexible rubber belt, should keep all small irregularities away from it, right? So far the theory.

In practice, however, the Alto's sound increased significantly when the engine trio was used. First of all this resulted in a much more spacious presentation, which at the same time increased in clarity and differentiation in all respects, as well as a much more mature, high-end character. This was not least due to the more stoic and fluent timing. Diana Krall's fantastic live album from the Paris Olympics, for example, was much more authentic, while, as soon as you took two of the motors out, the stage and its surroundings shrank au-

TEST-COMPONENTS

Turntable: Transrotor Rondino nero

Pickups: Audio-Technica AT-ART9, Clearaudio Stradivarius V2, Dynavector Karat 17DX, Ortofon Cadenza Red

Phono-Preamplifier: Accustic Arts Tube Phono II, Brinkmann Edison

Pre/power amplifier: Accustic Arts Tube PreampII-MK2/AmpII-MK3

Loudspeaker: B&W 800D3, Fischer & Fischer SN470M

Cable: HMS Suprema, JIB Silver Galaxy BP-006SC (Phono), HMS Gran Finale Jubilee/In acoustics 2404 (NF/LS)

dibly, the band moved closer together and there was audibly less air in the sound.

With Tiny Island's congenial version of the Taj Mahal title "When I Feel The See Beneath My Soul" from the Opus 3 vinyl sampler, the Alto only achieved that self-contained, floating, indeed, almost hypnotic aura, which is reserved for only the best record players, if used in its three-engine mode – whereby the correct mains phase at the Konstant FMD (see diagram) must be adhered to. By "Single-Drive" it played clean and orderly, but without this pronounced "instinct" for atmosphere and perfection and therefore stayed clearly below the mentioned sphere. Theory is dull, the analogue cosmos, on the other hand, is colorful and full of surprises.

Of course we also messed around with the height adjustments of the arm bases. The expected results occurred: if the base was too high, the reproduction became more present at first and then stricter. It could happen that voices appeared glassy by losing the energy connection to the supporting fundamental. On the other hand, the performance was covered or even slightly musty if the arm was lowered too far down. It was astonishing that deviations of half a millimeter were already noticeable. Although not every scanner

reacted equally clearly and sensitively to the ups and downs, the tendency was consistent. And the differences also led us to rethink the subject of "vertical scanning angle", because the rapid adjustability of this Transrotor makes it possible to demonstrate its significance all the more emphatically.

Correctly adjusted, the "Alto extremo" did not need to hide away from its brother Rondino nero out of our reference class, who competed in the family duel with identical arm/scanner combinations for optimum comparability. In order to avoid imponderables, we even exchanged the Figaro MCs with each other and used only one phono cable, which we always plugged into the TR5009 we were respectively using.

It didn't take long to recognize that the two turntables were playing at eye level. The Alto, reinforced by the motor double and the large power supply, tried to overtake the, in theory superior, Rondino nero, which is some good 2000€ more expensive, with its exemplary cleanliness and openness of sound. However, the Rondino nero played at least as spaciouly and relaxed, albeit with a somewhat more closed diction, which resulted not least from a touch more sonority and serenity, whereby the Rondino nero kept slightly ahead.

ANALOG MANUFACTORY

In comparison to the big names in turntable production, Transrotor in Bergisch Gladbach is a proper manufactory. And above it hovers the spirit of founder and analogue veteran Jochen Räge (below), who registered the brand in 1973 and experienced all the highs and lows of the analogue industry. The company's manageable dimensions were usually of advantage.

As well as that you could do almost everything yourself. During our visit, metal parts were polished on a machine, while employee Gerd Weichler (r.) measured the control boards delivered by an electronics specialist and installed them into elegant cabinets. The drives were already waiting for them, because a shipment to Asia was currently being prepared. The export business, which has grown rapidly in recent years, is in the hands of Räge's son Dirk. Overseas sales have long since exceeded domestic sales, although Transrotor is strongly represented in the German hifi trade. However, the solidity and finesse of „Made in Germany“ are a source of delight worldwide. Valuable synergies also result from the cooperation with the British manufacturers Goldring and SME, whose pickups and tonearms the Rhinelanders sell in Germany. They perfectly complement the Transrotor drives.

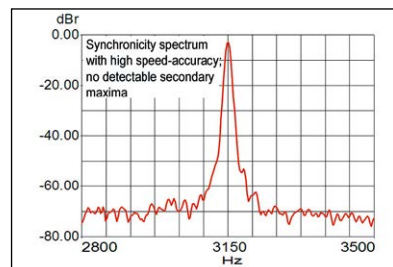
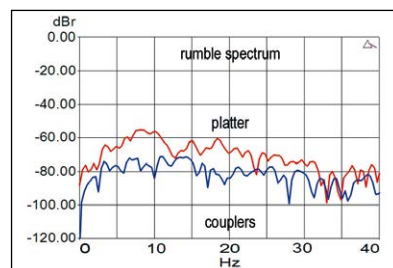


TRANSROTOR ALTO

Price: around 12335 €
 (Complete price with power supply Konstant FMD, two extra motors, tone-arm TR 5009 and MC pickup Figaro)
 Dimensions: 52 x20 x50 cm (WxHxD)
 Warranty: 2 years
 Contact: Räge Hifi
 Phone: +49 2202 31046
 www.transrotor.de

A first-class turntable in terms of effort and technical demands, whereby the standard TMD bearing as well as the perfectly reliable height adjustment for the arm base stand out especially. This way top tone arms and scanners can always unfold their full sound potential because they can be adjusted in the twinkling of an eye to different thicknesses of vinyl, for example. Even in the basic version, the Alto is a top turntable. With the optional three-motor drive and large power supply unit, it's right at the front in terms of sound!

MEASUREMENT RESULTS



LAB COMMENT

Mains phase at the tested device

The rumble and synchronicity values approach our respective measuring limits. Thanks to the fine speed adjustment on the power supply unit, the two speeds can be set very precisely.

FEATURES

External power supply for up to three motors, two individually adjustable speeds (33/45), height adjustable feet and tonearm base

STEREO - TEST

SOUND QUALITY **99%**

PRICE/PERFORMANCE

★ ★ ★ ☆ ☆
SEHR GUT

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®

PURE PLEASURE



Naim has been consistently driving its streaming platform forward over the last ten years. With a triple hit of ND 5 XS2, NDX 2 and ND 555, the British now present their most mature network players on the market. We have let ourselves be spoiled by the middle one – the NDX 2.

Grab a map of England and place a finger on London. Move westwards and turn straight south half-way to Bristol – you can't really miss Salisbury. The small town lies in the center of the South English park landscape and is a gateway to the unique "New Forest" national park. At the northern edge of the city lies the unfathomably ancient hill fortress "Old Sarum", an epicentre of British early history: Stonehenge, the Celtic expansion, Caesar's summer trips to the island, the centuries-long differences between Angles, Saxons and natives as well as the early royal period – all of this took place in

the immediate vicinity, shaping the historic city center, the surrounding countryside and, ultimately, everything we now call England.

Driving to the eastern edge of the village, the historical flair quickly fades away, being replaced by petrol stations, supermarkets and streets that wind around commercial buildings before they suddenly end at faceless rolling gates. The neighborhood could just as well be located in Stuckenborstel near Bremen, Cutricchio at the foot of Vesuvius or in a suburb of Boston.



One of the buildings, however, stands out: the sand-colored brick building, with its cubically austere layout and the implied door arch, doesn't quite fit into its surrounding. Behind its façade there is nevertheless the same hustle and bustle as is prevailing in all the other companies.

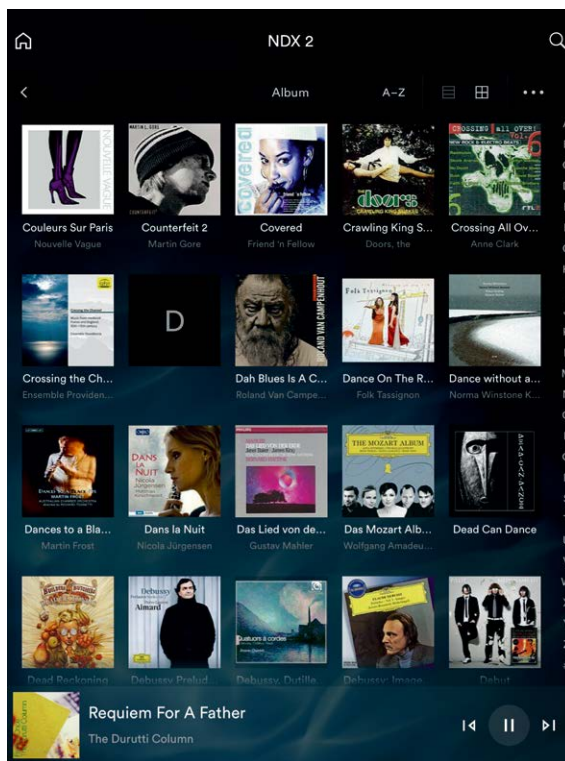
◀ Naim's remote can also operate connected amplifiers. It is, however, not really necessary: the NDX 2's control logic has been tailored to the remote app.

A few years ago Naim allowed us to stroll through these offices with a guest card on our lapels. Our most intense memory is a slight hint of disappointment. Here, in Salisbury, we had expected a stronghold of British tradition and developers with certain “peculiarities”. We expected stereotypes but found the exact opposite: open-plan offices, walls full of production plans and sales tables, team meetings in a matter-of-fact atmosphere ...

Naim is one of the most innovative hi-fi manufacturers and cultivates ways of thinking by which the brand could probably even survive in the Silicon Valley. In these rooms, ideas emerged that deeply anchored streaming in the concept of their product lines. A pioneering achievement by means of which Naim and Linn independently stamped high-end streaming with the label “Made In Britain”.

At a time when virtually all manufacturers, except Sonos of course, were dependent on suppliers such as Stream Unlimited and foreign apps, the developers behind their brick façade began to tinker with hardware whose features were controlled by proprietary software. In the beginning, they used commercially available computer components, and their first-ever HDX operating system was a Linux derivative. Soon after, the first complete in-house developments followed. This process did, of course, involve overcoming countless obstacles and dead ends. When we attended the presentation of the streamer NDS in early 2012, the software developers still had an endless bug and to-do list hanging on their office wall.

Last year Naim’s concept finally reached a level that outclasses most of its competitors. Even though it was not launched until twelve months later, the



▲ Sophisticated operation: the Naim app offers an exemplary overview and gets by with a minimum of control elements.

NDX 2 is nothing more than an update on the hardware and software status of the Uniti models, introduced in 2017. Its streaming board and digital features are completely congruent with the top model of the Uniti “Nova” series. Our extensive tests of the small “Atom” (from 2400 Euro, STEREO 10/17) and the Nova (from 5100 Euro, STEREO 12/17) are therefore urgent reading recommendations.

Rather than list all the features for a third time, let’s consider why the world would need something like the NDX 2 in addition to the formidable Unitis. The key, of course, lies in reduction.

KEYWORD
Bug: The English word for vermin is a pseudonym for software errors in the IT world. For once, it actually isn’t nerdy programmer slang. Already in the 19th century comparative use of the term is proven.

While Atom, Star and Nova see themselves as complete systems with their integrated amplifiers, the three new network players are dedicated purists for every hi-fi chain.

The smallest model is the ND5 XS2 (around 2800 Euro): 43 centimeters, LAN/WLAN, Bluetooth, DAC inputs, lots of integrated circuits, but no options. At the top of the line is the ND 555, (around 16,000 Euros) whose selected luxury assemblies bring all the finesse that Naim can offer. As usual in the British 500 line, it lacks its own power section, so it must be supplemented by an external power supply. The NDX 2 lies in between the two. It also has discrete circuits and hand-picked components, and its digital section is symmetrical. A power supply is on board, but it can be upgraded. If you operate it “Out Of Box”, a thick plastic plug the size of a shot glass sits on

the booster power access. By the way, you can’t make any horrible mistakes here, as the streamer detects faulty wiring and then refuses to boot with the power button flashing vigorously.

We had the separate power supply XPS DR (around 4900 Euro) available for our test and it was one focus of our hearing comparisons. To put it bluntly; operated with its power booster, the NDX 2 is one of the best streamers we have had in the listening room so far. Its soft, velvety and unbelievably multi-faceted timbres, the sublime fine dynamics and the unagitated, controlled and yet captivating musical nature drew us deep into the music from the very first moment. Like the Uniti Nova before it, the NDX 2 is a convincing all-rounder that finds the right tone for every style. At one moment the



◀ USB, Digital-ins and two alternative analog-outs, including Naim’s superb DIN-tap. Note that the NDX 2 has also been prepared for optimal radio traffic with its three antennas.

ADVANTAGE FOR CHROMECAST

If you instruct a streaming-app like Qobuz to play music on the NDX 2, it logs into the web service and takes over the entire data transfer, playback and conversion. Unlike Airplay, the mobile phone and tablet are only used as a remote control by Chromecast. This saves power and has sound advantages, because the much superior architecture of the Naim-streaming board is used

driving, almost cheesy-emotional strings in Liszt's "Hungarian Rhapsody" ("Rhapsodies", Stokowski) beguiled us, while at the next it slammed the pulsating bass drum from Chelsea Wolfe's "Feral Love" ("Pain is Beauty") into the room with grandiose emphasis and wonderful differentiation. The capabilities of Symphonic Line's RG 9 and DALI's Epicon 6 certainly also played an important part in this outstanding performance. Finally it draws Leslie Feist's voice smooth but fine and with precise contours into the center of a huge stage.

After we had removed the power supply from the chain, the streamer sounded only a tiny bit more two-dimensional, spatially a bit more tied up and dynamically at best a touch less sophisticated. The sound difference would hardly be worth mentioning, especially if you consider that the combination with the XPS DR raises the package price to 11,000 Euros and thus almost doubles it. Actually a pleasant result after all: the outstanding streamer has already exceeded our expectations even without its optional power supply! At the same time, you can consider the tempting booster upgrade as a potential expansion and keep saying to yourself: some day ...

TEST-COMPONENTS

Music sources: Qobuz via FiiO X5 III (Chromecast), Tidal, Audiodata MS II, Melco N1A, Apple iPhone SE (Airplay)

Integrated amplifier: Symphonic Line RG 9HD, T+A PA1000E

Loudspeaker: Canton Smart Vento 9, DALI Epicon 6

Cable: Sets from Audioquest and Van den Hul, Octave 3-P filter

But you should keep in mind – sorry, dear HiFi purists – that a network player is more than just a "sound body". These devices are just as much defined by their functionality and accessibility. There, Naim also plays at the very top. Of course, there are other potent remote solutions. With Roon, which by the way has been integrated, or Auralic's Remote, there are controls that can at least keep up. What we, however, particularly like about the British concept is the homogeneity with which they have woven web streaming into their experience. Tidal and Spotify Connect are natively supported, the former, though, without MQA. When you register an account, your personal favorites appear directly on the home screen. All other services can also be played back via the NDX 2. With Qobuz this worked most smoothly via Chromecast: Google's smart interface allows the playback of high bit music with up to 24/192. Apple fans can use Airplay 2, which is, however, a step below, as this standard works with fixed 24/44. Since recently both standards support cross-brand multiroom.

Like many of the latest streamers, the NDX 2 is also a D/A converter that can feed up to four external sources into its state-of-the-art circuits. In the app you'll find even more connection options, including several analog ones, as the streamer is, for example, capable of controlling preamps and integrated amplifiers from Naim. The source inputs can be named individually, and if you don't have any other hardware from the British company, everything superfluous can simply be hidden. Its biggest advantage is, however, that the app can do all of this with an absolute minimum of controls – so it's practically impossible to get lost in submenus. I want to see the competition do that!

Carsten Barnbeck



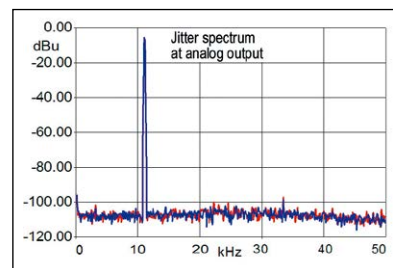
▲ The XPS DR external power supply boosts the spatiality and dynamics of the NDX 2. It is not a must-buy, but to experience the NDX 2 at 100 percent, the investment is crucial.

NAIM NDX 2

Price: around 6000 €
Dimensions: 44 x9 x32 cm (WxHxD)
Warranty: 2 years
(5 years after registration)
Contact: Naim Audio Ltd
Phone: +44 (0) 1722 426 600
www.naimaudio.com

Already without the booster power supply, Naim's NDX 2 is one of the strongest streamers we've heard. Operation and flexibility are outstanding: all web services are supported via Airplay2 and Chromecast.

LAB MEASUREMENTS



Signal-to-noise ratio referred to 24 bits	109.3 dB
Signal-to-noise ratio referred to 16 bit	97.2 dB
Signal-to-noise ratio digital zero	110.2 dB
Distortion factor at -9dBFS	0.001 %
Distortion factor at -60dBFS	0.3
Converter linearity at -90dBFS	0.1 dB
Emphasis detection (DAC)	ok
Rectangle	ok
Pulse	ok
Jitter	2.1 ns
Deviation from fs	0.8 ppm
Amplitude of the data stream	503 mV
Power consumption Stby./idle (at)	/17 W

LAB COMMENTS: Throughout excellent measurement values; especially the superb noise ratios are eye-catching, but also distortion and linearity are great.

FEATURES



UPnP-Streamer; reads all sound formats incl. DSD; internal signal processing with 32/384; four S/PDIF inputs (max. 24/192; 2 x USB for external memory (incl. charging current); Chromecast; Airplay2; Bluetooth AptX; Tidal; Spotify Connect; Web-Radio; Roon Ready; optional power supply upgrade; included remote control .

STEREO-TEST

SOUND QUALITY STREAMER	98%
SOUND QUALITY DAC	97%

PRICE/PERFORMANCE



OUTSTANDING

Pure legacy.

Next-gen attitude.



**We've taken care of the tech.
You take care of the music.**

The new Dynaudio Xeo wireless stereo speakers: all the performance of high-end hi-fi with none of the hassle. Just plug them into the mains and plug in your sources – or stream with high-quality aptX Bluetooth. It's as simple as that.



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