WWW.HIFINEWS.CO.UK **FEBRUARY 2015**

THE HOME OF REAL HI-FI

& Record Review

Classic brand returns with high-end separates





JansZen zA1.1

Hybrid electrostatic speaker

Krell Vanguard New US muscle amp

PS Audio Sprout The hottest all-in-one?

Ouad PA-One Tube headphone amp

Cool running

'Saving energy without sacrificing sound' p22

EAT C-Sharp Super sleek vinyl spinner



- PLUS 18 pages of music reviews & features VINYL RE-RELEASE America's eponymous debut LP
- OPINION 11 pages of letters and comment VINTAGE REVIEW Acoustic Research AR-7 speakers
- SHOW BLOG We visit the Audioshow in Portugal
 READERS' CLASSIFIEDS Hi-fi bargains galore



MUSICAL FIDELITY

MF-100

SUPERIOR PERFORMANCE HEAD PHONES



Music Is Our Religion

VERY HIGH QUALITY • MUSICAL FIDELITY DESIGNED BALANCED ARMATURE • NEODYMIUM DRIVE UNITS

YI'I/I'HTTI/(CX

VINYL & RECORD REVIEWS

74 Classical Companion

Christopher Breunig continues his quide to classical music with his pick of the essential recordings of Chilean pianist Claudio Arrau

76 Vinyl Release

Steve Sutherland re-examines America's debut LP from 1971, now reissued on 180g vinyl

78 Vinyl Icon

The second most influential band behind The Beatles? Mike Barnes looks at Kraftwerk's pioneering synth-pop LP, The Man-Machine

Classic Rock Venues

Steve Sutherland continues his tour of world iconic rock venues with LA's Gazzarri's, Rainbow, and Roxy

90 **Music Reviews**

Audiophile LPs, hi-res downloads and the very latest rock, jazz and classical albums reviewed

DEFINITIVE PRODUCT REVIEWS

Technics SU-R1/SE-R1

The brand is back and hopes to make a splash with this big-ticket network music player and amp

EAT C-Sharp/C-Note

Slim deck with E-Flat DNA and all-new 10in arm makes a play for tweakers and luxury seekers alike

38 **Charisma Audio MC-2**

Sapphire rod and improved wiring as Canadian company adds second MC pick-up to its cartridge range

44 JansZen zA1.1

Not for headbangers, but this hybrid electrostatic standmount delivers purity and realism that will enthral

Antelope Audio Zodiac Platinum DSD/Voltikus PSU/10M Atomic Clock

Why this spectacular-sounding three-box outboard DAC and clock could be a truly sound investment



52 **Krell Vanguard**

With a retro-fittable digital module in the works this high power integrated is truly fit for the 21st century

56 Melco N1Z

What's this? A NAS drive built with the audiophile in mind? We check out the sound of this specialised music server

Quad PA-One

Company's first ever headphone amp brings together valve power and a DAC in a neat 1950s-styled package

Oppo PM-2

Can Oppo's more affordable planar magnetic headphones still cut it where it counts? We find out...

PS Audio Sprout

USB DAC, Bluetooth, MM phono stage and a promise of fuss-free sound. Can this diminutive Class D amp deliver?

VINTAGE

118 Vintage Review

How do the classic components of yesteryear measure up today? We test Acoustic Research's AR-7 speakers

124 From the vault

Adrian Orlowski attempts to put subjective listening on a rational footing as we rewind to April 1980 in our pick of articles from HFN's archive



ABOVE: Antelope Audio Zodiac Platinum DSD/Voltikus PSU/Rubidium Atomic Clock, see p48

NEWS AND OPINION

13 Welcome

A message from the editor

15 News

Exclusive preview of Devialet's Phantom 'Implosive Sound Centre', new pre/power from Classé and McIntosh's first headphones

Show Blog

Flagship Focal speakers, dazzling Devialet amps, a full McIntosh set-up and a Marten system costing 70,000 Euros... Jorge Gonçalves reports from the Lisbon Audioshow

Investigation

It's not just sound quality that amp makers are striving to improve but energy efficiency too. Are the two incompatible? Keith Howard reports

102 Opinion

Insider comment on the audio topics of the day from Paul Miller, Barry Fox, Jim Lesurf, Steve Harris and, writing from the US, Barry Willis

110 Sound Off

Vintage amps and reverse stereo switches, using Quad II amps with modern speakers, aptX explained, price reviewers pay for kit, plus why no test of amp's balanced output?

138 Off The Leash

We're experiencing a curious phase in hi-fi history, says Ken Kessler, and it's one creating insecurity for manufacturers and audiophiles alike



ABOVE: How does the AR-7 speaker from 1976 shape up today? See p118



DISTRIBUTED BY SELECT AUDIO
EMAIL: SELECT.AUDIO@TISCALI.CO.UK
TEL: 01900 601954



AMG FACTORY HOHENPFAHLWEG 43a 93309 KELHEIM, GERMANY WWW.AMG-TURNTABLES.COM











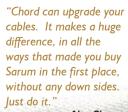












Alan Sircom Hi-Fi+ 115

Sarum

This is a new experience, all the things you want and more. Detail, drama, emotion, rhythm, dynamics and timbre.

Silence between each note, a stereo image so solid that you could walk into it, voices at the right height, an orchestra with every instrument perfectly in place. Like being there. Like listening to music being created.

Visit us at the Bristol Hi-Fi Show 2015. Hear just how far we can move the HORIZON and find out just how SUPER the Sarum is. This is a demonstration you won't want to miss.

Read the full story at www.chord.co.uk









Tuned ARAY

oppo



PM-1

Planar Magnetic Headphones



Proprietary Planar Magnetic technology

echnology .ite-like, natural

sound quality
High sensitivity & scalability

Plush padding & reduced weight for comfort

Comprehensive set of cables and accessories

HA-1

Headphone Amplifier



Class A balanced power amplifier

Toroidal power

USB DAC with

ESS 9018 Sabre^{III} Reference DAC

IR Remote 8 Bluetooth control included

BDP-103D

Universal player with Blu-ray



Dual-core fast loading

Darbee Visua Presence

Dual HDMI

4K up-scaling

True 24p M vide

Network streaming

7.1-Channel analogue output

BDP-105D

Flagship universal player with Blu-ray



Darbee Visual

Upgraded USB DAC supports DSD 64/128

Headphone amplifier

Dual Sabre® Reference DACs Coaxial and optical digital inputs







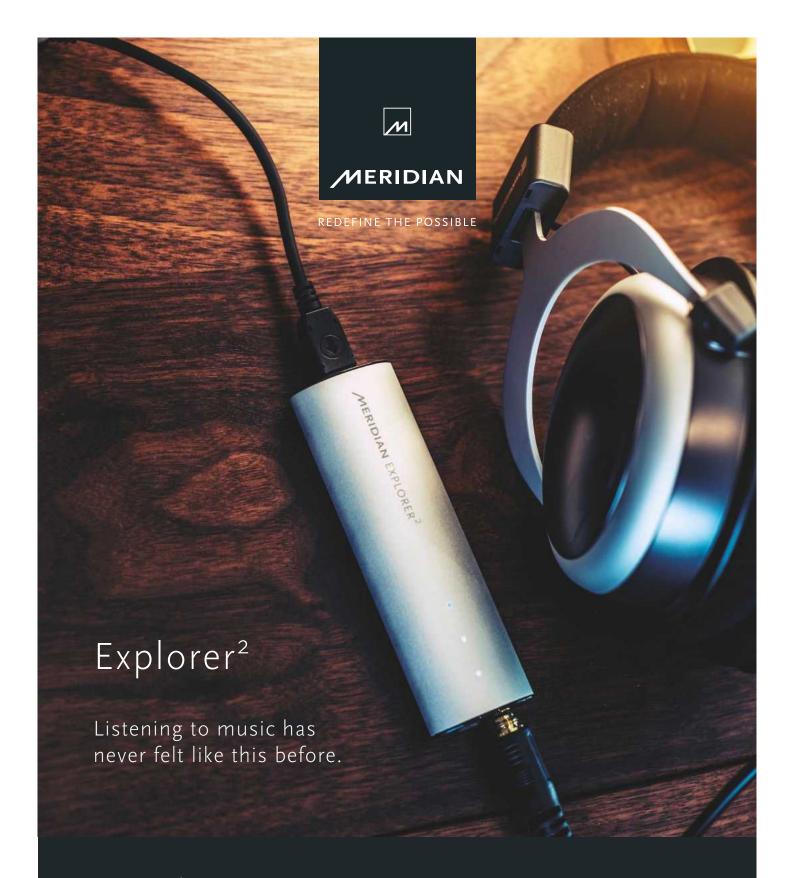
twenty:22

THE BEST - 3 YEARS RUNNING



Contact your participating retailer now

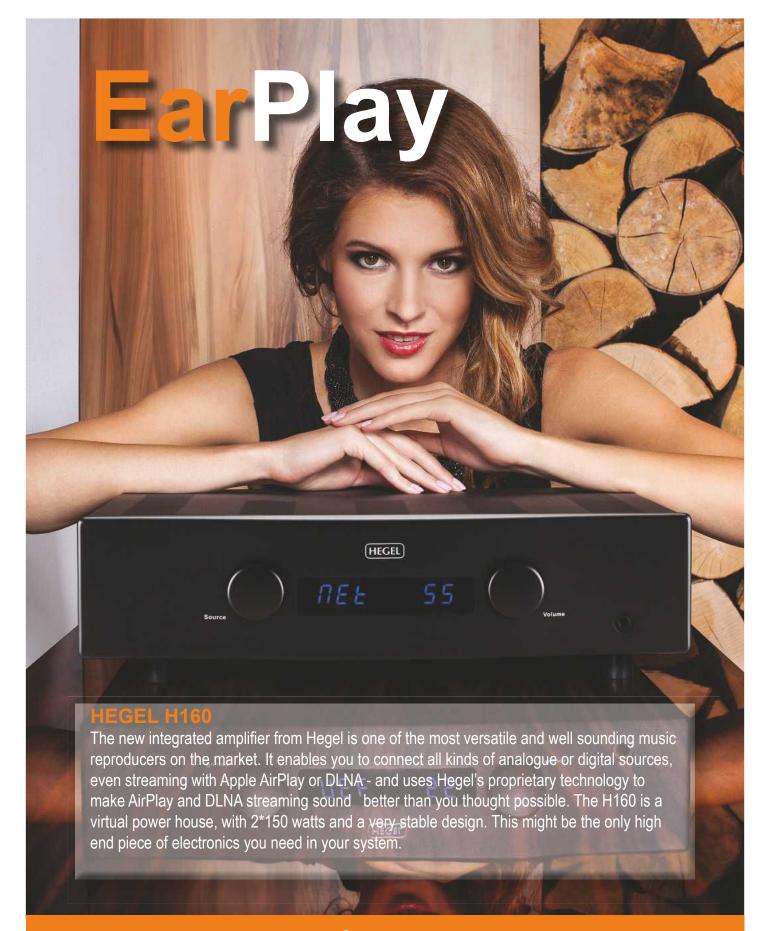
See pmc-speakers.com/promo/stands



Explorer² – the new pocket DAC with Meridian's unique resolution enhancement technologies – includes MQA®, the revolutionary British technology that's bringing a whole new meaning to the sound of music. MQA will change *everything*.



From your Meridian partner Details at meridian-audio.com





Derby: Musicraft

Edinburgh: Loud & Clear

Kent: Igloo Audio

Hegel: www.hegel.com





You Will Hear the Difference

Only HDtracks makes it easy to download and enjoy your favorite music in stunning hi-res quality.

HDtracks features a large selection of thousands of hi-res titles from hundreds of labels. Choose from any genre including: rock, pop, jazz, classical, R&B, and more.

Get 15% off your first order. Use code HDHIFI15*

www.hdtracks.co.uk

*Valid only at hdtracks.co.uk. Territory restrictions may apply. One use of code per customer. Offer expires 2/28/2015.

CAMBRIDGE

851N

UP-SAMPLING NETWORK PLAYER

We've developed this flagship network player to fit seamlessly into the existing 851 Series allowing you to harmonise your networked lifestyle with your passion for audio perfection. It has 24-bit/384kHz audio upsampling from all sources, two high end Analog Devices DACs, and complete digital connectivity including 5 digital inputs, three USB inputs, an asynchronous USB Audio input, Spotify Connect, Airplay and optional Bluetooth.



YOUR MUSIC, OUR PASSION

cambridgeaudio.com



Hugo, the DAC by which all others are judged

"Superb"

What Hi-Fi Sound and Vision, grouptest winner

"A landmark digital product" *****

Editor's Choice, Hi-Fi Choice

"Chord's best-ever DAC"

Hi-Fi +

"Spectacular"
Ken Kessler, The Telegraph

"Breaks all records"

Hi-Fi World

"A game-changer"

Hi-Fi Critic

"My reference DAC" head-fi.org

"Incredible" avforums.com

"Remarkable"





Hugo The World's first reference-class mobile dac/headphone amplifier

- Home and mobile use (10hr+ battery)
 Unique custom-made Chord FPGA
- Five digital inputs (inc. Bluetooth) Playback up to DSD 128 and 384kHz PCM
 - Use as a digital preampBuilt to last







FEB/15





ABOVE: Not quite in scale, Quad's diminutive PA-One (left) brings the warmth of valves to headphone listening (p60) while Oppo trickles down its planar-magnetic tech to these 'entry-level' PM-2 cans (p64)

VINYL: Synthesisers are set to stun in this month's Vinyl Icon with Kraftwerk's The Man-Machine (p78), while Steve Sutherland gets groovy as America's debut LP is re-released on 180g (p76)

RIGHT: Hi-Fi News & RR is the exclusive UK representative of EISA's Hi-Fi Expert Group and editor Paul Miller is EISA's Hi-Fi Expert Group Manager

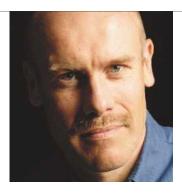


tereo is clearly back in the ascendent as the big beasts of consumer audio return to their traditional stomping ground. One year ago Hi-Fi News carried the first review of Sony's HAP-Z1ES media player and partnering TA-A1ES amplifier the first serious stereo separates from this brand in over a decade.

Now its one-time sparring partner, Technics - the audiophile arm of the giant Panasonic Corporation has been dusted off and supercharged with a similar, but decidedly more esoteric, 'Reference' media player/ preamp and sophisticated Class D power amplifier. A second, 'premium class' C700 system looks destined to go head-to-head with Sony's player and amp.

Both companies have been roused by the same shift in the audio firmament – the rise and rise of high resolution music downloads. Technics is going one step further, however. As we reported last month, this audiophile marque will also be lending its name to yet another on-line hi-res music store.

Hi-Fi News was made aware of these plans in Osaka, Japan, back in December 2013. We were the only UK magazine travelling as part of a small international contingent restrained by a very large non-disclosure agreement. We knew Panasonic was working



on something 'big'. The cat was let out of the bag on our first morning in Osaka, when we were shown into a listening room bearing legacy Technics branding, and with some classic products from that past tucked away at the back.

What we were there to see and hear was - well, what was it, exactly? A network audio player was feeding various prototype

The Technics brand has been dusted off and supercharged'

'digital' Class D amplifiers. There was a standmount loudspeaker too, clearly being developed in tandem with the electronics.

The intervening year has seen Panasonic throw some serious resources behind this project. Technics was not only coming back after a leave of absence, but it was coming back with a bang. Just how big a bang, you can read about in our world exclusive review from p28.

PAUL MILLER EDITOR

HI-FI NEWS' EXPERT LINE UP: THE FINEST MINDS IN AUDIO JOURNALISM BRING THEIR EXPERIENCE TO BEAR ON ALL AREAS OF HI-FI & MUSIC



BARRY FOX Investigative journalist supreme, Barry is the first with news of the latest developments in hi-fi and music technologies



JOHN BAMFORD JB brings huge industry experience, a penchant for massive speakers and a love of hi-res audio in all its diverse guises



KEN KESSLER is a long-serving contributor, luxury goods writer and champion for the renaissance in valves and 'vintage hi-fi'



KEITH HOWARD has written about hi-fi for 30 years, and edited Hi-Fi Answers for nine. KH performs our speaker and headphone lab tests



STEVE HARRIS Former Editor of this very title from 1986 through to 2005. A lifetime in audio and a love of jazz makes Steve a goldmine



JOHN HOWES Foremost collector and archivist of vintage hi-fi, famous for the UK's bi-annual Audio Jumble, John shares his experience with HFN



STEVE SUTHERLAND Worked on Melody Maker and then edited NME from 1992-2000. the Britpop years. Steve brings a unique slant to our Vinyl Release pages



Devialet Phantom

FRENCH INNOVATORS ATTEMPT TO REDEFINE THE AUDIOPHILE'S EXPECTATIONS OF HI-FI – AGAIN!

A question has played on the minds of all savvy audiophiles – why has Devialet, darlings of the French hi-fi set, been acquiring tens of millions of Euros in investment while mopping up the cream of hardware and software engineers (35 and counting)?

One week before the rest of the world's press were invited, *Hi-Fi News* was granted an exclusive preview of the answer – the €1690 Phantom or 'implosive sound centre'.

GOODBYE TO DOCKS

This all-in-one, verynearly-portable (it weighs 10.5kg) solution was made possible through a further miniaturisation of Devialet's core streaming and ADH amplification technologies coupled with some impressive mechanical engineering.

Inputs include dual-band Wi-Fi (a/b/g/n 2.4GHz & 5GHz), Ethernet on RJ-45 (10/100/1000MHz) and Toslink optical for use with legacy digital sources. Devialet is also introducing its Dialog peripheral that enables a fully wireless high-res audio system throughout your home, and can control and synchronise up to 24 Phantoms.

NUTS AND BOLTS

The outside of this smooth, low diffraction enclosure – an ABS

LEFT: The €1990 'Silver'
Phantom is distinguished by its
silver-coloured bass drivers and
by higher-powered ADH amps
BELOW: Exploded view shows
the Phantom's core driver
components – custom 170mm
anodised alloy bass drivers,
25mm aluminium dome tweeter
and 110mm annular ring mid unit

shell with polycarbonate chassis – reveals a dual-concentric midrange 'ring' and inset treble dome, both fabricated from aluminium. The pair of custom bass drivers are gasket-sealed into the enclosure by a force of 1.2 tons while their ±13mm throw gives the impression they will pop from the cabinet at any moment!

The drivers are powered by four ADH amplifiers, including 2x300W modules for the bass. This in itself is a feat of engineering – what requires 200cm² of PCB space and 1000 surface-mount components in Devialet's high-end amplifiers is reduced to a single 1cm² ASIC in the Phantom.



concept at the heart of its amplifiers [HFN June '14].

Mapping the characteristics of bass drive units and their acoustic load has allowed Devialet to equalise the audio signal in DSP *before* it hits the speaker, ensuring the driver's performance is idealised.

Over the last ten months we've seen this software developed to accommodate over 150 different loudspeaker models, but this was never its primary mission. In fact, SAM was conceived to tackle a very specific problem posed by the Phantom – just how do you get a truly extended and palpable low frequency response from

two opposing 6in alloy drivers working into an impossibly small, sealed, cabinet volume (just 2x3litres)?

Thanks to SAM, and the physical robustness of its high-efficiency bass units, Devialet claims to have exceeded the bass extension of a typical 120 litre floorstanding loudspeaker, specifying a response of 20Hz-20kHz (±0.5dB) and a maximum output of 105dB SPL (Silver Phantom).

Is Devialet on the cusp of sparking (another) revolution in hi-fi? It certainly thinks so... Devialet, 0208 971 3909; http://en.devialet.com, www.absolutesounds.com

AWESOME BASS

SAM (Speaker Active Matching) has been described by Devialet as its 'second technical revolution' following the ADH

LEFT: Extreme
miniaturisation of
Devialet's ADH technology
permits four amp modules to
be fitted per (Silver) Phantom

Classé Sigma Series



Now fully integrated into the B&W Group, Classé Audio has used its parent company's economy of scale and efficient production technologies to drive down the entry point of its separates. First to fully benefit from this process is the new Sigma Series, a combination of £4250 SSP 7.1 channel preamp/processor, £2950 AMP2 stereo power amplifier and £4250 AMP5 multichannel amplifier.

Key features of the SSP include Ethernet connectivity. with proprietary signal clocking for streaming DLNA sources and AirPlay, control via smartphone app and asynchronous two-way USB link (up to 192kHz/24-bit). All three products incorporate Classé's in-house designed

switchmode PSUs with PFC (Power Factor Correction).

Switching technology extends to the output stages of the AMP2 and AMP5 power amps which employ the Class D modules first developed for its Delta series CA-D200 power amp. Onboard DSP is employed to identify and remove dead bands in the Class D amplifier's PWM stage while the output filter is set at the switching frequency of the amp rather than just outside of the immediate audioband.

Like the CA-D200, the AMP2 is rated at 2x200W (the AMP5 at 5x200W) but built into a more conventional, though still elegant, case design. Classé Audio, 01903 221500; www.classeaudio.com

Mac on the move

Iconic marque MacIntosh Labs has launched its first headphone, a circumaural, closed-back (bass-ported) design with a nominal 200ohm impedance and 97dB sensitivity. Priced at £1995, the lightweight (464g) MHP1000 has a premium soft leather headband and ear pads. McIntosh Laboratory, 01202 911886; www.mcintoshlabs.com



MERIDIAN MOA

Describing it as a 'breakthrough technology to reverse the trend (of compressed audio)', Meridian has announced the launch and licensing of a new encoding and lossless music distribution format dubbed MOA. 'Master Quality Authenticated' is a process by which archival content - in addition to new music – is digitised via a proprietary algorithm, believed to incorporate Meridian's apodising filter technology, while still able to be delivered in standard WAV, FLAC and other file formats. It is envisaged that the highest resolution files will be streamed using no more bandwidth than CD-res media. www.musicischanging.com

TRON AMPLIFIER

GT Audio has announced a new Tron 300B-based tube power amplifier rated at 9W into 4-16ohm. The £6750 Tron Atlantic boasts extremely low noise levels and is designed for high efficiency speakers. www.tron-electric.co.uk

Leema reboots

UK SEPARATES SPECIALIST RETURNS WITH DAC

Now under new ownership, the innovative Leema brand is back with a high-end DAC/ preamp dubbed the Libra. Priced at £5995, the Libra is equipped with three coaxial, optical and two AES/EBU digital inputs, all rated at 192kHz/24-bit and DSD64. The latter is more typically delivered over USB and here the Libra offers a galvanically-isolated asynchronous input compatible with 384kHz/24-bit, DXD, DSD64 and DSD128 music files. These are joined by two I2S inputs via RJ45 connectors, the programmable pin allocation accommodating 'any high end source with an I2S interface'.

Bluetooth is also supported via an optional module as are legacy analogue sources via three single-ended and balanced line inputs. The Libra may be configured for fixed or variable outputs, the latter via a fully analogue volume control. Leema Electro Acoustics Ltd; 01938 559021 www.leema-acoustics.com



The Hi-Fi Show *Live* 2015 NAD's nCore Masters

THE LIVE HIGH-END EXPERIENCE RETURNS IN 2015

Now in its third year, the UK's only dedicated high-end audio event, The Hi-Fi Show Live will light up the Beaumont Estate venue in Windsor over the weekend of 24-25th October. The exhibitors with the most enduring presentations of the most exclusive audio equipment are all pledged to return, joined by other iconic marques joining us in Windsor for the first time. As ever, The Hi-Fi Show Live will offer audiophiles a unique opportunity to experience and compare the world's best audio equipment while enjoying presentations from key designers and personalities. www.hifinews.co.uk/show



Unison celebrates 25

UPDATED MODEL FROM ITALIAN TUBE AMP MANUFACTURER

Born of the success of Unison Research's long-standing Triode 20 amplifier, and released as part of its 25th anniversary celebrations, the 20kg, £2500 Triode 25 has been developed over an extended period. Like its predecessor, the Triode 25 is

a push-pull design utilising pairs of EL34 tubes in the output stage. ECC82 and ECC83 triodes feature in the preamp stage. Triode and pentode output modes may be selected, the latter rated at 45W/6ohm per channel. Switchable high (5dB) and low (1.8dB) feedback options are also included. Furthermore, reflecting trends in the market, the Triode 25 is equipped with a 384kHz/32-bit and DSD128 compliant

asynchronous USB input. ARIA, 01235 511166; www.unisonresearch .com, www.henley designs.co.uk

EVOLUTION OF CLASS D AMPLIFIER TECHNOLOGY

For the new £2699 M22 power amplifier, NAD has replaced its DDFA system for an alternative Class D architecture developed by Hypex, dubbed nCore. This promises improved performance, efficiency and stability – all entirely unaffected by variations in loudspeaker impedance. This is joined by the £3299 M12 digital preamp which has optional MDC modules including BluOS, additional XLRs, S/PDIF inputs, and even HDMI inputs/outputs. NAD Electronics International, 01732 459555;

www.nadelectronics.com



HI-FI NEWS? JUST ASK...

If you can't always find a copy of this magazine, help is at hand! Complete this form, hand it in at your local store and they'll arrange for a copy of each issue to be reserved for you. Some stores may even be able to arrange for it to be delivered to your home. Just ask!

Please reserve/deliver my copy of **Hi-fi News** on a regular basis, starting with issue.... First name Surname... Address....

Postcode...



IF YOU DON'T WANT TO MISS AN ISSUE...

Upcoming Events

08 FEB Audio Jumble 2015, The Angel Leisure Centre, Tonbridge, Kent; www.audiojumble.co.uk

20-22 FEB Sound & Vision Show, Marriott City Centre Hotel, Bristol;

www.bristolshow.co.uk

09-10 APR Hi-Fi & High End, Crocus Expo Centre, Moscow, Russia 14-17 MAY

High End Show, M.O.C, Munich, Germany;

www.highendsociety.de

29-31 MAY T.H.E. Show, Hilton Hotel, Newport Beach, CA, USA

Audioshow, Portugal

Words & pictures: Jorge Gonçalves



The Lisbon Audioshow celebrated its 25th anniversary when it opened its doors on the 7th of November last year. There's a Portugese saying that rain brings good luck to the bride and groom and the same held true for the three-day event. The organisers were rewarded with an even greater number of attendees than the previous year – nearly 5000 in total - not to mention one of the finest ensembles of great sounding components so far.

Every year exhibitors spare no effort when it comes to ensuring their systems give of their best, but they also put a lot of work into decorating the hotel rooms in which they exhibit in order to make them as appealing as possible to visitors. And the beautifully ornate interior of the city's luxurious five-star Pestana Palace Hotel – built in the 19th century and now a national monument - certainly helped them achieve this goal.

Electronics from Canor in the form of its TP106 VR integrated amplifier and CD2 VR+ CD player were partnered here with the Cambridge Audio 851D upsampling DAC/preamp and Tannoy's DC10 floorstanders. www.canor-audio.com; www.tannoy.com



The Nikita 2 loudspeakers from French company Davis Acoustics produced a very balanced sound when driven by a Crayon integrated amp. The music was streamed via the much talked about Chord Hugo while vinyl fans weren't forgotten with an Avid Acutus turntable also used as a source. www.davis-acoustics.com





Pro-Ject tempted with a tasty selection of some of its most popular turntables, plus the new RPM 1 Carbon (second from left). Costing £325, the deck features a new arm made from carbon fibre and aluminium resin. www.henleydesigns.co.uk



Just one of the contenders for the best sound at the show was this set-up comprising a pair of Raidho D3 loudspeakers, Pass Labs Aleph X300.5 power amp and an Esoteric K-01X CD player with external Esoteric G-01 Rubidium clock. Volume was controlled via a high quality passive preamp. www.raidho.dk; www.passlabs.com; www.esoteric.jp

WBLOG Sights and sounds from around the globe

Once again, Wilson Audio was responsible for some of the most beautiful sounds at the show. A pair of the company's Sasha Series-2 loudspeakers was driven by a D'Agostino Momentum Integrated [HFN Dec '14] weighing in at 54kg and said to deliver 200W/ch - fed by a CD8T CD player from French company Metronome Technologie. Power to the whole system was filtered through a Nordost Quantum Qx2 mains filter and distributor. www.absolutesounds.com; www.nordost.com





A beautiful shot of the Avid Acutus turntable with SME V tonearm. Analogue sources could be found all around the show and in many instances were the only source used. www.avidhifi.co.uk

Demand is strong for wireless speakers it seems. Noonday showed its 'L' and 'M' models, both supporting Bluetooth, Near Field and cable connections. www.noonday-audio.com





New Zealand know-how meets all-Brit excellence as a Townshend The Rock 7 turntable feeds a Tom Evans The Groove phono stage hooked up to a Perreaux Eloquence 250i amp. CD player is a Perreaux CDT. www.perreaux.com

The gorgeous Sonus faber Lilium loudspeaker was combined with the new Galileo GS preamplifier and GS150 power amplifier with KT150s valves on board from Audio Research [HFN Jan '15]. It was difficult to choose the best source when the contenders were a Studer reel-to-reel tape deck playing studio master tapes, a TechDAS Air Force Two turntable and the Metronome Calypso CD player. www.absolutesounds.com



BLOG Sights and sounds from around the globe //////



The voluptuous-looking Estelon Extreme II floorstander certainly made its mark, powered by a full complement of electronics from German company Trinity Electronic Design. Dietmar Bräuer, Trinity's owner and chief designer, was on hand to explain the thinking behind his new power amps, said to produce 200W into 8ohm. Turntable used was a TW Acoustics Raven Black Night with a Miyajima Madake cartridge. www.trinity-ed.de

B&W was present with its CM6 S2 speakers playing beautiful music driven by the new Rotel line of electronics: the RC-1570 preamp, RCD-1570 CD player and RB-1552 MkII power amp. Also present were two prototypes of the new more affordable line of electronics from Classé, named the Sigma series. On show were the Sigma AMP2 power amp and Sigma SSP AV processor. The source chosen was the Aria streamer from new Spanish brand Digibit, which is distributed through B&W dealers. www.bowers-wilkins.co.uk; www.classeaudio.com



Simply gorgeous in all senses of the words, this trio of Devialet amps flanked by speakers from Amphion drew admiring looks from all who entered the room. From left to right can be seen the 250 amplifier/streamer, stereo or dual mono 200 and the integrated 120. www.devialet.com; www.absolutesounds.com

These magnificent looking speakers are the Coltrane Supreme IIs from Marten Audio. Despite being taller than most visitors and weighing some 200kg a piece, they disappeared into the soundstage as soon as the music played. We were told the price was 'around 350,000 Euros'. Electronics were courtesy of VTL, its Siegfried II power amps dominating the scene. The total cost of the system was nearly 700,000 Euros once the new Ultimo K2 turntable from Portuguese designer Rui Borges was included. www.marten.se; www. ruiborgesturntables.com



Sights and sounds from around the globe



Apertura unveiled its new Armonia speakers, complete with ribbon tweeters. They were hooked up to a Burmester 082 integrated amplifier while source was a Transrotor Fat Bob S turntable equipped with a Transrotor/SME M2-9 tonearm and Van den Hul Crimson XGW cartridge. Phono stage was the battery-powered Trigon Advance. www.apertura-audio.com

Another contender for the best sound of the show was this McIntosh rig. It comprised the XRT1K speakers, MC1.2 KW monoblocks - said to kick out 1.2kW of power - a C500 tube preamp, C500 controller and a MCD1100 CD/SACD player. The analogue source was the Kronos Sparta – the latest turntable from Louis Desjardins. Like his flagship Kronos, this sees two platters, one above the other, rotating in opposite directions. www.mcintoshlabs.com; www.kronosaudio.com

What could be more fitting for Focal's flagship Stella Utopia EM loudspeaker than a magnificently decorated room with a beautiful view over Lisbon's Tagus river? Electronics were Naim through and through, with the company's new NSX streamer as source feeding a NAP500 power amplifier. www.focal.com; www.naimaudio.com



More internet radios, this time from the well-know British speaker manufacturer, Ruark. To the left is the stereo R2 model while closest to the camera are two R1 tabletop units, one in an optional CarryPack to aid portability. All units are Bluetooth enabled and sport OLED displays. www.ruarkaudio.com





Cocktail Audio's X40 media streamer is said to offer playback of high-resolution files including DXD at 352.8kHz/24-bit. Inside can be found the highly regarded Sabre Reference DAC while it also offers a MM phono input to allow recording at sample rates of up to 192kHz. Below it is the Primare 132 amplifier. www. cocktailaudio.co.uk

Next

at the International CES, 2015

High-efficiency amplifiers

Keith Howard on the search to save energy without sacrificing sound quality

RIGHT: The Benchmark AHB2 power amplifier is the first to use THX's high-efficiency Achromatic **Audio Amplifier** technology, a development of Class G employing feedforward error correction [first review in **HFN** next month]

ust as there is no perpetual motion machine, there is no audio power amplifier which delivers all the power it draws from the mains supply to the loudspeakers that it drives. Some of that power - sometimes a lot of it is wasted as heat.

Traditionally this is not something that has bothered audiophiles much. In fact many of us have learned to draw comfort from feeling that our hi-fi electronics are running warm. But waste is never clever, and increasingly the world at large is looking for - and sometimes insisting upon – improved efficiency from electronic equipment of all types.

Much of this pressure is coming from legislators concerned to limit power station pollution, enhance energy security and, perhaps, allow ageing power distribution systems to cope a little longer. Consumers too have good reason to wish to curb energy usage as energy bills rise, and designers likewise because efficient electronic devices can often be both smaller and cheaper to manufacture as a result of having less heat to dissipate.

CLASS SYSTEM

Reflecting this trend, for some years now HFN has published power consumption figures as part of PM's lab reports on amplifiers and other electronic components. But for audiophiles sound quality naturally comes first, which makes the idea of energy efficiency a difficult sell. For decades, if anything, we have tended to associate quality with



'Class A amps

enjoy the

reputation of

sounding best'

low efficiency, so high-efficiency amplifiers are viewed with some suspicion. In the 21st century, though, that's a mindset which some in the audio industry believe is ripe for change. As the Honda advert wryly puts it in the car context: 'Let's do those things that can't be done

- like less fuel in for more miles out.'

The reason why we often equate high heat dissipation with high sound quality is the Class A amplifier. Its

classification is based on circuit operation rather than quality of results, but Class A amplifiers have long enjoyed the reputation of sounding best - at the same time as generating a lot of excess heat.

To understand how amplifier designers have looked to improve amplifier efficiency over the decades we have to delve into amplifier classification to understand what it

> means and why it is that different classes are inherently less or more efficient.

What we are exclusively concerned with here is the final.

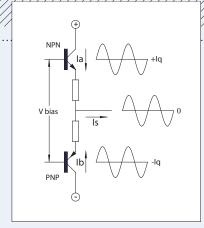
output stage of a power amplifier, whose task it is to provide sufficient current capability to drive the low-impedance load presented by loudspeakers. The earlier stages of the amplifier, which provide the necessary voltage again (typically of around 30x), generate relatively little heat by comparison and universally operate in Class A to ensure best performance.

The output stage can operate in Class A too but, because this is inefficient, more often operates in Class B. This mode is significantly less wasteful of energy, particularly when idling, but still less than miserly in its use of power, hence the resurgence



BELOW RIGHT:

Class A XA60.5 monoblock from Pass Labs is specified as drawing 225W from the wall. 'The virtues of Class A promise effortless detail and natural warmth of sound,' said our review in HFN Apr '10, but 'you pay for this in your electricity hills



in recent years of Class D amplifiers which use a switching rather than a linear output stage to enhance efficiency further.

But each of these improvements in efficiency over Class A comes with downsides which can impact on sound quality, so superior solutions are still being sought.

GAME OF TWO HALVES

Figure 1 depicts a solid state, push-pull, complementary symmetry amplifier output stage, shorn of nonessentials for understanding what affects its efficiency. Note that one transistor (the upper one) is placed between the amplifier's positive voltage rail and the loudspeaker output, with the second transistor between the output and the negative voltage rail. It is common, as a result, to refer to the output stage as having two halves. (I won't be considering valve amplifiers at all here, for which Class A operation is normal and the range of modes of operation available to transistor amps of little practical relevance. Because it has to employ heaters to

its cathodes, a valve amplifier can never be high-efficiency.)

In Class A operation, as shown in Figure 1, both halves of the output stage conduct (ie, pass current) throughout the signal cycle, as depicted here for a sine wave signal. As the current through one half of the output stage increases, so it decreases in the other half, and vice-versa as the signal changes polarity. This is good news for distortion performance because the even-order nonlinearities of the two halves of the output stage tend to cancel, but it is very bad news indeed for efficiency.

Whenever an output transistor has both a voltage across its collector and emitter (connected here to the voltage rail and output respectively) and is also passing current, it will dissipate heat energy equivalent to VI where V is the voltage dropped across it and I is the current passing through it.

To improve efficiency we must make VI as small as possible, whereas a Class A output stage

encourage electron emission from

becomes an issue LEFT: Group Test of Class D amplifiers from HFN April 2008 featured the **Channel Islands** Audio D100, Flying Mole MA-S160, NuForce Reference 9V2, Rotel RB-1092 and Trichord Research D300.

a simplified Class A output stage and how its two halves conduct throughout the signal cycle, here for a sine wave. The upper and lower waveforms show the current through each

FAR LEFT:

Figure 1 shows

half (la and lb), and the central waveform the output current. Ouiescent current, Iq, is half the peak current required to deliver the amplifier's rated output power

ABOVE LEFT:

Figure 2 illustrates a simplified Class B output stage showing how each half conducts for only half of the signal cycle. The quiescent current here is typically two orders of magnitude (100x) lower than in an equivalent Class A output stage but crossover distortion

The Trichord was declared the best all-rounder

in effect does the opposite. The problem of Class A dissipation is particularly acute under quiescent conditions, when the amp is idling with no input signal. To ensure both halves of the output stage remain conducting throughout the signal cycle, the standing/idling/quiescent/ bias current (all these different terms are used) through the output devices must be at least half the peak current required by the load.

Take the example of a Class A amplifier rated at a modest 50W into 80hm. This requires a peak output voltage of 28.3V and a peak output current of 3.54A, so the minimum standing dissipation in the output stage is 100W (2x $28.3 \times 3.54/2$) – twice the power as that delivered to the speaker. In practice we would want a true Class A amplifier to remain in Class A down to a load impedance of, say, 20hms, requiring four times the standing current and so four times the standing power dissipation. Inevitably, then, Class A amps run hot and need large heatsinks to dissipate the wasted heat.

SLIDING BIAS

One way in which Class A's hunger for power can be reduced is by means of what is generically known as sliding bias, a term which appears to have been coined when the technique was first described in a valve amplifier circuit published in Mullard Technical Communications in 1958. What this does is vary (modulate) the output stage standing current according to signal requirements, reducing it on lowlevel signals and thereby trimming back output stage power dissipation.

Given the transient nature of audio signals and the frequencydependent nature of loudspeaker impedance this is no simple task but some manufacturers still use refined versions of sliding bias, most notably Krell whose Sustained Plateau Biasing was recently superseded by its iBias technology.

Class B, though, was the means by which the majority of audio amplifiers were made significantly more efficient, as it avoids the complication of modulated output stage biasing while also being more effective at reducing heat dissipation. (Classes C and E are more efficient still but are radio →





sound foundations

+44(0)1276-501-392 in fo@sound fown dations. co. uk

New from ADL

discover

inner sound





headphones

featuring Alpha Triform Contour Earcups



New

ADL STRATOS

Stereo USB DAC / ADC

Recording Interface

• DSD (2.8M/5.6M) • 32 / 192 USB DAC • 24 / 192 USB ADC

with High Performance Phono Stage!





New

ADL 24-bit/192KHz

GT40

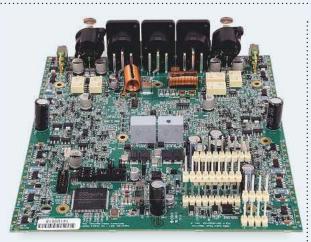
USB DAC/ADC with Phono Stage!

Harmonizes Computer Files and Analog Inputs the renowned GT40 taken to a new level of performance









frequency techniques with no ready application to the reproduction of high-quality music.)

In Class B (Figure 2), each half of the output stage conducts for only about half the signal cycle, rather than the whole cycle as is the case in Class A. This results in a considerable reduction in overall power dissipation – although the extent of the improvement depends on signal level. If Class A resembles the normal operation of a twohandled saw where the men at either end push or pull continuously, in Class B each pushes and pulls for only half the stroke and rests during the other half.

FEWER AMPS

As well as being more efficient when reproducing a signal, Class B has the further advantage that no-signal, quiescent dissipation is greatly reduced. Instead of the standing current being many amps, as it typically is in Class A designs, a few tens of milliamps usually suffices just enough to ensure there is no 'dead zone' around the zero-crossing point as a result of neither half of the output stage being conductive.

ABOVE: AHB2's circuit board carrying the low-dissipation **AAA amplifiers**

RIGHT: Arcam's new A49 integrated amp boasts 50W in Class A mode while offering up to 200W from its 'latest generation Class G' power amp

BELOW LEFT:

Krell's KSA-100 from 1980 used Sustained Plateau Biasing, which promised reduced power consumption and cooler operation than rivals. Krell has only recently replaced this topology with its new iBias output stage design

There is an issue of terminology here which needs to be understood. I'm using the definition of Class B that each half of the output stage conducts for half the signal cycle, whereas some term this Class AB, reserving Class B for an unbiased output stage in which there is no standing current whatsoever.

As such a 'Class B' output stage would display gross crossover distortion I prefer the more pragmatic definition - although unbiased Class B stages are used in some amplifier circuits, the Classic case being Quad's 'current dumping' topology, where other means are provided to fill in the 'hole' around zero-crossina.

Class AB, in this usage, refers to an output stage in which the

amplifier's DC voltage rails are not fixed but variable.

The simplest scheme of this type – called Class G in Europe and Japan but, adding further confusion to amplifier classification, Class H in the US - has two or more pairs of voltage rails, each of higher voltage. So long as the amplifier output level remains low enough, the DC rails with the lowest voltage suffice and output stage dissipation is reduced accordingly. Only when the output voltage demand increases sufficiently do the higher voltage rails come into use.

EARLY CLASS G

The Hitachi Dynaharmony models, introduced in 1977, are popularly remembered as the first Class



standing current is greater than required by Class B but less than required by Class A.

Beneficial as it is for efficiency, Class B has problems. Most notable of them is that the hand-over of one half of the output stage to the other can never be achieved seamlessly, leading to an error about the signal zero-crossing point known as crossover distortion.

UNPLEASANT SOUNDS

All Class B amplifiers suffer it to some degree, and negative feedback is not fully effective at suppressing it. Moreover, it has a reputation for sounding unpleasant, popularly being blamed for many early transistor amplifiers sounding worse than their valve forebears.

Class B cuts dissipation by reducing the standing current in the output stage but the other factor that determines dissipation – the voltage across the conducting output device(s) - is not addressed. So further reduction in waste heat can be achieved by combining Class B with a power supply in which the

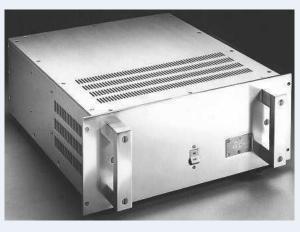
G designs but the concept is at least eight years older (US patent 3,662,899). At the time there was growing interest in amplifier circuits that provide short-term output capability significantly greater than their continuous output capability, so as to accommodate better the transients typical of music signals. Enhanced short-term output capability and improved efficiency, though, are two sides of the same coin: Class G provides both.

Even better results can be achieved if, instead of using stepped voltage rails, fully modulated rails are used which 'track' the signal voltage (see Figure 3 overleaf) thereby maintaining a constant, low voltage across the conducting output device(s).

The BASH (Bridged Amplifier Switching Hybrid) topology does this, using a modulated switching power supply in conjunction with a conventional Class B amplifier.

BASH has the advantage of eliminating the low-level output spikes that can occur with Class G amplifiers when switching voltage →

.....



Ayre

Fresh Ayre



The NEW Ayre AX-5 Integrated Amplifier is the result of fresh thinking. Featuring Ayre's new Diamond output stage, together with their exclusive EquiLock circuitry and a Shallco solid silver contact switch for gain control. The key to perfecting the Ayre AX-5 was to incorporate the Variable Gain Technology (VGT) of the award winning Ayre KX-R preamplifier in to the new output section. Like all Ayre components the AX-5 features fully discrete, fully balanced, zero feedback circuitry, ensuring the most musical performance.

In the words of Charles Hansen (CEO & Head of R&D at Ayre):

'In the simplest view, the Ayre AX-5 is an amalgamation of the Ayre AX-7 and the Ayre KX-R. Yet in another way, the AX-5 is the most radical integrated amplifier ever designed.'

The Ayre AX-5 will bring you closer then ever to your music.



t: 01727 865488

e: info@symmetry-systems.co.uk

w: www.symmetry-systems.co.uk

BACKWARDS AND FORWARDS

In loop negative feedback, used by most power amplifiers, a portion of the output signal is returned to the amplifier input where it is subtracted from the input signal to generate an error signal to cancel distortion, which then passes back through the amplifier. In fact the cancellation is not complete and usually becomes less effective at high audio frequencies because the open-loop gain of the amplifier - its gain before the application of feedback - has to be rolled off to ensure stability.

In passing through the amplifier again the error signal is also itself subject to distortion, with the well-known result that reduction in low-order nonlinear distortion is bought at the expense of an increase in high-order nonlinearity. In feedforward correction the input and output are again compared to generate an error signal but this is subtracted at the amplifier output. This is more difficult to realise but provides 'faster' correction, able to compensate better for Class B crossover distortion and output glitches caused by Class G rail switching.

'The Class G

AAA amplifier

could go down

in audio history'

rails but has the disadvantage of using a switching rather than a linear power supply, which poses problems of radio frequency interference (RFI). Perhaps because

of this, BASH has proved quite popular in subwoofer amplifiers, where high powers are often needed to accomplish the equalisation

demanded by the use of small cabinets - but not in stand-alone audiophile power amps.

CLASS D

Mention of switching inevitably brings us to Class D, a quite different form of amplification to the linear amps considered thus far. The



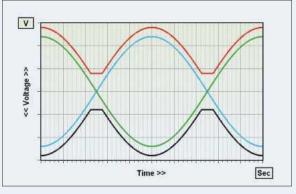
output devices in a Class D amp are either fully 'on' or hard 'off', with the transition between the two states being accomplished as quickly as possible. This means that when

the devices are conducting, the current through them is high but the voltage across them is low, which means that dissipation is limited.

Class D amplifiers have proven popular in recent years, not least because of improvements in output devices that have enhanced performance and improved reliability. But the switching nature of Class D brings problems, particularly the generation of radio frequency interference (RFI) – control of which consumes significant design and development resources - and the need for an output filter that suppresses the ultrasonic frequencies related to the switching, integrating the output waveform into one which more obviously resembles the input.

Fixes for these issues have been developed and Class D amplifiers now combine high efficiency with good performance – but there is residual suspicion of them among many audiophiles.

In the continuing race to achieve high efficiency without compromise to sound quality, THX best known for its stringent home theatre performance standard has now entered the fray with



ABOVE: Voltage waveforms for a BASH amplifier, showing how the voltage rails (red and black traces) track the bridged amplifier's antiphase output waveforms (blue and green traces) to keep an almost constant voltage across the output devices

BELOW LEFT:

Hitachi ad from 1977 for amps in its Dynaharmony range. While often thought to be the first Class G designs, the technology was at least eight years old

the Achromatic Audio Amplifier (AAA), 'achromatic' meaning without colour, which makes its first appearance in the new AHB2 amplifier from Benchmark.

GOODBYE TO RFI

A development of Class G, it eschews switching operation in either the amplifier or the power supply on the basis that the resulting RFI issues are incompatible with highest sound quality, in addition to placing extra burdens on the design process. So the power supply is linear and so too is the amplifier.

A Class B amplifier is used, with two or more pairs of DC rails of increasing voltage, but the Class B problem of crossover distortion and the Class G issue of rail-switching glitches are largely eliminated by the use of feedforward error correction (see box-out, above right).

The result, says THX, is an amplifier of exceptionally low distortion and also exceptionally low output noise which provides efficiency comparable with Class D without incurring its RFI problems.

HI-FI CREDENTIALS

The high efficiency of AAA is especially valuable in multichannel amplifiers and situations where high efficiency and low heat dissipation are particularly important, like in-car audio. But its audiophile credentials are being established at an early stage by Benchmark's selection of it for the AHB2 power amplifier.

Has Class A sound quality been allied to Class D efficiency? If so, AAA will go down in audio history as a significant breakthrough.

Hi-Fi News already has a sample of the Benchmark AHB2 amplifier and our full review, including detailed measurements, will be published next month.

Web: www.technics.com; http://panasonic.net Prices: £6500/£12,000



MEDIA PLAYER & AMPLIFIER

Technics SU-R1/SE-R1

Technics is back, and the Reference series R1 player/controller and power amp combowe have here is just short of £18,500. Can it cut it in a competitive high-end market? Review: **Andrew Everard** Lab: **Paul Miller**

lephant in the room out of the way before we start: no, there's no turntable in either of the two systems with which Technics is making its comeback to the audio market, including the flagship SE-R1 power amplifier, selling for £11,999, and the matching SU-R1 network player/preamp, yours for £6499. The matching speakers (£18,599) will be reviewed next month.

However, asked the question, both Technics project head Michiko Ogawa and chief engineer Tetsuya Itani admit that there's been some investigation of the possibility of developing a new turntable going on behind the scenes, and that Itani has some definite ideas in this direction.

NO CONVENTIONAL PREAMP

But then, 'behind the scenes' has very much been the watchword for the whole Technics project, with development being carried out as what the team leader Michiko Ogawa calls a 'skunkworks project' by engineers who kept the faith, even after parent company Matsushita (now Panasonic) discontinued the brand.

The systems broke cover in major style at IFA in Berlin at the beginning of Sep '14, Panasonic doing a classic 'Oh, and one more thing...' at the end of a press conference heavy on less specialised consumer electronics. Now the products are starting to appear in the shops, and there's a Technics Tracks online *music store* live from January 2015 in the UK and Germany, which are the launch target markets for the new electronics.

The hardware we have here isn't quite what it initially seems, in that the SU-R1 is more network player/control centre than conventional preamp – it's actually called a Network Audio Control Player – while the SE-R1 power amp does all the heavy lifting in this system. Audio is transmitted from SU-R1 to SE-R1 in digital form, with

RIGHT: Despite featuring a Class D (PWM) output stage, the SE-R1 is still very bulky indeed thanks to its massive linear power supplies [see Investigation on amplifier efficiency, p22]

left and right channels carried separately over Ethernet cables using the proprietary 384kHz/24-bit 'Technics Digital Link'. This link also carries information about the

volume control which is implemented just ahead of the PWM DAC in the power amplifier, before passing the signal to its dual-mono Class D PWM power amp stages.

The SU-R1 will play a wide range of files over an Ethernet link, eg, from a computer or NAS unit running suitable server software. It handles all the common formats up to 192kHz/24bit over both DLNA and asynchronous USB, as well as DSD2.8 and 5.6, and it can also handle those codecs over USB-A via a USB thumbdrive.

Other inputs extend to the usual digital choices, the SU-R1 offering the option of remastering up to 192kHz/24-bit, as well as analogue inputs, while that front-panel USB

is also iOS compatible.

Talking of which, there's also a Technics Music Player control app to 'drive' the system. For our test the company provided an iPad mini pre-loaded with a prelaunch version of this

app, but it would be unfair to draw any firm conclusions about how well it works.

A variety of Technics technologies, both old and new, have been adopted in the SU-R1 and SE-R1, but a major concern of the engineers was what they describe as 'Minimising noise and achieving maximum









silence', and not just by the adoption of that digital link between the two units.

The SU-R1 isolates the interfaces for digital inputs used by USB and NAS devices, PCs and other digital sources, in order to prevent the ingress of external noise, and employs jitter reduction circuits. Also, an 'Optimally Activated Circuit System' partially shuts down elements such as unused digital interfaces, networking and the display, in a quest for noise reduction.

Virtual Battery Operation (used in Technics separates going back at least two decades) is applied here to isolate the amp from power supply noise by charging a capacitor bank then disconnecting charging power during playback. Naturally, separate power supplies are used for the digital and analogue sections of the SU-R1.

An original Technics algorithm is used for the oversampling digital filter, and what the company calls 'High Res Remaster' can be used to upsample all incoming signals

to 192kHz/32-bits to further push noise out of the audio band. Separate Burr-Brown PCM1792 D-to-A converters are used in a balanced configuration for the left and right channel analogue outputs, while incoming analogue signals are converted to digital using Burr-Brown's 192kHz/24-bit PCM4220 ADC.

Both balanced and standard preamp level outputs are provided in addition to the dedicated Technics Digital Link, and the SU-R1 has two sets of analogue inputs on conventional RCA phonos alongside its raft of digital options.

REDUCING JITTER EFFECTS

The SE-R1 is something of a big ol' beast, with a dual-mono symmetrical layout right the way back to the secondary windings on the hefty transformer, and uses what Technics calls its JENO (Jitter Elimination and Noise-shaping Optimization) Engine, combining a clock generator to reduce

ABOVE/BELOW: SU-R1 player/controller and SE-R1 power amp are both immaculately built, with minimal controls: extra knobs on SE-R1 (below) allow use as a conventional power amp, and selects two sets of speakers

low-frequency jitter and a sample rate converter to look after high-frequency jitter. The PWM conversion circuit, able to convert high-res audio to PWM while maintaining dynamic range, is another in-house design, and the amplifier uses gallium nitride FETs in its power stage to enable high power to be developed from a single push-pull design, thus shortening the large current signal path.

On the power supply side the amp combines choke rectification with fully discrete regulation in the quest for smooth voltage and current delivery regardless of load. Similarly, the clock circuit is batterypowered, again to isolate it from power supply fluctuations. Familiar amplifier →





High End – Made in Germany





Clearaudio Innovation series turntables on demonstration here

The Audio Consultants Aldermaston Berkshire 01189 819 891 Cool Gales Bath Somerset 0800 043 6710 Hifi Sound Stockton-on-Tees North Yorkshire 08456 019 390 Home Media Maidstone Kent 01622 676 703 MCRU Huddersfield West Yorkshire 07908 056 978 Stone Audio Poole Dorset 01202 630 066



ABOVE: SU-R1 has a range of digital and analogue inputs, plus analogue outs – but the preferred mode of connection is the Technics Digital Link, on twin Ethernet cables. **BELOW:** Immaculately built, the media player uses pairs of Burr-Brown DACs and a linear PSU for the analogue outputs

'Reinstating

LAPC restores a

lot of the sparkle

in a recording'

design cues are much in evidence, including short signal paths, a double-skinned chassis braced by alloy columns, very substantial speaker terminals and, of course, there are those 'very Technics' meters (rather more for show than go and reading about 10% high). But the SE-R1 power amplifier does have one more trick up its sleeve – LAPC.

Technics' Load Adaptive Phase Calibration allows the amplifier to sample

the combined amplitude and phase characteristics of the attached speaker load. Using onboard DSP, and what's described as a 'speaker impedance adaptive optimisation algorithm' it manipulates the signal in the digital

domain to achieve a flat frequency and phase response at the speaker output.

CALIBRATE AND LISTEN

Setting up the Technics amplification isn't made any simpler by the sheer mass ('approx 54kg') of the SE-R1 power amp. You'll need a pair of Ethernet cables of the same length to link the player/preamp to the power amp (we used AudioQuest Pearl when auditioning in the Ed's media room), although there are also conventional and balanced ins and outs, which don't enjoy the services of the Technics Digital Link.

The LAPC calibration system is fairly alarming, playing a series of whip-like chirps of increasing rapidity through the speakers, sufficient to have the neighbours wondering whether you and your partner have decided to spice things up a bit, and accompanied by some switching noise as the system has a think and makes its adjustments. The level of the test-tones was high through the B&W 802s used in our system, connected using short lengths

of Ecosse MS2.15 cable [HFN Jan '13], so I suspect would be entirely alarming were you to be using speakers of higher sensitivity.

Mind you, the LAPC optimisation is worthwhile: with it

disengaged the SU-R1/SE-R1 system sounds strangely flat and uninteresting, with strings in particular robbed of their tonality and bite. Kicking LAPC back in restores a lot of the sparkle and impact inherent in a recording, and after some experimentation I opted to leave it on for my listening.

One other point worth noting was that the system seemed somewhat prone to random soft pops audible through the speakers when listening to music at low levels. After a bit of system juggling it became apparent the noise was being generated in the power amp.

REDISCOVERING MUSIC

There are several unusual things about the revival of the Technics brand: one is that it happened at all, another is the way the engineers have tackled the design of their flagship system – and a third is that the project is being headed by an acclaimed Japanese jazz pianist.

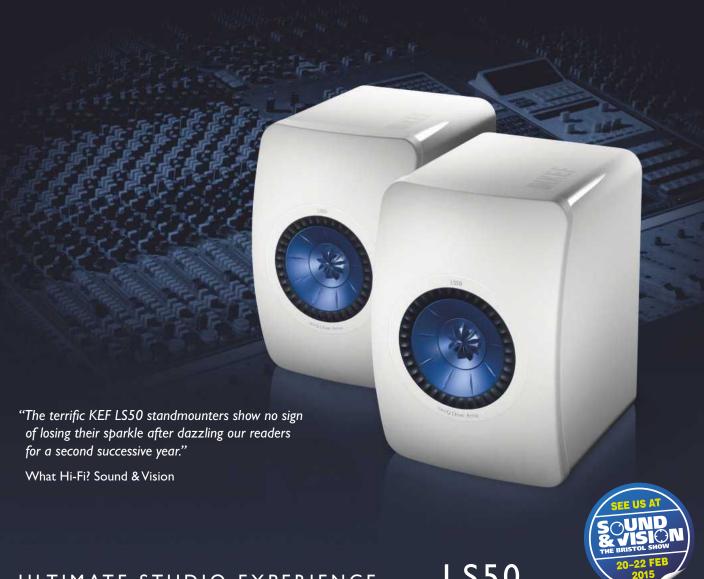
OK, so Michiko Ogawa isn't just any jazz pianist: quite apart from having 14 albums to her name and playing with the likes of the Kansai Philharmonic, Ms Ogawa started her career with Panasonic almost 30 years ago, working in the company's Acoustic Research Lab. She played a major part in the development of Technics ultra-slim large-diaphragm speaker, the AFP1000, which was adopted by the Vienna State Opera, and also the 'row of tubas' SST-1 backloaded horn speaker, which is in New York's Museum of Modern Art.

She sees a change happening in the way we listen to music, from the data-reduced 'audio everywhere' trend of recent years back to a desire to have somewhere we can sit quietly and concentrate on music in high quality – and it's toward this market that the new Technics products are aimed (initially in its European launch).

She explains that she has studied the psychoacoustics of listeners' emotional responses, and that the whole philosophy of the new systems is that 'We are striving to offer listeners the feeling of "rediscovering music", by helping them have uniquely emotionally engaging experiences – the ones we seem to have lost.'







ULTIMATE STUDIO EXPERIENCE









LS50

More than fifty years of groundbreaking innovation, our LS50 mini monitor applies KEF's latest acoustic technologies from Blade and beyond to deliver the uncompromised sonic purity, accuracy and transparency we originally pioneered with the legendary LS3/5a professional studio monitor for the BBC. The good news is that you no longer have to be a sound engineer to enjoy the startling illusion of presence it creates.

Now available in High Gloss Piano White.

www.kef.com/LS50





ABOVE: SE-R1 has twin sets of hefty loudspeaker terminals, with front-panel selector: as well as the Digital Link connection there are analogue inputs on RCA and XLR

At the risk of stating the obvious, the sound of the Technics is a bit high-end Japanese audio - terribly polite and detailed with demonstration-quality content, but unwilling to get its hands dirty with more raucous music, and rather prone to getting confused should you sneak in some flat-out rockers.

HARD WORK

Play the likes of Holly Cole, or similarly well-recorded jazz, and the Technics is in its comfort zone, with plenty of definition and detail on offer, but ask it to crash out the likes of Fleetwood Mac's 'Tango In The Night' [HDtracks 192kHz/24-bit download] and it's definitely more at home in the quieter passages than when things get harder-edged.

And with a track such as Led Zep's 'Ramble On' [from Led Zeppelin II, Atlantic; 24-bit download] the opening vocal is a little too distant and anonymous, while the chorus thickens up noticeably and lacks impact just when it's required.

The point is, this sounds like an amplifier working very hard, when in fact it should be cruising, given the power it has at its disposal.

Change to some hi-res DSD courtesy of Norwegian label 2L, and the simplicity of the Dena Piano Duo playing Brahms's Variations On A Theme Of Haydn [2L-094], and the Technics pairing is much more at home, allowing the two pianists to weave around each other in an open, well-defined soundstage.

Similarly the combination handles the close-recorded harmonies and instrumentation of Brooklyn jazzers Lake Street Dive with smoothness and clarity, bringing out the essence of vocalist Rachael Price well, but without the last nuance of its spine-tingling character.

The way the band's bass, drums and trumpet open its cover of 'I Want You Back' [from Fun Machine, Signature Sounds download] is pleasant and workmanlike enough, but Price letting rip with her vocal is iust a little bleached here.

The same is true of how Technics' combo plays the classic Linda Ronstadt 'standards' recordings with the Nelson Riddle Orchestra voices have good character, and there's an attractive bite and blare to the sound of the brass backing 'Straighten Up And Fly Right' [For Sentimental Reasons, Elektra/WEA 0075596047425]. However, at the same time, the whole sound doesn't quite gel but rather simply combines a series of disparate elements - all handled well, but also all a little anonymous, not helped by a slightly nebulous soundstage image.

There's nothing significantly wrong with what the Technics player/amplification does. It has decent bass extension, a smoothly rendered treble, and makes a fine job of placing elements in a soundstage. What doesn't ever quite happen, however, is that moment when the music breaks free of the audio system, and you're revelling in a performance. \oplus

HI-FI NEWS VERDICT

The Technics system is impressive, and does so much right in purely technical terms, thriving on demonstration quality music of the simple orchestral ensemble/ trio jazz school. But it struggles to convince when the music is rather more down and dirty, and never quite shows that spark of magic required to set it apart from a market that's already more than adequately populated with high-end alternatives.

Sound Quality: 76%

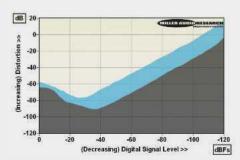


TECHNICS SU-R1/SE-R1

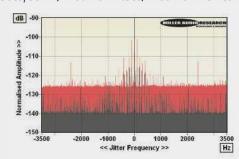
It is almost inconceivable that these components would be deployed in isolation so they were tested as an 'integrated' digital amplifier (with Technics' proprietary Digital Link to the SE-R1). This connection carries audio data up to 384kHz/ 32-bit with volume metadata that governs the final Class D PWM output stage. With a peak level (OdBFs) digital input 2x100W/8ohm is achieved at volume setting '-23dB' with a maximum 2x150W/8ohm at '-21.5dB'. Into 4ohm loads. 2x285W at 0.09% THD is achieved at volume '-21.5dB' while the next step (-21.0dB) delivers 2x315W at 0.6% THD, the point of digital clipping. Therefore, '-21.5dB' is the SU-R1's maximum safe volume setting if the combo is fully 'digitised'.

Distortion, and particularly HF distortion, is entirely dependent on power output and sample rate, ranging from 0.005% at 1W/1kHz to 0.098% at 1W/20kHz (48kHz/24-bit) and 0.0098% at 1W/20kHz (96kHz or 192kHz/24-bit). At 10W/ 20kHz output, THD varies from 0.11% (48kHz Fs) to 0.022% (192kHz Fs). The lowest THD occurs around -30dBFs or 0.15W/ 80hm [see Graph 1, below], Jitter [Graph 2] is adequately suppressed (mainly PSU-related) at 206psec (SU-R1) to 550psec (SU/SE-R1 at 10W). The response of the balanced Class D output stage is also very load dependent: flattest at -0.05dB/20kHz to -2.17dB/90kHz into 80hm but with a declining treble into lower impedance loads. In practice this is compensated for by Technics' LAPC (Load Adaptive Phase Calibration) regime.

Readers may view comprehensive QC Suite test reports for Technics' SU-R1 and SE-R1 by navigating to www.hifinews.co.uk and clicking on the red 'download' button. $\mbox{{\bf PM}}$



ABOVE: THD vs. decreasing 24-bit/48kHz digital level (black, 1kHz; blue, 20kHz) where 0dBFs = 150W/80hm, -20dBFs = 1.5W, -40dBFs = 15mW



ABOVE: High res. 24-bit/48kHz jitter plots. SU-R1 (black) at OdBV versus SU/SE-R1 (red) at 10W/8ohm

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	158W / 315W
Dynamic power (<1% THD, 8/4ohm)	160W / 315W
Output imp. (20Hz–20kHz, SU/SE)	418ohm / 0.139-1.37ohm
Freq. resp. (20Hz–90kHz, SU/SE)	+0.0 to -1.7dB/+0.0 to -2.2dB
A-wtd S/N ratio (SU/SE)	110.5dB (OdBFs) / 88.8dB (OdBW)
Distortion (20Hz-20kHz, SU/SE)	0.0005-0.09% / 0.0075-0.022%
Digital jitter (48kHz, SU/SE)	206psec / 550psec
Power consumption (SU/SE)	24W/540W (68W idle)
Dimensions (WHD, SU/SE)	480x120x391/480x241x567mm

TURNTABLE/ARM

Belt-driven turntable with electronic speed control and arm Made by: European Audio Team, Prague Supplied by: Absolute Sounds Ltd, UK Telephone: 0208 971 3909 Web: www.euroaudioteam.com; www.absolutesounds.com

Price (including arm): £2498

EAT C-Sharp/C-Note

EAT made its name with tubes before adding a distinctive turntable line. The C-Sharp maintains the brand's glossy visual appeal, but can it deliver sonics to match? Review: Steve Harris Lab: Paul Miller

t's now some six years since EAT, already established as a maker of high-end audio tubes, burst into the high-end turntable market with the spectacular Forte and Forte S [HFN Dec '10]. EAT followed up with the E-Flat and its unusual tonearm [HFN Jan '12]. But with the new C-Sharp (£2498), EAT has moved into much more affordable price territory.

EAT's founder Jozefina Lichtenegger is wife of Pro-Ject boss Heinz Lichtenegger [see boxout], so it comes as no surprise that the turntables are manufactured in the same facility at Litovel in the Czech Republic. But although they clearly share some design heritage, the EAT products are quite different from anything offered under the Pro-Ject name.

SLIMMED-DOWN DESIGN

Many turntables of the high-mass school are unwieldy-looking devices, where the record is perched up on a platter that's as tall as it is wide. With the Forte, EAT took the lateral-thinking step of making the platter's diameter larger instead, to create a high-mass design that looked really good: a turntable of classic proportions and elegant design, but on a heroic scale.

With the Forte S, the platter diameter was reduced and the twin motors were built into the plinth, rather than having a separate outboard unit. With the E-Flat the two motors were hidden under the platter, driving a sub-platter from opposite sides through a single belt.

For the C-Sharp, EAT has produced a design that's slimmed down further. It uses the E-Flat's oversize 340mm diameter platter, but, with a single motor sunk into a rather shallower plinth, the whole player has a lower profile.

Immaculately black-lacquered, the plinth is made of 'highest density' MDF and is supported on three large cone-shaped screw-in aluminium feet with soft inserts,

RIGHT: Here the (single) motor is mounted on the main plinth, while a carbon-fibre-skinned top plate forms a suspended sub-chassis to carry the main bearing and tonearm

adjustable for levelling. Nestling within the rim of the plinth, the carbon-fibrepatterned top plate forms a suspended subchassis on which the main bearing and arm are mounted.

It's actually a sandwich of carbon-fibre and MDF, supported on ten compliant elastomer cones. Once you have removed the three transit screws, this subchassis can move with its intended damped freedom.

The main bearing is an inverted type, its 10mm-diameter shaft projecting upwards from the subchassis and topped by a ceramic ball. Over this fits the sub-platter. with its matching bronze journal. As with the E-Flat, the sub-platter is a substantial item, a machined aluminium disc 80mm in diameter and 15mm thick. The belt, a round section type is said to be made from special anti-static rubber, which is then glue-joined and polished.

Because most of the platter's mass is in the sloping thick rim, it will have a greater flywheel effect than a conventional-sized platter. Yet with the bonded-on polymer playing surface measuring just under 300mm, it's easy and convenient to put records on and take them off.

EAT's chunky two-part record clamp has a felt face underneath and so cannot damage your record labels. It's nice enough to use, but takes about six turns on the centre part to screw it down.

SEPARATE SPEED CONTROLLER

A small separate unit [see bottom of p35], EAT's speed controller takes low-voltage DC power from a plug-top power supply unit and synthesises the appropriate AC current for the two motor speeds. In standby mode, the central button will be lit green. Touch the 33 or 45 button, and its LED will flash blue until the correct motor speed is reached, when it will glow solid blue (this takes about 12-20 seconds). No fine speed adjustment is provided.





Looking imposing if rather 'blingy,' the 10in C-Note arm fitted to the C-Sharp is described as 'a completely new design which combines all advantages of a unipivot arm with a Cardan design'.

It's hard to discern what's actually inside that big bearing housing. On top is a knurled button which, when unscrewed, comes out complete with a downward-

pointing pivot about the size of a very large drawing pin. EAT's blurb only states that 'The unipivot in the middle helps the bearing to be less loaded'.

Whatever the secret of the bearings, the

C-Note has the stability of a conventional gimbal type. So it doesn't wobble all over the place like a unipivot, but is easy and comfortable to handle; and there is almost no bearing play in the lateral direction. There is play in the vertical direction, but if the bearing design is good this will not be critical, as the bearing will always be loaded by the mass of the arm.

Arm height adjustment for VTA is carried out by slackening the two hex bolts that lock the sliding arm pillar in position in its mounting. At the front end, the sleeklooking tapered carbon-fibre arm tube is completed by a polished aluminium

headshell. Its straight sides and squaredoff front edge make for an easy visual reference and, in fact, installing cartridges could hardly be simpler. EAT says that inside the tonearm is a special siliconbased grease to damp tonearm/cartridge resonances 'by more then 50%'.

The large-diameter rear counterweight is not so heavy as it looks because it is

> a hollow shell filled with a sorbothanetype material. A small accessory disc can be bonded on, allowing the arm to comfortably balance out even quite weighty moving-coils. Balancing and

tracking force adjustment is, as usual, carried out by winding the counterweight forward or back on its stub. The only slightly fiddly aspect is the thread-andweight bias compensator. This is sited inboard of the C-Note arm housing, but the nylon thread must be passed around the back of the housing to hook onto a small peg on its outer side.

LIGHT, BRIGHT AND CLEAN

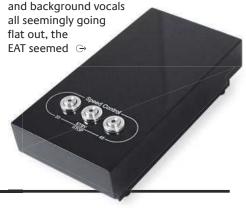
So, although this turntable comes pretty well disassembled, it really proved quite easy to put together and set up. I started by installing the excellent Ortofon Cadenza **ABOVE:** While the C-Sharp shares the E-Flat model's heavyweight oversized platter, it carries an all-new 10in arm. Seen below is the matching. control unit with electronic switching

Black, which worked very well. It gave a strong and commanding sound, with a fine, extended and very well-controlled bottom end, and detailed upper registers.

However, I also had extremely enjoyable results using a Benz Micro Glider SL. Although the bass was not so tight and the mid not so analytical, I felt that the easygoing Benz was subjectively a really good match for this turntable. With the C-Sharp, it always sounded warm and open, and I ended up just wanting to listen to more and more music.

On music with a beat, the turntable had an appealing, lively bounce about it. Listening to funky guitarist Mel Brown and the neat little instrumental 'W-2 Withholding' from Eighteen Pounds Of Unclean Chitlins And Other Greasy Blues Specialties [Bluesway BLS 6064], Brown's trademark tricky blues picking seemed hugely energetic. Brass and organ sounds were light, bright and clean, while the unidentified bass player's great sound came over with immediacy and clarity.

Again, the EAT delivered a meaty and beaty sound on the classic direct-cut I Got The Music In Me with Thelma Houston and Pressure Cooker [Sheffield Lab LAB-2]. In the title track, with horns, keyboards, quitar



A FAMILY PRO-JECT

Jozefina Krahulcova entered the hi-fi business through a family connection, as her sister was married to the valve maker Alesa Vaic. In 1998, while studying at the University of Economics in Bratislava, Jozefina started working for Vaic. She learned all she could about the art of making valves and she represented the company overseas. But times changed at Vaic and after only a few years, Jozefina was ready to set up on her own, as EAT. By 2003, she was having KT88s and 300Bs made by Tesla Vršovice in Prague, and it was while looking for a distributor in Austria that she met her husband-to-be Heinz Lichtenegger, owner of Pro-Ject. In 2006, Jozefina was able to purchase Tesla, moving the factory from its original site in Vršovice to Hloubětín, to the north east of Prague. Finally, with the facilities of Pro-Ject available, EAT was able to enter the turntable arena.

'The C-Sharp

delivered a meaty

and beaty sound

with classic LPs'

160+ brands already booked with more booking weekly

SOUND& **HE BRISTOL SHOW**

20th – 22nd February 2015. 10 a.m. – 5 p.m. every day at the Bristol Marriott City Centre Hotel



Buy Your Tickets Online & SAVE over 15% www.bristolshow.co.uk

ADMISSION

Adults One Day £12 on the door I £10 online Two Days £20 (Additional £8 payable at Show)

Students & Seniors (over 65) £10 on the door | £8 online Two Days £16 (Additional £6 payable at Show)

Students receive a FREE pair of in-ear headphones worth £9.95!

(Valid Student ID card required)

Accompanied Children Under 16 FREE

BRANDS INCLUDE: Acoustic Energy, Acoustic Research, Air Audio, Alpha Design Labs (ADL), Anthem, Anthem AV Solutions, Apollo, Arcam, Aria, Armour Home, Art Vinyl, artsone, Astell & Kern, Atacama Audio, Atlas Cables, Auden Distribution, Audio Detail, Audio Note, Audio Technica, Audiolab, Audiomica, Audionet, Audiopaest, AV Tech Solutions, AVTech Media, Bedini, Benchmark Media Systems, Blue Horizon, Bowers & Wilkins, Box-design, Bricasti Designs, Brodmann Acoustics, Bryston, Canor Audio, Canton, CEntrance, CH Precision, Chord Company, Chord Electronics, Clearaudio, Cocktail Audio, Computer Audio Design, Computers, Lulipited, Creatity, Cyrus, Pall Devidet, Physrox (Vind. Duraputer, Ellipited, Carolthy, Cyrus, Pall Devidet, Physrox, Vind. Duraputer, Ellipited, Carolthy, Cyrus, Pall Devidet, Physrox, Vind. Duraputer, Ellipited, Carolthy, Cyrus, Pall Packlet, Physrox, Vind. Purputer, Ellipited, Carolthy, Cyrus, Pall Packlet, Physrox, Vind. Purputer, Ellipited, Carolthy, Cyrus, Pall Packlet, Physrox, Vind. Purputer, Vind. Physrox, Vind. Phy Computers Unlimited, Creaktiv, Cyrus, Dali, Devialet, Diverse Vinyl, Dynaudio, EHD, Elac, Entotem, Epson, Exposure, Flamingo Audio, Focal, Fostex, Furutech, GloveAudio, Goldring, Grado, Harbeth Audio, Heed Audio, Hegel, Henley Designs, Hi-Fi Choice, Hi-Hi-Fi News, Hi-Fi Racks, Hi-Fi World, Hi-Fi, HiFi Critic, Home Cinema Choice, Hutter Racktime, IAG, Icon Audio, IFI Audio, in-akustik, IsoAcoustics, IsoTek, Jenving Electronics, JL Audio, JVC, KEF, Keith Monks, Knosti, Kudos Audio, Leema Electro Acoustics, Lehmann, LH Labs, Light Harmonic, LongDog Audio, Mass Fidelity, MCRU, Melco, Michell Engineering, Ming Da Valve Audio UK, Monitor Audio, Music First Audio, Music Hall, Musical Fidelity, MusicWorks, Nagaoka, Nalim Audio, Naim Label, Nordast, Norma, NuNu Distribution, Okki Nokki, Optoma, Ortofon, Paradigm, Peachtree Audio, Pioneer, Playto, PMC, Power Wrap, Pristine Vinyl, Pro-Ject, ProAc, PSB, Q-Acoustics, SCDE, Quad Cuadral, Quadrasjie, RedSpark Music, Rega, REL Acoustics, Rohde & Schwarz, Roksan, Ruark Audio, Screen Innovations, SCV Distribution, Select Audio, Silent Mounts, SIMZ, Simple Audio, Sonic Concept, Sonic Design, Sonneteer, Sony, Sound Fowndations, Spendor, SSC, Stack Audio, Supra Cables, SVT Sunoko-Vent, Sygnifi, TAD, Tannoy, Technics, Tellurium Q, Timestep, Tonar International, Townshend Audio, Trinnoy, Unison Research, van den Hul, Vinyls Best, Vivac, Wharfedale, What Hi-Fi? Sound and Vision, Wilson Benesch, Yamaha and more booking weekly... Computers Unlimited, Creaktiv, Cyrus, Dali, Devialet, Diverse Vinyl, Dynaudio, EHD, Elac Wilson Benesch, Yamaha and more booking weekly...

HI-FI, HOME CINEMA, PROJECTORS, VINYL - THEY ARE ALL AT BRISTOL

And there are lots more surprises in store...

- The UK's largest and longest running Hi-Fi and Home Cinema Show - now in its 28th year!
- Visit the What Hi-Fi? magazine stand for a demonstration or an answer to any questions you might have
- Pick up a fantastic Show baraain... with great deals on most purchases!

£10K OF HI-FI TO BE WON IN THE WHAT HI-FI? SHOW COMPETITION

- Speak directly to the journalists, the manufacturers and the designers!
- Enjoy Cabot Circus shopping and entertainment area with easy parking right next to the hotel

gobuz

Exclusive 2 Month* FREE trial of Qobuz

Receive a FREE Qobuz 24bit Hi-Res Show Album

*Requires credit card validation

GETTING TO THE SHOW

BY TRAIN: Temple Meads Station is a short distance from the Marriott.
BY CAR: From the M4 take J19 (M32 - Bristol).

Follow signs for City Centre and RAC signs to the Show. For those using satellite navigation systems the hotel post code is BS1 3AD. Easy local parking in Cabot Circus car park and

Broadmead and Bond Street NCPs.



www.bristolshow.co.uk

For the latest news and a full list of brands exhibiting please visit our website













In association with





ABOVE: The C-Note arm's counterweight is damped by a sorbothane-like polymer while the nylon thread for the bias outrigger sits in a groove around the arm base, improving stability. The arm/signal out and PSU sockets use colour-coded connectors

unfazed and kept things well balanced. You could perhaps have asked for a bit more detail and definition in the brass, but the background vocals stayed sweet and didn't squawk, and the overall effect was great, a sound full of vitality.

Turning to more studio-based productions, the EAT seemed to be quite good at humanising a relatively processed recording. On Stevie Winwood's 1980 solo album Arc Of A Diver [Island ILPS 9576], Winwood overlaid all the instruments himself to a point where his vocals often seem almost buried in the mix. Yet with EAT they were always intelligible and impactful, so that the songs made sense.

ATTRACTIVE LIVELINESS

On intimate, small-scale classical recordings, the EAT could evince a quite convincing sense of space, and at the same time its lively quality was attractive. With Beethoven's Septet played by the Ensemble of St James [CfP CFP 40059], the players came to life in a very appealing way with characterful woodwind sounds. The spacious sound of the recording venue was made quite apparent, and the performance took on a good sense of scale since the double-bass was given its full weight and authority in the ensemble.

It was great to find some recent audiophile releases that really lived up to their promise with the EAT C-Sharp, and one of these was the expanded 2LP issue of Last Dance by Keith Jarrett and Charlie Haden [ECM 378 2250]. I was immediately captivated by Jarrett's spiky, instantly-communicative piano on 'My Old Flame', while Haden's string bass had terrific energy and presence, with a seemingly extra deep response from the EAT giving weight and gravitas. Even after Jarrett had turned the tune inside

out and upside down, Haden's bass solo burst out of the speakers with real passion.

After this, it was easy to relax into the superbly-crafted production of Eric Bibb's 2003 Natural Light [Pure Pleasure PPAN 018]. On a highly-arranged track like 'Tell Riley' the backing musicians were nicely spread behind Bibb across a wide, fairly deep soundstage. And it truly conveyed the rich sound of Bibb's baritone vocals on a more intimate, introspective song like 'Circles'.

Finally I had a great mono blast with a record that's very far from audiophilia, The Best Of Elmore James [Sue Records/Island ILP 918]. As with other compilations of American material on this short-lived imprint, the overall sound makes you suspect that the tracks were simply dubbed from the US 45s.

But it was this compilation, released less than two years after James's death in 1963, that brought 'Dust My Blues' and 'Shake Your Moneymaker' to impressionable young British ears. On the C-Sharp, this music seemed every bit as vibrant and exciting as it ever did back then. (b)

HI-FI NEWS VERDICT

With this model, EAT really is offering a lot of turntable for the money. The Czech company's unique advantage, of course, is its close association with Pro-Ject's manufacturing resources, and many of the design decisions and material choices seem to reflect the latter company's expertise. Yet this is still an eminently luxurious product and, if the looks grab you, the sound certainly won't disappoint.

Sound Quality: 83%

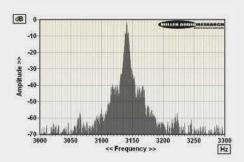


REPORT

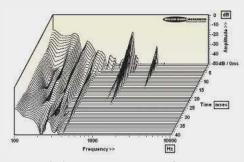
EAT C-SHARP/C-NOTE

As supplied, the new C-Sharp may have required a protracted 9sec start-up time and run slightly slow (-0.32%) but its performance was otherwise very close to that of EAT's E-Flat [HFN Jan '12]. Wow and flutter was well controlled with peak figures of 0.03% and 0.04% respectively [see Graph 1, below]. The -68.9dB through-bearing rumble improved by about 1dB through-the-groove (the clamp made little difference here) but alongside the inevitable hum and noise components seen on almost all turntable rumble spectra, the C-Sharp has a clear mechanical mode at 79Hz and minor harmonic at 158Hz, the primary at -65dB relative to the pick-up output at 1kHz/5cm/ sec. We saw the same modes with the EAT E-Flat...

The partnering C-Note tonearm has what EAT describes as a 'traditional Cardan bearing', or pin and block unipivot, which offers good stability and low friction (<10mg) in both planes. This new arm design features an alloy bearing housing, a tapered carbon-fibre tube and bonded alloy headshell, the latter contributing to the high overall 15g effective mass but allowing the use of low compliance MCs with 'heavyweight' mounting hardware. The carbon tube's main bending mode is deferred to a reasonably high 205Hz with another mode at 280Hz and harmonic at 420Hz, all quelled by the tube's internal damping (carbon tubes can exhibit high-Q resonances if undamped). The sharp mode at 1.08kHz and harmonic at 2.22kHz are linked to the alloy headshell and fingerlift, but are short-lived. Readers may view full QC Suite reports for EAT's C-Sharp turntable and C-Note tonearm by navigating to www. hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division). The -0.32% absolute pitch error will be inaudible



ABOVE: Cumulative tonearm resonant decay spectrum, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec

Turntable speed error at 33.33rpm	33.23rpm (-0.32%)
Time to audible stabilisation	9sec
Peak Wow/Flutter	0.03% / 0.04%
Rumble (silent groove, DIN B wtd)	-69.8dB
Rumble (through bearing, DIN B wtd)	-68.9dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-56.8dB
Power Consumption	11W
Dimensions (WHD)	500x135x400mm

CARTRIDGE

Medium-output moving-coil cartridge Made by: Charisma Audio, Canada Supplied by: Real Hi-Fi Ltd, UK Telephone: 01257 473175 Web: www.charismaaudio.com; www.realhi-fi.com



Charisma Audio MC-2

Canada's Charisma Audio builds on the success of its MC-1 cartridge with the addition of a new and more esoteric model to its range. Is its sound as colourful as it looks? Review: Adam Smith Lab: Paul Miller

ales of music on vinyl topped one million in 2014 - the first time since 1996 - and there are many who would argue that vinyl enthusiasts haven't enjoyed such a wide choice of hardware and software since the 1980s. When it comes to turntables, the market is not solely the preserve of the big manufacturers. There are plenty of smaller businesses fighting hard for a slice of the action and this is just as true when you look at the market for pick-up cartridges: surely one of audio's most challenging products.

One of the more recent arrivals here is Ontario's Charisma Audio, and its route to market has followed a somewhat different path to that of most of its rivals. It has now released its second product, the MC-2 cartridge retailing at £1150 and bigger brother to the original MC-1.

Charisma Audio was set up in 2000 by a group of audio enthusiasts who aimed to 'import premium quality stereo components with incredible performance but affordable prices into Canada'. The founder was Bernard Li, who had previously held the role of contributing editor to Audiotechnique magazine in Hong Kong. Li had been a vinyl enthusiast since the mid-1970s and had collected an impressively varied selection of LP replay equipment.

With names like Scheu Analog, Well Tempered and EMT within his portfolio, Li then took another step forward by introducing his own products. The first to carry the Charisma Audio badge, in 2011, was the Function loudspeaker stand and this was followed by a stylish metal record weight called the Solid. So far, so fairly conventional. However, I'll

RIGHT: This shot clearly shows Charisma's rigid sapphire cantilever emerging from the magnet's front yoke. The cross-shaped 'moving coil' is also visible on its compliant mount

wager eyebrows were raised at the release of Charisma Audio's third product, at the beginning of 2014, since it was none other than a moving-coil cartridge.

SAPPHIRE ROD CANTILEVER

This first design was the MC-1, retailing for £750 and offering a stylish machined body, a titanium alloy cantilever and a line contact stylus. It was well received and, in short order, the MC-2 followed. However, Li is clearly not a man to rest on his laurels, as the company's website is currently offering sneak previews of a prototype third model, the Reference One.

This was officially unveiled at the Toronto Audio and Video Entertainment Show in October '14 and it features an Amboyna Burl wooden body. The MC-2 moving-coil reviewed here is much closer to the MC-1 design. It still has the same machined aluminium body, giving it a relatively high overall mass of 12g but is finished in a pleasing shade of light turquoise blue (as distinct from the red of the MC-1). More importantly, the MC-1's

titanium cantilever has made way for a sapphire rod on the MC-2 – although it is still tipped with the same super fine line contact nude diamond stylus.

The other notable difference is to be found in the MC generator, where 6N OCC copper wiring has been changed to single crystal high purity copper. Other than this, the two specifications are quite similar, although Charisma Audio specifies an increase of 5kHz in upper frequency extension for the MC-2, over the 20kHz limit of the MC-1.

Amusingly, the generator assembly in both models is the source of no small amount of speculation amongst vinyl fans. Many seem to have taken one glance at it and confidently announced that it's a Benz Micro construction. Bernard Li, however, is playing his cards close to his chest and not revealing his sources. Even Matthew Jameson of UK importer Real Hi-Fi, who has known Li for 15 years, is not privy to the whole story behind the cartridge's manufacturing heritage.

That said, however, he did manage to quash some of the internet rumours by confirming that no, it's not a Benz Micro, and no, it's not made in China!

Speaking directly to Li, he confirmed that he is very happy with the cartridge's design and it more than meets the

> mystery supplier. His aim was to obtain an open and airy sound with good neutrality, and he cites the semi-enclosed body as a

strict criteria that he set his

strength here. Having found some open-bodied designs too stark-sounding and enclosed models too dull, the halfway house approach has proved to be just the ticket. In addition, he also confirmed that his MCs are designed to offer a generous output, use high quality wiring and employ a well-damped suspension. This final criterion has resulted in the







use of a special rubber formulation that is claimed to be more flexible and less prone to ageing than standard polymers.

Regardless of who made it, the cartridge is very well constructed and finished, and comes in a neat wooden box with accessories in a small velvet

bag. These comprise hex-head M2.5 bolts for mounting plus a suitable allen key. The cartridge body features threaded holes and the depth of these is generous. I found no trouble mounting or aligning it - the chunky

body helping greatly in this respect.

GRIP AND INSIGHT

For evaluation purposes, I fitted the Charisma Audio MC-2 cartridge to an Audio Note Arm Two/II mounted on my Michell Gyro SE but also made use of an SME 309

tonearm on a Sony TTS-8000 turntable [see HFN Sept '14]. Both decks fed an Anatek MC1 phono preamplifier and then into a Naim Supernait amplifier and out through PMC Twenty.24 loudspeakers.

One of my regular cartridges for home use is an Audio-Technica AT-OC9MLII which

> I appreciate greatly for its crisp and exuberant detail, and I soon realised that Charisma Audio's new baby is highly likely to appeal to fans of the OC9, too. It has a magnificent grip, insight and fabulous

sense of clarity that cuts right into the heart of recordings, but without ever 'spitting' or giving a sense of harshness.

Much as I love the OC9, it occasionally teeters on the edge of brashness unless carefully optimised. The MC-2, however, had no such issues, although it is worth

LEFT: The vertical notch on the MC-2's front aids cueing (despite its curved profile) while the broad, flat top suface and threaded bolt holes promise a secure fit to all substantial tonearms

noting that it can be a little edgy until the recommended 50 hours of run-in time has elapsed. I spent a fairly solid weekend listening to it at first and Friday-night tracks revisited on Sunday afternoon were most definitely more fulsome and smoother.

With vertical tracking force set at the recommended 2g, the MC-2 proved to be a most capable performer. At all times it imparted a reassuring sense of being firmly locked into the groove and gave no hint that it was ever likely to mistrack or suffer from sibilance. Even some older recordings that were originally of less than high quality and had been well-used sounded more confident and focused when played along by the MC-2.

A STABLE FOCUS

At the top end, the line contact stylus tip makes its presence felt by simply not making itself obvious: ie, the treble was pure, clean and spacious, giving a lovely sense of air and depth to performances. Fortunately this did not seem to reflect any sense of artificial brightness but a feeling that the MC-2 was simply bringing to the fore what was there. Again, the underlying focus offered by the cartridge held images stable within the soundstage and offered a vivid window into the performance.

In midband and in spatiality terms, the MC-2 continued to impress. It set up a commendably vivid central image that projected beautifully out from the loudspeakers. Malia's performance on the track 'Claire Cadillac' from her Convergence LP with Boris Blank [Universal 374-593-2] was truly superb with each subtle vocal inflection easily distinguishable. The Charisma Audio cartridge offered an exceptional sense of realism and scale and, with my eyes shut, the notion of a truly in-the-room performance was very strong.

In terms of instrument definition, the MC-2 met all challenges with ease. It rendered every type of music with a lifelike and detailed perspective and typically ensured that very little was lost within the mix. Equally, everything that was there sat nicely defined within its own space, and never seemed to be vying for attention alongside other performers or instruments.

The upright bass and bass guitar that interplay superbly in Bert Kaempfert's 'A Swingin' Safari' from his *The Taste* Of Kaempfert box set [World Record →

BUILDING FROM SCRATCH

There are a surprising number of cartridge manufacturers who still build their own internal generator assemblies. In Europe, possibly the best known is Ortofon in Denmark, but further south we find Benz Micro in Switzerland and Clearaudio in Germany. Also in this part of Europe is van den Hul in The Netherlands, with A J van den Hul winding his cartridge coils by hand and finally tuning each cartridge individually. Moving East, Lyra creates its own designs under the watchful eye of Yoshinori Mishima, and Koetsu Japan still winds its own coils manually. More unusual are the offerings of Soundsmith in the USA. As the official re-manufacturer of Bang & Olufsen's replacement cartridges it has considerable experience in the construction of these moving micro cross designs, which are a variant of the moving-iron topology. The company also makes the remarkable Strain Gauge models such as the SG-200 [HFN May '10] based around a concept that dates back to the '60s.

'The treble was

pure, clean and

spacious, giving a

lovely sense of air'

"I don't know these guys from Germany but the sound was fantastic..."

Michael Fremer Stereophile, T.H.E. Show Newport 2013





BERLINA-SERIES

EDITORS' CHOICE.

We are happy to receive a very special award at the end of this year: Besides the Editors'-choice-award in "The Absolute Sound" this year the major award was reaching the top of the all-time-ranking of our BERLINA RC 9 in Germany's "Audio" like the RC 11 did in "Stereoplay"!

The secrets that we keep: Unique loudspeaker-technologies by sophisticated mathematics and the use of components of highest quality.

Get more information about our loudspeakers and our dealers online or call us:

Office $+44\ 1563\ 574185\cdot Mobile\ +44\ 7967\ 697990$





LEFT: Another view of Charisma Audio's precisely aligned sapphire cantilever and exceptionally robust outer alloy body. The cartridge pins are gold-plated and well spaced to accommodate most tonearm leads/tags

Club SM190/195] were expertly intertwined by the MC-2 and it set the whole track bounding along with a joyful enthusiasm.

At the bass end, I found the Canadian newcomer to be eminently capable. As mentioned, it laps up rhythms and offers plenty of precise low end detail, all the time imparting just the right amount of warmth to the upper bass region. As a result, the sound offered by the MC-2 strikes a near perfect balance with its well-rounded bass never straving too far off course, sounding neither bloated nor over-blown.

At times, though, I felt a little more outright punch at the very bottom end might not have gone amiss. The drum strikes on Mazzy Star's 'In Your Kingdom' from *Seasons* Of Your Day [Rhymes of an Hour Records, Rhymes004] suffered from a slight lack of impact compared to the very best. A change of turntable from the Gyro SE to my Sony TTS-8000 did help out here, the Sony's direct-drive motor adding a frisson of extra bite.

A STRESS TEST

Ultimately, however, I never really found this to be a serious issue. Attempting a more strenuous test in the form of 'Waiting In Vain' from Bob Marley And The Wailers' Legend album [Island BMW1] saw the Charisma rise to the challenge superbly and pound out the track's fine bass line with aplomb. Again, that very last ounce of weight was a little reticent, but the sheer timing precision and the taut rhythms of the performance meant that this

never made its presence felt as a deficiency; the overall result was just too good to worry about.

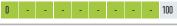
Again and again during my time with the MC-2 I found myself drawn to well-recorded music that was full of detail. The way in which the cartridge took these performances, spread them out into an expansive whole and presented them with precision and a sense of effortlessness was captivating.

The hands sweeping along the percussion chimes at the start of 'Giverny' from Chris Rea's On The Beach [Magnet Records WX 191] was nothing short of a masterclass in detail with its crisp insight and rock solid placement within the soundstage. Fortunately, as the track continued, things remained just as cohesive and controlled, with the MC-2's dependable gravitas and spatiality promising - and delivering a splendid result.

HI-FI NEWS VERDICT

The Charisma Audio MC-2's bloodline may be something of an enigma, but to let this put you off securing an audition would be a grave mistake. This pick-up builds on the strengths of the MC-1 to offer an impressively well-rounded performance across all sorts of music. More importantly, while the asking price is hardly beer money, the MC-2's sound quality remains competitive with the best MCs at £1000.

Sound Quality: 85%

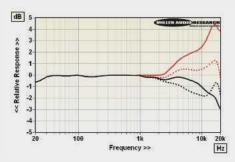


CHARISMA AUDIO MC-2

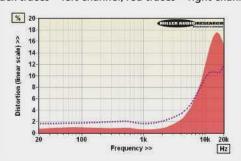
With a recommended tracking force range of 2.0g ±0.1g and tested at 2.0g, this medium weight MC proved to be a more than adequate tracker, surmounting the 70µm groove pitch, clearing both channels at +15dB (315Hz lateral cut, re. 11.2um at 0.5% THD) and mistracking with equal symmetry at the top +18dB level (5% THD). Indeed, and in all respects aside from its lateral and vertical frequency response, the MC-2's generator seems very symmetrical in design. It looks akin to a Benz Micro design but my measurements don't show a direct parallel with any of the Swiss brand's more recent models. So the MC-2 offers a very useable $635\mu V$ output – significantly higher than its rated $420\mu V$ – with an acceptable 0.3dB channel imbalance.

The fine line contact diamond is beautifully finished although the practical VTA (with parallel armtube) is closer to 26° than 20° just as the dynamic compliance is a little 'softer' at 17cu than Charisma's suggested 10µm/mN. A 9-10g effective mass tonearm puts the resonance at 8-9Hz, so I'd certainly recommend sticking with low to medium mass partners.

Unequalised distortion is a low 2.5% (1kHz/5cm/sec) while equalised THD varies from 0.6-20% lateral to 2-14% vertical [see Graph 2, below]. The lateral/vertical responses are reasonably symmetrical too but it's the L/R symmetry that's wayward here, the right channel markedly 'hotter' than the left at +3dB/10kHz versus -1dB/10kHz [see Graph 1, below]. Readers may view a comprehensive QC Suite test report for the Charisma Audio MC-2 pick-up by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: Frequency response curves (-8dB re. 5cm/ sec) lateral (L+R, solid) versus vertical (L-R, dashed). Black traces = left channel, red traces = right channel



ABOVE: Lateral (L+R, solid) and vertical (L-R, dashed) tracing and generator distortion (2nd-4th harmonics) vs. frequency from 20Hz-20kHz (-8dB re. 5cm/sec)

Generator type/weight	Moving coil / 12g
Recommended tracking force	1.9-2.1mN (2.0mN)
Sensitivity/balance (re. 5cm/sec)	635μV / 0.33dB
Compliance (vertical/lateral)	17cu / 19cu
Vertical tracking angle	26 degrees
L/R Tracking ability	75µm / 75µm
L/R Distortion (–8dB, 20Hz-20kHz)	1.1-23.5% / 0.61-17.5%
L/R Frequency resp. (20Hz-20kHz)	+0.6 to -2.9dB / -0.5 to +4.8dB
Stereo separation (1kHz / 20kHz)	28dB / 18dB

"I have to say, I was blown away by the sound of the DirectStream..."

> John Bamford – Hi-Fi News



"The DS is a game changer... The DS gets my highest recommendation"

Karl Sigman – Audiophilia

Pioneering world class audio products

40 years in the making, Hi-Fi's Holy Grail of sound has arrived in PS Audio's new DirectStream DAC.

PS Audio's reference DAC is a game changer. The unique DirectStream DAC features hand written, discrete, perfection based conversion that uncovers all the missing information that has been hiding in your digital audio media for all these years. CD's, downloads, high-resolution PCM or DSD based media are expertly upsampled in the DirectStream, to ten times DSD rate and output as pure analogue directly into your power or preamplifier.

The sound is simply astounding. However don't take our word for it, instead take your music to one of our approved PS Audio dealers listed below and discover why DirectStream will redefine your listening experience.

The search is finally over. It's time to rediscover your music collection.

































Reviewer quotes:

"It's easily the best DAC I've ever heard in my system, making digitally-recorded music sound better than I've ever heard it"

Vade Forrester – The Absolute Sound

"I witnessed the best sound quality I've ever heard from these DSD recordings"

> John Bamford – Hi-Fi News

"The DirectStream offers the best way we've yet encountered to convert "digital" music in to real music".

Marja & Henk – 6moons

"Analogue lovers sensitive to "Digititus": form an orderly queue..."

Hi-Fi News

"The DirectStream represents a new benchmark in audio reproduction... in my view the PS Audio DirectStream is the most musically and technically capable device of any type that I've ever had the pleasure to evaluate"

Frank Alles - Stereotimes

Customer quotes:

"A joyous experience awaits with every CD played".

DM – Shropshire

"With most components you get used to them and they cease to impress but the DirectStream keeps delivering the goods consistently. The magic never stops... Nothing but the music".

IS – West Midlands

"Through all other digital sources, instruments are electronic, while through DirectStream they all sound real".

GN – West Midlands

"In my experience never before has there been a game changing component like PS Audio's Perfect Wave Direct Stream DAC. It completely re-defines hi-fi as we have known it! Easy enough to wax lyrical about definition, soundstage, space, transients, musicality etc, but what it does best of all is put this huge smile on your face which just won't go away. Much of this is the sheer pleasure of what you are hearing, but it is also the realisation that the years of searching are over, you have finally found what you have been looking for."

RB - Suffolk

For existing PS Audio customers who already own a Perfect Wave DAC Mk2 – an upgrade path to the DirectStream DAC is available for you.

Please contact your approved PS Audio dealer, listed below, for more information.

LOUDSPEAKER

Two and a half-way hybrid electrostatic loudspeaker Made by: JansZen Loudspeaker Ltd, Ohio, USA Supplied by: Sound Setup Ltd, Gloucestershire, UK Telephone: 01242 506446

Web: www.janszenloudspeaker.com; www.soundsetup.co.uk Price: £5499



JansZen zAl.l

This hybrid US electrostatic speaker comes with a fine pedigree and promises great results Review: **Steve Harris** Lab: **Keith Howard**

ere in the UK, 'electrostatic' tends to mean 'Quad' and vice versa. But on the other side of the Atlantic, the great pioneer in this field was Arthur A Janszen. Today, hearteningly, you can still buy a JansZen electrostatic speaker that's designed and made in the USA. Here we're looking at the smaller of two current models, the £5499 JansZen zA1.1.

During World War II, Janszen was working on hydrophone technology at the Harvard Underwater Sound Laboratory [see boxout, below]. He developed an electrostatic transducer to serve as a high-quality reference sound source. Later, he worked in his own time to develop an electrostatic unit for hi-fi.

In 1954, Janszen left Harvard to set up Janszen Laboratory, Inc, building speakers that teamed his electrostatic tweeter with an AR bass unit. He also developed a full-range electrostatic speaker. Then in 1959, Janszen Lab's assets and know-how were transferred to KLH, Janszen himself becoming a KLH vice president, and the now-legendary KLH Nine was born.

Janszen's elder son David also followed an engineering career, in various fields. In 2004 he decided it was time to put his own personal electrostatic speaker research and development into practice. So, in early 2005, the famous name re-entered world of high fidelity, with the new JansZen company, and a large and

imposing speaker, called the JansZen Model One.

COMPACT FORM

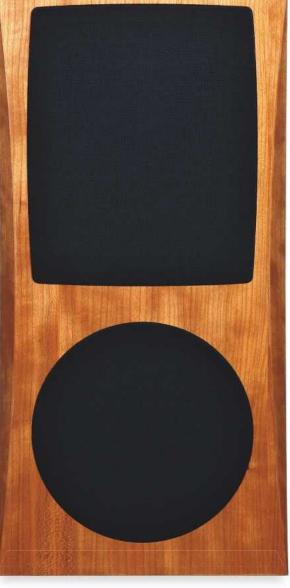
Currently, while the Model One awaits the implementation of new R&D, the main focus is on the zA2.1 and zA1.1, both also hybrid electrostatic designs. The larger zA2.1 is an unusual, compact yet imposing floorstander, having two electrostatic panels per speaker with bass units above and below.

You could perhaps describe the zA1.1 as a compact standmount or large bookshelf speaker, but it bears little resemblance to conventional models in those categories.

Frequencies below 500Hz are handled by a 7in (175mm) aluminium-coned dynamic drive unit with sealed-box loading, supplemented in the 30-60Hz range by a second, similar unit firing to the rear.

Its low bass output can be

adjusted by a two-position switch. 'Stand' is conceived to give an extended bass response with the speaker around 600 to 800mm from the rear wall. With the speaker placed close to the wall, the alternative 'Bookshelf' setting



claims a suitable reduction of output in the 50Hz region.

Hidden behind the upper, rectangular grille is the 180mm wide by 200mm high electrostatic panel, which covers the whole frequency range above 500Hz. Essentially a modern development but derived from the original JansZen units, it is built on a tough, injection-moulded ABS stator frame, which carries an array of 132 electrode elements. The electrostatic membrane has a 'thickness less than one-fifteenth of a sheet of 20lb paper', which is in the order of a few microns.

WALLED-OFF ESL PANEL

JansZen's approach, where only the front radiation of the panel is used, is quite different from that of 'see through' electrostatic speakers that operate as

BIRTH OF THE 'STATIC

The first full-range 'static was designed in the UK by Peter Walker and David Williamson, and sold as the Quad ELS from 1957 until 1981. But two Americans play a part in the electrostatic story too. The first was Frederick V Hunt, who in 1954 showed that a constant-charge push-pull electrostatic speaker was inherently linear in operation and offered exceptionally low distortion. Previous push-pull electrostatics, without a diaphragm of high surface resistivity, did not retain a constant charge and were very non-linear as a result. Fellow American Arthur A Janszen worked under Ted Hunt at the Harvard Underwater Sound Lab where electrostatic transducers were used for testing hydrophones, and in 1954 Janszen Lab Inc launched the first high fidelity electrostatic tweeter, which operated from 1kHz to >20kHz. This was the forerunner to a full-range design, prototyped in 1957, which went on sale in 1959. KH





LEFT: Behind the upper grille lies JansZen's electrostatic panel, covering mid and treble frequencies. The heavyweight, well-crafted cabinet also houses two 7in cone drivers, one facing to the rear [see p47]

above 5kHz. JansZen makes intelligent use of drive unit characteristics to give the desired dispersion and response without additional electronic filtering.

As a further refinement, the zA1.1 has a variable treble-cut control, with a range of 6dB. This works by reducing the polarising voltage to the treble section, so when you turn the control down, you have to wait some time for the existing panel charge to leak away before the change takes effect. When

'Armatrading's

heartfelt vocal

came to life with

fabulous realism'

turning the control up, however, the effect is immediate.

Unlike the larger zA2.1, which comes

with a solid hardwood baffle, the zA1.1 is constructed from veneered MDF, but the build and finish quality is still excellent. Veneer options are figured maple, cherry and walnut. For various

reasons, the grilles are not removable.

Most manufacturers tell you to set up their speakers so that the tweeter is at ear height. With the JansZens, this is *essential* rather than merely desirable, due to the restricted vertical dispersion. If you walk around them while they're playing, they will sound dull and dead until you sit with your head at the correct listening height.

However, an addition that JansZen already offers for the zA2.1, and has promised soon for the zA1.1, is the airLayer side-firing tweeter, which 'adds air and sense of spaciousness in [the] listening area,' and will 'add highs when standing' or moving around the room.

JansZen does not manufacture stands, but supplies certain designs on request. The importer can also advise on suitable types. Here, I used a pair of strong and well made 600mm-high PMC stands.

ARTISTRY REVEALED

I found the JansZens puzzling, intriguing and finally illuminating. Starting off with a few well-worn audiophile favourites, I kept finding that the results were not quite what I expected.

Imaging was precise and could be very convincing, but did not spread generously around the speakers. With careful adjustment of toe-in, though, I could get a fairly good sensation of depth behind and between the boxes. There was also a notable absence of 'height' in the image, an aspect which, while probably illusory, can often help make for a relaxing and enjoyable effect. With the JansZens, you were conscious that the sound was being presented to you at ear level.

It was almost as if these speakers homed in on the most natural recordings. On Joan Armatrading's Whatever's For Us on CD [Castle Classics CLACD 143] these speakers were merciless in revealing the excesses of Gus Dudgeon's production sound on the opening 'My Family' and left you feeling it was just too overdone. Yet on a song like 'City Girl', the JansZens could bring Armatrading's heartfelt vocal to life with fabulous realism.

Something similar happened with Marta Gomez's *Entre Cada Palabra* [Chesky JD301]. In the somewhat cluttered opening

track, 'Maria Mulata' the electrostatic mid and treble faithfully reproduced all the tinkling percussion effects so beloved of audiophiles, but the result seemed less than overwhelming.

But on the later, perhaps more perfected tracks, the JansZens had my jaw dropping at the pure artistry of the singer, that lovely voice conveyed in living and breathing perfection. The speakers really brought home her wonderful musicality and rapport as her vocals become intertwining duets with respectively flute, clarinet and accordion.

dipoles, radiating sound to the rear as well as to the front. The zA1.1's ESL panel has its own space that is walled off from the rest of the interior of the enclosure. Behind the panel, acoustically absorptive material attenuates the ESL's rear radiation.

'The materials and their configuration behind the ESL panel also damp the natural resonance of the membrane in such a way as to provide something quite close to critical damping,' claims JansZen.

A major design aim was to give the speaker maximum independence of the room by controlling its dispersion, while being 'not overly beamy'. Dispersion is specified as $\pm 20^{\circ}$ in the horizontal plane, and $\pm 10^{\circ}$ vertically. Each panel is electrically split down the middle, so that midrange signals go to the whole panel but only one half receives treble frequencies

FEBRUARY 2015 | www.hifinews.co.uk | 45



ROKSAN

K3 Integrated Amplifier & CD Player

Roksan's K3 Series of hi-fi electronics put sound quality first. But more than just sounding great, they're also effortlessly simple to use and come in a design that anyone would be proud to put at the centre of their music system.

The K3 Integrated Amplifier has been built with today's discerning audiophile in mind. Boasting five Line Level inputs, an exceptional Moving Magnet phono stage and superior aptX® Bluetooth technology; it is an ideal hub for all manner of audio sources. There is power and bass drive in abundance, with superb sound staging and engaging detail that is both refined and enjoyable.

The K3 CD Player is a high-quality source component that delivers a rich, almost analogue, sound performance that perfectly matches the Integrated Amplifier's delivery. When using these products together, you have a package that is truly unrivalled for the price.





With the Mozart Oboe Quartet from The Art of Janet Craxton [BBC Records BBC CD 635], the sound had a flowing naturalness. The most minute and subtle detail of the sound fell naturally into place, revealing the completeness of Craxton's control of tone, vibrato, and the shaping of each phrase.

TANGIBLE STRING SOUNDS

The more I listened to the JansZens, the more I felt that they were really made for classical music. They excelled on recordings old and new. With the classic 1959 RCA recording of Heifetz in the Mendelssohn Violin Concerto [JVC JMCXR-0010], these speakers really sang. Heifetz's violin was sounding out naturally with not a trace of the glassy hardness that this recording so often evokes. At the same time, the orchestra had real shape and form, with individual sections and instruments heard seemingly in clear air, while the bass end provided a solid foundation.

I soon found, too, that with a nicely-produced solo instrument album, the JansZen sound could be truly exquisite. A good example was Earl Klugh's Hand Picked [Heads Up HUI-33201-02], where the quitarist's rich nylon-string sound became completely tangible. Finger and string noises were audible, just realistic, not intrusive. On tracks where he duets with quest artists, the sound of the two guitars was wholly intelligible and natural.

LEFT: Along with the usual binding posts and a mains inlet to power the electrostatic panel, the rear panel carries a two-position bass compensation switch and a variable treble-cut control

Given a more synthetic kind of studio production, the JansZen could sometimes seem uncomfortably revealing. On Olivia Trummer's Fly Now [Contemplate CMN14005], her reprise of the title tune features a strident synth sound, and this was a moment when I might have turned the treble down quickly, if that were possible. But then came the sweet relief of the straightforward acoustic trio on 'Don't Ask Love', when all seemed right again.

The JansZens could be really satisfying on rock as well. Turning to Boz Scaggs' Greatest Hits Live [Gray Cat GCD 4001], it did a good job with Scaggs' anthem 'Lido Shuffle' even though I felt things could be a little looser and weightier. But on the dramatically atmospheric 'Somebody Loan Me A Dime' that pure, transparent midrange conveyed Scaggs' melancholy vocal to perfection.

With Muddy Waters' Folk Singer [Chess/HDRCD1001], the big splashy soundstage was spectacular enough, and you could luxuriate in the ringing, echoey guitar sounds, but it was Waters' voice that became really compelling. Although the presentation did not flatter the artifices of this recording, it still seemed as if all the usual impediments of the reproduction chain had been left aside, and the speaker let you straight through to the essence of the performance. \circ

HI-FI NEWS VERDICT

This design is really the fruit of more than one lifetime's research and development, and it tackles the usual problems, particularly of room interaction, in unusual and effective ways. It produces all the lovely, natural purity that should be the hallmark of an electrostatic, without any real drawbacks. Perhaps not for headbangers, but a loudspeaker which, when used as intended, can be endlessly rewarding.

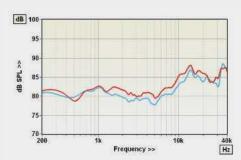
Sound Quality: 85%



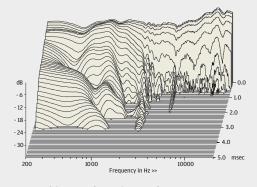
JANSZEN ZA1.1

JansZen claims 85dB sensitivity for the zA1.1 but while we recorded 84.2dB by simple averaging of the response data, the pink noise figure came in significantly lower at 82.1dB. Nominal impedance is 80hm but this sits poorly with our measured minimum of 2.5ohm which suggests a 3ohm figure is more appropriate. Impedance phase angles are quite well controlled but even so the EPDR (equivalent peak dissipation resistance) dips to a minimum of 1.5ohm at 954Hz, so the zA1.1 presents a tougher than average load to the amplifier.

Measured on the axis of the electrostatic tweeter, with the tweeter output level set to max, the 1m frequency responses show a slight downwards trend up to 5kHz beyond which the upper treble output rises by about 8dB [see Graph 1, below]. As the tweeter level control affects output above 1kHz, this excess is better tackled by listening slightly off-axis. Because of this treble rise the response errors are a little high at ±4.7dB and ±4.6dB respectively (200Hz to 20kHz). Pair matching error, over the same frequency range, was a little disappointing at ±1.8dB but careful adjustment of the tweeter level controls would reduce this. Diffraction-corrected nearfield measurement showed the bass extension, with the rear panel switch in the 'Stand' position, to be a poor 70Hz (-6dB re. 200Hz) but the roll-off is slow and judicious placement near a room boundary will help. In the 'Bookshelf' switch position there is less than 2dB lowering of output at 100Hz then, oddly, the response falls off a cliff at 80Hz. The cumulative spectral decay waterfall [Graph 2, below] evinces fast treble decay with only low-level resonances. KH

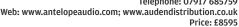


ABOVE: The treble rise above 5kHz is arguably better tackled by listening off-axis (for the flattest response)



ABOVE: Cabinet and 'static panel resonances are very well controlled. Mild cone modes are all that remain

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	84.2dB/82.1dB/81.3dB
Impedance modulus min/max (20Hz–20kHz)	2.5ohm @ 675Hz 10.2ohm @ 6.2kHz
Impedance phase min/max (20Hz-20kHz)	-41° @ 20Hz 40° @ 1.5kHz
Pair matching (200Hz–20kHz)	±1.8dB
LF/HF extension (-6dB ref 200Hz/10kHz)	70Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	1.5% / 0.2% / 0.3%
Dimensions (HWD)	430x210x330mm





OUTBOARD USB DAC

Antelope Audio Zodiac Platinum DSD/Voltikus PSU/ 10M Rubidium Atomic Clock

Antelope Audio has tapped into its bespoke digital clocking and pro-audio heritage to offer a three-box USB DAC/preamp solution for discerning domestic audiophiles Review: **John Bamford** Lab: **Paul Miller**

ntelope Audio's latest product for high-end hi-fi systems, its Audiophile 10M atomic clock, was launched in the latter part of 2014, and has been designed to complement the company's top-of-the-range Zodiac Platinum DSD DAC introduced earlier that same year: a two-box combo priced at £4249 with its accompanying Voltikus power supply unit. Adding the Audiophile 10M clock turns the Zodiac Platinum into an ambitious three-box system priced at a heady £8595, but promising state-of-the-art playback of PCM and DSD digital media.

FINE-TUNING OPTIONS

It's considerably more than just a D-to-A converter, as the centrally positioned volume control dominating its fascia might suggest. As well as being a headphone amplifier – with two headphone sockets on the front panel – it's also a preamplifier with two analogue inputs alongside its USB, AES/EBU and four S/PDIF (two RCA and two Toslink) digital inputs. Active inputs are auto-detected. One of the analogue inputs is single-ended (RCA), while the other is balanced – via ¼in TRS jack sockets, which are commonly used for balanced audio connections in professional gear.

Volume control is analogue, the rotary knob governing an encoder for the unit's relay-switched precision resistor ladder attenuators (separated for left and right channels) to adjust gain in 1dB increments. Both single-ended (RCA) and balanced (XLR)

RIGHT: Antelope's reed relay-stepped volume control, output stage and power supply sits on the Zodiac's uppermost PCB while the LatticeXP2 FPGA (the host processor) and dual PCM1792 DACs are located on the lower board

analogue outputs are provided; these can been trimmed in ranges from +14dBu to +26dBu (XLR) and 0dBV to 12dBV (RCA). Headphone output impedance can also be switched between '0' and 120ohm and the headphone amplifier's output attenuated by 12dB if required. Finally there are three 'de-jittered' digital outputs on the unit's busy rear panel: two S/PDIF (RCA) and one AES/EBU (XLR).

Digital-to-analogue conversion is courtesy of TI/Burr-Brown quad DACs – two DACs working in parallel per channel – while a major feature of the Zodiac Platinum is its custom designed upsampling employed by FPGAs running at 64-bit. Antelope Audio's USB implementation is also bespoke, with ASIO drivers provided

for Macintosh, Windows and Linux operating systems. Supporting PCM up to 384kHz and DSD up to 128Fs via DoP, the Platinum's synchronous upsampler can convert 44.1/48kHz to 352.8/384kHz and single-rate DSD [DSD64/2.8MHz] to quad-rate DSD256. I say 'can' because this feature can be disabled if you prefer to play out files at their native sampling rates – or perform strategic upsampling in player software in your computer.

THE VOLTIKUS PSU

There are no user-selectable filter options in the Zodiac Platinum, Antelope's designers choosing to employ a fixed linear-phase filter. While most functions can be addressed in set-up menus accessed by





variously pressing and holding the power and source buttons on the fascia, computer audiophiles will be delighted by Antelope's provision of a comprehensive software control panel which allows remote control of the DAC directly from the screen of your computer. It provides convenient access to all essential controls – source selection, volume, upsampling on/off, etc - and provides a number of additional features such as a peak level meter, adjustment of the front panel LEDs' intensity, product registration and feedback to

the manufacturer, and firmware updates. A nicelyformed metal infra-red handset [see p51] is also included in the package.

Antelope's cutelynamed Voltikus power supply is priced around £800 as an upgrade

option for the company's Zodiac Gold DAC/ preamp/headphone amplifier introduced three years ago. But with the firm's latest DSD-capable (and better spec'd) Zodiac Platinum the Voltikus PSU is mandatory as the Platinum has no on-board supply. A discrete linear supply employing a shielded

toroidal transformer, Linear Technology LT1021 voltage reference and multi-stage regulation, the Voltikus design has been tweaked for accompanying the Platinum and hooks up via a supplied cable terminated with mini XLR connectors. Power on/off is governed by a rocker switch on the rear panel where there is also a ground/lift switch to eliminate hum caused by ground loops.

And finally we have Antelope Audio's brand new Audiophile 10M outboard atomic clock, an ultra-accurate 10MHz

> rubidium reference generator designed to 'get ultimate sonic performance from your system' [see boxout]. It has two outputs and can be used with two devices that support 10MHz input clocks - typically studio

components – simultaneously.

Connection to the Zodiac Platinum is via a supplied BNC cable. It increases the price of ownership substantially, and it only references USB audio signals.

Considering the elaborate three-box component rig and the need to install the

ABOVE: Buttons for power, input, mono and mute are duplicated on Antelope's nifty software control panel (see text) and IR handset. Display shows volume, input or sample rate

ASIO driver and desktop utility, it might sound like something of a palaver to get this top-of-the-range Zodiac Platinum up and running. Don't be put off. Installation was a breeze and everything worked without a hitch.

DEEP IMAGES CREATED

From the outset I could hear that the performance was straight out of the top hi-fi drawer. It sounds detailed and vivid, delivers a beautifully 'open' and threedimensional soundstage, packs a powerful low-end punch, and has a mellifluous easyon-the-ear quality. I settled in to several days' enjoyable auditioning...

Recent months have found me exploring the musical subtleties of several modern jazz offerings released on the Norwegian independent Hubro imprint. One of my favourite ensembles is the innovative trio Splashgirl, whose 2012 album Field Day Rituals [Hubro CD2520] showcases piano, double-bass and drums, artfully crafting sparse sonic landscapes in which the spaces around their instruments play as important a part of their compositions as the notes themselves.

The Zodiac Platinum's strikingly clear and deep imaging capability helped make inventive tracks such as 'Dulcimer' and 'Mass' utterly captivating, the latter's immense low frequency rumblings resolved exquisitely by the Platinum to help describe the music's dark and spooky underbelly. The piano and drum kit sounded highly authentic, with realistic splash and crash to the cymbals, together with naturally decaying reverberation tails.

In a completely different vein, Lorde's hit song 'Royals' from Pure Heroine [Universal Music NZ 602537519002] sounded equally splendid, the Platinum combo depicting most faithfully the →

RUBIDIUM BEAT

When Igor Levin founded Antelope Audio in 2005 he already had 15 years' experience in professional audio, his US-based AardSync brand providing highprecision audio and video clocking systems for recording and mastering studios, and large-scale pro-sound rigs for live concerts. Antelope Audio continues to design and manufacture a plethora of professional studio gear alongside its range of specialist hi-fi DAC/preamps, built in its factory in Bulgaria. Precision clocking remains at the company's very core, its proprietary 'oven controlled clocks' and 64-bit 'Acoustically Focused Clocking' (AFC) algorithm featuring in all its current hi-fi DACs. Says the firm of its Audiophile 10M rubidium atomic clock: '100,000x more stable than a typical crystal oscillator, the hyperfine energy levels of the non-radioactive rubidium core enable high-precision timing to 0.03 parts per billion, which equates to a loss of just one second per 1000 years!' Introduced for the first time as a hi-fi component by Antelope, to ensure ultimate performance from its Zodiac Platinum DAC/preamp, its design is based on the brand's Isochrone 10M studio master clock which, we're told, many engineers believe to be 'the best sounding clock' ever produced.

'Detailed and

vivid, it packs

a powerful low-

end punch'



40 years in the making, the NPC is the ultimate in vinyl and analogue reproduction.



The NPC combines a state-of-the-art pure analogue phono pre-amplifier with a high-end analogue PCM/DSD converter. Play anything from your turntable or analogue source via the NPC into your pre-amp. Or record your vinyl collection through the NPC onto your computer and play it back via a DAC.

The result? Your new digital vinyl collection brought to you in the original analogue sound.

Price: £1,799.00

For a no obligation demonstration please contact one of the following approved PS Audio dealers:

North West - Brian & Trevors 0161 766 4837. East - Analogue Seduction 01733 350878.

Midlands - Oxford Audio Consultants 01865 790879 / Midland Hifi Studio 01902 380083 / Art Audio Salon - 07878 566814.

South East - Guildford Audio 07979 515577 / Audio Venue W5 0208 567 8703 / Audio Venue Maidenhead 01628 633995 / Stereo Now 07870 192618.



ABOVE: The DAC [centre] offers USB (with a 10MHz clock input on BNC), coaxial and Toslink S/PDIF, and AES/EBU digital ins, re-clocked S/PDIF and AES digital outs plus RCA and balanced XLR analogue outs. The 10M [right] provides two clock outputs

fragility evident in the 17-year-old New Zealander's voice. The wallop of the bass drum was exhilarating. And, once again, the clarity allowed easy observation of individual elements - and the 'sonic spaces' - in the recording, along with the multi-tracked harmonies and the didgeridoo-type droning bass effects buried in the mix.

Meanwhile densely-produced prog-rock recordings such as Squackett's infectiously melodic 'Tall Ships' from A Life Within A Day [Esoteric Antenna EANTCD 21002] were seemingly put under a microscope. Ex-Yes bassist Chris Squire's characteristically twangy Rickenbacker sound stood out clearly among the multiple layers of keyboards, guitars and reverberant voices as I listened all the way into the recording studio's mixing desk. Steve Hackett's acoustic guitar sounded simply heavenly.

UPSAMPLING THE FILES

Meticulously crafted high resolution audiophile recordings naturally were brought to life by the Platinum setup. Switching between WAVs, AIFFs and FLACs of high sampling rate PCM recordings from the 2L label and native DSD recordings from Channel Classics was automatic and seamless throughout the time I spent evaluating the Antelope combo.

The best of these sounded wonderfully authentic – as indeed they do when I play them through my resident T+A DAC 8 [HFN Oct '12]. But of course this was designed at a time when 192kHz/24-bit audio was the 'state of the art' in USB interfacing. More recent designs, like this Zodiac Platinum, are mandatory if you want to play DSD recordings in



their native format and access rare 'demo' files at 352.8/384kHz.

Comparing like-with-like, listening to CD rips and hi-res PCM files up to 192kHz/24-bit, I'd describe the T+A DAC as 'faster' and more incisivesounding, the Zodiac Platinum adding a little more subjective bass warmth and a gentler, more relaxed demeanour through mid and treble.

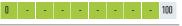
All the while I'd deliberately been listening to Antelope's three-box combo with its upsampling turned off, wanting to hear files in the 'raw'. Does switching-in the Zodiac Platinum's upsampling make an appreciable improvement to its sound quality? As when observing the subjective differences between various digital filters, it's impossible to determine what sounds 'best', as the results tend to vary from recording to recording, and preferences would depend on the 'character' of your system.

For the most part I couldn't determine that upsampling PCM files to 352.8kHz made a difference that would easily be heard under blind listening conditions. However, with simple recordings (the aforementioned Splashgirl a case in point) upsampling did appear to add a little more clarity and openness, sharpening the focus. ①

HI-FI NEWS VERDICT

Admittedly expensive – especially with its optional Audiophile 10M rubidium clock - this is a topflight component combo that delivers spectacular sound. But it sounds tremendous even without the 10M. £4249 for the two-box Zodiac Platinum combo isn't unreasonable if you factor in what you might otherwise spend on a latest-spec DAC, an audiophile headphone amp and a separate preamp for a high-end system.

Sound Quality: 87%

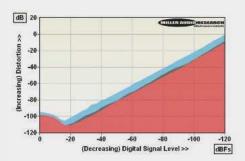


REPORT

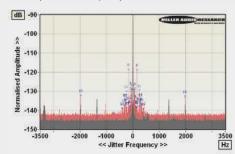
ANTELOPE ZODIAC PLATINUM

This is a very solid performer although much of its subjective 'character' is as likely due to the analogue output stage as the proprietary digital housekeeping. As supplied, the DAC is configured to offer a maximum 3.9V output through its (balanced) 55ohm XLRs where distortion rises slightly from a minimum of 0.0002-0.0004% (20Hz-20kHz) at -20dBFs to 0.0013-0.0018% at OdBFs [see Graph 1, below] irrespective of choice of digital input or use of the 10M clock. Similarly, the A-wtd S/N ratio remains impressively wide at 114.5dB, low-level resolution good to ±0.1dB over a full 100dB dynamic range and the frequency responses very extended at -0.13dB/20kHz (44.1/48kHz media), -0.7dB/45kHz (96kHz files) and -3.1dB/90kHz (high-res 192kHz files).

Antelope's 10M external clock only services the proprietary asynchronous USB input, not the S/PDIF or AES/EBU inputs. However, while there is no significant difference in the general performance of the Zodiac's S/PDIF and USB options there is a distinction in cumulative jitter with the 'unclocked' S/PDIF emerging the superior at just 18psec [black spectrum, Graph 2 below] and the 10M-clocked USB at 78psec [red spectrum, Graph 2]. Clearly the most thermally stable master clock cannot guarantee that jitter won't 'sneak in' at some other point across the digital audio path up to, and including, the DAC chip itself. However the sharp delineation of these spectral lines indicates little or no noise-like jitter which bodes well for fine, sharplyfocused stereo imaging. Readers may view comprehensive QC Suite test reports for the Antelope Audio Zodiac Platinum DAC's S/PDIF and USB inputs by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Distortion vs. 48kHz/24-bit digital signal level over a 120dB dynamic range. S/PDIF input (1kHz, red) and USB input (1kHz, black; 20kHz, blue)



ABOVE: High resolution jitter plots with 48kHz/24-bit data (S/PDIF, black; USB, red). 10M clock used for USB

Maximum output level (Balanced)	3.90Vrms at 55ohm
A-wtd S/N ratio (S/PDIF / USB)	114.8dB / 114.5dB
Distortion (1kHz, OdBFs/–30dBFs)	0.00125% / 0.00016%
Dist. & Noise (20kHz, OdBFs/–30dBFs)	0.0018% / 0.00045%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0dB to -0.1dB/-0.7dB/-3.1dB
Digital jitter (48kHz/96kHz/USB)	18psec / 38psec / 78psec
Resolution @ -100dB (S/PDIF / USB)	±0.1dB / ±0.1dB
Power consumption	15W (5W standby)
Dimensions (WHD) / Weight	430x100x360mm / 13.5kg

INTEGRATED AMPLIFIER

Integrated amplifier. Rated at 200W/80hm Made by: Krell Industries LLC, Orange, CT, USA Supplied by: Absolute Sounds Ltd, UK Telephone: 0208 971 3909 Web: www.krellonline.com: www.absolutesounds.com



Krell Vanguard

Though massive powerhouses continue to define Krell, their entry-level integrated amps are the industry's best-kept secrets. The new Vanguard continues the tradition Review: Ken Kessler Lab: Paul Miller

ade in the USA': funny how four little words can be such a game-changer. Krell took some unwarranted stick because its uncommonly desirable S-550i [HFN Jul '13] was made in China, and a malevolent wing of the enthusiast community just couldn't let it go. Lesson learned, as the back of the new £4500 Vanguard proudly states 'Made in the USA'. All that's missing is four bars of Springsteen when you switch it on.

DIGITAL MODULE ON THE WAY

Sharing the look of the Krell Duo 300 power amp [HFN Oct '14], the Vanquard is a slightly lower-powered (200W versus 300W) integrated derivative. We are reviewing the entry-level, line-only analogue version. A panel on the back beckons the fitting of a digital module currently in preparation that will add: Bluetooth aptX wireless connection for streaming from computers, smartphones and tablets; two HDMI inputs and an HDMI output; one each of optical and coaxial inputs, as well as the activation of the front panel-mounted USB input.

For those who wish to buy a Vanguard now, the price of the module has not yet been announced, but rest assured it can be fitted by a dealer after purchase. Also enabled by the upgrade is Ethernet music streaming, controlled through dedicated iOS and Android apps.

The Vanguard's bold look owes much to the chassis design and construction of the new Krell Foundation preamp/processor, hence the bulge on the front panel as per the Duo. Inside is a typically massive power supply with a 750VA toroidal transformer worthy of overseeing an amplifier with the above-cited output, which doubles to a claimed 400W into 4ohm [see Lab Report, p55]. It also runs coolly thanks to a pair of surprisingly quiet, thermostaticallycontrolled fans.

RIGHT: A single 750VA toroidal transformer (with multiple taps) feeds independentlyregulated supplies for the Class A preamp and proprietary, fan-cooled power amp

Krell's Illusion preamplifiers provided the topology of the balanced and fully-discrete Class A preamp stage. Moreover, like earlier Krell integrateds, it offers user-configurable options viewed from a rather archaic display on the right that reminded me of my circa-1983 Tandy TRS-80 portable computer. To the designers at Krell: I've seen £69 MP3 players with better displays!

Once you get past the vintage dot-matrix graphics, the panel accesses a menu to allow you to configure input naming and input level trim. At the back, along with the Ethernet and remote control inputs, are three line-inputs labelled S1, S2 and S3 in traditional Krell fashion, plus one stereo balanced input

using XLR. The latest generation goldplated WBT speaker terminals are a joy to use, and accept bare wire or spades. Also at the back are a three-pin IEC mains input and the primary power on/off switch.

While the remote is filled with 35 buttons, most await the aforementioned digital module and the option of controlling a Krell CD player or transport. What the all-metal remote control duplicates from the front panel are the power on/off, the diamond pattern of five buttons for navigating the menu and adjusting volume, plus three buttons for source, menu and mute.

That impressive bit of sculpture in the middle of the fascia contains lighting which







glows red in stand-by and blue in operating mode. To its right are the menu display, which lights up when you change source or volume, the IR sensor below it, and a USB input above. Just about the only thing Krell left off, no doubt to the consternation of younger or more modernised listeners, is a headphone socket.

All of this is housed in a compact chassis. This being a Krell, it weighs a not inconsiderable 17.7kg out of the box. chunky but manageable and easily unpacked by one person. And thanks

to the lack of clutter combined with clear labelling, it's up and running in minutes.

(A WIDE SOUNDSTAGE

I assessed this with a wide range of products, not presuming that everyone buying a £4500 integrated amplifier will be running £5000+ speakers. I used the Vanguard with Wilson Audio Alexias, but also Spendor LS3/5As. Sources included line outputs from the Pono and Astell & Kern digital audio players, and Musical Fidelity's M1 CDT CD transport via Cambridge's DacMagic Plus. Cables were Crystal Ultra, including the mains cable.

Tempted though I was to dig out albums on the Vanguard label, I stuck with titles

KRELL'S INTEGRATION

Krell is a serious participant in custom installation and home cinema, so the Vanguard offers a 'Theater Throughput' mode, and 3.5mm jacks for IR input and 12V remote trigger input and output. There are even optional rack-mount ears, as custom installers like to hide the kit. Given the sophistication of the installation

market, Krell has a web server to provide an interface for viewing and setting up the various parameters - eg, via iPad - when the unit is connected to an active network, accessed via the rear-panel Ethernet connection. The display, reminiscent of operating screens from home automation products such as Crestron's, monitors temperature, levels, source in play and other functions.

'With this amp,

mono recordings

enjoyed a real

sense of depth'

that I've been using for regular reviewing duties, or those I know so intimately that they're second-nature. And I'm glad I did, because one proved revelatory: The Kinks' Arthur (Or The Decline And Fall Of The British Empire) [Universal 273 227-4].

It was this disc that revealed instantly

the Vanguard's prime strength. This plays on a theory I have that's both unsubstantiated and illogical, but it's kept me sane for years, so here goes: I firmly believe that every hi-fi component

demonstrates some form of synecdoche that embodies or defines its essential nature. An example would be the sparkling treble of Decca cartridges. What this album exposed in seconds is that the Vanguard creates a fabulously wide soundstage.

Note that I said 'wide', because its front-to-back stage depth is merely OK. But if you like broad vistas, this amp has a wallto-wall spread, without adding any holes in between that shouldn't be there. Central

ABOVE: As with previous Krell integrateds, there is a welcome lack of clutter. Pressbuttons to the left choose sources and set levels, while accessing the menu viewed to the right

images were solid and properly positioned, but the extremities were just as clearly defined instead of entering some cloudy morass. In the alternate version of 'Drivin' the far right acoustic guitar's harmonics bled in just enough to create a sensation of air between it and Ray Davies' vocals.

To the left and slightly forward, the harmonising Kinks and tinkling piano sounded like a Greek chorus, with their off-stage presence adding a proscenium effect. Gentle drums at the back... it was all-embracing yet utterly two-channel. This amplifier knows how to resolve image placement with the finesse of a Denon DL103 moving-coil cartridge.

Curiously, the Vanguard seemed to betray its ancestors with bass that reminded me more of valve amplifiers than solid-state behemoths. Infatuated as I am with The Four Seasons due to the spell cast on me by Jersey Boys, I couldn't resist

> 'Big Girls Don't Cry' on Jersey Beat [Rhino Box Set 8122795939], the snappy bass enjoying - as it does on most early Four Seasons' hits - a key role, along with substantial percussion. With the Vanguard. it was free of any aggression of the solid-state variety.

And yet transient attack was more than satisfying, also vividly evident with the brass punctuation. If this

seems mildly schizophrenic, I'm at a loss to explain it: the effect was consistent from CD to whatever transition is undertaken via Pono. It was even more noticeable with the opening to 'Walk Like A Man', though the Vanguard conveyed all of the weight →





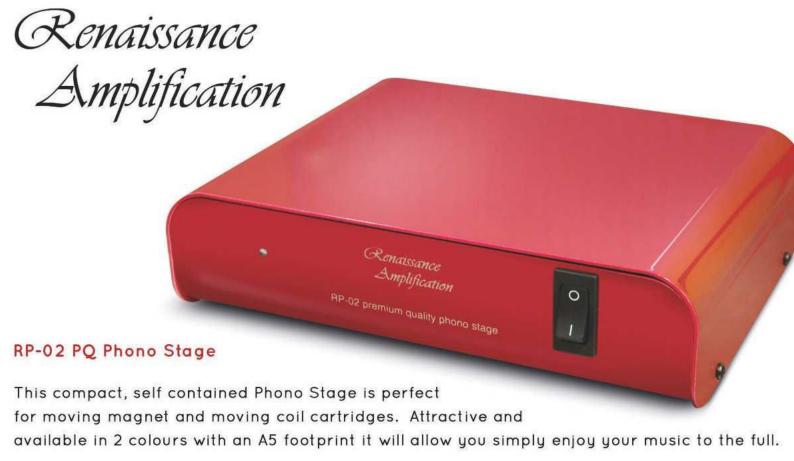
Quintas 6500 Surround System

Quadral meet the need for excellent acoustic signal reproduction by launching this 5.0 speaker system. The combination of dynamic, crisp sound, solid quality workmanship and a sleek yet very elegant appearance brings you a high performance at a surprisingly low cost that will amaze you.



SOUND&VISION
THE BRISTOL SHOW

YOU CAN SEE AND HEAR THESE FANTASTIC BRANDS AT THE BRISTOL SOUND & VISION SHOW FRIDAY 20TH - SUNDAY 22ND FEBRUARY 2015 @ MARRIOT CITY CENTRE HOTEL, BRISTOL BS1 3AD







ABOVE: The Vanguard accepts three line inputs plus one balanced (XLR), along with Ethernet and power triggers. Blank plate covers aperture for optional digital card

that recording possesses. And we're talking mono.

Which reveals another strength, if not one as impressive as the soundstage width: this amp resolves layers of sound such that mono recordings enjoy a sense of depth on a par with the admittedly truncated front-to-back stage of the Vanguard playing stereo CDs.

FITS IN WITH THE SYSTEM

Bob Dylan's Blonde On Blonde [Mobile Fidelity UDSACD 2097] using the CD layer – was a great showpiece for vocal textures. following a few hours' worth of Frankie Valli's falsetto.

One needs a sense of humour to wallow in the weirdness that is 'Rainy Day Women #12 & 35' and its drunken feel superimposed on a militaristic beat. Dylan's near-sneer presents a contrast with the Dylan of nearly a half-century later, but the Vanguard integrated presents enough detail to portray both with absolute precision.

The transfer of the title track on George Formby's When I'm Cleaning Windows - His 52 Finest 1932-1946 [Retrospective RTS 4104] is a fabulous means of finding out what a full-range system can extract from what must surely be a limited bandwidth recording - but it was no less satisfying than much newer recordings. While the spectacular ukulele break wasn't as clearly delineated as I've heard through much dearer integrateds, it was still a source of wonder.

By this stage, I was in a quandary. The S-550i had left me speechless because of its seemingly unlimited power, but it lacked a digital option: crucial in the current climate. And



although the Vanguard sounds less muscular, less authoritative, it may be more 'listener-friendly'.

The late S-550i reeked of audiophilic precision, demanding sources and speakers that probably inhabited a price category well above it. Still, it was a bargain of a powerhouse regardless of its Asian origins. The Vanguard, too, is a bargain, but of a different sort: it seems more forgiving of the rest of one's system. It rose to the brutal challenge of the Alexias, if not guite testing its bottom octaves, while it also seemed at home with small monitors like the LS3/5As.

Throw on Kodo: Heartbeat Drummers of Japan [Sheffield Lab CD-KODO] if you want to hear what it does in the lowest reaches of one's hearing. Fat and rich, with sufficient attack, if not quite delivering the hammer-blow of the S-550i.

If a component can exhibit 'attitude', then this amp never sounds sniffy about what it's fed, nor what it is feeding. I even had a quick burst with the sub-£120 Pioneer SP-BS22-LR speakers. OK, they belie their size and price, but they're hardly what you'd hook up to an amp costing £4.5k. The Krell loved 'em, made 'em sing. (b)

HI-FI NEWS VERDICT

By now, you must know what to expect of Krell: the Vanguard is a solid, commanding performer, and in this guise, something of a bargain. Maintaining a Krell tradition, it is minimalist in its fascia accoutrements, without sacrificing anything important. Add a balanced input, full remote control, user-adjustable settings and the forthcoming digital module, and you'll have a 'proper' Krell for the 21st century.

Sound Quality: 86%

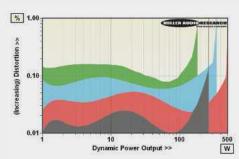


REPORT

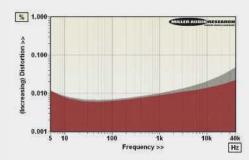
KRELL VANGUARD

Rated by Krell at 200W/8ohm, its Vanguard amplifier achieves a higher output in practice - 2x250W/8ohm and 2x380W/4ohm with sufficient headroom to accommodate peaks of 270W and 510W into 8 and 40hm loads under dynamic conditions (all <1% THD). A tight 13.6A current limit restricts the output to 350W/185W into 2/10hm [see Graph 1, below] making the Vanguard about half as capable as Krell's 300 Duo [HFN Oct '14] into low impedance speaker loads. While Krell's literature states the Vanguard 'borrows design and construction from its iBias amplifiers' it's still not particularly clear whether the power amp is actually an iBias topology or not. Power consumption is improved over the 300 Duo at 74W (idle) while its distortion characteristics are different - the Vanguard offering a far steadier 0.015-0.025% THD over its full 200W rated bandwidth with a 0.0067-0.017% spread at 10W/8ohm from 20Hz-20kHz [see Graph 2, below].

Its frequency response has a flat treble out to -0.13dB/ 20kHz, falling to -2.1dB/100kHz, while the 0.067-0.09ohm output impedance suggests there will be minimal variation with speaker load over the 20Hz-20kHz audio range. The S/N is only a little above average at 89dB (re. 0dBW, balanced input) but the Vanguard does offer an (unnecessarily) huge 48dB gain. Just 11mV input is required for a 1W/8ohm output. The Cirrus CS3318-based volume control offers unity gain at its '072' setting with 32dB of range over the top 50 steps from '100' to '150'. Readers may view an in-depth QC Suite report for Krell's Vanguard amplifier by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 40hm (red), 20hm (cyan) and 10hm (green) speaker loads. Maximum current is 13.6A



ABOVE: Distortion vs. frequency from 5Hz-40kHz at 10W/8ohm (left = black; right = red)

Power output (<1% THD, 8/4ohm)	225W / 380W
Dynamic power (<1% THD, 8/4/2/10hm)	270W 510W 348W 185W
Output impedance (20Hz–20kHz)	0.067-0.090ohm
Frequency response (20Hz–100kHz)	+0.01dB to -2.06dB
Input sensitivity (for OdBW/200W)	11mV / 162mV (Balanced in)
A-wtd S/N ratio (re. OdBW/200W)	88.8dB / 111.8dB
Distortion (20Hz-20kHz re. 10W/80hm)	0.0067-0.017%
Power consumption (Idle/Rated o/p)	74W/650W (10W standby)
Dimensions (WHD) / Weight	434x105x445mm / 17.7kg

NETWORK AUDIO LIBRARY

Network-enabled media storage device Made by: Buffalo Technology, Japan Supplied by: Kog Audio Ltd, UK Telephone: 024 7722 0650 Web: melco-audio.com; www.kogaudio.com



Melco N1Z

Japanese high-end brand turned storage giant Melco thinks you really need a hand-built audiophile server to get the best from your network-stored music. Do you? Review: Andrew Everard Lab: Paul Miller

here are two schools of thought when it comes to the storage of digital audio and its delivery to the listener: one suggests that data is data, and nothing really matters beyond its accurate delivery until you get to the output of whatever digital-to-analogue conversion option you choose. 'Digits are digits' is the maxim: data is either there completely or fails completely, with no 'grey areas' in-between.

ON THE OTHER HAND...

That's the blue corner: in the red corner are those - including Japanese company Melco, maker of the £6200 N1Z we have here - who'll tell you that all kinds of external factors upstream of the DAC can affect the way a digital file sounds. Believers swear by anything from the choice of USB, Ethernet or even SATA cable to the brand of hard drive used to store the music, and the type of power supply used both on it and associated equipment in the digital chain.

Whole corridors of the internet are kept busy with the jousting between those claiming science and logic on their side, and the 'Yes, but just listen...' camp. This is neither the time nor the place to pin one's colours to one mast or the other, beyond an admission that my current set-up uses a couple of NAS units, one acting as the backup for the other, connected directly via unmanaged Ethernet switches to my music playback hardware, rather than through the main internet hub/router.

Yes, there's still a connection to an Apple Airport Extreme, allowing various wireless iThings to access the playback hardware and thus control it; but beyond that the household data requirements and those of the music system are kept separate: a further NAS unit on the data network looks after the backing-up of documents, pictures and the like. The

RIGHT: The N1Z is distinguished not only by its use of dual Buffalo-built 'audio grade' 0.5TB SSDs but also by the twin switchmode PSUs feeding its LAN and USB/SDD/Marvell 88F6281 microcontroller-based mainboard

data cables are Belkin's finest – or rather standard – in a range of colours, just so I can trace them back to what connects to what; the music NAS drives are QNAPs running WD Red drives, and that's about it.

I have in the past tried a number of audio-oriented storage solutions, and found them entirely satisfactory: they run silently enough for their task, but then the hidden-away QNAPs are hardly intrusive unless running backup tasks between themselves (which they do in the dead of night for exactly that reason). They offer rapid access to the music they store (as do the QNAPs, despite currently containing

around 5TB of music), and they offer a range of ease when it comes to loading content, from built-in CD drives for music ripping to the need to shunt music around on USB sticks or portable drives, at least during initial set-up.

SIMPLE FASCIA CONTROLS

Melco clearly believes it has something new to bring to the party, which is why it now has two Melco Music Library units on sale via UK distributor Koq Audio. The hand-assembled N1 models are described as 'the first storage system optimised for high resolution audio', and they come in





two flavours: the N1A, with 4TB of internal storage, is £1600, while the flagship N1Z has just 1TB of SSD drives inside.

That last number should have got the 'I could build a computer to do that for £250' brigade harrumphing off into the distance, so let's endeavour to find out what these Melco units are all about...

Well, the N1A and N1Z are the result of a two-year development project designed to optimise storage devices for audiophile requirements, both in engineering and operation: the idea is that these units

aren't hobbled by the need to perform a range of storage functions from music streaming to computer data back-ups, and are designed to sit in the equipment racks with the rest of a system, not snaffled away in that

domestic server room commonly known as the cupboard under the stairs.

The N1Z is a slimline unit, at about two-thirds standard audio component width and a little over 60mm tall and has minimal controls on the front panel: no more than a power switch, and up/down/ enter/back buttons, the last of these also turning the display off when the player is showing its home screen. To the rear

are three USB connections, for importing content, expansion with extra drives and backup, and a fourth to power or recharge connected USB devices. Add a pair of Ethernet ports – one for connection to the network, the other for a direct connection to a network player - and that's about it.

Inside, there are two 500GB Buffalo Audio Grade SSD units. These are designed for music server applications, with special management algorithms to suit the 'once stored not often changed' nature of music, rather than the need for continuous

> optimisation when a drive is constantly rewriting data – as it might in computer or backup applications.

Completely separate and isolated switchmode power supplies are used for internal and external

data communications together with extra Melco smoothing capacitors in the N1Z over and above the N1A design. The flagship player is also built in a very solid case using H-frame panels for added rigidity, and it sits on wooden isolation feet supplied by Japanese company TAOC.

A precision clock is used in the cause of jitter-elimination, and the high-quality Ethernet ports are optically isolated on

ABOVE: OLED panel and up/down/enter/ back buttons allow the Melco to be set up and customised: the display can be switched off, and power on/off executes quickly

all lines to avoid interference - it's even possible to turn off the LED data transfer indicators in case these create any noise.

The idea is to deliver the cleanest possible data, with no noise on the digital connection, to components downstream of the N1Z – which is another reason for the dual Ethernet outputs: rather than requiring a switch, or to be run through a network carrying other data, the Melco can connect its output directly to a network music player. And once loaded with music, either using USB memory or a simple import routine accessed from the front-panel menu, it can be disconnected entirely from the home network, and combine with the music player to form a standalone front-end for a system.

SIMPLY MORE LISTENABLE At least that's the theory, but there are

some caveats. Because the Melco takes over the role of DHCP server and thus IP assignment, when used directly into a player in 'direct' mode, those players controlled solely by, say, an iOS app are going to have problems. For example, I had to revert to using the player's remote handsets and peering across the room with my Naim NDS and Technics ST-C700 players until I reverted the Melco back into conventional 'network' mode, at which point normal service was restored.

Similarly, to load music onto the N1Z from a network-connected computer you have to go back to 'network' mode.

The question is, of course, how special this dedicated 'player' output mode is, and what effect it has on sound quality. It's plausible that the strategies Melco has adopted to ensure clean delivery of data without glitches and drop-outs have an effect on the integrity of the information being fed to a network music player. When I played devil's advocate by hooking both my main music drive and my music players →

THE MELCO MARQUE

Melco started life as an audio company, founded by Makoto Maki in 1975 – the Maki Engineering Lab Co. Maki is still the CEO of Melco Holdings, which moved into computer peripherals in 1981, and has evolved to become the parent of storage company Buffalo. And it's big: in 2013 it had revenues of almost £550m. So what's it doing in the audiophile world, aside from returning to its roots? Well, the idea of the Melco Music Library models is very much in the tradition of the company's turntables of the past: it launched its first models in 1978, aiming at the very high end with massive platters driven by a heavy duty motor via a thin silk thread 'belt'. The platters started at 12kg and went all the way up to 35kg, being machined to a slightly concave shape to avoid the need for a conventional mat, and the disc was clamped in place with a 2.75kg brass weight. Further mods were carried out by UK distributor Studio Beco, run by Be Yamamura, later to develop the huge Yamamura Churchill horn speakers: even heavier platters and record clamping weights were tried, so those few who could afford the Melco turntables were not only well-heeled, but also well-exercised!

'The sound was

more listenable.

with better detail

and punch'

Guildford

01483 537 577

e

sales@guildfordaudio.co.uk

W.

www.guildfordaudio.co.uk

m.

07979 515 577





FULL FORCE

The magnificent Air Force Two turntable AVAILABLE FROM GUILDFORD AUDIO.

NETWORK AUDIO LIBRARY



ABOVE: Rear panel plays it simple: network and direct player Ethernet connections, plus USB ports dedicated to expansion, back-up and loading of content

via the Virgin SuperHub delivering broadband into the house, then compared the sound with that of the Melco running straight into either of the players, it was clear that the sound was simply more listenable, and appeared to deliver better detail and dynamic punch using the £6200 super-server.

It's not a massive difference, and was more apparent when using the Naim to play 192kHz/24-bit files, or the Technics with DSD content, and much less so with either handling CD-quality music.

Rather than tangible improvements to, say, the tonality of instruments or voices, increased dimensionality to the soundstage or simply being able to hear details previously veiled, there's just a greater sense of presence and realism with the Melco running in 'direct' mode, and the music simply seems an easier listen.

A SIMPLER ALTERNATIVE

However, I mentioned 'caveats' (plural) at the beginning of this section, and here's the big one: anyone sufficiently serious about their network music playback is likely to have storage and player connected directly, and this kind of connection, as opposed to running the music through a do-it-all broadband modem/router, brings just the same gains as are evident when using the Melco.

With a simple and effective switch of the kind I use (the Netgear GS108 eight-port model I bought was around £35, if memory serves, plus about £12 for a linear power supply) there's a definite reduction of 'glare' to the sound (ie, when compared to the modem/router connection), evident in the fact that the music is just more musical.

What is neat about the Melco is that its setup, operation and file-management is well thoughtthrough: it takes just 15 seconds or so from power up to being ready

to work, will shut down in five seconds, and is said to be immune to problems caused by power cuts. I pulled the plug when it was working, and on reconnection it was fine, so I guess that last claim is also proved.

Backup happens automatically if you connect an external drive to the appropriate USB, or you can configure the two internal drives to mirror each other, and any storage added to the expansion port simply appears as extra space.

Oh, and thanks to the internal server software, the Melco can stream just about every file format imaginable, up to and including DSD2.8/5.6. But then again, that's possible on any NAS unit able to run the latest versions of Twonky media server, which has DSD support.

Yes, the N1Z is an intriguing application of audiophile design thinking to something most have previously left to computer storage solutions and - given Melco's history - is a logical coming together of its areas of expertise. But I really struggled to find any real sonic advantage over my existing contentserving solution, which is much less expensive, within the abilities of anyone with minimal computing knowledge, and delivers much greater storage capacity. \circ

HI-FI NEWS VERDICT

The Melco simply allows a good network player to perform very well, but there's no immediate 'rock you back on your heels' gain in sound quality. My 80% Sound Quality score reflects this; and the fact was my digital system sounded as good as it ever has with the N1Z in use. But I stick to my point that I feel such quality is achievable for a fraction of the cost with a well-sorted digital server/switch system.

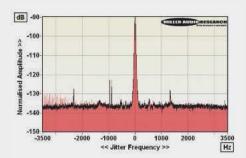
Sound Quality: 80%



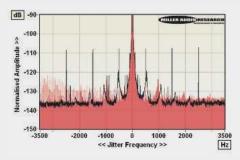
MELCO N1Z

How do you test what is, in essence, an audiophile NAS drive? 'Indirectly' is the short answer, because the Melco N1Z is an intermediate device that stores music files to be accessed, in turn, by your network media player without the need for an external router or switch. It is free of the competing processes that may exist in your home network (either in software or hardware) and also, courtesy of those opto-isolated Ethernet buffers, ostensibly free of any circulating RF earth currents or other spurious noise.

I tested the N1Z with an early sample of Chord's CodeX player, the Marantz NA8005 [HFN Jan '15] and Cyrus Stream XP₂ Qx [HFN Aug '13]. As expected, there were no observable differences in distortion (versus level or frequency), response, output level, linearity or, indeed, A-wtd S/N ratio whether the test player was driven via the QC Suite network (and Netgear switch) or directly via the same test files stored on the N1Z. Jitter, however, was the most likely indicator of 'difference' and here I observed some variation. Chord's CodeX was inherently the cleanest of the trio with jitter of <5psec/10psec/15psec at 48kHz/96kHz/192kHz - a performance unchanged with the N1Z. Similarly, the low-rate noise-like jitter measured with the Marantz NA8005 was utterly unchanged when driven via the N1Z directly [Graph 1, below] although a 'burst' of noise at ~21kHz was evident above the noise floor at -130dBFs [red spikes to the left of Graph 1]. This same pattern of noise was spread across the 48kHz jitter spectrum of the Cyrus XP₂ Qx although the correlated litter was now reduced from 320psec to 200psec. With 96kHz files the additional spurious noise was evident [see Graph 2] but correlated jitter was reduced from 210psec to 150psec and the noise-like clumps at ±550Hz. ±1.1kHz shifted up in frequency but reduced in amplitude. PM



ABOVE: 96kHz/24-bit jitter spectra from Marantz NA8005 over Ethernet with router (black, via QC Suite) and direct without router (red, via Melco N1Z)



ABOVE: 96kHz/24-bit jitter spectra from Cyrus Stream XP₂ Qx over Ethernet with router (black, via QC Suite) and direct without router (red, via Melco N1Z)

LAN (1000BASE-T)	One via router, one direct to player
USB (USB 3.0)	Three ports plus one 5V charger
Digital jitter (Marantz NA8005)	15psec (15psec via PC network)
Digital jitter (Cyrus XP2 QX)	150psec (210psec via PC network)
Power consumption	14W
Dimensions (WHD) / Weight	350x65x370mm / 7kg

HEADPHONE PREAMP

Headphone preamp/USB DAC Made by: International Audio Group, China Supplied by: IAG Ltd, Cambs Telephone: 01480 447700 Web: www.quad-hifi.co.uk; www.internationalaudiogroup.com



Quad PA-One

Quad's first-ever headphone amplifier, the PA-One, marries a preamp, DAC and power source for your cans in a product straight out of the 1950s - 'Hooray!' says KK Review: Ken Kessler Lab: Paul Miller

bjectivity is said to disappear when a reviewer actually buys a component he or she is assessing. It's the reinforcement everyone looks for when they buy anything. Do your buddies approve of your car/ watch/amp? In this case, can a reviewer be impartial when he bought the item in question without even hearing it?

Yes, I coughed up for a Quad PA-One on the strength of a photo from Quad's PR company. It wasn't even a press release and the only thing certain was its retail price of £1199. Awash as everyone in hi-fi is with a plethora of headphones and headphone amps, and given that I'll be reviewing more cans in the next year than the previous 20, I figured I should buy one that adheres to my valve preferences.

SOMETHING FUNKY?

Like other contributors to HFN, I use the Oppo HA-1 [HFN Sep '14] as a reference, along with the Pathos Aurium, but I wanted something, er, funky. It doesn't get much funkier than a mix of vintage valve sound and archaic styling, but with a full complement of digital inputs.

Someone at Quad has a great sense of humour - one who probably drives the new Fiat 500 and uses a fountain pen. This is the best sort of retro, if that's your thing. And it is mine. By virtue of its 'elder Quad' looks alone, like the Quad Vena [HFN Jan '15] the PA-One will charm even the most jaded audiophile.

With the PA-One, Quad is addressing the most powerful trend in home audio. Headphones show no sign of reaching saturation point, and the assumption is that - after people grow familiar with the foibles of their ear-buds and cheesy fashion cans - a substantial number will graduate toward serious, 'audiophile' headphones.

In Quad's case (as with Pathos and others who make headphone amps but not

RIGHT: Lifting the PA-One's bottle cage reveals five tubes: two 6SL7 and 6SN7 double triodes and an EZ81 rectifier. The PSU transformer is screened in its own box at the rear of the chassis

cans), it is also hoped that they'll discover how much better their headphones, even if fed by computers, iPods and tablets, will sound through superior amplifiers. Quad isn't coy about this, stating that 'most high quality headphones never realise their full potential, because they are normally connected to poorly matched amplification.'

Quad's PA-One is truly comprehensive.

Although it features balanced inputs but not balanced headphone outputs, it embraces everything else that the modern headphone fetishist could want. As is now de riqueur, the PA-One accommodates a

wide array of digital and analogue sources, including balanced and single-ended line level inputs, along with line-level outputs via RCA phono sockets. For the digital element, the unit accepts Toslink optical, coaxial and USB. The rear also contains an on/off rocker and IEC three-pin mains input.

So far, so normal, in a world filled with combination DAC/headphone amps. What seduced me - rightly or wrongly - is the valve amp section. Valves have had such a complete and successful comeback from the brink of extinction that they are now merely a choice, like 'fountain pen or rollerball'. And mine is a pro-tube bias.

THAT USEFUL QUAD SLIDER

In the PA-One, the valve complement consists of two 6SL7s, two 6SN7s and

one EZ81. The cage is removed with a supplied, extra-long, thin screwdriver: I suppose tweakers could experiment, but I confess to not having a box full of these particular tubes. Suffice

it to say, they were quiet and they seem to be of solid build.

You shouldn't have to worry about the Quad driving whatever you ask it to handle. Maybe something odd, like Jecklin Floats or Wharfedale Isodynamics or some other obscure cans might flummox it, but I doubt it. The headphone output power is stated as 500mW, with an impedance range of



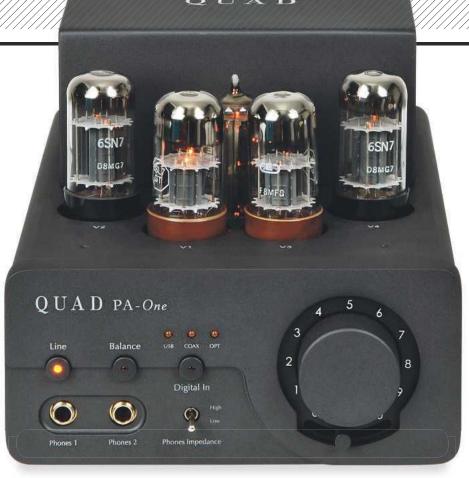
'If I had tried the

Ouad PA-One

only as a preamp,

I'd be impressed'





32-300ohms. The user can switch between settings of 'High' for above 100ohms and 'Low' for below that [see Lab Report, p63].

Keep in mind – if the images don't convey this - that this unit is only 180mm wide, so those inputs are contained in a panel half the size of an iPad mini. The fascia is also fully-occupied, dominated by a rotary volume control on the right, with Quad's traditional balance slider under it. (Whatever you may think of balance controls, headphone usage does increase their usefulness.)

To the left are two ¼in headphone sockets, three pushbuttons and a toggle. The toggle selects high or low impedance settings for the headphones, while the pushbuttons choose the balanced or singleended line inputs and the third, labelled 'Digital In', scrolls between three digital sources. To aid your selection, tiny red LEDs above the Digital In button light up for USB, coaxial or optical. Only the lack of any remote to control this will worry some.

My Mac Air and iMac found this with ease, the PA-One's USB DAC being computer-friendly with USB2.0 compliance and supporting music files up to 192kHz/24-bit resolution. For 'legacy' use, Musical Fidelity's M1 CDT transport was fed into the PA-One via coaxial and Toslink, the former sounding slightly smoother.

WHEN CANS RULED THE EARTH

While I maintain that hearing music through speakers is preferable on every level to headphones, and that headphones are necessary only for privacy or monitoring in a studio, they are the current default for many listeners. I certainly don't ever recall enjoying new albums with friends through anything other than loudspeakers for a shared experience. I suppose that, circa 2015, listening through 'phones and shouting at each other, 'Listen to that lick!' or 'Aren't The Killers awesome!' must have an appeal lost to me. Then again, I use my iPhone for calls. It should be emphasised that the PA-One really is a full-blown preamp that happens to have two headphone sockets, in the same way that McIntosh's MHA100 is actually a proper integrated amp masquerading as a headphone amp. This essentially points to a new rhetorical sleight-of-hand which recalls the period right after CD arrived, when everything was called 'digital'... whether it was or not. Now the trope to apply is the term 'headphones' if you want to attract a wide audience. Thus, I await the first Louis Vuitton Headphone Case.

LEFT: Beside the (manual only) volume knob are selection toggles for RCA and balanced line ins and Toslink, coaxial and USB digital ins. High and low impedance cans are accommodated

To assess both impedance settings and the PA-One's handling of various headphone types, I listened to the same handful of tracks through ten models. They included Audeze LCD-X [HFN Sep '14] and LCD-XC, B&W P3, P5 and P7 [HFN Aug '14], Sennheiser HD414s, Oppo PM1 [HFN Jul '14], Monster Inspiration, those ornery Beyer DT48s and the oBravos [HFN Jan '15].

VALVE-Y BASS

What follows is an overall assessment, as none of the headphones misbehaved with the PA-One. Sensitive or hungry, dynamic or planar, all were accommodated beautifully, playing louder than I like, while sounding 'full-range' at low levels.

I can tell you from the outset that respective features aside – the Oppo headphone amp is the more precise and incisive, the Pathos the most transparent. As I don't have the McIntosh to hand, and as it costs five times the price of this, it's not in the mix (but it is on my bucket list).

Let's dispense with the bass right away, assessed mainly through the B&W P7s and the Audeze LCD-XC. It is deep - truly well-extended – and as tuneful as all those pace/rhythm/timing types worship, but it is also valve-y. By that I mean it lacks the snapping-a-Twiglet crispness of the Oppo. I don't have an issue with that, and it certainly did not undermine the walking sounds on The Four Seasons' 'Walk Like A Man' [Rhino 8122795939]. Some might, if they listen to tech/funk and synths.

More to the point, it didn't affect the weight of the majestic percussion of Kodo on Heartbeat: Drummers of Japan [Sheffield Lab CD-KODO]. Clearly, and despite a direct feed into one's lugholes, headphones do not – cannot! – convey bass in the manner of a quartet of 10in woofers. Whatever the measurements, the effect will be an illusion, like the perceived bass of an LS3/5A. But the sound was never less than satisfying and convincing, provided one has no problem with the transition from sound in front of to sound within the head.

Headphone listening - with the exception of true binaural - will always seem artificial because of this effect. Which is why I also used this as a preamp, feeding the Quad 909 and Musical Fidelity M1 PWR power amplifiers. Even if you never use cans, the PA-One has a value obscured by the headphone sockets. Unlike the dazed →

ALLNIC AUDIO

"We are currently auditioning the Allnic H3000 LCR Phono Stage. At first listen, this component knocked us flat. Straight up analog heaven."

"Starting with the build quality of his duo (L3000 & H3000) on through the sonics, this combo is simply one of the best in the world regardless of price."

"The H3000 made for some of the most eerie listening I've ever experienced. The sense of one performer being in front of another conjured musical specters in my listening room time and again."



LOTUS Hifi

www.lotus340r.net sales@lotus340r.net +44 788 785 2513

Sunbury On Thames, 15 mins from Heathrow Airport, in store demos or extended home loans Allnic / Vitus / Avalon / Brinkmann / Entreq / Durand / HighFidelity Cables / Stillpoints / Transfiguration / PAB



ABOVE: Quad provides balanced and unbalanced analogue ins plus Toslink and coax S/PDIF digital ins alongside a USB port. RCA outs turn the PA-One into a DAC/preamp

slacker I met a few years ago at a hi-fi show flogging a \$6000 alltube headphone amp with no line outputs, Quad has devised this to serve another function. You may be reading this because you're after a headphone amp, but how do you feel about a fine preamp being thrown in for free?

SUBTLE DIFFERENCES

If the 'h' word had never been used, I had tried this only as a preamp, I'd still be impressed. It's not as smoothly refined as, say, Quad's preamp-only QC-24, but that doesn't contain a DAC or a headphone output. But the PA-One is definitely worth considering just as a preamp, if price and space matter.

With both Badfinger's Timeless... The Musical Legacy [Apple CDSAPCOR 31] and other tracks from The Four Seasons, it was interesting to hear how the PA-One separated harmonies in what is the confined space of one's skull. We are, after all, talking about vocals, the most difficult sounds to produce with naturalness.

On 'Big Girls Don't Cry', the contrasts between Valli's falsettos and the bass vocals of Nick Massi were emphasised by a slight bloom to the latter that was possibly artificial, yet beneficial compared to the matter-of-factness of the Oppo and to a lesser extent with the Pathos. I'm merely pointing out subtle differences. And subtlety is the order of the day when it comes to the minutiae on offer with cans.

Turning to the more raucous pop of The Wonders' 'That Thing

You Do' [Play-Tone Records 664055 2], its jangling/soaring guitars enjoyed sparkle and clarity with the requisite attack, though the Oppo exhibited greater precision in terms of transient snap. This contrasted with the gentler decay at the trailing ends-of-notes afforded by the alltube headphone amp.

That ol' dependable, the kick-drum opening from The Band's 'Up On Cripple Creek' [The Band, Mobile Fidelity UDSACD 2129], possessed exactly the dryness I hear off the vinyl, while the vivid 'metallic-ness' of the harmonica on Captain Beefheart's 'I Can't Do This Unless I Do This/Seam Crooked Sam' from Sun Zoom Spark 1970 to 1972 [Rhino R2 541728] had me dig out an old harp to make sure it was as real as it sounded.

What more can I say? I sent the cheque before even seeing this in the metal. And now I own it. Yay! 🖰

HI-FI NEWS VERDICT

You saw this coming: I love the PA-One with the same affection I reserve for our cats. A pugnacious spud of a component, it's chunky and well-made and handsome, which just happens to deliver terrific sound: incredible value and eminent usability in a teensy box. Can it be improved? Remote control, sure, and balanced headphones would be nice, but the latter is far from mainstream. So, my advice is: buy it.

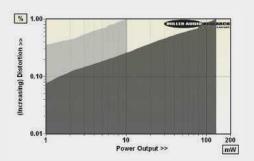
Sound Quality: 85%



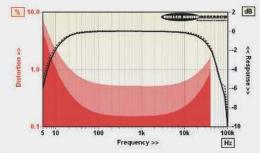
QUAD PA-ONE

While there's novelty in Quad's decision to create a tube-based headphone amp (based on pairs of 6SL7 and 6SN7 triodes), the PA-One is, at least partially for this reason, not a solution for all seasons. There's certainly no reason why it could not deliver a healthy output, but while Quad's website specification lists '500W' (surely 500mW/32ohm), the PA-One offers rather closer to 130mW/25ohm at 1% THD in its low impedance mode and just 10mW in its high impedance mode [see Graph 1, below]. Arguably, this same graph clearly indicates that more power will be available at even higher distortion (rising from 0.08% at 1mW to 0.24% at 10mW and 0.85% at 100mW) but the PA-One is still no match for the likes of the 2200mW Teac HA-501 [HFN Apr '14] or the 8500mW Oppo HA-1 [HFN Sept '14] when it comes to driving the toughest 'phones.

The ideal synergy is probably best achieved using high impedance headphones with the PA-One's low impedance setting. Here's why: even in low impedance mode there's a useful 8.9V output available while the 17-18ohm source impedance will still provide a uniform response (-0.4dB at 20Hz and 20kHz into a flat 1kohm load). With non-uniform low impedance 'phones, however, the response could vary quite wildly. Distortion also increases with loading and extremes of frequency [see red and shaded red traces, Graph 2 below]. Readers are invited to view comprehensive QC Suite test reports for Quad's PA-One headphone preamp and USB DAC performance by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Continuous power output versus distortion into 25ohm 'headphone' load (black = low impedance setting; grey = high impedance setting)



ABOVE: Freq. resp. (black) from 5Hz-100kHz into 25ohm and distortion versus frequency (red, 1V/1kohm; shaded, 40mW/25ohm) from 5Hz-40kHz

Maximum output (re. 1% THD into 47kohm)	13.5V (high imp. mode)
Max. power output (re. 1% THD into 25ohm)	133mW (low imp. mode)
Output Impedance (20Hz-20kHz; low/high)	18.8ohm / 70ohm
Maximum gain (low/high)	+21.3dB / +27.6dB
A-wtd S/N ratio (re. OdBV)	87.1dB
Frequency response (20Hz-20kHz/25ohm)	-0.45dB to -0.40dB
Distortion (20Hz-20kHz, re. 40mW)	0.51-1.1%
Power consumption	38W
Dimensions (WHD)	180x164x285mm

HEADPHONES

Open-back, circumaural planar magnetic headphone Made by: Oppo Electronics Corp., China Supplied by: Oppo BD UK Ltd Telephone: 0845 060 9395 Web: www.oppo-bluray.co.uk

'Fitted with the

same earpads,

both sounded

exactly the same'



Oppo PM-2

The business end is the same as in the flagship model, but the fittings and finish are less luxurious. Can Oppo's more affordable planar magnetic headphones deliver? Review: Andrew Everard Lab: Keith Howard

t seems anyone can launch a pair of headphones: speaker manufacturers, brands best known for hefty valve amps, car companies and firms you've never heard of before, have all jumped on the current boom in headphone listening. And at first it looked like Oppo, best-known for its high-quality Blu-ray players – and, in some markets, smartphones - was going to be another 'me too' company.

However, not only did it launch its classy PM-1 model, complete with a price-tag on the thick side of £1000, it backed it up with a high-end headphone amplifier. the HA-1 [HFN Sep '14], and the promise of more affordable headphones: the £699 PM-2 model we are reviewing here.

EXPLORING THE TECHNOLOGY

To say the Oppo PM-1 created a stir is something of an understatement: it was well reviewed just about everywhere, with HFN's July '14 exclusive only tempering its 'a remarkable first product from a company with no track record in high-end headphones' with the slight caution that the sound errs on the side of understatement rather than drawing attention to itself.

No matter: the market is crammed with models designed to sound larger than life – apparently if you come up with such a design there's the odd computer company just waiting to throw billions of dollars at you in order to acquire your brand! - so it's gratifying to encounter a pair of headphones designed to be a civilised listen rather than do little more than thump out the beats complete with leaden bass lines.

What was clear from the off was that, rather than just cranking out a pair of midrange headphones to halo its brand, Oppo had done some serious work on the

RIGHT: Unless you look very closely, it's hard to tell the PM-2 apart from the pricier PM-1: the differences are purely cosmetic, the earpads being the most obvious change development of its first models. Planar magnetic technology is by no means the easy way of doing headphones (the easy way is any one of many off-the-shelf transducers cranked out in their thousands by parts suppliers) but Oppo made life even trickier for itself by going back to the drawing-board and investigating what makes this particular technology tick.

Among the developments applied to the planar magnetic design, in which

an electrically charged diaphragm sits in a magnetic field (to put it in very basic terms), are the use of a seven-layer diaphragm carrying flat aluminium conductors on both sides. (One side is more usual, arranged

in a spiral across the whole driver surface for even drive.) The idea is to reduce the weight while at the same time boosting sensitivity, and that certainly seems to be borne out in the finished design - I have extensive experience of the PM-1 headphones, used with everything from an original AudioQuest DragonFly to

Oppo's own HA-1 headphone amplifier, and have always found them easy to drive, while revealing of improvements in the amplification with which they're used. They're both fast and highly dynamic, not to mention having serious bass heft.

TRAVELLING COMPANIONS

As a result of those easygoing electrical characteristics, the Oppos aren't headphones you need only consider for

> home use, powered by a dedicated amplifier. While they will thrive when so used, they're also light and comfortable enough for use on the move, powered either from the output of a personal

digital player like my Fiio X3 or on the end of a portable amplifier.

OK, so I'd be a bit cautious about swanning about in some less salubrious quarters with a £1000+ pair of headphones on my noggin but certainly for long train or plane journeys they're rather good, despite the lack of noise exclusion afforded by the open-backed design.

On which subject, Oppo has on the stocks some new additions to its fastgrowing headphone range, perhaps better suited to music on the move - see our boxout for more details of these models.

Anyway, back to the PM-2 headphones, and Oppo was remarkably candid about the 'junior model' when it announced its entry into the market: the PM-2 is exactly the same as its big brother where it counts - in design and drive-unit engineering – but simply uses a range of less expensive cosmetic materials and loses some accessories in order to reduce the price.

So choosing between PM-1 and PM-2 is a bit like choosing between two models of a car using exactly the same drivetrain, but with either deepgrain leather seats or cloth: it shouldn't change the performance, just the feeling





of luxury. That's literally the choice here, for in the place of the PM-1's lambskincovered ear-cushions and headband, the PM-2 has synthetic leather, the adjustment mechanism has a matte finish rather than the polished gloss of the pricier headphones, and various trim pieces are plastic rather than metal.

The 6.35mm-terminated cable is OFC for the PM-2, instead of the PM-1's OCC, but both models also come with a 3.5mm-plugged cable for use with portable equipment, along with a denim carrying case (the PM-2 doing without the beautifully lacquered wooden storage box the extra £400 for the PM-1 buys you). The optional velour earpads, as well as the alternative lambskin pads designed to give a little treble lift, both of which are standard with the PM-1, have gone AWOL, too. But should you wish to buy the PM-2 and kit it up to PM-1 spec, it can be done: the PM-1 lambskin earpads. and the velour ones, are available as accessories.

A BIT MORE ZING

Oppo launched those alternative earpads mentioned above in response to PM-1 buyers wanting a bit more air and treble sparkle - neither of which qualities I have ever found lacking in all the time I've used those headphones - and the PM-2 earpads use that same 'alternative' design. That means a swift switch between the two models does reveal a little more zing in the upper frequencies than the PM-1 delivers, but that aside, the sound is extremely similar, which is a very good thing.

Just for the sake of experiment, I did swap over the earpads between the two models, and guess what? The PM-1 fitted with the PM-2 earpads sounded just like the less expensive model, complete with that little breath of extra fresh air, while the PM-2 with the luxury lambskin ear-muffs was exactly like the PM-1's usual sound.

In other words, fitted with the same earpads, both models sound exactly

oppo

LEFT: Same understated style and open-back design as the PM-1, but synthetic leather not lambskin, and some use of plastic trim

(€ 1

the same, and while I love the slightly smoother sound of the PM-1 headphones as supplied, I can see why Oppo has opted for the marginally brighter balance as the out-of-the box signature for the less expensive model.

By any standards, the PM-2 is a very fine-sounding pair of headphones, and across a range of partnering

> equipment delivered a presentation as well-suited to driving rock and pop as it is to classical music - from accompanied voice to orchestral and choral works.

Unfortunately I didn't have Oppo's own HA-1 headphone amplifier to hand for this review: but the rather excellent new Marantz HA-DAC1, which is very similar in concept and function, proved an excellent substitute. I also used the highquality phono stage built into my Naim Supernait2 amplifier, a little tube-powered pre/headphone

amplifier from Chinese company Trends Audio, and portable headphone amps from Denon and Fijo, along with the previouslymentioned AudioQuest.

This is a very addictive pair of headphones. Light and comfortable, and with a solid fit without any sense of the head being clamped, the PM-2 thrived on the end of the Marantz amp, fed a range of music from my MacBook Pro computer.

First out of the traps was a selection of classic Carpenters tracks, and the way Karen's voice just bursts into being at the opening of 'Goodbye To Love' [from the Ultimate Collection compilation, Universal Music 0602498446263] was lovely →

OPPO ON THE MOVE

Oppo isn't taking things easy: coming up next is an even more affordable pair of headphones, more specifically designed for use on the move, and a matching battery-powered headphone amp. Oppo's PM-3s made their debut at the HFN show last autumn. They're the company's first closed-back design, and thus better suited for use in noisy environments - and keeping your music in when you're travelling in company! Expected to sell for around £400 or so when they hit the shops fairly soon, they're already lined up for an exclusive HFN review; the same goes for the company's rather smart leather-bound HA-2 portable headphone amplifier, expected to be between £300-£400. A Class AB design with built-in USB DAC able to handle PCM at up to 384kHz and DSD256, it will feature 30m rapid charging and can be used with computers, Apple iOS and Android devices, and will have a 3.5mm stereo analogue input.





Music to your ears



Trust us to lead you through the hi-fi maze; no wrong turns, no dead ends. Our systems aim to reach musical heaven, the best sound you've ever heard.





















through the Oppos; and so was the sheer texture of the vocal, delivered with just the right mix of warmth and fragility on 'I Won't Last A Day Without You', thanks to the way in which the headphones combine insight and intimacy.

But they're not at all about politeness and refinement, as a blast of 'Welcome To The Machine' from a hi-res copy of Wish You Were Here [Analogue Productions CAPP 33453 SA] made clear, from the throbbing machinery of the opening to the way they kept the vocal front and centre while layering the instruments and effects around it in a fashion that gave the lie to the suggestion that headphone listening means 'music shut in your head'.

The soundstage was big, deep and well-focused, making for a highly involving listen, and this ability was just as effective when playing down and thrashy rock tracks - rather more rockier ones than the Floyd – as it was with more refined material.

IMMERSIVE EXPERIENCE

Claire Martin's Time And Place [Linn AKD 423], sees the singer partnered with the Montpelier Cello Qt, and the way this ensemble snaps and glides through the tango rhythms of Martin's version of Bowie's 'The Man Who Sold The World' was rendered with crisp, precise timing by the Oppo headphones, creating a delicious effect.

I think I just preferred it with the PM-1 earpieces in place, in that it can sound a shade overblown in its attack with the out-of-the-box PM-2 configuration, but I am sure that'll be a matter of personal taste and partnering equipment.

With the small Trends Audio tube amp, for example, the PM-2 earpads injected a little more punch into the music, while with the rather more

ABOVE: Despite being lightweight for a planar magnetic design the PM-2 delivers notably high sensitivity

forthright Marantz DAC/headphone amplifier the PM-1 pads were marginally preferable.

There's nothing light or insubstantial about these headphones, as was revealed by another Linn recording, Gillian Weir's 2001 reading of Poulenc's Organ Concerto [BKD 178], recently reissued as part of the company's

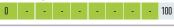
The sound was big, dramatic and powerful, while packed with masses of fine detail, and showed just how well the Oppo PM-2 headphones can not only 'do the hi-fi thing', but also immerse the listener in the soundscape of a recording.

At £699 the PM-2 is hardly a bargain-basement design, so it's appropriate that the cosmetic changes have done nothing to detract from the user appeal established by the original Oppo headphones, and that they perform just as well as the £1099 pair. That makes a proposition with which it's very hard to argue. \circ

HI-FI NEWS VERDICT

Well, Oppo said the PM-2 was going to be just like the PM-1, just with some cost-cutting on the cosmetics and a concordant price reduction, and it was right. I'm not consistently sure about the slight treble lift brought about by the change of earpad design - to these ears they sound more natural (and more like an 89% SQ) with the optional PM-1 pads fitted - but by any standards this is a very special pair of headphones.

Sound Quality: 85%

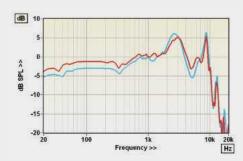


REPORT

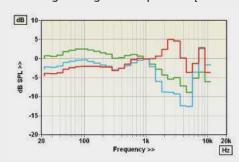
OPPO PM-2

Oppo claims the same sensitivity and impedance for the PM-2 as the PM-1 [HFN Jul '14]: 102dB for 1mW and 32ohm, which is equivalent to 117dB for 1V at the specified impedance of 32ohm. We measured the lower value of 114.6dB at 1kHz (it was 114.4dB for the PM-1) but this is still high for a planar magnetic design, being very similar to the 115.1dB we obtained from the Audeze LCD-X [HFN Sep '14]. So, like the PM-1 and LCD-X, this is a planar magnetic that defies the type's reputation for being insensitive. In fact the PM-2 is as sensitive as many moving-coil designs. Isodynamic drivers have almost resistive impedance, and so it is with the PM-2 - although, like the PM-1, the impedance versus frequency graph displays a small peak at around 330Hz. This makes for a somewhat larger variation than typical of planar magnetics, with minimum and maximum modulus values of 35.2ohm and 40.1ohm (20Hz-20kHz). Note too that, for an unknown reason, the lower value is 60hm higher than that recorded from the PM-1.

Despite this its frequency response is little affected by source impedance, to the extent of just 0.2dB for a 10ohm source or 0.5dB for a 30ohm source. Uncorrected frequency response [Graph 1, below], is also very similar to that obtained from the PM-1, with less peaking around 3kHz than moving-coil models typically exhibit. Diffuse-field correction of the response [green trace, Graph 2] suggests that the perceived tonal balance will again be characterised by a lack of presence band energy. Gentle low frequency roll-off is apparent below 100Hz but bass output is nonetheless well maintained to below 20Hz, while total harmonic distortion is vanishingly small at 90dB SPL at both 100Hz and 1kHz. The capsule matching error of ±3.2dB (40Hz-10kHz) is excellent for a headphone – better even than the PM1's ±3.5dB – and mostly reflects different interactions with the left and right pinnae of the artificial ear. KH



ABOVE: In common with other planar magnetic designs, the PM-2 shows a reduced peakiness around 3kHz leading to a slight loss in presence [see below]



ABOVE: 3rd-octave freq. resp. (red = uncorrected; cyan = FF corrected; green = DF corrected)

Sensitivity (SPL at 1kHz for 1Vrms input)	114.6dB
Impedance modulus min/max (20Hz-20kHz)	35.2ohm @ 2.8kHz 40.1ohm @ 328Hz
Capsule matching (40Hz-10kHz)	±3.2dB
LF extension (–6dB ref. 200Hz)	10Hz
Distortion 100Hz/1kHz (for 90dB SPL)	<0.1% / <0.1%
Weight (inc cable and 0.25in connector)	496g

Integrated amp with Bluetooth & USB DAC. Rated at 35W/8ohm
Made by: PS Audio, Boulder, Colorado
Supplied by: Signature Audio Systems
Telephone: 07738 007776

Web: www.psaudio.com; www.signaturesystems.co.uk Price: £650



PS Audio Sprout

Aimed squarely at the no fuss hi-fi fan, PS Audio's bite-sized Sprout integrated blends style with simplicity in a package that has both analogue and digital bases covered Review: **Andrew Simpson** Lab: **Paul Miller**

here's nothing better than spending listening time with our main hi-fi systems. But the reality of modern life means that, for many of us, a second system in a home office or bedroom can sometimes be a requirement for enjoying music when domestic circumstances demand it.

Like many rivals who've recently launched discreet all-in-one mini integrateds, such as Cambridge Audio, Quad and NAD [see boxout], PS Audio's stomping ground also lies in high-end separates, which sit alongside its range of audio power plants. The £650 Sprout, however, is firmly focused on bringing the company's hi-fi knowledge to new audiences, who will be equally wooed by its size and style as they will by its sonics.

INTIMIDATION FREE

The culmination of two-and-a-half year's work, the Sprout is the brainchild of PS Audio's Scott McGowan, son of company CEO and founder Paul McGowan. Scott says: 'With our Sprout we're fighting for the people. Its name was chosen to get away from the usual alpha-numeric titles typically given to audio equipment.

"Sprout" is about removing intimidation and it's our response to the music lover who wants great sound quality but may be put off by stacks of complex separates."

The Sprout's intentionally stripped-back feature set and elegant aesthetics clearly embody this thinking. And judging by its 897 Kickstarter backers who pledged \$414,963 against its \$36k goal (http://kck.st/1z8jW4x), PS Audio was clearly on to something. There's no flashy digital front panel screen with user menus to get to grips with, or even an LED to tell you it's powered up and ready to rock. Instead, you just have rotary dials for input and volume to choose which

RIGHT: The underside of the Sprout reveals PS Audio's extensive use of surface-mount components. The PSU and Class D amplifier modules are behind metal screens above source you want to listen to and at what level, plus a power switch on its rear panel.

Designed, engineered and hand-tested in PS Audio's Boulder homeland, the Sprout is actually built in China, which has allowed the company to make sure you get plenty of quality materials for the money. The two front-panel knobs are machined from solid billets of aluminium, while the unit's 3.5mm-thick main chassis is formed from bead-blasted extruded aluminium, with rounded corners and chamfered edges.

Finishing off the package with a dash of retro chic is the unit's inset top-panel, formed from an expanse of walnut veneered MDF which, combined with the case's silver livery, will ensure the Sprout stands out amongst its partnering kit.

The Sprout's five inputs have been carefully selected to cater for different sources. On the analogue side, a 3.5mm jack socket is fitted for line-level inputs, while a pair of RCA sockets allows movingmagnet equipped turntables to connect to the Sprout's internal phono stage,

which boasts a combination of passive equalisation and a Class A gain stage.

DIGITAL OPTIONS

On the digital side, you can choose from a USB Type B or S/PDIF (coaxial) socket, which can both accept data up to 192kHz/24-bit. Instead of Wi-Fi streaming, PS Audio has opted to equip the Sprout with aptX Bluetooth streaming, for users who like to bring music stored on smartphones and the like into the equation. Under the Sprout's lid sits an Anaview ALC0100-2300 Class D amp, with switchmode PSU, offering a claimed 33W into 8ohm [see Lab Report]. This module was selected for its sound quality says PS Audio, size and efficiency also meeting the company's brief.

Designing such a minimalist product that can still offer the right features posed a number of challenges for PS Audio, as Scott explains: 'To keep the Sprout compact, its back panel real-estate took a lot of work to get right. Likewise, finding a solution to stop the wood panel warping





through excessive heat exposure was just one of the challenges we faced along the way. Thermal testing was also a huge undertaking and sourcing parts like the detented potentiometer took a long time.'

For DAC duties, the Sprout's USB, coaxial and BT inputs are fed into a Wolfson WM8524 192kHz chip, selected for its smooth analogue character and how well it works with the Sprout's inbuilt clocking mechanisms.

The Sprout employs an analogue stepped volume control and its front panel

also packs a 6.35mm headphone socket, which claims to support a wide range of impedances from 16-300ohms, meaning the Sprout can also double up as a versatile headphone amplifier.

Getting the PS Audio up and running takes no time at all. If you plan on connecting the Sprout to analogue sources

with stereo RCA outputs you'll need to budget for cables that terminate with a 3.5mm jack plug, and to send music over USB requires you to first install a dedicated driver from PS Audio's website.

Connecting to the Sprout via Bluetooth is made more convenient: there's no pairing button on the rear panel antenna to fiddle with, instead any BT-equipped device simply finds the Sprout and lets you pair automatically. The back panel is also home to a single set of 4mm multi-way speaker



connections, which are auto-muted when headphones are plugged in to the fascia.

PRESENCE AND COLOUR

Parked next to my Q Acoustic 2020i bookshelf speakers and testing its Bluetooth input with my iPhone 4s, the Sprout looks and sounds every bit the

modern desktop system.

Streaming a 320kbps MP3 file of Future Islands' 'Light House' from their Singles album [4AD EAD3402A] over air served two purposes. Firstly it showed that the Sprout's Bluetooth

function is a breeze to use, and secondly it highlighted how the Sprout will play the hand it's been dealt with admirable enthusiasm - it presented the track with enough stereo separation and rhythm to make the music as enjoyable as it could be, given its obvious audio limitations.

ABOVE: Just over 6in wide, the wood-topped Sprout offers manual volume and input selection via two stepped rotary dials plus a headphone socket, but there's no remote

But while this confirms that having a Bluetooth option to stream wirelessly on the fly is a worthy inclusion if convenience is king, streaming a 44.1kHz/16-bit (1411kbps) FLAC file of this track over a hard-wired USB connection from my laptop running Tidal, let me know how much more the Sprout has to offer when given higher quality content to play.

Gone were the fuzzy edges and closed-in soundstage of the MP3/iPhone combination, replaced with music that had real body and greater levels of detail, adding depth to each note and making the music sound much more convincing.

Where before there was a pallid, almost hollowness in the midrange and lifelessness in the bass, armed with the FLAC material the Sprout replaced these characteristics with musical presence and colour that breathed life into the track. The treble in particular snapped into focus with greater degrees of clarity, while the bass guitar in the upper midrange took on more texture.

Upping the ante with a 96kHz/24-bit studio master of Pink Floyd's 'Lost For Words' from the The Division Bell [at highresaudio.com] gave the Sprout a much richer diet to chew on. David Gilmore's opening guitar solo sounded accurately defined in the soundstage, and with a tonal clarity that was clean yet sufficiently relaxed, rather than being overly clinical in a way you find with some Class D amps.

Through this recording, the Sprout let the strong stereo imaging come to →

PINT POT POWER

With hi-fi companies keen to cash in on the desktop audio voque, we've seen an explosion of mini integrated amps in recent times. Many models rely on more traditional Class A/B power within their modest cases, such as Quad's Vena [HFN Jan '15], Micromega's MyAmp [also HFN Jan '15] and Cambridge Audio's Minx Xi. For others, cooler running Class D has paved the way for more versatile solutions. Employing 'hybrid digital amplifiers', NAD's D 3020 mini integrated [HFN Aug '14] and D 7050 network amplifier come in rubber coated cases, designed to work laid flat or standing upright and pack a range of streaming options including Bluetooth, with AirPlay and wi-fi for the latter.

'The PS Audio

Sprout's Bluetooth

function is a

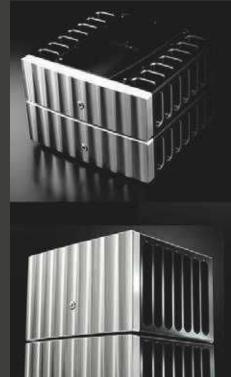
breeze to use'

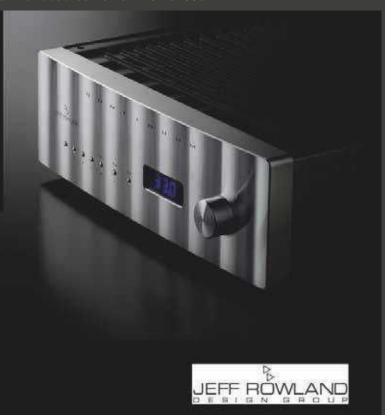
Some models also offer app control, making their supplied remote controllers seem perhaps dated. So whether you want to keep things simple or are looking towards an all-singing desktop amp to partner your PC or Mac you now have plenty to pick from.

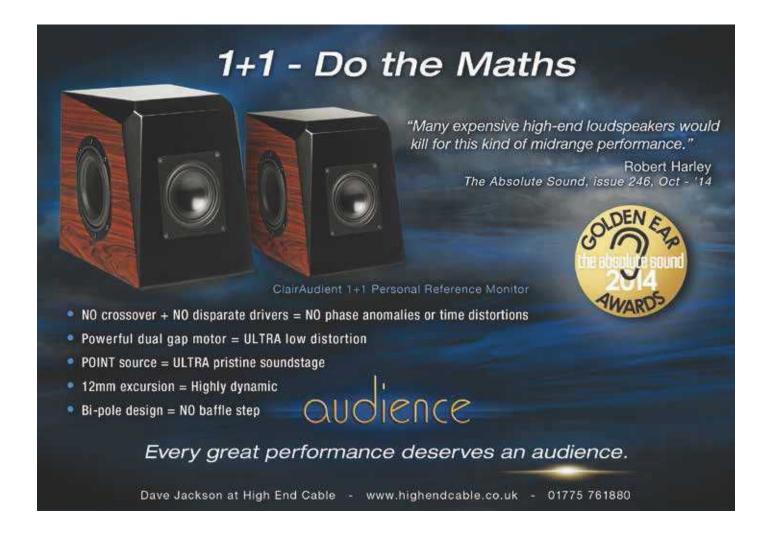
High End Cable www.highendcable.co.uk

www.highendcable.co.uk Please call Dave Jackson on 01775 761880











ABOVE: S/PDIF, asynchronous USB and Bluetooth inputs are joined by analogue line in and out on 3.5mm sockets, MM phono on RCAs and 4mm posts for speaker cables

the fore as the little Q Acoustics 'disappeared' into a soundstage that was surprisingly dense, underlining just how capable the PS Audio integrated is when driving such budget bookshelf loudspeakers.

Although it's unlikely that you'll be partnering the compact Sprout with a pair of high-end floorstanding loudspeakers in the £3000 region, I couldn't resist finding out how it would fare hooked up to my Dynaudio Focus 260 towers - to see how calm it remains when potentially outside its comfort zone. Returning to the Pink Floyd track, thankfully the Sprout sounded unruffled, and presented the music with enough poise to ensure the Dynaudio's weren't found wanting.

EVERYTHING IN CHECK

With its volume knob at the 11 o'clock position, the Sprout had the '260's drive units shifting enough air almost to provoke a visit from the neighbours. And what was more impressive at those listening levels was how it managed to keep everything in check, so that the music stayed evenly balanced.

Where it perhaps falls down compared to the best of the Class A/B brigade at this price is in its slight lack of authority and expression in the bass, which can seem a bit grainy and proved harderedged through the Dynaudios. It's not that the PS audio's bass is lacking in quantity, but that it seemed to add a certain tonality of its own to the lower registers (on some tracks more than others).

With the analogue outs from a Cambridge Audio Stream Magic 6 V2 supplying the Sprout's 3.5mm input with a 44k.1Hz/16-bit ALAC rip of Nick Cave & The Bad Seeds 'Easy Money' from The Lyre Of Orpheus [Mute Records CDStumm233], lower registers were firmly presented and the notes tailed off with a natural sense of timing and depth although I sensed a slight blurring

around the edges through the Dynaudios. Swapping back to the smaller Q Acoustics this trait was far less obvious, suggesting that the Sprout will probably benefit most from the best pair of mini monitors you can afford to partner it with two obvious contenders being Q Acoustics' premium Concept 20 and KEF's LS50 [HFN Jul '12].

With a VPI Scout 1.1 turntable [HFN Oct '14] feeding the Sprout's MM input, and an LP with Vaughan Williams' 'The Lark Ascending' with Sir Adrian Boult and the London Philharmonic [EMI ASD 2847], I heard how well equipped the Sprout is to handle the black stuff.

Background noise was kept low, while the air and space that surrounds Hugh Bean's solo violin let his instrument's notes soar and swoop above the delicate orchestral accompaniment, showing the Sprout's inbuilt MM stage to be more than a match for many a budget standalone phono preamp.

Using this arrangement to test the Sprout's headphone output via a pair of AKG K 242 HD cans brought equally fruitful returns. The Sprout wasn't overly revealing, which thankfully kept sibilance at bay and made for a fatigue-free experience, especially for extended listening. \circ

HI-FI NEWS VERDICT

In today's hi-fi age of apps and interfaces it's refreshing to come across something so easy to live with and stylish as the Sprout, which intentionally removes the head-scratching by offering only carefully chosen features to get the music flowing. Sound-wise its top end is nicely refined and has a strong soundstage presence for such a modest output, although its bass is perhaps not quite as clean as with some rivals.

Sound Quality: 78%

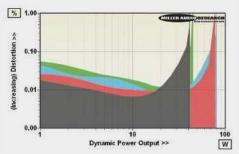


REPORT

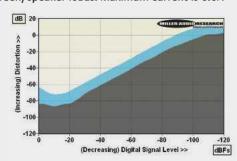
PS AUDIO SPROUT

While not quite as powerful as the Quad Vena [HFN Jan '15], the PS Audio Sprout does meet its 50W specification provided we assume this is into 40hm where it reaches 68W. A figure of 2x38W is more realistic into 80hm while its limited headroom. amounts to 41W, 77W, 82W and 44W into 8, 4, 2 and 10hm loads under dynamic conditions [see Graph 1, below]. However, the real issue is not power but noise and the tailoring of its (low) frequency response. Under test, a layer of 'hash' or 'grass' was exposed extending right through the 20Hz-20kHz audio spectrum, reducing the A-wtd S/N ratio to just 65.5dB (re. OdBW) and to 80dB via the USB input/line output (re. 0dBFs). In addition, while the DAC/line out already has a filtered LF response that rolls steeply away below 100Hz to reach -5.5dB/20Hz, this is further filtered by the power amp which falls to -25dB/20Hz (but not before a +5.7dB 'bump' provides a kick in the bass at 70Hz...). However, the Sprout's top-end response does not show the speaker load sensitivity of those amps still using balanced Class D modules, and stretches out to -0.3dB/20kHz and -7.4dB/100kHz into 8ohm and 4ohm loads.

Noise and LF response aside, the USB DAC section of the Sprout offers a modest set of numbers. Distortion rises from 0.005% midband to 0.05% at 20kHz [see Graph 2, below] while low-level resolution is necessarily limited to around 15-bits (there's a +3dB error at -90dBFs) and jitter is quite high at 1700psec. Readers may download full QC Suite test reports for the analogue and digital performance of PS Audio's Sprout amplifier by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 40hm (red), 20hm (cyan) and 10hm (green) speaker loads. Maximum current is 6.6A



ABOVE: THD vs 48kHz/24-bit digital level over a 120dB range via USB in/line out (1kHz, black; 20kHz, blue)

Power output (<1% THD, 8/4ohm)	38W / 68W
Dynamic power (<1% THD, 8/4/2/10hm)	41W 77W 82W 44W
Output impedance (20Hz–20kHz)	0.013-0.025ohm
Frequency response (20Hz–100kHz)	-23dB to -7.4dB
Input sensitivity (for OdBW/33W)	143mV / 850mV
A-wtd S/N ratio (Analogue/Digital)	65.5dB (OdBW) / 80.2dB (OdBFs)
Distortion (20Hz-20kHz, An/Digital)	0.006-0.12% / 0.0057-0.047%
Power consumption (Idle/Rated o/p)	9W / 80W
Dimensions (WHD) / Weight	152x45x203mm / 6.4kg

"Beautifully designed and exquisitely engineered... a sound that's expansive, rich with detail and effortlessly involving."



MADE IN GERMANY

- HiFi News

TRIPLE X £3320

- 9 inch, 10 inch and 12 inch tonearms
- Low vibration precise motor
- Accurate quartz digital motor
- Sandwich construction made of steel,
 MDF and damping components













TRIANGLE

MANUFACTURE ELECTROACOUSTIQUE

TRIANGLE has decided to relocate part of its manufacturing process to France, with the view of producing top quality speakers utilizing the expertise and the experience of its local teams. This form of luxury craftsmanship combines the finest woodwork with TRIANGLE's acoustic expertise. Triangle's goal is to share the emotion of live performance, to realistically reproduce the sensation and realism of every instrument or voice. You don't just listen to a Triangle loudspeaker, you feel it.



Triangle Signature Alpha £6000

The flagship of the Signature range, this 1.3 meter high column includes three bass drivers specifically designed for this product. The performance level is extremely high, offering deep and fast bass.





music is our passion 🔓 🕡 💟 🤾











Trigon's timeless elegance pleases the eye and prepares the ear and mind for a transcendent sonic experience

EXCELLENCE IS THE KEY

Every so often a product comes along which re-writes the rule book in it's market - sometimes this can be because it simply sounds sensational compared to it's peers, sometimes the design or build can be the best of the best, sometimes it can be inspirational innovation that wins this accolade - when a product combines all three of these elements then you have something very special indeed.

Consider a Music Sever which offers bit perfect CD ripping (multiple formats), innovative design and sensational build, and combines ease of use with audiophile performance -with these attributes you have the Trigon Chronolog.

Available with entirely silent internal SSD storage from 60Gb (around 150 albums) to 960Gb (around 2250 albums), there is a model for every collection - of course there is nothing to stop you connecting your own external hard drive to the Trigon Chronolog, and letting the high end internal DAC work it's magic on your music collection!

Full iPad/iPod/iPhone compatibility allows the user to control all aspect of the Trigon Chronolog from the comfort of their sofa - both Single Ended and True Balanced outputs are made available for all system topologies.



Gato Audio **DIA-250** Integrated **Amplifier** £2990



I really don't want to send it back." James Palmer - HiFi Wigwam



The Absolute Pinnacle of Danish High End Audio







Gato Audio PRD-3 Preamplifier £2190

The Gato Audio PRD-3 preamp features low noise analogue circuitry,

true 24bit/192Khz conversion,

upsampling and a very clean internal clock generator for ultra low jitter in the digital domain.

Classical Companion

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Claudio Arrau Concert pianist

One of the great Beethoven interpreters of the past, the Chilean pianist claimed a lineage back to Liszt. Does he still sound relevant today, asks Christopher Breunig

he Chilean pianist Claudio Arrau (1903-1991) was a child prodigy who, aged six, had so impressed the country's President that, two years later, he was given a government grant to study at Berlin's Stern Conservatory. He was accompanied by his mother (a piano teacher) and his sister - Arrau's father had died when he was only a year old.

His subsequent and most influential teacher there was Martin Krause, who had studied with Liszt. who in turn had been a Czerny pupil, a pianist/composer tutored and encouraged by Beethoven... When Krause died suddenly in 1918, Claudio Arrau was deeply affected.

So Arrau could claim a pianistic/ idealogical inheritance from Beethoven, no less, and it was with the music of that composer that he earned the highest regard, and also for his Liszt interpretations. He was

Arrau in a 1947 portrait photo by Arnold Newman, taken for Columbia Records



also eloquent in Chopin: not always the case with 'Beethoven pianists'.

However, Arrau had a far wider range, had become established as a young man in virtuoso repertoire, and late in life

'He was barely

able to unlock

his own New

York front door'

was even studying Boulez's Sonata No 3 and pieces by Stockhausen - while also making a return to Bach. In the 1930s he had given marathon recitals,

eagerly embracing all of JS Bach's keyboard works.

Arrau had recorded the Goldberg Variations for RCA in 1942, although its release was long postponed as Wanda Landowska, a war refugee who had just arrived in New York, wanted to make her recording using harpsichord, and Arrau consented to this being given priority.

He cut his first record for Vocalion in 1921, then 78s for Electrola. Coming to the States, he made recordings for Brunswick, RCA, American Columbia, EMI Columbia and most extensively for Philips. The company celebrated Arrau's 80th birthday in splendid style, with massive LP box sets devoted to Beethoven, Brahms, Chopin, Debussy, Liszt and Schumann.

He lived at a time when musicians weren't expected to give interviews to promote every record release. From what I recall he was somewhat taciturn, although he had high praise for the singer Dietrich Fischer-Dieskau, and Furtwängler's monumental account of Schubert's Ninth Symphony.

THE WISDOM OF OLD AGE

He did, however, take part in a book project by Joseph Horowitz, Conversations With Arrau [ISBN: 9780879100131]. Horowitz discovered someone 'barely able to unlock his own front door, let alone boil an egg'. Yet asked about his playing at 80, Arrau said 'I can do what I have never done before – the muscles become wiser.'

In a filmed interview for DVD [The Art of the Piano; NVC Arts], he spoke of the need to keep the body relaxed and thereby 'in contact with the depth

of your soul. Stiffness impedes the physical current of what the music dictates to you.'

Arrau was playing Liszt's *Twelve* Transcendental Studies at the age of 11 and his 1974 recording [see boxout] is considered definitive. In 1983 CBS/Sony issued a 'Retrospective' 3LP album [79354] including 1951/2 mono recordings of five Hungarian Rhapsodies, the First Concerto and Hungarian Fantasy, with the Philadelphia Orchestra and Ormandy. Arrau's 1979 version of the concerto, with the LSO and Sir Colin Davis, runs for an exceptional 21m: three minutes more than before.

His very fine account of the Liszt B-minor Sonata was issued in 1970 [Philips 6500 043]. Far better than the 1985 remake it remains as a download at the Universal website





Claudio Arrau · Otto Klemperer Beethoven Piano Concertos Nos.3, 4 & 5 'Emperor' (Live recordings from the Royal Festival Hall) Piano Sonatas Nos.24 & 31 great Beethoven interpreters: Arrau with Klemperer they performed three concertos together in London in 1957

TESTA

[http://www.deutschegrammophon. com/qb/cat/4647132].

The greater part of Arrau's Philips discography is indeed now only available via 44.1kHz/16-bit downloads - although when you look at the current overall availability it is surprisingly generous, particularly with live performances.

The most recent CD release was ICA Classics' remastering of an all-Beethoven 1960 recital given in Stockholm [ICAC 1522]. It includes the Appassionata. But there's a certain strain about this live version, and if you compare the studio one from 1984 [Philips 432 041-2] you get the impression that Arrau (working in his home city, New York) found playing without an audience more than congenial.

BEETHOVEN CONCERTOS

Arrau's 1955 mono recording of Beethoven's Fourth Concerto was the first LP I bought (the small



photo on the opposite page was used for its cover). He completed the cycle for EMI in stereo, with the Philharmonia under Alceo Galliera in 1958, although it suffered the acoustic jolt of cadenzas pasted in from solo sessions. He redid them all in 1974 with Bernard Haitink and the Concertgebouw. The Fourth in that lavishly documented Philips LP box set, and certainly the 'Emperor' Adagio, I thought revelatory. They are now in a 14CD set [see boxout].

Late in life he completed a further cycle with Sir Colin Davis and the Dresden Staatskapelle (and began re-recording the sonatas) but although the technique was as refined as ever, the readings had lost their earlier vigour and intensity.

The slow movement of No 4 in 1955 had a real sense of dialogue between piano and orchestra which is simply not there in Arrau's final version. DG too issued a Fourth with the Bavarian RSO, taped live at a concert given in aid of Amnesty International. It's now in a Bernstein compilation [DG E477 6690]. You can also see it - Bernstein sporting a beard, and on his best behaviour - on YouTube. (Did the pianist ever speak out publicly against Pinochet's dictatorship in Chile?)

PARTNERED BY KLEMPERER

But the Beethoven concertos with Arrau I would recommend most highly are in Testament's 2CD set of live performances of Nos 3, 4 and 5 with the great conductor Otto Klemperer, given in the Festival Hall in 1957 [SBT2 1351].

Their 1954 Cologne account of Chopin's E-minor Concerto - a composer one scarcely associates with Klemperer and reputedly his first encounter with the music was also preserved and first issued by Music & Arts: it is now on ICA Classics [ICAC 5045].

Daniel Barenboim has described Arrau as 'believing in the seriousness of music - and unwilling to compromise on any level.' Arrau felt, too, that humour could not exist in music - a subject in which Alfred Brendel delights in his book On Music [Robson Books]. Brendel gives examples with Ligeti, Haydn and early Beethoven. Listen too, for proof, to Pollini's new DG recording of the Op.49 sonatas: 479 4325!

DG's 6CD set has Arrau in Beethoven's **Fourth Concerto** with the Bayarian RSO from 1976

ESSENTIAL RECORDINGS

Debussy Préludes, Images, Estampes

(44.1kHz/16-bit download only) You can savour what Colin Davis called Arrau's 'rich, almost organ-like sound - never clattery' in a set of the Préludes to rank with Michelangeli's for DG. Sone sniffy critics claimed you could hear Arrau's fingernails hitting the piano keys, but I never heard this!

Beethoven Piano Concertos 4 and 5

Decca UCCD-4853 (Japanese import) It looks as if all that remains of Arrau's finest concerto cycles, the one with Concertgebouw/ Haitink, is this very recent recoupling. (Downloads at Presto Classical.) However, there's a very costly box with all the concertos sonatas and variations, etc: Philips 462 358-2.

Liszt Etudes

Philips 456 339-2 (two discs)

This CD reissue has Arrau's 12 Transcendental Studies from 1974 and five Concert Studies. together with Nikita Magaloff's Paganini Etudes. The Études d'exécution transcendante were separately issued as a Pentatone SACD: PTC 5186 171. The transfer was superior but this disc now appears to have been deleted.

The Final Sessions

(44.1kHz/16-bit download only) Four Bach Partitas, six Beethoven sonatas and piano works by Schubert (Impromptus D935; Sonata D894, etc) and Debussy (Bergamasque Suite; Pour le piano, etc). You can purchase single tracks at Presto Classical.

Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

America America (180g vinyl)

Formed in England in 1970, this American trio caught music fans' attention with their fresh take on folk rock. **Steve Sutherland** revisits their debut LP, on 180q vinyl

hey say you can't judge a book by its cover but, of course, the exact opposite is true when you're talking about albums. At least, in the pre-digital age it was, anyway.

Back in the day, the 'packaging', as it's so disparagingly referred to nowadays, was an integral part of the album experience and the sleeve that you chose to tuck under your arm while you strolled casually across the playground or college campus said as much about you and the self-image you wished to project as the length of your hair or the cut of your trousers.

WONKY TAKE

I can still vividly remember, these long 40 years hence, how impressive Pedro looked as he slouched around the corner of the science block, his face a pudding of pustules, his hair a lank, greasy curtain hanging down to his waist with The Groundhogs' Thank Christ For The Bomb conspicuously about his persona. I thought he was so-o-o cool and I so-o-o wanted to be him, girl-scaring pustules 'n' all.

But, looking back, of course, the really cool thing about being a kid is that you have a very wonky take on the rules of

cool and, in the inevitable ritual of getting it completely wrong, you make some discoveries that stick with you down the years, long after the notion of cool has ceased to be any kind of aphrodisiac.

And so it was that the 16-year-old me took to wandering around carrying the album we're here to talk about, America by America. Care to read any contemporary review of America and chances are you'll be confronted by accusations of, if not downright plagiarism, then at very least an over-zealous fondness for the works

of Crosby, Stills & Nash. Which is a bit like saying that The Eagles grooved on Gram Parsons, or The Jam liked The Who, or that Big Star held The Beatles in awe, or that Teenage Fanclub, in

turn, revered Big Star. True, true, true and true. But as in every case here, America's CSN crush only tells part of the story.

For the real picture you have to look at the sleeves. CS&N, shot by hip celebrity photographer Henry Diltz in West Hollywood in 1969 portrays three

'The biggie was the two-chord masterpiece "Horse With No Name"

Steve edited NME from 1992-2000, the Britpop years, launching NME.com and reviving the NME Awards. Previously he was Assistant Editor on Melody Maker. Among his many adventures he has been physically threatened by Axl Rose, hung out awhile with Jerry Garcia and had a drink or two with Keith Richards...



grown men, two approaching 30, who are moving confidently into the second phase of their careers after The Byrds, Buffalo Springfield and The Hollies respectively. They are and look a supergroup. They gaze at the camera as if they own the whole world. They sure know how to pose. One of them holds a guitar. One of them sports a splendid moustache.

I never owned this album when I was a kid. My friend Bob's dad had it though. He played quitar in a local pub band and marvelled at what he called their

> 'virtuosity'. I listened to Nash's winsome 'Lady Of The Island' and just couldn't get it. It was a dad's LP.

The cover of America also features three individuals shot by a famous

photographer but there the similarity ends. These guys are Dewey Bunnell, Dan Peek and Gerry Beckley, three school buddy sons of American servicemen stationed in North London. They are lank-haired, be-denimed, sprawled on scatter cushions just like me and my mates did in each other's crashpad bedrooms. Two are 19 and one's 21 and they look like they're sharing a joke and possibly a sneaky cigarette of dubious origin. Behind them is a portrait of three Native Americans. In short they look like us. Or what we want to be. They have no pedigree. They look young, handsome, carefree and groovy. Which is just what the album sounds like.



The photograph is by Nigel Waymouth, a well-connected chap who, having launched the legendary swinging '60s boutique Granny Takes A Trip in 1966, got together with another talented fellow called Michael English to form Haphash & The Coloured Coat, a design company responsible for tons of fantastical psychedelic posters advertising such happening underground clubs as UFO and Middle Earth.



Gerry Beckley, Dan Peek and Dewey Bunnell caught on camera in the studios of Dutch broadcaster AVRO as they appear on the weekly television show TopPop in 1972

AMERICA

Priced £16.50, the 180g Music On Vinyl reissue of America's debut album is available online from www.juno.co.uk

John Peel was the guvnor DJ at Middle Earth. The other was a bloke called Jeff Dexter who'd been a mod dancer at the Lyceum, deejayed at the first Glastonbury Fayre, and had recorded a daft little record called 'Let Me Teach You How To Dance'. The track was written by a mate of his called Ian Samwell who'd been quitarist in Cliff Richard's pre-Shadows backing band The Drifters and had authored 'Move It'.

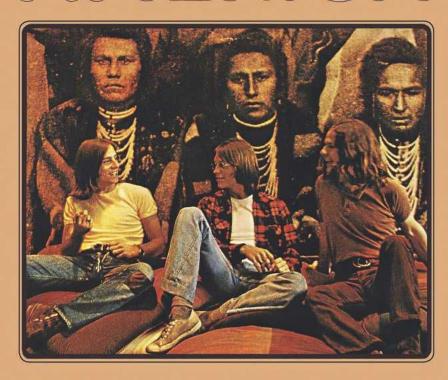
It was Samwell, A&R-ing for Warner Brothers in the UK, who discovered and signed America. Dexter became their manager and the pair produced the album we're on about here. The lads, being young and impressionable, were in awe of The Beatles' Sgt Pepper and hankered after a complicated, orchestral debut, but Samwell and Dexter saw it another way and encouraged the lads to keep it up close and personal.

Dexter took them to Holland to gig away from prying ears and by the time they came to record the album at London's Trident studios in late 1971 they had a sound rich in harmony, every note as



Beckley, Peek and Bunnell pose for a promotional shot in 1972

AMERICA



deceptively simple and laid-back as the vibe Peter Asher had fashioned for James Taylor on his previous year's smash album Sweet Baby James.

A FRESH TAKE

America, with its bright, nifty, intricate acoustic guitars, buoyant basslines and easy vocal collaborations was a fresh take on the quintessential freak sound of the times. The lyrics were mostly pure hippy dippy but that was OK because they were vague enough to pique our interest while naïve enough not to suggest any real sort of artistic pretension. The songs were eminently singalongable and still are today.

The main writer was Bunnell who penned 'Sandman', the one that goes, 'He flies the sky like an eagle in the eye of a hurricane that's abandoned,' which would appear to make no sense whatsoever but is actually about US soldiers on active duty in Vietnam being too scared to sleep lest they be killed in the night. He also wrote the jaunty opener 'Riverside' about revelling in being busy doing nothing, the protest zeitgeisty 'Children', the completely outof-kilter psycho ditty 'Pigeon Song' and the cute pastoral 'Three Roses', which was a hit single in the US.

So was Beckley's mawkish 'I Need You' but of course the biggie was Bunnell's two-chord masterpiece 'Horse With No Name' which was recorded after the album : was first released. Originally titled 'Desert Song' until Jeff Dexter talked 'em out of it, the song about 'plants and birds and rocks and things' and there 'ain't no-one for to give you no pain' was a surprising smash Stateside (knocking Neil Young's 'Heart Of Gold' off the No 1 perch – oh the irony!) and swiftly added to the LP, which shot the long player straight to the top as well.

Their fortune made, the three lads immediately sacked Dexter and Samwell and legged it to California. Exactly what I would have done had I been lucky enough to be them. 🖰

RE-RELEASE VERDICT

Another reissue from the well respected Music On Vinyl stable, this 180g LP comes in a sturdy cardboard sleeve and, at under £17, is well worth the asking price. A little more aurally vibrant than the original pressing, all 12 tracks here sound more detailed, have greater body and bass definition while treble is smoother and more extended. Reassuringly, our copy was flat and noise free, no weave could be seen, and the volume remained consistent across the LP. A covetable folk-rock classic, this is a fine addition to any collection. HFN

Sound Quality: 87%





Kraftwerk The Man-Machine

They weren't the first band to use synthesisers, but this four-strong outfit from Düsseldorf were pioneers when it came to fully-synthesised pop. Yet their belief in the fusion of man and machine at first sent chills rather than thrills down the spines of the music critics...

Words: Mike Barnes

he 1970s was a crucial decade in the development of electronic music. Within a few years, synthesisers had shrunk from the huge modular Moogs such as the one used by Keith Emerson in 1969, with its towering patchboard that looked like a small telephone

like the Minimooa. You also had the option of semi-automating the instrument by linking it to a sequencer which,

exchange, to the portable and affordable suitcase-sized synthesisers

when triggered, would result in a set pattern of notes being played.

RISE OF THE ROBOTS

In some quarters there grew a distrust of this branch of technology. Not only might computerised machines take your job, they might well take over the world, went the thinking. Warnings in sciencefiction of what might lie ahead were exemplified by HAL, the renegade ship's computer in 2001: A Space Odyssey, introduced to the big screen by Stanley Kubrick in 1968. On Emerson Lake And Palmer's futuristic three-part suite 'Karn Evil 9' from their 1973 album Brain Salad Surgery, Greg Lake struggles in vain to outsmart his HAL-like enemy.

As the 1970s continued, progressive rock groups used ever more ostentatious banks of keyboards and huge PAs. For some pundits, the accumulation of so





The band pictured in 1977 (I-r) Florian Schneider. Ralf Hütter, **Karl Bartos** and Wolfgang Flür

Promo shot of the band, again from 1977, used to promote their sixth studio album, Trans-Europe **Express**

Ralf Hütter on stage in Munich 2011. Ever the technological innovators. their gig was part of a '3D tour' by the band that saw audiences treated to a light show that included 3D projections

much hardware was seen as distancing and dehumanising rather than empowering. In an NME review of Pink Floyd at the Empire Pool, Wembley in 1974, co-writers Nick Kent and Pete Erskine labelled the band's lacklustre performance 'Orwellian'. likening it to the soulless muzak described in George Orwell's novel, 1984.

'One can easily envisage a Floyd concert in the future consisting of the band simply wandering on stage, setting all their tapes into action, putting their instruments on remote control and then walking off behind the amps,' wrote the pair. They also talked of 'computerised' gestures, which in context exemplified all that was fake and ran counter to the one-to-one communicative power of pure rock 'n' roll.

Kraftwerk - their name means 'power plant' in German - had different ideas.

They had surfaced in Düsseldorf in 1970 during the extensive reinvention of German music, dubbed 'Krautrock' by the English

music press. Essentially the duo of Florian Schneider and Ralf Hutter, the band initially experimented with both conventional instruments and electronic sounds, their rhythms coming from real drums as well as drum machines, and echoed flute and keyboards.

The group hit their stride with synths and sequencers on the album Autobahn, released in 1973, which

saw Wolfgang Flür drafted in on 'electronic percussion'. The album with an edited version of the title track charting at No 11 in the UK



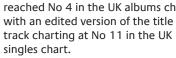
This album was something of a novelty, allying the sort of electronica that had been heard on the groundbreaking Giorgio Moroder-produced 'Son Of My Father' by Chicory Tip, with

> Krautrock-style experimentation and pop hooks.

In an interview in 1975 with journalist Lester Bangs for the American

magazine Creem, Ralf Hutter claimed that as part of Krautrock's ongoing reinvention, Kraftwerk were typical of a new generation seeking new electronic sounds.

By now they had been joined by a second electronic drummer, Karl Bartos, wore uniformly short haircuts and were dressing in anonymous middle management suits. And to those unsure about this whole \ominus





'The band's arch,

android severity

meant they were

provocative'

DUSSELDOR



VINYL ICONS

PRODUCTION NOTES

The Man-Machine was recorded in Kraftwerk's own Kling Klang studio in Düsseldorf, opened in 1970 in a large old industrial building. The studio consisted of a small soundproofed studio area, an adjacent workshop and a storage area in the basement.

The group liked to work undisturbed and there are stories of incoming phone calls having to be made at prearranged times. Accuracy was essential: you had to phone just as a band member was about to pick up the receiver as the ringing tone had been deliberately switched off.

Kraftwerk were always pushing the bounds of technology and employed an engineer to help design and adapt their instruments and equipment, including Flür and Bartos's customised drum kits. By the time The Man-Machine came to be recorded. Hutter and Schneider had contacted the Bonn-based electronic instruments firm Matten & Wiechers and commissioned the construction of the 'Synthanorma'. This was a 32-step sequencer, through which they would feed a Minimoog or an EMS synthesiser to create their trademark sound.

The Man-Machine was recorded onto an analogue tape master which was then taken to the commercial Studio Rudas, also in Düsseldorf, where Joschko Rudas worked on the final mix. The title track of 1977's Trans-Europe Express had become a disco hit and in order to capitalise on this crossover appeal, sound engineer Leanard Jackson, who specialised in disco and funk, was flown over to Düsseldorf to help.

In 1981 the band cleared out the equipment from Kling Klang and took the whole lot on tour with them.





'music of the machines' schtick, they made a bold statement.

When Bangs asked if the machine could ever start playing them, Schneider replied: 'Yes. When it gets to a certain stage, *It* starts playing... it's no longer you and I, it's *It*.

Hutter then added that: 'The Mensch-maschine is our acoustic concept, and Kraftwerk is a power plant – if you plug in the electricity, then it starts to work. It's feedback. You can jam with an automatic machine, sometimes just you and it alone in the studio.'

SHOCKING CONCEPT

While computer owners today can easily make music with software that requires little input from the user,

at the time this was a shocking concept. It was as if Kraftwerk themselves might provide the soundtrack to 1984.

Perhaps just as

importantly, this was the 1970s and Kraftwerk were German. And the music press, despite being regarded as enlightened – both in the UK and US – was still parochial to the point of being xenophobic.

Even Bangs, a fan of sorts, asked Schneider if they intended to provide a musical 'final solution'? As crass and offensive as this remark was, Kraftwerk also played up to the notion of national stereotypes.

Hutter told him: 'We want the whole world to know our background. We cannot deny we are from Germany, because the German mentality, which is more advanced, will always be part of our behaviour.'

The tricky thing was to isolate where Kraftwerk actually stood.

They were provocative with their arch, eccentric, almost comic-book android severity, but much revealed itself to be tongue-in-cheek. Evidently the German sense of humour was also far more advanced than we, at the time, had realised.

CHARACTERLESS CLONES

The albums Radio Activity, released in 1975, and Trans-Europe Express (1977) kept the group in the public eye, but it was 1978's The Man-Machine that saw them reach a new commercial peak.

The cover, which references the early Soviet propaganda posters of Russian modernist artist El Lissitsky, showed all four group members posed like characterless clones.

'It's easy to forget

one of their major

influences was

The Beach Boys'

The music was now pure electronica.
The synth lines were like clean, gleaming mosaics, topped by the group's

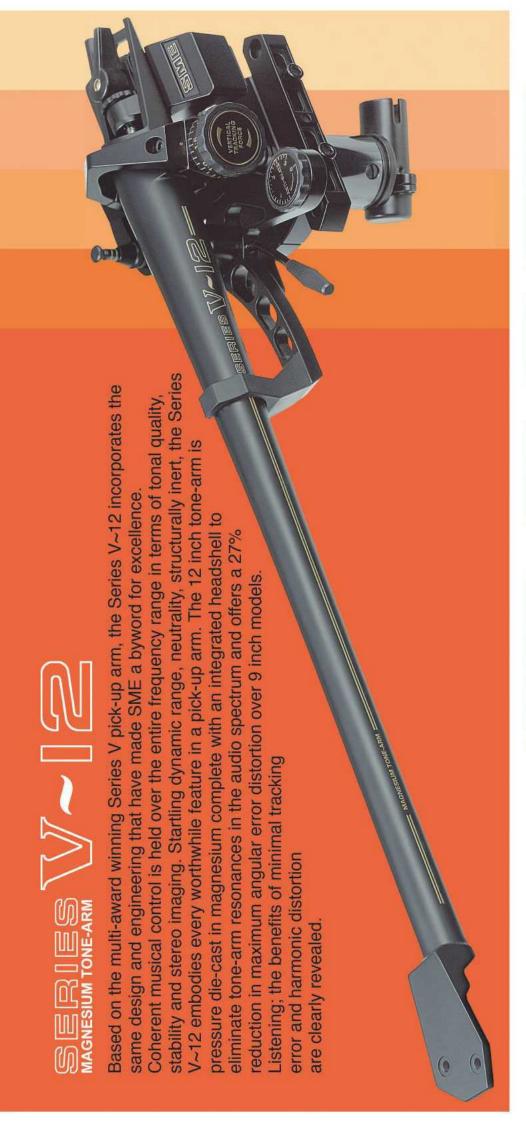
typically vocodered vocals, as on 'We Are The Robots'.

One of the projections from the band's 3D tour, which are viewed by the audience through cinema-style glasses. For 2015 concerts see www. kraftwerk. com

The Kling Klang Studio in Düsseldorf. In 2009 the band moved their set-up to Meerbusch-Osterath, six miles west of Düsseldorf

The band on stage in Zürich in 1976, the year before the release of Trans-Europe Express







"The best pick-up arm in the world"

SME LIMITED • STEYNING • SUSSEX • BN44 3GY • ENGLAND • TEL +44 (0)1903 814321 • FAX +44 (0)1903 814269 • www.sme.ltd.uk • sales@sme.ltd.uk

The **New EV03 Sigmas** from IsoTek delivers highly effective, class-leading performance to dramatically improve both sound and picture quality, whilst also protecting your valuable equipment from power surges and voltage spikes.*





"I was truly impressed and amazed at how much of an improvement the EVO3 Sigmas is over the previous model.

This product is truly awesome in the effect it has upon a system and can be regarded as an essential purchase."

HI-FI WORLD, 5-Globe winning product

NEW EV03 Sigmas

The new IsoTek EV03 Sigmas offers 4 medium power outlets, now rated at 10A and 2 high current outlets rated at 16A. A paired down verson of IsoTek's award winning Titan Direct-Coupled© conditioning network is used to power the high current side of the product.

- Removes Common mode noise
- Removes Differential mode noise
- RFI reduction 75dB
- 108,000A of instantaneous protectoin
- LED Display







Find out more about IsoTek's award winning range of power cleaners, and for your free brochure, please contact:

info@soundfowndations.co.uk • www.soundfowndations.co.uk www.isoteksystems.com • www.facebook.com/isoteksystems

Alternate Forma Discograp





'The Model' is Kraftwerk's best known song - it's wistful, full of melancholy, with an exquisite keyboard melody. But then it's easy to forget that, according to the group, one of their major influences was The Beach Boys. 'Spacelab' is a longer, mainly instrumental track with a techno beat and a memorable high, light synth tune, while 'Metropolis' has a more measured, slightly ominous tread.

'Neon Lights' exemplifies an important aspect of Kraftwerk's unique approach. Whereas some later synth pioneers, like Gary Numan, fetishised cold, emotionless alienation, the mensch-maschinen of Kraftwerk always seemed to be having fun, and on this track they collectively share in the wondrous spectacle of a city at night. The title track, with vocodered vocals, also possesses a cool, pristine beauty.

PITHY STATEMENT

The Man-Machine is one of Kraftwerk's most pithy statements. It shows that the group's great strength was to harness their perfectionism and use this to understand how electronics and pop music could work together. In doing so, they found an original voice.

Even now their music hasn't really dated and their legacy is huge. After all, this whitest of white groups has influenced some of the blackest of black music. In 1982 Afrika Baambaata used some of their precision-tooled grooves for his electro-funk classic, 'Planet Rock', while their influence on Detroit techno has been crucial.

To say, as have some, that Kraftwerk have been the second most influential group behind The Beatles is surely no exaggeration. \bigcirc



ORIGINAL LP

'We create out of the German language, the mother language, which is very mechanical,' said Ralf Hütter in 1975. 'We use it as our basic structure.'

The German language version of The Man-Machine – titled Die Mensch-Maschine - was first released on LP in 1978 on Kling Klang/EMI Electrola [1 C 058-32 843], with a limited edition red vinyl version bearing the same catalogue number.

The English language version came out the same year in the UK and Ireland [E-ST 11728] and in the US and Canada [SW-11728] on Capitol. The album had individual releases across a large number of European territories on LP, all on Capitol or co-released on subsidiaries. Exceptions to this were in Yugoslavia, where the LP was released on the Jugoton label [LSCAP 73083].

Further afield, Capitol releases included Australia and New Zealand [both ST 11728], Japan [ECS-81083], Colombia, Brazil, South Korea and India.

A version for Argentina entitled La Maquina Humana was released on LP also on Capitol [108030], with translated titles, while a Uruquyan promo LP of that title, with a red sleeve and stickers on the original artwork on the front and back was released on Discos Es Cultura [SW-1-11728].

CASSETTE RELEASES

The German language version was released on cassette on EMI Electrola/Kling Klang [1C 258-32 843]. The English version [TC-E-ST 11728] was released on Capitol and it was this version that hit the shops across other European territories, though as with the LP version, most countries were alloted their own individual catalogue number.

The exceptions were Spain. where the cassette was released as El Hombre Máquina [10C 268-085444] and Yugoslavia, where the tape appeared on Jugoton/Capitol [CACAP 9064]. There was also a release in the US [4N-16302].

VINYL REISSUE 1985

In 1985, the album was reissued on vinyl in a limited number of territories. These included the German version on EMI Electrola [1C 064-1 32 843 1] and a UK edition [FA 4131181], which appeared on the mid-price budget reissue label, Fame, launched by Music For Pleasure in 1982.

FIRST CD 1986

The Man-Machine first appeared on silver disc in Germany in 1986 on the group's Kling Klang label [CDP 564-7 46131 2] and in the UK and Europe that year on Capitol [CDP 7 46039 2]. A US version bearing the same catalogue number as the UK release followed in 1987.

It took two further years for a CD release in Japan, where in 1989 it appeared as part of the CBS Past Masters series [CP21-6045].



CD REISSUES

In 1993 the album was re-released on CD in the US on Capitol's budget CEMA Special Markets label [S21-56956] and was also licensed to the Cleopatra label [CLEO58772]. This release is distinguished by the fact that a different photograph is used for the cover. This has headshots of the group, arranged diagonally.

A standard Capitol CD reissue took place in the UK and US when the rights to the recording reverted back to the company in 1995. A subsequent CD reissue on the label in 2005 included a standard jewel case with a four-page booklet [7243 5 81686 2 4].

In 2007 there was a special Japanese reissue at budget price on FMI with an obj sleeve and liner notes in Japanese [TOCP-53097].

VINYL REISSUE 1993

In 1993 the LP was released once again on vinyl. This was in the US where Capitol reissued the LP on both its regular label and on its CEMA Special Markets label to accompany the simultaneous CEMA CD release that year.

Both vinyl versions bear the same catalogue number [\$11-56854] but the CEMA release has pink disc labels.



REMASTERED CD 2009

The first CD remaster to appear was the German language version. The project was overseen by Ralf Hutter and the disc was released in Germany in 2009 on the Kling Klang label [50999 6 99589 1 5].

Later that year an English language version of the remastered CD went on sale in Mexico – also on Kling Klang [5 099970 595321] - and in the US on Kling Klang/ Astralwerks [50999 308302 2 6].

Now the cover simply bore the typography used on the sleeve of the original version, without a photograph of the group members. This became the standard artwork for all these reissues.

In the UK the remaster appeared on the Mute label [CDSTUMM 306] and in Japan on Mute/Kling Klang [TOCP-70814]. Apart from the Mexican version, all of these CD remasters came in a standard jewel cases with a 16-page page booklet enclosed in a cardboard slipcase.

REMASTER ON VINYL 2009

To accompany the remastered CD, an English vinyl version was released across Europe on Mute [STUMM 306] and on Kling Klang [50999 6 99589 1 5]. The LP came with a 12in 16-page colour booklet and a picture inner sleeve. The outer sleeve bears the image used for the 2009 remastered CD.

Gazzarri's, Rainbow & Roxy, LA

A little slab of Hollywood's Sunset Strip has been the playground for movie industry playboys and the area's principal aspiring musicians for decades. **Steve Sutherland** takes you to the heart of the live music experience with the story of three key clubs

entil soup. Whether it was all his blasted guts could handle, or scoffed to act as ballast for the intended binge ahead, it wasn't much of a last supper. Then he felt sick.

All the cavorting around in On The Rox. The coke. The booze. The smack. The soup was the last straw. Well, almost...

They took him home. Or, what passed for home. Shovelled him out of the Rainbow Room back to Bungalow 3 at the Chateau Marmont. There he shot up a speedball. Robin Williams looked in and swiftly left. Likewise, Robert DeNiro. His lady companion shot him up again. Then she left in his Merc.

He was found the next day by his personal trainer. Dead in his bed, balled-up in the foetal position. John Belushi, Jake Blues, King Of Comedy, dead at 33.

GHOULISH STUFF

Not the cheeriest way to start our story, granted, but in a town like Hollywood, it's ghoulish stuff like this that keeps the wheels of the tourist industry spinning.

And there's plenty more where that came from, so stick around if you've got the stomach for it.

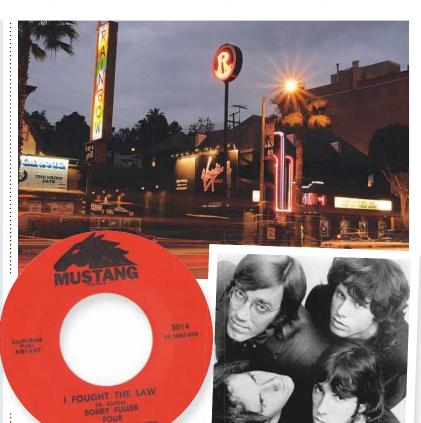
Precisely where we are in Hollywood

Roxy Theatre on the Sunset Strip in West Hollywood California. Known originally as Gazzarri's, it opened on September the 24th 1973 with a private club upstairs called On The Rox

The Bobby Fuller Four's 1966 hit 'I Fought The Law'. The band made early appearances at Gazzarri's

The Doors, pictured here in an Electra Records publicity shot from 1967, were once the house band at Gazzarri's

John Belushi died from a drugs overdose following a night at The Rainbow Room. He was just 33



is a short strip that runs along West Sunset Boulevard from number 9009 which is the address of The Roxy Theatre, and its private upstairs bar, On The Rox, to number 9039 which used to be known as Gazzarri's.

And squeezed between the two, equally relevant to our editorial, is number 9015, the home of The Rainbow Bar & Grill.

TALL TALES

This tiny stretch was – still is – the principal hang-out for LA's elite and aspiring musical denizens and, small though it might be, it has some mighty tall tales to tell.

To start at the start we need to visit Gazzarri's, a club named after a cigar-chomping self-styled gangster type called Bill Gazzarri who came to call himself the Godfather Of Rock

'n' Roll. Gazzarri took a chance on the kids and enjoyed hosting early gigs by The Byrds, Buffalo Springfield and The Doors, who served for a while as the house band before scooting just up the street to wow them at the Whisky A-Go Go.

Nascent Hollywood royalty Sonny & Cher cut their chops here too, as did The Bobby Fuller Four, until 1966 when 22-year-old Bobby was found dead at the wheel of his car in a parking lot in near-by North Sycamore, badly beaten up and doused in petrol. The LAPD verdict? Suicide! How did his hit go? Oh yeah, 'I Fought The Law'...

Gazzarri had a thing for dancers
– especially the ladies – and
encouraged all the new crazes,
taking to filming the kids cutting
a rug on the dance floor and



projecting their images onto big screens a good couple of decades before the MTV video boom.

In the '70s he took a shine to a bunch of longhairs fresh out of Pasadena who were willing to do covers of just about anything from Led Zeppelin to The Bee Gees so long as they got a gig.

PAY TO PLAY

Gazzarri liked their crazy singer – a mouthy squirt called David Lee Roth – and installed them as his new house band. And so it was that Van Halen built the grass roots following that kept them going until Rodney Bingenheimer, the little mod geezer who ran Rodney's English Disco down the block, brought Gene Simmons of Kiss down to the club to take a look at them. Gene liked what he saw, ponied up for some demos that he himself produced, then failed to get them signed under the name Daddy Longlegs.

No matter. Mo Ostin at Warners scooped 'em up soon after, leaving the joint a bit bereft until a new generation of big-hair metallers took to hanging out, Gazzarri's playing host to early shows by Motley Crüe, Poison and Guns N' Roses who guinea-pigged the new pay-to-play scheme whereby each band stumped up a hundred or so bucks in advance for tickets

David Lee Roth got his first break at Gazzarri's, his group taking over the house band slot before later returning as

Van Halen

NO AGE LIMIT 9039 Sunset Blvd., Hollywood

ONE WEEK ONLY !

THUR-SUN.(14-17)

Sonny and Cher. caught on camera in 1971, made some of their first live appearances, as a duo at Gazzarri's

Elton John and Bernie Taupin. The Rainbow Bar & Grill opened on April the 16th, 1972, with a party for Elton

Lou Adler and Carole King, pictured in 2012

to their fans, theoretically ensuring a healthy house for the four 45-minute sets the venue guaranteed per night.

Gazzarri died in '91, his club closed in '93, and an earthquake rang its death knell 12 months later, the structure raised to the ground. It was rebuilt and called The Key Club, but this shut its doors in March 2013.

EXCLUSIVE CLUB

Its near neighbour, The Rainbow Bar & Grill, joined the party in 1972

when Lou Adler (manager of The Mamas & Papas, Carole King and Sam Cooke among others, producer and director of Cheech & Chong's stoned cinematic

and aural escapades) threw his lot in with club runner Elmer Valentine to

> director Vincente Minnelli's cosy Villa Nova restaurant (where Marilyn Monroe first met future hubby Joe DiMaggio)

> > plush and

contemporary dining space with a private and exclusive Over The Rainbow Club upstairs.

Elton John opened the enterprise and pretty soon the Hollywood Vampires moved in. Alice Cooper was the president, Keith Moon his

> lieutenant, and the rest of their small, exclusive gang included Ringo Starr, John Lennon, Harry Nilsson, Monkee Mickey Dolenz, Elt's lyricist

Bernie Taupin and ace organ-fiddler Keith Emerson. This was a band of brothers bonded over one desire: to drink, drink, then drink some more. There were gargantuan tournaments, apparently. Not a pretty sight, especially when Moon turned up dressed as Hitler or a nun, as was his loony habit.

Others who regularly strolled in and staggered out over the years included Neil Diamond, Motörhead's Lemmy and local genius-cum-nutjob Warren Zevon who immortalised the place in his →





'This was a

band of brothers

bonded over one

desire: to drink'



which

they then

flogged

CLASSIC VENUES

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



epic ode to self-indulgence 'Poor, Poor, Pitiful Me'.

Mover and shaker Kim Fowley pretty much lived there in the mid-'70s, made it his office and struck the deals that launched his proto-riot grrrl act The Runaways over lunches at the Rainbow.

And where the rockers gathered, so did the groupies, many, like the infamous Pamela Des Barres, waiting tables there between conquests.

Belushi spooned his last earthly sustenance at Table 16 on the 4th of : opened on the site of what used to March 1982 but.

as at Gazzarri's, the '80s really belonged to the big-hairs, the Crües, the Gunners and the Poisons, et al, chowing down in the restaurant

and shooting up in the bogs. You can see the place today, in all its tacky glory, in the GN'R videos for 'November Rain' and 'Don't Cry'.

HIP BIG-HITTERS

The final member of our funky Hollywood trio is The Roxy Theatre, which was opened on the 23rd of September 1973 by a cartel of some of LA's hippest big-hitters. Lou Adler was in there again, along with legendary shark-like agent David Geffen, and his sometime business partner Elliot Roberts, manager

of Neil Young, Joni Mitchell and just about anyone else who was anyone profitable in the groovy Laurel Canyon set. Peter Asher, fresh released from The Beatles' fast rotting Apple Corps and enjoying success producing James Taylor, also chipped in, as did Elmer Valentine again, giving him a stake in the Roxy, Rainbow and Whisky.

ROCKY HORROR

'Sin and stardom

seemed to thrive

hand in hand for

decades here'

The new 500-capacity venue,

be a strip joint called The Largo, was a deliberate attempt to steer talent away from the famous Troubadour which, according to all these great

men, was exercising too much of a gigging monopoly over their talent.

Neil Young & The Santa Monica Flyers played the opening week and in 1974 it hosted the first US stage production of The Rocky Horror Show, which Adler had imported from London.

Bands who played here were legion, the acoustics so good that George Benson, Frank Zappa, Bob Marley, Van Morrison and Bruce Springsteen all recorded live shows here for general release. The Ramones' gig scenes for the movie

qiq scenes from The Ramones' movie Rock 'N' Roll High School were filmed at The Roxy

Roxy poster for Jane's Addiction

Rock 'N' Roll High School were shot here in '78, and in 1987 Jane's Addiction decided that live tapes from their Roxy Shows should form the backing for their debut, self-titled album.

OBSCENITY BUST

Another act with movie connections was Paul Reubens, who honed his Peewee Herman character on the Roxy stage in 1981, only to take a steep career tumble a decade on when his TV show was cancelled following an

obscenity bust in an adult cinema.

Sin and stardom seemed to thrive hand in hand for decades on this little slab of the Strip, and it reached its peak when Heidi Fleiss, a regular at the secret little On The Rox Bar above the club, was nailed for running what might well be described as the most glamorous knocking shop in the history of Western civilisation.

Both the Roxy and the Rainbow remain fixtures of the

Sunset Strip scene today. They are currently, it must be said, undergoing a bit of a lull legend-makingwise. But hang around long enough and sure as A follows B, where there's sex comes drugs and where there's drugs comes rock 'n' roll. 🖰













Since 1948 Ortofon have introduced nearly 100 different moving coil pick-up cartridges to the hi-fi market. Their latest models in this long and proud heritage are the Quintet Series.

All Quintet cartridges use the same ABS thermoplastic bodies and neodymium magnets, but each model in the range has its own sonic expression that reflects its status. From the well-rounded **Quintet Red**, through the smooth **Quintet Blue** and spacious yet dynamic **Quintet Bronze** up to the pure audio excellence of the **Quintet Black**, this series offers something for every discerning listener at a very attractive price.

The Quintet Series also includes a true-mono cartridge, for accurate reproduction of older mono recordings.



hi-finews Subscription order form

DIRECT DEBIT SUBSCRIPTIONS UK ONLY Yes, I would like to subscribe to Hi-Fi News ☐ Print + Digital: £11.87 every 3 months (SAVE 34% on shop price + SAVE 75% on Digital Download + FREE GIFT) Print: £9.79 every 3 months (**SAVE 34%** on shop price + **FREE GIFT**) YOUR DETAILS MUST BE COMPLETED Mr/Mrs/Miss/Ms.....Initial.....Surname. Address Postcode . Mobile.. Email I WOULD LIKE TO SEND A GIFT TO: Address Postcode Country INSTRUCTIONS TO YOUR BANK/BUILDING SOCIETY DIRECT Originator's reference 422562 Name of bank. Address of bank..... Postcode

Instructions to your bank or building society: Please pay MyTimeMedia Ltd. Direct Debits from the account detailed in this instruction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this instruction may remain with MyTimeMedia Ltd and if so, details will be passed electronically to my bank/building society.

Account number

Reference Number (official use only)

Account holder...... Signature.....

Sort code

Please note that banks and building societies may not accept Direct Debit instructions from some types of account.

CARD PAYMENTS & OVERSEAS

Yes, I would like to subscribe to *Hi-Fi News*, for 1 year (13 issues) with a one-off payment

UK ONLY:

☐ Print + Digital: £49.79 (SAVE 29% on shop price + SAVE 75% on Digital download + FREE GIFT)

Print: £41.49 (SAVE 29% on shop price + FREE GIFT)

EUROPE & ROW:

- ☐ EU Print + Digital: £69.56
- ☐ *EU Print*: £61.26
- ROW Print + Digital: £73.30
- ROW Print: £65.00

PAYMENT DETAILS

		_	
Please make cheques payab			on the back
Cardholder's name			
Card no:		((Maestro)
Valid from	Expiry date	Maestro issue n	0
Signature		Date	

Offer ends 1st February 2015. MyTimeMedia Ltd & Hi-Fi News may contact you with information about our other products and services. If you DO NOT wish to be contacted by MyTimeMedia Ltd & Hi-Fi News please tick here: □ Email □ Post □ Phone. If you DO NOT wish to be contacted by carefully chosen 3rd parties, please tick here: □ Phone. If you wish to be contacted by email by carefully chosen 3rd parties, please tick here: □ Email

POST THIS FORM TO: HI-FI NEWS SUBSCRIPTIONS, TOWER HOUSE, SOVEREIGN PARK, MARKET HARBOROUGH, LEICS LE16 9EF.



PRINT + DIGITAL SUBSCRIPTION

Free 1.5m USB audio cable* - Chord USB SilverPlus

13 Issues delivered to your door

Save up to 34% off the shop price

Download each new issue to your device

A 75% discount on your Digital subscription

Access your subscription on multiple devices

Access to the *Online Archive* dating back to January 2008

Exclusive discount on all orders at myhobbystore.co.uk



PRINT SUBSCRIPTION

Free 1.5 USB audio cable* - Chord USB SilverPlus

13 Issues delivered to your door

Save up to 34% off the shop price

Exclusive discount on all orders at myhobbystore.co.uk

SUBSCRIBE TODAY

Receive a free **Chord USB SilverPlus** when you subscribe today*



Following Hi-Fi News' ground-breaking group tests of USB cables [HFN, July '13 and '14] we have secured a limited number of Chord's USB SilverPlus for offer to new subscribers. Awarded our prestigious 'Outstanding' badge for its superb performance, Chord USB SilverPlus employs gold-plated contacts and shells for its connectors while the internal data cables employ silver-plated oxygen-free

copper strands insulated with LDPE. The cable is fully screened, and jacketed in a soft white PVC sleeve. If you're an enthusiast looking to enjoy high-resolution music files for the first time, then USB SilverPlus is the ideal choice to connect your computer to your USB DAC.

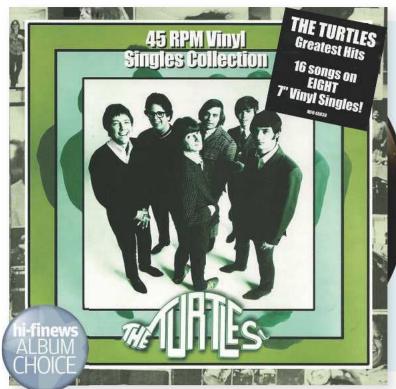
TERMS & CONDITIONS: Offer ends 1st February 2015. *Gift for UK subscribers only, while stocks last. **When you subscribe by Direct Debit. Please see www.hifinews.co.uk/terms for full terms & conditions

(hifinl/V690) www.subscription.co.uk/hifinl

Quote ref: V690

Lines open weekdays 8am - 9.30pm & Saturday 8am - 4pm

VIEWS: VINYL



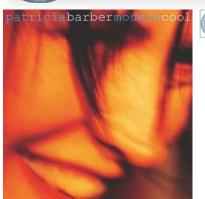
THE TURTLES

45rpm Vinvl Singles Collection

FloEdCo/Manifestor Records MFO 48030 (eight singles)

Oooh, am I gonna catch hell for this: 'Album Choice' going to a box set of eight 7in/45rpm singles? Really? Let's look at the evidence. The eight singles feature 16 A-sides, though three or four are semi-obscure. The rest are staggering pop classics like 'You Baby', 'Happy Together', 'She'd Rather Be With Me' and others penned by the likes of Bob Dylan, Nilsson, Jim McGuinn and Gene Clark, Warren Zevon, P F Sloan, and Bonner and Gordon. The Turtles were as polished as any 1960s act, but utterly underappreciated until they broke up and singers Kaylan and Volman were grabbed by Frank Zappa. This is some of the finest sunshine pop ever, and you will not believe how good thick vinyl 45s can sound. KK

Sound Quality: 90%



PATRICIA BARBER

Modern Cool

Premonition Records 90761-1 (two discs; 180g vinyl)

With spreading a single LP over two discs joining the 2x45rpm 12-inchers sets as the formats of choice for the best sonics, fans of Barber will adore this magnificentsounding iteration of her 1998 release. I'm warming to her slowly, but this is too jarring, as if she'd spent time in Berlin, wishing she was Nico. Yes, it's that kind of bleak, with even her three cover versions having an unexpected sinister edge. The Paul Anka-penned 'She's A Lady' is as far removed from Tom Jones's hit version as the Flaming Lips' latest is from the original Sqt Pepper (and not in a good way). It makes for a great demo LP, but you'll want to kill yourself after hearing it. KK

Sound Quality: 85%



Mobile Fidelity MFSL 2-420 (two 45rpm LPs; 180g vinyl)

Not sure how far into the catalogue MoFi

BOB DYLAN

Bob Dylan

will go with transfers of the Dylan canon onto 45rpm, two-LP sets, but the results continue to stagger this listener. My pristine mono original copy remains my standard because of its inimitable naturalness, but this is just as intimate and involving - quite a feat when working with tapes over a halfcentury old. This album is the opener to one of music's truly astounding careers, with the 20-year-old Dylan giving us 'Talkin' New York', 'Baby Let Me Follow You Down', 'Song

To Woody', 'House of the Risin' Sun' and nine others in unplugged fashion. It must have been earth-shattering back in 1963, for it resonates still. KK

Sound Quality: 90%



FRANK SINATRA

Point Of No Return

Mobile Fidelity MFSL 1-409

Curiously, this merits MoFi's 'silver label' status, despite it being a glorious release from 1961, with sound as befits an orchestra conducted by Alex Stordahl and material including 'September Song', 'There Will Never Be Another You', 'These Foolish Things' and 'As Time Goes By'. On the other hand, there's so much Sinatra from which to choose that this 'average' LP blows away just about anything else. But this was his last for Capitol before leaving for Reprise – any sense that it's half-hearted is as much based on history as it is on attitude. Sinatra is magnificent with Stordahl, with whom he worked in the 1940s. Also fabulous on SACD, but this has the edge. KK

Sound Quality: 90%

0	-	-	-	-	-	-	-	-	100
U									100

AUDIOPHILE: DIGITAL



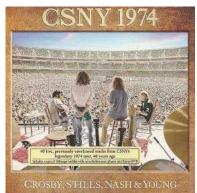




















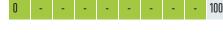


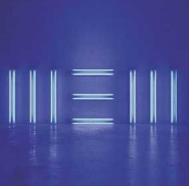
CROSBY, STILLS, NASH & YOUNG **CSNY 1974**

Rhino R2541729 (three CDs + DVD)

Uniform with the solo-career boxes for Crosby, Stills and Nash, this is the sort of archival treasure that will send chills down a fan's spine. Graham Nash has, again, proven to be the band's peerless chronicler with a package consisting of unreleased live material from their 1974 tour – arguably their peak – augmented by a 188-page book full of photos and complete annotation for the scholar, plus a DVD with eight live performances. The sound is spacious and vivid, thanks in part to mastering by the legendary Bernie Grundman, while the songs (from ten shows) are faultless. If you ever loved the music of CSNY, this is your reward. KK

Sound Quality: 89%





PAUL McCARTNEY

New Collector's Edition

MPL 88072 35971 (two CDs + DVD)

A question begged: does Paul McCartney have enough money? This is the seventh edition of this album that I know of, and it's still basically, er, New. If one posits that even bad McCartney is better than most, then this should be OK at the very least. On the other hand, it's one of the best things he's done in years. But enough is enough: a second CD of extra music, including five unreleased songs, and four tracks recorded live in Tokyo, plus a DVD of promo materials ... hands up, all of us who keep buying this stuff because we're fans/casualties. I suppose one should be grateful that he's still performing, but a little commercial restraint wouldn't go amiss. KK

Sound Quality: 85%





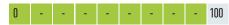
FRANK SINATRA

Songs For Swingin' Lovers

Mobile Fidelity UDSACD2106 (mono SACD)

However that strikes you as a hoot, with SACDs lending themselves to multichannel, the point is that this album is so truly spectacular that you might even want to buy it if you already own MoFi's stunning vinyl version. No Sinatra fan wishes to identify a favourite album, but this 1956 session is composed entirely from offerings out of the Great American Songbook, and it is impossible not to swing - as the title commands – to his sublime interpretations of 'You Make Me Feel So Young', 'Anything Goes', 'Makin' Whoopee' and a dozen more of that calibre. This is as good as standards get, even if (like me) you prefer Nat 'King' Cole or Dino. Utterly superb. KK

Sound Quality: 90%



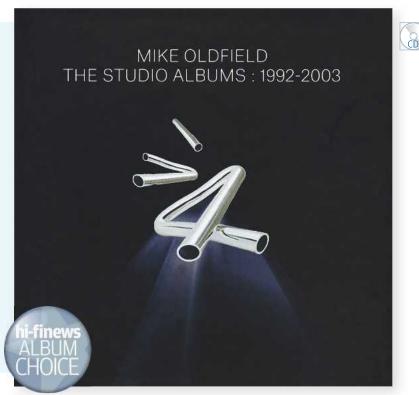
MIKE OLDFIELD

The Studio Albums 1992-2003

Warner 825646 233298 (eight discs)

This is written as a public service, out of a sense of duty, because I loathe ambient drivel almost as much as I detest Primal Scream. But equally, I respect Oldfield's work with Kevin Ayers. As Oldfield is adored by audiophiles, an 8CD box containing his 1992-2003 output is sure to be a winner for a certain type. The package contains Tubular Bells II, The Songs Of Distant Earth, Voyager and Tubular Bells III (also on 180g vinyl), with Guitars, The Millennium Bell, Tr3s Lunas and Tubular Bells 2003 completing this box. While there is some variation - especially the four albums not being transferred to LP as well - the net effect is Tubular Bells again and again and again. But that's by-the-by: the sound is exceptional. KK

Sound Quality: 89%



HI-RES DOWNLOADS



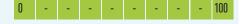
Works for cello and piano: Jean-Guihen Quevras/ Alexander Melnikov (96kHz/24-bit; FLAC)

www.eclassical.com; Harmonia Mundi HMC 902183.84

Early, middle and late period sonatas are prefaced by the three sets of variations on this release, complementary to the violin sonatas with Faust/Melnikov [HFN Yearbook 2010, 'Album Choice']. It should appeal to those unable to come to terms with the use of fortepiano in the Isserlis/Levin Hyperion cycle. Although Melnikov played a Graff fortepiano in Beethoven trios with Faust/Queyras [HFN Oct '14], here he exploits the full dynamic range

and colour of a modern grand while scrupulously observant of score markings. The cellist produces a rather dry, clean sound - even in Op.105:1 and 2 you are aware that Beethoven gives the 'lion's share' to the piano! In the Op.69 scherzo both players sound all the tied notes as 'echoes' (a point much debated). With close sound in perfect balance these recordings are an absolute joy to hear. CB

Sound Quality: 95%





TINGVALL TRIO Beat (96kHz/24-bit; FLAC)

www.highresaudio.com; Skip Records LC 10482

Based in Hamburg, the award-winning Tingvall Trio is a cosmopolitan combo led by Swedish composer/pianist Martin Tingvall, alongside Cuban bass player Omar Rodriguez Calvo and multi-disciplined drummer Jürgen Spiegel, from Bremen. This is the band's sixth album in eight years, its eclectic jazz style highlighting the trio's crossover appeal due to an amalgamation of rock, pop and classical influences. Tingvall's compositions are infectiously melodic, sometimes a little pompous, formulaic even – but regularly downright fun. The trio sounds like it's enjoying itself and the sound quality is excellent, the drum kit and piano particularly dynamic and vivid. Beat was recorded in the studio run by Italian sound engineer Stefano Amerio, which houses a Fazioli F-278 grand piano: this hi-res recording captures its vibrant timbre quite spectacularly. JB

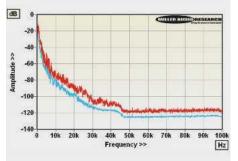
Sound Quality: 85%



OUR PROMISE

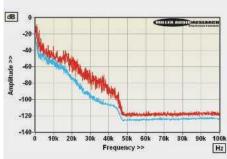
Following our Investigation feature [HFN, Jun '11] where we examined the claimed quality of high-resolution downloads, Hi-Fi News & Record Review is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of information for those seeking new and re-mastered recordings offered at high sample rates and with the promise of delivering the very best sound quality. (Note: asterisk in headings denotes technical reservation explained below.) PM

LAB REPORT



This is a refreshingly true and clean 96kHz/24-bit recording with piano harmonics extending a little beyond 10kHz and the cello almost up to 30kHz before decaying into a very quiet noise floor, free of digital spuriae. PM

LAB REPORT



The Fazioli F-278 grand piano shows an extended ~20kHz reach while the ultrasonic region is occupied by harmonics from the percussion. It's a fairly clean recording making good use of the 96kHz sample rate. PM



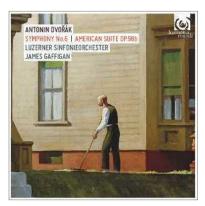












DVORAK

Symphony 6; 'American Suite' Lucerne SO/James Gaffigan (96kHz/24-bit; FLAC)

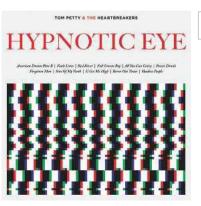
www.highresaudio.com; Harmonia Mundi HMC 902118 Political ill-will meant that the planned Vienna Philharmonic premiere of the Brahms-influenced Dvořák Sixth was deferred for three years and it was first played by a Prague orchestra in 1881. The VPO's only recording came in 2000 under Myung-Whun Chung – superb, like the BPO/ Kubelík (both DG), and I don't think this Lucerne Orchestra version offers any real challenge. In seeking out every tiny detail, their young American chief conductor, I think, loses a forward momentum – even in the furiant scherzo. Only in the finale does everything come together splendidly. Orchestrated from a 1894 piano original, the five-movement Suite, however, brings no such reservations. The (Russell Johnson designed) Lucerne KKL hall acoustic registers at movement-endings; but the soundstage is rather two-dimensional. CB

Sound Quality: 75%



This looks like a 96kHz recording but there remains a lot of spurious noise and ultrasonic 'clutter' in addition to peaks at 20kHz, 32kHz and 46kHz. How much of the post-20kHz content is 'real' and how much is distortion from limiters, etc? PM

Frequency >>



TOM PETTY & THE HEARTBREAKERS

Hypnotic Eye (48kHz/24-bit; FLAC)

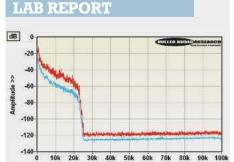
www.highresaudio.com; Warner Music Group

Rarely does the evergreen Tom Petty disappoint his fans, his 13th album with The Heartbreakers proving to be no exception – except that it was three long years in the making. Perhaps because of this it feels over-produced and lacks any feeling of 'performance', despite the album being the band's most rollicking and hardrockin' collection of tracks in a very long time. Power chords and jangling guitars combine with tremendous harmony vocals reminiscent of Petty's outings when an angry young man in the '70s. Of course we've heard it all before, but Petty's songwriting remains as sharp and incisive as ever. Sound quality throughout is merely OK, compressed to sound punchy on the move rather than dynamically thrilling on a decent hi-fi system. So there's nothing to be gained by downloading Hypnotic Eye in an unnecessarily large bit bucket. JB



100

Hz



With a return to 'raucous rock 'n' roll' comes (I assume) an applied level of compression and limited dynamic range that renders 24-bit encoding somewhat redundant. The 24kHz bandwidth offered by 48kHz sampling is well used. PM

Frequency



IMOGEN HEAP

Sparks (96kHz/24-bit; WAV, ALAC, FLAC)*

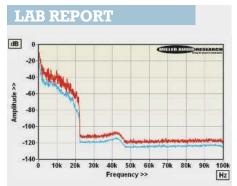
www.naimlabel.com; Absolute/Megaphonic megad007

As our Lab Report warns, there's nothing 'hi-res' about the sound of Imogen Heap's latest assemblage of sonic sculptures. Nevertheless she's as inventive and eclectic as ever in her musical explorations in which she has cut 'n' pasted a patchwork of myriad samples and 'sound seeds' (field recordings of mundane sounds sent in by her fans). She's impossible to pigeon-hole precisely but strikes me as a fascinating fusion of Laurie Anderson and Kate-Bushon-acid jumbled with a concoction of contemporary pop singers. And while too many of the tracks on Sparks tend to develop into a cacophony of brash, heavily-treated and hard-to-decipher vocal gymnastics, it's impossible not to be impressed by her creative zest. 'You don't have to be a chef to make an omelette, and you don't have to be Mozart to make a piece of music', she's said. Hear, hear! JB

Sound Quality: 60%

100





This download is listed as exclusively available via the Naim Label in the UK, courtesy of her own label Megaphonic, in 'hi-res 96kHz' guise. It'll light the 96kHz LED on your DAC but the file is clearly a 2x upsampled 48kHz recording. PM















The Endless River

Parlophone Records 490-1727

I rarely like to review 'major' album releases but a 'new' Pink Floyd release is an event which even I can't ignore. Despite being constructed largely from out-takes recorded for 1994's The Division Bell, it quickly became the most pre-ordered album ever on Amazon. Primarily instrumental, it features mostly electronic keyboard textures from late keyboardist Rick Wright, enhanced by overdubs from guitarist Dave Gilmour and drummer Nick Mason. Don't buy it if Pink Floyd, to you, means angry progrock magnificence (The Wall, Dark Side, etc) but dive right in if you love the spaced-out ambient instrumental side of the band that started (arguably) with 'Set The Controls For The Heart Of The Sun' back in 1968. JBk









CD





Sony Music 88875012202

A gifted cellist, singer-songwriter and Peter Gabriel collaborator, Norway's Linnea Olsson is fast becoming a force to be reckoned with on the international scene. Her debut album, Ah!, was notable for its ambient-experimental instrumentals, but this time she's putting her appealing voice and clever songs front and centre without abandoning her avant-garde leanings. Imagine Laurie Anderson with pop suss, Kate Bush with a voice that doesn't grate after ten minutes, or Enya with less sugar, and you're well on the way to Olsson. Every cut is delightful, but the insightful 'The Love She Kept' and the vocal-sample-driven 'I Am Younger' are outstanding spine-tinglers. JBk

Sound Quality: 92%





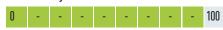
JOE TOPPING AND THE VAGRANT KINGS

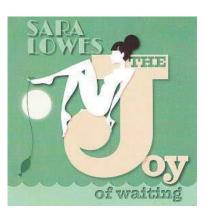
Joe Topping The Vagrant Kings

Fellside Records FECD265

The blues never goes away but far too often the lion's share of attention goes to so-called virtuoso electric quitarists whose understanding of the genre extends all the way back to Joe Bonamassa or maybe even Stevie Ray Vaughan. It's refreshing then to encounter Joe Topping, a Brit with an obvious devotion to the blues in all its forms who, instead of re-hashing the multitude of '50s and '60s cliches we hear too often, writes his own songs incorporating folk, jazz and rock into the music just as the earliest pioneers did. He delivers great songs sung and played with spirit, and recorded using vintage mics to enhance the authenticity of the sound. Buy it now. JBk

Sound Quality: 90%





SARA LOWES

The Joy Of Waiting

Railings Records FRR36

Novelist and playwright J B Priestley has been rarely, if ever, quoted as an inspiration by rising young female singer-songwriters, but Manchester's Sara Lowes is one of finer sensitivities than most. A million miles from Gaga, Minaj or even Pixie Lott, Ms Lowes dresses her finely-wrought melodies in arrangements that have more in common with '60s baroque pop than contemporary dance modes. It's all decidedly easy on the ear but none the less captivating for that, with quirky rhythms and spiky brass stabs contrasting nicely with her breathless lighter-than-air vocal style. It is, indubitably, too clever for the charts but time-less pop aficionados will love it. JBk

Sound Quality: 85%

0									100
U	-	-	-	-	-	-	-	-	IUU



ELECTRICITY FOR MUSIC

"Improves your hi-fi, irrespective of mains quality"

MiniSub Wave. Jimmy Hughes

HIFI Choice - Recommended

Find out more about why power quality is key to your system's performance at www.isol-8.co.uk

• t: +44 (0)20 8856 8856

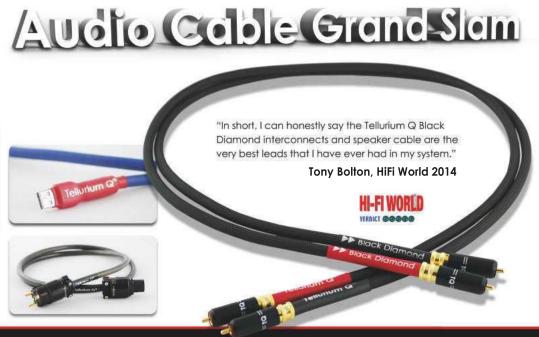
e: sales@isol-8.co.uk

w: www.isol-8.co.uk

DESIGNED & EXCLUSIVELY HAND BUILT IN ENGLAND

Tellurium Q®

Audio products designed to combat phase distortion



Products of the Year 2014:

Blue USB





Hi-Fi Choice







Find out why Tellurium Q® cables are achieving an audio cable grand slam, why not contact Tellurium Q® or one of our many dealers, now.















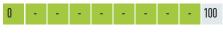
ABDULLAH IBRAHIM

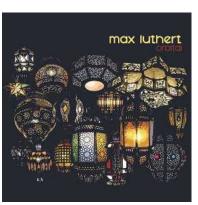
The Song Is My Story

Intuition INT34422 (CD + DVD)

When Ibrahim's solo album Senzo appeared in 2008, it could have been a swansong to a career that had begun in the '60s. But it was more like a new beginning, as 2010 brought a vibrant album with his group, Ekaya, and another with the WDR big band. Mukashi followed in 2013, with Ekaya reedsman Cleave Guyton. But this new solo album opens with Ibrahim on sax, in an arresting melody that implies the harmony even with no chords stated. Then, on piano, the lifelong influences of Ellington, Monk, et al, are distilled into Ibrahim's own eternal essence. And his graceful, illuminating spoken introductions on the DVD mean that for once, this really is a bonus. SH

Sound Quality: 90%





MAX LUTHERT

Orbital

Whirlwind Recordinas WR4659

Bassist Max Luthert is best known for his work with the trio Partikel, but here he makes his debut as a leader with an appealing new sextet. He wanted to challenge himself by writing and arranging for a larger group, so along with Partikel cohort Duncan Eagles (tenor sax), he recruited flautist Gareth Lockrane and altoist Seb Pipe to create an unusual threehorn line-up. Then he added Matt Robinson (piano) and Dave Hamblett (drums). Ensemble passages give way seamlessly to improvised solos and counterpoint, Lockrane soaring above the saxes or adding a mysterious quality on alto flute. An experiment, but a very successful one. SH

Sound Quality: 85%





OLIVIA TRUMMER

Fly Now

Contemplate CMN14005

A graduate in both jazz and classical piano in her home town of Stuttgart, Trummer began recording with her own trio in 2006, soon demonstrating a wondrously effortless, natural combination of pianistic and vocal abilities. Recently she's divided her time between Berlin and New York, where she even appeared with Kind Of Blue drummer Jimmy Cobb. There she also recorded this album of intricately melodic songs, superbly crafted with responsive support from bassist Matt Penman and drummer Obed Calvaire. Guitarist Kurt Rosenwinkel, who'd played with Trummer in Berlin, is heard on three tracks. A sunny album from a super-talented artist. SH

Sound Quality: 85%

0 100			•							
	0	-	-	-	-	-	-	-	-	100

JIMMY GREENE

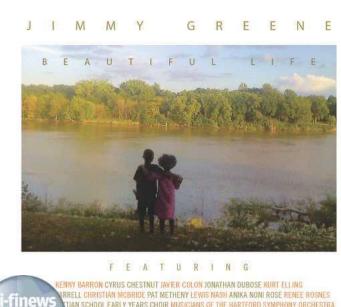
Beautiful Life

Mack Avenue MAC1093

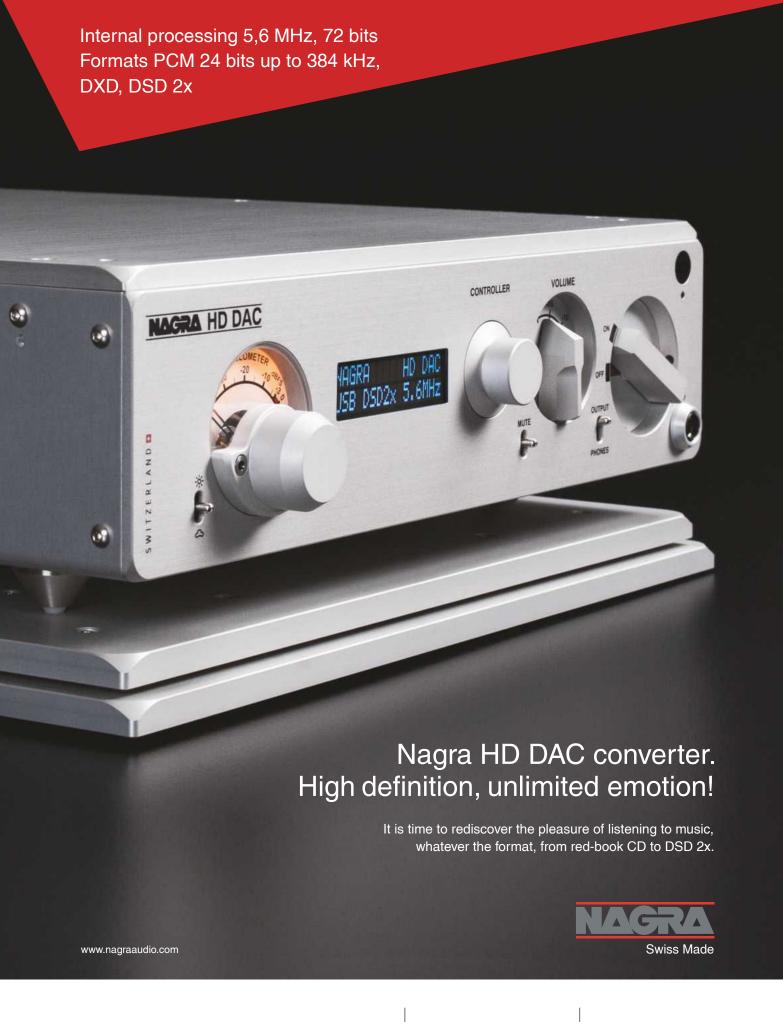
In December 2012, saxophonist Jimmy Greene's daughter Ana died in the Sandy Hook classroom shooting. Harry Connick Jr sang at Ana's funeral and recorded the fundraising tribute 'Love Wins.' But Beautiful Life owes its existence to a beautiful gesture by Norman Chesky of Chesky Records. In early 2013 he offered to donate the production of a recording that Greene could do whenever he was ready, and have complete ownership. Weaving many elements together in a multilayered celebration of Ana's life, Greene included the voice of Ana herself, a children's choir and a string orchestra as well as guest appearances from Pat Metheny and Kurt Elling. Proceeds go to two charities in Ana's name. SH

Sound Quality: 90%





IAN SCHOOL EARLY YEARS CHOIR MUSICIANS OF THE HARTFORD SYMPHONY ORCHESTRA





Accuphase Leben Nagra Peak Consult Tel: +44 (0) 1235 810 455 E-mail: info@rtsaudio.co.uk Web: www.rtsaudio.co.uk



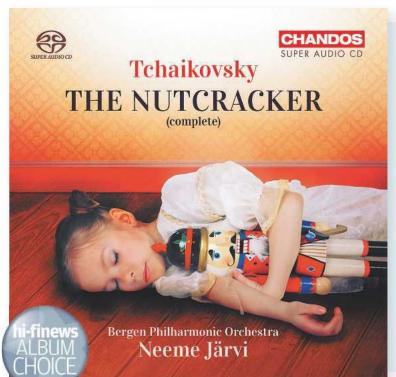












TCHAIKOVSKY

The Nutcracker

Bergen Philharmonic Orchestra/Neeme Järvi

Chandos CHSA 5144 (SACD hybrid; downloads up to 96kHz/24-bit resolution)

Neeme Järvi brings down the final curtain in grand style on his Bergen ballet trilogy: Swan Lake, Sleeping Beauty and now this complete Nutcracker. It comes uninterrupted, ie, as a single SACD or high-res download, in excellent sound (whereas classic favourites like the Ansermet or Dorati are now long in the tooth). It's quite a driven account, which makes listening exciting, although you need to hear, by way of a complementary experience, how much Rostropovich eked out in expressiveness and inner detail in his Suites recording with the BPO [DG 449 7262]. The orchestral playing is impressive - notably the Bergen wind soloists and there's a pleasing children's chorus. CB

Sound Quality: 85%

HALLE







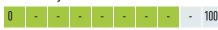
Gottlieb Wallisch pian Joseph Haydn The London Sonatas

HAYDN

Keyboard sonatas 59-61; F-minor Variations Gottlieb Wallisch

Linn CKD 464 (SACD hybrid; downloads up to 192kHz/24-bit res) This programme comprises the three sonatas Haydn wrote during his second London stay and the one completed at Esterházy just before his visit, together with the well-known Variations. Bayouzet's Chandos series has yet to cover these sonatas: he uses a Yamaha whereas Wallisch has a fine Steinway D, recorded in the Neumarkt venue often used by Brendel, et al. He embraces all these pieces in a completely un-self-regarding way (Bavouzet can occasionally sound arch in Haydn) and brings out all the twists and turns, colour and humour, in a manner that ties in closely with early Beethoven. CB













Symphony 3; Thomas Tallis Fantasia; The Wasps Overture; Five Variants of 'Dives and Lazarus' Sara Fox, Hallé Orchestra/Sir Mark Elder

Hallé CD HLL 7548

If you saw the admirable BBC4 'Symphony' series with Simon Russell Beale and Sir Mark Elder you may recall discussions on VW's Pastoral Symphony, its premiere greeted with talk of five-barred gates and cow-pats. But in effect it encapsulated his experiences in World War I. It's perhaps the least easily grasped of the nine: not much to draw you in to (i), for example. The Hallé's playing is remarkable, while the solo trumpet and soprano passages have a beautiful perspective. The Tallis Fantasy is revealed in all its gloom and majesty; and the Wasps overture is new, not the 2010 reissued. CB

Sound Quality: 85%

0	-	-	-	-	-	-	-	-	100



BARTOK/TCHAIKOVSKY

Divertimento/Serenade for Strings LSO String Ensemble/Roman Simovic

LSO Live LSO0752 (SACD hybrid; downloads up to 96kHz/24-bit res) This is the first disc by the LSO's strings under its Moscow-trained leader: odd bedfellows but in both works the control of dynamics, inner voicing and rhythm is marvellous. The Tchaikovsky has real expressive depth in its Élégie movement, while the Bartók makes a fine modern counterpart to the benchmark Fricsay/ DG mono. Under Simovic's direction its concerto grosso form is strongly projected. The Barbican sound is quite good, with precise location of basses, which have a good 'bite', but it is hardly in the audiophile league of the old Argo analogue string recordings we had on vinyl. CB

Sound Quality: 75%

100

THE SEVENOAKS

FOR THE LATEST SALE PRICES AND OFFERS, CONTACT YOUR LOCAL STORE OR VISIT WWW.SSAV.COM



GREAT SAVINGS IN-STORE AND ONLINE













PLEASE NOTE: SOME BRANDS/PRODUCTS ARE NOT AVAILABLE AT ALL STORES, SPECIAL/ADDED VALUE OFFERS ARE NOT IN CONJUNCTION WITH ANY OTHER OFFER (NICWAOO). ADVERT VALID UNTIL 07/02/2015. E&OE



















£399

Claim Free

Worth £79.95



THE SEVENOAKS

FOR THE LATEST SALE PRICES AND OFFERS, CONTACT YOUR LOCAL STORE OR VISIT WWW.SSAV.COM

SALE













FOR THE LATEST PRICES AND OFFERS VISIT WWW.SSAV.COM OR CONTACT YOUR LOCAL STORE



Best Independent Retailer (Large) Consumer Electronics Award Winner 2014

Stores Nationwide

We have a national network of stores and a hard-won reputation for outstanding customer service.

Website

Visit our website for a streamlined on-line experience with an outstanding product selection plus the latest product news and store infomation. Bishop's Stortford® 01279 506576 Bristol® 0117 974 3727 Brighton 01273 733338 Bromley 020 8290 1988 Cambridge® 01223 304770 Chelsea® 020 7352 9466 Cheltenham® 01242 241171 Chorleywood® 0845 5046364 Epsom® 01372 720720 Exeter® 01392 218895 Sheffield • 0114 255 5861 Southampton • 023 8033 7770 Tunbridge Wells 01892 531543 Weybridge 01932 840859 Witham (Essex) 01376 501733 Yeovil • 01935 700078

VISIT WWW.SSAV.COM FOR ADDRESS DETAILS, OPENING HOURS AND BRANDS STOCKED

* THESE STORES ARE FRANCHISED AND OPERATE UNDER A LICENCE AGREEMENT TO SEVENOAKS SOUND & VISION



The hi-fi network

Unveiled at the Hi-Fi Show Live 2014, Melco's media players are designed to live mid-stream on your home network. Paul Miller wonders whether the 'audiophile NAS drive' has its niche

urn to p56 and you'll see our exclusive review of Melco's flagship N1Z 'High Resolution Digital Music Library'. At first sight the N1Z looks like a £6200 alternative to Sony's HAP-Z1ES [HFN Mar '14] – both are media players with internal storage, accommodating LPCM files up to 192kHz/24-bit and DSD to 5.6MHz. Both have additional USB ports that facilitate external storage or allow music files to be copied to the internal drive(s). And both offer a network connection to access the full repository of your stored music.

But while Sony's HAP-Z1ES is a complete media player, with balanced and unbalanced analogue outputs, the Melco N1Z offers network outputs only on RJ45 sockets. OK, so these are fully isolated 'light-pipe' network connections, internally coupled via the very best TDK pulse transformers (the four grey 'boxes' sitting behind each silver network connector - see inside shot, top right).

OPTIMISED NAS DRIVE

You can see where the N1Z is headed - this is an 'audiophile NAS drive', complete with its own internal

high performance dataswitch and DHCP server. Unlike a conventional NAS drive, the N17's network connection talks directly to your player without any additional switch or hub and via a copy of

the TwonkyServer Premium 7.1.1 media server carried by the embedded OS.

Melco's design is intended to maximise the sound quality of N1Z, but while my lab tests indicated a slight reduction in correlated jitter way down the line in the host player/DAC, they also revealed patterns of very low-level interference that were absent when the

same player/DAC was hooked up to a PC via a standard Netgear switch [see p59].

BUFFALO TECH

Andrew's listening tests were similarly equivocal - unless the comparison was made with a substantially overburdened home network feeding multiple clients.

Melco's pitch to hi-fi enthusiasts is clear enough. By collaborating with Buffalo Technology - a leading Japanese manufacturer of computer peripherals and storage devices, including NAS - Melco's library players will rid hi-res audio delivery of 'issues including lack of intuitive software, lack of stability and

compromised audio performance'.

However, I'm bound to wonder if the sort of hi-fi enthusiast likely to entertain the

> purchase of a very costly audiophile NAS drive will ordinarily be using such a compromised network in the first place. All the 'hi-res' music fans that I know are either employing a dedicated PC/Mac with a single network switch or, more

likely, enjoying their 96/192kHz tunes via a software player and asynchronous USB.

MUSICAL DRIVES

'I cannot help but

be intrigued at

the potential of

Melco's concept'

Nevertheless I cannot help but be intrigued at the potential of Melco's concept. The 'audio grade' SSDs are apparently costlier to manufacture than the total bill for its entry-level (£1650) N1A model! These



ABOVE: Inside the Melco N1Z media player - two 'Audio Grade' solid-state drives flanked by separate switched-mode PSUs

by Buffalo's memory products division. They employ selected NAND chips, nonmagnetic alloy/stainless cases, a 'super capacitor' to support the drive if the power lead is accidentally pulled, plus custom firmware.

SSDs are designed and manufactured

Firmware is key. Standard lifetime optimisation algorithms for SSDs operate in bursts and may be intrusive, especially if the host computer is cluttered with programs. Buffalo's algorithm operates constantly but at a very low level, re-writing areas that exhibit intense reading (such as popular playlist tracks) in sequence rather than as fragments.

So the design of the N1Z adheres rigorously to the audiophile engineering handbook - doing everything that should be done to reduce noise and other sources of data jitter. A pity our listening results were less than revelatory. \circ



Technology journalist

Music on the move

'Faced with an

information stonewall

I sniffed out patents

Dolby has filed'

Dolby is promising 'to fill every dimension of your listening room with sound' thanks to a system that bounces music off the ceiling and tracks you as you move. **Barry Fox** stands his ground...

o misquote Lieutenant Colonel Bill Kilgore in the movie Apocalypse Now, 'I love the smell of patents in the morning'. Patents in the morning smell of victory because when middle managers in large companies refuse to communicate usefully, they are often blissfully ignorant of the patents that their company's engineers and lawyers have already published. Take Dolby Labs, for example - the company which in Europe has become so uncommunicative that it did not announce the death of founder Ray Dolby.

WARNING BELLS

As touched on last month, Dolby is now on a mission to launch a consumer version of Atmos, the object-based 3D surround-with-height cinema sound system. The consumer launch relies on floorstanding speakers that bounce the height channels off a ceiling. The hi-fi companies that made this possible, Onkyo and KEF, have so far had no say in

who Dolby invites to demonstrations in the home Atmos room Dolby has built in its Soho Square HO.

Bouncing sound round a room will immediately ring warning bells on

phasing and imaging. Unsurprisingly the first independent review comments on home Atmos are now reporting the need to stick speakers in inconvenient places to get the intended aerial audio images.

Faced with an information stonewall from Dolby and no invitation to the first demos, I sniffed out the patents Dolby has been filing.

Two, from Dolby's Brett Crockett and Scott Harris, usefully explain the basics of object-based audio and frankly admit the difficulties of using it in a home



ABOVE: A traditional 7.1 speaker layout with four Dolby Atmos-enabled speakers (7.1.4)

environment. Instead of the traditional method of spreading a total soundfield over a few loudspeakers, object-based coding treats individual sounds, such as musical instruments, voices or effects, as 'objects' which are sent to target speakers or groups of speakers.

Metadata buried in the audio signal controls a 'rendering' system which moves the sounds between speakers to create a

sound trajectory. This idea sounds

better for movie blockbusters than music but Scott Harris believes the 'ideal' way to reproduce music in high fidelity is to send object sounds

to 'tuned' speakers, for example violins to speakers that are 'closely tuned to violins'.

A common problem with conventional home audio - the existence of 'sweet-spots' for best listening – also affects objectbased audio, says Brett Crockett.

He writes: 'When a listener moves away from the ideal listener location assumed by an object-based audio rendering system, the audio... perceived by the listener is spatially distorted.'

The proposed solution is to visually track listeners in the room, using a camera

device like those used with Xbox and PlayStation games consoles. The audio is then rendered to suit 'the position and/or size of each listener'.

The tracking system needs to compensate for even small movements away from the sweet-spot, Dolby admits, and if 'the listener moves from the centre of a couch, to the left side of the couch. nearer to the left speaker, the system would detect this... and compensate'.

The camera also compensates for a 'small person... assumed... to be a child' or 'a larger person... identified... as an elderly person with hearing loss' and 'dynamically renders the audio'.

Waxing lyrical, the patent suggests that the visual tracking system could also identify 'that the child is dancing to the music' or identify 'that a person sitting in a chair or couch has fallen asleep, and... gradually turn down the audio playback level or turn off the audio.'

DERIVED SIGNALS

One of Dolby's earliest filings on adding height to conventional horizontal surround (from Christophe Chabanne in 2008) reminds me of the early days of surround sound, when audio pioneer David Hafler derived signals for rear channels by extracting out-of-phase information from the front channels.

Dolby's filing suggests mounting height speakers above the front pair of a 7.1 system, and feeding them with out-of-phase information extracted by active or passive matrix from the feeds to the rear side speakers.

Several more filings from Christophe Charbanne show a TV set with rows of multiple speakers built - soundbarfashion – into the top and bottom of the screen bezel, to harden the audio image.

If punters reject the idea of bounce speakers cluttering the room in addition to 5.1 or 7.1 surrounds, we can perhaps expect to see Atmos soundbars doing some bouncing. (b)



Nature is the best constructor! That's why at Entreq we try to build in the same way. The result is a natural sound and a flow in the music that is seldom heard. Cleanus, Silver Cleanus and Atlantis Cleanus are completely passive mains filters. You could more accurately describe them as high frequency seperators. High frequency interference and other contaminants are dramatically reduced without any loss of dynamics or dynamic constraints. The result is a quiet and pitch black background. What else would you expect from Entreq.

ENTREQ DEALERS

Acoustic Arts	(Bedfordshire)	website - www.acousticarts.co.uk	email - Mail@acousticarts.co.uk	phone - 01582 485316
Audio Destination	(Devon)	website - www.audiodestination.co.uk	email - info@audiodestination.co.uk	phone - 01884 243584
Lintone Audio	(Tyne & Wear)	website - www.lintone.co.uk	email - sales@lintone.co.uk	phone - 0191 477 4167
Lotus HiFi	(London)	website - www.lotus340r.net	email - sales@lotus34or.net	phone - 07887 852513
Martins HiFi	(Norfolk)	website - www.martinshifi.co.uk	email - sales@martinshifi.co.uk	phone - 01603 627010
Rayleigh HiFi	(Essex)	website - www.rayleighhifi.com	email - rayleigh@rayleighhifi.com	phone - 01268 779762
Sonic Synergy	(London)	website - www.sonicsynergy.co.uk	email - info@sonicsynergy.co.uk	phone - 07946 577374
Sonic Synergy	(Swansea)	website - www.sonicsynergy.co.uk	email - info@sonicsynergy.co.uk	phone - 07971 849474
Studio AV	(Berkshire)	website - www.studioav.co.uk	email - sales@studioav.co.uk	phone - 01753 863300



Journalist for top American audio-video publications

Moving pictures

How do you feel about mixing music with video? Barry Willis talks to one man who believes that combining a fine hi-fi system with home theatre can mean more lifelike performances at home

efore approximately one hundred years ago, music and the performers who made it were inseparable. Listeners could close their eyes, but visual images of the musicians, instruments, and performance space were always part of the experience.

The advent of recording changed all that, permitting the separation of sound from those who made it. Disembodied sound became the norm early in the 20th century and is so commonplace today that we seldom think about how unnatural it is. For many, listening at home in private is preferable to attending a live performance - a justifiable preference given that quality hi-fi usually sounds better.

SOMETHING AMISS

Steven Lester believes there's something fundamentally amiss about this. The San Francisco Bay Area entrepreneur has long made it his mission in life to reunite great music with great images of the artists who create it – to the dismay of many of his colleagues in the highperformance audio industry.

At the 2014 California Audio Show, Lester alienated many of his audio purist colleagues by demonstrating concert videos with an amazing SIM2 projector and huge

Stewart film screen flanked by a pair of large Tannoy loudspeakers. His playlist was a seemingly infinite archive of music performances gleaned from DVD and Blu-ray discs and elsewhere. Material from online sources looked absolutely high-def through the SIM2.

At a show with less than capacity attendance, Lester's demo room was always packed. The man's knowledge



ABOVE: The author's home system includes an 8ft Stewart Greyhawk screen allied to an Optoma HD-7900 projector (not shown) while Steven Lester's personal website is at www.stevenlester.net

of music and his infectious enthusiasm combined to make his system's big picture and big sound even more immersive than they might have been otherwise. We spent more than an hour letting

him lead us wherever he felt like going, from large-budget productions of toptier classical orchestras to simple solo performances, such as Adele's heartrending barefoot performance of 'Someone Like You' at The Royal Albert Hall.

'I took a lot of grief from the audio-

"The absence of

images is one of

high-end audio's

biggest obstacles"

only crowd for that demonstration.' Lester confessed later. 'But I've always considered the absence of images one of highperformance audio's biggest obstacles. We see performers

at the concert hall and onstage at rock shows - why not in our homes with our spectacular sound systems?'

Lester made this connection early in his career. As a hi-fi salesman in the 1980s, he took the biggest Sony XBR monitor he could find and 'plopped it down between a pair of loudspeakers.' The result: home theatre before anyone thought to call it that. He's been on that path ever since,

one made more rewarding by everimproving screens, projectors, video monitors, and audio equipment.

His message that great sound is not sullied but enhanced by great pictures isn't one that reaches all audiophiles, some of whom assert that placing anything between loudspeakers besmirches their performance. But it's one that resonates strongly with this journalist, whose involvement with video extends almost as far back as his involvement with music.

GREAT MATERIAL

Those of us who long for lifelike performances at home do ourselves a disfavour by ignoring all that video can bring to the party – especially today, with so much great material available. Those who agree might start with the DVD Stop Making Sense, Jonathan Demme's 1984 film of Talking Heads, possibly the greatest concert footage ever made.

Other great discs include Diana Krall -Live in Paris, Pink – Live in Europe, David Gilmore In Concert and of course, many Pink Floyd productions.

Lester's website is a simple affair and doesn't convey the fervour he shares in his demonstrations. That's a pity, because sitting in on a Lester demo is a treat. \circ

OPINION



Jim Lesurf Science Journalist

Jim Lesurf has spent a lifetime in audio, both as an engineer at UK hi-fi company Armstrong and reader in Physics and Electronics at St Andrew's University

Tricks with clicks

This month **Jim Lesurf** outlines a tip he's adopted to make it far easier to find and eradicate low-level clicks on old classical music LPs, once he's converted them to digital files on his PC

ecently I bought a number of new LPs and all have been in excellent condition. As someone who for the sake of convenience likes to make digital copies of LPs to play, this is a bonus as I don't need to use my PC to tweak or clean up the results once the files have been made. But for ancient LPs the situation is more varied. Some are fine. Others – particularly secondhand ones – carry scars from their past. Clicks, ticks, and the occasional explosion!

Careful cleaning can remove dust and dirt but it can't undo damage to groove walls. Fortunately, when the music makes it worthwhile, much of the damage can be repaired on the digital version.

DIGITAL DRAWBACK

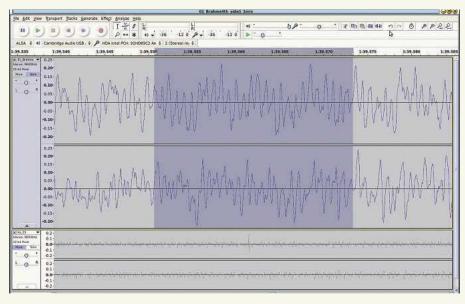
The bad news is that automated de-clicking processes can do more harm than good because they will sometimes decide that some of the actual music is a click to be tidied away. So for the best results, skill and human judgement are needed. Which in turn can demand lots of time and patience.

If you only need to remove a few obvious clicks the process can be done

quite quickly and easily. Just load the file into your favourite audio editor and use the relevant effect or tool. I tend to favour Audacity [see http://audacity.

sourceforge.net].
Not only is it free but I find that its 'repair' effect works well and gives me control. Usually the result is an inaudible 'mend' – ie, no audible trace of the original click.

Really bad damage may require more drastic treatment. In such situations the sad truth is that a lot of audio information has been lost and the result will never be perfect. So in the



ABOVE: On the filtered version of the file this click is clearly visible making it easier to edit out

worst cases you may have to snip out the offending 'bang', then smooth over the join to make the best of a bad situation.

In my experience the most daunting problem is with old LPs bearing long passages of classical music recorded at

'I experimented with

ways to make the

smaller ticks and

clicks stand out'

a low level. Here even the slightest 'ticks' becomes audible. And in some cases there may be hundreds, or even thousands of them on a single LP side. Each one is easy to repair once found,

but many are very hard to find by eye! You can hear them, but struggle to see them.

Because of this I started experimenting with ways to make the smaller ticks and clicks stand out from the music when looking at waveforms on a screen.

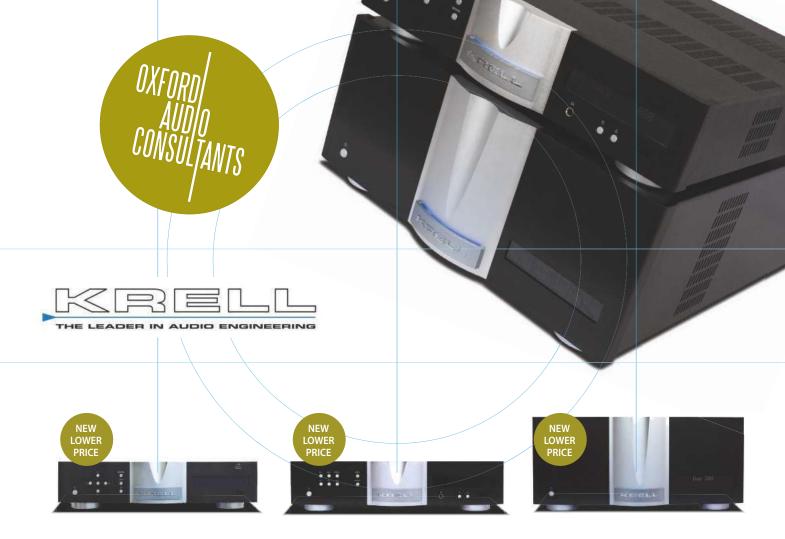
The trick I finally adopted was to generate a modified version of the file by applying a filter which attenuates the parts of the recording below 5kHz. To do

this I used the free SoX audio utility [see http://sox.sourceforge.net] but there are other ways. Most of the musical power is at lower frequencies, so the filtering reduces this. The clicks remain because a lot of their energy is at high frequencies.

SATISFYING WORK

The Audacity screenshot illustrates how the clicks appear on the filtered version. In short, they are far more visible. If you try this approach, though, take care to select the main file as 'solo' and the filtered one as 'mute'. Then repair and save just the main file. If you don't remember to do this then you may add back into the final result all the clicks, having unintentionally combined the two files when saving.

Sadly, it can still take hours to really clean up an LP that has many low-level but audible clicks. But this trick does speed up the process a lot. And it can be satisfying to patiently work away at 'rescuing' an old recording and get a result that sounds as good as new. (b)



NEW Krell Vanguard INTEGRATED AMPLIFIER | £4,500.00

The Vanguard incorporates a 200-wattper channel amplifier and a Class A preamplifier, enclosed in a chassis that borrows its design and construction from the new Krell Foundation preamp/ processor, Connect stream player, Illusion preamp and iBias amplifiers. An optional, field-installable digital module with USB, HDMI, coaxial, and optical inputs as well as Ethernet audio and apt-X Bluetooth streaming will also be available.

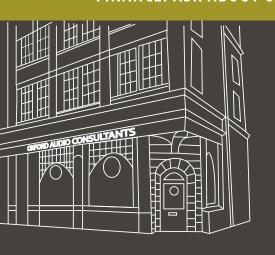
NEW Krell Illusion II PREAMPLIFIER & DAC | £5,998.00

The Illusion II is the perfect centrepiece for a world class digital and analogue audio system. Added to the normal selection of balanced and singleended inputs are five digital inputs. The digital module features AES/EBU, coaxial, and optical digital inputs for use with streaming devices or other digital sources.

NEW Krell Duo 300 Stereo POWER AMPLIFIER | £8,998.00

300 Watt Amplifier Featuring Krell iBias Technology. It's all the power and control for which Krell has always been famous, with a level of resolution and musicality in the midrange and treble that has simply never been heard before. In short, the new patent pending iBias Class A Krell amplifiers give today's audiophiles and home theater fans everything they could possibly want in an amplifier.

Call Jon or Alasdair on 01865 790879 for more information or to book a demonstration. FINANCE: ASK ABOUT OUR BUY NOW PAY LATER SCHEME. 0% APR NO DEPOSIT.



OXFORD AUDIO CONSULTANTS

01865 790 879

E-MAIL info@oxfordaudio.co.uk

WEB SITE www.oxfordaudio.co.uk

ADDRESS

Cantay House Park Énd Street Oxford OX1 1JD

BUSINESS HOURS

10am to 6pm Mon-Fri 10am to 5pm Sat Closed Sunday & Bank Holidays

Follow us on:











Zero-compromise isolation technology A necessity — not an accessory.





"The Stillpoints supports work, and so far they've worked every single time I've used them.."
Roy Gregory, The Audio Beat - July 2013



Analogue Seduction	Audio Destination	Choice Hifi	Criterion Audio	KJ West One	Lintone Audio
Peterborough	Tiverton	Richmond	Cambridge	Marylebone	Newcastle
01733 350878	01884 243584	020 8392 1959	01223 233730	020 7486 8262	0191 477 4167
Lotus Hifi	Martins Hifi	Rayleigh Hifi	Sonic Synergy	Sonic Synergy	Studio AV
Sunbury	Norwich	Rayleigh	East Finchley	Swansea	Eton
01932 783612	01603 627010	01268 779762	07946 577374	07971 849474	01753 863300





Steve Harris Contributing Editor

Steve Harris edited *Hi-Fi News* between 1986 and 2005. He loves jazz, blues music, vinyl and vintage hi-fi and anything that makes good music come to life

Second time around

'We know now that

run-of-the-mill LPs

are often made using

a CD as the master'

According to one turntable manufacturer, high quality recordings are crucial if vinyl is to survive. **Steve Harris** spotlights one record label whose return to the ol' black stuff is uncompromising

o-one knows how long the 'vinyl revival' might last.
Recently I asked a turntable manufacturer who's one of the wisest heads you could meet, and even he refused to predict this.

But he did assert that vinyl's future will depend on a flow of good new recordings, saying that some he'd picked up recently had proved downright disappointing from a sonic point of view.

I guess he was thinking of the studio production sound as much as the mastering quality. When it comes to the latter, we know now that run-of-the-mill LPs are often made using a CD as the master. The results can still be good enough, and they may even be preferred subjectively, but logically and philosophically, an LP made this way just can't be better than the CD it's cut from.

ORIGINAL SOURCE

In reality, new vinyl issues can only be worthwhile if they are conscientiously mastered from an original studio source. Fortunately, there are companies that

really do this, and one of them is Germany's Edition of Contemporary Music, better known to us as ECM.

Like other record companies, ECM stopped releasing new titles on vinyl

in 1992. By that time, though, ECM was already unique, a phenomenon among record labels, a brand, as recognisable for its visual identity as for its musical and sonic excellence.

It was an identity that translated unusually well from LP to CD. The psychedelic excesses of the 1960s, so magnificently expressed on the foot-square canvas of an LP cover, became insignificant and unintelligible when scaled down to CD-booklet size. But

RIGHT: Now on 180g vinyl thanks to the ECM label: pianist and composer Keith Jarrett and the late bassist Charlie Haden. They're captured here duetting in 2007, by film maker Reto Caduff



ECM's cogent minimalism could still be striking at five inches across, and its slipcase cover art, more exquisite than the jewel-box it concealed, made a CD the perfect collectable object.

After 1992, some back-catalogue titles remained available on regular 140g vinyl. But it was only in 2009 that ECM returned seriously to the audiophile LP market. Keith Jarrett's *Yesterdays* [179 4205] and Enrico Rava's *New York Days* [179 7340], both deluxe 180g double albums, became

the label's first new releases on vinyl in 17 years.

Though previously unreleased,
Yesterdays wasn't actually all that new, as it had been recorded live in
Tokyo in 2001. But it

was snapped up by collectors who couldn't get enough of Jarrett's Standards Trio.

Many more 180g vinyl issues followed, including several Pat Metheny titles and another half-a-dozen Keith Jarretts, then at the beginning of 2014, ECM filled another gap in the vinyl picture.

Under the heading 'The story of our listening,' a set of seven pre-CD-era titles were remastered from the original analogue sources and made available for hi-res download and on CD as well as 180g

vinyl. Artists included Jarrett again, Gary Burton and Abdullah Ibraham. All the titles had long been out of print as LPs and four had never been issued on CD.

For the autumn of 2014, though, ECM came up with just two judiciously-chosen vinyl offerings. First, there was the 180g, double-album version of *Last Dance* [378 2250], from the now-famous duet sessions Keith Jarrett recorded with bass player Charlie Haden in 2007. *Last Dance* had appeared on CD in June 2014, just a month before the bassist passed away.

BIGGEST SELLER

Secondly, on vinyl for the first time in its 20th anniversary year, was Officium [481 1085], the recording which first teamed the Hilliard Ensemble with jazz saxophonist Jan Garbarek. SInce its CD release in 1994, this had become one of the label's biggest sellers ever.

For a whole generation of audiophiles, I think, 'ECM' and 'CD' have become almost synonymous. But now, to behold *Last Dance* in LP form, with the same perfect, uncompromising artwork now writ large, is to be impressed anew by ECM's style, charisma and sheer quality.

It almost goes without saying that the sound of this LP is gorgeous. It's rich, inviting, tangible, everything you would hope for. This is a vinyl record that you can believe in. \oplus

Send in your views to: Sound Off. Hi-Fi News. AVTech Media Ltd. Enterprise House, Enterprise Way, Edenbridge, Kent TN8 6HF or email your views to: letters@hifinews.com please use 'Sound Off' in your subject field

Correspondents express their own opinions, not those of Hi-Fi News. We reserve the right to edit letters for publication Correspondents using e-mail are asked to give their full postal address (which won't be published). Letters seeking advice will be answered in print on our Sound Off pages, but due to time constraints we regret we're unable to answer questions on buying items of hi-fi or any other hi-fi queries by telephone, post or via e-mail.

MORE BALANCED REVIEW AURALIC TEST LACKED A CRUCIAL COMPARISON

If I may paraphrase the balloon teacher scolding the balloon pupil for running amok with a pin. 'Not only have you let me down, and your friends down, but most importantly you've let yourself down'. So it is with Keith Howard's review of the Auralic Taurus MkII headphone amp [see HFN Jan '15].

Why would you review this device without doing so in balanced mode? I am sure Mr Howard has numerous contacts in the industry able to provide him with suitable cables.

I have had the opportunity to compare this amp in balanced and unbalanced modes in my home set-up with a variety of sources. The cables were of the same manufacture and construction, the only difference being balanced and unbalanced connectors.

Even to my amateur ears there is a significant and persistent difference. The imaging, neutrality, and transparency are all improved upon. So I believe Mr Howard cannot draw the conclusions he has until he has had the opportunity to do this comparison and thus complete his review fully. I can lend him my headphones and cables if he is really stuck.

Hi-Fi News is a standard bearer when it comes to review practices but, like the balloon schoolboy, I find myself very deflated by this incomplete review.

Ian Melville, via email

Keith Howard replies: Regrettably it isn't always possible, within the strictures of magazine schedules, to have available the ancillary equipment one might wish for. In the case of balanced headphone drive it isn't just a case of having the right cable to hand, of course, but of having the right headphone and cables, both balanced and unbalanced.

A headphone with unbalanced and balanced cables was briefly available to me during the review period, but I was so disappointed with its sound quality that it made no sense to use it for an unbalanced/balanced comparison. The review makes crystal clear that my conclusions therefore apply to the unbalanced connection only, and of course the headphone amplifier used as a reference was connected in exactly the same way.

Given that the majority of headphones are only available with the unbalanced connection, this is a mode in which any high-end headphone amplifier must work well.



ABOVE: Front and rear of Auralic Taurus MkII showing balanced XLR output sockets

Back to the loudspeakers

Some vintage amps had a Left/Right or Right/Left control switch while there were amps available in the 1970s that came with switches offering the user the choice of normal stereo or reverse stereo and left and right mono. I was once told that some American audiophiles enjoyed listening to their audio systems in the traditional manner then, using the same loudspeakers, would flip these controls to reverse the channels and swivel their armchair so that they then faced the opposite wall while they listened.

Having spent too many miles listening to music in commercial vehicles I can well understand this. Indeed, I now think my brain prefers it when I sit with my back to the speakers.

Why does music sound exciting from a distance? Is it because it challenges our brain? Perhaps we should listen off-axis, at a distance and in a randomly moving chair?

Robert Kline, via email



ABOVE: The Yamaha CA-2010 from 1977 featured a 'Mode' switch for reverse stereo as well as normal stereo

Jim Lesurf replies: Modern commercial recordings generally have a 'spotlit' sound. For popular music this often comes from 'pan pot' stereo and various other effects that are applied in the recording studio using the mixing desk and other hardware wired into this. The result aims to give a sharp stereo image and impact when the music is played via conventional cones-in-a-box loudspeakers and the listener is sitting up straight and paying attention. However, this is an artificial sound, and it's aimed at disquising the tendency for many speakers to spray sound all around the room, particularly at low frequencies.

By moving away from the ideal stereo listening sweet-spot, rotating your listening chair, or going walkabout you lose the stereo image. But you also alter the overall tonal balance you're hearing towards the general 'ambient' sound that is bouncing all around. The spotlight effect is lost and a more relaxed sound is the result, generally with less high treble.

Whether you consider this change in perception to be an improvement or not depends on your tastes, where you sit, and what you're playing. Either way, if the music sounds good, enjoy it.

No sax please, we're British

WHY TELL US YOU CAN HEAR A SAXOPHONE WHEN THERE ISN'T ONE PRESENT ON THE TRACK?

In the review of the Exposure 3010S2 pre/mono amps in the December 2014 issue, Adam Smith writes about the song 'Angel' from Sarah McLachlan's Surfacing album on CD [Arista 07822-18970-2].

On p65 he talks of 'the soft tones of the backing saxophone murmuring quietly away in the corner of the room.' Playing the same CD, I did not notice any saxophone playing in the song nor is there any mention in the CD liner notes that any saxophone was used. I would appreciate your comment and enlightenment.

K J Tan, via email

Adam Smith replies: You raise an interesting point, K J, as the only instruments credited on the track are piano, upright bass and drum machine, and the subtle instrument lurking in the



ABOVE: Sarah McLachlan's Surfacing

background during the first ten seconds of the song definitely isn't any of those! Nevertheless, I stand corrected. A more accurate description would have been of a 'backing saxophone-like sound'.

and live sound

PANASONIC WAS BY NO MEANS THE FIRST HI-FI COMPANY TO PROVIDE LIVE PA SOUND

Too bad Barry Fox left out the following, when writing that Panasonic in the 1980s was 'the first hi-fi company to foray into live sound' [see HFN]an '15]. He missed these, all predating the 1980s: The Newport Jazz Festivals (McIntosh); Woodstock (McIntosh); and The Grateful Dead's Wall of Sound (McIntosh).

You'll also find that Quad, Klipsch, KEF and many others (as opposed to companies that were also 'pro' like JBL) ventured out of studios, too.

Khets Enkernels, via email

Barry Fox replies: Thanks, Point taken, In fact I recall seeing Quad electrostatic speakers being used at the Royal Festival Hall in London for a performance of sitar music. I should have said that Panasonic was the 'first hi-fi company to make monster PA speakers'.



ABOVE: McIntosh trumpets its proud PA heritage at www.mcintoshlabs.com with images of The Grateful Dead's Wall Of Sound and the company's amps used at Woodstock in 1969

Lanes On Your

Since its origins in the early

1980's, Ethernet, and the Local

Area Network (LAN) systems

it enables, has become the

copper plumbing of the digital

age. Originally deployed only

over coaxial cable, the Ethernet

protocols (IEEE 802.3) now

also apply to fibre-optic and "Category" (Cat 5, 5e, 6, 6e, 7)

cables. These 8-conductor (4 twisted pairs) Cat cables are the

8 lanes which stream or transport

your digital entertainment to

equipment a foot away or several

AudioQuest refers to its

Cat 7 cables as the RJ/E Series ...

RJ for the RJ45 connector standard to the application,

and E for Ethernet. For

AudioQuest, the highest Cat 7

standard (with all 4 pairs

using correctly differentiated

twist rates and individually

shielded) is only the solid

foundation to which AQ then

adds better materials and

leading-edge

additional

rooms aways.

pre-terminated

unique-to-AQ

technologies.

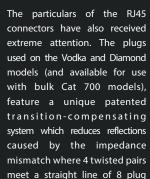












Cat 700



Cat 700 Carbon

What does this all mean? Simple ... better sound!



contacts.

SAVE 20% NOW! IN OUR BEST EVER WINTER SALE



20% OFF Russ Andrews and Kimber cables and accessories



T. 01292 319 416

email: contact@loudspeaker-art.com { website: www.loudspeaker-art.com

THE MODELS





Alnico 12 loudspeaker is a true work of art..."

Audio Note Lounge

What exactly is aptX?

READER SEEKS ENLIGHTENMENT FROM THE HEN TECHNICAL TEAM

I note that an increasing number of hi-fi separates now include aptX Bluetooth wireless audio, such as the Naim Muso and the Cambridge Audio DacMagic Plus. A number of individual reviews have noted that this may be the preferred way to transmit wireless audio conveniently from tablet PCs to hi-fi equipment (while accepting that a wired network or USB stick is the best way to transmit HD audio files).

I read the Wikipedia entry for aptX. Here it states that 'aptX Lossless supports high-definition audio up to 96kHz sampling rate and sample resolution up to 24 bits'. Apparently aptX has been in use in broadcasting for over 25 years! So in theory I should be able to transmit HD files wirelessly, but is this the case?

My Samsung tablet will play a 96kHz/24-bit or even a 192kHz/24-bit WAV file, but does the Bluetooth link support either of these rates? And if so, is this done automatically or is there a set-up procedure?

I have scoured manufacturers' websites, equipment reviews, and online articles, but none has dealt with these questions satisfactorily.

The information available about the technical aspects and setup of aptX is vague to say the least. And this is true for the official aptX website at www.aptx.com, though a useful list of aptX equipment can be found here.

Mike Tartaglia-Kershaw, via email

Barry Fox replies: I will leave most of the reply to others on the HFN team, but can add one important practical point. The aptX system, which was developed in Belfast, initially for professional broadcast use, has the advantage of low latency. The real-time signal processing adds very little delay to the sound.

This makes the technology ideal for wireless headphones when used with TV or video sound because aptX is far less likely to destroy lip sync.

Steve Harris replies: Bluetooth is said to give a wireless range of up to 30m, and its reliability, bandwidth and achievable audio quality have all improved since its inception. Current Bluetooth devices use the aptX codec instead of the earlier SBC lossy compression, and this has perhaps encouraged hi-fi manufacturers to take it more seriously.

Chord Electronics appears to have been first in the field with its Chordette Peach, a multi-input Bluetooth-equipped DAC. This was followed at the other end of the price scale by Cambridge Audio with its little BT100 Bluetooth adapter, then Arcam announced its rBlink Bluetooth DAC for around £150. One of the more recent companies to join the fray has been Musical Fidelity with its M6 outboard DAC and, as you say, Naim's Muso music system also supports aptX.

Claims for Bluetooth audio quality vary, with Cambridge cautiously speaking of 'almost CD-quality reproduction' while Chord refers to 'CD-like transfer of music'. Arcam simply mentions 'high quality music replay'.

Paul Miller replies: The fact that aptX is described as enabling 'CD-like quality wireless audio' suggests, that with limited Bluetooth data rates, this is a lossy compression system albeit one that very cleverly squeezes as much audio data into as compact a stream as possible. In practice aptX uses Adaptive Differential PCM instead of MP3's psychoacoustical modelling to achieve a compression ratio of 4:1 (a 352kbps data rate for 44.1kHz/ 16-bit audio). To adequately transmit 96kHz/24-bit audio losslessly will require a proportionally higher data rate.



ABOVE: Naim's Muso wireless music system has aptX as a supported audio format



Not only are wires still very much the lowest-distortion highest-performance way to send both analog and digital audio information, but when it comes to sending power, "wireless" is just a nifty science project, not part of a home entertainment rig.

The challenge of not adding distortion as AC power goes from the wall to the electronics, and the challenge of not adding distortion as audio power is sent to a loudspeaker, are almost the same. The amount of energy transferred through these cables, and the size of the associated magnetic fields, puts them in a different class from all other audio and video cables.

Speaker cables need to maintain perfect integrity across the audio band and then some, while AC cables only have to try to be perfect in a narrower band. AC cable design is therefore a subset of speaker cable design because AC cables are subject to almost all the same distortion mechanisms, and benefit from almost all the same damage minimizing techniques.

For the most sophisticated powertransfer cables, for the best sound and video, please visit audioquest.com for more details.



audioquest.com

Transparency, openness and trust

WHY READERS SHOULD BE TOLD HOW MUCH HFN REVIEWERS PAY FOR THEIR REFERENCE PRODUCTS

As a reader of *Hi-Fi News* for over 20 years and an Audio Research and Wilson user, I'm delighted to see Ken Kessler enjoying the Audio Research Ref 5SE and Ref 75 amplifiers and, I assume, his 'new references', the Wilson Alexia speakers. According to his review of the TechDAS TDC01 Ti cartridge [*HFN* Sept '14], he's also relishing the D'Agostino Momentum Stereo power amplifier.

This substantial expenditure of circa £100k on components, which he has recommended and written about in the magazine, and his comments about buying the 'review sample(s)', plus his new-found enthusiasm for interconnects and speaker cables to match his new references – after years of decrying the hype around said products – gives me the opportunity to ask about *Hi-Fi News* policy when reviewing products.

I think *Hi-Fi News* should let readers know how their reviewers came by their equipment – especially if they review it in the magazine – and even more so if they rate it highly and subsequently it becomes one of their 'reference' components. I particularly believe readers should be told what a reviewer actually paid for their equipment. By this I mean the full retail price, cost of the review sample, any special purchase price, arrangements from the supplier or dealer or whether a component has been provided on 'long term loan'.

Ken isn't the only contributor this applies to. Paul Miller has the Devialet amps while John Bamford has the T&A DAC. And there are other examples. I believe it is important in these days of

increasing transparency and openness in just about every aspect of life, including journalism, that readers are provided with this information to better inform their view of any individual review. *Hi-Fi News* is a great magazine. I look forward to another 20 years.

Bill McCardle, via email

Ken Kessler replies: Before reading this, keep in mind 1) that there isn't an audio journalist I know who uses equipment that he or she doesn't regard as reference quality, irrespective of the arrangement – purchase or loan – so the opinions are solid; 2) that every audio journalist of repute can pretty much borrow anything he or she wishes to use, because it is to the benefit of the manufacturer; and 3) that components change or are upgraded so frequently that reviewers are forced to change equipment in order to review with a contemporary set-up.

I and most others break the last rule for the very reason we can't afford to replace every component when one is superseded by a new model. Or, as in the case of the Marantz CD12, it is one's personal reference yet to be bettered.

I despise cables as the cause of much ill-will toward high-end audio, but I have *never* written that they don't sound different, nor have I said there is no hierarchy. I borrow *all* of my cables. Regarding the hardware, I own the Audio Research components, I borrow the Wilson speakers and the D'Agostino is on loan. Both of the latter are ex-demo and cannot be sold at retail, which explains why they are of less use to the manufacturer.

This month, I bought the Quad PA-One headphone amp on the strength of the press release. That's what's called a 'leap of faith'

by any measure. I bought my own Pono player. A friend gave me his AK100 when he upgraded

I and other reviewers get discounts similar to those of the retailer. This is neither a secret nor should it be a surprise, nor cause to shout 'foul!' Mr McCardle doesn't state what he does for a living. Is he a plumber? Then he paid less for his central heating than a non-plumber. A banker? Don't get me started about either his mortgage rates... or his

earnings. Wine merchant? Car salesman? Doesn't matter: every job has its perks in the form of staff discounts or special treatment.



As Mr McCardle has been keeping such close tabs on me, he will also know that the brands about which I've written books, and have therefore been paid by, are precluded from my reviewing their products until a substantial period has passed, as agreed with Paul Miller, eg, at least five years.

The bottom line is: if you think I or any other reviewer is writing a biased review because we borrowed some equipment or got a discount, then you should stop reading that reviewer's articles and complain to the editor. After 31 years of this, I would have thought that our opinions have stood the tests of the marketplace and of time, and earned the respect of this magazine's readers.

Paul Miller replies: Most readers will appreciate that *HFN*'s contributors are freelance writers rather than staff and that I am not their keeper. However, until I am presented with *prima facie* evidence to the contrary, I will not countenance the suggestion that any would 'throw' a review. To write a glowing review about a product that has been offered for loan but which is not required or even liked is counterintuitive. Only the most professional writers in the world are invited into *HFN*, plus I run a *very* tight ship here, so I can assure Mr McCardle that very little escapes my attention...

Personally, I have a very clear policy regarding the retention of equipment. If a brand sees mutual value in allowing a piece of its equipment used as a reference in subsequent reviews then there is no harm or foul. None of us will be using or recommending items that cloud the musical picture. The equipment remains the property of the manufacturer, will be maintained in pristine condition and can be recalled at any time. The alternative - purchasing equipment at a very favourable rate – is less straightforward. If title over the equipment passes to the reviewer then, theoretically, he is able to sell that item at a later date. But I would take a very dim view if that item was sold at higher than the purchase price.





ABOVE: See reviewers' home systems at www.hifinews.co.uk



inspire the music





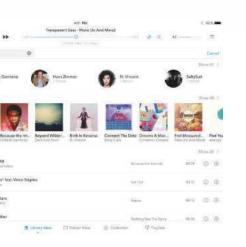
It is not a streamer, it turns your DAC into a streamer!

Streaming DSD and DXD Music Though WiFi Network

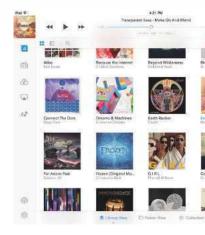
The ARIES serves as a "bridge" between music files on network storage or high quality online streaming services and your DAC — enabling DACs for the first time to stream high-resolution music quickly and wirelessly in virtually any sampling rate, including DSD, Double-Rate DSD and DXD. It is powered by AURALiC's proprietary Tesla hardware platform that includes a Quad-Core ARM Coretex-A9 processor running at 1GHz, 1GB DDR3 onboard memory and 4GB internal storage. The Tesla platform has a calculation ability of 25,000 MIPS, more than enough to decode a vast spectrum of audio formats, including AAC, AIFF, ALAC, APE, DIFF, DSF, FLAC, MP3, OGG, WAV, WV and WMA. ARIES as well as all other Lightning based products support several advanced functions such as on-device playlist that allows control software to turn off during play and complete supporting of multi-room, multiple control points.

LIGHTNING DS

Multi-Room Streaming Control Software











Seamless integration with online streaming from qobuz and $\ensuremath{\mathsf{TIDAL}}$

audioemotion











Clearaudio Vinyl Replay Systems



High quality turntable designs

– Made in Germany

Innovative tone arms using opposing magnet bearings

Simple linear tracking arms that work **Superb cartridges** producing some
of the largest soundstages

Fuss free phono stages with automatic cartridge loading

For further information please visit **audioconsultants.co.uk**

info@audioconsultants.co.uk
4 Zephyr House Calleva Park Aldermaston Berkshire RG7 8JN UK

the **audio** consultants

To book an audition please call +44 (0)118 981 9891 www.audioconsultants.co.uk

FINE TWO CHANNEL AUDIO SYSTEMS

Edge Electronics Amplifiers

Extremely pure, transparent sound across the entire frequency range

Very high current delivering supremely tight, deep bass extension

Every nuance of tone, texture and dynamics expression revealed with ease

Exceptionally stiff and massive cabinet construction reduces resonance pollution

A level of musicality rare amongst most other reference electronics systems



For further information please visit audioconsultants.co.uk

Better sound from Quad IIs

TIPS AND TRICKS FOR MODERN SPEAKERS FROM READER WHO HAS REBUILT AMPS

I was interested to read your review of the vintage Quad II amps in the HFN 2014 Yearbook, particularly the suggestion that due to their input circuitry it is best to use them with the Quad 22 preamp in order to avoid a muddy sound.

It so happened that the magazine arrived on the day that I first had the opportunity to listen to a couple of Quad IIs which I have been rebuilding. Using a Music First passive preamp and a pair of Quad ESL57 speakers gave very good results. There was certainly no sign of thickening of the sound or lack of detail mentioned in the review. I have also briefly tried them driving a pair of LS3/5As using a home-made preamp with a cathode follower output, again with excellent results.

This is not the first time that I've read about the Ouad IIs sometimes delivering aural mud, but I can't help thinking this may be as much to do with a possible mismatch at the output as the input.

As you point out, the Quad IIs were intended for use with speakers of nominal 15ohm impedance - like the ESL57 and the early versions of the LS3/5A. Although the actual impedance of these speakers varies hugely across the audio spectrum, they were at least designed - as were others of the period – to go with amps having a 150hm tap on the output transformer. So it's not surprising they work well with the Quad IIs.

Anyone wanting to use the Quad IIs with more modern speakers,



ABOVE: One of David's rebuilt Quad IIs see HFN Mar '14 for original Vintage review

which typically have a much lower nominal impedance, may well find that they get unsatisfactory results. In this case it may be worth trying to alter the taps on the output transformers to better suit 80hm speakers. To do this, remove the link between terminals S and R, and instead link S to T, and R to Q.

An important point to watch if you're not using the Quad II with a 22 preamp, is to ensure proper attention is paid to earthing the chassis. For this reason I have fitted modern 3-pin IEC mains connectors to my rebuilds, with the chassis directly tied to mains earth, and the amplifier earth connected via a 10ohm groundlift resistor to avoid trouble with hum loops. This was the solution adopted by Quad for the Quad II-40 amplifier. It works well and if it's good enough for Quad it's good enough for me.

David Lord, via email

Tim Jarman replies: My thoughts are that the absence of appropriate LF filtering in modern preamps can cause the output transformers of the Quad II, which are quite small for the overall power rating of the amplifier, to operate outside their design limits, leading to the muddy sound described. The division of the circuitry between the units of the Quad system is arbitrary and has more to do with packaging than to allow various parts of the set-up to be substituted for others.

We have been spoiled in recent decades by the excellent performance that can be obtained from DC-coupled transistor amplifiers, which can deliver their full output power right down to a couple of Hz. This is not the case with transformer-coupled valve designs, so it is necessary to tailor the LF response to prevent the amplifier trying to reproduce frequencies of which it is not capable.

Equally, a well chosen HF cut-off is required to prevent phase inversion issues within the negative feedback loop of the output stage. In the Quad 22/II some of this tailoring and filtering takes place in the 22 unit, so it cannot be dispensed with lightly. The Quad II has never truly impressed me as a standalone amplifier, but within the context of the complete system I find its character to have far greater appeal.



minimizing ingredients are used to ensure that all eight models of Bridges & Falls cables bring you beautiful music, clear dialogue and thunderous sound-effects.

audioquest

Acoustic Research AR-7 compact loudspeaker

Packing Edgar Villchur's acoustic suspension woofer into ever smaller loudspeaker cabinets resulted in this king of compacts from 1976. How does it sound today? Review: Adam Smith Lab: Keith Howard

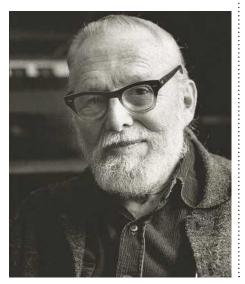
he world of hi-fi underwent a huge evolution during the 1960s and 1970s. As increasing numbers of home consumers bought stereo electronics, loudspeakers were, by necessity, subject to some radical changes.

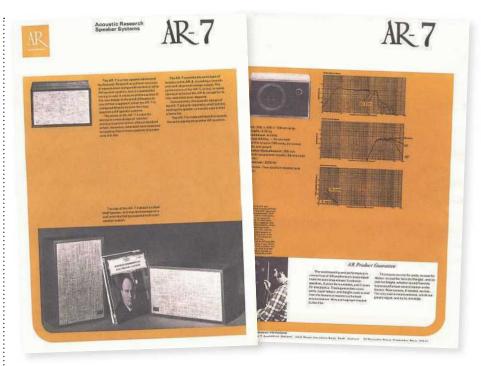
To begin with, the need for two matching enclosures put paid to what was often a smattering of different drive units scattered about a single large baffle. Then there was miniaturisation, which began to capture the imagination of manufacturers and consumers alike. We often think of the 'Wife Acceptance Factor' as a modern phenomenon, but it has been around a lot longer than most of us might realise!

GREAT STEP FORWARD

One of the main issues with domestic acceptability was bass. Greater amounts of good quality bass meant bigger enclosures and, while a single Klipschorn or Quad Corner Ribbon placed carefully in a room might well have passed muster, having two of these behemoths lurking in the lounge did not generally allow for elegant living.

It was during the 1950s that a great step forward was taken in this respect.





Audio pioneer Edgar Villchur of Acoustic Research came up with a method of building a speaker that delivered greater bass output from an enclosure that was far more compact than those then on the market. Not only that but the concept gave lower distortion, too.

Called an Acoustic Suspension speaker, the design did have the disadvantage of being low in efficiency, meaning lower SPLs with amps of the era. But as amplifiers became bigger and more powerful, this was much less of a concern.

The first loudspeaker of this type to be produced by Acoustic Research was the AR-1 and this was followed by the AR-3, both models being regarded as true classics and highly capable even by modern

LEFT: Edgar Villchur photographed in 1988. He founded Acoustic Research in 1952 to produce the AR-1, which incorporated his acoustic suspension principle

ABOVE: Literature from the period, introducing the AR-7 with design details and specifications

standards. Interestingly, however, Villchur and his team looked at shrinking their revolutionary design even further, despite the fact that it was barely a few years old. The result was the more affordable AR-2.

SMALLER STILL

In 1964 the cabinet shrank again with the introduction of the AR-4. This model featured an 8in woofer as opposed to the 10in unit used for its bigger brothers. The AR-4 was swiftly followed by the AR-4x, offering an improved tweeter and better performance, and in 1973 came the final model in the series, the AR-4xa.

But Acoustic Research had already taken the concept behind the 4a and used it to make something rather special. In fact, something that made the 4xa somewhat redundant, because it was a speaker





promising similar performance in an even smaller package. And one that was even cheaper. That speaker was the AR-7.

First debuted in 1972, the AR-7 was Acoustic Research's answer to the need for a properly compact loudspeaker: one that could sit neatly on a bookshelf or be hung easily on a wall from picture hooks. The well-proven tweeter from the larger AR-6 was mated to a brand new 8in bass driver using a simple crossover at 2kHz.

Both units were housed in a sturdy but compact cabinet weighing 5kg and measuring 400x250x160mm (hwd).

An early ad for the AR-7 shows four of the speaker enclosures lying on their backs

and stacked on top of each other, demonstrating that together they take up a very similar amount of space as the cabinet of a single AR-3.

AR was also keen to point out that four AR-7s would be the perfect solution for those seeking a compact, stylish and high-quality set-up with which to take advantage of the quadraphonic wizardry that everyone felt sure was to revolutionise : in size that prompted the birth of the

our listening in the 1970s. As a final note on the speaker's size, the AR-7 was the first model to be packed two to a box by the company. Until its appearance, each loudspeaker shipped had occupied its own individual packaging.

FOAM SURROUND

'The AR-7s

sounded gutsy,

punchy and spry

from the first note'

The new bass driver was in many ways a departure for Acoustic Research. A foam surround was used, whereas most

of the woofers on the company's older models had treated cloth. Meanwhile, a new design of cone. voice coil and motor unit ensured that the acoustic suspension principle would

perform optimally in the new cabinet. The woofer also exhibited a free-air resonance of 25Hz – a remarkably low figure for an 8in unit – which gave an overall resonance of 68Hz when mounted in the cabinet. This compared favourably with the 4x and meant that bass response was barely any different to that of the larger predecessor.

Of course, it was not just a reduction

ABOVE: The 8in pulp woofer was specially designed for this small enclosure but AR saved costs by finishing the cabinet in a vinyl wrap. The oatmeal cloth grille is anchored by Velcro

AR-7, but a corresponding drop in cost. As a result, the 7's cabinet was finished in vinyl wrap rather than real wood veneer another first for an AR design. Gone, too, was the continuously variable tweeter output level control from the 4x, which was replaced by a two-position switch. This offered 'Flat' and 'Normal' options somewhat unusual monikers given that one might not unreasonably assume that flat is normal! However, in the case of the AR-7. the 'Normal' position reduced tweeter output by around 2-3dB above 3kHz.

BIG ON BITE

The AR-7 sold well and was very highly regarded, contemporary reviews praising its 'bite', lack of brashness and impressive bass. High Fidelity magazine in August 1973 even went so far as to say AR had succeeded in its aim to 'offer a compact speaker that would be well suited for fourchannel installations and which also could serve as the reproducer in a modestly priced, but high quality, stereo system.'

SUDHANDHIELCO.UK

Guaranteed used and ex-demo audio equipment from HiFiSound - the UK's premier source

Call: 0845 6019390 Email: news@2ndhandhifi.co.uk

The UK's biggest and best used audio selection

ı	Analogue			Amplifiers			Digital			Loudspeakers		
ı	Audio Technica OC9, boxed little use	used	199	AMR 777 Integrated	dem		Arcam CD72, excellent remote boxed	used	99	Acoustic Energy AE1 Classic	new	799
ı	Audiolici phono stage and line preamp Avid Acutus Ref power supply	dem dem	999 2499	Anatek MB50 Class A Monos Anthem Integrated 2 Valve Integrated	dem used	899 499	Arcam Alpha 8, excellent Arcam CD17, as new boxed	used dem	149 449	Acoustic Energy AE1 Reference standmount Acoustic Energy AE 1 Mk11 in Gloss black	new dem	1249 799
ı	Benz Micro LP, boxed plenty of life left		1199	Art Audio Jota 520b, excellent		3999	Arcam Alpha 8se, excellent boxed	used	199			499
ı	Benz Micro Ruby Wood H, boxed plenty of life left	used	599	Audia Flight Pre and Flight 50 Class A power	dem	3999	Arcam CD192, excellent remote	used	279	1.5	used	3249
ı	Benz Micro L 04, boxed plenty of life left	used	499 899	Audio Analogue Bellini VB and Donizetti Cento, superb	used	2400	Arcam CD17, excellent	used	299	Art Audio Stiletto in Maple Aspara Acoustics HL6 in Oak	dem new	599 1999
ı	Benz Micro Gullwing, superb boxed Cartridge Man Conductor Air Bearing Tonearm	used new	749	Audio Analogue Maestro Ref SE integrated	dem	Call	Arcam CD37, excellent Arcam Alpha Plus, excellent	used used	799 99	Audio Physic Tempo in Cherry, fair	dem	699
ı	Clearaudio Innovation Compact, good condition	dem	1999	Audio Analogue Puccini SE amp. Black	dem	379	Atoll 100SE DAC	new	299	Aurum Cantus Music Goddess in Gloss black	dem	699
ı	Clearaudio Unify Tonearm excellent boxed	used	699	Audio Analogue Maestro Integrated Audio Project ap60 integrated	dem dem	Call Call	Audio Alchemy digital transmission interface/psu	used	99		used used	Call 249
ı	Conrad Johnson TEA 1b Phono stage Conrad Johnson Premier Six phono preamplifier	used used	1999 Call	Audio Research Ref 610 Monoblocks, vgc boxed	used 1		Audio Analogue Maestro SE CD Audio Analogue Paganini (later model)	dem dem	Call 399	, 3	used	249
ı	Consonance Cyber 40 phono stage	dem	599	Audio Research LS25 mk2, excellent boxed		1699	Audio Synthesis Transcend CDT (Modded SONY)	dem	399		used	349
ı	Garrard 401, Slate Audio plinth	used	799	Audiolab 8000Q/Ms, silver, excellent boxed Audiolab 8000C excellent boxed	used	899	Ayre CX7 EMP, excellent boxed		1199		used	349
ı	Garrard 401, SME 3009 Garrard 301, Decca arm and cart	used used	699 799	Audiolab 8200A vgc boxed	used dem	199 499	Ayre Evolution DVD Bryston DAC/Streamer	dem dem	1999 Call	Castle Harlech, excellent boxed Diapason Ares	used dem	399 999
ı	Graham Phantom Supreme 12", SME cut	dem	Call	Audion Silver Knight PSE valve monoblocks		1999	Chapter Audio Sonnet CD & Nevo remote		1999	Elac BS243, excellent boxed monitor	used	699
ı	Hadcock 242 Export,	dem	599	Audion Sterling Plus KT88 Integrated boxed	dem	499 1749	CEC TL51XR, lovely belt drive unit	used	699		used	499
ı	Leema Elements phono stage	dem	299 Call	AVI Lab Series Pre/Power, excellent remote BAT VK50se preamplifier, vqc+		2499	Chord 'One' CD player		1799	Epos M22 in Cherry Final 400 Electrostatics with ES400 Sub	dem	549 999
ı	Lehmann Black Cube phono stage Lehmann Black Cube SE phono stage	dem dem	Call	Bryston 4Bsst2, excellent boxed, due in	used	Call	Chord Qute EX DAC, excellent boxed Consonance CD120 Linear	dem dem	799 399	Focal Electra 1008, mint boxed		2249
ı	Inspire Full on Technics 1210/Plinth/PSU/SME M2 a			Chapter Audio Couplet Power Amplifier		1999	Consonance CD2.2, new sealed	new	Call	Focal Electra 1028, mint boxed		2749
ı		used	599	Chord Electronics SPM1200b, excellent Conrad Johnson Premier 18, boxed with remote		1299 1799	Consonance Droplet, vgc+	dem	899	Focal Electra 1038, mint boxed Gradient Intro, excellent condition, bargain	dem used	3999 249
ı	Linn Sondek, Lingo, Naim Aro, superb Linn Sondek, Basik plus , Valhalla, VGC+	used used	2499 699	Consonance Cyber 10 Integrated	dem	799	Cyrus DACXP, excellent boxed, REDUCED Denon DNP720AE, near mint boxed	used	699 199	Heco Celan 500 in Silver	dem	499
ı	Linn Sondek, Grace 707, basik psu, VGC+	used	599	Consonance Ref 8.8 integrated valve amp	dem	999	EAR Acute 3, mint boxed	used dem	3749	Heco Celan 300 in Mahogany	dem	399
ı	Linn Sondek, Naim Aro, Staff build Armageddon		2499	Consonance Cyber 50 Preamplifier Consonance Cyber 211 monos c/w Pavane valves	dem dem	499 2999	Exposure 2010CD, remote	used	199	Heco Statement in gloss black, £3k new Kef Q100, brand new, sealed box		1499 249
ı	Linn Sondek, Rosewood, boxed, superb!	used	Call 149	Creek Destiny Integrated	dem	699	Goldenote Koala , near mint boxed	used	759		new used	999
ı	Linn Basik Plus, vgc+ Luxman PD300, fantastic condition	used	799	Denon PMA1500AE, excellent	used	749	Inca Design Katana cd player (no remote) Leema Elements CD player sealed box	used	149 749	Leema Xandia Mk1 in black		2499
ı	Lyra Erodion Step up	used	1499	ES Labs DS X4 digital, excellent boxed	dem	299 7749	Linn Karik 3, excellent boxed remote	used	499		used	299
ĺ	Mana Reference wall shelf	used	299	Esoteric C03/A03 Pre/Power, boxed remote Exposure XV11 Preamplifier with MC board, boxed		399	Marantz CD6003, excellent boxed	used	149	Leema Xero in Mahogany Linn Kan, boxed, fair	dem used	349 199
ĺ	Mana Reference table Michell Hydraulic Reference, SME3009, excellent	used used	299 849	Graaf GM50B Mk11 Integrated	dem	2999	Marantz CD10, excellent boxed new belt kit	used	449		used	349
ı	Michell Tecnoarm A in black as new mint boxed	used	449	Graaf GM100 valve power amp		1999	Marantz SA7001, nr mint boxed Marantz CD85, excellent with remote	used used	199 299		used	99
ı	Michell Syncro/RB250/Eroica, great condition	used	499	Icon Audio Stereo 40 mk2 boxed Icon Audio, MC34 boxed	used	549 299	Marantz CD6004, nr mint boxed	used	199		used used	2249 999
ı	Moth phono stage	dem	249	Krell FPB600, excellent		2999	Meridian 506/20 with MSR	used	399	Magneplanar MG1.6, superb, boxed Mark & Daniel Maximus with treble	useu	999
ı	Musical Fidelity XLPSV3 phono stage Musical Fidelity XLPSV8 phono stage	dem dem	99 199	Leben CS300, excellent boxed	used	899	Meridian 508/20, excellent	used	449	extenders £2500ish	dem	999
ı	NAIM Aro, excellent boxed	used	1499	Leema Elements Amplifier, excellent Leema Pyxis/Altair Reference Pre & Monos	dem dem 1	899	Meridian G06, excellent boxed Meridian 500 Transport, excellent boxed	used used	599 599			749
ı	NAIM Stageline N excellent boxed	used	199	LFD Integrated amp LE MK111		1499	Moon Equinox CD	used	799	Mark and Daniel Mini in Grey inc. Marble cabinets. Martin Logan Mosaic, excellent boxed	dem used	699 699
ı	Nottingham Analogue Interspace Junior set	used	599	LFD LS1 linestage, reasonable shape	used	299	Moon CD 3.3x £3k new	used	999			
ı	Nottingham Analogue Spacedeck, rega cut Ortofon Rondo Bronze	used used	549 99	Linn Majik Kontrol & 4100 Power, excellent		1499	Musical Fidelity XDAC V8	new	Call	Martin Logan Source SE real wood veneer,		
ı	Pioneer PL100 Tangential tracking arm	used	Call	Linn Kolector Preamplifier Meridian 501V preamp, excellent	used	299 299	Musical Fidelity 3.5 CD Musical Fidelity A1Pro CD	dem new	399 799	ex boxed	dem	999 3499
ı	Pioneer PL530 Direct Drive, good condition	used	299	Meridian 501 Pre	used	349	Musical Fidelity KW SACD with upgraded psu		1249	Martin Logan Prodigy, excellent Monitor Audio PL300, mint crated		3999
ı	Project RPM 9 turntable with arm and platform	dem	649	Micromega IA100, great integrated, boxed	dem	599	Musical Fidelity M1 DAC, excellent boxed	used	329		used	599
ı	Project Phonobox 2, ex boxed Project Xpression mk2, arm and cart	used used	59 199	Musical Fidelity M3i, excellent boxed	dem	749	Musical Fidelity M1 CDTB	dem	499		used	449
ı		used	399	Musical Fidelity M3i, excellent boxed, REDUCED Musical Fidelity M1PWR, excellent boxed	used	649 349	Musical Fidelity M6 black boxed Musical Fidelity M3 black boxed	dem dem	1199 499	Monitor Audio GX300, near mint boxed Monopulse Model S	dem	1999 699
ı	Project RPM 4 Turntable/Arm with cover, great!	used	249	Musical Fidelity X-T100 Integrated	dem	249	Musical Fidelity M1Clic	new	699	Monopulse Model A speakers	new	1499
ı	3	used	599	NAIM NAC82, excellent boxed	used	899	Musical Fidelity CD1008 Pro, near mint boxed		1199	Monopulse Model C	new	399
ı	Rega Planar 2, RB250, excellent boxed Rega RP3 Elys2 cartridge, excellent boxed	used	179 399	NAIM NAP250, olive excellent boxed NAIM NAP250, very late olive excellent	used	899 1099	Myryad Z20DAC, excellent boxed NAD C545Bee, excellent boxed	used	199	NAIM Ovator S400, excellent	dem	Call
ı	Revolver Rosewood, G1022, excellent	used	199	NAIM NAC72, excellent boxed	used	349	NAIM CDX, excellent, boxed remote	used used	149 649		used used	399 699
ı	Roksan Xerxes RB300, PSU, boxed	used	599	NAIM NAC42/NAP110, excellent boxed	used	499	NAIM CD5i, excellent boxed	used	449	Nola KO speakers in black		3999
ı	Roksan Xerxes, XPS, SME Fit	used	349 179	NAIM NAP250, excellent late boxed olive NAIM NAP150, excellent boxed		1199 349	NAIM CDS3, excellent boxed, remote		1899	Nola Contender in Cherry		1499
ı	Graham Slee Fanfare Amp3 Graham Slee Gram Amp2	dem dem	119	NAIM NAC202 with NAPSC, boxed	used used	1199	NAIM CDS3, excellent boxed, remote NAIM CDi, excellent boxed	used	1999 599	Nola Micro Grand Reference inc stands, £15k new PMC Twenty 21 and 22 excellent boxed	dem used	5995 Call
ı	Graham Slee Elevator EXP Step up	used	299	NAIM NAC202, vgc+ boxed just NAIM serviced		1199	NAIM CD3.5, vgc	used	299		used	1199
ı	SME 3009/3, excellent boxed	used	249	NAIM NAP180, excellent boxed	used	599	NAIM DVD5, excellent boxed	used	499		used	1199
ı	SME 3012, excellent SME V12, nr mint boxed	used dem	799 Call	NAIM NAC42/NAP110 combo, boxed great NAIM NAIT 5, excellent remote boxed	used used	599 449	Prima Luna Prologue 8, ex demo boxed		1299		used used	1999 1399
ı	STD305, vgc, no arm	used	99	NAIM NAC152/NAP155XS, excellent boxed		1199	Quad 99CDP, excellent REDUCED Rega Planet 2000, excellent	used used	399 199	Proac Studio 140 mk2, nr mint boxed	dem	1199
ı	Systemdek, Syrinx PU2, excellent	used	349	NAIM NAC90/NAP92, vgc	used	349	Rega Apollo R, excellent	used	449	Proac Studio 110, excellent boxed	used	499
ı	Systemdek IIX900/RB250/AT440	used	279	NAIM NAC102/NAPsc NAIM NAC 102, vgc boxed	used used	449 399	Rega Apollo 35th Anniversary, excellent	used	449	Proac Studio 115, excellent boxed	dem	749
ı	Thorens TD150, SME3009 good condition Thorens TD160 HD turntable	new	299 1199	Neutonia Salis Integrated, classy Restek built	used	399	Rega lo DAC, excellent	used	149	Quad 21L Floorstander Quad ESL63, good condition	used used	199 399
	Thorens TD160, Audio Technica arm, boxed	used	249	Onix OA32 Integrated, excellent	used	299	Rega Saturn, excellent boxed Roksan Kandy K2, excellent boxed	used used	599 449		used	399
1	Thorens TD209 turntable package	dem	699	Onix OA25 Integrated, excellent	used	399 1999	Rotel RCD02, vgc	used	79		used	249
	Thorens TD2030 Blue turntable Thorens TD125 c/w SME3009, excellent	new used	999 399	Pathos Logos Integrated Placette Audio Passive Linestage	dem dem	599	Sugden Masterclass CD original version	used	999	Red Rose Rosebud £2.5k new with (used) stands Revel M22, excellent boxed	dem new	799 599
1	Tom Evans Groove, 0.85mv/100 ohm, excellent	used	849	Prima Luna Prologue 3 Preamplifier vgc+	used	649	TAG McLaren DAC 20, excellent Technics SL-PS900, remote manual	used	249 149	Revolver RW45 floorstander in Cherry	dem	699
	Townshend Elite Rock o'w Excalibur, boxed excellent	used	799	Prima Luna Prologue 2 Integrated, good shape	dem	799	Tube Technology Fulcrum CD transport	dem	699	Revolver Cygnis Gold in Black, £14k new		4995
ı	Trichord Dino 2 c/w NC PSU & HP Cable	dem	Call	Prima Luna Prologue 3 Preamplifier, REDUCED Prima Luna Prologue Premium Preamplifier	dem used	749 1199	Tube Technology Fulcrum DAC (inc DAC64 chip)	dem	899	Revolver Cygnis in Maple/Black, £6k new Revolver Music 1, vgc+ boxed		2495 349
ı	VDH Colibri M/C cartridge VDH Condor M/C cartridge		2999 1999	Puresound L300 valve preamp		3599	Unison Research CDE, excellent boxed remote	used	999		dem used	5999
ı	VPI Scout, JMW arm excellent	used	Call	Quad 606 Power excellent boxed	used	399	Yamaha CD-S3000 near mint YBA GC-10, ex boxed, £1600 new, BARGAIN	dem used	Call 399		used	1199
ı	VTL TP2.5 phono stage (new)		1749	Quad 66 Preamp, excellent remote Quad 99 Pre/Power, excellent, remote, Quadlink	used	349 649		uscu	000		used	799
ı	Wilson Benesch Act 1 Tonearm, nr mint superb	used	799	Quad 405, from	used	199	AV/Accessories/Cables			Spendor S8e, cherry, excellent condition Sunfire True Sub Subwoofer	used dem	849 399
ı	Radio/Recorders			Quad 33/303, vgc, serviced	used	299	Audeze LCDX excellent	dem	849			2499
ı	Arcam Alpha, vgc+	used	29	Quad 34/306 late grey versions	used	399	Audeze LCDXC excellent Custom Design Milan, ex display	dem dem	899 Call			
ı	Arcam T61, vgc+	used	79	Rega Brio 3, excellent boxed Resolution Audio Opus 21 S80 Integrated	used dem	229 Call	Elemental Audio Equipment Rack	dem	499	Totem Mite in black Totem Rokk in mahogany, excellent	dem used	449 249
1	Arcam DT91, excellent	used	149	Roksan Kandy K2 Power, nr mint boxed	dem	499	Elemental Audio speaker stands	dem	499	Totem Sttaf, near mint boxed	new	999
	Creek T43 FM tuner Denon TU-1800DAB	new used	99 179	Roksan Kandy K2 Integrated, nr mint boxed	dem	499	Ergo AMT phones with Amp 2 (£2.5k new) Experience Filtration 6 way block with 3m cable	dem dem		Usher Mini Dancer 1, vgc boxed	dem	1799
1	Denon TU-S10	used	199	Sugden Masterclass Monoblocks, in titanium Sugden A21a line Integrated	used dem	3999 999	HiFi Racks 3 tier rack in Oak	dem	Call 199	Velodyne DD18 sub in black		1999
	NAIM NAT03, excellent	used	199	Sugden Az ra iline integrated Sugden Masterclass Pre/Monos in Graphite		6499	Isotek Nova power conditioner	dem	1199	Veritas H3 (Lowther drivers) in gloss black, 100db Yamaha NS1000, good condition for age	dem dem	2999 799
1	NAIM NAT101 & SNAPS, excellent £500 NAIM service		899	Sugden Masterclass Pre/Monos in Titanium	used	6499	Isol-8, Substation Integra	used	499		GOIII	. 55
ĺ	Nakamichi BX2, excellent Nakamichi 580, near mint boxed	used used	149 249	Sugden Masterclass Integrated in Titanium		2749	Lehmann Rhinelander Musical Fidelity M1 HPAB	used dem	199 399	Special system deals		
	Nakamichi RX505 and 202	used	Call	Sugden A21SE in Titanium, boxed, excellent TagMcLaren 60iRV, excellent boxed	used used	1399 299	Musical Fidelity TripleX power supply	new	199	Audio Analogue Primo CD/Amp combo Consonance Ping CD/AMP	dem dem	499 599
1	Pure 701ES DAB Tuner	used	89	TEAC Distinction A1000 Integrated, ex demo	dem	599	NAIM XPS DR, ex demo	dem	2599	Linn Classik Movie 05, excellent boxed	used	699
ĺ	Quad FM3, vgc Quad FM4, late grey version, excellent	used used	79 179	Unison Research Simply Italy Integrated	dem	999	NAIM Flatcap XS, excellent boxed	used used	449 1199	NAIM Uniti 2, Uniti Lite and UnitiQute all mint	dem	Call
	Rotel RT1080, excellent	used	149	Unison Research S2k Integrated, excellent Yamaha AS500, excellent boxed	dem used	699 179	NAIM Supercap, various excellent boxed from ProAudio Bono Reference Platform	dem	399		used used	799 899
ĺ	Yamaha CT7000, vgc	used	499	Yamaha A-S3000, excellent boxed	dem	Call	Tellurium Q Interconnects, various	dem	Call		used	349
ĺ	- 1 04040 0			40 004= 004		-					-	
1	1011111647 7	h /	777	1 / AF HX/15 KM1	ı U	4U	III Emalii nawa			ndhandhifi co i	4 1 1/2	r

Tel: 01642 267012 or 0845 6019390 Email: news@ 2ndhandhifi.co.uk

VINTAGE HI-FI

Nonetheless, by the mid 1970s AR was bringing out new models with increasing regularity and the introduction of the Advanced Design Department (ADD) models in 1975 saw the AR-7 replaced by the AR-18. Interestingly, this model became a classic in its own right and lasted well into the 1980s in various guises.

(ADAM LISTENS

I positioned the AR-7s on my Atacama SL-600 stands for auditioning purposes and was amused to find the cabinets so shallow in depth that they fitted perfectly between the gel-filled isolation pads that I have affixed to the stands' top-plates! With suitable adjustments made, I connected the speakers to my Naim Supernait amplifier and began listening.

The review samples are not my loudspeakers and are an old design, so I certainly did not intend to thrash them, but I was very impressed by the way in which they did a fine job of filling my room with sound. The room in

question measures 33x15ft and smaller loudspeakers often find themselves sat at one end, vainly shouting into something of an abyss. The AR-7s, however, sounded gutsy, punchy and spry from the off, with a surprising level of bass for their size.

I started off with The Holly Cole Trio's version of 'I Can See Clearly Now' from The Best of Holly Cole CD [Metro Blue 7243 5 29064 2 0]. The track starts with a solidly plucked double-bass line and while the ARs certainly didn't plumb the low frequency

RIGHT: AR ads often carried endorsements from well-known musicians, such as Miles Davis and Louis Armstrong. Here Herbert von Karajan is pictured with two AR-3a speaker systems

depths in the manner of my regular PMC floorstanders, they more than made up for this with their sheer punch and verve. Each note snapped into focus perfectly and never outstayed its welcome, speaking volumes about the quality of the overall cabinet and driver design.

When the vocals commenced, the ARs continued to impress. Miss Cole was vivid and well placed within the centre of the soundstage and as the rest of the instrumentation gradually joined in, the 7s seemed to puff up their chests and set proudly to work on weaving a pleasingly

'I marvelled at

their feistiness

when fed a good

bass line'

cohesive overall picture. They never sounded strained or congested, and did a very fine job of keeping all the players easily distinguishable.

At the top end, the ARs gave away their vintage a little more.

: Although things were certainly clear and nicely detailed, the crispness that one might expect from a more modern tweeter was a little lacking.

Until this point I had been auditioning the speakers with the treble adjustment switch set to 'Norm', but clicking this over to 'Flat' definitely added a little more upper midrange and lower treble presence. This certainly brightened the sound somewhat but the last modicum of sparkle was still rather elusive. The AR-7's tweeters were



most certainly advanced for their time and an improvement on those of the AR-4x but they cannot quite offer the insights we are accustomed to today.

That said, with the right material this was much less of an issue. Initially, I was disappointed to discover that Diana Krall sounded rather distant and uninterested when singing 'Popsicle Toes' from her When I Look In Your Eyes CD [Verve 050 304-2]. This is a good recording and the result is usually a smooth and delightfully laid-back performance. The 7s pushed this a little too far, lacking the last ounce of sparkle to lift things a little.

DIGGING DEEP

In complete contrast, Terry Hall's version of 'Sense' from his Home CD [Anxious Records 4509-97269-2] bounded along with great enthusiasm and proved that the AR-7s can certainly dig into the heart of a recording when given the chance. The mastering of this disc is somewhat crisper than the Diana Krall CD and the ARs sounded much happier with it. Once again, 'Moon On Your Dress' – a later track on the Terry Hall set - had me marvelling at the little cabinets' taut feistiness when fed a good bass line.

Ultimately, I felt that the 7s are most definitely material-dependent, but not in a way that simply meant brighter recordings sounded better. The speakers certainly have a smooth overall demeanour at the top-end but do not lack insight at all. Rather, some recordings simply seem to →

LEFT: The AR-7 was reviewed in HFN/RR Oct '73, priced £55 a pair. Its sound was described as 'very smooth without any disturbing peakiness or hollow effects in the middle register'



DUIPMENT REPORTS ON KEF, ARMSTRO





AT JORDAN ACOUSTICS





















UPnP"

AirPlay

Spotify Connect®

Bluetooth*/ aptX°

Remote

3x Digital / Analogue **Inputs**

USB

App Control (iOS™ & Android™)

iRadio"

Streaming



Mu-so is Naim's first wireless music system. Finely tuned by Naim's specialist engineers in England, its powerful audio brain delivers the most exceptional quality in sound, commanding 450 watts of power through six custom-designed speakers to create an experience of music that has to be heard to be believed. Its advanced yet simple to use connectivity includes AirPlay, UPnP™ streaming, Spotify Connect, Bluetooth (aptX), iRadio, iOS and Android app control and multiroom capability. Call or e-mail Jordan Acoustics to find out more.

Mu-so | music system

0% Finance available*

£895.00

On most naim models

- *subject to status & conditions
- *Naim only available from our bournemouth store.





World Class | Audio Systems

- *t* | 01202 911 886 bournemouth store
- *t* | 01592 744 779 glenrothes store
- *w* | www.jordanacoustics.co.uk



ABOVE: Instructions for use as a single (mono) speaker or stereo pair are posted on the rear of the cabinet. The effect on treble response of the 'Flat' and 'Normal' switch positions are described in the lab report, adjacent

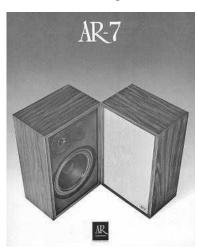
lack presence and scale, sounding more drab than usual but still with good clarity. Find the right match, though, and the little AR-7s will impress on every level.

While there are more than a few other compact loudspeakers of a similar vintage, I am struggling to think of any able to really hold their own against the '7s. They were a ground-breaking design in their day and time has not diminished their capabilities one iota.

BUYING SECONDHAND

Despite their popularity, AR-7s are relatively uncommon on the secondhand market and happy owners seem to have a tendency to hang onto them, so your search for a pair may require some patience. Naturally, the foam surround of the bass driver can be prone to rot, but re-foaming kits are readily available.

The loudspeakers show their age when it comes to their rather underwhelming rear screw



ABOVE: Cover of brochure from 1976 which carried specifications and graphs

terminals, which are nothing more than a knurled brass knob on a threaded post. This will not grip cables of more than moderate thickness with any security, so it would be wise to invest in some spade connectors to permit a secure fixing. Naturally, replacement with modern binding posts is another option, but to my mind this is akin to sticking go-faster stripes onto an E-Type Jaquar.

The two-position tweeter switch can give intermittent connection issues as it ages, so checking this and cleaning the contacts as necessary is a wise move. Other than this, there is very little to go wrong with the AR-7s and they should give many years of fault-free service if suitably looked after.

This said, it is worth remembering that they were designed in the days of much less powerful amplifiers so cannot handle the high output levels of many a modern design. A modicum of caution with the volume control is advised. \oplus

HI-FI NEWS VERDICT

The AR-7 was Acoustic Research's first real attempt to miniaturise its acoustic suspension technology and I would say the result was spot-on. The '7s are a real compact marvel and utilised class-leading technology of the day to give a grown-up and expansive sound that belies their compact dimensions. They wowed the speaker market back in the 1970s and a good pair will likely have the same effect today.

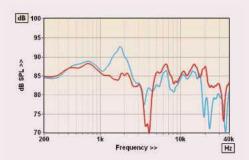
Sound Quality: 84%



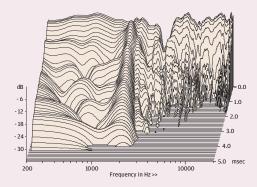
AUDIO RESEARCH AR-7 (Vintage)

As far as I'm aware Acoustic Research didn't specify a sensitivity for the AR-7 but in a High Fidelity review it was said that 4.5W input produced 94dB SPL at 1m, equivalent to a sensitivity of 87.5dB. Our pink noise measurement recorded a lower 86.2dB, averaged for the pair, which is creditable for such a compact sealed box design. This is achieved while retaining an amplifierfriendly impedance, the modulus falling to a low of 4.7ohm at a high 8.9kHz. Modest impedance phase angles result in a minimum EPDR of 3.0ohm at an even higher 18.3kHz. The forward frequency responses for the review pair were recorded on the tweeter axis, with the grille removed, and with the rear baffle switch in the 'Flat' position [see Graph 1, below].

Replacing the grille lowers the treble output by an average of about 2dB above 6kHz, while putting the switch in the 'Normal' position results in the treble being suppressed by a further 4dB above 6kHz. So with the grille in place and the switch set to 'Normal' the AR-7's sound will be distinctly dulled. Even in the 'Flat' position the frequency response errors are high at ±9.1dB and ±9.2dB respectively and the large disparity in the two responses results in an awful pair-matching error of ±12.3dB (both over 200Hz-20kHz). How much of this is due to the ravages of time is, of course, impossible to tell. Diffractioncorrected near-field measurement showed the bass response extension to be 55Hz (-6dB re. 200Hz). Despite the large response errors the CSD waterfall [see Graph 2, below] is pretty good although there's an obvious breakup mode at around 1.8kHz. On one of the pair distortion was audible from a low level at 100Hz. KH



ABOVE: On-axis response shows dulled HF - 'brightest' balance achieved with no grilles and switched 'Flat'



ABOVE: Cumulative spectral analysis shows a driver mode at 1.2kHz but the cabinet is well controlled

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	85.4dB/86.2dB/86.0dB
Impedance modulus min/max (20Hz–20kHz)	4.7ohm @ 8.9kHz 12.8ohm @ 68Hz
Impedance phase min/max (20Hz–20kHz)	-26° @ 87Hz 28° @ 19.7kHz
Pair matching (200Hz–20kHz)	±12.3dB
LF/HF extension (-6dB ref 200Hz/10kHz)	55Hz / 32.6kHz/19.7kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	1.6% / 0.3% / 0.5%
Dimensions (HWD)	400x248x159mm

Subjective evaluation

Adrian Orlowski offers a rational basis for an emotional topic



Hi-Fi News April 1980

Each month HFN will bring you an article from our vast archive of features and reviews from yesteryear

he notion that listening to hi-fi equipment can be a valid way of assessing it is still far from being redundant. It's true that the technology of measuring instruments is better now than it has ever been, but it's likely to be a long time yet before machinery can completely replace ears in the appraisal process - if ever.

Considering hi-fi as a whole, and the effects on the sound quality of all the different items in the hi-fi chain, there's a strong prima facie impression that the sorts of differences which can be heard, and their relative magnitude in perception, are such that they cannot be readily accommodated, or accounted for, by a single scale or criterion. In other words, the audible effect of, for instance, amplifiers on sound quality is of a different nature to the effect of turntables.

Now if the assessment of the sound quality of individual items of equipment is to be of practical value for everyone concerned, and not just a mere concession to consumers, it



is necessary to go beyond the vague manner in which sound quality is usually appraised and progress to a situation where we have some definite and systematic concepts to apply in the listening process.

FOUR CATEGORIES

I'm going to suggest four such distinct categories into which it's possible to put the differences which may be heard. I feel that they can be applied to any component in the hi-fi chain. And they also take due note of the sometimes quite different approaches to sound quality evaluation underlying the methods of different reviewers and critics. In these respects, then, what I'm proposing should be of universal interest, regardless of individual ideological affiliations and opinions on the question of the 'subjective' evaluation of hi-fi equipment.

The first specific category should be a familiar one: coloration. Coloration means any unnatural colouring of the sound, and refers to any characteristic timbres which are reproduced by the hi-fi equipment along with the programme. Although coloration is usually thought of as a problem indigenous to loudspeakers, this shouldn't blind us to the fact that no item in the hi-fi chain is entirely free from it.

On account of its prevalence in speakers, it's here that most work has been done on it. This has resulted in a systematic identification of certain sorts of coloration [see table, opposite].

Loudspeakers afflicted with these sorts of colorations really do sound the way they're described here, ie, as 'honky' or 'wooden'. But although this is a useful synopsis, it's also rather elementary as a clarification



of the concept and, as it stands, can't easily be stretched to cover the colorations perceived in other items of hi-fi equipment.

Basically, it's necessary to disburden ourselves of the notion (implicit in the table) that colorations arrange themselves conveniently in octave bands. Because, at one bandwidth extreme, down to one-third octave and less, they are so narrow that they manifest themselves only as (mild) congestions at a particular frequency: eg, a high Q resonance in a tonearm perhaps, while at the other extreme they may extend over several octaves, eg, crossover distortion as

excessive highorder odd harmonics in amplifiers.

Likewise, they may be less severe than would merit a

strictly onomatopeic description of them. So they may be so slight that they can only be characterised as a sui generis coloration: eg, HF graininess in moving-coil cartridges. And there's also the unusual special case where the most conspicuous feature is not the coloration itself, but a boundary region in the sound dividing two bands of different intrinsic coloration: eg, in speakers which attempt to integrate drivers working on different principles.

OVERALL BALANCE

In addition to specific colorations, there is also the aspect of overall tonal balance to consider. In any item of equipment, the tonal balance between high, mid, and low frequencies may be such that the overall effect is one of mild coloration: eq, where high frequencies are prominent, sound will have a cool or thin quality and where HF is depressed it will possess a warm or intimate quality. But it's moot whether tonal imbalances should be classed with colorations or under a separate head.

As far as the evaluation of hi-fi is concerned, it seems that as long as such tonal imbalances are not excessive, they are also not unacceptable. One probable reason for this appears to be that the tonal balances of different concert halls

due to variations in the acoustics tend to be rather worse than those occurring in hi-fi equipment that meets the relevant specifications.

But although this line of thought is in itself correct, where coloration is the only accepted 'subjective' criterion it has this corollary: that given two hi-fi systems about even in their level of coloration, choice between them on the basis of listening can rest only on tonal preferences. And since these are subjective, there are no further grounds for using listening to make a rational choice between them.

One must therefore resort to specifications or to extrinsic factors

'These categories

can be applied to

any component in

the hi-fi chain'

like cost per watt to make that choice. I think this is simply wrong; and I don't think it's what goes on in the minds of hi-fi consumers who

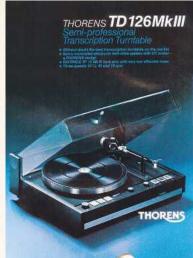
take the trouble of listening to the goods before buying them.

In particular, given two such systems matched in their levels of coloration, it is usually possible to discriminate between them on their ability to extract information from the source, record or tape. This is my second category.

So what is 'information'? Here I mean information about the music. the musicians, the instruments and about how the recording was made. The latter is a far more subtle sort of information than the former, so it's useful to distinguish between them. High-level information (the less subtle sort) is of the type which answers the following questions:

How many performers are there (in an ensemble piece)?

Can they be heard all the time, during solo and tutti sections alike? **RIGHT: Thorens** TD126MkIII from 1977 and (below) **Linn Sondek** LP12, released in 1973. The author suggests that comparing the sound of these two turntables will bring the concepts of coloration, information. control and resolution into sharper relief





BELOW: While there is a well established vocabulary used by reviewers to describe coloration in loudspeakers at different frequencies, colorations do not arrange themselves conveniently in octave bands as the table might

suggest

How many singers are there? Are they different people, or the same one, multitracked?

Is it possible to determine what each one is singing?

Is it possible to determine the melody? And the counterpoint?

Is it clear in what sort of scale a melody is pitched? That is, harmonic or melodic minor; whole-tone or diminished?

Is the harmony identifiable? Is it possible to hear a straight dominant 7th/tonic resolution as written rather than a suspension?

I'll consider low-level information later, but the difference between the two is one of musical primacy and dependency.

ESSENCE OF MUSIC

In some sense the features identified by these questions constitute the basis of music - where they don't exist, music can't exist either. And where these features are confused by a hi-fi system to the extent that they are no longer identifiable as such, then it may justly be said that what is being reproduced is not music, but (some) music and (some) noise - which is pretty much what a system poor in information extraction actually sounds like. So the important point about high-level →

COLORATION AT THESE FREQUENCIES	WILL OFTEN SOUND LIKE THIS
40Hz to 80Hz	Boomy
100Hz to 150Hz	Chesty, plummy
150Hz to 300Hz	Hollow, boxy, wooden
400Hz to 600Hz	Tube-like, tunnel
700Hz to 1.2kHz	Honky, cup-like
1.8kHz to 2.5kHz	Clangy, nasal, hard
2.5kHz to 5kHz	Metallic, present, ie, forward
5kHz to 8kHz	Sibilant. sharp
10kHz to 15kHz	Fizzy, gritty, splutter

FROM THE VAULT

information extraction ability is that it's a measure of the coherence with which a hi-fi system/item of equipment renders the music.

This is sufficient to distinguish information retrieval from mere detail, which is a common confusion. Changing an elliptical stylus for a 'fine-line' type will not necessarily result in an increase in information and may result in an apparent decrease! It becomes harder to see the musical wood for the trees.

Conversely, the suppression of detail (by masking, for instance) may result in a perceived increase in high-level information, and hence basic musical intelligibility. This is an important point when appraising a cheaper hi-fi system, which may consequently sound better than a more expensive one, even though its level of coloration is greater.

BESIDE THE POINT

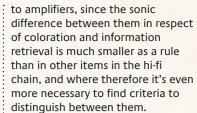
It might be argued that this is an unhelpful concept for the appraisal of hi-fi, because, whereas we can evaluate, say, a loudspeaker for coloration by comparing its reproduction of an instrument with the sound of that instrument as it really is, this is not the case for information. We don't have independent access to the information locked up in the groove of the record or the magnetic domains of the tape except via the loudspeaker. But this is in a way beside the point, since the concept of information extraction, like that of coloration, admits of degrees. Thus one can still compare two items of equipment with each other, if not the information retrieved with the sum total of information available.

The third category of appraisal which I think is valuable is 'control'.



ABOVE: Two more components the author suggests the reader might wish to use for comparitive listening are Mission's 774 tonearm from 1979 and the Hadcock GH228 (top right). The Mission features fluid damping and a detachable allov wand and was designed by former racing driver. John Bicht. The Hadcock can still be bought today, in GH228 **Export form**

BELOW: From Japan, the Supex SD900 Super weighed just 9g thanks to the use of a specially made cerium/cobalt magnet inside the body. The author suggests comparing it with a Dynavector



In simple perceptual terms, control refers to the degree of solidity and stability possessed by the sound; and in particular, by the different elements (the timbres, tones of the different instruments) which make up the music being reproduced. The common descriptions of sound as 'tight' or 'tidy' are only a part of what's involved here, and although these are typically associated with good damping properties, the concept of control seems to be wider than this.

seems to have

more to do with feedback than with acoustical or electromechanical damping; and in amplifiers damping doesn't seem to be a

particularly fruitful concept in explaining why some amplifiers have better control than others.

Like coloration and information extraction, control is something which may not be uniform over the whole frequency range. In general, it appears that the measure of control is harder to achieve at the frequency extremes than in the midband.

In listening for control, the best test is to use a fairly complex (ie, ensemble) piece of music, and to listen for individual instruments in the sound matrix. Regardless of its particular prominence in the mix (which, of course, is something unique to each recording, with vocalists often mixed 'up front') and regardless of how many, and what, other instruments happen to be playing at the same time, every

instrument's place in the sound should remain rock-steady (given that deliberate level changes do happen). In particular, it should not exhibit any tendency to be merged or submerged into the overall matrix by the entry of other instruments or by the occurrence of large-scale transients. Likewise, its stereo placement should remain unaffected, with no tendency to wander or waver.



The fourth category is bandwidth resolution. To indicate some of the things involved in it: low-level In turntables, for instance, control: information, dynamics, detail (with

'For control, the

best test is to use

a fairly complex

piece of music'

the proviso that there's some high-level information upon which it can hang), 'speed', 'clean edges'. These concepts are themselves

terms of the art, so that in fitting them together into 'bandwidth resolution', I had better explain what they individually refer to.

Low-level information is just high level information of a subtle nature, and it's the sort of thing addressed in the following questions:

Is there the same clarity in the rendition of an instrument regardless of the number of accompanying instruments; or is its rendition confused by the presence of other instruments?

Is (pursuing an example of Rega's Roy Gandy) that acoustic guitar a Martin or a Gibson?

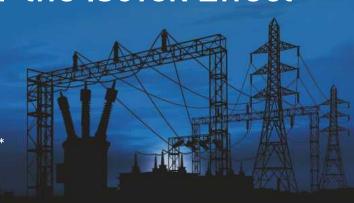
Was that word 'pat' or 'bat'? Can one hear singers breathing in, not just breathing out?

Is any ambience coherent or delocalised? →





Mains electricity is distorted by numerous factors as it travels from power stations to our homes, eroding your systems performance. The New Discovery Range from IsoTek delivers highly effective yet eminently affordable solutions to enhance sound and picture quality, whilst also protecting your valuable equipment from power surges and voltage spikes.*





"A distinct cleaning up of the sound... "A marked benefit for dynamic range, a consequence of lowering the noise floor, as well as a refinement and a general opening up of the soundstage"

IsoTek EV03 Premier, Hi-Fi Choice, March 2013

EV03 Premier

IsoTek's most affordable power cable has at its core three 2sqmm conductors made from 99.9999% OFC (oxygen-free copper) and coated in silver to aid conductivity, with a Teflon FEP dielectric extruded over each conductor. A cotton filler is used to give the cable internal strength and reduce microphony whilst maintaining dielectric performance. The cable is terminated with high-quality 24ct gold connectors, designed and manufactured by IsoTek rather than bought off the shelf. No similarly priced power cable is constructed to such a high specification, with correspondingly impressive benefits to sound and picture quality.

- 24ct gold connectors
- Silver plated OFC conductors
- Teflon FEP dielectric
- 16A current capability
- C15, C19 and C7 IEC options
- 1.5m standard length

EV03 Polaris

Cost effective high-performance power distribution strip that cleans Common and Differential Mode noise from the mains as well as offering surge and spike protection.

"More space, lower noise and greater resolution... An increase in timing precision, depth of bass and a much greater sense of musical flow"

IsoTek EV03 Polaris, Hi-Fi Choice, March 2013



RECOMMENDED

Choice

For your free brochure:

IsoTek products are distributed by Sound Foundations. +44 (0)1276 501 392 info@soundfowndations.co.uk



Discover IsoTek

FROM THE VAULT

Is that rhythmic pulsing more like tremolo (amplitude variation) or vibrato (frequency variation)?

Clearly the information encoded in the recording of a piece of music forms a continuum, so that it's possible to determine more of it from its reproduction on a good system. Dynamics in the context of this category is not co-extensive with the technical concept of S/N ratio, although it borrows something from it. In particular, some items of equipment seem to be better than others in reproducing the range between very loud and very soft and this is reflected in the nuances of stress with which the individual notes of a melody are rendered.

On the better system it becomes easier to grasp a musical phrase as an entity because of this. The reason is perhaps an absence of spuriae from the signal and therefore less interference with the wanted signal. This absence of some spuriae or 'noise' permits low-level information and particularly its transient components to be more easily

identified, with the result that the instruments seem to be more sharply delineated, and to possess 'cleaner edges'. Likewise. it also seems to be connected

with the rhythmic vitality, or clarity of pulse, and hence the perceived tempo or 'speed' of reproduced





music, in that the rendition of instrumental attack is improved.

Collectively, these facets of hi-fi reproduction comprise this category of bandwidth resolution.

HEAR FOR YOURSELF

'On the better

system it becomes

easier to grasp a

musical phrase'

To conclude: these four categories constitute four distinct ways - four points of view, if you like - in which

> hi-fi sound quality can be assessed. Seen in the light of these categories, the sonic differences in the performance of items of

equipment stand fully revealed, in much the same way that the technique of chromatography can separate and reveal the presence of many different chemical compounds in a given sample.

To close, the following suggested comparisons of equipment will illustrate these ideas far better than any argument or analogy:

- Turntables: Linn Sondek and Thorens TD126MkIII.
- Tonearms: Grace G707 and Mission 774; ADC LMF1 and Hadcock GH228.
- Cartridges: Supex SD900 Super and Dynavector R100 Karat.
- Amplifiers: Spendor D40 and Nytech CTA252XDII.
- Speakers: LS3/5A and Ceol; KEF 105 and Acoustic Research AR90 (with the lower- and upper-mid attenuators on the AR90 set to -3dB to cancel the innate advantage that the KEFs have in their more neutral frequency response). ()

ABOVE: Pages from the April 1980 issue of Hi-Fi News in which Adrian Orlowski sets out his case for establishing a rational base for the subjective evaluation of hi-fi components

LEFT: Still one of the world's all-time greatest speakers, the LS3/5A from 1975 was developed by the BBC and built under licence by a variety of companies. Rogers Audio being granted the first contract. However, Rogers went out of business before making a single unit and it was only after Swisstone bought the Rogers name that the speaker appeared bearing the Rogers brand



Also in HFN this month in 1980

SUBJECTIVE SOUNDS

Notes from Paul Messenger.

FM RADIO

Angus McKenzie's monthly column on all things FM.

AUDIO PATENTS

By Adrian Hope.

A BELOW-RESONANCE LOUDSPEAKER

Heinz Lipschutz on a different approach to speaker design.

FIVE DIVERSE CASSETTE DECKS

Denys Killick tests the Dual C839 RC, Marantz SD 6000, Optonica RT 5100, Philips N 5748 and Technics RS-M63.

AN INSTANTANEOUS POWER METER

Duncan MacArthur describes an LED design to reveal those voltage peaks.

THE FABULOUS WIENIAWSKI

Wilson Lyle offers a brief centenary assessment.

SONGS IN THE KEY OF LIFE

Ralph Denyer considers the recordings of Stevie Wonder.

QUALITY MONITOR

Our quarterly reassessment of recorded sound quality.

CLASSICAL CASSETTES

Reviewed by Peter Gammond.

POSITIVE FEEDBACK

This month's technical correspondence.

I AM THE GREATEST



Miniature Monitoring Loudspeaker

THE FAMOUS

LS3/5A

This Loudspeaker, designed by the British Broadcasting Corporation, is used where space is at a premium and some small sacrifice of Bass Response is justified for the sake of achieving com-

Maximum output is greater and the quality higher than that obtainable from loudspeakers of compar able size, especially in the lower frequency range.





Subscribe securely online: www.mymagazineoffers.co.uk/NY15 Call: 0844 543 8200 and Quote NY15

By Post: Please complete the form and return it to the address provided below.

Signature. Sort code

DIRECT DEBIT SUBSCRIPTIONS UK ONLY	
Yes, I would like to subscribe to: Hi-Fi News ☐ 3 print issues for £1 then £9.79 every 3 months Hi-Fi Choice ☐ 3 print issues for £1 then £9.79 every 3 months	Home Cinema Choice ☐ 3 print issues for £1 then £10.49 every 3 months
YOUR DETAILS MUST BE COMPLETED	INSTRUCTIONS TO YOUR BANK/BUILDING SOCIETY
Mr/Mrs/Miss/MsInitialSurname	Originator's reference 422562 Name of bank
	Address of bank
Postcode Email Tel Mobile	Postcode
	Account holder

POST THIS FORM TO: HOME CINEMA CHOICE SUBSCRIPTIONS, TOWER HOUSE, SOVEREIGN PARK, MARKET HARBOROUGH, LEICS LE16 9EF

Please note that banks and building societies may not accept Direct Debit instructions from

will be passed electronically to my bank/building society.

Reference Number (official use only)

Account number Instructions to your bank or building society: Please pay MyTimeMedia Ltd. Direct Debits from the account detailed in this instruction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this instruction may remain with MyTimeMedia Ltd and if so, details









Fri 20th - Sun 22nd February 2015

Marriott City Centre Hotel Bristol, Lower Castle Street, Bristol, BS1 3AD

www.pristinevinyl.com t:+44 (0) 1837 871288



GREAT VALUE NEW & PRE-OWNED HIGH END HI-FI

- Huge range of high end brands
- Expert system matching advise
- Used high end hi-fi bought and sold
- Part exchange welcome
- All items checked and guaranteed
- Major credit cards accepted

HIGH QUALITY NEW & PRE-OWNED HI-FI:

Arcam FMJ DV139

Rotal RB-1510
Musical Fidelity Nu Vista 300
Atlas Asimi 2m Speaker
Roksan Xerxes/Artemiz
TelluriumQ Ultra Black 3m Speaker

世	71	ES	T	40	
_	_				

JPS Labs aluminata JPS Labs aluminata Olive ONE HD Music Player Audiomecar Pierre Lume Mephisto CD Trans, Audio Note AN-Vx Interconnect 1m Acoustic Zen MC2 Digital Reference BMC Audio M2 Monoblocks	£4 £5 port £7 £4 £1 £9,1
CD Players and DACs	
Arcam rDAC + Squeeze	£250
Audio Aero Capitole Signature	£3,300
	£29,500
Audio Aero La Fontaine	£17,500 £4,250
	£4,250 £600
Audiolab 8200CD Audiomeca/ Pierre Lurne Mephisto CD Transpo	rt £700
AVI Series 21 MC4 Reference	£690
Bel Canto Dac3	£2,199
Bel Canto USB Link 24/96	£349
Bluenote Stibbert valve improved	£1,800
BMC Audio BDCD1.1 Belt Drive CD Player	£3,195
BMC Audio PureDAC	£1,290
Cambridge Audio dacmagic plus	£165
CEC TL0X Classe Audio CDP102	£9,990 £1,290
Cyrus cd6 se2	£400
Cyrus CD8X	£400
Esoteric Esoteric K-03	£4,000
Esoteric P05 D05	£5,500
Gryphon Mikado Signature	£4,990
Krell EVO 505 (110v)	£3,395
Krell Evo 505 SACD Krell Evolution 525	£3,490 £5,990
Krell KPS20il	£1,490
Marantz UD 9004	£2,690
Mark Levinson No 36 DAC	£1,290
	£12,255
Mark Levinson No 512 CD/SACD	£7,995
Mark Levinson No 31 & 30.5 Transp/Dac Mark Levinson No 31.5 Reference CD Transport	£7,450
McIntosh MCD1100	£7,490
Meridian Audio 508	£600
Micro Seiki CDM2	£1,490
MICROMEGA Microdac	£295
Moon 300D	£850
MSB Platinum III Musical Fidelity M6 CD	£950 £899
NAD M51	£1.100
Naim Audio CDi	£650
Opera Consonance Droplet CDP 5.0	£1,295
Perreaux DP32	£1,475
Plinius CD Player101	£2,400
Plinius CD101 Primare BD32	£1,890 £3,500
Proceed CDP CD/HDCD player	£995
R&T Audio Design Orpheus mk2	£500
Shanling CDT300	£1,795
Theta Compli	£1,595
Wadia S7i	£7,490
Wadia i171 Yamaha S2000 CD/SACD	£400 £795
Yamana S2000 CD/SACD	£/95
Loudspeakers	
Acoustic Preference Gracioso 2	£4,990
Adam Audio Compact Active Version Adam Audio Tensor Epsilon (Active)	£1,295 £2,000
Alon Phalanx	£4,590
ATC SCM 20 SL (Active) & WA Active Sub	£2,250
ATC SCM300AT based custom model	£8,550
ATC SCM300 ASL Monitors	£17,500
Audio Acoustics FUNDAMENTAL K2	£5,995
Audio Physic Virgo 3	£1,950
Audio Physic Scorpio 25th Anniversary	£2,890 £675
Audio Physic Tempo 3i Aurousal A1 MK	£675
Avalon Arcus	£3,450
	£57,600

	-		
	Arcam rDAC + Squeeze Alon Phalanx Lamm Lamm M1.1	£4,	99
	Wadia S7i	£7,	49
	Loewe Reference stand speaker	£1,	40
	Transparent Audio Ultra mm XLR 2m YBA Passion 1000 monoblocks	£7	89
	Kuzma Stabi Reference+ Ref2 psu+ Triplanar	£7,	99
	Moon 300D	£	85
	Cary SLP 98L	£2,	49
۱	B&W htm 2D	£2,8	00
	B&W DM 70 Continentals	£1,8	00
	B&W Matrix 800	£5,9	90
	Beauhorn B2.2 Revelation	£1,8	00
	Dali 300 MK2 in Rosewood Eclipse TD512, A502 + Stands	£1,6	
	Eggleston Works SAVOY	£15,0	00
	Focal JM Lab Diablo Utopia III & Stands	£8,1	00
	Focal JM Lab Electra 1028Be Focal JM Lab Grande Utopia III EM £	£2,6	
	Focal JM Lab Scala Utopia 3	£18,9	99
	Focal JM Lab Stella Utopia III EM	£47,9	90
	Gamut S5	£9,9	90
	Genesis Technologies Genesis G200. 4 box system Genesis Technologies II.5	£12,9	90
	Genesis Technologies 5.3	£7,5	
	Hansen Audio Emperor	£32,5	00
	Hansen Audio Prince V2 Hansen Audio The Knight	£18,0	00
	Hansen Audio The Knight Heco celan 500	£9,9 £5	50
	JBL 250 Ti	£2,8	90
	KEF Moun	£85.0	00
	KEF Reference 207/2	£7,5 £2,7	00
	Krell resolution 3 Living Voice Auditorium	£2,7	50
	Loewe Reference stand speaker	£1.4	00
	Martin Logan Summit	£5,5	00
	Martin Logan Summit	£4,9 £8	90
	Martin Logan Logos Centre Martin Logan Request	£1,5	
	Merlin VSM MXR	£6,4	95
	Mission 765	£4	
	Mission 753 PMC Twenty 22	£2 £1,3	50
	Quad ESL 2905	£4,2	50
	Revel Ultima Studio 2 NEW	£8,4	90
	Rogers LS3/5A & AB1 Subs	£1,5	95
	Roksan K2 TR-5 Shahinian diapson	£6 £11,9	
	Sonus Faber Cremona	£2,9	
	Sonus Faber Guarneri Homage Palladio		
	Reference LE	£6,7	50
	Sonus Faber Concerto Home & Stands Spendor s100	£9 £1,5	ດເ
	Spendor A3	£6	00
	Titan 3Way	£1,2	95
	Transmission Audio M1I Verity Audio Tamino	£1,7 £1,9	50
	wharfedale 1950's Corner Horns	£6,9	90
	Wilson Audio W/P6	£5,9	90
	Wilson Audio Watt Puppy 7	£7,4	90
	Wilson Audio WATT Puppy 7	£7,4 £6,7	90
	Wilson Audio Watt Puppy 7 Wilson Audio WP8	£10,9	95
	Wilson Audio Maxx 3	£49,5	00
	Zu Audio Omen	£1,2	00
	Power Amplifiers		
	Aesthetix Atlas Mono Blocks	£9,9	90
	Astin Trew At 5000 ATC S1A2-150	£4 £2,2	U(
		£35,0	
	Audio Research Classic 120 Monoblocks	£2,4	50
	B.A.T. VK-255 SE Bel Canto Ref 1000 M (Mk2) Mono blocks NEW	£3,7	00
	Bel Canto Ref 1000 M (MK2) Mono blocks NEW Bel Canto Ref 1000 monos	£4,3 £1,9	υl 91
	Beyond Frontiers Audio Tulip w/ DAC	£8,5	00
	BMC Audio CS2 Integrated/ Power Amplifier	£4,5	95

£895 £7,890 £5,995 £850 £2,495	TelluriumQ Ultra Black 3m Spe Nordost red dawn Vertex AQ roraima silver lite Vertex AQ roraima Densen DP-DRIVE XS + DP 04
£2,800	Bryston 28BSST-2
£1,800	Chord Electronics 1200c
£5,990	Classe Audio CA2200
£1,800	Conrad Johnson Prem 8A mon- Crimson Electronics 640 E3 Mo
£1,650 £2,000	Edge NL Reference Monoblock
15,000	Edge NL12.1
£8,100	Gryphon Antileon
£2,695	Halcro DM 88 Monoblocks
21,999 18,999	Halcro DM38 with 220/110 V tra
47,999	Jadis ja-250 Jadis JA200
£9,990	Jeff Rowland Model 3 Monoblo
12,990	Jeff Rowland model 3
10,000	Karan Acoustics KA M2000
£7,500 32,500	Krell EVO 302 Krell FPB 200
18,000	Lamm Lamm M1.1
£9,900	Leema Acoustics Corvus
£550	Linn klimax Solos
£2,890	Luxman M800A stereo power
85,000 £7,500	Mark Levinson No 33H Mark Levinson No 532
£2,700	Mark Levinson No 532H Refere
£1.350	High current Dual Mono Power
£1,400 £5,500	Mark Levinson No 532H stereo
£5,500	McIntosh MC275 (2 Available) Musical Fidelity 308 K Mono-bl Musical Fidelity Nu Vista 300
£4,990 £890	Musical Fidelity Nu Vieta 300
£1,550	Naim Audio Nap 180
£6,495	New Audio Frontiers NAF Perfo
£400	Plinius SA 250mkIV
£250	Rotel RB-1510 Sony TAN R1 monoblocks
£1,350 £4,250	Soulution Audio 711 upgraded
£8,490	Tenor HP 300
£1,595	Tom Evans Linear A
£600	Tube Technology Genesis Mon
11,990 £2,990	VTL MB 450-III Signature Mono Welborne Labs DRD45
LZ,330	YBA Passion 1000 monoblocks
£6,750	
£990	Pre Amplifiers Audible Illusions Modulus 3A
£1,500 £600	Audio Innovations L1
£1,295	Audio Innovations L1 Audio Research LS25 (mkl)
£1,250	Ayre Acoustic K-1xe Pre and pl B.A.T. VK-53 SE
£1,750 £1,990	B.A.T. VK-53 SE BMC Audio DAC1PreHR
£6,990	Boulder 1010 Pre
£5,990 £7,490	C.A.T SL1 Ultimate
£7,490 £7,490	Cary SLP 98L
£6,750	Classe Audio CP - 800
10,995	Classe Audio CP 500 Concordant Exquisite + Exclusi
49,500	Crimson Electronics 710 Pre A
£1,200	Gryphon Sonata Allegro
	Jadis JPS2S
£9,990	Karan Acoustics KA-L Pre Klyne Audio Arts 7LX3.5 & pho
£400 £2,200	Krell Evolution 202
35,000	Krell KCT
£2,450	Linn Klimax Kontrol
£3,700	Luxman C800f
£4,300	Mark Levinson No 380s
£1,990 £8,500	Mark Levinson No 326s Mark Levinson No 326s + Phor
£4,595	Mark Levinson No 326s Refere
£9,190	Dual Mono Pre

yston 28BSST-2	£12,750
nord Electronics 1200c	£1,690
asse Audio CA2200	£2,250
onrad Johnson Prem 8A monoblocks	£4,950
imson Electronics 640 E3 Monoblocks	£3,399
lge NL Reference Monoblocks	£34,990
lge NL12.1	£8,900
yphon Antileon	£5,990
ilcro DM 88 Monoblocks	£24,950
alcro DM38 with 220/110 V transformer	£8,500
dis ja-250	£15,000
dis JA200	£9,490
ff Rowland Model 3 Monoblocks	£2,500
ff Rowland model 3	£2,450
ran Acoustics KA M2000	£22,990
ell EVO 302	
	£5,500
ell FPB 200	£1,750
mm Lamm M1.1	£6,990
ema Acoustics Corvus	£999
nn klimax Solos	£8,995
xman M800A stereo power	£8,990
ark Levinson No 33H	£9,900
ark Levinson No 532	£17,362
ark Levinson No 532H Reference	
gh current Dual Mono Power Amp	£7,500
ark Levinson No 532H stereo power amp	£4,995
Intosh MC275 (2 Available)	£4,250
usical Fidelity 308 K Mono-blocks	£650
usical Fidelity Nu Vista 300	£2,400
nim Audio Nap 180	£600
w Audio Frontiers NAF Performance 2A3	£4,000
nius SA 250mkIV	£3,495
otel RB-1510	£295
ny TAN R1 monoblocks	£8,990
oulution Audio 711 upgraded from 710	£29,990
nor HP 300	£15.500
m Evans Linear A	£3,850
be Technology Genesis Monoblocks	£1,390
L MB 450-III Signature Monoblocks	£14,500
elborne Labs DRD45	£1,690
BA Passion 1000 monoblocks	£7,890
e Amplifiers	
idible Illusions Modulus 3A	£2,250
idio Innovations L1	£240
idio Research LS25 (mkl)	£1,800
re Acoustic K-1xe Pre and phono	£3,950
A.T. VK-53 SE	£8,240
IC Audio DAC1PreHR	£3,495
ulder 1010 Pre	£6,950
A.T SL1 Ultimate	£7,295
ary SLP 98L	£2,495
II y SLF 90L	
asse Audio CP - 800	£4,000
asse Audio CP 500	£2,100
oncordant Exquisite + Exclusive	£1,250
imson Electronics 710 Pre Amp	£3,995
yphon Sonata Allegro	£5,490
dis JPS2S	£9,990
ran Acoustics KA-L Pre	£2,195
iidii Accuadica NA-L FIE	
yne Audio Arts 7LX3.5 & phono	£2,790
ell Evolution 202	£5,990
ell KCT	£3,990
nn Klimax Kontrol	£4,250
xman C800f	£8,990
ark Levinson No 380s	£2,250
ark Levinson No 326s	
	£5,990
ark Levinson No 326s + Phono	£6,750
ark Levinson No 326s Reference	
ial Mono Pre	£8.170
	20, 170

	Naim Audio CDi ATC SCM300 ASL Monitors ATC S1A2-150 Krell KCT Mark Levinson No 380s REL Stentor III Shanling CDT300 Mark Levinson No 326s MSS Audio Signature II AES/EBU Krell FPB 200	£650 £17,500 £2,200 £3,990 £2,250 £590 £1,795 £5,990 £495 £1,750
١	Mark Levinson No 380	£1,790
	Musical Fidelity Kw Phono	£1,450
	Nakamichi 410	£198
	Sony TAE 900	£2,990
	Tom Evans The Vibe pre & Pulse power supply	
	VTL TL 6.5 Signature Line Pre	£9,990
	Turntables/Arms/Cartridges & Phonostage	
	Aesthetix IO Eclipse	£15,590
	Astin Trew AT8000 phono	£450
	Audio Research PH8 black	£3,890
	BMC Audio MCCI Phono MC	£2,300
	Boulder MS11 & MS01 Phono stage	£1,795
	Cello Cartridge Clear Audio Insider Gold	£4,000 £1,000
	Clear Audio Insider Gold Clear Audio da Vinci V2	£2,890
	Clear Addio da Vilici V2 Clear Audio Goldfinger Statement	£5,990
	Densen DP-DRIVE XS + DP 04	£477
	Dr. Feickert Analogue NG High-Precision	2411
	Cartridge Alignment Tool	£149
	ELP LT-1LRC	£3,500
	EMT 950 Broadcast Turnta Fabulous BBC	
	Wide body	£6,500
	Gale GT2101 Turntable	£7,990
	Garrard 401	£750
	Jan Allaerts MC1B mk1	£1,495
	Klyne Audio Arts 6PE mm/mc	£1,950
	Kuzma Stabi (wood) & Ref psu	£1,990
	Kuzma Stabi Reference+ Ref2 psu+ Triplanar	
	LFD MCT SE Phono mc	£3,500
	Linn Axis Manticore Mantra	£300 £300
	Marantz tt15s1	£825
	Origin Live Digital Stylus Force Gauge	£625
	Pink Triangle Export/ Zeta	£1,495
	Roksan Xerxes/Artemiz	£1,400
	SME 312s	£1,850
	SME Model 10A turntable	£4,250
	SME Model 30/12A	£21,995
	SME Model 30/2A	£8,790
	SME Series V Gold plated arm	£2,395
	SME Series V-12	£3,249
	SME Model 20/12A	£11,567
	SME Model 20/3A	£7,990
	SME Series V (gold print)	£2,490
	Sonic frontiers SFP-1 Phono	£750
	Sony TTS8000 with Resinamic Sound	C1 ECC
	RS-8000 plinth	£1,500
	Sumiko Pearwod Celebration II Thorens TD 126 mklV	£1,150 £590
	Tri-Planar MKVII	£2,890
	van den hul Colibri PXC	£2,750
	Voyd Reference+ Ref psu + Cyalene+ AN IO	22,730
	LTD & AN7c	£20,990
	VPI TNT 4 Flywheel RB1000	£4,500
	VPI TNT MK2.5 suspension	£2,490
	Wheaton Tri-Planar MK IV	£1 705

100s more bargains online now list your items FREE at www.choice-hifi.com today!*

Email: info@choice-hifi.com Telephone: 020 8392 1959 / 07768 720456

STOCKISTS OF: ACCUSTIC ARTS / AIR TANGENT / AUDIO NOTE / AUDIO PHYSIC / AUDIA / AUROSAL BEL CANTO / BURMESTER / CAT / CLEAR AUDIO / DENON / GAMUT / GRAHAM SLEE / GRAHAM TONEARMS HALCRO / JM LAB / LAMM / LEXICON / LINN / METRONOME / MONITOR AUDIO / NAD / NUFORCE ORIGIN LIVE / ORTOFON / PANASONIC / PARASOUND / PIONEER / PLINIUS / PRIMARE / PROJECT / QED REVEL / ROKSAN / SME / TIVOLI / TOM EVANS / TOWNSEND / USHER / VELODYNE / YBA AND MANY OTHERS

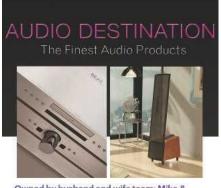


choice HI-FI

hi-finews

TO SUBSCRIBE Call 0844 543 8200 or

subscribe online at www.hifinews.co.uk/subscribe



Owned by husband and wife team: Mike & Caroline - Audio Destination is not your typical Hi-Fi specialist

Audio Destination brings together a range of only the finest audio products and places them in comfortable and relaxed surroundings.

We look forward to seeing you

Call +44 (0)1884 243 584

email: info@audiodestination.co.uk Audio Destination, Suite 7a Market Walk, Tiverton, Devon EX16 6BL

All You Need In One Place

- ▶ Premium Loudspeaker Drivers
- ▶ Highest Quality Crossover Parts
- Crossover Design and Assembly
- **DIY Speaker Kits**
- Wire and Terminals
- Expert Advice

Some of our Brands:

- Accuton
- Audax
- Aurasound
- Eton
- Fostex
- ▶ HiVi Research
- Peerless
- **SB Acoustics**
- Scan-Speak
- Seas

madisound)))

Your Worldwide Provider of High End Loudspeaker Parts

madisound.com

IAN HARRISON

MICHELL ENGINEERING

ORBE ORB SE **GYRODEC** BRONZE GYRODEC BLACK GYRO SE TECNO ARM A

HR POWER SUPPLY ORBE PLATTER KIT **ORBE CLAMP KIT** SECURE COVER UNI COVER TECHNOWEIGHT **GYRO BEARING**

PLEASE PHONE FOR PRICES

ian.harrison@mercian.myzen.co.uk TEL: 01283 702875

Stockists of:

- Arcam B&W Focal
- Linn Naim PMC • Rega • Rotel and MORE

9 High Street, Hampton Wick. Kingston upon Thames, Surrey KT1 4DA

Tel: 020 8943 3530 Open: Tues - Sat 10am - 6pm www.infidelity.co.uk







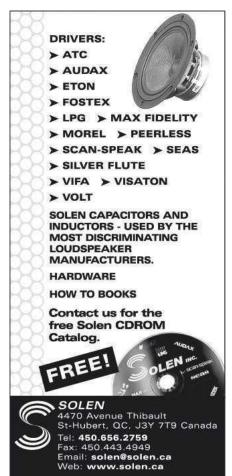
tavistock audio

love your music

- Wilson Benesch
- **Michell Engineering**
- Grado Naim •
- The Chord Company •
- Kudos Quadraspire •
- Audiovector
 PMC
- Audiolab
 Quad • Project •

18 Market Street Tavistock Devon PL19 0DE

01822 618 940

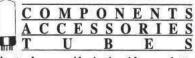




THE SOPRANO WITH YOUR CABLES?

Careless cable choices can strangle your excellent system. The Cable Company database, based on feedback from thousands of US home cable trials, can tell you what cables will work best in your system.

- FREE SHIPPING on purchases over \$100.
 - · 60 brands, 238 cable products.
 - · FREE of all US taxes.



Call, write, fax or email for details and free consultation (215) 862-4870 • fax (215) 862-4871

> Visit our website at: http://www.fatwyre.com email: fatwyre@fatwyre.com



125 Union Square, New Hope PA 18938 USA ALL MAJOR CREDIT CARDS

TO SUBSCRIBE call 0844 543 8200 or subscribe online at www.hifinews.co.uk/subscribe

hi-finews

YOUR SURPLUS EQUIPMENT URGENTLY REQUIRED NOW FRIENDLY PROFESSIONAL SERVICE

PLEASE PHONE GEORGE ON 07860-511111

VALVE AIVIPS	
EAR 509 ANNIVERSARY MONOBLOCS (XLR)	MINT/BOXED £3850
AUDIO RESEARCH LS-22 & REMOTE UPGRADE	£1495
AUDIO RESEARCH PH-5 PHONO STAGE	MINT/BOXED£1195
ART AUDIO INTEGRA EL-34 VALVE INTEGRATED	£1295
BAT VK-60 POWER AMP	EXCLT/BOXED £2450
ANTIQUE SOUNDLABS AQ-1009 845 MONOBLOCS	£2995
ROGUE AUDIO 150 MONOBLOCS (NEW OLD STOCK £4600+?)	£2995
PAPWORTH M-100 MONOBLOCS ONE OWNER	MINT/BOXED £2750
PATHOS INPOWER CLASS A HYBRID MONOS (SUPERB £9K?)	£4250

......MINT/BOXED ..

.....£795

FX.DFM....

MATTISSE REFERENCE 2 BOX PRE AMP (64 STEP ATT.).....ONE OWNER £3450

ANTIQUE SOUNDLABS LH-01 PRE-AMP H/PHONE AMP...

VINYL		
GRAHAM PHANTOM ARM & £750 UPGRADE CABLE		
VAN DEN HUL MCD 501 SIL.HYBRID TONEARM CABLE	EXCLT.	£295
NOTTS ANALOGUE MENTOR TONEARM DEM USE	MINT .	£495
THORENS TD-160S/ADC ARM /VMS20 1 OWNER		
REGA RB-300 TONEARM	EXCLT .	£149
ACOUSTIC SOLID 1 TURNTABLE	MINT .	DUE
AUDIO RESEARCH PH-5 PHONO STAGE	MINT/BOXED .	£1195
NOTTS ANALOGUE MENTOR & HEAVY KIT	EXCLT.	£1650
MISSION 774 TONEARM 2 WANDS SIL.WIRE ETC	EXCLT/BOXED.	£399
WILSON BENESCH CIRCLE (ONE OWNER 25 HOURS USE ONLY		
PINK LPT/RB250/PSU/CART REBUILT AS EXPORT		
AUDIO INNOVATIONS 1000 MC STEP UP		
TOM EVANS MICRO GROOVE	EXCLT .	£375
DENON DP-1200 SPECIAL EDITION (INC.ARM/CART.)		
ANTIQUE SOUNDLABS MINI PHONO 2 BOX		
MICHELL ISO/HERA PHONO STAGE		
DENON DL-30L TURNTABLE ARM AND CARTRIDGE	EXCLT.	£195

LOUDSPEAKERS

SONUS FABER AMATI HOMAGE	MINT/BOXED £5750	
AURUM CANTUS GRAND SUPREME £10.000 +	DEM/CRATED £5500	
KLIPSCH CORNER HORNS (BIRDS EYE MAPLE)	FANTASTIC! £3995	
MARTIN LOGAN VANTAGE 1 OWNER	MINT/BOXED £2550	
AURUN CANTUS BLACK ORCHID	DFM £495	

PODIUM 1s FEW WEEKS USE ONLY (£6000? NEW)1	1 OWNER	£2295
MARTEN MILES CHERRY (8k+ ONE OWNER)	SALE!	£2995
B&W 801 MATRIX SERIES-2 IN WALNUT 1 OWNER	EXCLT	£1995
B&W 802 SERIES-3 & SOUND ANCHOR STANDS		
AUDIO ARTISTRY DVORAK 2 PANELS 2 SUBS & X- OVER		
ART AUDIO PRECISION MONITOR (PIANO BLACK 6K+)	DEM+1	£2795
BOLZANO VILLETTRI BV3003 & BV SUB. FANTASTIC!	SALE!	£2995
AUDIOSTATIC ES-100 ELECTROSTICS (SUPERB)		
AURUM CANTUS BLACK ORCHID	DEM	£550
ALR JORDAN CLASSIC 2 (BIRCH VENEER £800+)		
ROGERS LS35A 15 OHM MATCHED PAIR		
SPENDOR LS35A MATCHED PAIR		
MISSION CYRUS CLS70 ICONIC STANDMOUNTS		
ANTHONY GALLO MPS-150 SUB. 1 OWNER	MINT/BOXED	£350
ENSEMBLE FIGURA ONE OWNER 1 OWNER		
HALES TRANSCENDENCE 5 (SUPERB)		
MIRAGE M6 SI HUGE BI-POLARS (£6.5K?)		
TANNOY CPA-12 PROFESSIONAL SERIES		
AURUM CANTUS MUSIC GODDESS (£2500)		
AURUM CANTUS LEISURE 3 SE (LAST PAIR £1350)		
AURUM CANTUS BLACK ORCHID (LAST PAIR £1300)		
AMPHION NEON 1 (1 OWNER)		
THEIL CS 1.5 (ONE OWNER FROM NEW)	BOXED	£895

COLID GIAIL			
BEL CANTO PRE-1 REMOTE PRE AMP	£995		
MARANTZ PM11 S2 DEM+1 OWNER	£1695		
ADVANTAGE i200 INTEGRATED AMP (£1800?)	£895		
OPERA CONSONANCE A-100 R AMP 1 OWNER	£495		
PASS LABS ALEPH PRE AMP	£1195		
MICHELL ARGO 12 MONTHS OLD 1 OWNER	AS NEW/BOXED£349		
MUSICAL FIDELITY A3CR POWER AMP 1 OWNER	£575		
LYNGDORF SDAi 2175 INTEGRATED	EX.DEM/BOXED£1195		
PRIMARE I-21 INTEGRATED 1 OWNER	£595		
DENSEN B300XS POWER AMP 1 OWNER	£950		
CHAPTER AUDIO 2+ POWER AMP	MINT/BOXED £2750		

SONY TA-N220ES 2/3/4 CHANNEL POWER AMP 1 OWNER.....

PS AUDIO GCA 100 X 5 POWER AMP 1 OWNER

AUDIO INNOVATIONS 1000 SILVER PRE-AMP

PATHOS INPOWER CLASS A HYBRID MONO'S

SOLID STATE

MARANTZ MA-700 200 WATT MONOBLOCS	DEM/BOXED	£595	
H-CAT P-12A PRE AMP (£2500?)	DEM	£995	
H-CAT P-12B PRE AMP (£2500?)	DEM	£1495	
MERIDIAN 501 PRE AMP	MINT/BOXED	£395	
JOHN SHEARNE 2.5 INTEGRATED AMP	1 OWNER	£375	
JOHN SHEARNE 3.5 POWER AMP	1 OWNER	£375	
TRANSPORTS/CD/DACS			
OPERA ORFEO LINEAR CD 1 OWNER	MINT/BOXED	£695	

TRANSPORTS/CD/DACS			
OPERA ORFEO LINEAR CD 1 OWNER	MINT/BOXED	£695	
TECHNICS SLP-1200 LITTLE USED	BEAUTIFUL	£495	
SONY CDPX-3000ES 1 OWNER			
TECHNICS SLPS-7 1 OWNER	EXCLT/BOXED	£29	
TOM EVANS TRICHORD DIG. TURNTABLE	EXCLT	£395	
VACUUM STATE.JLTI (£1300) BRAND NEW	BOXED	£79	
LINDEMANN 680 SACD/CD PLAYER			
KENWOOD DP-9010 TRANSPORT 1 OWNER			
ALCHEMIST KRACKEN 2 BOX CD 1 OWNER			
STELLO CDA-320 ONE BOX CD/DAC			
INCA TECH KATANA	VGC	£39	
MERIDIAN 500 TRANSPORT			
THETA CARMEN CD/DVD TRANSPORT	EXCT/BOXED	£79	
THETA DSP PRO GEN III RCA/AES/& AT&T 1 OWNER	EXCLT/BOXED	£79	
THETA DATA HARVEDOAL OD/LD DLAVED AT\$T 1 OWNED	EVOLT/BOVED	640	

LOUDSPEAKER CABLE

CHORD CO.EPIC TWIN 3M BIWIRE	EXCLT	£299
MIT MH-750 8 METRE PAIR	EXCLT	£1250
BLACK RHOD. POLAR. NINJA DCT ++2.9M, PAIR	EXCLT	£650
XLO 5.2 SIGNATURE-1 4FT PAIR	DEM	£495
SONORAM PLATEAU 4 METRE PAIR	EXCLT	£475
XLO REF.2.5 METRE PAIR	EXCLT	£375

INTERCONNECT CABLE

VAN DEN HUL MCD 501 SIL.HYBRID TONEARM CABLE	EXCLT	£295
XLO ULTRA 0.5METRE RCA	MINT	£149
CHORD CO.SIG. 1 METRE PAIR BNC TO BNC	UNUSED .	£299
ACOUSTIC ZEN SILVER REF 2 METRE XLR	VGC	£595
ANALYSIS PLUS SOLO CRYSTAL OVAL 0.5 METRE	EXCLT	£225
AUDIOQUEST/TRUTH EMERALD 1 METRE PAIR	EXCLT	£149

www.heathcoteaudio.co.uk/heathcoteaudio@aol.com

MOST MAJOR CREDIT/DEBIT CARDS ACCEPTED



020 7226 5500

...£275

£1795

MINT/BOXED .

...EXCLT..

www.grahams.co.uk



"One of the five best hi-fi shops in the world"

Grahams Hi-Fi Canonbury Yard 190a New North Road London N1 7BS

ARENA Magazine





located inside



Peartree Rd Colchester CO13 9EF 01206 765 444 info@istereos.co.uk

IAN HARRISON HIFI

TEL: 01283 702875 ian.harrison@mercian.myzen.co.uk CARTRIDGES TONEARMS

PHONOSTAGES TOM EVANS GRAHAM SLEE WHEST AUDIO ANATEK OHAD CLEARAUDIO ICON AUDIO **PURE SOUND** PRO-JECT EAR YOSHINO ROTHWELL

AIR TIGHT TRANSFIGURATION KOETSU **GOLDRING** BENZ MICRO ROKSAN

CARTRIDGE MAN **DECCA LONDON**

TURNTABLES MICHELL PRO-JECT THORENS SRM TECH EAR AMAZON AUDIO

DENON INSPIRE

GRAHAM MOTH **AUDIO TECHNICA PRO-JECT** CARTRIDGE MAN MUSIC HALL HELIUS REED

MICHELL REGA

SMF⁴

PLEASE PHONE TO CONFIRM PRICE & AVAILABILITY PRIOR TO ORDERING. ALL GOODS ARE BRAND NEW & BOXED WITH FULL U.K GUARANTEES. NO EX-DEM OR EX-DISPLAY GOODS. NO GREY IMPORTS GOODS ARE NOT SUPPLIED ON APPROVAL. SORRY NO GENERAL CATALOGUES PLEASE PHONE OR WRITE FOR SPECIFIC REVIEWS, BROCHURES OR PRICES. *CALL FOR DETAILS ESTABLISHED 1986

MAIL ORDER ONLY FROM; IAN HARRISON, 7 MILL HILL, REPTON, DERBY, DE65 6GQ
TEL: 01283 702875 9am-9pm INCLUDING SUNDAYS.



SONOS

MARKETPLACE //

To help ensure accuracy, your classified advertisements must be submitted by email or post...

Please email your entries to: letters@hifinews.com

THE PLACE TO

BUY & SELL AUDIO EQUIPMENT & ACCESSORIES

NOW FREE

1. ACCESSORIES

SOUNDSTYLE five-shelf tripod hi-fi rack, black smoke glass in East Hastings, Brighton.
Tel: 0786 4034087/01323 761257

2. AMPLIFIERS

ARIAND amplifier FV34B-Mklv, remote, £300. Tel: 020 8531 5979

PS AUDIO GCC 250 Class D control integrated amp, remote control. Asking £400. Tel: 020 8531 5979

EXPOSURE 3010S2 £950. Tel: 07179 151445/07979 151445

LOGOS Pathos amplifier, Classé CDP 300 CD/DVD player, Sonus faber floorstanding Toy Towers, Ecosse speaker cables (2x4m) biwired. Tel: 07855 09057

AYON Spark Mk2 for sale. Bought as an ex-dem unit with little subsequent use as a backup, so in good condition. An excellent 20W integrated SET, with good reviews. £1500 ono, happy to demo. Would consider swap for quality preamp. Tel: 01235 768606

AUDIO Research LS7 preamp. Black. Excellent condition, boxed. £500. Croft SuperMicro 2 preamp, serviced and upgraded, October 2014, very good condition, £475. Tel: 01942 516092/07742758182

REGA Brio amp. Excellent condition. Boxed £100. Buyer collects. Tel: 01865 559737

NAD 312 amp £50, Bang & Olufsen system, 5500, with speakers, £500. Tel: 01708 457691

ROTEL 1582 MK 11 stereo amplifier, 200Wpc. Black, new, £895. Buyer collects. Tel: 07956 121013. No texts, please.

MUSIC First Audio Passive Magnetic preamplifier. Major reviews by the audio press. Boxed with instructions. Condition as new. £975 ono. Tel: 01745 798932/ 07714 530889

3. CABLES

ATLAS Asimi speaker cable, 2m. As new, boxed, £1700 ovno. MIT MH 750 Plus series, 2 x 3m,

good condition, boxed £325 ovno. Madrigal balanced CZ GEL 1.5m, good condition, boxed £80. Tel: 07952 336766

CLEARER Audio Silverline digital cables, Im and 3m, RCA/WBT connectors. Can split. £125 ono. Tel: 01235 762171

4. CD/DVD PLAYERS

NAIM Uniti, perfect working order, £995 plus courier fee extra. B&W DM602 S3 speakers and cable. Negotiate price. Tel: 0120 8812516

QUAD 66 CD player. Remote control handset included. £185. Tel: 01708 457691

SONY CDP337ES (MRP circa £900). Luxury vintage MC with one of the best ever transport mechs. Sony KSS190A. Heavy-duty power supplies so weighs 12Kg unboxed. Includes remote. £200 ono. Tel: 01257 415541.

CYRUS CD 8X and PSX-R unit, Can dem. £475 Buyer collects. Tel: 01354 652691

CYRUS CD7Q and PSX-R. Owned from new, boxed with manuals and remote. Tel: 01242 235531

MUSICAL Fidelity KW DM25 CD transport, KW DM25 DAC, A5 integrated amp. Original owner, £2000 for all. Moving house! Tel: 0208 965 5054

MUSICAL Fidelity KW SACD player, perfect condition, smoke and children-free home, serviced by MF last year. Documentation and original box, *etc.* £2000, (RRP £4000.) Tel: 07970 651481

5. DACS

HUGO DAC, excellent condition, unused present, £1085. Tel: 07179 151445/07979151445

MUSICAL Fidelity X-Dac V3 in perfect condition including original packaging and PSU. Can post, but to UK only, £200. Tel: 07543 179039

7. SPEAKERS

B&W CM5, pair, £380 (£799 new). Can dem. Buyer collects (Milton Keynes). Cash please. Tel: 01908 642184

TOWNSHEND Sir Galahad speakers, factory re-built in 2008. Modern equivalents start at £35,000-plus. All serious offers considered. Audition in SW London. Tel: 07587 310622 or email jazzyb1966@gmail.com

AE 301 speakers, unused, £299. Tel: 07179 151445/07979151445

KEF 4 x B139, 4 x B110, 2 x T27. All good working order. Offers, buyer collects. Tel: 01909 566231

ART Skibo floorstanders, light wood finish,, slight damage to one cabinet,will demo, £425 ovno. Buyer to collect. No boxes. Reason for sale: upgrade. Tel: 01745 82299

VIENNA Acoustics Haydn Grand speakers SE, walnut, as new, boxed, few hours' use. £650. Tel: 07843 746026

ROGERS Export monitor L5, matched pair. Purchased new in 1980. Original manuals, quality speaker cable, includes six Goldring Acoustic cones, small mark on top of one speaker. £800.
Tel: 01256 465079

Q ACOUSTICS 2020 speakers, two pairs in gloss white plus one pair of Q Acoustics stands in gloss white. Tel: 01625 433996

Q ACOUSTICS 10i, Mint condition. Black, £60. Boxed. Buyer collects. Tel: 01865 559737

WILMSLOW Audio Rhythm King speakers, £350. Tel: 020 8531 5979

8. TUNERS

QUAD Elite FM tuner. Mint condition, one owner, original

packaging. £275, buyer to pay shipping. Tel: 07472 122945. Email: pistehors@gmail.com

9. TURNTABLES

GARRARD 301 in Northwest Analogue slate plinth, 3009 tonearm, boxed, excellent. SME 4 tonearm, boxed, excellent. Linn Ittock arm, Linn T Kable, mint. Ring for details. Tel: 0777 0772647

11. SYSTEMS

AUDIOLAB 8000P/C, pre/power, black; Arcam CD72, silver; Sony Tnr SB920, black; Denon cassette deck, DK M24HX, black; ProAc speakers, Studio 125 dark wood including bi-wires, veneer cabinet, all leads and manuals, demo welcome, buyer collects. £750 ono. Tel: 020 8950 0658

12. MISCELLANEOUS

B&W P7 headphones, as new, few months old, £220. Tel: 07843 746026

OPPO PM-2 planar headphones, cost £700 new, not used, still sealed in box. Will accept £550 ono. Tel: 07887 852563

CLASS A amplifier power supply, self-contained, free-standing unit, suits John Linsley Hood's 1969/1996 designs and similar amplifiers, £299 or near offer accepted. Price includes posting. Tel: 0207 4998729

13. WANTED

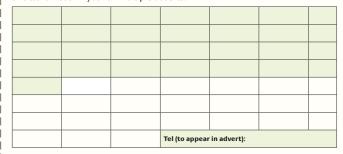
TOP quality hi-fi separates and complete systems, Naim, Linn, Cyrus, Meridian, Audio Research *etc*, fast, friendly response and willing to travel/pay cash.
Tel: 0781 5892458

PLACING AN ADVERTISEMENT IN THE HI-FI NEWS CLASSIFIEDS SECTION

Fill in your advertisement copy here...

Please write the product category number that best suits your equipment in the first square. The product categories are: 1 – Accessories; 2 – Amps; 3 – Cables; 4 – CD/DVD players; 5 – DACS; 6 – Software (CDs, records *etc.*); 7 – Speakers; 8 – Tuners; 9 – Turntables; 11 – Complete Systems; 12 – Miscellaneous; 13 – Wanted

We will insert the telephone number you want to appear in your advertisement(s) as many times as is needed. You only need to fill it in once and it only counts as one word – even if you run multiple adverts.

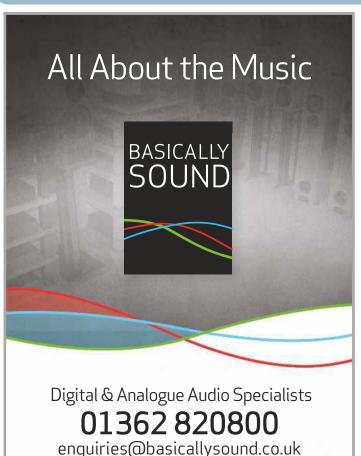


Please post this completed coupon to Hi-Fi News magazine, MyTimeMedia Ltd, Enterprise House, Enterprise Way, Edenbridge, TN8 6HF, or email your advert to letters@hifinews.com Hi-Fi News accepts no responsibility for description or condition of items advertised.

DEALER DIRECTORY

TO ADVERTISE HERE Please call 01689 869919 or 01689 86985







www.basicallysound.co.uk







HARBETH LOUDSPEAKERS
P3 ESR MONITOR 30.1
HL COMPACT 7ES3 MONITOR 40.1
Super HL5+

Supplier Of Harbeth Since 2003

PLEASE PHONE FOR PRICES

ian.harrison@mercian.myzen.co.uk **TEL:** 01283 702875









Analogue Seduction are dedicated towards two channel Hi-Fi, specialising in vinyl replay.

As well as our on-line shop we have dedicated demonstration retail facilities based in Peterborough, Cambridgshire and we can offer our customers home demonstrations.

We stock the finest in amplification, analogue, digital replay and speakers.

We also specialise in a cable termination and cable burn in service.

Please visit our website **www.analogueseduction.net** to browse or purchase products that are not easily available elsewhere.

New vinyl records now stocked

Tel: +44 (0)1733 350878

DEALER DIRECTORY

TO ADVERTISE HERE Please call 01689 869919 or 01689 86985



music is our passion

(6)











The New Noble Line

Harmonious Sound & Design





MBL N51 Integrated Amplifier

audioemotion

www.audioemotion.co.uk tel: 01333 425999



The legacy continues...

For over 30 years, **ProAc** have established a worldwide reputation for producing some of the finest loudspeakers available. The Response series has reigned supreme in its class and this legacy continues with the all new... D48R



Art - Audio Note - ProAc - Unison Research Quad - Magneplanar - Lector - Audio Music - Funk

Demonstrations available by appointment

Emporiumhifi

Kent 01304 239419 or 07597157713 **Swansea** 01554 403503





Miyajima Artisan Cartridges



Stereo - Mono - 78 RPM

With the release of the Beatles' newly remastered mono albums and a resurgence of interest in late 50's and early 60's mono records, what better time to add one of Miyajima's hand-crafted mono, stereo or 78 RPM phono cartridges to your system?

Japan-based Miyajima has been making phono cartridges for more than three decades. Only recently discovered by American and European audiophiles, they have since received rave reviews all over the world and deservedly so.

Every Miyajima cartridge is handcrafted in-house by a dedicated full-time team of six based in Fukuoka, Japan. The cartridge bodies are individually precision-milled from rare and exotic hardwoods including ebony, rosewood and African blackwood (mpingo). These dense natural materials lend a vibrant and natural tonality to the sound.

Cool Gales Victoria School House Bath BA2 6LU 0800 043 6710 www.coolgales.com

The Music Room 33 - 35 West Graham St Glasgow G4 9LJ 0141 333 9700 www.music-room.com

Sound Hi Fi PO Box 2001 Dartmouth TQ6 9QN 01803 833366 www.SoundHiFi.com

Audio Meister Higher Denham Bucks UB9 5EJ 01895 833099 www.audiomeister.co.uk

Timestep Distribution www.miyajima-lab.co.uk

HOW TO CONTACT US...

news **Record Review**



Editor • Paul Miller Art Editor • Steve Powell Features Editor • Patrick Fraser Reviews Editor • Chris Breunig Retouching Manager • Brian Vickers Test & Measurement • Paul Miller

Photography Andrew Sydenham

Management Team

Group Editor • Paul Miller Group Art Editor • John Rook **Head of Production • Julie Miller Group Advertising Manager •** Joanna Holmes Subscriptions Manager • Kate Hall Chief Executive • Owen Davies Chairman • Peter Harkness

Advertisement Team

Advertising Sales • Joanna Holmes Tel • 01689 869 919 joanna.holmes@hifinews.com

Subscriptions

New, renewals and enquiries...

Tel • +44(0)1858 438798 Email: mytimemedia@subscription.co.uk USA/Canada:

Tel • (001) 866 647 9191 Rest of World:

Tel • +44 (0) 1689 869 896

Email: mytimemedia@subscription.co.uk

We Live At...

MyTimeMedia Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent TN8 6HF Tel: 0844 412 2262 Outside UK: +44 (0) 1689 869 840 www.hifinews.co.uk

Hi-Fi News is a member of the Audit Bureau of Circulations (ABC) and of EISA (www.eisa-awards.org)



recycle

When you have finished with

this magazine please recycle it.

HI-FI NEWS & RECORD REVIEW, ISSN 2042-0374, is published monthly with an additional issue in January by AVTech Media Ltd, a division of MYTIMEMEDIA Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent TN8 6HF, UK. The US annual subscription price is 65GBP (equivalent to approximately 108USD). Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431. US Postmaster: Send address changes to HI-FI NEWS & RECORD REVIEW, Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Subscription records are maintained at CDS GLOBAL Ltd, Tower House, Sovereign Park, Market Harborough, Leicester, LE16 9EF. Air Business Ltd is acting as our mailing agent.



e're in the midst of a curious phase in hi-fi's history and I for one do not have a crystal ball to suggest the outcome. Just look at the disparate forces at play, coupled to the accelerated pace of change. Keep in mind that 78s (1920-1950s) and LPs (1950s-1980s) enjoyed roughly 30 years apiece without serious challengers. The cassette was prevalent for a similar period. and CD is fading fast... after 30 years.

SENSE OF INSECURITY

If this lifespan of three decades is roughly par for any format, the atypical acceleration, or rather the 'paradigm shift' in music playback is the move away from physical formats altogether. We are now experiencing a large-scale transfer toward streaming for the casual listener, while many audiophiles

 unwilling to give up sound quality - have moved gingerly toward high-res downloads.

While not a physical format, downloads are, at least, manifestly present in one's home, immune to the loss

of web access, or cloud failures and are therefore, in a strange way, a type of possession. Streaming is simply FM radio, but with choice instead of a DJ's whims. But where is all this going?

Anyone who is immersed entirely in audio either by choice or profession is experiencing:

a sense of insecurity that far outweighs the initial threat of CD vs LP, or even digital per se. Back in 1980-1985, few could have imagined some ethereal manifestation like the internet feeding us with music. The sense of awe that accompanied its arrival in the 1990s was probably the same in the 1920s when radio first emerged.

Long ago, I joined a never-ending line of misanthropists who firmly believe that mankind is growing ever more stupid, and nothing happening today causes me to rethink this stance. More relevant to this organ - accompanying the stupidity epidemic – is a lowering of standards in most walks of life. While fine wines, fashion, watches and some other categories have maintained audiences in love with quality, the audio industry hasn't, save for the microscopically tiny world of high-end

> audio. And we are not significant enough to make a difference.

Whatever the sources, the inescapable need for amplifiers and speakers remains a constant - until there's

some biological means of implanting a wi-fi receptor in one's head. Many of us cling to the hope that merely placing music lovers unaware of high-end audio in front of 'proper' gear is enough to convert them to high fidelity, at the very least, to buy a decent amp/speaker combination. I have

no idea what the conversion rate is, but I'm sure it's teensy.

This magazine has made a number of moves conceived specifically to wave the quality banner. We measure so-called highresolution downloads instead of merely taking a website's word for it. We review high-end products almost exclusively, yet with a continued concern for those who love music but simply cannot afford the often-offensive prices of high-end audio. So we do have an eye for bargains.

Probably the most important undertaking for Hi-Fi News is the reviving of a worthwhile hi-fi show near London, based on the unfortunate realisation that there are no longer enough retailers able or willing to stock, demonstrate and sell high-end hardware. Retailers are dying off at an alarming rate; a hi-fi show goes a long way toward enabling an enthusiast to hear an ideal demonstration of the equipment, rather than simply reading about it.

LACK OF COMMUNICATION

After the original Heathrow show shut its doors for the last time this seemed part of a global trend. Milan's TOP Audio, the Stereophile shows in the USA – the calendar has been diminished, and many would argue for a quite obvious reason: there are fewer audiophiles to support them.

But the demand still exists. It was this need recognised by Hi-Fi News' editor, as well as the most important high-end distributors, that a showcase had to be established to promote the high-end before it disappears not due to a lack of interest, but a lack of communication.

That has ever been the problem, despite the audio community embracing the internet from the outset: audiophile chat rooms predate all social media. Shows, on the other hand, are physical reality: what should be the definition of multi-media.

I attend four shows every year without fail: CES, Munich, Paris and Tokyo. A return to a UK show is on the cards now that there is an alternative to what has been passing for shows for the past few years: a dealer show and what's best described as a wake. If Hi-Fi News can put its money where its mouth is, then so should the rest of us. ①

ON TEST:

'While not a

physical format,

downloads are a

type of possession'

- Exclusive: Ming Da Dynasty Cantabile tube amps
- Exclusive: T+A PDP 3000 HV SACD player
- **Exclusive: Technics SB-R1 floorstanders**
- **Exclusive: Musical Fidelity Round Table**
- Exclusive: Benchmark AHB2 Class G 'AAA' amp

PLUS:

- Investigation: Horns at the Science Museum
- Show Blog: We visit the International CES
- Classical Companion: Strauss Four Last Songs
- From The Vault: ARC D-70 review from 1984
- Vinyl Icons: Cream Disraeli Gears





For more information and a demonstration on Jeff Rowland products please contact Signature Audio Systems on **07738 007776** or by email kevin@signaturesystems.co.uk

"I've got a feeling we're not

in Kansas

anymore..

A voyage of musical discovery: Nuance. Emotion. Artistry. Over the decades, MartinLogan has produced loudspeakers with the sole purpose of getting you back to the music.

Having mastered electrostatic technology with the CLS, a skill now embodied in the hybrid Summit X and the full-range CLX Art, MartinLogan has re-imagined speaker technology. MartinLogan speakers address systems from purist two-channel to multi-channel home theatre, with a range including BalancedForce™ Dynamo™ subwoofers, surround-sound and centre channel speakers,

It is no exaggeration to say that MartinLogan speakers are as beautiful as speakers can be and bear aesthetics worthy of the sound they reproduce. They enhance your musical pleasure and your living space.

Because, as Dorothy learned, there's no place like home.



