

# hi-fi news

THE HOME OF REAL HI-FI

& Record Review

## MAGIC TOUCH

**Exclusive** Spellbinding –  
Magico S3 floorstanders

‘The perfect 21st  
century starter amp?’  
Budget Esoterica, p68



**Primare 60-series**  
Pre/power for hi-res music media

**New Nu-Vista**  
Musical Fidelity’s mammoth amp

**GROUP TEST** Standing tall  
Five premium £1500 loudspeakers



‘Getting studio  
sound at home’  
HFN Investigates, p24

• **PLUS** 18 pages of music reviews & features • **VINYL RE-RELEASE** Gram Parsons’ *GP* on 180g vinyl  
• **OPINION** 11 pages of letters and comment • **VINTAGE REVIEW** Logic’s inaugural dm 101 turntable  
• **SHOW BLOG** We report from Hong Kong’s Hi-Fi Show • **READERS’ CLASSIFIEDS** Hi-fi bargains galore

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ABOVE: For our Group Test of £1150-£1650 speakers, turn to page p45

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See page 88



# Mythology M1

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*Srajan Ebaen, 6Moons.com, April 2014*

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*Dick Olsher, The Absolute Sound, Oct 2014*



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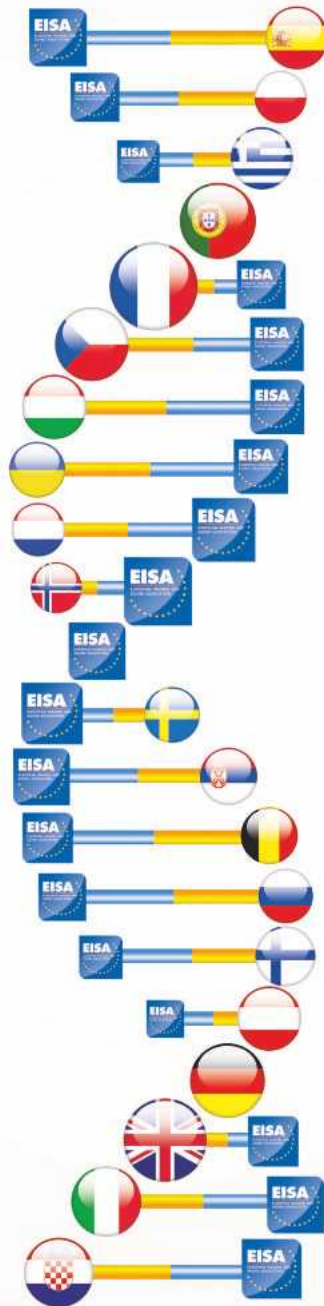
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HI-FI Choice Sept 2014

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- the-ear.net, June '14



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- HiFi News, June '14

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in Walnut

# Powerful Dynamic Natural



## **New entry level HEGEL H80 integrated amplifier:**

More powerful, less additives, more inputs, more possibilities... But still that addictive HEGEL sound.

### **HiFi+ (UK 2014):**

"It's a well-built, deceptively powerful amplifier with an excellent digital audio stage. 'It fights well above it's weight' is a cliché of the highest order, but it really applies here. Excellent!

- Alan Sircom - Editor

### **The Absolute Sound (USA 2014):**

"I hope more people will participate in the deeper enjoyment of music in their homes because products like the H80 make it more accessible. The H80 is the real deal...and a sweet deal, too." - Kirk Midstkog - Reviewer

### **HiFi & Musik (Sweden 2013):**

"It will take a while for me to recover after this. This may be the best value for the money I have reviewed in my career." - Jonas Bryngelsson - Editor

### **Lyd & Bilde (Norway 2013):**

"Home run (klokken inntertier)! To say that HEGEL did it right with the H80 is an understatement. AMPLIFIER OF THE YEAR" - Lasse Svendsen - Editor



**Derby:** Musicraft

**Edinburgh:** Loud & Clear

**Kent:** Igloo Audio

**Hegel:** [www.hegel.com](http://www.hegel.com)

# Vena

Compact Digital Amplifier



Quad celebrates 77 years of audio innovation with the launch of Vena: a compact integrated amplifier sporting a wide range of digital and analogue inputs, plus superior-quality wireless streaming over Bluetooth with aptX support. D/A conversion is handled by the same high-performance 24-bit/192kHz chipset used in the company's acclaimed Platinum CD players and, as one expects of Quad, the Class AB power amp section is of the highest quality. With a range of finish options to suit any setting, Vena is an exceptionally neat solution for superb sound from any source; from smartphones, tablets, PCs and Macs to traditional hi-fi separates.

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**RIGHT:** KEF's flagship M500 headphones get their first lab test on p64



**ABOVE:** Over 15 years since its first Nu-Vista amplifiers, Musical Fidelity returns to the tube that drove generations of hi-fi systems. See p38

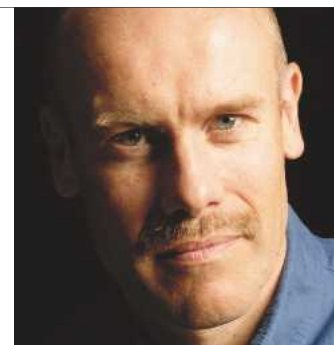
**M**usic has never been so readily accessible, in either quality or format, as it is today. As audiophiles we are almost exclusively interested in top quality media, extending from pristine 180g+ vinyl LPs to high resolution music files that can be downloaded from licensed webstores.

Because of the web's global reach, online music retailers are obliged to use geo-targeting and geo-filtering to manage the distribution of their content, ensuring it's not sold into territories embargoed by the record companies.

This is because the big music labels often prefer to stagger the launch of new releases into the US, Europe and Asia, much as Hollywood controls the availability of its new movies. But this has proved frustrating for UK readers who cannot access some of the hi-res downloads we review and test every month [see p92].

Fortunately these barriers are now breaking down – legitimately for a change – as euro-based *highresaudio.com* is given leave to trade limitedly into the US while the Stateside's *HDtracks.com* is finally opening up to the UK [see p14].

Rather than fight the porous borders of the internet, and also as much 'new' HD content is really legacy media re-released



in greater than 16-bit/44.1kHz CD resolution, old barriers and restrictions are being replaced by commercial good sense.

The record companies are making hay, releasing old favourites on 180g vinyl, on BD audio disc and also as raw WAV or FLAC media files. No point in letting those precious master tapes collect dust in the vault

## 'Territorial barriers to music downloads are breaking down'

when they could be bolstering the music biz...

It's tempting to imagine that the margins offered to online suppliers are not especially generous. Only last month Linn Records announced it would be concentrating its efforts on its own 'Studio Master' downloads rather than acting as a host for the major record labels. Perhaps it knew the worlds biggest 'hi-res supermarket' was about to move into town.

**PAUL MILLER EDITOR**

DAVID LEVINE

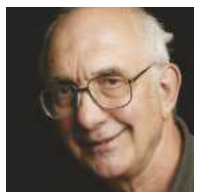


**VINYL:** The Zombies' *Odessey & Oracle*, a latent critical success, is this month's Vinyl Icon (p78), while Steve Sutherland revisits country music, '70s style, as Gram Parsons' *GP* is released on 180g LP (p76)

**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



### 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 currently our Senior Contributing Editor and almost singularly responsible 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



# HDtracks direct to UK



## HI-RES DOWNLOADS FOR UK AUDIOPHILES

It's official. UK buyers can now legitimately download hi-res audio files from HDtracks, the US-based online store, including titles from all the major record labels. HDtracks was established back in 2007 by the brothers David and Norman Chesky, founders of audiophile label Chesky Records. But until this year, and the launch of [www.hdtracks.co.uk](http://www.hdtracks.co.uk), only US residents could legally access the thousands of albums that HDtracks offers in 96kHz/24-bit and 192kHz/24-bit form. HDtracks has also entered the German market with [www.hdtracks.de](http://www.hdtracks.de).

Meanwhile, Germany's own [www.hiresaudio.com](http://www.hiresaudio.com), which already sells downloads to UK and US consumers, now offers many titles from the Warner and Universal catalogues that are also available from HDtracks.

In some cases, HDtracks' prices are slightly higher, but albums are available as AIFF, ALAC and WAV files as well as FLAC. 'HDtracks is about quality,' says David Chesky. 'We are the original high-resolution store.'

[www.hdtracks.co.uk](http://www.hdtracks.co.uk)

## Helius revolution

### FROM TONEARMS TO TURNTABLES

Darlings of the 1980s tonearm scene, Helius is aiming for a big comeback with none other than a suspended subchassis turntable boasting a 'laser-guided, optically-encoded speed control system referenced to the platter'. The 'acoustically isolated' motor is mounted directly onto the subchassis which is supported by double wishbones tuned to 1.5Hz. As speed is servo-controlled, the acrylic platter does not require a high mass although the bearing is still equipped with a super-hard silicon nitride ball. The main chassis has three feet, two of which are adjustable for levelling. Price is just £3500.

**Helius Designs, 01386 830083**

[www.alexia-turntable.co.uk](http://www.alexia-turntable.co.uk),

[www.selectaudio.co.uk](http://www.selectaudio.co.uk)



## HI-FI NEWS' NUGGETS

### ISOTEK SYNCRO EVO3

Power conditioning specialist IsoTek has launched an upgraded 'EVO3' Special Edition of its Syncro mains cable. Three 3mm<sup>2</sup> silver-plated OCC square-section copper conductors are arranged in a proprietary 40 strand configuration, each live, neutral and earth core insulated with Teflon, twisted and double-shielded with a mylar and copper wrap. An alloy 'bullet' halfway down the cable contains a DC-blocking filter. Price is £1195 for a terminated 2.2m cable. [www.isoteksystems.com](http://www.isoteksystems.com)

### AUDIO NOTE LOUNGE

Based in Brighton, the Audio Note Lounge is now offering a bespoke service where you can choose to have an Audio Note product or entire system finished from a wide range of automotive colours. This includes the entry-level iZero system to the mighty Meishu, the AN-E speakers and legendary Ongaku amp. <https://twitter.com/audionotelounge>

## Take Confidence

### MORE PLATINUM FROM DYNAUDIO



Taking their cues from the stunning Evidence Platinum loudspeaker, Dynaudio's Confidence models (the C1, C2, C4 and Centre) are now also available with aluminium parts finished in a satin black, a bead-blasted tweeter plate together with a choice of Mocca, Bordeaux, Rosewood and Piano Black cabinet veneers. All Confidence Platinum speakers are equipped with the brand's 28mm Esotar2 soft fabric dome tweeter and use ultra-light woofers with magnesium silicate polymer diaphragms (the C4 Platinum Mocca is shown here). The Confidence crossovers all employ ceramic resistors, air-cored inductors and high quality capacitors along with new thin film resistor types.

**Dynaudio International GmbH, 01353 721089;**  
[www.dynaudio.com/uk](http://www.dynaudio.com/uk)

## Micromega MyAMP

HIGH-END DAC PLUS COMPACT INTEGRATED AMPLIFIER

Compact hi-fi solutions are very fashionable and none more so than the bijou My range from Micromega of France. Following on the heels of its MyDAC [HFN Jun '13], MyZIC headphone amp and MyGROOV MM/MC phono stage, the £479 MyAMP has a mere 140x75x140mm (whd) footprint. Inside, a 24-bit ESS Sabre DAC handles the three digital inputs (inc. USB) while three analogue inputs are routed directly to the integral Class A/B 30W amp. **Micromega (Audis), 020 8991 9200; www.micromega-hifi.com**



## Musical Fidelity M6si

ESTABLISHED FAVOURITE GIVEN A DIGITAL SHOT IN THE ARM



Although the build quality and aesthetics of Musical Fidelity's M6i integrated amplifier are as contemporary today as at its launch some five years ago, its lack of a USB input is not. Hence the revamped M6si.

Not only has the design been relaid using surface-mount components but the preamp and separate monoblock power amp sections now all have their

own individual regulated power supplies. There are extra inputs too, the tally now comprising MM/MC, asynchronous USB (to 96kHz/24-bit), CD, Tuner, two Aux and a balanced XLR connection. Performance improvements are also claimed but the price remains £2499.

**Musical Fidelity, 0208 900 2866; www.musicalfidelity.com**

## Oppo options

NEW HEADPHONE EAR PADS TO TAILOR SOUND QUALITY

Oppo has launched a new set of lambskin leather ear pads designed to slightly increase the treble response of its PM-1 Planar Magnetic headphones [see HFN Jul '14]. From Sept '14 all PM-1s will ship with a choice of three pad designs, the new option also being offered free to early adopters of the PM-1.

**Oppo Digital, 0845 060 9395; www.oppodigital.co.uk**



## Singing the Blues

ACTIVE HEADPHONE FOR LISTENERS ON THE MOVE

Blue, with 20 years of experience in microphone technology and design, has released an active headphone with 50mm drivers dubbed Mo-Fi. The Mo-Fi offers three amp settings – On, On+, and Off (On+ delivering a bass boost, Off reverting to passive operation). The internal amps' batteries are rechargeable via micro USB. Price is £275.

**www.bluemic.com; www.mofihdphones.com**



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## Upcoming Events

IMPORTANT DATES FOR YOUR HI-FI DIARY

- 05 OCT** Audiojumble, Tonbridge; [www.audiojumble.co.uk](http://www.audiojumble.co.uk)
- 17-19 OCT** High End Swiss 2014, Hotel Moevenpick Zuerich Regensdorf, Switzerland; [www.highendsociety.de/](http://www.highendsociety.de/)
- 01-02 NOV** The Hi-Fi Show *Live* 2014, Beaumont Estate, Windsor; [www.hifinews.co.uk/show](http://www.hifinews.co.uk/show)
- 08-09 NOV** Hi-Files Show, Holiday Inn, Belgrade, Serbia
- 20-23 NOV** European Triode Festival, Berlin; [www.triodefestival.net](http://www.triodefestival.net)
- 06-09 JAN** International CES, Las Vegas, USA; [www.cesweb.org](http://www.cesweb.org)





## Xtension 9 SuperPack

The Xtension 9 SuperPack from Pro-Ject Audio Systems represents one of the finest high-end turntable packages available today. Drawing inspiration from Pro-Ject's first ever 'money-no-option' turntable, the Xtension 12, this streamlined version boasts advanced technologies and phenomenal value for money. The high-gloss plinth (available in Black, Red or White) is an MDF construction filled with metal granulate, making it high-mass and non-resonant just like the platter, which is made from a special alloy lined with Thermo-Plastic Elastomers and topped with recycled vinyl records. The whole turntable is magnetically decoupled from a rack by three specially designed feet.

The Xtension 9 SuperPack's motor efficiency is improved by the built-in speed control module, and the whole package is finished off by the stunning 9CC Evolution Tonearm and pre-fitted Ortofon Quintet Black.

Available in the UK for **£2,200** (UK SRP)



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# Hi-Fi Show preview



THE 'WHO'S WHO' OF PREMIUM AUDIO SET TO EXHIBIT AT THE UK'S ONLY HIGH-END HI-FI SHOW



Advance tickets are on sale for the UK's premier high-end audio event – *The Hi-Fi Show* at the Beaumont Estate, Old Windsor on Saturday 1st and Sunday 2nd November 2014. We have a fixed visitor allocation for this event so please call 0844 848 8822 now to avoid disappointment. Tickets cost £20, or £15 for subscribers. Full-priced tickets are also available via [www.eventbrite.co.uk](http://www.eventbrite.co.uk); and please return regularly to [www.hifinews.co.uk/show](http://www.hifinews.co.uk/show) for more details.

Now in its second year, with more rooms, competitions, events and accessible local parking, the UK's only high-end audio show continues to gather momentum as the 'who's who' of world-class hi-fi are planning a series of exclusive presentations, listening demonstrations and Q&As.

The 20 Windsor, Wessex and Buckingham suites will be given over to these exciting closed-door demonstrations with individual opening times staggered throughout the day so that visitors can plan their own schedule of experiences. The biggest decision will be knowing where to begin!

The Sandringham and Osborne suites will play host to open-door demos where you can get to grips with the latest in specialty audio, cables and power supply conditioning and sample for yourself the sounds of the very best electrostatic, isodynamic and moving-coil headphones on the market.

## UK Firsts

### EXCLUSIVE SHOW AUDITIONS

As the date of the Hi-Fi Show draws closer, the list of exclusive listening experiences continues to grow. In addition to regular demos of its fabulous Statement amplifier in Windsor Suite 3, Naim Audio will also be entertaining visitors with its wireless Mu-so system in the restaurant area while its bespoke 'Naim for Bentley' in-car installation will be pulling up outside the reception area.

Ming Da will unveil its flagship Dynasty 'Cantabile' monoblocks. Rated at 50W, these huge amplifiers – 3ft tall and with outboard PSUs – employ the famous 212 power valve. In another Hi-Fi Show first, these amps will be driven by the all-tube Audio Detail preamp, designed and manufactured in the UK.

Headphone fans will be treated to AKG's EISA Award-winning K845BT and an exclusive airing of its new high-end reference model, the stunning £1100 K812.

## Audio Alchemy Worldwide launch

REVITALISED MARQUE TO BE UNVEILED AT THE HI-FI SHOW

The irrepressible Peter Madnick, pictured opposite at last year's Hi-Fi Show and fresh from his engineering exploits at Constellation Audio, has announced the reformation of Audio Alchemy. Seasoned audiophiles will remember products like the DDS CD transport and Dac-In-The-Box

outboard converter – iconic designs that rapidly became part of hi-fi folklore.

Twenty years on, the diminutive form factor of those '90s products is more commonplace today so the new range will feature larger enclosures, custom designed and manufactured in Madnick's own facility.

Courtesy of Symmetry in Windsor Suite 6, we can expect to see and hear the full Audio Alchemy range including the



DDP-1 DAC/preamp (pictured), the DDA-1 integrated amp, DPA-1 power amp and MRD-1 media player. The PS5 outboard power supply will also be shown by way of upgrade. We can't wait!





# Hong Kong Show 2014

Words & pictures: **Bob Hawkins**

Wan Chai's magnificent Exhibition and Conference Centre once again provided the perfect setting for Hong Kong's High End Audio Visual Show, now in its 12th year. Taking place over the weekend of the 8th of August, the event attracted some 30,000 visitors and while a number of exhibitors were noticeable by their absence, their places had been taken by welcome additions.



Increases in the numbers of headphones and network streamers were at the expense of source players, with Oppo the new kid on the block. There was huge interest in its main products while its universal players were used in many presentations at the show.

With 130 or so exhibitors demonstrating a wide range of components and the sun shining over the Centre after stormy weather earlier in the week, it was an event to remember.



To these ears, Avalon Acoustics' Isis loudspeaker provided some of the finest sounds at the show, a DXD disc of Jun Fukamachi's *At Steinway* having all the presence of a concert hall when played in the room. AA's Isis was the first full-range speaker to use proprietary neodymium magnetic technologies in all its drive units. Frequency range is a claimed 20Hz-45kHz, sensitivity 90dB and height 1.54m. Price is £56,500 a pair. [www.avalonacoustics.com](http://www.avalonacoustics.com)

The absence of Hong Kong tube amp manufacturer Audio Space from this year's event gave plenty of opportunities for other Chinese companies to show off their analogue valve products, Cayin being one. In Hong Kong, its recently revamped 2x20W output vacuum tube amp sells for a very competitive £1050. [www.en.cayin.cn](http://www.en.cayin.cn)

Shenzen-based Eisteddfod produces excellent turntables. The decks aren't available in the UK but the company does produce a useful stroboscopic disc-set with easy setup instructions in English. The disc's 'B-side' carries a tonearm alignment pattern. The box set costs just £90. [www.eisteddfod.taobao.com](http://www.eisteddfod.taobao.com)







Thinking outside the box saw US designer James Bongiorno come up with a preamp packing all the features we enjoyed back in the '70s – built-in MC and MM circuitry; headphone amp; tone and balance controls – plus a solidly made remote. The Ambrosia 2000 costs £5100. [www.ampzilla200.com](http://www.ampzilla200.com)



At the opening ceremony there was musical support from the Hong Kong Police Band. There were also regular performances given by youngsters playing dragon drums similar to those used in dragon boat races. Percussion instruments of all kinds feature largely in Chinese culture and were to be heard in many of the show's audio demos over the three days.



Here's a speaker pairing that had heads turning: the Mythology M1 woofer/tweeter combo with the Soprano SBESL electrostatic super tweeter. The design and manufacture is in-house, says ENIGMAcoustics' Wei Chang. Price is £8640/£2170 with the monopole stand costing £350. [www.enigmacoustics.com](http://www.enigmacoustics.com)



This year marks the 95th anniversary of Ortofon A/S and to celebrate the company has produced a limited edition 28g titanium MC Anniversary cartridge, shown fitted to this magnificent Acoustic Solid deck. Just 500 pieces are to be made and are said to offer improved internal damping to reduce vibration. Price is around £2000. [www.ortofon.com](http://www.ortofon.com)



Designed for 2.1, 4.1 and 5.1 setups, Dutch audio manufacturer Kharma has produced a neat active digitally-controlled 3-way system. Driven by 120W amps, the Butterfly satellite speakers can be desk, floor, ceiling or wall-mounted while the matching subwoofer is rated at 180W. The full Kharma Butterfly system costs £8070. [www.kharma-butterfly.com](http://www.kharma-butterfly.com)

Crystal Cable's new Arabesque Minissimo speakers were on show in bright solar orange and this lovely aquamarine blue. They formed the centrepiece of Excel HiFi's dem room where they performed superbly, providing a rock-solid soundstage. No specs as yet, but we were able to establish that the cabinet is machined from a single, solid alloy block. [www.crystalcable.com](http://www.crystalcable.com)





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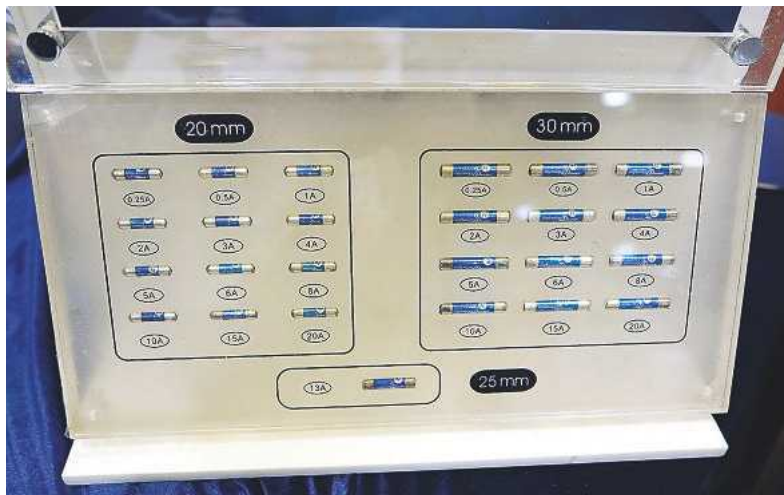


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- Spain – AV Premium
- Sweden – Hifi & Musik
- Ukraine – Stereo & Video

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Made from high quality MDF and finished in rosewood or cherry, these custom-made Lawrence loudspeakers are the work of designer and company founder, Lawrence Liao. Inspired by Lawrence's love of music they are aptly named: Mandolin, Violin and Cello. The Cello (middle of picture) is a five-driver, 3.5-way floorstanding design with a rear-firing ribbon tweeter. This is in addition to an air-motion tweeter, mid-treble driver, woofer and subwoofer. The company, which is located in Taiwan, was founded in 1996. [www.lawrenceaudio.com](http://www.lawrenceaudio.com)



There appears to be quite a lucrative market for high-grade audio fuses and at the show there were quality Chinese alternatives on offer. Available in a wide range of values, the ones in this display cabinet use a twisted multi-strand wire, housed in a quartz tube. The end-caps are high quality copper which are plated in either platinum, palladium or rhodium. Prices are £80/£50/£35 respectively.

It was the finish of these Obravo HAMT-1 cans from Taiwan that caught our eye. They're hand assembled and have brushed metal ear cups with stitched leather ear pads. They're not too heavy, using a 57mm woofer with neodymium magnet, and a 40mm AMT tweeter. The price is £1300 with the battery powered HPA-1 amp costing £230 extra. [www.obravo-global.com](http://www.obravo-global.com)



The Kronos Sparta turntable, which features a counter-rotating platter, was another product that drew admiring glances. One of only 250 made, the sample here is fitted with a Triplanar arm, XYZ Omega cartridge and Omicron puck. A work of art! The deck costs £29,230 while the power supply and stand is a further £9230. [www.kronosaudio.com](http://www.kronosaudio.com)



Siltech introduced its new Triple Crown interconnect cables at the show. They feature a radical new cable topology that combines 'mono crystal' silver conductors with ultra low-density insulation. The cables also come with new XLR and self-centering RCA locking connections. The terminations are rose gold-plated aluminium and there is a switchable shield to float or ground the wire at each end. Plans are to bring the cables to market in October this year. Price is £28,700 per metre pair. [www.siltechcables.com](http://www.siltechcables.com)





## SHOWBLOG Sights and sounds from around the globe

Established in Guangzhou, China, in 1997, Secret Audio produces hand-made tube amplifiers. This is its Reference Flagship range. The tube preamp (top centre) has an outboard power supply, as do the mono power amps (lower row). The preamp/power amps have balanced/unbalanced input/outputs with the power amps rated at 150W/ch. The preamp costs £9700 and the power amp, £10,590. This is the first time Secret Audio has exhibited at the show and no website is available.



The £915 X30 all-in-one network streaming audio system is from Cocktail Audio, which is based in the UK. It features a high speed optical disc ripper, an FM tuner, 5in colour screen, HDMI out, USB inputs, two hard disk storage drives, and is rated at 50W/ch. A 24-bit/192kHz PCM1792A DAC is specified. [www.cocktailaudio.co.uk](http://www.cocktailaudio.co.uk)



The Melody 212 Everest mono power amp sports a Western Electric 212 valve, said to give 50W of Class A power. The amp is equipped with 4/8ohm speaker taps and has large heatsinks, which goes some way to explaining its 75kg weight. Price is £27,300. [www.melodyhifi.cn](http://www.melodyhifi.cn)

It was standing room only to hear Goldmund's superb Apologue Anniversary speaker in the nearby Grand Hyatt Hotel. One of only 25 built, the design is a replica of the 1987 original except for the circuitry used. Most striking of all is that no speaker cables are needed as these new iterations are Wi-Fi controlled. Price is €500,000. [www.goldmund.com](http://www.goldmund.com)



One UK company doing very well indeed at the show was Atlas Cables. In addition to showing its full range of cables and accessories, it ran a production workshop and at times its stand was ten deep in visitors. Here Andrew Connolly and company MD Kevin Kelly pose for a photo before the early morning rush. [www.atlascables.com](http://www.atlascables.com)





This is Avalon's attempt to produce a no-holds-barred loudspeaker. The Tesseract stands 1.93m tall and is to be officially unveiled in Hong Kong at the end of August – hence the Darth Vader-style light wands surrounding the display. The seven drivers include four 15in subwoofers. Rated impedance is 5ohm, its frequency response a claimed 16Hz-50kHz at 92.5dB sensitivity and peak input is a heady 2500W. Price per pair will be around £175,500. [www.avalonacoustics.com](http://www.avalonacoustics.com)



JF Digital chose the event to launch its UDS-5 Stream Server, which appeared to be one of the bargains of the show at £1500. It features two ESS Sabre ES9018 DACs per channel and offers support for virtually all audio formats including Blu-ray, CD, LPCM files to 768kHz, and internet radio. It also boasts a 3TB hard disk. [www.jfdigital.com/en](http://www.jfdigital.com/en)



From Pixel Magic, producers of Now TV in Hong Kong, comes the flagship (£6000) Lumin S1 network music player machined from a solid block of aluminium and packing a host of features including Ethernet and USB inputs (supporting DSD128 playback) and XLR/RCA outputs. Four ESS Sabre ES9018 DACs are specified. [www.luminmusic.com](http://www.luminmusic.com)

MBL's 101 X-treme omnidirectional speakers never cease to amaze. They look like nothing else in the audio world, weigh 3600lbs, yet sound so graceful in performance. The driver array is huge: two radial woofers, two radial midrange drivers, two radial tweeters, one 'ambience' dome tweeter, and no fewer than six 12in subwoofers. £230,770. [www.mbl.de](http://www.mbl.de)



At the lower end of Secret Audio's product range is the Violin Mono Block Power Amplifier. Hand made in Guangzhou, China, and finished in piano-gloss black, the four tubes used are a 12AX7, a 12AU7 and twin EL156s. The amplifier is rated at 2x100W and has three speaker taps: 4ohm, 8ohm and 16ohm. At £460 each, these amps would seem to represent great value.



Last year it was the Hyperion cartridge that made its mark at the show. This year it was SoundSmith's latest incarnation – the Strain Gauge from Peter Ledermann. This latest version costs £5200 but includes the SG210 phono preamp for direct connection to a power amplifier. [www.sound-smith.com](http://www.sound-smith.com)



Next month  
Our pick from the best international shows of 2014



# Room for improvement

Can you get studio or concert hall sound at home? **Steve Harris** finds out

**RIGHT:** In search of the ideal. You want your system to reproduce the sound of big spaces like the Royal Festival Hall (top) and Abbey Road Studio 1 (bottom left). Mastering rooms, like this one at AIR Studios (bottom right), provide a controlled listening environment

It's great to upgrade your system and get more enjoyment out of it with every improvement. But it's a hi-fi truism that the biggest contributing factor to the sound you hear is in fact the room. Once you've reached a certain quality level, you'll very likely get a bigger improvement for your money if you spend at least some of it on the room rather than on the equipment.

Every room has its own character, which is the complex product of its dimensions, its construction and its contents. Some rooms are naturally congenial, but almost any room can be improved. So where to start?

## ABSORBER PANELS

Thanks to the demands of home cinema and the mushrooming growth of home recording, it's now easy to buy absorber panels, bass traps and diffusers, the acoustic treatment products that once were only known to pro audio. Among their huge ranges, companies like GIK and Vicoustic do offer panels and other products that are suitable for home hi-fi installations.

Absorbent panels are the most obvious kind of room treatment. They can be used to damp the



reflected sound from the walls by absorption. Alternatively, panels may be constructed as diffusers which scatter the reflections in all directions rather than absorbing sound energy.

In the simplest case, if you can hear the echo effect of the sound bouncing between two opposite hard, sound-reflective walls, then try damping one of them. You can always experiment with a temporary wall-hanging before investing in a purpose-built panel. You may also want to place panels around the speakers, behind them and at the first reflection points on the side walls.

But the most common of all room problems, especially in small rooms, is uneven and boomy bass caused by standing waves. Every room has 'room modes' at frequencies where the room dimensions coincide with the wavelength of the sound. At any given point in the room, the effect

will be to increase the level of some frequencies and reduce others.

Absorbent panels stuck on the walls are of no use here, because they can't absorb down to low enough frequencies.

When building studios, designers can use 'bass traps' built into

the structure, consisting of large enclosures filled with absorbent material and typically faced with slatted coverings that will reflect higher

frequencies. However, there are bass traps that can be used in the home, and in fact they've been around for decades now.

## RESISTIVE WALL

The pioneer in this field was an American acoustic engineer, Art Noxon, who set up ASC (Acoustic Sciences Corporation, [www.acousticsscience.com](http://www.acousticsscience.com)) in 1984 and started making Tube Traps. They were immediately successful.

'Tube Traps can help get rid of time-smeared, excessive bass'

**RIGHT:** Acustica Applicata's DaaD devices offer diffusion along with absorption, to avoid overdamping the overall sound. Seen here in black is the smallest model, the 20cm-diameter DaaD 2, which can absorb frequencies from 120Hz upwards





**LEFT: A truly impressive system in a large room that's been optimised by an array of DaaD devices stacked to give double height**



**BELOW LEFT: Now used by professionals and audiophiles all over the world, ASC's Tube Traps first appeared back in 1984**

When you first set eyes on a Tube Trap, you might mistake it for a rolled-up carpet. But the Tube Trap is not just a big lump of absorbent material. Instead, Noxon had cleverly applied a principle that combined acoustic capacitance and resistance. Essentially, the acoustic capacitor is the air chamber inside the tube, while the acoustic resistance is the fibreglass tube itself.

When the Tube Trap is placed where sound pressure builds up due to the room modes, the sound creates a pressure differential between the outside of the tube and the chamber inside. Trying to equalise the differential and raise the pressure inside, the sound wave has to travel through the resistive fibreglass tube wall, which dissipates its energy as heat.

So Tube Traps really can help to get rid of excessive and time-smear bass. They come in several diameters, as the larger the enclosed volume, the lower the frequencies that can be dealt with.

At the start, Noxon found that although the Tube Traps worked very well in controlling the bass, they made the overall sound too dull in the treble. The solution was to build in a reflector around part of

the circumference, and this in turn made it possible to fine-tune the final sound balance by rotating the Tube Trap to get the best results.

### INTO THE CORNERS

Since the 1980s, there have been further developments on the Tube Trap theme. Italian company Acustica Applicata started off as ASC's distributor, then formulated its own designs, based on similar principles and called DaaD (Diffusion Absorption Acoustic Devices).

One of the main claims of the DaaD is that its lobed shape allows it

penetrate more deeply into a corner, making it more efficient at dealing with the pressure build-up there. Again, the DaaD uses a diffusor for higher frequencies in one of its lobes, so the result can be tuned by rotation as well as positioning.

Once again, the DaaD is available in different sizes, which can deal with different frequencies. The fattest is DaaD4, which has a maximum diameter of 39cm, and is intended to deal with resonances down to 50Hz and also with 'all kinds of early reflections.'

Thanks to this, as with the ASC Tube Traps, the DaaDs can be used in small or large numbers and with direction from the suppliers, can provide a complete solution. In the UK, DaaD products are distributed by The Audio Consultants ([www.audioconsultants.com](http://www.audioconsultants.com)).

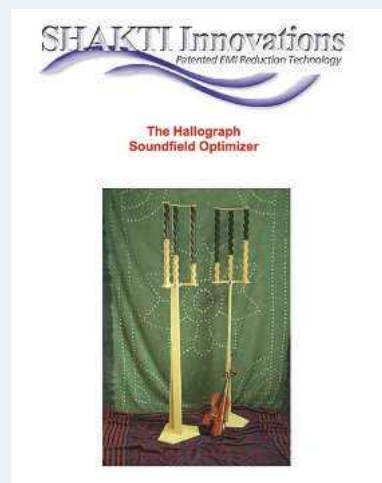
### THREE-PRONGED ATTACK

One of the most intriguing room treatment products around comes from Shakti Innovations of California, and it's the Hallograph Soundfield Optimizer. Looking a bit like Poseidon's trident, the Hallograph is a wooden construct that you place behind the speakers to 'reduce the audibility of the chaotic reflections from the walls of the listening room so they won't overpower and interfere with the direct sound from the loudspeakers.'

Cynics might find the company's blurb about the Hallograph a bit overblown when it claims that 'The Hallograph contours the frequency, amplitude and time coefficients of the first reflections you hear, which produces a stunning increase in realism.' But it clearly does ☞

**BELOW LEFT: A zany tweak product, or a serious room improver? This is Shakti's Hallograph Soundfield Optimizer**

**BELOW RIGHT: More Tube Traps, this time used to optimise results in a relatively confined space**





## INVESTIGATION

something, as its happy users attest (see [www.audioreference.co.uk](http://www.audioreference.co.uk)).

Anyway, there's no doubt that currently-available room treatment products can transform the sound of your room and your system. If you proceed by uninformed trial and error, you may get good results, but it's better to do some reading first, to understand the essential principles of acoustics.

### FROM THE GROUND UP

On the other hand, only a very fortunate few can take the ultimate step of building a dedicated listening room from the ground up with the help of an acoustics expert.

But perhaps that's what we'd all really like to do. So earlier this year I was delighted to take up an invitation from Michael [see *Sweetspot*, *HFN* Mar '04] to see and hear his newly-completed domestic hi-fi and AV room, which was designed by Danish engineer Ole Lund Christensen.

Christensen says, 'If you ask them, audiophiles will agree that the room is the biggest obstacle, the biggest problem. But very few have taken a scientific view on what would be the best possible room.'

Back in 1985, then a partner in a pro-audio import company, Christensen designed the new Puk recording studio, which soon attracted clients as illustrious as George Michael and Elton John. Later, having developed big active



**ABOVE:** Air conditioning is essential but must be noiseless from the listening position

**BELOW:** Panels removed to reveal Michael's equipment area, showing (left) the home cinema gear and (right) the Halcro DM68 monoblocks for the two-channel system. Holfi amps drive the five-channel in-wall speakers

speakers for studio use, Christensen launched the GamuT D200 amplifier, initially under the name Sirius. He sold GamuT in 2003, and since then he has designed custom-build listening rooms, amplifiers and loudspeakers for clients in the USA, UK and India.

Here in the UK, Michael had bought a beautiful Georgian house. He asked Ole to create a listening space that would include a new home cinema system but also provide the best possible results from his existing high-end stereo system. This was a dCS Verdi/Elgar/Purcell front end, Halcro DM8 preamp and DM68 monoblock amps with Audio Physic Medea speakers.

Michael was bringing this system unchanged from his previous home.



There, he'd felt happy with the equipment, but he'd recognised the effect of the rooms it had been used in. So it was time for a clean slate. Christensen's design

started with a floating shell inside the walls of the building, so the room is almost perfectly soundproofed. Inside the shell are very thick absorbent layers of rockwool, which are finally covered with fabric.

'I found that the first problem that you need to solve is getting silence,' he says. 'Because if you don't have the silence, all the small details will not be audible. So that's the fundamental Rule Number One. If you can't hear it, it's gone.'

Lengthy special ducting makes the air conditioning system virtually silent within the room. The door seals automatically when closed, thanks to a neat over-centre catch.

### THE BLACK HOLE

Christensen's next concern was, as he puts it, 'To make sure that the speakers interface with the room as best I can. So that the music energy is transferred to the listener with as little interference as possible.'

He jokingly calls his absorbent wall system a 'black hole' wall, because it absorbs all but the lowest frequencies. But that doesn't mean that the room is totally dead.

'The job of the acoustics is to make it easier for the brain to decode all the signals. What this acoustic does is to remove the clutter of the room, so you are listening to the loudspeaker, undisturbed as far as possible.'

'You actually have to split the sound into three parts, as is well known. First you have the direct sound from the speaker to your ear.

'Then you have the first reflections, which are from the speaker, down to the floor and up to your ear, and to the side walls and then to your ear.

'And then, thirdly, a bit of time later, all these sounds have bounced around enough to become diffuse. Diffuse means that you cannot say that there is a pattern, the sound has to come from everywhere randomly. In a normal room, an average room,





**LEFT: In Michael's listening room, massively constructed subwoofer enclosures are positioned at crucial angles. There are no parallel surfaces**



**ABOVE: This latch ensures the door to the room closes with a perfect seal**

actually more than half of the energy that hits your ear is coming from the surfaces, not from the loudspeaker.

'That means that your brain is trying to dig out the direct sound, but it is constantly overwhelmed by most of the sound energy, which is coming from the surfaces, from the early reflected sound, and from the diffused sound which is from multiple reflections.'

'So I must reduce the first reflections, because they are my enemies! Well, I have to have a floor to stand on, so I have to have a first reflection from the floor. Now, humans live on the earth. We always have a surface below us, so our brain has solved that problem many years ago. But the height and the side reflections, they are the variables in the room. In a big

**“Half the energy that hits your ear is coming from room surfaces”**

concert hall, a big space, there is the simple fact that it takes a long time for the sound to travel to the wall and come back.'

So the reflections in the concert hall, because the distances are so big, are very weak, and diffuse.

'What I'm doing is trying to give you an amount of diffused sound as late as possible. Because if you think about it, you have the direct signal coming to you. Now, that's one note, but now the musician is playing the next note, and now a third note. Now, any sound from the room will disturb these notes.'

'On the other hand, I have to have some of it. So the decision is to leave a time window as long as I can

manage, so that the first note has the room to itself, until a sufficient time has elapsed so that the note can decay, and you hear the decay into silence. And then you have the diffused bit, to maintain the feeling of being in a space.'

Starting with similar principles to an LEDE (Live End/Dead End) control room, Christensen also aimed to make a small listening space feel like a much bigger space. None of the surfaces in the room are parallel.

'There is no time delay, no side reflection. There is only the direct sound and then the reflections of that, and these I take care of with my absorbers, and only having select, limited reflecting surfaces placed so that the sound cannot go direct to the listener, it

has to bounce many times, getting delayed and low in level and diffuse.'

#### **LA SCALA BECKONS...**

Sitting comfortably in Michael's room, the listening experience is as immersive as you could wish. We became totally absorbed in the music, whether from CD or from Blu-ray using the multichannel system, and it really was like listening in a much, much larger space than the actual room. We felt ourselves transported to La Scala by the fabulous Blu-ray recording of Verdi's *Requiem* under Barenboim.

To listen here was to become oblivious to the surroundings, which are really quite utilitarian, with just

plain fabric on all sides to cover the foot or more thickness of rockwool behind it. But on those walls behind the listening seats, surprisingly perhaps, there are a number of thin wood battens.

'Yes. A little bit of wood framing,' says Christensen. 'I found that if I didn't have the wood frames, it didn't sound good enough. When you work it out from the dimensions, they are so small that only the very highest frequencies, above 10kHz, will interact with them.'

'What this does, I think – and this is my personal theory – is like the way that the good concert halls, the old ones have a lot of wood carvings, mouldings, details like that. And from a physics-book point of view, these create a wonderful diffuseness of the very top end, which you don't have in a modern concert hall.

Because all the elements are big. There are no small curves.'

'And that's the reason why we have not been able, with all our modern technology, to reproduce the sound of these ancient halls. So rather than having a complete absorbing surface, I have this tiny spider's-web of extreme high-frequency reflection taking place.'

Perhaps, I thought, a bit of that happens with the seemingly left-field Shakti Hallograph... ☺





# Primare PRE60/A60

The long talked about flagship pre/power amplifier from Primare is finally in production and it's a dream combo, with a plethora of inputs for the 21st century audiophile  
 Review: **John Bamford** Lab: **Paul Miller**

**W**ind the clock back four years and you'll recall Sweden's Primare launching its new mid-priced 30 Series components, the excellent I32 integrated amplifier [HFN Jun '11] and CD32 CD player [HFN Jul '11] subsequently running off with a coveted EISA Award for 'best two-channel system 2011-2012'.

Even back then there were rumours that the company had a flagship pre/power combo on the drawing board. But they've been a long time coming. HFN has secured a world exclusive as the PRE60 and partnering A60 power amplifier, priced £6500 each, are at last rolling off the production line.

## EVERYTHING DONE IN SWEDEN

As Primare's boss Lars Pedersen reveals [see p31], as well as tweaking and refining the design of what are the first *seriously* high-end stereo components the company has produced in two decades, the company has spent the last year managing a shift of PCB production for its entire product range from the Far East back to its native Sweden. Everything is now manufactured locally.

The PRE60 is far more than just a preamplifier. It covers all bases as a modern control hub for a high-end system, incorporating an onboard DAC with an asynchronous USB-B input for direct computer hook-up, a USB-A socket at the rear for USB HDDs and memory sticks that's also iDevice-friendly, and four S/PDIF inputs: one coaxial (RCA) and three optical (Toslink). Furthermore there's a built-in network audio player for streaming music and accessing internet radio, the PRE60 coming into its own when driven by a tablet or smartphone using Primare's iOS or Android app.

There are six analogue inputs – two balanced (XLR) and four singled-ended (RCA) – along with a fixed level record out

(RCA) and a 192kHz/24-bit-capable S/PDIF (RCA) output socket as well. And there are four pairs of analogue outputs – two sets of XLRs and two of RCAs – allowing bi-amping with single-ended or balanced power amps. The only omission is a phono stage for vinyl replay. Primare does, of course, have a standalone MM/MC phono amp in its portfolio – the £800 R32.

For its power supply the PRE60 employs a custom-made C-core transformer and 43,000µF capacitor bank, with discrete regulated supplies separately powering the preamp's analogue and digital sections. A further switchmode supply facilitates very low power consumption (0.2W is claimed) when in standby; this is disabled as the

linear supply takes over once the PRE60 is powered up.

Circuitry is fully balanced throughout and DC coupled from input to output, unbalanced inputs being converted to balanced signals by a conversion stage buffered by Burr-Brown OPA2134 op-amps and fed to volume and balance controls employing 'closely matched' JRC resistor ladder attenuators in a balanced configuration. Source selection is via signal relays.

As on Primare's less ambitious 30 Series components, the PRE60 features a white OLED status display that adds a real touch of class. The electronics driving the display are sited between the 15mm thick aluminium front

*'It is Primare's most powerful implementation of UFPD to date'*



**RIGHT:** Primare's A60 power amplifier employs the most capable version yet of its proprietary UFPD Class D output stage, using two modules per channel in a balanced configuration



panel and the unit's main steel chassis to shield them from the preamp's analogue and digital circuits.

Via an intuitive set-up menu the preamp's inputs can be custom-named (and disabled when not in use), each input individually trimmed for volume and balance in 1dB steps, the power-up volume set to a desired level, and the display's intensity adjusted in four brightness levels. Analogue input number 6 can be configured as a 'pass-thru' for integrating the PRE60 with a surround processor.

Where Primare's I32 integrated and PRE32 preamp can be fitted with an optional MM30 'media board' which offers music streaming, a suite of digital inputs and D/A conversion, the digital section

of the PRE60 is integral to the preamp's design and considered more advanced than the company's MM30 module.

In fact it's an amalgam of its standalone NP30 network player [HFN Jul '14] and DAC30 DAC with XMOS-based USB interface [HFN Feb '13], employing the former's UPnP/DLNA network streaming module from German supplier Audivo and the latter's Burr-Brown SRC4392 digital interface receiver/sample rate converter, and CS4398 Delta-Sigma DAC from Cirrus Logic. All incoming digital data is upsampled to 192kHz/24-bit.

And as in the NP30, the Audivo network client in the PRE60 includes internet radio using the familiar vTuner portal and works via Wi-Fi as well as a wired

**ABOVE:** A two-tone finish differentiates the 60 Series from Primare's less costly components. OLED display and stainless steel volume and source selector rotary controls are gorgeous

Ethernet connection – but you'll need to use the latter for streaming hi-res audio. Functionality via WLAN is restricted to a maximum resolution of 48kHz/16-bit.

#### CLASS D AMPLIFICATION

While the PRE60 can be used with any power amplifier of choice, its natural partner is the new A60. Again this is a fully balanced design, employing the company's proprietary UFPD Class D modules [see boxout]. The A60 is Primare's most powerful implementation of its UFPD technology to date, employing two modules for each channel and an elaborate switchmode power supply incorporating what the company calls 'isolated PFC' [Power Factor Control] technology.

Says Primare: 'Although switchmode power supplies have gained a reputation for noise and unreliability, their theoretical advantages are well-known. The rails can be regulated with precision, and current demand from the mains is lower as a result of high efficiency and the absence of current spikes: energy is taken from the mains over a larger period of the sine wave.

'Our PFC implementation controls the current from the mains voltage so that ➔

#### ULTRA FAST POWER DEVICE

The UFPD Class D modules at the heart of Primare's power amps are representative of the new breed of this technology, cool-running high performance analogue PWM amplifiers inspired and given 'audiophile credibility' by the likes of Hypex's UcD units [www.hypex.nl]. While Primare's UFPD amplifiers are proprietary they share many important features with the single-ended Hypex modules rather than the floating ICEPower modules from B&O – both brands are still implemented in various current hi-fi amplifiers, of course. Distortion is very low and fairly uniform with frequency [see Lab Report, p33] but their biggest claim to fame is almost total load-invariance. While most Class D amps are 'tuned' to offer the flattest response into 8ohm, with variations into higher and lower impedances, the UFPD's response, like that of the Hypex modules, is almost unchanged, regardless of speaker load. PM



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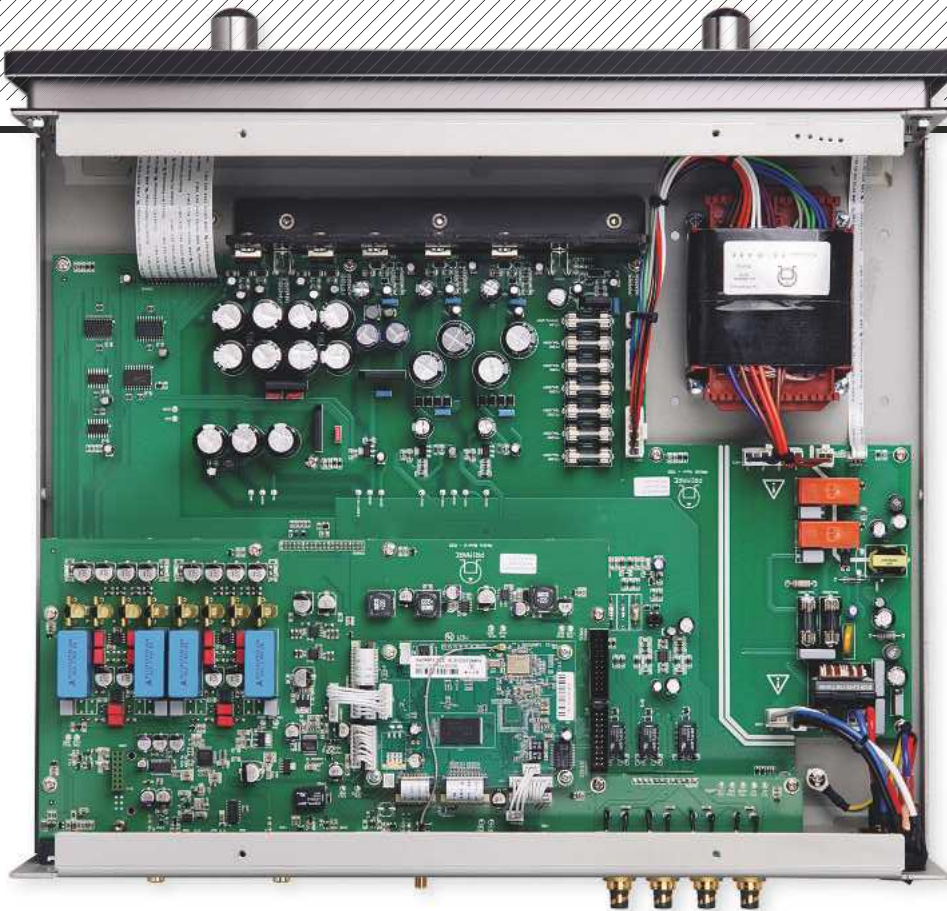
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## LARS PEDERSEN

Primare Systems' Lars Pedersen has been at the helm since 1996. As a young entrepreneur Lars was the Scandinavian importer of British-made Target speaker stands, and by the 1990s had a business (Xena Audio) that owned the Primare, Copland and QLN brands before choosing to focus solely on Primare.

Says Lars: 'The PRE60/A60 has been coming for over two years. As well as being our new flagship amplifier you could say it represents something of a turning point for our company, as part way through its development we decided to shift *all* of our manufacturing back to Sweden. This has been a major undertaking, however the statement "Made in Sweden" is highly appreciated in many markets around the globe as it represents a high level of quality assurance.'

Lars has built a fabulous media room in his home situated a short drive from Primare's HQ in Växjö where he and his engineers can assess prototypes. Fitted out with a state-of-the-art projection system and high-end JBL Project loudspeakers, it's a dream set-up – and all driven by Primare electronics, naturally.

So what's next for Primare? 'We keep a keen eye on market demands. And we expect to make several new product announcements at next January's CES. We have already finalised an optional Bluetooth (AptX) receiver/decoder board for the PRE60 and our other Wi-Fi enabled products. In the UK it will be priced around £175'.



**ABOVE:** The PRE60 is so much more than a preamp – it also houses a daughter board complete with network media player, USB and S/PDIF DAC, the latter based around Cirrus Logic's tried-and-tested CS4398 24-bit/192kHz DAC (introduced in 2003). All digital inputs are upsampled to 192kHz

it is a pure sine wave with the same frequency and phase as the mains voltage. Even if 1000W is taken from the mains, other equipment in the replay system will not be affected, as its presence becomes virtually invisible to the mains voltage.

'The isolating stage of the converter works in a ZVS mode and, as a result, the switch flanks contain a lower quantity of harmonics, providing lower EMI and a clean environment for the amplifiers to work in.'

The A60's rear panel sports XLR and RCA inputs which are selected via a miniature toggle switch alongside two sets of WBT Nextgen speaker terminals for easy bi-wiring. Internally these are connected from the amplifier's output stage using Van den Hul SCS-12 cable.


### A BOLD ATTITUDE

As I've spent the last couple of months basking in the awesome power and refinement of T+A's three-box 3000HV pre/power/PSU combo [*HFN* Sep '14] which costs almost two-and-a-half times as much as this Primare duo, I could easily have been underwhelmed hearing the Series 60 components driving my Townshend monitors. But the A60 packs a serious

punch and exhibits tremendous low-end 'grip', the combo delivering impressive weight and scale to musical performances combined with striking detail and precision across the frequency spectrum.

Indeed, it took very little time to determine that they're exceptional components for the money too, music charging along with a bold and energetic attitude, full of rich, clear detail with open soundstaging.

The vigorous drum thwacks by percussionist Manu Katché in Robbie Robertson's 'Somewhere Down The Crazy River' from his eponymous album of 1987 [Mobile Fidelity 'UltraDisc II' remaster, UDCD 618] were delivered with immense power, the combo's fast and agile timing enabling Tony Levin's bass playing to be clearly discerned throughout the piece, where it can all too easily become swamped due to the recording's 'busy' production quality. Percussion details and the swirling keyboard embellishments way back in the mix were exposed beautifully thanks to the Series 60s' crisp and vivid sound character.

I thought the combo sounded mightily impressive used as a pure analogue amplifier system fed by the balanced 

'Vigorous drum thwacks were delivered with immense power'



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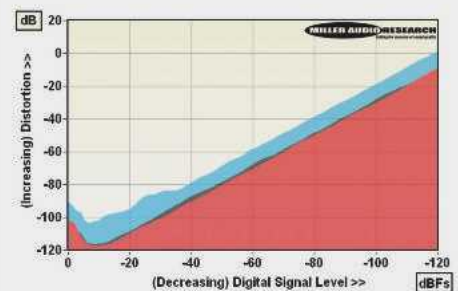


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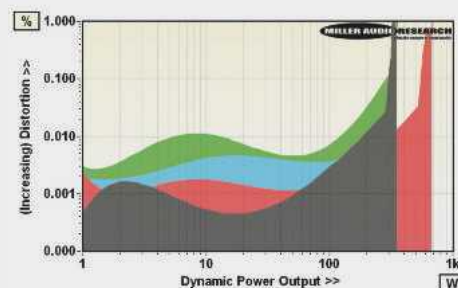
## PRIMARE PRE60/A60

The performance of Primare's digital inputs is bounded by the PRE60's analogue stages which, unsurprisingly, are very clean indeed. Distortion at 0dBV out is as low as 0.00005% through bass and midrange, increasing to a mere 0.0005% at 20kHz, figures matched by the digital inputs at -10dBfs [see Graph 1]. The A-wtd S/N ratio is 96dB (re. 0dBV, balanced in/out) and 108.6dB for the S/PDIF, USB and network inputs (re. 0dBfs or 4.2V out) although the maximum preamp output is a full 15V from a 140ohm source. The analogue in/out frequency response has a very gentle treble roll-off amounting to -0.1dB/20kHz to -2.5dB/100kHz, increasing to -0.2dB/20kHz with 44.1kHz-192kHz digital inputs and -6.8dB/90kHz with the highest rate 192kHz files. Digital jitter is impressively low via S/PDIF at <20psec at all sample rates while the asynchronous USB and network inputs are only fractionally higher at 50psec.

Partnering the PRE60, the A60 packs the biggest punch we've measured from Primare's UFPD modules – a balanced pair being employed per channel here. The 2x250W/8ohm specification is readily exceeded in practice at 2x300W/8ohm and 2x575W/4ohm, increasing still further to 350W and 675W into 8/4ohm under dynamic conditions [see Graph 2]. Idle pattern interference is much reduced in these latest modules so it's innocuous white noise that limits the A-wtd S/N ratio to 80dB (re. 0dBW). Distortion is typically <0.001% from 1W-150W through bass and midrange but increases to 0.015% at 20kHz. As I discussed in the boxout [p29], frequency response is broadly unaffected by speaker load – flat from 1Hz to 20kHz (-0.05dB) and rolling steeply away >70kHz (-4.5dB/100kHz). Readers may view comprehensive QC Suite test reports for the PRE60/A60 via the [www.hifinews.co.uk](http://www.hifinews.co.uk) homepage. PM



ABOVE: THD vs. decreasing 24-bit/48kHz digital level, S/PDIF (1kHz, red) vs. USB (1kHz, black; 20kHz, blue)



ABOVE: Dynamic output vs. THD into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) loads



ABOVE: PRE60 covers all bases with six analogue inputs (two balanced), four S/PDIF ins and two USB connections. There are multiple output options too, as well as external IR, trigger and RS232 affording the pre/power combo full system integration

outputs of a T+A DAC 8, but sound quality appeared to step up several notches when I pushed data directly from my computer source into the PRE60's USB input.

The benefit of having a DAC 'hard wired' inside a preamp was immediately obvious as the sound gained extra crispness and clarity. Hearing the delectable harmonies of Crosby, Stills and Nash performing 'Guinevere' on their 1969 debut album [96kHz/24-bit download] was a sublime experience. There seemed to be acres of space between their voices and acoustic guitars, the Primare combo's exceptionally clean treble allowing the guitar strings' harmonics to ring with crystal clarity and natural decay.

### TELLS IT LIKE IT IS

I found Primare's 'digital media' implementation appeared to differentiate very little between data pushed in via USB or pulled over a network via Ethernet connection. With the Gaelic-influenced 'The Awakening' from The Pat Metheny Group's *Imaginary Day* [Warner Bros 9 46791-2] the PRE60/A60 combo served up a larger-than-life sound that was quite spectacular, rich in tonal colours and textures.

An audiophile friend and I blind-tested each other but neither of us could reliably determine whether we were streaming or playing via the PRE60's USB input. The rhythm section appeared ultra-precise, with no overhang and subjectively 'fast' leading edge

definition. The sound had bags of air and detail and dynamic explosions were created with apparent ease.

I was constantly entertained by this Primare duo's razor-sharp clarity and its explicit rendering of musical detail. And thanks to its seriously well-toned muscle in the lower registers I revelled in a cannonade of terrifyingly visceral bass during 'Fancy' by Australian female rap artist Iggy Azalea [*The New Classic: Virgin* 3740916].

Then, winding the clock back to the '70s, I revisited James Brown's 'The Boss' from *Black Caesar* [Polydor 517 135-2] and was presented with a cavernous sound image, the amplifier combo's vivid clarity allowing forensic inspection of the recording's elements.

Look elsewhere if you crave a big-bosomed, cushy and romantic sound. Primare's flagship audio components tell it like it is, their honesty raising goose bumps with common regularity. ☺

### HI-FI NEWS VERDICT

Exhibiting Primare's excellent build quality these Series 60 components ooze style and sophistication. They are also beautifully voiced, delivering a super-clean sound brimming with detail alongside ample muscle to drive all but the most power-hungry speakers. In the high-end arena they represent outstanding value, especially as you're getting a high-res DAC and network player included in the price!

Sound Quality: 88%



### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	300W / 575W
Dynamic power (<1% THD, 8/4/2/1ohm)	352W / 675W / 685W / 350W
Output imp. (20Hz-20kHz, PRE60/A60)	140ohm / 0.014-0.005ohm
Freq. resp. (20Hz-20kHz, PRE60/A60)	+0.0 to -0.10dB / +0.00 to -0.05dB
A-wtd S/N ratio (PRE60/A60)	95.9dB (0dBV) / 80.1dB (0dBW)
Distortion (20Hz-20kHz, PRE60/A60)	0.0001-0.001% / 0.00025-0.015%
Digital jitter (48kHz/96kHz / USB)	13psec / 12psec / 50psec
Power consumption (PRE60/A60)	31W/560W (26W idle)
Dimensions (WHD, PRE60/A60)	430x142x385mm/435x108x365mm



# Magico S3

Among its claims to fame, this new floorstander boasts the world's largest monocoque alloy enclosure

Review: **Paul Miller** Lab: **Keith Howard**

In just one decade, Magico has transformed itself from boutique brand to a dominant force in the high-end loudspeaker scene. This is largely the achievement of one man, Alon Wolf, Magico's indefatigable CEO and designer who's guiding philosophy operates along the lines of 'if you want it done properly...' This extends not only to the drivers which are largely bespoke but in particular to those famously inert cabinets, renowned for employing copious quantities of alloy, innovative scaffold-like internal bracing and constrained-layer damping.

A continuous, unbroken shell is arguably the ultimate expression of this ideal – and one which is realised in the new S3 floorstander whose carcass is one continuous, massive alloy extrusion some 16in in diameter.

Prices for the 68kg S3 depend on the level of finish. The M-Cast is Magico's standard offering, an attractive, satin-style powder-coat available in a set range of colours for a £25,000 ticket. M-Coat, by contrast, is Magico's premium-level finish, achieved using glossy automotive paints for a visually striking appearance. These command figures closer to £29,000 so you've *really* got to want a custom paint job [see front cover!]

## THE BIG DEAL

The S3 also plugs the gap between Magico's smaller extruded-cabinet S1 and the larger the S5, which is built from four different alloy panels [see *HFN* Dec '12]. It's a three-way, sealed-box design combining the same advanced MB30 beryllium tweeter and 6in M380 midrange unit that Magico uses in the S5. But it's the implementation of the M380 that Alon Wolf describes as 'the biggest deal of these loudspeakers' – the driver working into its own specially shaped sub-enclosure fashioned from a polycarbonate resin.

Conceived as the 'ultimate sound pressure absorption device', this internal enclosure takes the form of an elongated bubble, providing the ideal acoustic termination for the M380 and reducing

distortion over a decade-wide bandwidth (200Hz-2kHz) by around 5dB, according to Magico's online graph [[http://magico.net/Product/S3/S3\\_04.php](http://magico.net/Product/S3/S3_04.php)]. The chamber also isolates the midrange unit from changes in pressure caused by the pair of newly-developed 8in woofers. These employ a hybrid 'Nano-Tec' aluminium cone material [for more on carbon nanotubes see Opinion p102, *HFN* Sep '14] combined with the huge voice coil and underhung motor system we've come to expect from the brand's in-house bass drivers.

## THE BIGGER DEAL

Personally, I consider the S3's extruded contoured aluminum cabinet – claimed to be the world's largest monocoque enclosure with ½in walls and having the potential to minimise diffraction effects, internal resonances and damping requirements – to represent the far 'bigger deal' [see boxout, adjacent].

In Magico's premier Q Series [*HFN* Sep '11] the lack of bending stiffness which afflicts the flat panels of box-shaped speaker cabinets, and particularly large box-shaped cabinets, is addressed by the complex process of incorporating numerous CNC-machined braces within the interior space. Something less extravagant was obviously required for the S series, so Magico did the sensible thing and increased the inherent stiffness of the cabinet walls by curving them.

In the S5 two curved side panels are attached to U-shaped internal braces to which the flat front baffle and small rear panel also attach but for the S3 Magico has developed this one-piece extruded cabinet, closed off with top and bottom plates. The tall structure (1.22m from head to toe) is stabilised by matching alloy outriggers fitted with exquisitely-machined adjustable spikes. Cable connection is as simple as it

**RIGHT:** The star of the show is the S3's 6in M380 midrange unit with its own moulded sub-enclosure. The perforated grilles are magnetically attached but should be removed before listening



## EXTRUSION EXPLAINED

Extrusion is often likened to squeezing toothpaste from a tube. In the case of the S3, however, the toothpaste is aluminium alloy heated to softening point. The outlet of the tube contains a die that forces the extruded aluminium into the required shape, and a hydraulic ram is needed to do the squeezing. It's simple enough in principle but it requires enormous force to extrude a section the size of the S3's cabinet, and ensuring tight dimensional tolerances is no simple matter. The process is not limited to the height of the S3 as multiple cabinets will be cut from one very long extrusion. Furthermore the S3 still employs U-shaped internal braces but here they are wedged into position by using bolts to force them away from the back of the flat front baffle area. KH



gets with a single set of 4mm lock-tight bananas sufficing for each cabinet.

While the paired bass drivers certainly benefit from boundary effect with the floor, the lack of output from the cabinets themselves assists in the neutrality of their positioning. Like other Magicos hosted at 'chez Ed' [see [www.hifinews.co.uk/news/article/meet-the-team;-paul-miller/9952](http://www.hifinews.co.uk/news/article/meet-the-team;-paul-miller/9952)] the S3s slotted into the room with minimum fuss and bother, finding their sweet-spot slightly toed-in and set a couple of feet from rear and side walls.

## JUST RELAX

While the S3s may give lesser solid-state and some tube amps pause, my pair of Devialet 800 monoblocks drove these loudspeakers with the kind of unruffled security I've come to expect. Digital sources included both my Sony VAIO laptop (in battery mode running XP and proprietary media software), in addition to an Oppo BDP-105D universal player for disc and files on USB stick.

Anyone tempted by the prospect of the Magico magic should also ensure the S3, like the S5, gets a chance to bed-in before any critical decisions are made. Those extruded alloy cabinets and 8in bass drivers took around two weeks to warm up and 'relax' before the music really flowed. Ah, but when it does, the S3s sound astonishingly quick, the bass utterly free of bloom or overhang, securing the musical rhythm with the deadly authority of a nail gun. I can think of a few other high-end floorstanders that, by contrast, seem to deliver their bass with the blunt precision of a wooden mallet. Furthermore the segue to Magico's topmost drivers is subjectively seamless, its

mid deliciously detailed, the treble sweet but so obviously extended beyond the grasp of the listener's ear.

## VINTAGE VALUES

The S3 is analytical by design but sympathetic, musically, in its approach. As a consequence it revealed the layering of The Beatles' 'Back In The USSR' [*White Album*; 2009, 24-bit re-master] without tearing this vintage masterpiece to shreds. The drone of aircraft in the background remained as clear as day, setting the scene for McCartney's slightly nasal vocals and enthusiastic percussion (all three remaining band members recorded drum parts after Starr quit, albeit temporarily, but McCartney's efforts made the final cut). The value of refreshing this vintage recording was especially clear as the S3s rolled out the red carpet for the Fab Four,

the boys performing with a clarity and energy that, over 45 years on, belied the tape's humble origins.

Moreover, the S3s create a capacious and very transparent soundfield without the

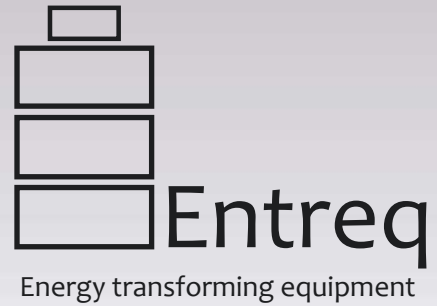
conspicuous presence of an archetypal 'big box'. Like the very best floorstanders, and all Magicos I've heard, the S3 vanishes from the picture, its form merely a gossamer-like vehicle for the music. But make no mistake, the power and energy with which its music is delivered belies the modest size of its drivers and can sorely test the headroom of the partnering amplifier. If you hear a pair of S3s sounding anything less than vibrantly clean, look first to the accompanying electronics.

I hankered to hit the 'SAM' button on the Devialet's remote [*HFN Jun '14*] but, at the time of writing, while the Q3 and S1 have bass performance profiles ready

'Bass rhythms are secured with the deadly authority of a nail gun'







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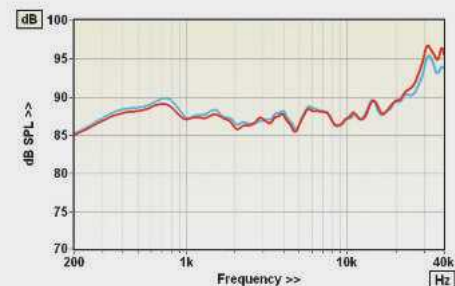
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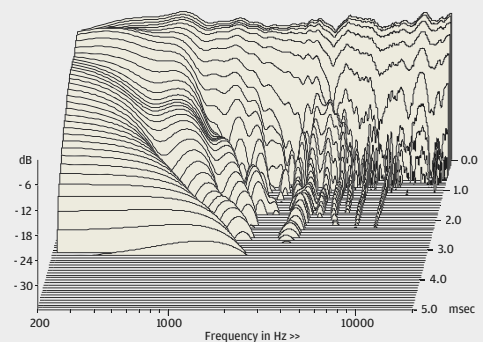
## MAGICO S3

Magico claims 88dB sensitivity for the S3 which is very close to the 87.8dB pink noise figure we measured over the frequency range 300Hz-20kHz. In a reflex-loaded loudspeaker of this size that would be a modest figure today and would not require low impedance to achieve but the S3 has closed box bass loading, which substantially curtails the achievable sensitivity, and so it does require low impedance to manage this. Magico claims a nominal figure of 4ohm but we measured a minimum modulus of 1.6ohm, more in keeping with a 2ohm nominal rating. Moreover, at high frequencies low modulus is combined with high impedance phase angle, the figures at 20kHz being 1.6ohm and -54° respectively, sufficient to drop the EDPR (equivalent peak dissipation resistance) to a scary 0.5ohm. Only at around 3kHz does the EPDR drop below the low frequency peak of 1.7ohm at 67Hz.

The forward frequency response trend, measured on the tweeter axis, is distinctly concave through the presence band but the response ripples are so well controlled that despite this the response error is just ±2.0dB for both channels (300Hz-20kHz). This is a fine result for a passive speaker [see Graph 1, below]. Pair matching over the same frequency range was out of the top drawer too at just ±0.7dB. Ultrasonic response reaches out to above 40kHz, while according to our diffraction-corrected near-field measurement bass extension is 43Hz (-6dB re. 200Hz), although this will be improved in-room by the twin woofers being near the floor. The cumulative spectral decay waterfall [Graph 2] shows fast initial energy decay but there is evidence of some low-level breakup modes in the treble. KH



ABOVE: The S3's forward response shows some loss in presence output but pair matching is excellent



ABOVE: Cabinet resonances are quickly damped but there are some mild driver modes at 3kHz and above

## HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms - Mean/IEC/Music)	87.9dB/87.8dB/87.6dB
Impedance modulus min/max (20Hz-20kHz)	1.6ohm @ 20kHz 18.5ohm @ 37Hz
Impedance phase min/max (20Hz-20kHz)	-54° @ 48Hz 38° @ 26Hz
Pair matching (300Hz-20kHz)	±0.7dB
LF/HF extension (-6dB ref 200Hz/10kHz)	43Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.2% / 0.1% / 0.1%
Dimensions (HWD)	1225x303x305mm

**LEFT:** The curved profile of the S3's extruded alloy cabinet is easier to appreciate from behind. Note also the single set of speaker terminals. Substantial, spiked outriggers ensure the tall S3 remains stable on all floor types

of Neil Young's *Harvest* [96kHz/24-bit rip from DVD-A] was not suddenly filled with an inappropriate urgency. However, the drums sounded refreshingly cleaner than is typical, as did the A-list guest backing vocals and LSO on 'There's A World', the lack of clutter and fuzz elevating the performance from doldrums to a state of drama where Young's voice - miked at a distance - enjoyed real space to breathe. The music was relaxing, informative and yet invigorating, all at once.

Switching to Donald Fagen's *Morph The Cat* [96kHz/24-bit download from [www.hdtracks.com](http://www.hdtracks.com)] certainly shows the S3s can rock with the best of 'em even if there's not the bass mass enjoyed with the bigger S5. And yet the S3 still palpably drives the music, the impact of drums supplemented by Fagen's signature Fender Rhodes, the robust bass guitar and baritone sax.

The fact that all these elements are delineated with near-surgical efficiency without being rendered with the passion of an autopsy is testament to the skill of the S3's design. I've never heard this 2006 release, rendered here in hi-res guise, delivered with such composed energy, such precision and toe-tapping insight. For this I could live without the last ounce of rib-tickling bass wallop. And if not, well there's always the fabulous S5. ☺

## HI-FI NEWS VERDICT

A 'technological tour de force' is not an uncommon cry in the promotion of high-end audio, but this promise is not only realised in the materials and manufacture of Magico's S3 but also in the exquisite delivery of its music. As with other Magicos, however, the spell is ideally woven in tandem with amplifiers of equivalent calibre, including those from Constellation Audio, D'Agostino and the Devialets used here.

Sound Quality: 88%



for download [<http://voteforsam.devialet.com/category/magico/?vfilter=popular>], the S5 and S3 are still accumulating votes.

Even without SAM's guiding influence the Magico S3 has an exceedingly 'fast' bass and with Devialet 800s at the helm, fast, tight and dynamic never meant hard or relentless. No sir.

## A FRESH HARVEST

In practice it'll lift the gentlest, least energetic of recordings like a wolf handles its pups - with razor sharp teeth never bared for a fight. So the casual stroll of Kenny Buttrey's drumbeat that sets the relaxed pace



# Musical Fidelity Nu-Vista 800

Fifteen years after launching the Nu-Vista preamplifier, Musical Fidelity surprises us with a high-end integrated amplifier using nuvistor valves: the 300W Nu-Vista 800  
 Review: **Ken Kessler** Lab: **Paul Miller**

**A**s Yogi Berra said, 'It's like *déjà vu* all over again.' It certainly doesn't seem as if 16 years have passed since the debut product to carry the Musical Fidelity 'Nu-Vista' tag appeared, but it was in August 1998 that *HFN* ran the scoop review on the Nu-Vista preamplifier. In August 2014, Antony Michaelson arrived with his new nuvistor-equipped integrated amplifier, the Nu-Vista 800.

At £7999, it's exceptional value: the circa-1998 £1200 price of the original preamp translates to around £2000 in today's money, so the remaining £5999 buys a 300W/ch dual-mono power amp. Blessedly, it unashamedly eschews gadgetry, with any extras being purely of the 'useful' variety: remote control for sofa spuds, a display of input and level you can switch off, selectable home theatre pass-through for one of the line inputs, extra speaker terminals for bi-wiring.

The 39kg Nu-Vista 800 possesses a fascia machined from solid, mil-spec aluminium, with a finish worthy of a watchcase. The sides are fitted with heatsink extrusions that work well – after beating the amplifier for 36 hours solid, it was barely warm. The unit comes with spikes for the feet, and cups to protect floors; I used the unit without, nestling on the AudioCarpet.

Any of you who have thrown up your hands in despair upon seeing the back of an A/V receiver with 60-plus sockets will rejoice in the 800's minimalist posterior. A copper panel houses, in addition to the quartets of multi-way binding posts: phono sockets for four line-level sources, a balanced XLR input, plus pre-out and line-out. That's it. Except for one bit of frivolity.

This is, after all, from the man who gave us illuminated feet, as if in homage to Fred Astaire. Because nuvistors are the '800's *raison d'être*, they light up. Moreover, the colour changes from red to yellow to

green to indicate the state of warm-up. The gimmick? The feet are down-lit, too. Those of a sober mien can, via remote or the display button on the panel, scroll through eight lighting permutations, including all lights off. I left 'em on.

## SO WHY NUVISTORS?

But back to the nuvistors, and why Musical Fidelity brought this out when the catalogue has no shortage of big amps. Nuvistor tubes were designed in the late 1950s, specifically to tackle all that was deficient in glass-bodied vacuum tubes. If there was a design brief, it must have addressed reliability, size, microphony,

overall performance and consistency between manufacturing batches. It achieved all of this... just as the transistor was becoming viable.

If an analogy is apposite, shed a tear for Bulova, which developed the superlative (and, it must be said, truly cool-looking) Accutron, a timepiece that might have been designed for audiophiles: an electronic watch in which a tuning fork controlled the frequency. So what happened? The Japanese perfected quartz. Boom – suddenly the Accutron is history.

Launched by RCA in 1959, the nuvistor appeared in the company's TV sets and other RF applications, but it was soon



**RIGHT:** A pair of nuvistor triodes drive no fewer than five pairs of Sanken power transistors per channel. Note the pair of toroidal PSU transformers and dual-mono amplifier layout



superseded by the transistor. Supplies languished, with Antony Michaelson finally rediscovering them in the mid-1990s.

NuVistors were plentiful but, according to Antony, 'Bases were impossible to obtain. For at least three years after the launch of the original Nu-Vista series, I tried to get more bases, but eventually gave up.' In early 2013, he started thinking about these tubes again and 'was able to locate what are probably the last nuvistor bases on Planet Earth' [see boxout].

For the '800, Musical Fidelity has moved Nu-Vista along from its progenitors through the use of 'state of the art surface mount design PCB techniques, the new designs benefiting from the freedom of layout that they offer'. I took a feed out from the '800 to compare the preamp section side-by-side with an original Nu-Vista preamplifier, and noted that 1) the family resemblance is uncanny, but 2) the newer unit is quieter and with more authentic bass.

Along with better surface mount technology, other evolutionary changes include CAD/CAM PCB design and software control for the volume and switching. The

Nu-Vista '800's front-end is sited on the same PCB as the input circuitry to keep all PCB tracks as short as possible, to provide immunity to stray hysteresis fields from the transformers. The nuvistor stage itself is visible through the top plate of the '800.

Beyond its physical resemblance to Musical Fidelity's outrageous Titan power amp, the latter also serves as the basis for the amplification stage. In the interim, Musical Fidelity has made improvements to the circuit. Overall configuration is dual mono, with separate mains transformers for each channel.

#### LET THERE BE LIGHT

OK, so switch-on results in a dazzling display of colours, as if the Aurora Borealis had mated with a piece of hi-fi equipment. I have no problem with gimmicks not in the signal path, but I do have a problem with the tedium of minimalist 'black boxes' devoid of perceived value. Musical Fidelity

**ABOVE:** Minimalism rules, with only massive rotaries for volume and source, and buttons below for power on/off and display settings; all functions controllable by a solid metal remote

most assuredly does not listen to the audiophile who thinks that, in order for a component to be taken seriously, it has to look like crud. High-end audio is a luxury field, and the goods should reflect this. The '800 emphatically tells its owner that this is no ordinary unit.

'This was an amp capable of copious amounts of precise extended bass'

Fed by the Marantz CD12/DA12 in balanced mode and the Denon DVD-2900 universal player in line mode, as well as the Astell & Kern AK120 digital player, the '800 drove Wilson Audio Alexias [HFN Mar '13] through Transparent Reference cables. This was the initial test, because the Alexias are hungrier than they first seem.

As it turned out, the '800 had no problems whatsoever, even driving them to levels that I would never suffer for more than a few seconds. The single track that made me sit back and go 'Whoa!' came from Hall and Oates, the punchy 'Africa' from *Voices* [Mobile Fidelity UDSACD 2114]. It opens with frenetic 'tribal' drumming, such that I was reminded of Kodo without feeling any need to look for their CDs, it's that much of a slammer.

Within seconds of firing up the '800, I knew that here was an integrated amp capable of delivering copious amounts of controlled, extended, precise bass. (I should remind you that my reference amplifier is the D'Agostino Momentum Stereo Power Amplifier at five times the price.) The '800 was not shamed, lacking only a trace of absolute mass. In other ☺

### NU-VISTA THEME

Remembering when Antony Michaelson first realised what he could do with nuvistors, and knowing that only Conrad-Johnson had used them before in a high-end audio context, I saw that his delight was contained only by the finite number of valve bases – not the tubes themselves. He had secured valves to produce the original Nu-Vista series of Preamplifier, M3 Integrated, 300 Power Amp and 3D CD Player. As he recently described the results, 'They gave an almost perfect balance between state-of-the-art transistor and tube design.' Because of the limited number of tube bases, the Nu-Vista models were produced in limited numbers and were – seemingly – a *cul de sac* in audio history, legendary products that appeared to be the *dernier cri* for the nuvistor. But that is to underestimate Michaelson, who knew that there were still multiple thousands of nuvistors out there. So what did he do? He found a company to make nuvistor bases exclusive for Musical Fidelity. All together now: 'Doh!' It's called *initiative*.



# The one.



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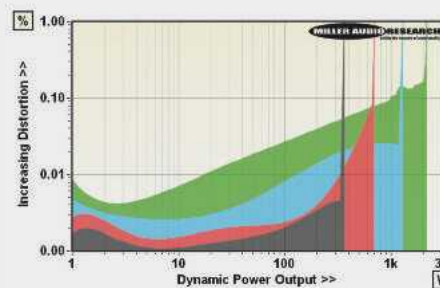
All there is. **DYNAUDIO**

## MUSICAL FIDELITY NU-VISTA 800

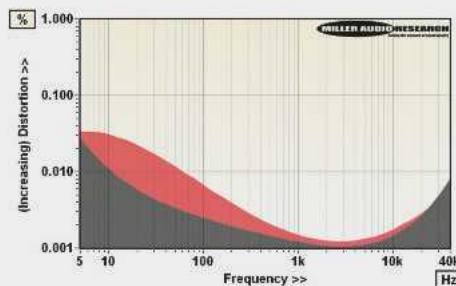
This nuvistor/bipolar hybrid integrated amplifier marks a return to Musical Fidelity's familiar stomping ground, although the provisional 330W/8ohm power rating is likely to have been revised to 300W/8ohm by the time you read this lab report. In practice the Nu-Vista 800 delivers a massive 2x325W/8ohm and 2x580W/4ohm with sufficient reserve to accommodate peaks of 370W, 700W, 1.30kW and 2.17kW into 8, 4, 2 and 1ohm loads at <1% THD [see Graph 1, below]. The five pairs of output devices (per channel) offer a current limit of 46.5A, which is more than sufficient to cook any difficult loudspeakers!

Distortion is low at 0.001-0.004% from 20Hz-20kHz though our sample showed a higher level through bass frequencies via the right channel of this dual-mono design [see Graph 2]. Distortion barely increases with level from <0.001%/1W to 0.002%/100W and 0.005%/300W although this trend clearly increases with decreasing load impedance [see Graph 1]. The frequency response is sensibly tailored with -3dB points at 3Hz-85kHz and flat within the audio band to within +0.0/-0.2dB. The A-wtd S/N ratio is 'average' for an integrated amp at 86dB (re. 0dBW) but this is a subjectively pleasant white noise.

The digitally-governed volume control operates in 0.5dB steps over a 114.5dB range with an error of just +0.3dB over 90dB, +0.5dB over 100dB and +1.3dB over a full 110dB of its range. L/R channel balance tracking is good to within ±0.1dB over this same range – impossible to achieve with a conventional analogue potentiometer! Readers may view an in-depth QC Suite report for Musical Fidelity's Nu-Vista 800 amplifier by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Maximum current is 46.5A



ABOVE: Distortion versus extended frequency at 10W/8ohm (5Hz-40kHz, left = black; right = red)

## HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	325W / 580W
Dynamic power (<1% THD, 8/4/2/1ohm)	370W / 700W / 1.30kW / 2.17kW
Output impedance (20Hz-20kHz)	0.03-0.08ohm
Freq. response (20Hz-20kHz/100kHz)	-0.15dB to -0.20dB/-4.0dB
Input sensitivity (for 0dBW/300W)	22mV / 373mV (balanced)
A-wtd S/N ratio (re. 0dBW/300W)	86.0dB / 110.8dB
Distortion (20Hz-20kHz re. 10W/8ohm)	0.001-0.004%
Power consumption (Idle/Max. o/p)	120W / 935W
Dimensions (WHD) / Weight	483x187x510mm / 45kg



ABOVE: A delight for those who hate clutter: multi-way speaker taps paired for bi-wiring, four line inputs, one balanced input, line-out and pre-out, plus IEC mains

words, despite being voiced by a man whose idea of a pianist is Grigory Sokolov while mine is Jerry Lee Lewis, the '800 rocks.

### RECREATING SPACE

While bass quality is one of the crucial elements that distinguishes decent, proper, audiophile-approved playback from the dreck that appeases the masses, it isn't everything. When dealing with stereo recordings, the recreation of space says as much about performance as the tonal accuracy, given the fragile nature of the audible clues to positioning. Here is the area where the '800 excelled to a point where I rank it alongside the very best I have ever heard.

With the remastered Four Seasons catalogue, *The Classic Albums* [Rhino R122795939], we have access to fantastic editions of the superlative recordings that exist to show off one thing: peerless harmonies. The 'Jersey Boys' not only pre-dated but certainly inspired The Bee Gees, The Beach Boys, The Searchers, The Hollies and The Tremeloes, who had a No 1 hit with The Four Seasons' 'Silence Is Golden'.

Here, the original version sounds smooth, detailed, but above all, cinematic in its spatial magnificence. The '800 is so open and transparent that you feel as if you could walk around each individual vocalist. On the same, otherwise rather lame album, *Born To Wander* – where they ill-advisedly latch on to the then-current craze for hootenanny-style folk – the net effect is, unfortunately, comically like the spoof music in *A Mighty Wind*, but with faultless harmonies.

Regardless of the (artistic) quality of the material, the '800 presents it with an almost schizophrenic balance: precisely what the nuvistor promises. Yes, I must return to the cliché about the nuvistor being the true bridge between the virtues of tubes and trannies, but this will be evident to anyone who can enjoy a decent demonstration. (It should include all-tube, all-solid-state and hybrid tube/transistor rivals, in order for this virtue to manifest itself without a shade of uncertainty.)

For that, I can recommend (but it shames me to do so) the stadium filler that is Foreigner's maudlin smash, 'Waiting For A Girl Like You' from *Foreigner 4* [Mobile Fidelity UDSACD 2053]. This track is awash with lush harmonies, synth-y swells, tasteful drumming, *ad nauseam*, but above all, a silky overall texture.

Fed with this, the '800 rises up like it was 1952 and it's time to unveil Cinerama. Its sound is huge, room-filling... grand rather than grandiose... persuasive rather than commanding. If I were allowed to use a wine analogy, this would be to most 'mega-amps' what Ornellaia is to Amarone. Too obscure? Then let's just say I'm at a loss for words. ☹

### HI-FI NEWS VERDICT

Those who were lucky enough to savour original Nu-Vista models will know what's in store: the speed and punch of solid-state, with the 'love' you only get from valves. This is a stupendously powerful integrated in a relatively compact chassis. Its behaviour is impeccable. It suffers nothing – lightshow aside – superfluous. It is capable of both delicacy and machismo. And 16 years from now, we'll remember it!

Sound Quality: 88%





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

**John Bamford –  
Hi-Fi News**



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### 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:

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**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."

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A close-up photograph of three Atlas Mavros audio cables. Two are interconnects with silver connectors and black braided sleeves, one with a red ring. The third is a speaker cable with a red braided core and a black braided outer sleeve. The cables are set against a dark background.

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*HiFi World, July 2013*

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# hi-finews GROUP TEST

As the £1200-£1500 loudspeaker market becomes crowded, we assess whether this abundance of competition is pushing sound quality standards higher than ever before

## FLOORSTANDING LOUDSPEAKERS £1150-£1650

### TESTED THIS MONTH

AUDIOVECTOR K13 SUPER	£1525
B&W 683 S2	£1150
KEF R500	£1500
MONITOR AUDIO SILVER 10	£1650
MONOPULSE MODEL S	£1495



Cutting-edge gear, cherry-picked by the *Hi-Fi News* editor



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#### • CD PLAYERS • TURNTABLES • CARTRIDGES • LOUDSPEAKERS • AMPLIFIERS • HEADPHONES • STREAMERS •

**M**ore than any other component, choice of loudspeakers remains one of the most personal that any music enthusiast can make. Upgrading *any* component in a system will alter the overall sound, but loudspeakers tend to have the most noticeable effects if only because their relatively simple mechanical nature means that they all sound very different, while each model interacts with the listening room in various ways. So the road to your loudspeaker upgrade is paved with many options.

With £1500 to spend on a pair of loudspeakers you're right in the middle of the crossover territory that marks the move away from more affordable models towards designs that are rather more adventurous – both in terms of internal construction and styling.

No self-respecting manufacturer aiming to tempt an audiophile to part with his hard-earned money would ignore this important milestone. Two of our five test contenders actually mark the pinnacle of the ranges to which they belong, but all of the designs

under consideration have some very interesting features and in some cases these are not shared by their more affordable brethren.

The least expensive candidate is also one of the largest, so the B&W 683 S2 at least promises plenty of sound per pound. Most of the other contenders are closer to our £1500 mark. The most diminutive and distinctive in appearance is the MonoPulse Model S at £1495, while KEF's R500 comes in at a mere £5 more than that; £1525 will purchase a pair of the sleek, Danish Audiovector Ki3 Supers, but there's a jump to £1650 for the new Monitor Audio Silver 10.

#### SYSTEM AND MUSIC

All of the five contenders were comprehensively run-in before listening began and were connected to a Naim Supernait 2 amplifier via Chord Company Epic Twin loudspeaker cable.

Sources comprised a Naim CD5 XS compact disc player with Flatcap XS Power Supply upgrade, plus a Michell Gyro SE turntable, Audio Note Arm Two/II tonearm and Ortofon Kontrapunkt B moving-coil

cartridge through an Anatek MC1 phono stage.

A wide variety of musical material was used for testing, in order to fully put each model through its paces and ascertain any areas of weakness. However, notable vinyl recordings included Eric Clapton's *Unplugged* [Reprise Records 9632-45024-1] for its atmospheric, intricacies of the acoustic guitar and bass timing. The Cinematic Orchestra's *Ma Fleur* [Ninja Tune ZEN122] was brought into play for its instrumental interplay and fine levels of filigree detail, and Latin Quarter's *Radio Africa* [Arista RHT102] used to check out the loudspeakers' responses to a deeper, more fulsome bass.

In addition, on compact disc, Nicky Holland's *Sense And Sensuality* [Sony 487992 2] was chosen for female vocal reproduction, some very well recorded piano work and its instrumental layering; and Steely Dan's *Two Against Nature* [Giant Records 9 24719-2] which is a well-used favourite of mine to check rhythmic capabilities. ↻

REVIEWS BY ADAM SMITH  
LAB REPORTS BY KEITH HOWARD

#### • CD PLAYERS • TURNTABLES • CARTRIDGES • LOUDSPEAKERS • AMPLIFIERS • HEADPHONES • STREAMERS •



# Audiovector Ki3 Super

**A**udiovector's Ki3 Super is the middle option in the second of the Danish company's five floorstanding loudspeaker ranges. The option system operated by Audiovector is unusual but it works by offering up to three different variants on the same design.

In the case of the Ki3, the standard model is based around a pair of 130mm bass/midrange drivers that utilise an oversized magnet system and a cone made from a mixture of carbon and glass fibres. Both drivers are assisted by Audiovector's 'QWR' setup which is a tuned bass loading system lying somewhere between a horn and a transmission line that vents just above the plinth.

This then crosses over to a 25mm tweeter sporting a dome based around a mixture of silk and nylon, and powered by a neodymium magnet. The Super model under review here adds a front baffle damping plate, better crossover and a reinforced cabinet.

Uniquely, Audiovector's IUC (Individual Upgrade Concept) means that you can buy the basic versions and return them to the factory to be lifted to Super or Signature model at any time, which is a nice touch.

Standard finishes for the Ki3 Supers are Cherry, Rosewood and Black Ash, with Matt White commanding an additional £100 price premium.

## A SPRY NATURE

Firing up the Ki3 Supers revealed a light and spry nature that made very favourable initial impressions. The loudspeakers' measured rising response definitely shows itself but they never sounded strident or harsh. In comparison to the equally bright-natured Monitor Audios, however, I felt the Audiovectors did lag a little in terms of absolute smoothness. Never straying into aural discomfort, the Ki3 Supers

nonetheless occasionally lacked subtlety when presented with less than perfect source material.

Across the midband, things were equally detailed and forthright – instrument rendition was excellent. Nicky Holland's piano exhibited a pleasing decay to each note with a good sense of natural resonance behind. In soundstaging, the Ki3s were surprisingly airy and capacious, filling the listening space with ease despite their comparatively diminutive proportions.

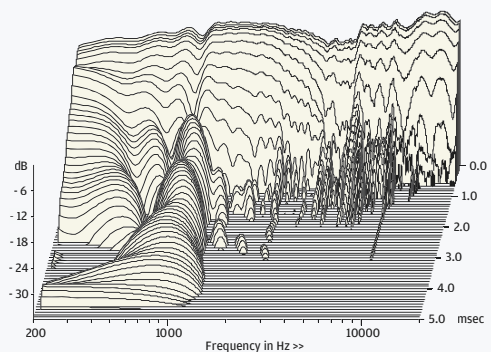
At the bottom end, the Audiovectors sounded a little lightweight at times. The bass that was present was decently tuneful and benefited from good levels of fine detail, but low end timing was not all it could be, with faster-paced and deeper bass lines occasionally seeming to struggle to keep up with the rest of the track.

Sound Quality: 75%



## LAB REPORT

Audiovector claims 92dB sensitivity for its compact Ki3 Super but our pink noise figure of 87.8dB suggests that is 4dB optimistic. The upside is that low impedance has been avoided to give an easy time to the amplifier. A minimum modulus of 6.1ohm fits well with the 8ohm nominal figure and phase angles are well enough controlled that the lowest EPDR (equivalent peak dissipation resistance) is a comfortable 4.1ohm at 3.9kHz. On-axis frequency response is uneven with a rising trend but error limits of  $\pm 3.9$ dB and  $\pm 3.2$ dB for the pair (200Hz–20kHz) are not excessive. Matching error was mildly disappointing at  $\pm 1.3$ dB over the same frequency range but below 4kHz was impressive at  $\pm 0.6$ dB. Unsurprisingly, bass extension is the poorest of the group at 82Hz ( $-6$ dB re. 200Hz). The CSD waterfall [see Graph] shows a prominent resonance at about 900Hz but treble resonances are mostly well controlled. KH



Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	88.9dB / 87.8dB / 87.7dB
Impedance modulus min/max (20Hz–20kHz)	6.1ohm @ 10.6kHz 34.4ohm @ 92Hz
Impedance phase min/max (20Hz–20kHz)	$-43^\circ$ @ 110Hz $35^\circ$ @ 28Hz
Pair matching (200Hz–20kHz)	$\pm 1.3$ dB
LF/HF extension ( $-6$ dB ref 200Hz/10kHz)	82Hz / 34.5kHz/31.7kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	1.2% / 0.1% / 0.5%
Dimensions (HWD)	980x140x250mm

# B&W 683 S2



**B**&W's 683 is the largest model in the 600 range and sports four drive units on its neat front panel. Starting at the top is the 'Decoupled Double Dome' tweeter, so called because it makes use of a thin aluminium dome which is, in turn, surrounded by a thicker aluminium ring.

This is claimed to offer the advantages of lightness of moving mass while also maintaining edge rigidity and minimising break-up. The 25mm tweeter is also located in its own gel-filled cavity and thus isolated from the rest of the cabinet.

Below this, the tweeter hands over at 4kHz to a 150mm FST midrange driver. 'Fixed Suspension Transducer' means that instead of a conventional surround, the edge of the distinctive Kevlar cone is terminated using a thin ring of foam, limiting the driver's movement and said to turn unwanted resonant energy into heat rather than sound. The intended result, of course, is a cleaner midrange.

Below this is a pair of 165mm aluminium-coned bass drivers. These make use of a similar twin layer construction to that of the tweeter dome says B&W, moving the units' first main breakup mode to over 5.5kHz: well above their crossover frequency of 400Hz. These are loaded via a front panel port that is dimpled in the manner of a golf ball as part of B&W's well established Flowport technology.

Colour choices are Black Ash or White, with the apparent discontinuation of any wood finishes. This is a slightly unusual step, especially when the white, I thought, made them look disconcertingly like an item of 1980s MFI bedroom furniture.

### TRULY COHESIVE

The B&W 683 S2s are superbly balanced loudspeakers and they offer a truly cohesive performance. The work on the design and mounting of the tweeter has definitely paid off, as, although the treble was not as finely etched and snappy as that of the Monitor

Audios, the B&Ws are definitely a winner in the sheer clarity stakes.

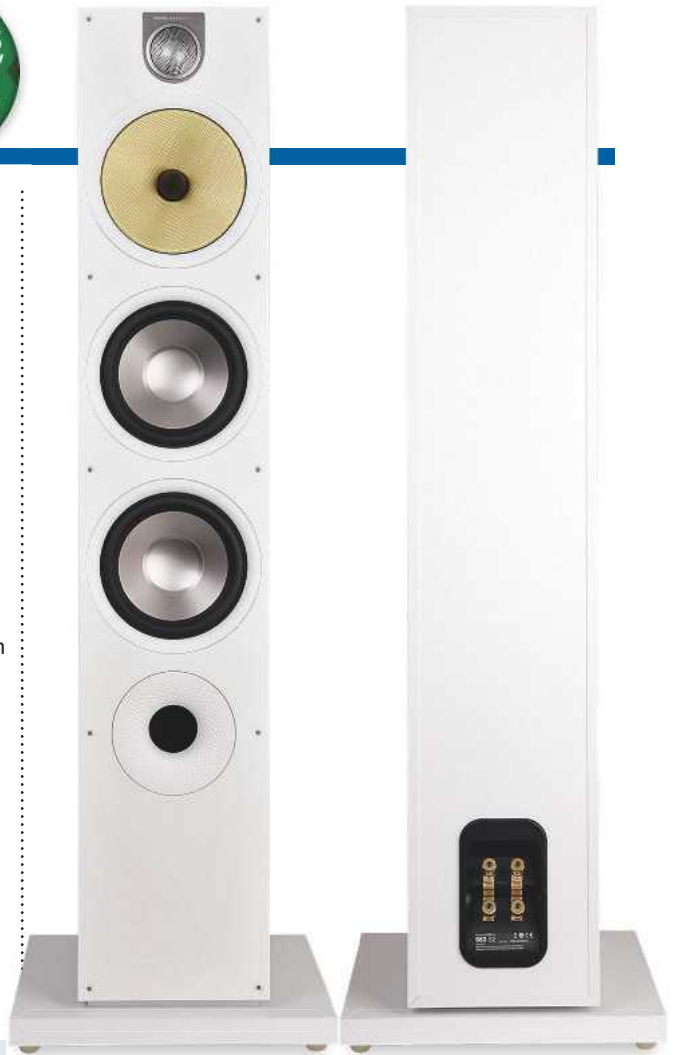
Combined with a midrange that had a fine level of insight and an underlying sense of purity, the overall result was crisp, detailed and eminently musical – Nicky Holland's interplay between piano and vocal on her track 'John's First Wedding' became an absolute delight.

Each piano key strike lingered within the soundstage by just the right amount, and faded delicately and precisely. This was aided at all times by a precise and stable image in the centre and capacious extension by just the right amount in all directions.

Bass timing was also absolutely first-rate, the foot-tapping on Eric Clapton's 'Hey Hey' on *Unplugged* remaining perfectly in tune with the rest of the performance.

Finally, low end detail also held no fears for the B&Ws, as they approached all kinds of instruments with confidence and allowed the nature of each to shine through.

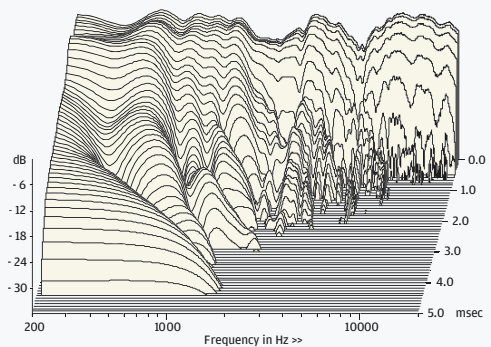
Sound Quality: 82%



## LAB REPORT

B&W claims 89dB sensitivity for the 683 S2 but our pink noise figure of 87.7dB suggests that 88dB is more realistic. Low impedance has been used to help achieve this: a 3.0ohm minimum is specified, which makes a mockery of the 8ohm nominal figure, and we measured a dip to 2.7ohm at 127Hz. Coupled with large phase angles, this results in the EPDR (equivalent peak dissipation resistance) dipping to a low 1.1ohm at 96Hz, asking a lot of the partnering amplifier.

On-axis frequency response is uneven in the treble, leading to error limits of  $\pm 4.2$ dB for both of the review pair, a figure bettered by three others in this group. But pair matching over the same frequency range (200Hz-20kHz) was outstanding at  $\pm 0.5$ dB. Despite the 683's size, bass extension was only fair at 58Hz (-6dB re. 200Hz). The CSD waterfall [see Graph] indicates that treble breakup resonances could be better controlled. KH



Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	87.5dB / 87.7dB / 87.2dB
Impedance modulus min/max (20Hz–20kHz)	2.7ohm @ 127Hz 27ohm @ 55Hz
Impedance phase min/max (20Hz–20kHz)	-73° @ 69Hz 55° @ 1.2kHz
Pair matching (200Hz–20kHz)	$\pm 0.5$ dB
LF/HF extension (-6dB ref 200Hz/10kHz)	58Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	0.4% / 0.1% / <0.1%
Dimensions (HWD)	985x190x364mm



# KEF R500



**K**EF's R500 stands out in this group thanks to its use of the company's well established Uni-Q technology, where the tweeter is to be found in the centre of the midrange driver.

In the case of the R500s, this is a 25mm aluminium domed design that sits in a 125mm aluminium midrange unit; the crossover between the two is at 2.8kHz. On the front of the tweeter is KEF's 'tangerine' waveguide and the midrange cone is terminated using a 'Z-flex' surround that promises to aid the units' integration with the front baffle, for a smooth treble.

Twin 130mm bass drivers bracket the Uni-Q driver vertically. Their appearance is unusual as they have trim rings over the surrounds, but while these improve the loudspeaker's appearance they also have a function. They aim to minimise reflections and out-of-phase information generated by the roll surround from interfering with the main bass notes, thus lowering distortion and improving the bass.

The R500s are available in High Gloss Black or White, plus Walnut and Rosewood real wood veneers. The KEFs have a bi-wiring connection arrangement which uses two pairs of terminals with two knobs located inbetween. Twist them anticlockwise and the terminals are disconnected and ready for bi-wiring or bi-amping; twist them clockwise and they are connected internally for single-wire operation – a neat solution.

## SEAMLESS DELIVERY

KEF's work on the Uni-Q driver evidently has paid real dividends in its latest incarnation. The R500s are much smoother and less brightly balanced than the Monitor Audios and even the B&Ws, but this in no way makes them sound dull. In fact, it results in an air of sophistication and meticulousness, giving soulful insights usually the preserve of a loudspeaker with a higher price tag.

The tweeter melds seamlessly into the midrange driver, offering integration across the frequency

range that could not be bettered by any of the other models; not even the MonoPulses which proved to be capable in this respect.

As a result, there was an inherent cohesiveness in the way in which the KEFs presented anything you cared to play through them. The Cinematic Orchestra's performance was an absolute masterclass in delicate subtlety, yet in complete contrast the R500s gripped the Latin Quarter track and really went to town on it.

This particular response could have been predicted, as the KEFs proved to have the best bass of the group – if challenged strongly by the B&Ws. They edged ahead in terms of weight and impact [not surprisingly – see Lab Report]. However, amount of bass is one thing, but quality is quite another and the KEFs scored full marks here, too. The rear mounted ports augmented in a firm yet inoffensive manner and this, combined with the top end clarity and midband purity, gave a highly addictive result.

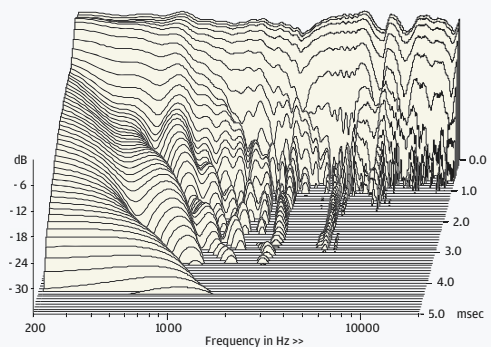
Sound Quality: 85%



## LAB REPORT

KEF specifies 88dB sensitivity for the R500 but our measured pink noise figure of 86.3dB suggests that this is optimistic. The good news is that challenging impedance has been carefully avoided. Although the modulus dips to a low of 3.3ohm at 142Hz (KEF claims a 3.2ohm minimum), phase angles have been very well controlled with the result that the EDPR falls to a minimum value of 2.2ohm at 106Hz – a good 0.5ohm better than typically recorded by modern floorstanders.

On-axis frequency response is mildly dished but error limits (200Hz to 20kHz) are impressively tight at  $\pm 2.1$ dB and  $\pm 2.5$ dB respectively. Pair matching over the same frequency range isn't so outstanding at  $\pm 1.3$ dB but falls to within  $\pm 0.9$ dB below 12kHz. Bass extension of 38Hz (-6dB re. 200Hz) is the best in our group. As is the CSD waterfall [see Graph] which evinces fast initial decay and well controlled resonances in the treble. KH



<b>Sensitivity</b> (SPL/1m/2.83Vrms – Mean/IEC/Music)	85.8dB / 86.3dB / 86.0dB
<b>Impedance modulus min/max</b> (20Hz–20kHz)	3.3ohm @ 142Hz 12.8ohm @ 2.6kHz
<b>Impedance phase min/max</b> (20Hz–20kHz)	-37° @ 35Hz 31° @ 1.3kHz
<b>Pair matching</b> (200Hz–20kHz)	$\pm 1.3$ dB
<b>LF/HF extension</b> (-6dB ref 200Hz/10kHz)	38Hz / >40kHz/>40kHz
<b>THD 100Hz/1kHz/10kHz</b> (for 90dB SPL at 1m)	0.7% / 0.1% / 0.1%
<b>Dimensions</b> (HWD)	1066x299x328mm

# Monitor Audio Silver 10



The Silver 10s continue the Monitor Audio tradition of offering a good amount of real estate for the money. Not only is the cabinet itself proportionally impressive, but it contains a pair of 200mm bass drivers: the largest on offer in the test. These are constructed using a dish-shaped cone made of Monitor Audio's Ceramic-Coated Aluminium/Magnesium alloy (C-CAM).

The dimples on the cone are the company's Rigid Surface Technology application, developed using Finite Element Analysis, which promises to add rigidity to the cone. The port loading these drivers is rifled and aims to reduce air turbulence in a similar manner to that of the B&Ws.

The 100mm midrange driver that operates from 550Hz upwards is newly developed for the range and sits in its own enclosure. It makes use of an underhung voice coil for improved linearity and is also based around C-CAM and RST cone technology. This in turn crosses over at 2.8kHz to a bespoke dome tweeter that has the base C-CAM material gold anodised for optimal stiffness and damping.

All drivers are fitted using a single bolt-through fixing that dispenses with the normal driver mounting hardware and also decouples the driver from the front baffle. Cabinet finishes are Black Oak, Natural Oak, Walnut and Rosenut wood veneers, plus High Gloss Black or White.

### PLENTY OF PUNCH

Of all the loudspeakers in the group, these are the ones that soared the highest and punched the hardest – even if not quite reaching as low as the KEFs. They suggest an enthusiasm to their presentation which really is infectious, and, while they could not quite match the KEFs or B&Ws for smoothness, they never sounded hard or unpleasant.

The rising response noted in the Lab Report definitely comes

across, but not in the way one might expect. Rather than making the top end dominant, it seems instead to recess the midrange. As a result, vocals were excellent in terms of detail but Nicky Holland appeared to be sitting a foot or so away from her piano and slightly less easily heard above it. And the subtly strummed electric guitar that supports Steely Dan on the track 'Jack Of Speed' seemed to have wandered off into the distance a little.

Certainly not distracting but the most commodious soundstage of all models in the test gave me hopes for real midrange projection, which wasn't quite there. At the low end, the Silver 10s are punchy and taut, shrugging off complicated bass lines and testing musical timing aspects with ease. They were virtually neck and neck with the B&Ws in terms of punch and rhythmical ebullience.

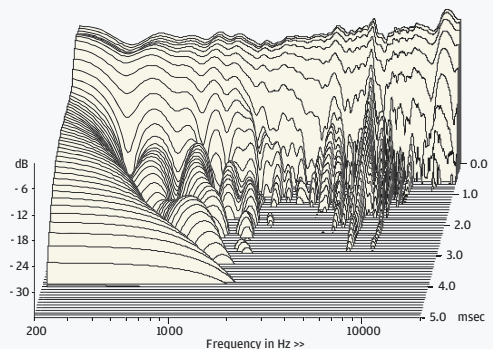
Sound Quality: 80%



## LAB REPORT

A sensitivity of 90dB is claimed for the Silver 10 but our measured pink noise figure of 87.7dB suggests that it is about 2dB optimistic. Low but not punishingly low impedance has been used to help achieve this. We measured a minimum modulus of 3.4ohm at 118Hz – well in keeping with the specified 4ohm nominal figure – while phase angles are well enough controlled that the EPDR falls to a low of 1.7ohm at 90Hz, a typical figure for speakers of this class.

On-axis response has a gently rising trend in the treble but limits of  $\pm 4.0$ dB and  $\pm 3.8$ dB for the pair (200Hz–20kHz) are not excessive. Pair matching of  $\pm 1.0$ dB over the same range is also par for the course and would have been much tighter but for two narrow-band disparities. Bass extension of 44Hz (–6dB re. 200Hz) is a good figure, bettered here only by the KEF. The CSD waterfall, though, could be cleaner in the treble [see Graph]. KH



Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	89.2dB / 87.7dB / 87.3dB
Impedance modulus min/max (20Hz–20kHz)	3.4ohm @ 118Hz 20.6ohm @ 22Hz
Impedance phase min/max (20Hz–20kHz)	–51° @ 78Hz 35° @ 54Hz
Pair matching (200Hz–20kHz)	$\pm 1.0$ dB
LF/HF extension (–6dB ref 200Hz/10kHz)	44Hz / >40kHz / >40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	0.4% / 0.3% / 0.2%
Dimensions (HWD)	1071x290x360mm



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# MonoPulse Model S

**H**iding beneath the cloth-covered facade of the diminutive MonoPulse Model S is a pair of high quality drivers, bass being handled by a 160mm polypropylene coned unit loaded by a downward-firing port. This crosses over to a 28mm silk dome tweeter at 3.5kHz.

The designer Allan Hendry has configured the loudspeakers to optimise their phase response. This involves mounting the drive units so that their voice coils are in line, and using crossover configurations that do not require a phase-reversed connection to either drive unit.

At the rear, four input terminals permit bi-wiring and there is also an extra pair above them, which can be linked to increase the tweeter output if desired.

The Model S comes with a padded leather rear panel and the carbon fibre on top of the cabinet is real and not just a pattern. All models are made to order and, although the company's website shows their standard range of ten different colours of cloth, others are available. Additionally, a special version optimised for valve amplifiers can be supplied for an additional £280.

### UNEVEN RESULTS

In complete contrast to the Monitor Audios, which seemed a little recessed in the midband, the MonoPulse loudspeakers projected well in this area. Consequently, instrumentation and vocal performances stood out with good scale; larger than the comparatively Lilliputian dimensions of the loudspeakers might suggest.

A strength of the Model S was its ability to offer a unified conjunction of drive units: on occasions I could have sworn I was listening to a full-range drive unit rather than two separate entities.

Nicky Holland was back tight behind her piano once more and the

instrument itself rang out well but without the sense of atmosphere offered by the Audiovectors or KEFs.

Bass extension was a shade better than with the Audiovectors but the Model S didn't really make this obvious. Although both timing and detail were fine, the MonoPulses didn't really seem to want to grip the music: *eg*, the Latin Quarter track simply plodded along in a rather matter-of-fact way.

Equally, at the top end, the Model S offered commendable extension but lacked evenness and involvement. Whereas the KEF and B&W were easily able to draw me into the music, the MonoPulses seemed less able to do this.

With *Unplugged*, Eric Clapton seemed to have lost enthusiasm for his guitar playing; and the taut beats behind Steely Dan on *Two Against Nature* were definitely subdued.

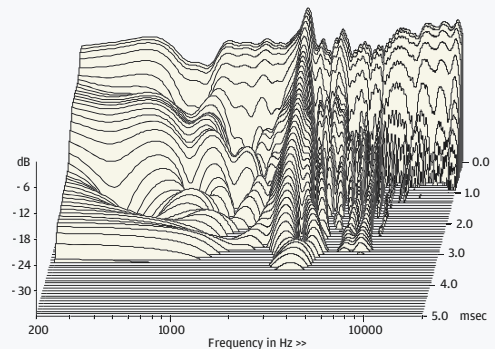
Sound Quality: 70%



## LAB REPORT

Monopulse claims 88dB sensitivity for the Model S but our pink noise figure was a low 83.2dB. The upside is the unusually amplifier-friendly impedance: we recorded a minimum modulus of 7.6ohm – the highest in our group – while phase angles are sufficiently well controlled to constrain the EPDR to a low of 3.8ohm at 3.5kHz.

On-axis frequency response is highly uneven, with a marked dip at 950Hz and a narrow peak at just over 3kHz giving rise to error figures of  $\pm 6.7$ dB and  $\pm 6.5$ dB (200Hz–20kHz) – the worst in our group. Pair matching was also poor at  $\pm 3.7$ dB over the same frequency range. Bass extension was a little disappointing at 62Hz (–6dB re. 100Hz), the lower reference frequency being used here because of a marked suckout at 195Hz, apparently caused by an 'organ pipe' resonance within the enclosed air. The *CSD waterfall* [see Graph] is poor with a strong resonance at the  $\sim 3$ kHz response peak. **KH**



Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	84.5dB / 83.2dB / 83.2dB
Impedance modulus min/max (20Hz–20kHz)	7.6ohm @ 4.0kHz 50.3ohm @ 1.7kHz
Impedance phase min/max (20Hz–20kHz)	–53° @ 2.8kHz 43° @ 862Hz
Pair matching (200Hz–20kHz)	$\pm 3.7$ dB
LF/HF extension (–6dB ref 100Hz/10kHz)	62Hz / >40kHz / >40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	3.2% / 0.8% / 0.3%
Dimensions (HWD)	920x180x200mm





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# GROUP TEST VERDICT

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This was an interesting group of loudspeakers and there's a good chance that one of them will fit the bill, no matter what your preferred sound balance. Even more encouragingly, the results are achieved differently from model to model, showing that manufacturers are truly thinking 'outside the box', if you'll forgive the pun. Every model tested has some little trick up its sleeve, which shows that loudspeaker designers are most certainly not resting on their laurels.

## INNOVATIVE DESIGN

The most innovative contestant was the MonoPulse Model S. No other loudspeaker I can think of is designed along radar guidelines (Allan Hendry is an ex-radar engineer) and it certainly seems to pay off in the way in which the two drive units integrate. The result is an almost 'single-driver' sense of uniformity. However, the rest of the loudspeaker's performance failed to capitalise on this, with both low bass and high treble lagging behind its midband performance.

The MonoPulses are very matter-of-fact in their presentation; they reproduce the instruments playing, but not with any great detail or insight. A good loudspeaker needs to offer more at this price point.

The Audiovectors certainly do that, despite being barely bigger than the MonoPulses. They have a lovely sense of airy spaciousness to their music-making that offers surprising scale to performances and they maintain this well off-axis, which speaks volumes for their drive unit design.

Unfortunately, their low end lets them down somewhat. While thundering bass extension could not reasonably be expected from

enclosures this big – and they certainly were very detailed – their timing was noticeably out of kilter on occasion. A shame, as I feel that they have potentially much to offer and would make a very tempting alternative to a standmount design where space is at a premium.

By contrast the Monitor Audio Silver 10s both promise and deliver more. Their capacious soundstage matches their dimensions perfectly and the result is a big-hearted and enjoyable sound. Bass punches firmly and precisely, treble is crisp, and imaging first-class.

They lagged a little in terms of midband projection, making some vocal and instrumental performances sound a little reticent. But if your amplifier or main source is a little midband-dominant these could be the perfect companions, so do not leave them off your

audition list; they do have some alluring qualities.

A rather more uniform performance across the board means that the B&W 683

S2s edge ahead of the Monitor Audios. They seldom put a foot wrong from low bass to high treble, and are blessed with a clarity and immediacy across the upper frequency range that combines detail with couthness in a very pleasing way.

In fact the high quality of their performance leaves you quite surprised to discover that they cost over £300 less than

any of the other four contenders on test. All in all, they are excellent loudspeakers and constitute a real bargain.

## A WORTHY WINNER

KEF, though, has clearly pulled out all the stops in designing the new 'R' range and it shows, as blind listening could easily convince that this is a much more expensive loudspeaker. All the drivers integrate seamlessly; the port tuning is just right and the R500s will reward completely with whatever music you choose to play through them.

That they are also stylish and beautifully finished is merely icing on an already succulent cake. All this combines to make them a worthy winner and an essential audition. ⬇

'KEF has pulled out all the stops with its "R" range'

S2s edge ahead of the Monitor Audios. They seldom put a foot wrong from low bass to high treble, and are blessed with a clarity and immediacy across the upper frequency range that combines detail with couthness in a very pleasing way.

In fact the high quality of their performance leaves you quite surprised to discover that they cost over £300 less than

**RIGHT:** The brilliance of the KEF R500s in all areas makes them the pick of this month's group, but the B&W 683 S2s offer a very capable performance for over £350 less



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# Norma HS-DA1 PRE

A USB DAC with a difference, this product's upgradable, modular construction means it can grow with you to provide full preamplifier functionality when the need arises

Review: **Nick Tate** Lab: **Paul Miller**

There has recently been a move away from the bulky hi-fi separates that typified the past few decades, towards more compact packages such as this elegant multi-purpose DAC. The Norma HS-DA1 PRE is highly versatile and modular – offering future upgrade potential with the ability to add additional features. Oh, and it's pleasingly small, especially when you consider that in the form it is being reviewed here it is both a DAC and a preamplifier.

Were this Japanese, it might have been rather larger and also considerably less attractive, but being Italian it presents as a quirky but pleasing variation on the theme of a standard hi-fi box. Norma isn't a name known to British audiophiles yet [see boxout], but it does a range of cleanly styled solid-state electronics with the flair you'd associate with this beautiful country.

## THREE RELATED MODELS

The immaculately brushed aluminium befits a DAC/preamp just south of £3000. It sports four inset main navigation buttons, next to a large acrylic-fronted central display section that contains another series of controls which take care of the HS-DA1 PRE's many functions. Standard finish is silver with a sparkle charcoal casing (although a black fascia can be supplied to special order) and there's a rather disappointing plastic remote control.

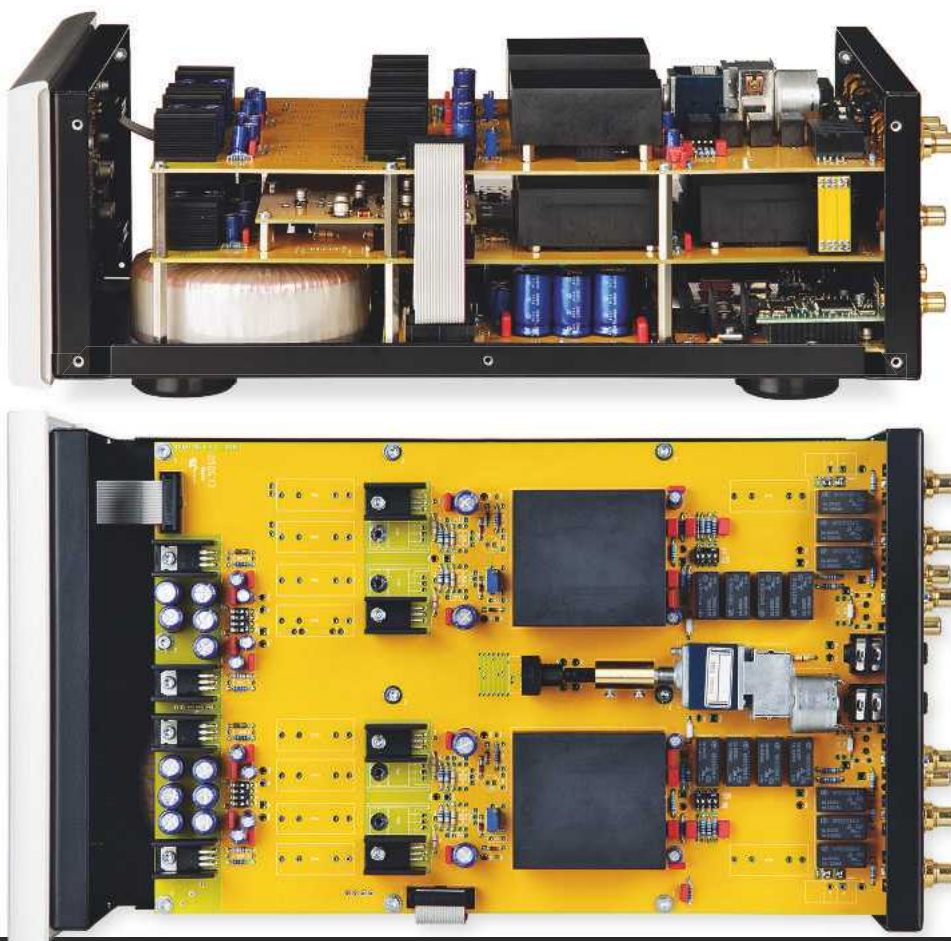
Norma's HS-DA1 is available in three versions, starting with the basic £1795 model which sports five digital inputs (USB and S/PDIF to 192kHz/24-bit), and both RCA and XLR analogue outputs. The £2195 HS-DA1 VAR offers a (defeatable) variable output level and a remote control, effectively turning it into a DAC/preamplifier. The flagship PRE model reviewed here costs £2995 and sports two additional analogue inputs and a

Class A headphone stage. It's also possible to toggle between high and low gain settings and between active and passive preamplifier modes.

If there's anything that lets the unit down ergonomically, it's the bright blue digital display. It's a little big, and there literally aren't enough digits in it, meaning that key words aren't fully spelled out – eg, 'defa' for 'default'. This hinders navigation, making it rather harder to use, especially on first acquaintance. What's really needed here is a fine-pitch OLED display, the like of which you find on Audiolab's M-DAC, which costs a quarter of the price. Naim's DAC-V1 is a similarly compact and versatile product, and it too boasts a lovely, easily readable and far more informative display.

While the larger metal buttons offer volume up and down, and set-up menu access, the small ones handle input selection (digital and analogue), headphone switching and sample rate conversion selection. Via the menu, you can customise a number of parameters for each digital input, including oversampling value, clock source, digital filter and absolute phase. Usefully, the preamp gain can be varied independently of the headphone gain, and this is duplicated on the remote handset.

Active and passive modes are selectable for the RCA line outputs, also available on the system remote. Again, this isn't the most intuitive process and is made trickier by having to deal with that overly



**RIGHT:** The top board (lower picture) is the preamp section with motorised volume, relay input selection and Class A headphone amps. The PSU and DAC stages are built onto the two lower tiers. Signal paths are kept very short



**LEFT:** Cleanly styled brushed aluminium fascia is dominated by a blue LED display, but with limited characters available, navigation through the menus is harder than expected. Buttons are a little fiddly, too

uninformative display. Yet inside, the Norma is a sight for sore audiophile eyes, showing an extremely tidy layout.

Each version of the HS-DA1 gets additional circuitry layered on extra boards, making this review sample a three-storey affair. The rear panel has a slot at the top for the additional socketry required by the PRE version, and it's all very neatly laid out and very robust – no flimsy connectors here!

Number crunching for the five digital inputs comes courtesy of two Burr-Brown PCM1704 24-bit DAC chips. Norma has used separate local clock oscillators, running at either 22MHz or 24MHz to handle the various multiples of 44.1kHz and 48kHz digital audio we now have.

**'Upsample a CD to 176.4kHz, and the sound gains in ease and space'**

The Burr-Brown DF1706 eight times oversampling digital filter has user-selectable roll-off characteristics, 'Sharp' or 'Slow'. A good-sized (considering the compact case) toroidal transformer is used, and this supplies juice via 15 power supply regulators, with separate feeds for digital and analogue sections. Generally the machine feels very well fitted together, fully in accordance with its price.

### A FEISTY LISTEN

Auditioning the unit first solely as a digital converter, fed by a Cyrus CD Xt Signature transport, the Norma proved a feisty and enjoyable listen. It presents a classic Burr-Brown DAC sound, which is big, ballsy and fun. It has a strong and propulsive bass,

which, allied to a lively upper middle band, lends any music it plays a little more weight and impact than is strictly accurate.

It's only a subtle effect, but can be pleasing with some types of music, and indeed systems. For example, Japan's 'Swing' [from *Gentlemen Take Polaroids*, Virgin CDV2180] was fulsome and powerful sounding with a thick, fruity and richly textured synthesiser sound. The drum work was pleasingly punchy and the mix sounded particularly large in scale, even if it didn't quite have the finesse or low-level resolution of Chord Electronics' Hugo DAC, for example.

This was most apparent on hi-hat cymbal work, which seemed a little less silky than it should have been, but also introduced a slight lightness of tone to vocals, which came over fractionally more forward than via some digital converters.

Hitting the SRC button on the fascia gives you the option of upsampling CD to 176.4kHz, whereupon the sound attains more ease and space. It's the classic upsampling effect, with a subtly smoother and more spacious treble, allied to a marginal loss of impactfulness.

The same goes for the switchable filter option, which is not profound in its effect and is largely down to taste and music – I ran the default setting. A far more useful improvement in sound can be had by switching to high resolution music.

Playing out Herbie Hancock's 'Rockit' at 88.2kHz/24-bit from my MacBook Pro running Audirvana in Integer mode, via a CAD USB cable, was revelatory. It sounded riotously good fun, and the DAC seemed to take a step back and let the music →

## CREMONA CALLING

The Norma brand is new to the UK, but is not new *per se* and is actually one of the many that populate the burgeoning and diverse Italian high-end hi-fi scene. Unusually, the brand is owned by a company that specialises in electronic measuring instruments. Opal Electronics bought it back in 1991, the company having previously traded since 1987, launching with its NS 123 amplifier. The company is located in the historic surroundings of Cremona – a place made famous to hi-fi enthusiasts at least by Sonus faber, which has named a loudspeaker after it. Beyond this though, the small town is of course famous for Monteverdi, Paganini, Stradivari, Amati, *et al.* After being acquired by Opal in the early '90s, Norma duly embarked on a seven-year R&D programme which led to a completely new range of products being launched in 1997 by designer Enrico Rossi. Since then it has focused on amplifiers, with the emphasis on dynamics, speed, and absolute transparency. The company says its products remain current for a long time, 'to preserve the investments made by clients'.



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sound with high fidelity.  
*noun* (pl. -fis |'ha 'faizl)

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*noun*

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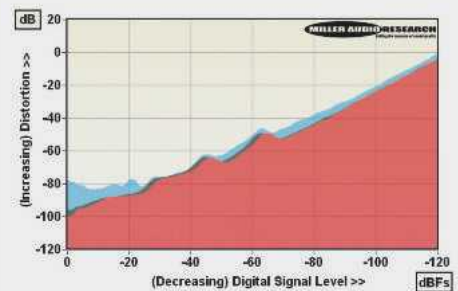
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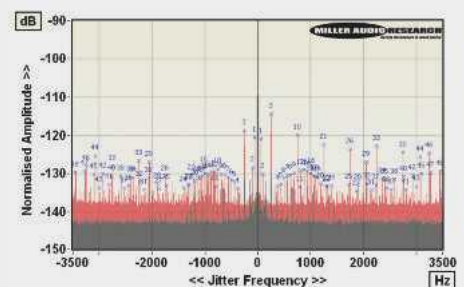
## NORMA HS-DA1 PRE

While our sample of the HS-DA1 was the 'fully-loaded' version including analogue inputs, Class A headphone amp plus USB DAC with preamp output, it is the latter functionality we will focus on here. In fact the DAC stage is fed via both S/PDIF and USB inputs, both offering a very similar level of performance with USB marginally preferred thanks to its 'cleaner' 30psec jitter spectrum [see Graph 2, below]. Otherwise much of the 'character' of the digital stage is determined by Norma's choice of DF1706/PCM1704 8x oversampled/96kHz chipset sourced from Burr-Brown.

While the moderate 0.0015-0.013% distortion realised over the top 30dB of its dynamic range (0dBfs yields 5.6V via the balanced XLR outs) is a function of Norma's proprietary I-to-V and subsequent analogue stages, the slightly irregular THD versus digital level profile is a function of the multibit DAC [see Graph 1, below]. From a subjective standpoint, at least the trend is very consistent regardless of frequency just as the 111.4dB A-wtd S/N ratio is appropriately wide. Response and stopband behaviour depend on digital filter and whether SRC (sample rate conversion) is engaged. With SRC the response is flat to 20kHz with 44.1/48kHz media just as the impulse response shows conventional pre/post ringing artefacts. Without SRC it rolls away to -3dB/20kHz and offers a mere 7dB stopband rejection but time domain ringing is vastly reduced. As ever, the advantages offered by non-SRC DACs are best realised with higher rate (96kHz/192kHz media). Readers may view comprehensive QC Suite test reports for the Norma Audio HS-DA1's S/PDIF and USB inputs by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



ABOVE: Distortion vs. 24-bit/48kHz 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 24-bit/48kHz data (USB 40psec, black; S/PDIF 160psec, red, marked)

## HI-FI NEWS SPECIFICATIONS

Maximum output level (Balanced)	5.60Vrms at 279ohm
A-wtd S/N ratio (S/PDIF / USB)	111.4dB / 111.3dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.0015% / 0.013%
Dist. & Noise (20kHz, 0dBfs/-30dBfs)	0.014% / 0.015%
Freq. resp. (20Hz-20kHz/45kHz)	+0.0dB to -0.04dB/-0.85dB
Digital jitter (48kHz/96kHz/USB)	160psec / 305psec / 40psec
Resolution @ -100dB (S/PDIF / USB)	±0.6dB / ±0.5dB
Power consumption	18W
Dimensions (WHD) / Weight	215x126x350mm / 5kg



ABOVE: Rear panel layout reflects internal modular construction; digital inputs (USB, coaxial and Toslink S/PDIF, AES/EBU), and IEC mains at the bottom, DAC RCA and XLR analogue outs in the middle, and RCA analogue outs and headphone outputs above

thrive. That slight upper midband hardness I'd heard on CD was gone, replaced by a lovely sparkling, atmospheric treble. It carried the firecracker dynamics of the song brilliantly, proving its dexterity with attack transients by stringing them together in a coherent way.

### UNERRINGLY ENGAGING

Across a range of music, from the soulful, jazzy strains of Donald Byrd's 'Lasana's Priestess' [from *Street Lady*, EMI BlueNote CDP 7243 8 53923 2 0] to the stark electronic minimalism of Kraftwerk's 'Techno Pop' [from *Electric Café*, CDP564-7 46420 2], the HS-DA1 proved a captivating performer with an unerringly engaging presentation; its ever-so subtle warmth through the lower midband and bass made thinner recordings sound a little more palatable and thicker ones seem weightier still.

The Kraftwerk track spotlighted its emotionally committed and entertaining character; it didn't quite dig down into the mix as forensically as it might have but the *scale* was superb, the HS-DA1 rendering the soundstage in its full cathedral-like glory, writ large across my listening room well beyond the plane of the loudspeakers.

Use the Norma HS-DA1 PRE as an analogue line-level preamplifier, and it has the clean and open sound you would expect from a modern, well engineered solid-state design. That means there is no particular

emphasis on the bass region, the midband isn't particularly forward and the treble never grates. For example, 'Mad Man Moon' from Genesis's *Trick Of The Tail* [Charisma 6369 974] came over in a very satisfying way, the HS-DA1 supplying a spacious, airy soundstage with plenty of fine detail. The recorded acoustic dropped back convincingly, and the unit retrieved a good deal of well resolved fine detail.

The track's opening four-bar piano phrases had a pleasing weight to them, and as the bass guitar came in, the preamplifier showed its fine low frequency extension. Phil Collins' vocals were smooth and set correctly in space, while the soft hi-hat cymbal work had a nice sonorous ring to its sound.

In absolute terms, there's a very slight drying out of the midband; compared to the best passives it loses just a little warmth and adds a very slight hint of upper midband grain, but it's subtle and completely permissible at the price. ☺

## HI-FI NEWS VERDICT

There's no denying the intelligence that's gone into the design of this product; from the outside it doesn't look special, but inside the modular construction makes it unusually versatile and upgradeable. It's also a fine sounding DAC and preamp at the price too, one that will not disgrace any 'affordable high-end' system. True, it has a few ergonomic and operational quirks, but then it *is* Italian!

Sound Quality: 82%





# Aurorasound Preda

Strikingly individual in its approach, this meticulously-crafted, fully-balanced line preamplifier from Japan promises pure enjoyment from digital sources

Review: **Steve Harris** Lab: **Paul Miller**

On the face of it, a line preamplifier might seem the least complicated component of a hi-fi system, and of course it should not add any character of its own to the sound. But preamplifier design is far from standardised and there is plenty of scope for the 'boutique' builder who aims for ultimate audio purity.

A case in point is Aurorasound, a fairly new Japanese company with a fresh and innovative approach. With the £8000 Preda, designer Shinobu Karaki has included his own implementation of the transformer volume control, a principle that's hitherto been associated mainly with the most fanatically purist passive preamps.

Yet this is not Karaki's first audiophile preamp design. Aurorasound's short history [see boxout] really began with his CADA 'Control Amplifier for Digital Audio', surely the only commercial hi-fi product to have combined archaic directly-heated triode tubes (beloved of DIYers) with a modern digital-to-analogue converter in the same chassis. Unfortunately, it proved difficult to get consistent supplies of the 3A5 tubes used, and the CADA seems to have been put on hold.

The Preda is quite different. It's all solid-state and, although it's similarly described as a 'Preamplifier for Digital Audio', it doesn't include a DAC. But the description is still logical in a sense, because Aurorasound now caters for analogue sources with its VIDA phono stage [HFN Jul '13]. Like the VIDA, the Preda is modular in construction, and in fact uses the same power-supply modules, one for each channel. Another building block of the design is a new 'Aurora-AMP' discrete amplifier module, and six of these are used in total.

But the main innovation is in the use of a transformer attenuator for the volume control, where taps on the secondary

winding of a transformer replace the resistors of a conventional stepped attenuator. In the context of a passive preamp, this approach can give a constant input impedance and also overcome the resistor type's disadvantage of increasing output impedance at lower levels. A currently-available Sowter transformer, for example, covers a 50dB range in 2dB steps when used with a suitable 26-position rotary switch.

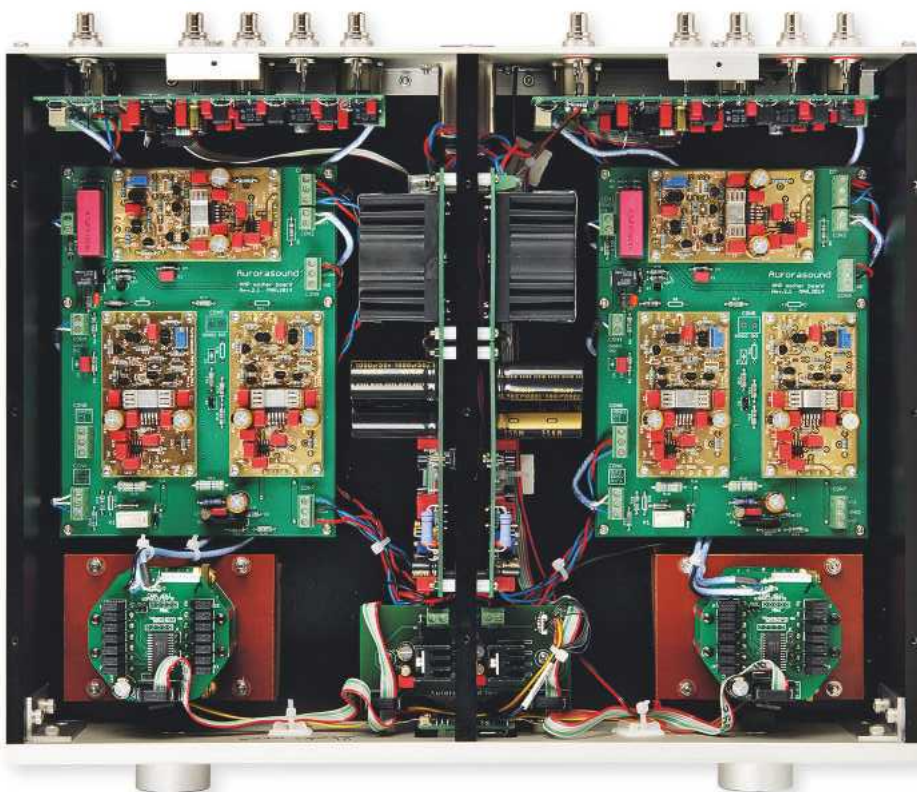
## A FEW IDIOSYNCRACIES

However, it's far more unusual to see a transformer volume control used in an active preamp, let alone a fully-balanced design like the Preda. Aurorasound's own volume control module is apparently an auto-transformer, where the primary and secondary are formed by a single winding. It offers 54 steps of 1dB, switched by UK-made Pickering glass-encapsulated relays

that are operated by external magnetic fields. DC buffer amplifiers precede and follow the volume control module, to prevent any interaction of source or load capacitance with the inductance of the transformer. An instrumentation-type amplifier is used for the XLR balanced inputs, while the balanced outputs each go through a final Aurora-AMP module.

Preda's front panel controls are simple enough. Two 'endless' rotary encoders provide source select on the left and volume on the right, with the settings of either indicated by the two-digit display in the oval centre window.

Normally the display shows the volume setting, nominally in dB, from 1 to a maximum of 54. When you touch the source selector, the display shows the chosen input (1 to 4 for the unbalanced line inputs, 5 or 6 for balanced) for a few seconds only, before reverting. This isn't



**RIGHT:** Clearly a true dual-mono design, the Preda employs a ladder of relays that switch across the 54 steps of its transformer-coupled volume control. Inputs and outputs are buffered



as convenient as a continuous display of the selected input, as you can find yourself having to touch the control just to check which one is active.

A small front-panel LED indicates phase-invert, an option that's provided along with some extra facilities via the chunky, metal-bodied remote [see p61]. In a cross-shaped button array, up and down arrow keys control the volume and a central button gives muting, while the left and right arrows alter the channel balance.

These cause an LED to light above the figures in the display window, to left or right as appropriate. When both LEDs are out, the balance is at the centre position. Source selection on the remote is by buttons numbered 1 to 6, and there's also a display-off key.

Aurorasound isn't the first company to place the power switch underneath the front panel, but there's another switch next to it for 'gain select'. Pressing this cuts the preamp's overall gain by 6dB, while an LED indicates this with a patch of green light under the unit. Most preamplifiers allow

you to fade the volume down smoothly into silence, but with the Preda in normal mode the lowest level, '1', may still be too loud in some circumstances. Hence the Low gain option, described as 'convenient for midnight listening by using high sensitivity speakers'. But some users may still find that the volume can't be lowered

enough for listening quietly into the night.

On the back of the unit, reflecting the dual-mono layout inside, are sets of balanced (XLR) and unbalanced (RCA phono) inputs, plus one unbalanced and one

balanced output socket for each channel. Balanced and unbalanced outputs are available simultaneously.

#### **LITTLE DETAILS REVEALED**

For the listening sessions I settled down on my usual sofa [see [www.hifinews.co.uk/news/article/meet-the-team;-steve-harris/9911](http://www.hifinews.co.uk/news/article/meet-the-team;-steve-harris/9911)], but with some different components. I used a Bryston 4BSST balanced stereo power amplifier kindly loaned by Unilet, with balanced cables by Van Damme. For unbalanced operation,

“The Sad Cafe”  
was infused  
with a timeless  
melancholy’

**ABOVE:** With rotary controls for source select and volume, both power-on and high/low gain switches are tucked away underneath the unit. The display shows selected settings and gain

I used Vertere Pulse B interconnects. Speakers were the B&W CM10s.

I decided that the balanced connection was better, but it was a very close-run thing. On Wynton Marsalis's *Selections From The Village Vanguard Box* [Columbia CK62191], when the trumpeter banteringly asks the time, you could hear just a bit more clearly the audience members' replies. On 'Easy To Love,' the opener from Patricia Barber's *The Cole Porter Mix* [Blue Note 50999 5 01468 2 6], there was just a bit more texture to the voice, and a slightly clearer perspective to all the instruments.

After this, I continued listening using the balanced format. On track after track and with CD after CD, I was arrested by the preamp's ability to reveal little details that had gone unnoticed before. One example was the subtler bits of percussion in Gwyneth Herbert's 'Perfect Fit (Original)' from *Clangers And Mash* [NaimEdge naim CD137]. While the handclaps sounded notably fleshy and real, the little rhythmic finger taps now also had shape and reality, instead of disappearing in the mix.

An indicator of the quality of a component is how well it can reveal the subtleties of the production on a CD track. June Tabor's wonderful rendition of 'The Lads In Their Hundreds' from *Quercus* [ECM 372 4555] was recorded live at The Anvil in Basingstoke in early 2006. But it was mixed for release at the Rainbow Studio in Oslo by Jan Erik Kongshaug and label boss Manfred Eicher, and with the Preda I felt I could almost see the way they had overlaid The Anvil's ambience with the 'ECM sound'.

With a very different kind of threesome, the Tori Freestone Trio and *In The Chop House* [Whirlwind Recordings WR4648], ↻

## A RISING AURORA

Osaka-born but now based in Yokohama, Shinobu Karaki played guitar in rock bands at high school and university and built his own first RIAA phono equaliser at the age of 15. He joined Texas Instruments Japan in 1980, eventually becoming Digital Audio Group business director. Taking early retirement from TI in 2009, he then pursued his interest in audio, initially building power amps, DACs and switching boxes for local audiophiles and shops. Then in 2011 came his unusual Aurorasound CADA, a tube preamp with built-in DAC, and the Aurorasound HiFace Pro D/D converter, a 'tuned up' version of M2Tech's HiFace. For 2012, Shinobu added BusPower-Pro, a clean power supply for USB devices, and introduced the VIDA phono stage. In 2013, he established Aurorasound Inc as a limited company. Shinobu now runs the business out of a new workshop and listening room, helped by his wife and two engineers working on contract.



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## PREAMPLIFIER



**ABOVE:** Rear panel reflects its dual-mono internal layout. Each channel has two balanced and four unbalanced inputs, with one balanced and one unbalanced output

the music really came alive in all its rhythmic complexity and precision. Freestone's brilliant harmonic sense means that you never feel the absence of a chordal instrument, and with the Preda the sheer beauty and honesty of her saxophone sound was more compelling than ever.

Listening to some archetypal 1970s rock recordings showed that the Preda could convey great dynamics while remaining poised and unruffled, never sounding edgy or untidy. On Dylan's *Blood On The Tracks* [Columbia 512350 6] its clarity allowed you to appreciate every instrumental contribution as the band maintained that oom-pah rhythm throughout 'Lily, Rosemary And The Jack Of Hearts.' On 'Simple Twist Of Fate' the acoustic guitars had body, feeling and dynamic subtlety as they ebbed and surged to accompany the twists of the tale.

### REAL TRANSPARENCY

And the Preda was really imperturbable on more modern recordings too. When I cranked up the volume and put on Kings Of Leon with 'The End' from *Come Around Sundown* [Sony 88697782412], the drum sound was truly gigantic and Caleb Followill's groaning vocal was monolithic, with the fractured piano that winds things down at the end a perfect contrast.

Turning to classical music, the Preda could maintain clarity and sparkle even with the heaviest of orchestral textures. On the LSO's 2003 Barban recording of Brahms Symphony No 1 with Bernard Haitink [LSO Live LSO0045], the huge sound of the opening movement was free of that deadening opacity that

comes in many systems from a lack of detail, and moved forward like the sea.

Moving on to hi-res sources, I used the Preda with a Chord Hugo DAC to replay files from a MacBook via iTunes and Pure Music. Here it offered a real transparency, with the feeling that you really were hearing the source unsullied and uncompromised. On Tim Hugh's recording of the Kodály solo Cello Sonata, from *Hands On Heart* [Naim], there was nothing to get in the way of the intensity of the music, the cello sounding superbly rich and sonorous in the supportive acoustic of Wigmore Hall.

With Rimsky-Korsakov's 'Dance of the Tumblers', the Minnesota orchestra sited comfortably in the acoustic of the hall, the percussion had a truly live and free breathing quality. Among other tracks from the same HDtracks sampler, Bach's Violin Concerto BWV1041, played by Anne Akiko Meyers, had a lovely, unforced delicacy to the string sounds, while J D Souther's 'The Sad Cafe' was grippingly infused with timeless melancholy and regret. A truly communicative sound. ☺

### HI-FI NEWS VERDICT

No ordinary preamp, to say the least, the Preda seems to reflect its designer's long experience in modern commercial electronics as well as his lifelong audiophile quest. It's somewhat idiosyncratic in styling and ergonomics, and so it may not be for everyone. But sonically, it can be revelatory, excelling at portraying the realism of vocal textures, for example, which makes the music expressive. It must be heard.

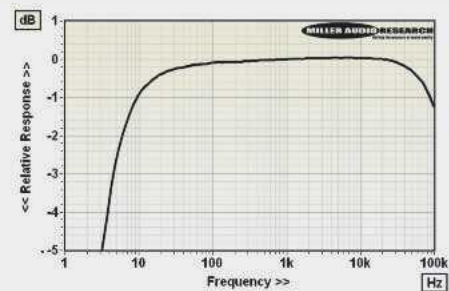
Sound Quality: 86%



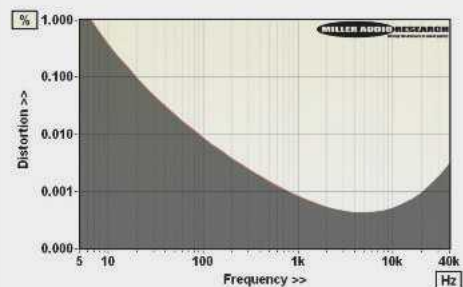
## AURORASOUND PREDa

Aurorasound's proprietary 54-step transformer-coupled volume control operates over a (limited) 50dB dynamic range in rough 1dB steps although the usable scope of the control is supplemented by the Preda's 'Standard' and 'Low' gain setting. Tested in balanced mode and switched via the green button under the fascia, 'Standard' offers a maximum +13.4dB gain (a volume range of -36.5dB to +13.4dB) and 'Low' -0.5dB (a range of -52.1dB to -0.5dB). The Preda offers substantial input and output overload margins - in excess of 10Vrms and 25Vrms respectively via the balanced XLRs, the latter via a 46ohm source impedance - so it has the headroom to cope with any line level source with the output swing to drive any likely power amplifier.

Importantly, because the stepped-transformer volume control is correctly buffered, the Preda's input and output impedance remains constant as does its frequency (and phase) response [see Graph 1], the former gently tailored to -0.38dB/20kHz rising to show a hint of presence emphasis (+0.03dB/1kHz-10kHz). Distortion is very low indeed above 500Hz, falling to a consistent 0.0008% right up to 20kHz. The transformer causes an increase in THD at bass frequencies - from 0.01%/100Hz and 0.1%/20Hz to 1.9%/5Hz [see Graph 2, below], in line with the tailored LF response [Graph 1]. Noise, too, is a little higher than with competing preamps as a very low-level carpet of 50Hz harmonics spreads through midrange and treble. However, an A-wtd S/N ratio of 95dB (re. 0dBV) is still perfectly acceptable (105dB+ is state-of-the-art). Readers are invited to view a comprehensive QC Suite test report for the Aurorasound Preda preamplifier by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



**ABOVE:** Extended frequency response (1Hz-100kHz) at 0dBV/60kohm via balanced input/output



**ABOVE:** Distortion versus extended frequency from 5Hz-40kHz at 0dBV (left, black; right, red)

### HI-FI NEWS SPECIFICATIONS

Maximum output (<1% THD, 47kohm)	>25Vrms (Balanced)
Maximum input level (<1% THD)	>10Vrms (Balanced)
Output impedance (20Hz-20kHz)	46ohm (Balanced)
Frequency response (20Hz-100kHz)	-0.38dB to -1.27dB
Input sensitivity	213mV (Standard gain setting)
A-wtd S/N ratio (re. 0dBV)	94.9dB
Distortion (20Hz-20kHz re. 0dBV)	0.00078-0.093%
Power consumption	28W
Dimensions (WHD) / Weight	420x90x330mm / 10.8kg





# Transfiguration Proteus

It's evolution rather than revolution, but with this new moving-coil a respected Japanese designer offers some enhancements to his own tried and trusted formula  
 Review: **Steve Harris** Lab: **Paul Miller**

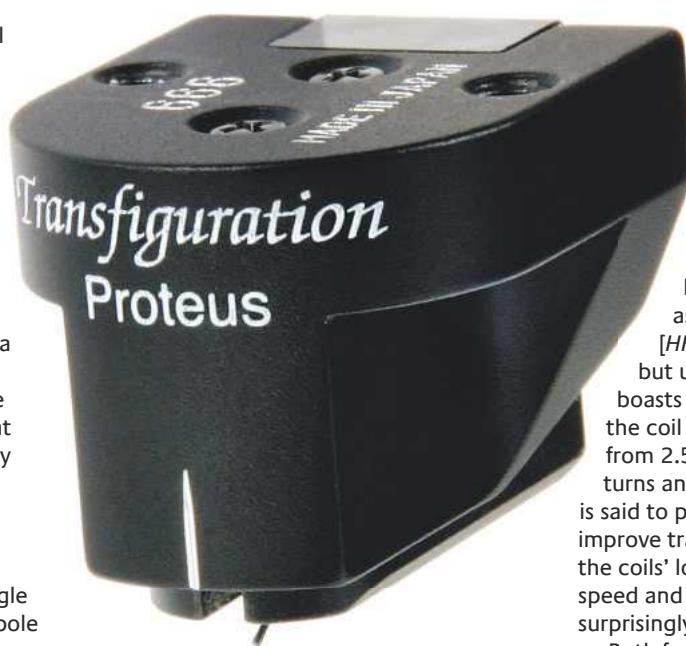
**M**any revered moving-coil cartridges have been with us for donkey's years, it seems, with revisions appearing every decade or so. Transfiguration has introduced new models more often than that, but all of them are based on a design first seen in 1992 – and that includes the new £2995 Proteus reviewed here.

However, its creator, Seiji Yoshioka [see boxout] claims that the Proteus comes another big step closer to the unachievable ideal of a cartridge that adds nothing and takes nothing away from the signal, like the proverbial 'straight wire with gain'.

## PRINCIPLES OF DESIGN

In most moving-coil cartridges, a single large magnet is used, with yokes or pole pieces front and back to complete the magnetic circuit. The cantilever with coils at its back end is attached to a damper and suspension block, which in turn is mounted to the magnet's rear yoke. At the front, the cantilever projects through a hole in the front yoke, which is thus closer to the moving-coils than the rear one.

From the start, with the original Transfiguration AF-1 [HFN, Apr '92], Yoshioka's concept was to take advantage of powerful modern magnet materials, getting rid of this asymmetry by using small ring magnets front and rear. Unlike the



yokes, these two magnets could both be extremely close to the coils.

This principle has been used in all Transfigurations to date, including the Orpheus flagship, which the Proteus replaces. Also familiar from previous models is the 0.3mm diameter boron cantilever, and the Ogura PA diamond stylus that's long been popular with other cartridge brands too. With a major radius of 30µm, this is arguably an extended-contact type rather than a true line-contact, but with its minor or scanning

**LEFT:** This new model uses the same aluminium body shell as the existing Phoenix, but has a lower output; there are some important differences inside too

radius of 3µm it can give a very detailed sound.

All these features – and the bow-fronted aluminium body as used on the Phoenix model [HFN, Mar '08] – are old news, but under the skin the Proteus boasts some genuine advances. First, the coil impedance has been reduced from 2.5ohm to 1ohm, by using fewer turns and a thicker silver wire. This is said to produce less phase shift and improve transient performance, while the coils' lower mass improves overall speed and mechanical responsiveness. Not surprisingly, the output is lower too.

Both front and rear magnets are now neodymium iron, where previously the front one was samarium cobalt, and this gives a higher magnetic flux density. A higher grade of mu-metal (3S instead of 2S) has been used for the square core which the coils are mounted on, and this is said to improve transparency and information retrieval 'without sacrificing musicality'.

## A DETAILED PRESENTATION

I set the Proteus up in my usual SME 10 to begin with but I also had outstanding results with the Rega RP8. From the start, I found that the Proteus could give a layered, relaxed and yet detailed presentation that allowed you to focus on any instrument or voice in a recording.

Listening to *Bob Marley And The Wailers Live* [Island ILPS 9376], the Proteus seemed to smooth out the rough edges of the live sound, even on the momentary intrusion of mic feedback near the start of 'No Woman, No Cry'. Yet it clarified every part of the mix, with the backing vocals beautifully distinct and separated, for example.

And vocals could be lovely, if sometimes a little less forward and tactile than expected. This was the case with Jennifer

## IMMUTABLY MUSICAL

Engineer, classical music lover and a keen concert-goer, Seiji Yoshioka founded the Immutable Music company in 1992 to launch his Transfiguration AF-1 moving-coil cartridge. Having studied existing conventional MCs, Yoshioka had identified the inherent problem of asymmetry in the magnet system, and came up with his own solution. 'I see a unique heritage of recorded music from the golden age of stereo LP productions somewhat in jeopardy,' he says, 'Unless people have a chance to hear more of those glories. The personal mission led me to capitalise on the unique potential of the "ring-magnet" and "yokeless" construction.' After the AF-1, later models all followed the same principle, though with many refinements. The Transfiguration Orpheus, introduced in 2007, would remain the flagship of the range until the arrival of this new Proteus.

## TRANSFIGURATION PROTEUS

A fair few miles of vinyl have spun under the bridge since our last look at a Transfiguration moving-coil [the Phoenix in *HFN* Mar '08] but this latest Proteus model obviously shares its key DNA. Like that Phoenix model, the Proteus is a low-ish output MC offering 230µV/100ohm (re. 1kHz/5cm/sec) and delivers a very extended HF response with an equally 'hot' upper treble. Indeed, few MCs can match the +8.4dB/16kHz (lateral) response of the Proteus which has a sharper sting than even the Sumiko Blue Point [*HFN* Mar '11]. Fortunately this treble peak is beyond the typical range of vinyl noise even if the presence and lower treble are still obviously emphasised. The fact that vertical cuts offer a similar response (+7.3dB/16kHz) bodes well for the uniformity of the sound 'image' from peripheral backing instruments to strong vocal performers [see Graph 1, below].

Ultrasonic harmonics are also revealed by the extended response, so distortion necessarily *measures* high at a max. of 12-13% at 8-9kHz (-8dB re. 5cm/sec). Once again the symmetry of Transfiguration's 5N silver coil/µ-metal core generator is reflected in the symmetry of its in-phase/anti-phase THD [see Graph 2]. The real gain in Transfiguration's latest MC design is realised in its enhanced tracking ability, the Proteus still showing a strong arm/cartridge resonance of +15dB and a moderate 17-19cu compliance and yet it clears the maximum 80µm groove with aplomb and suffers <0.6% THD through the toughest +18dB/315Hz test track. Readers may view a comprehensive QC Suite test report for the Transfiguration Proteus MC pick-up by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'Download' button. PM

Warnes on 'Ballad Of The Runaway Horse' from Rob Wasserman's *Duets* [GRP 97 121]. Here Wasserman's double-bass was excellent, sounding woody, full-bodied and decisively rhythmic; and it was even more captivating on the next, uptempo, track 'Gone With The Wind.'

On Eric Clapton's classic 1970s rock album *Slowhand* [RSO 2479 201] the Proteus again seemed able to lay out a complex mix so that you could home in on any part without effort. On 'Lay Down Sally', over the hypnotic shuffle beat of Carl Radle and Jamie Oldaker, Clapton's seemingly understated solo guitar stood out nicely, clear of the busy background.

'Walk On The Wild Side' from Lou Reed's *Transformer* [RCA LSP4807] was exquisite, Reed's vocal finely nuanced with air around it, while Herbie Flowers' amazing bass was just 'there' like a force of nature, but with such detail that you could not help picking up on the faint twangy buzz of the string against the fingerboard on each note.

When the Thunderthighs girls sang louder, you could almost see the fader being pushed up. On this track I felt that the balance and general demeanour of the Proteus was almost beyond criticism.

*Muddy Waters: Folk Singer* [Discovery HDR 1001] sounded magnificent, too. Waters' vocals



**ABOVE:** A body that extends well forward makes it hard to see the stylus when setting up, but by the same token it isn't dangerously exposed when in use

were just epic, and his slide guitar was really spine-tingling, with the real scratch of the bottleneck on wire-wound strings.

Finally, one of the most revelatory moments with the Proteus came when I put on one of the old Decca stereo records of István Kertesz conducting the LSO in Dvorak's *Scherzo Capriccioso* [SXL 6044].

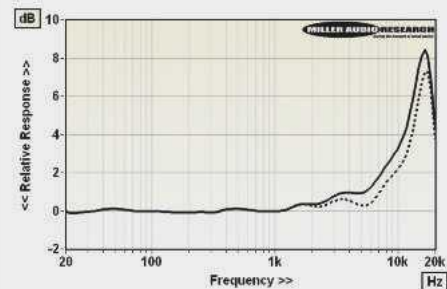
Here the instrumental timbres just seemed to glow with fresh life, while the dynamics and vigour of the orchestra were stunning. The loud and uninhibited timpani were heard to the full but their impact didn't muddy the overall texture. It was a joyful sound. ☺

**'Instrumental timbres just seemed to glow with new life'**

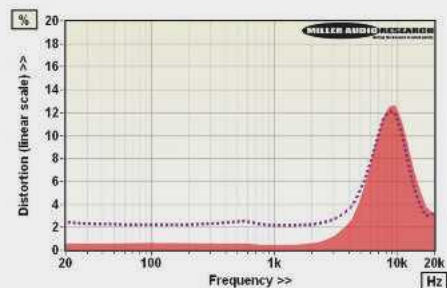
### HI-FI NEWS VERDICT

This won't be the first review to describe a Transfiguration as neutral-sounding, seeming to reveal the character of other parts of a system rather than displaying much of its own. The measured frequency response contradicts this, but for me the Proteus actually didn't often sound over-bright. On most recordings it seemed nicely balanced, pleasing the ear with effortless detail and musicality.

Sound Quality: 85%



**ABOVE:** Frequency response curves (-8dB re. 5cm/sec) lateral (L+R, solid) versus vertical (L-R, dashed)



**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)

### HI-FI NEWS SPECIFICATIONS

Generator type/weight	Moving coil / 7.8g
Recommended tracking force	1.7-2.2mN (2.0mN)
Sensitivity/balance (re. 5cm/sec)	230µV / 0.36dB
Compliance (vertical/lateral)	17cu / 19cu
Vertical tracking angle	30 degrees
L/R Tracking ability	80µm / 80µm
L/R Distortion (-8dB, 20Hz-20kHz)	0.55-12.1% / 0.54-12.5%
L/R Frequency resp. (20Hz-20kHz)	-0.4 to +8.4dB / -0.3 to +10.3dB
Stereo separation (1kHz / 20kHz)	24dB / 21dB



# KEF M500

KEF's advance into the headphone market has been modest, even cautious. The M500 breaks no moulds – but is good to look at, comfortable to wear and sounds good too  
 Review & Lab: **Keith Howard**

**K**EF has a special place in the pantheon of UK loudspeaker companies, earned because there's a case for contending that it prevented our domestic loudspeaker industry following the path to complacent self-destruction that killed off our motorcycle and car industries.

KEF founder Raymond Cooke was determined to raise loudspeaker design from the alchemical to the rigorously scientific, and in the process he dragged other UK manufacturers, old and new, along with him. But, so far as I know, he never contemplated diversification into headphone manufacture.

Although designing and making a headphone moving-coil driver isn't a million miles from designing and making a tweeter, history teaches us that the normal trajectory to headphone manufacture was from microphones, not loudspeakers. All the long-established names of the headphone industry – AKG, Audio-Technica, Beyerdynamic, Sennheiser – can still be found on microphones too.

## DESIGN AWARD WINNER

But in a modern world where personal music players have crowned the headphone king, there is an obvious temptation for speaker manufacturers to ignore precedent and join the party.

KEF wasn't the first to succumb and it surely won't be the last but, given its illustrious history of innovation, those of us who remember the KUBE, coupled cavity bass loading, UniQ, etc, can be forgiven for wishing that the £250 M500 – an over-head model that complements the M200 earphone – was more radical in some way.

It would be unfair to call it 'me too' but, let's face it, the world isn't short of supra-aural closed-back headphones with boosted bass – it's awash with them.

**RIGHT:** Capsules that fold right up into the headband make for a compact hard-shell zip-up carrying case that will fit into a large pocket, briefcase or man bag/handbag

That said, the M500 – deserved winner of a Red Dot Design Award – unquestionably cuts a dash. I don't know who undertook the industrial design but they made a fine job of it: the M500 looks neat and classy yet rugged, and is practical too if you listen on the move.

Capsules that fold up into the headband make for a hard-shell zip-up case that's small enough to be pocketable (providing you mean a *large* jacket or coat pocket) and twin connecting cables, one with an inline mic/remote and the other without, assure versatility whatever the music source; ¼in and aircraft adapters are included too.

KEF doesn't say a great deal about the technology underpinning the M500 beyond the facts that the driver is 40mm in diameter, uses a neodymium magnet system (of course) and has a voice coil wound with copper-clad aluminium wire

to save on moving mass. An 'acoustics precision tuning plate' between the driver and earpad 'is precisely positioned to optimise clarity, dynamics and bass weighting', and the flat earpad incorporates memory foam. The frequency response published on the web page has such a large-range vertical axis – 100dB!

– that the trace looks fairly flat, but closer inspection shows that it at least resembles the uncorrected responses in our Lab Report, the disparities perhaps reflecting KEF's use of a different artificial ear.

'KEF's award-winning M500 unquestionably cuts a dash'

Having just praised the industrial design, I do have two criticisms. First, I found it difficult to achieve a consistent seal between the earpads and the artificial ear when performing the frequency response measurements. This is not an unfamiliar problem with supra-aural designs and – despite the artificial pinnae being derived from anatomical measurements on real ears and being made from silicone rubber that compresses similarly when subject to the clamping force of a headphone – it is unclear how this correlates with behaviour on real lugs. It's reasonable to suppose, though, that some users will find it difficult to achieve consistent bass performance with the M500 because of sealing issues.

Second – and now I'm riding a familiar hobby horse – insufficient attention was paid to the vibrational behaviour of the M500's headband. If you listen to pink noise on one channel you can clearly hear the carry-over of quite high-pitched sound to the inactive capsule.

Given that the control of spurious vibration is such a key aspect of loudspeaker design, it never fails to surprise me when a headphone from a respected speaker manufacturer evinces this problem. Someone should have been listening out for it. Many users of the M500 will, of course, be





**LEFT:** Proving once again that silver-grey and black is a restrained but classy colour combination, the M500 looks smart and rugged – a cut above headphone *hoi polloi*

are reviled for but there's something to be said for it in the madcap world of diverse headphone tonal balances, and the M500 does compromise adroitly.

### WALKING A KNIFE EDGE

A track which illustrated well what I mean is the late Chris Jones' 'Fender Bender' from the Stockfisch CD *Roadhouses & Automobiles* [SFR 357.6027.2]. You'd hope for fine recording quality from Stockfisch and you get it here, but this isn't the 'classic' audiophile album that's long on fidelity and short on music.

In the Shure review [*HFN* Oct '14] I described this track as a romp, and so it is: a duel – or rather, a friendly rivalry – between the acoustic guitar and electric bass, both of which play helter-skelter in a piece brimming with fun and energy.

Clean, unexaggerated bass is essential for its success, otherwise it gets bogged down rhythmically, and here the M500 walked a knife edge: not so full at LF that the tempo dragged unacceptably but not ideally light-footed and agile either.

It lacked a little of the crispness of a tonally leaner presentation and some details were less telling as a result, such as the quiet entry of the electric organ. All told this track was fun and enjoyable, as it should be – but not quite as breathlessly thrilling as I know it.

Vaughan Williams' Oboe Concerto is a world away musically but in its way it told a similar story of the M500's sonic spoor. The recording on EMI *Eminence* [CD 5753112], with the RLPO under Vernon Handley and Jonathan Small as soloist, is a good one but not the ultimate in respect of transparency and 'air', so it doesn't take much in the way of clouding anywhere in the chain of ➔

happily unaware of such issues. What they will notice is that it is light, does not think it's a vice for your head, and so is comfortable to wear. Unlike circumaural headphones, supra-aurals are also much better at avoiding 'sweaty ear syndrome' if that's something which afflicts you in the course of long listening sessions.

### MUSICALLY AGNOSTIC

KEF claims that the M500 is musically agnostic, that it performs as well on opera as it does on hip hop. I don't spend significant time listening to either but, yes, it's fair to say that the M500 suits a broad range of programme. It has what I perceive to be a little too much bass, but crucially, it isn't so overblown that it submerges everything in low-frequency stodge.

Moreover, the M500 doesn't compound the problem by having a reticent presence band, so while its overall tonal balance veers to the warm side, its music making doesn't lack verve. I compared it with the Audio-Technica ATH-ES88, winner of our recent group test [*HFN* Aug '14], and the M500 emerged as more darkly-hued tonally but, I thought, preferable across

a range of musical genres, with a delivery more like what you'd expect from a good pair of loudspeakers.

This is not to say that the M500 offers the ultimate in resolution or musical insight but it charts quite a canny course between the many modern headphones that are slugged by excess bass and my favourite type: one that delivers a faster, more analytical sound but which, on the downside, some listeners find too 'forward'. Compromise may be what committees

### HEADPHONES VS. SPEAKERS

Loudspeakers are designed to radiate sound into a room, while headphones direct sound into a small volume of air in front of the user's ear or eardrum. This is a very different acoustical situation, so while the basic driver components are essentially the same a headphone driver has a completely different set of requirements to a loudspeaker driver. One result is that it is often feasible to use a single headphone driver to cover the entire audible range, something that is very tricky to achieve for a loudspeaker. Aside from differences in the drivers, one of the main difficulties in designing a good headphone is that the performance can change a lot depending on the user's head and ear shape and how well it fits. The acoustical performance can even change if the user simply removes and replaces the headphone. Because of this, a great deal of design work is done to ensure a consistent performance irrespective of the seating of the headphone.



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## KEF M500

I've never seen this before: KEF's specification for the M500 quotes error limits for both sensitivity (103dB  $\pm$ 4dB for 1mW at 1kHz) and impedance (32ohm  $\pm$ 15%). Taking sensitivity first, 103dB for 1mW into the nominal 32ohm impedance is equivalent to a voltage sensitivity of 117.9dB for 1V, comfortably within  $\pm$ 4dB of the 118.9dB we recorded as an average for the two capsules at 1kHz. This figure puts the M500's sensitivity towards the top end of what is typically achieved by modern moving-coil designs, justifying KEF's use of CCAW for the voice coil and guaranteeing that the M500 can be driven to healthy (or unhealthy) sound pressure levels by anything from hand-held sources upwards.

As for impedance, we measured a minimum modulus of 33.5ohm and a maximum of 38.7ohm (20Hz-20kHz), figures which certainly fall within a range of  $\pm$ 15% but with a little higher than 32ohm as the nominal figure. This means that a 10ohm source impedance will cause a frequency response modification of less than 0.3dB and 30ohm a change of less than 0.6dB: figures which mean that in normal circumstances the M500's tonal balance will be little affected by the output impedance of whatever drives it.

As the uncorrected capsule frequency responses show [Graph 1, below] the M500 has a modest upturn in output below a few hundred hertz and a well developed peak at around 3kHz resulting from normal interaction with the artificial ear. When these responses are averaged and diffuse-field corrected [green trace, Graph 2], the result is a modest bass lift coupled with a pretty flat presence band output. What these graphs don't show is the large variability in low frequency response obtained during measurement, caused by sealing problems to the artificial pinnae. When a good seal is achieved, bass output is shelved up by more than in these graphs. KH



**ABOVE:** KEF's exploded diagram shows the aluminium alloy capsule frame, 40mm driver, acoustic tuning plate and supra-aural memory foam earpad

reproduction to render it a little fuzzy at the edges. Via the M500 there wasn't the luminosity necessary to make the solo part really 'sing', nor the clarity to imbue the distinctive string harmonies with their full mesmerising effect.

Without access to a differently balanced headphone you might be perfectly content with its sound or perhaps point a finger at the recording, but as I said earlier the M500 is a compromise: an artful one but a compromise nevertheless. It trades transparency for a fuller, warmer, more easy-going quality: a trade-off that you must buy into if the M500 is to appeal.

### UNEXPECTED TREATS

Generally this isn't the best of recipes when it comes to extracting the most from old rock recordings but the fact that the M500's ratcheting back of transparency is more a function of its tonal balance than a true lack of resolution meant that it coped OK with the two examples I tried.

Free's 'I'll Be Creepin' [ripped from Island CRNCD 2 518 456-2] usually benefits from a modicum of bass lift, so it and the M500 got on just fine. Eric Clapton's 'Double Trouble', from *Just One Night* [Polydor 531 827-2], doesn't welcome such LF assistance so readily but nonetheless it remained enjoyable, if not quite so redolent of the frisson of a live stage performance as it is with a really

good pair of speakers. The M500 also confounded my expectations on other occasions.

Take the 96kHz/24-bit Naim label download of Fred Simon's 'Poetspeak': a jazz piano trio recording that can easily suffer from a thickened piano sound. I expected this to come over as a little turgid via the M500 but it didn't.

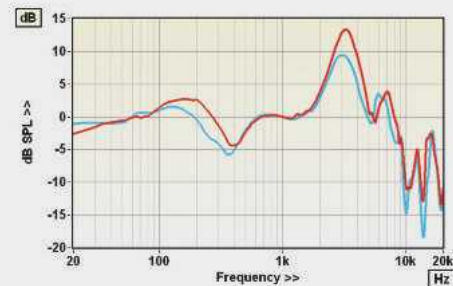
Yes, the unusually natural percussion sound wasn't delivered to ultimate effect but headphones generally don't do treble that well – clean and well balanced is usually the best you can hope for, and the M500 delivered on that.

This recording has an unusually fine double-bass sound too, which I expected the elevated LF of the M500 to befuddle somewhat, but apart from one moment of conspicuous excess it didn't. The bass was a bit full but it was under control and tuneful. Stir in the clearer than expected piano sound and it was an unanticipated treat. ☺

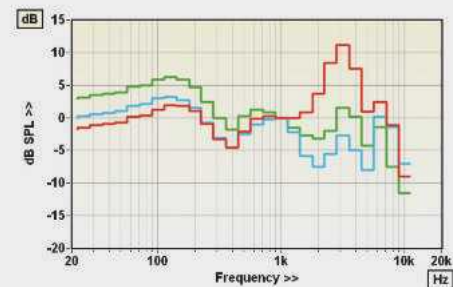
### HI-FI NEWS VERDICT

KEF's first step into the headphone market may have been less bold than some of us hoped for but the M500 is a creditable debut nonetheless. Slickly designed and reassuringly constructed, it's balanced tonally on the safe, warm side of neutral. With too much bass for my taste, its sound lacks some immediacy, but many will appreciate the equanimity this confers with harsher-sounding recordings.

Sound Quality: 82%



**ABOVE:** Bass lift rather depends on the seal achieved around the pinnae (ear) – the better the fit, the stronger the bass. Presence band is relatively flat



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

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL at 1kHz for 1Vrms input)	118.9dB
Impedance modulus min/max (20Hz-20kHz)	33.5ohm @ 21Hz 38.7ohm @ 3.3kHz
Capsule matching (40Hz-10kHz)	$\pm$ 4.0dB
LF extension (-6dB ref. 200Hz)	<20Hz
Distortion 100Hz/1kHz (for 90dB SPL)	<0.1% / <0.1%
Weight (inc cable and 0.25in connector)	224g



# Pro-Ject MaiA

Staking further its claim on the 'entry-level' sector, Pro-Ject introduces MaiA, a £399 DAC/amp with nine inputs! Is this the perfect 'starter' amp for the 21st century?

Review: **Ken Kessler** Lab: **Paul Miller**

**C**onfession: I gave Pro-Ject's Heinz Lichtenegger the name for this baby, while he was plying me with Austrian wine when I visited Pro-Ject in March. He showed me his tiny, 206x36x165mm integrated amp, with no fewer than five means of digital ingress, for only £399. All I could think of were the legendary 'My First Sony' adverts.

'How about "My Audiophile Integrated Amplifier"?' I suggested. 'After all, you've just graced budding enthusiasts with the Elemental turntable. You could call it "MaiA", which sounds suitably new-age.' Next thing I know, a few weeks later it's on the stand at the Munich Show, the 'MaiA' banner emblazoned across the stand.

## IT'S ABOUT COMPACTNESS

Having had a sneak preview *chez* Lichtenegger, I wasn't quite as surprised as those buzzing around it, but the importance of the model was not lost on anyone who appreciated how much was forced into a chassis the size of one of those 'airport exclusives' sold air-side before their official UK launch – trade paperbacks, they're called. Thanks to a credit-card sized remote, the ergonomics hadn't been compromised by these dimensions, save for one detail that I'll get to in a moment.

Back during my days of abject poverty, circa 1974, all I could afford was a Pioneer PL12D turntable, a Teleton amp and a pair of Sennheiser HD414s. Speakers were out of the question, because I lived in a B&B and the walls were thin. The Teleton worked brilliantly as a headphone amplifier. This system reminded me of that beginner's package, but then I realised: this is as much about *compactness* as anything else, because there are more purist offerings on the market for less money.

What the MaiA offers over NAD's like-priced D 3020 [*HFN* Aug '14] are

**RIGHT:** The MaiA's modular construction is clear – note the separate PCBs for USB, Bluetooth and MM phono stages, line/headphone output and the Class D power amp

smaller size and a greater number of inputs, including the above-mentioned moving-magnet phono stage, just begging for a Pro-Ject Elemental. The NAD is arguably more powerful, and somehow more audiophilic, but you could also say the same for rivals like the various Carot One products, the Musical Fidelity V90 modules and many others. It is a very crowded sector.

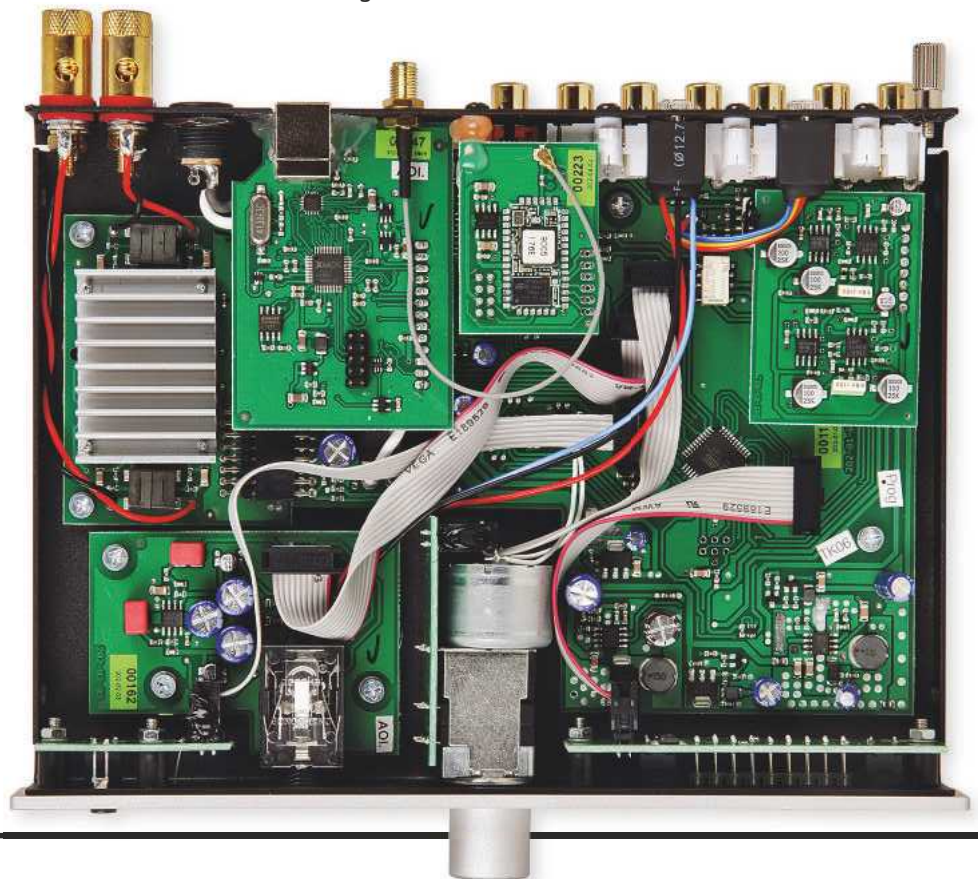
Pro-Ject, or rather Heinz, wants the MaiA to appeal to those who might otherwise be seduced by inferior solutions like iPod docks: 'civilians' rather than hard-core audiophiles. It is thus deliberately easy to use, and it worked faultlessly in finding Bluetooth sources via its aerial. It can be expanded by Pro-Ject's own tuners, CD players or transports and streamers in the S-Series Box range.

Trying hard not to think like a jaded old audiophile, I treated it like something that might end up in the hands of a true novice. In other words, I treated it like a toaster or kettle – I didn't once look at the owner's manual, I expected it to be as straightforward as an iPad.

Rated as a 25W device [but see Lab Report], its Flying Mole Class D power amp modules have enough power for easy-to-feed speakers like those super-inexpensive, Andrew Jones-designed Pioneer SP-BS22 speakers – the ones I don't think were offered here, but which Americans could get for as little as \$129 a pair.

The headphone amplifier works beautifully with the Musical Fidelity MF100s, assorted B&Ws, Focal's Classic and

'The MaiA is deliberately designed to be easy to use'





even Sennheiser HD414s. Insertion of a 1/4in jack mutes the speaker outputs.

It's the speaker terminals that present the only grounds for complaint about ergonomics: Pro-Ject stuffed four multi-way binding posts so closely together that one cannot get one's fingers around the knurled caps to tighten them sufficiently. I fitted banana plugs, but users of bare wire or spade connectors won't be amused. They are colour-coded, but you'll need to look closely. If there's ever a mkII version, Pro-Ject should space these on either side of the input socket for the mains, from the external power supply.

One must stress that this will handle a full nine sources, accommodating a turntable, a CD player or transport, network music players, computers, two channels off TV or a DVD/Blu-ray player, wireless devices and USB sources. According to information at hand, the MaiA is fitted with a CS4344 DAC from Cirrus Logic. Its S/PDIF coaxial input supports up to 192kHz/24-bit; the two S/PDIF Toslink optical inputs support up to 96kHz/24-bit; Bluetooth accepts aptX and A2DP profiles while the USB (Audio Class 2) Type-B connection employs an XMOS chipset for asynchronous USB streaming up to 192kHz/24-bit from a PC or laptop.

### MICRO BOX DESIGN

**Pro-Ject is not alone in squeezing so much into such a small space, as surface-mount technology advances inexorably: there are MP3 players fitted into USB sticks in this day and age. Aside from the grumbles about the too-close speaker terminals, Pro-Ject has managed to deliver exactly what Heinz Lichtenegger wanted to produce as a partner not only for the Elemental turntable, but for the rest of the Box range. The MaiA, however, is more of a one-stop purchase than the rest of the Box models, which seem to encourage upgrading. It's just good enough to keep the general music-lover happy without sowing seeds of dissatisfaction... provided it's matched with speakers that need no more than the MaiA can muster. Like that Teleton that kept me happy in my basement digs, the MaiA can power most modern headphones, while sounding smooth and clean through speakers when not driven too hard. But wind it up, and it sounds like what it is: a small package that delivers enough and no more.**

As for the built-in MM phono stage, this is based upon Pro-Ject's Phono Box design and it's pretty good: I plugged in a Kiseki Blue moving-coil and it had enough gain for nearly acceptable performance without a step-up. Other analogue line-level inputs include the one mini-jack input on the back and two unbalanced RCA pairs, in anticipation of an external tuner for those who don't want to depend on streaming radio via iPlayer or other on-line sources, as well as any CD players or tape decks.

### TRYING ALL THE OPTIONS

Not having an Elemental, I fed the SME 30/12 with Kiseki Blue and Denon step-up into the MM stage, but all other listening involved the Astell & Kern AK120 with high-res music from HDtracks [now available in the UK, see p14]. I also used an iPod into the 3.5mm line socket, a MacBook Air with Fidelia and iTunes, and the Marantz CD12/DA12 CD player. Pioneer's SP-BS22 speakers were connected with some old QED cables, and the headphone listening was via Musical Fidelity MF100s.

Dealing with the MM stage was easy: the MaiA sounded better-than-competent with what is effectively a Box phono stage, reasonably quiet, and with good, but not overwhelming dynamics. The Band's

**ABOVE:** Available with black or silver fascia, the MaiA provides press buttons for scrolling through the sources, a motorised rotary for volume, 1/4in headphone socket, standby button

eponymous second LP [Mobile Fidelity MFSL 1-419] features the staggering 'Up On Cripple Creek', with some of the most natural-sounding and dynamic drum kicks you'd want to hear. The MaiA stopped short of turning the sound into the cardboard boxes Jerry Allison used for the percussion on the Crickets' 'Peggy Sue', the impact only slightly compromised. All-in-all, given that I'd just heard them through the Musical Fidelity Nu-Vista 800 [see p38] into Wilson Alexias, it wasn't even remotely disappointing: Pro-Ject's MaiA, rather than kicking ass, pushes tush.

Same with the footfalls in The Four Seasons' 'Walk Like A Man' [Rhino Box Set 8122795939], via the Astell & Kern through the Bluetooth input, as well as the Toslink optical. I managed to feed the same disc through every digital input, via AK120, iPod, Mac and Marantz, eventually settling on the best set-up: the coaxial input. Not that any were bad.

Where the MaiA separates the audiophiles-in-waiting (or seasoned listeners) from casual users is in the pecking order of the digital inputs. Most of you will have already decided, for example, that Bluetooth will not worry coaxial, that USB can be variable at best, that Toslink is consistent if not necessarily as natural-sounding as the coaxial input.

But generalisation doesn't work. That weary old warhorse, the Marantz CD12, with red book-only CD playback, still sounded amazing through the RCA phonos, in classic line-level, gee-it-could-be-1988 conditions. But then HDtracks' 192kHz/24-bit version of Linda Ronstadt's *The '80s Collection* was magnificent through Fidelia via USB, especially the orchestration during her work with Nelson Riddle: 'silky' best describes it, replete with grandeur. ➔





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## PRO-JECT MAIA



**ABOVE:** The back is crammed with three line, MM phono and five digital inputs, speaker terminals and a 3.5mm stereo line out, plus input for power from a wall wart

What proved challenging, then, was defining the overall sound of the MaiA, its transparency being sufficient to produce a digital hierarchy, but one that wasn't unbending. The Wonders' 'That Thing You Do' [Play-Tone Records 664055 2, CD-single], like The Band, has a powerful drum sound, underpinning piercing, twangy guitar work. It sounded warmest through the CD12/DA12 into line inputs, but the Astell & Kern player is so good that via optical it lacked only a trace of the attack – drum kicks as well as guitar leads – heard via CD. Satisfying? I could imagine lesser speakers masking the differences, while decent headphones would, by their inherently analytical nature, emphasise them.

### CLARITY UNCOMPROMISED

For a £399 purchase, assessing the MaiA is surprisingly complex. Badfinger's *Timeless ... The Musical Legacy* [Apple CDSAPCOR 31] has upper frequency energy that can veer toward the brittle. The MaiA's voicing favours an analogue stance, such that the recording could almost sound tube-like in its lack of treble aggression. Kodo's *Heartbeat: Drummers Of Japan* [Sheffield Lab CD-KODO] benefited from authentic, lengthy decay, the MaiA providing enough air to deliver an impression of the drums' sheer scale.

I don't want to be too dismissive of the Bluetooth connection, but it rarely seemed as satisfying as the wired connections, while streaming from Amazon's Cloud Player revealed deficiencies compared to HDtracks' 24-bit offerings. The latter's *Doors* albums possessed sit-up-and-listen levels of command and coherence,

the ringing and the liquidity of Ray Manzarek's Vox Continental electric keyboards so redolent of the era that I could almost smell patchouli.

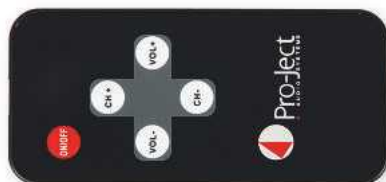
It took the subtlety and sophistication of Lou Rawls' *At Last* [Blue Note CDP 7 91937 2] to demonstrate the MaiA's refinement, after having accepted that this quality is present in the MaiA only if one respects the limitations of its small Class D amplifier. Despite bouts of ZZ Top and Mountain, which showed that it can deliver power and mass up to a point, it took the title track duet between Rawls and Dianne Reeves to demonstrate how MaiA can convey, too, the vocal textures, nuances and, yes, the kind of clarity that Reeves' voice possesses.

Irrespective of the type of input – and I played the track directly from CD as well as transferred to the two digital players in my possession – the soaring nature of Reeves' vocals tax the resolving power of a system in a couple of ways: dynamics, timbre, detail. The MaiA showed slight traces of haze, but not enough to compromise the clarity. It avoided sibilance, and preserved a sense of scale. Did it dazzle? Not quite. But then, the price is less than the cost of the interconnects I used between it and the Marantz. ☺

### HI-FI NEWS VERDICT

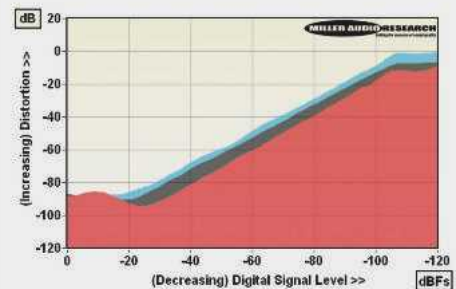
One needs to put the MaiA into context: it may be aimed at budding purists, but it's also a 'lifestyle' offering for customers unlikely to worry about upgrades. For the former, it's a great starting point because it accommodates so many sources, including legacy components. For the latter, this needs just speakers and sources for an all-singing/all-dancing system that will satisfy for years. Pro-Ject strikes again.

Sound Quality: 80%

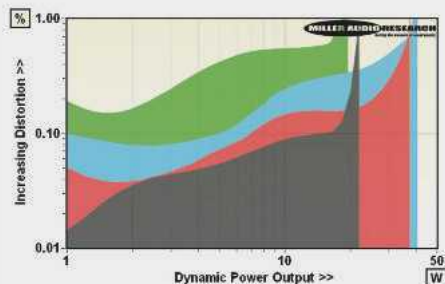


Shoe-horning this plethora of technologies into so compact an enclosure means that compromises in performance are almost inevitable. The choice of Class D module limits the 8ohm power output to 22W (not 25W) under both continuous and dynamic conditions, a quality that also holds true for the 37W, 41W and 20W outputs into 4, 2 and 1ohm loads [see Graph 1, below]. The nature of the amp's bridged output also makes its extremely sensitive to variations in the loudspeaker load with frequency – the output impedance climbs from a modest 0.06ohm through bass and midrange to 3ohm at 20kHz and 18ohm at 48kHz while the response dips from –0.45dB/20kHz and –10.1dB/100kHz into 8ohm to –3dB/20kHz into 4ohm. So it'll sound markedly 'sweeter' (duller, even) into tougher HF speaker loads. Distortion also climbs with frequency and level (0.06% to 0.9% from 20Hz–20kHz at 10W) while the elevated noise floor restricts the A-wtd S/N ratio to 81 dB (re. 0dBW).

Measured via the 4-5ohm headphone output, USB and S/PDIF digital inputs realise a full 1.81V (re. 0dBFs) and A-wtd S/N ratios of 96.0dB and 100.2dB, respectively. The responses are slightly different too, the S/PDIF input having a +0.45dB peak at 18kHz with 44.1/48k media while via USB there's a –0.6dB dip at 20kHz. Higher-res 96kHz and 192kHz media files have –1.2dB/45kHz and –4.5dB/90kHz responses, respectively. While the asynchronous USB input offers a slightly poorer (~16-bit) S/N ratio, jitter is very much lower at 35psec than the 1000psec+ incurred via S/PDIF at the same 48kHz sample rate. Readers may view comprehensive QC Suite test reports for Pro-Ject's MaiA (amplifier, S/PDIF and USB performance) by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



**ABOVE:** THD vs. decreasing 24-bit/48kHz digital level, S/PDIF (1kHz, red) vs. USB (1kHz, black; 20kHz, blue)



**ABOVE:** Dynamic output vs. THD into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) loads

### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	22W / 37W
Dynamic power (<1% THD, 8/4/2/1ohm)	22W / 37W / 41W / 20W
Output impedance (20Hz–20kHz)	0.06–3.5ohm (4-5ohm headphone)
Frequency response (20Hz–100kHz)	–0.4dB to –10.1dB
A-wtd S/N ratio (Amp/ S/PDIF/USB)	80.9dB (0dBW) / 100.1dB/96.0dB
Distortion (20Hz–20kHz, Amp/DAC)	0.055–0.89% / 0.0037–0.0085%
Digital jitter (48kHz/96kHz/USB)	1060psec / 425psec / 35psec
Power consumption (Idle/Max. o/p)	4W / 55W
Dimensions (WHD)	206x36x165mm



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# Classical Companion

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

NEW SERIES

## Richard Strauss *Also sprach Zarathustra*

Film-goers who bought the music for the 2001 *A Space Odyssey* excerpt were faced with 35 minutes of dense orchestral music to cope with, says **Christopher Breunig**

**W**e know he sported one helluva moustache and that his anguish at the ill-treatment of a horse may have inspired the 2011 Hungarian film *The Turin Horse*, but when Friedrich Wilhelm Nietzsche completed *Also sprach Zarathustra*, a treatise on the destiny of man (1883-5), it was abstruse even for the student of philosophy.

The English conductor Norman Del Mar, who wrote a critical three-volume study of the music of Richard Strauss (he also recorded *Also sprach Zarathustra* with the LPO – Cfp, 1978), quotes the composer as saying his eight-section orchestral tone poem was a 'homage' to Nietzsche rather than a musical portrayal of his written discourses. Others have suggested that the concept of a 'Superman'

➔ Karajan, 1973 – the vinyl choice and arguably first choice in any medium

⬅ This 1918 portrait of Richard Strauss by Max Liebermann is in the Staatliche Museum Berlin



[Übermensch] would nonetheless have had a strong appeal, one also reflected in his scores *Macbeth*, *Don Juan* and *Ein Heldenleben*.

### EARLY PERFORMANCES

Scored for a large orchestra and premiered in 1896 by the composer in Frankfurt, *Also sprach Zarathustra* has long been criticised as banal in parts. But Del Mar argues that it is interesting throughout – 'hauntingly beautiful and vivid'. Indeed, when Bartók (then aged 21) heard the 1902 Budapest premiere he was inspired to resume working as a composer. Obviously a late romantic piece in style, it did, at the end, offer a forward-looking, unresolved clash of two tonalities: B major alternating with C major. Stravinsky's trademark bitonality came later!

Like Mahler, Richard Strauss enjoyed cordial relations with the Amsterdam Concertgebouw and its musical director Willem Mengelberg: their 1898 performance of *Also sprach Zarathustra* impressed the composer, and in 1903 they gave joint London concerts of Strauss's music. (Not yet cleared by the

Denazification Board, he was similarly feted returning to the Royal Albert Hall in Oct '47.)

In 1944, a live performance of the work Strauss conducted with the Vienna Philharmonic was captured on Magnetophon tape. Outside the UK it was issued on Vanguard, Turnabout, Eterna and Intercord LP labels – although when DG boxed his old studio recordings here in 1976 it was not included in the set [2740 160, 5LPs].

Although Mengelberg (to whom *Ein Heldenleben* was dedicated) had left no recording, there was, in 1935, an efficient Boston version under Koussevitzky [RCA 09026 60929 2]. Clemens Krauss was another conductor the composer admired: his 1950 VPO recording – admirably straightforward – is now part of a Decca mono set

[see boxout]; you can also hear an upload to YouTube.

Even finer was the 1954 taping with the Chicago SO under Fritz Reiner, which was

done as an early stereo recording – although first issued here in mono [HMV ALP 1214]. He made a further version shortly before his death, when he was seriously ill (1962). Produced at Symphony Hall by Richard Mohr and engineered by Lewis Layton this was immediately acclaimed as an audiophile LP.

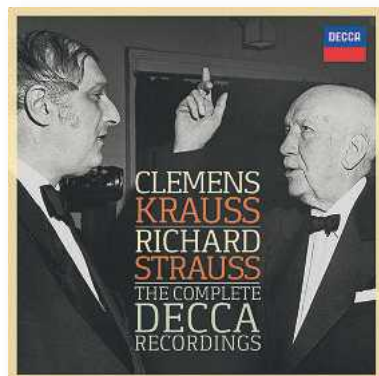
A half-speed mastered Mobile Fidelity LP using the Ortofon cutting system was issued [MFSL 1-522] – though I never felt it superseded the RCA Red Seal pressing SB 6158. And as well as the company's own 'Living Stereo' CD [09026 61494 2] we had a JVC XRD transfer [JMCXR-0011]. Now it's in a comprehensive budget-price CD set [see boxout].



In his early 30s, Walter Legge was already rising through the ranks at HMV, but he was also writing newspaper reviews. In January 1938 he heard Mengelberg conduct *Zarathustra* with the BBC SO: a performance which he thought masterly yet 'unable to disguise the vulgarity and inherent weakness of the work'. In it Legge found a 'super cinema sentimentality... music no better than something written for *Hymns Ancient and Modern*'.

### KARAJAN AND KUBRICK

Perhaps that's why we had no early Karajan recording with Legge's Philharmonia Orchestra (they first did it with Maazel in 1962). It was the piece which Karajan wanted to make as his VPO debut recording for Decca/RCA in 1959 (he'd made his DG debut that same year with *Ein Heldenleben*) – although, suggests



biographer Richard Osborne, it proved 'soft-centred' in both the playing and the engineering. (A misjudgment on both counts!)

In his memoir *Putting the Record Straight* [Secker & Warburg] producer John Culshaw relates Karajan's delight at the importation of a huge church bell for the 'Night Wanderer's Song' section, although he left the problematic dubbing of the organ part to the production team – the Sofiensaal didn't have an organ and one from a military chapel outside Vienna was used (it was played by Ray Minshull, then Culshaw's assistant).

For Stanley Kubrick's cult film *2001, A Space Odyssey* the director wanted the 22-bar opening section, 'Sunrise', from this 1959 recording. Curiously, Decca insisted that the tape usage be uncredited (Karajan threatened to sue!) and, seizing the

➔ From the 1970 Salzburg Festival, this live performance captures Karajan in his prime with his Berlin orchestra

↙ The composer with Clemens Krauss, whose VPO recordings have been recently reissued by Decca



moment, rival record companies quickly brought out compilations with other pieces on the film soundtrack. Apparently, on MGM's own 'soundtrack' LP, Karl Böhm's 1958 DG version was substituted!

Karajan is unquestionably the 'Superman' of DG's 1973 recording with the Berlin Philharmonic Orchestra: the sound is sumptuous, wide-ranging, and Karajan's control of the work masterly. The engineer was Günter Hermanns (for the less satisfying 1983 digital remake too). This is arguably the library choice: on vinyl, [see boxout]; on CD, DG 447 441-2; on SACD, (Japan) Universal UCCG-9067.

But I am going to nominate instead their live performance

recorded at the 1970 Salzburg Festival by Austrian Radio [Testament SBT 1474]. This has a more spacious and natural acoustic, and the performance (intonation occasionally not quite as perfect as in the studio version), has a more relaxed atmosphere – Karajan is in his element. It sweeps to a peak in the 'Tanzlied' but Michel Schwalbé's violin solos were even sweeter on the 1973 DG. The 'Midnight Bell' is somewhat tinny on both versions.

It's hard to recognise the orchestra as the same on another Testament version from Salzburg (1962), where Karl Böhm conducts the BPO in a rigid and dull account of the score [SBT2 1489]. This is certainly one to avoid! ☹

## ESSENTIAL RECORDINGS

### VPO/Clemens Krauss

Decca 478 6493 (5 CDs)

The historic choice: eight of the symphonic poems and the complete Salome (Christel Goltz in the title role), all with the VPO.

### Staatskapelle Dresden/Rudolf Kempe

Warner Classics 4317802 (9 CDs)

Strauss' complete orchestral music: a definitive recording project from late in Kempe's career.

### BPO/Herbert von Karajan

Speakers Corner DG 2530 402 (180g vinyl)  
Speakers Corner's recut has raised the level and eliminated some obvious compression which marred DG's own LP. You can see my full review at <http://www.hifinews.co.uk/news/article/r-strauss/737>.

### Chicago SO/Fritz Reiner

RCA 0888837905527 (11 CDs)

All the CSO/Reiner 'Living Stereo' Strauss recordings were boxed earlier this year together with older Chicago and Pittsburgh/Columbia versions of, eg, Don Juan; Don Quixote; Ein Heldenleben. Both the 1954 and '62 *Zarathustra* are here.

### Boston SO/William Steinberg

DG 479.1081 (Blu-ray Audio)

We reviewed this as a 96kHz/24-bit download [HFN Aug '12] but now neither Linn Records nor Highresaudio can offer it in the UK. I suggested the R Strauss (1971) was 'sonically impressive... a complete revelation', dazzlingly executed and a fierce competitor to Reiner or Karajan.



# Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

## Gram Parsons *GP (180g vinyl)*

Released in 1973, it is now considered one of the few crucial country records of the era. **Steve Sutherland** revisits this debut solo LP, now reissued on 180g vinyl

See that bloke standing over there, the burly one with the tattoos and the handlebar moustache, the one who looks a bit like a Hollywood version of a Hells Angel? Well, he reckons he's slept with more murderers than anyone else on the planet.

Now this would surely be reason enough to be buying him his third pint of Guinness mid-afternoon in this Central London pub. But the fact that he's spent the best part of the last hour explaining how he knew Charles Manson pretty well and hung out with him before the whole Helter Skelter thing went down, bedding the willing majority of the female menagerie that made up Manson's murderous Family before they all got banged away is actually *not* the reason we're here.

### PROBLEM-FIXER

The gentleman we're supping with is, in fact, Mr Philip Kaufman, a rock n' roll tour manager and problem-fixer of admirable longevity whose main claim to infamy is that he's the dude who stole and burned Gram Parsons' body back in 1973. And

that particular shenanigan is what we really want to know about so here, direct from the hearse-driver's mouth, is how the whole dang heist went down.

Just out of gaol on a marijuana bust, Kaufman had been hired to take care of The Rolling Stones when they'd breezed into Los Angeles to put the finishing touches to their *Beggar's Banquet* LP. Along for the ride was Gram, who'd met The Stones in London when he'd briefly but influentially been a member of The Byrds, taking the band in a new C&W direction with the *Sweethearts Of The Rodeo* album.

When The Stones returned to the UK, Kaufman took up with Gram, helping him put together his group The Flying Burrito Brothers, and then 'executive nannying' Gram through the recording of his first ever solo album, *GP* (much more of which in a moment).

'Executive nannying' pretty much meant trying to monitor and sneakily reduce

'He decided to steal Gram's body from the airport and fulfil the pact'

### STEVE SUTHERLAND

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...



Gram's drug intake, bail him out of gaol when the occasion arose and generally make sure that he was in a fit state to function – a full-time task and no mistake.

Anyway, Gram had been putting down tracks for his second solo album, which was eventually to be released under the title *Grievous Angel*, and decided to head out for a long weekend to The Joshua Tree on the edge of the Mojave desert to, as we are wont to say these days, chillax with a couple of friends.

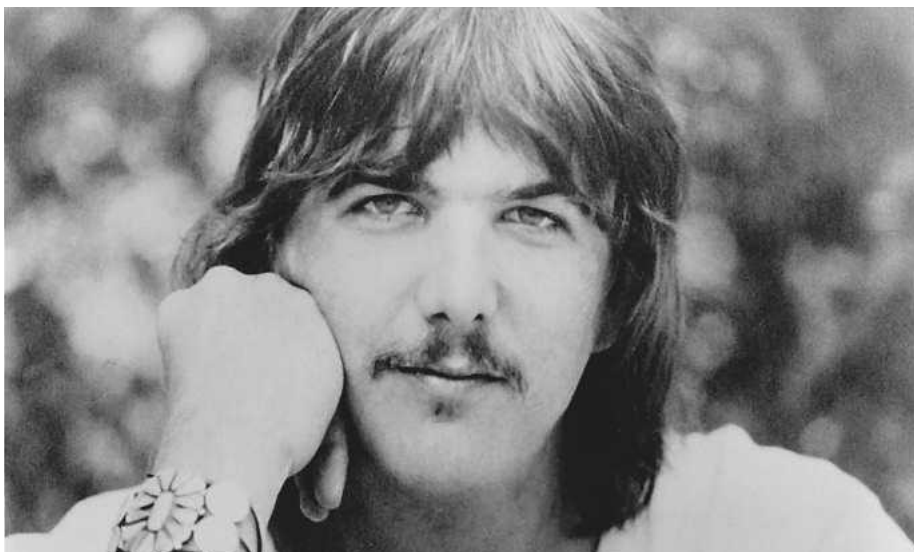
Unfortunately, Gram's idea of chillaxing was to neck a ton of booze and morphine which put a premature end to him aged just 26 in Room 8 of the Joshua Tree Motel. One of the freaked-out chums called Kaufman and, during the immediate to-ing and fro-ing and covering

of tracks, the K recalled a pact he'd made with Gram at the recent funeral of Clarence White, the Byrd who'd been mown down by a drunk driver while loading his guitars into a van. The pact said that if either of them snuffed it, the other would burn the body out in the desert.

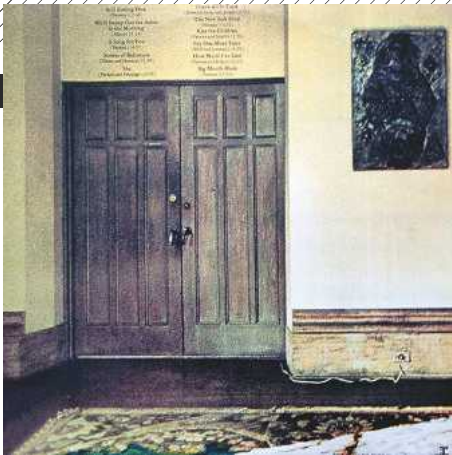
### OUTLAW ENDING

Mindful of the pact and the fact that Gram's much-loathed stepfather was trying to get his body flown back to an ancestral plot down South (according to the K, something to do with his gaining of inheritance money), Kaufman decided to steal Gram's body from Los Angeles International Airport and fulfil the pact.

Borrowing a friend's hearse, he conned the authorities at LAX into releasing Gram's body into his custody, drove the coffin, drunk, back out into the Joshua Tree National Park and duly torched it under the stars – an attractively outlaw ending which served to seal the Gram Parsons legend upon which Mr Kaufman, as we are only too happily and conspiratorially aware, has wine and dined out ever since.



➔ Singer, songwriter Gram Parsons pictured in 1972 for a Reprise Records publicity shot. He was born Cecil Ingram Connor III in Florida in 1946 and joined The Byrds in 1968



➔ Priced £14.99, the 180g Reprise reissue of Gram Parson's *GP* is available mailorder online from [www.rockbox.co.uk](http://www.rockbox.co.uk)

And it's majorly due to Mr Kaufman's pyrotechnical escapades that we're now celebrating the *GP* album. Released in 1973 on the Reprise label, it was monumentally ignored by the record-buying public who, despite its many good reviews, just weren't ready for what Gram referred to as his Cosmic American Music.

What he meant by that was taking in all the marvellous and varied influences American music had to offer down through the ages and, through personal experience, locating the deep sincerity within each.

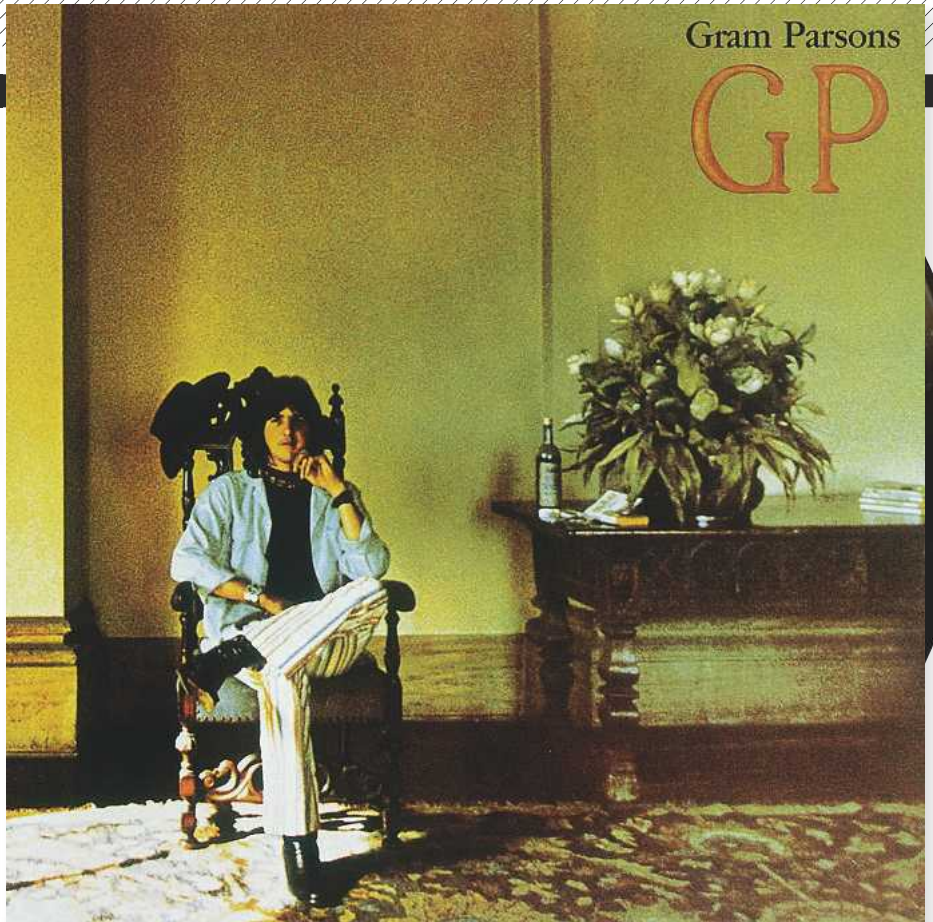
Gram was a rich Southern boy – born Cecil Ingram Connor III, with a Harvard education – hardly the typical background of a rock 'n' roll rebel. But he was steeped in Southern soul, deeply moved by the honest sentimentality he found in the work of Country giants like George Jones and in the gritty realism of Merle Haggard and was wowed by Elvis Presley's gaudy majesty.

Elements of all these can be found on Gram's solo debut, *GP*, all rinsed through with his personal vein of sore self pity.

### PERFECT IMPERFECTION

It's all in the voice really – cracked, stretching to express an emotion that it's not quite able to reach and all the more a perfect fit to its subject matter for that imperfection. In the same way that Johnny Cash makes those almost-notes sing out his pain, so Gram's voice with, as the *Rolling Stone* critic Bud Scoppa so aptly put it, its 'warring qualities of sweetness and dissipation', infected the traditional song format with a sobering reality.

In Gram's trembling hands the old country staple 'Streets Of Baltimore' is almost too much to take and his own indecipherable 'New Soft Shoe' sounds like the most nostalgic thing ever. These are lachrymose songs, full of sorrow, doubt, and resignation but it's the way Gram's voice can't quite cope with conveying the lyrics' meaning in the traditional tuneful



sense that brings them to life – a strength in his weakness of which he was so self-aware that he introduced Ms Emmylou Harris just to underscore the point.

Harris was discovered and introduced to Gram by his ex-Byrd and Burrito Brothers buddy Chris Hillman who'd spotted her performing in an obscure country trio. Her angelic voice, wrapped in loving harmony around Gram's, renders songs such as Joyce Allsup's 'We'll Sweep Out The Ashes In The Morning' and the George Jones weepie 'That's All It Took' nigh-on unbearably sad.

And I know it's a crazy thing to say, but even without the vocal magic I've been banging on about, *GP* would still have been a great album because the playing is so assured and on-the-emotion.

### TOP NOTCH CREW

It's no surprise as Gram wasn't shy in using his money and contacts to ensure he got the very best to work with – guitarist James Burton, drummer Ron Tutt and pianist Glen D Hardin from Elvis Presley's Taking Care Of Business Band plus top country players, steel guitarist Al Perkins and fiddler Byron Berline. This was a top notch crew.

But as I said, *GP* didn't sell when it was first released and then along came the likes of The Eagles and took what Gram invented – the genre we now call Country Rock – high into the charts; a bone of contention with Gram that he took to his funeral pyre.

But once the tale of Kaufman's escapade began to make the rounds, Gram's work became imbued with the glow of notoriety and romanticised retrospect. In much the same way that we find it impossible to listen to Nirvana without loading it with Kurt Cobain's gruesome end, so *GP* sounds all the more poignant filtered through Gram's fiery exit.

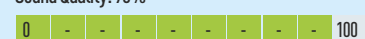
Whether such mythologising is artistically or even morally right is hardly here nor there. The simple fact is that *GP* is considered a bona fide classic now and that's exactly how it should be. ☺

### RE-RELEASE VERDICT

This is a fine-sounding reissue that does justice to both the authoritative playing and Parson's sometimes fragile vocal performances. The low end is full yet taut, Hal Battiste's sax contributions punch through the mix with an arresting rasp and the pedal steel guitars ring true, ensuring the set retains its deep south authenticity.

It's an excellent pressing, too. There was no weave to be seen on our copy, no problem with inner tracks distorting and the volume remained consistent across both sides. Easy to recommend. HFN

Sound Quality: 90%







# The Zombies *Odyssey & Oracle*

After a sojourn into Abbey Road Studios to make an album that could match the success of a three-year-old hit single, it was back to the day jobs for this band of would-be stars from St Albans. Until the LP found its way into the hands of an A&R man from the US...

Words: **Johnny Black**





The Zombies, a straight-out-of-school rock'n'pop quintet from St Albans, suffered the misfortune of scoring a massive international hit in August 1964 with their first single, 'She's Not There'. Instant worldwide success is the kind of thing teenage bands can usually only dream of, but in many cases – The Zombies among them – it can be too much too soon.

It took the band three years to produce anything else that could match either the pop bliss or the commercial appeal of 'She's Not There', and when they finally did it with *Odyssey And Oracle*, no-one seemed to notice.

By the middle of 1967, their fortunes had plunged so far that they extricated themselves from their Decca Records deal. 'We had decided to break up,' remembers keyboardist and songwriter Rod Argent, 'but we wanted to make a swan song album and produce it ourselves. We took that idea to CBS and asked if they would fund us.'



Chris White, Hugh Grundy, Rod Argent, Colin Blunstone, Paul Atkinson



### INTO ABBEY ROAD

Understandably, CBS didn't exactly push the boat out to welcome The Zombies, but the company did advance them £1000, which was just about enough to pay for some studio time in Abbey Road.

What they had going for them, apart from Argent's songwriting and keyboard smarts, was the heart-stoppingly beautiful voice of Colin Blunstone and additional songsmithery skills in bassist Chris White. The other two band members, guitarist Paul Atkinson



'Time Of The Season' single released in 1969



Playing 'She's Not There' on *Top Of The Pops* in 1964



Early '60s promo shot



and drummer Hugh Grundy, completed a formidable line-up that made The Zombies an exceptionally gifted combo both onstage and in the studio, but with three barren years behind them, it was debatable whether they could deliver the goods for their new bosses.

Abbey Road boasted the best studios, equipment and staff of any UK facility at the time. The other side of the coin though, was that it was run like a factory with maximum three-hour sessions, strictly observed lunch breaks, and close-down at 10pm lest neighbours complain about the noise.

### POP CLASSICS

On the 1st of June, 1967, The Zombies got stuck in at Abbey Road, completing a lighter-than-air Chris White pop gem called 'Friends Of Mine', and starting work on Argent's delicately wistful 'A Rose For Emily'.

'I'd been reading a William Faulkner short story called *A Rose*

*For Emily*,' he told pop scribe Alec Palao, 'and while the song's got nothing to do with that, I liked the way the title sounded. So I got up really early and I just started to write the song from that.'

Just one day later, they laid down the euphorically optimistic 'This Will

Be Our Year', and it should have been obvious to CBS that the album was shaping up to be a classic. Unfortunately, no-one from CBS

was paying much attention.

'CBS was only just starting in this country then,' remembers Blunstone. 'The staff was only three or four people. To my knowledge, I never saw anyone from CBS at the studio or afterwards.'

As the days rolled by, the tally of impeccable pop classics continued with their only blatantly hippy anthem, 'Hung Up On A Dream' and the avant-garde, experimental anti-war protest song 'Butcher's Tale (Western Front, 1914)'. ☺

'Could the band deliver the goods for their new bosses at CBS?'



## VINYL ICONS

### PRODUCTION NOTES

The Zombies were one of the first non-EMI acts to record in Abbey Road and they soon found that despite its reputation for being unusually regimented, Abbey Road staff didn't lack a sense of humour.

'They used to play tricks on us,' remembers Chris White. 'One time, for example, we'd been having trouble with Rod's Hammond organ because leads kept blowing. Then, all of a sudden, we looked at the controls and there was all this smoke pouring out. Someone had crawled underneath and put a smoke bomb in there. So we had a lot of fun in Abbey Road, despite the strict hours!'

Like many artists who used Abbey Road, The Zombies have nothing but praise for the staff. 'Geoff Emerick produced "Time Of The Season", and Peter Vince mixed it,' recalls Rod Argent. 'A lot of the rest was produced by Peter, a lovely man.'

'Although Chris and Rod were very interested in the technological side,' confirms Vince, 'they were not very knowledgeable about it, and it was therefore accepted that we were a team. In all fairness, they did rely on me, and I was left to get the sound unless they didn't like it.'

Colin Blunstone remembers the considerable distance between the studio and the control room. 'We were on a tight budget, so when the time came to do my vocals, I'd run down to the studio. By the time I arrived, I'd be out of breath, so I'd have to stand there for a few minutes to recover. I realised before long that all the running wasn't saving time or money at all.'

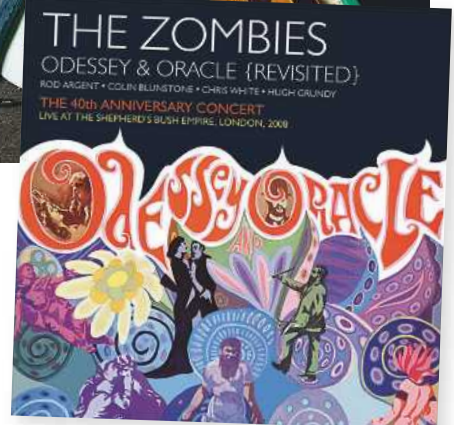
In the years since *Odessey And Oracle*, Blunstone has recorded in a great many studios, but still says it is one of his favourites in the world.



LEO CINICOLA



LEO CINICOLA



Chris White has recalled the writing of 'Butcher's Tale...', saying, 'I got emotionally involved reading about the First World War. I had an old pedal harmonium-type American organ and we actually carried it into Abbey Road to record.'

Although a strong songwriter, White rarely sang on Zombies tracks, but in this instance, vocalist Colin Blunstone was reluctant to tackle it, feeling that the subject matter was not consistent with their other material. White explains how the situation was eventually resolved, remembering, 'Rod said, "You've got to sing this because your wavery, nervous voice is fine for it." It was such a weird track.'

**'Abbey Road moved the piano because we were five minutes over time'**

### STUDIO CONFLICT

The band were clearly in high gear, producing strong new songs almost daily, but other bookings at Abbey Road forced them to move to Olympic Studios for two superb cuts, 'Maybe After He's Gone' and 'Beechwood Park', both of them composed by White.

'Beechwood Park' was actually an evocation of the lovely heat at the time in England,' he says. 'I had this image of a little village where I lived. This was actually the place where they filmed the movie *The Dirty Dozen*. It was right in the wilds of the country, which I loved.'

The album's major hit single, 'Time Of The Season', was another

one which produced conflict in Abbey Road. Its composer, Rod Argent admits, 'I was incredibly dogmatic

about things in those days. If I wrote a melody, I wanted it sung exactly the way I'd written it. I'd make

Colin do it over and over, and he got p\*\*\*ed off. Finally he shouted, "Look, if you're so bloody good, you sing it." I must have been

insufferable. But we stuck with it and in the end, in a very bad mood, he sang it beautifully.'

'It had one of those broken sort of rhythms, which was a bit unusual,' he continues. 'The bass riff is "Stand By Me", although I didn't copy it consciously. There's a very unusual chorus chord sequence going into the major at the end. Originally we had a rhythm section under that but it was a production decision after we'd recorded the track to cut out the rhythm section so you just had that a *capella* bit.'

In mid-August, they crafted 'Care Of Cell 44' and 'Brief Candles', and wrapped the sessions with 'Changes' on November the 7th.

'We were overdubbing harmonies on "Changes" and the piano man came in,' remembers White. 'He moved the piano while we were

↖ In 2001 Colin

Blunstone (second from left) and Rod Argent (fourth from left) reunited to record together. In 2004 they began using The Zombies name again. In 2008 the original line-up marked the 40th anniversary of *Odessey and Oracle* with gigs at Shepherd's Bush Empire

↖ The pair caught on camera at work in the recording studio in 2011

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*Positive Feedback, December 2011*

# Alternate Format Discography



DAVID LEVINE

➔ Blunstone and Argent in a publicity shot from 2011

still singing because we were five minutes over time.'

*Odessey And Oracle*, now regarded as an all-time classic, was received by the moguls at CBS with precious little enthusiasm, and barely limped into the market place in April 1968. By this time Colin Blunstone had returned to his first job, at the Sun Alliance Insurance Company, Hugh Grundy was selling cars and Paul Atkinson was learning to be a computer programmer.

The Zombies were finished and Rod and Chris were planning a new band under the name Argent. Then, by a curious twist of fate, the former leader of Blood Sweat And Tears, Al Kooper, who was now working for CBS in New York as an A&R man, paid a visit to the London office and happened upon a copy of *Odessey*.

## A LAST GASP..

Loving what he heard, Kooper insisted that CBS America should release it. His first choice for a single was the abrasive anti-war anthem 'Butcher's Tale...'. It stiffed, as did several subsequent singles.

It wasn't until the spring of 1969 that, as a last gasp, CBS released 'Time Of The Season' in the US. 'It registered six sales in one day in Boise, Idaho,' says Chris. 'That was all it took to get the CBS machinery into gear. They sniffed a hit.' By April it had sold over a million copies.

What could have been the renaissance of The Zombies became, instead, just another one-off hit single, because Rod and Chris were now totally committed to Argent. 'Going back just to make a few quick bucks seemed a bit false to me,' reflects Rod.'

'It's ironic,' points out Blunstone, 'that for most of the time The Zombies were together we didn't earn a lot of money, but I gather there were lots of bogus Zombies bands going out in the wake of "Time Of The Season", making a fortune claiming to be us.' ☺



Despite the increasing status of this album over the years, it has not generated a huge number of re-releases, perhaps largely because the band did not produce any extra or unused tracks during the recording process. As a result, most editions have retained more or less the original track listing and thus preserved the integrity of the original album.

## ORIGINAL VINYL EDITION (1968)

On its initial release in the UK, *Odessey And Oracle* came in stereo [S 63280] and mono [63280] editions, in what was then the standard flipback package, featuring a laminated front cover and a plain back panel.

One indication of how little CBS was prepared to invest in the album was that when the studio work was completed, and the £1000 budget spent, CBS pointed out to the band that they had not made a stereo master mix but a mono one. In order to get a stereo mix, Rod Argent and Chris White were obliged to finance the extra mixing sessions needed themselves, at a cost of £200.

Unfortunately, perhaps because they didn't have the cash, 'This Will Be Our Year' remained in mono until it appeared on the exquisite *Zombie Heaven* 4CD box set, which was released in 1997.

Another telling fact was that the sleeve artist, Terry Quirk, misspelled the word 'Odyssey' on the cover of the LP, rendering it as 'Odessey'. No-one had the cash or the inclination to change it and the word remains misspelled to this day.

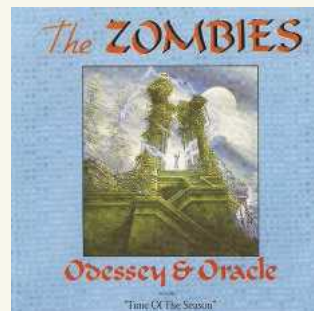
## US EDITION (1968)

This is the US release promoted by Al Kooper that CBS elected to slip out on its subsidiary label Date [TES 4013], with Terry Quirk's

psychedelic cover art over-printed near the top with blocky black type bearing the band's name and the album title, presumably on the bizarre assumption that American rock fans – who had been consuming psychedelic album cover art for several years already – would be unable to decipher Quirk's florid script. Otherwise, it's pretty much like the UK edition.

## TAIWANESE HOLY HAWK EDITION (1969)

*Odessey And Oracle* was among the first psychedelic albums to be widely bootlegged in the far east, as this Taiwanese edition reveals. Apart from Holy Hawk logos on the cover and label, it's virtually identical to the US originals.



## FIRST CD EDITION (1986)

Manufactured in France by the Rock Machine label [MACD 6], this was the first attempt at a CD version of *Odessey*. For reasons lost in the mists of time, it features alternative cover art, known to aficionados as The Old Man In The Temple. Considered a fine CD at the time, its quality has since been surpassed by other editions, and it's now very hard to find.

## RHINO CD EDITION (1987)

This digitally re-mastered Rhino edition [R2-70186] is still considered to be among the best-sounding versions of *Odessey*, and it's also the first try at giving a bit more value for money by



including a later single, 'Imagine The Swan', and another track, 'I'll Call You Mine', both of which are worth hearing and fit reasonably well with the album's tracks. It also throws in a freshly-written Rod Argent liner note.

If you're looking for a decent vinyl edition of the album, try Rhino's black plastic companion to this [RNLPL 70186].

## REPERTOIRE EDITION (1992)

Germany's Repertoire label expanded the original 12 tracks to 28 by tagging on a compilation of later-period Zombie goodies [pictured below, centre]. Interesting, but hardly essential.



## BIG BEAT EDITION (1998)

The UK's Big Beat label came up with something somebody should have thought of sooner, a 30th Anniversary CD reissue [CDWIKD 181] offering the original stereo and mono mixes of all of the album's tracks, plus a trio of alternate mixes, taking the number of tracks up to 27.

Arguably a little better in sonic terms than the Rhino editions, so if you're choosing between the two, your decision will depend to a large extent on the track listings.

## 180G VINYL EDITION (2014)

Quite why it has taken until this year to deliver a 180g version of this timeless classic is hard to understand, but Repertoire [V102S], makes a good fist of it with a stereo half-speed master, created by Jon Astley (noted for his work on recordings by The Who, Led Zeppelin, George Harrison and others) at Abbey Road Studios.

Not only has the label gone back to the cradle in terms of the studio, but it's returned to the original 12 tracks with no extras. As a package too, it's rather lovely, perfectly replicating the 1968 UK release. For the vinyl-smitten, this is the one.



# Bag O' Nails Club, *London*

At the centre of the swinging '60s, this small but exclusive club in London's Soho was where music's aristocracy might often be found, enjoying a little night-time privacy... **Steve Sutherland** takes you to the heart of the live music experience, at 'The Bag'

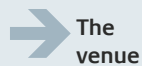
If I could reel back time and attend any gig from the past, I'd set the controls for the 11th of January 1967 and The Bag O'Nails Club, a small Dickensian drinking establishment at 9 Kingly Street, Soho, just around the corner from the fashion mecca of Carnaby Street where the Swinging London in-crowd gather to groove the night away. Come on, it's down this narrow staircase and in this cellar where it'll take a moment or two for your eyes to acclimatise, what with all the smoke, dark oak and mirrors.

## CELEBRITY GOLDMINE

I hope you've brought your iPhone because it's a goldmine for selfies with celebrities tonight. Over there by the bar are Pete Townshend and John Entwistle from The Who. In the private booth reserved for Paul McCartney is Macca himself, with manager Brian Epstein and fellow Beatles John Lennon and Ringo Starr.

Rolling Stones Mick Jagger and Brian Jones are hob-nobbing in a corner with Donovan, while Jeff Beck, Eric Clapton and Jimmy Page hold court with their various parties of pals and hangers-on.

The Hollies are here too, and The Small Faces and The Animals. Oh, and here comes Lulu, and there's Superlungs Terry Reid, joining The Beatles at their table.



The venue as it looks today, on Kingly St in London. A private members club, it offers a wide programme of music from jazz to rock and classic. See <http://bag-o-nails.com> for more



EWAN MUNRO



Business card from the mid '60s with club telephone number. The REG prefix denotes the nearby Regent St telephone exchange

A regular at the club was The Who's Pete Townshend, pictured here in 1967

They've all assembled here to see a man who only arrived in the UK on a flight from New York a few months ago but the rumours about his supernatural powers have ensured tonight's house is packed with the coolest of the cool.

Very few here have actually witnessed his magic before. Eric Burdon of The Animals had caught him during his first UK impromptu jam at the Scotch Of St James and had declared his talent 'haunting'.

Mick Jagger had seen him a while ago in a New York club and Eric Clapton had witnessed his skills at even closer hand, when he'd offered the newbie a chance to jam with his supergroup Cream at the Central London Polytechnic back in October.

The result was a quicksilver version of Howlin' Wolf's 'Killing Floor' that left Clapton – who, lest we forget, was 'God' according

to the graffiti around London – humbled and stunned. Clapton considered this new fellow, 'like Buddy Guy on acid!' and made a point to be at the Bag and anywhere else this 'genius' was showing.

It's nearing showtime and Macca leans over to Terry Reid. 'Have you seen this guy yet?' he asks. 'I hear he's amazing!'

## HAND PICKED

'This guy' is Jimi Hendrix and here he is now, with drummer Mitch Mitchell and bassist Noel Redding, his newly-formed Experience, hand-picked from auditions arranged by his manager, Chas Chandler, ex-bassist with The Animals.

Chas has recently arranged a recording contract for Jimi with Who manager Chris Stamp's Track label and the band have been in the studio all day, spending hours trying



↑ The Beatles caught on camera in the summer of 1966. Like other stars recording in London, they would visit the club after working late in the studio



↙ Brian Jones pictured in 1965, the year the Gunnell brothers bought the venue for £7000

↗ Jimi Hendrix stands above Mich Mitchell (left) and Noel Redding. Hendrix's appearance at the club in January 1967 is now regarded as having been pivotal in his career

↙ Eric Clapton (right) stands alongside Jack Bruce in this early '60s press shot. Hendrix left him 'humbled'



to master something Jimi's just thought up called 'Purple Haze'.

Jimi's smiling as he quickly sets up. He and the band are sporting the afro haircuts that already ensure they stand out in any crowd and then there's Jimi's dandy dress sense – the one that, via an old red soldier's jacket, has already got him into a scrape with the law on the London streets over a perceived disrespect for the British military.

Jimi squints at the crowd and says: 'Thanks for coming. I'd like to do this little song that I know is very close to your heart. It's number one on the charts.' He then proceeds to atomise at a tremendous volume never heard before The Troggs' version of 'Wild Thing'.

It's pure alchemy, turning the basest of pop metal into pure gold. And it's the sexiest thing this crowd has ever seen on stage. Jaws drop. Terry Reid tears himself away to go for a pee and encounters Brian Jones who informs him, 'It's all wet down the front.' Reid asks him what he

means and Jones replies, 'It's all the guitarists crying.'

Indeed, such is the impression Jimi makes, Clapton and Townshend follow him from club to club over the next few weeks, at one gig holding hands as they witness him revolutionise what a mortal can do with an amplified instrument.

### IN THE BAG

The Bag is one of a handful of 'supper' clubs on the London circuit

in the Swinging '60s. Most had been established in previous eras, shady haunts where politicians, high ranking members of the judiciary, high-end prostitutes and famous showbiz names often gambled and rubbed shoulders with the kind of gangsters that historically run any major city's underworld, after-hours activities.

By the mid-'60s, these had largely been adopted by the new groovy set and most accommodated the latest trends by providing DJ stalls, small dancefloors and cramped stages where bands might entertain the famous clientele sipping their whisky and sodas at the tables and booths.

They traded behind strict door policies under such names as The Upper Cut, Blaises, The Speakeasy, The Ram Jam, the 7½ and, of course,

The Bag which was small and select – 75 seated with 100 more standing around – and run by a bit of a dodgy geezer called Rik Gunnell and his brother John.

Rik has been a boxer, then a bouncer, then a chancer promoting all-nighter jazz gigs on Sundays in the basement of the Mapleton Hotel in Leicester Square.

Club Americana he called it, a dive which welcomed all – white beatniks and black servicemen – to

hang out from midnight till 6am for 50p with a three-course meal of tomato soup, chicken and chips and ice cream chucked in for good measure.

Ousted by the owners, he took his enterprise to bigger premises in Wardour Street where his Flamingo Club became an early '60s hot-spot featuring Georgie Fame and his Blue Flames as the house band.

The Flamingo was the venue where soon-to-be-infamous girl-about-town Christine Keeler's two lovers Johnny Edgecombe and Lucky Gordon had it out over her affections in October 1962, with the not-so-Lucky fleeing with knife wounds to the face requiring 14 stitches which he subsequently posted to Keeler – nice guy – with the threat that for each stitch she ↪



'His supernatural powers have ensured tonight's house is packed'



## CLASSIC VENUES

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



← Shot of Fleetwood Mac from the '60s with Peter Green (top right) and John McVie (top left). McVie would meet wife-to-be and future Mac band mate Christine Perfect at the club

↖ A mid '60s shot of Georgie Fame outside the Flamingo Club

↓ It was love at first sight for Paul and Linda McCartney. The plaque says it all

was gonna need two. Such goings on earned the Gunnell brothers the unwanted journalistic attention of ace reporter Duncan Webb who had brought the Maltese pimping family the Messinas to book under the famous 'Arrest These Four Men' headline in *The People* newspaper.

### SWING SOIREES

But despite the heat, the Bros remained undaunted, and started promoting and managing on the side, owning at least a piece of Georgie Fame, Geno Washington, Long John Baldry, Cliff Bennett, Fleetwood Mac, John Mayall and Rod Stewart.

They also launched The Star in Wardour Street, Club Basic in the Charing Cross Road and the Ram Jam in Brixton. But the Bag was their real baby, the place where all the big guns hung out.

It already had a pretty rich history, hosting swing soirees in the 1930s and getting mentioned by name in Anthony Powell's twelve-volume, decades-spanning novel, *A Dance To The Music Of Time*. It was a major jazz joint too, hosting the Downbeat Club every Sunday afternoon in early 1948.

By the time the Gunnells took it over, buying it for £7000 in 1965, it had a pretty seedy reputation

as a hostess club for toffs, but the brothers turned that around pretty sharpish, attracting their Flamingo crowd to the new venue and, with a licence to serve booze until three, it fast became a regular destination for pop groups needing somewhere to go after working late in the studio.

Another attraction was the Spanish chef who was on hand to serve up toasted steak sandwiches – The Bag being one of the few haunts where you could get grub past midnight in Swinging London.

Paul McCartney was apparently a big fan of the sarnie and he

turned up with the rest of the Fabs and their girlfriends one night just as the club was closing and begged the Gunnells to let 'em in where they

proceeded to scoff, quaff and dance, with The Bag entirely to themselves until the dawn's early light.

The Bag was also the scene of many an impromptu jam session. On at least one occasion Hendrix joined in with the house band, a group called Gass who provided the music for *Catch My Soul*, pop TV entrepreneur Jack Good's musical version of *Othello*, and went on to record an album called *Ju Ju* with Fleetwood Mac's Peter Green. Talking of the Mac, it was at The Bag that bassist John McVie first met

Christine Perfect, who soon became husband and wife.

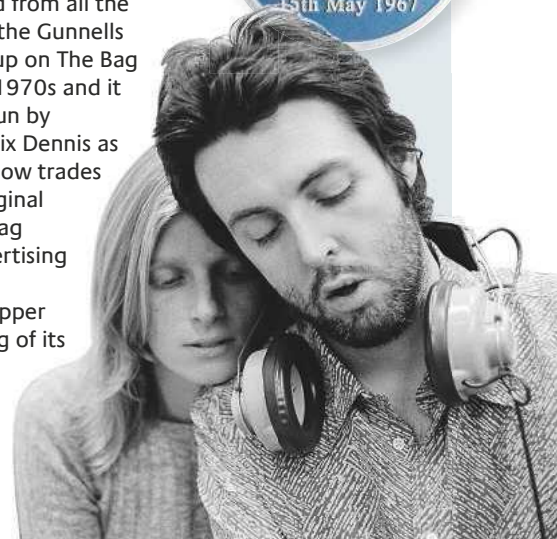
And it was also at the Bag that Paul McCartney first clocked the love of his life. He was there checking out Georgie Fame's Blue Flames after a dinner hosted by Brian Epstein on the 15th of May 1967 to celebrate the completion of *Sergeant Pepper's Lonely Hearts Club Band*, when Linda Eastman walked in with The Animals.

### ILLUSTRIOUS HISTORY

Macca was smitten and so was she. Small talk led to the pair moving on to the Speakeasy where they heard Procul Harum's 'A Whiter Shade Of Pale' for the first time, then back to Macca's to admire his modernist art collection. The rest, as they say, is history.

Exhausted from all the all-nighters, the Gunnells finally gave up on The Bag in the early 1970s and it was briefly run by publisher Felix Dennis as Miranda. It now trades under its original name, The Bag O'Nails, advertising itself as an upmarket supper club boasting of its fine wines and top-end cuisine, alongside its illustrious history. ☺

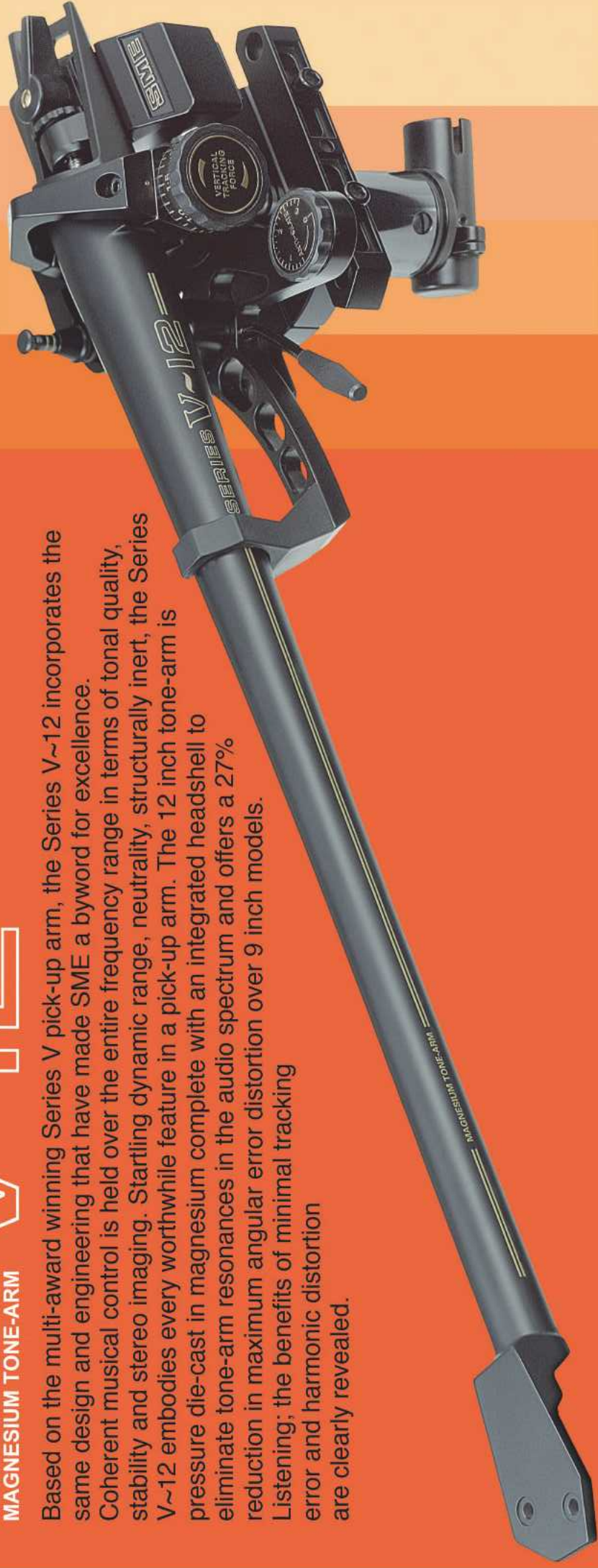
'The Fabs quaffed and danced, with The Bag entirely to themselves'



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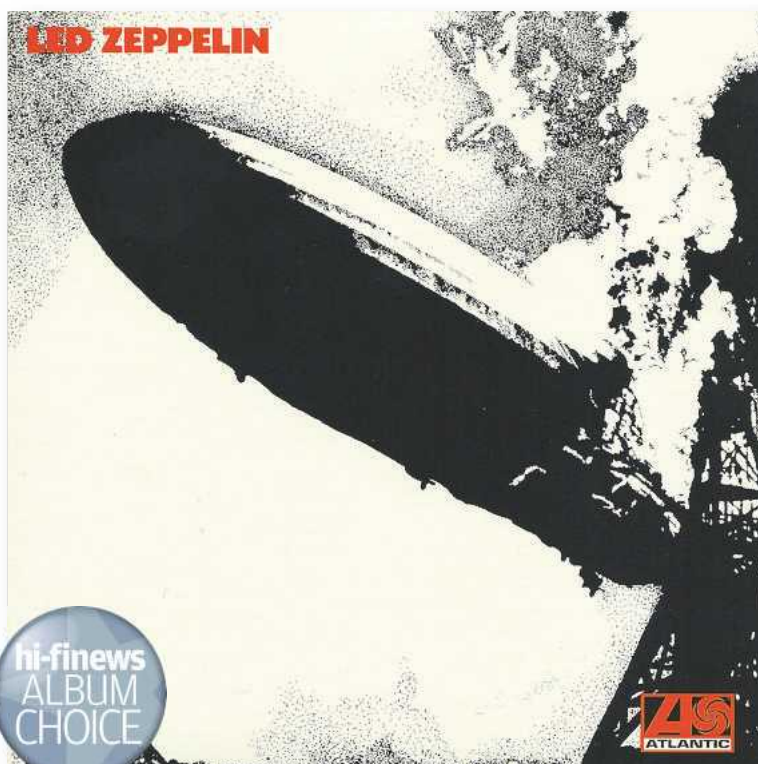
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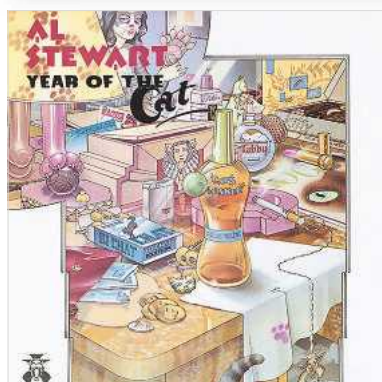
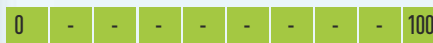
### LED ZEPPELIN

Led Zeppelin

Atlantic R2-536179 (three 180g vinyl LPs, two CDs)

Led Zep's eponymous debut from 1969, along with Jeff Beck's earlier, arguably superior, *Truth*, created a new genre of British heavy rock with an added level of artistry and sophistication that altered the way the genre was perceived. Some critics were dismissive, not realising this was the birth of one of the greatest rock acts ever, born of the ashes of The Yardbirds. This monumental release gets the full archive box-set treatment here (as do Zep II and Zep III), with both LP and CD versions of the re-mastered original, a 1969 Paris concert and a gorgeous book. A must-own, but if £99 is too steep, there are also CD-only or LP-only alternatives, with the bonus live set. (My CDs shifted in transit – it's a badly-made box.) *KK*

Sound Quality: 92%



### AL STEWART

Year Of The Cat

Parlophone 2564631083 (180g vinyl)

Not the first audiophile edition of this LP, this Alan Parsons-produced hi-fi show fave still sounds terrific, provided you appreciate Stewart's schtick – worthy troubadour, mildly eccentric Scottish singer-songwriter. Imagine a less-hippie-like Donovan and you're not far off. But to criticise this is folly: it is deservedly popular, like other albums that are so familiar they're almost fashionable to hate (*Breakfast In America*, *Rickie Lee Jones*, et al). Each song is a story, the playing is impeccable and the sound makes hi-fi systems blossom. But I don't think I can sit through the cloying and smug title-track once more without wanting to snap a stylus. *KK*

Sound Quality: 89%



### WEEZER

Pinkerton

Mobile Fidelity MFSL 1-393 (180g vinyl)

After the hit debut, which was very much a product of MTV promotion thanks to the sharp 'Buddy Holly' video (but worthy nonetheless), Weezer's sound grew edgier and arguably less melodic for the sequel. In retrospect, this was exactly the mid-1990s post-Cobain indie norm, but it retained the geekiness that made Weezer so interesting in the first place. Instead of Nirvana/Seattle slacker grubbiness, here was a group that looked like the inspiration for the gang on *The Big Bang Theory*. It may not have sold as well due to its less commercial presentation, but it's a rich, rewarding marriage of chord-driven powerpop and college radio intellectualism. *KK*

Sound Quality: 87%



### NEIL YOUNG

A Letter Home

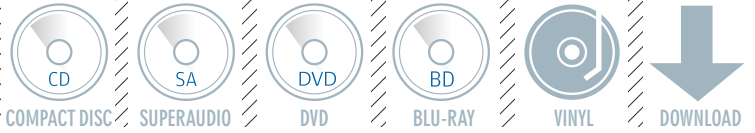
Reprise 1-541532 (two LPs, one CD, one DVD, seven 6in singles)

With the Young-championed Pono player/download service soon to arrive, it's great to see that Young still loves physical formats. This is an over-the-top box set of his latest album, which consisted of standards like 'Crazy', 'Early Morning Rain', 'If You Can Read My Mind' and Dylan's 'Girl from the North Country', recorded with Jack White in a refurbished 1947 Voice-O-Graph recording booth. Thus, while you get it on more formats than you'd care to own, the sonic quality of the source material is 'historical' at best. As an artefact for fans, this is amazing, but – like the Led Zep boxes – the card container itself is an insult: the innards shift in transit. *KK*

Sound Quality: 89%



# AUDIOPHILE: DIGITAL

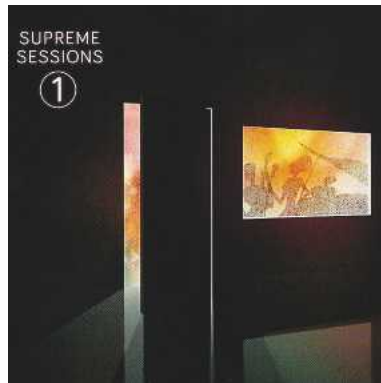


## CAROLE KING Tapestry

Mobile Fidelity UDSACD 2117 (SACD)

Reviewed in LP form in May, this joins a fair few editions of one of the best-selling albums ever. To recap, it was one of those multi-platinum early singer-songwriter LPs – its natural sibling is James Taylor’s *Sweet Baby James* – and it became the default music to simmer to, for the emos of the day: 1971. The hip musical equivalent of ‘chick lit’, it is filled with sublime songs so familiar to baby boomers that one would find it hard to imagine anyone, however young, *not* knowing ‘So Far Away’, ‘You’ve Got A Friend’ or its ten other masterpieces. Luckily, the sound was spectacular, so this SACD won’t disappoint, even if the LP is slightly more, er, emo. *KK*

Sound Quality: 89%

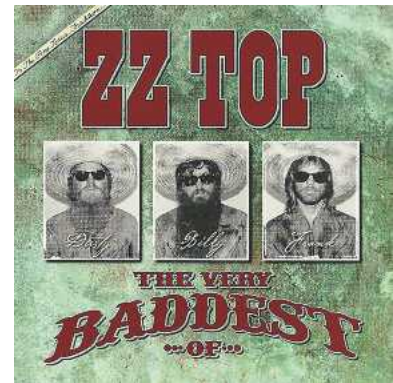


## VARIOUS Supreme Sessions 1

Marten Recordings (purist recording)

Just as the Scandinavians have commandeered the TV detective, so are they quietly doing disproportionately more audiophile material than so small a region should. Speaker brand Marten recorded this live set in Gothenburg, using just two mics. The material is a mix of jazz and vocal standards, mainly accompanied by piano and bass, and while it reeks of ‘audiophile discs’ of yore, with a certain potential to ape *soma* (as in Huxley, not Hinduism), the sound is so lush, gorgeous and realistic that you are forgiven any initial reticence. The light-hearted take of ‘Embraceable You’ brings a smile, and acoustic bass fans will cherish the whole set. *KK*

Sound Quality: 89%



## ZZ TOP The Very Baddest Of

Warner Bros 8122795864 (two CDs)

If, like me, you consider this Texan trio to be the most honest, least pretentious, ultra-heavy boogie-rock band ever, you’re in for an ear-bleeding treat. This 40-track overview (also on a 20-track single CD) gathers together the cream from three separate record labels, and also features quasi-obscure material not available in digital form. Beefed up by singles tracks, it covers pure blues to heavy metal, culminating in a wry take of ‘As Time Goes By’ – yes, as in the classic film *Casablanca*. Kicking off with ‘Gimme All Your Lovin’’, it delivers the most witty assemblage of titles this side of *Spinal Tap*. ‘Velcro Fly’? ‘Tube Snake Boogie’? Awesome, dude. *KK*

Sound Quality: 88%



## FRANKIE VALLI AND THE FOUR SEASONS

The Classic Albums Box

Rhino R122795939 (18 CDs)

If it were only because the stage triumph *Jersey Boys* has made it to the screen, courtesy of Clint Eastwood, this would be rightly adjudged a cash-in. Obvious timing or not, it happens to set the record straight on a vocal group so truly magnificent that they challenged The Beatles, The Beach Boys and Motown for chart positions, could out-falsetto The Bee Gees and gave us so many truly perfect Top 40 hits that it’s difficult to imagine the past 50 years minus ‘Sherry’, ‘Big Girls Don’t Cry’, ‘Walk Like A Man’, ‘Dawn (Go Away)’, ‘Rag Doll’ or a few dozen other smashes. The LPs are filled with delights, all 18 of ‘em in replica card sleeves (including two mini-gatefolds), although a nice booklet wouldn’t have gone amiss. *KK*

Sound Quality: 90%

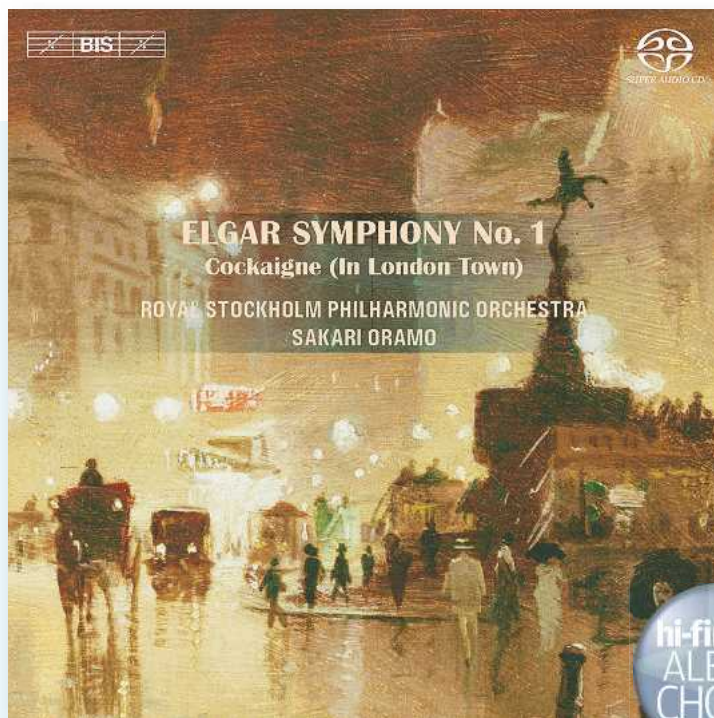


# FRANKIE VALLI and THE FOUR SEASONS

the CLASSIC ALBUMS box







### ELGAR

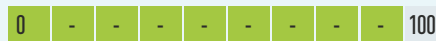
Symphony 1; Cockaigne; Royal Stockholm PO/  
Sakari Oramo (96kHz/24-bit; FLAC)

[www.eclassical.com](http://www.eclassical.com); BIS-1939

Oramo's Swedish orchestra plays Elgar with real warmth and commitment, especially the brass – glorious in the finale and at the end of the overture *Cockaigne* (where accurately dry bass-drum sounds are underpinned by organ – an option not always heard in recordings). There's some characterful phrasing here by the principal clarinetist, presumably Hermann Stefánsson [see this section *HFN* Aug '14]. In the slow movement of the symphony those

ever softer repeated string motifs are wonderfully sensitively graded. Incidentally, Oramo has his first/second violins antiphonally divided. The May 2012/Oct '13 recordings are naturally balanced, set quite forward in the Stockholm Concert Hall: a full, detailed sound. John Pickard's booklet note is very good too! Score readers will find both these works free to view as online PDFs. *CB*

Sound Quality: 90%



### NATALIE MERCHANT

Natalie Merchant (88.2kHz/24-bit; FLAC)\*

[www.hiresaudio.com](http://www.hiresaudio.com); Nonesuch/Warner Music Group 2541042

American songstress Natalie Merchant has been an audiophile favourite ever since she departed the lead vocalist's role from 10,000 Maniacs two decades ago. Her solo debut *Tigerlilly* was among the initial batch of albums selected by Warner to mark the introduction of the DVD-Audio format, while 1999's *Live In Concert* featuring covers of 'After The Gold Rush' and 'Space Oddity' is a timeless hi-fi demonstration recording. She's hardly prolific. This eponymously-titled release is only her sixth studio album – and having married, divorced, and raised a daughter it sees her songwriting reaching a high level of maturity as she touches on many personal issues. It's a finely-crafted recording as well, the sound richly balanced and sweetly toned. Her fans certainly won't be disappointed – although our Lab Report indicates you might buy the CD rather than pay more for the 88.2kHz/24-bit file. *JB*

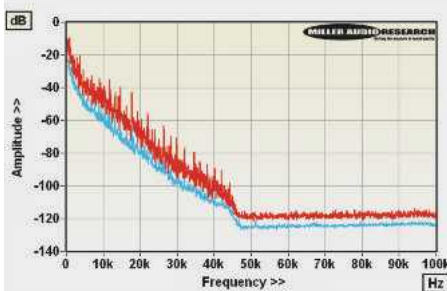
Sound Quality: 75%



### OUR PROMISE

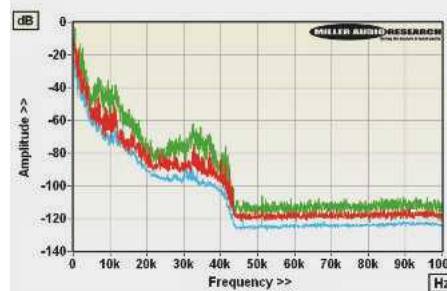
Following our Investigation feature [*HFN*, Jun '11] where we examined the claimed quality of high-resolution downloads, *Hi-Fi News & Record Review* is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of 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

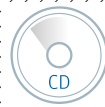


This is a genuine 96kHz/24-bit digital recording made available here in native form. Harmonics of the sparkling percussion ring out across its full ~45kHz bandwidth [see Graph, *Cockaigne (In London Town)*, above]. *PM*

### LAB REPORT



Also available as a 44.1kHz CD, this 88.2kHz download shows signs of being a distorted upsample with sub-20kHz music signals reflected beyond 22.05kHz [see RMS spectrum, blue, and single sample spectrum, green]. *PM*



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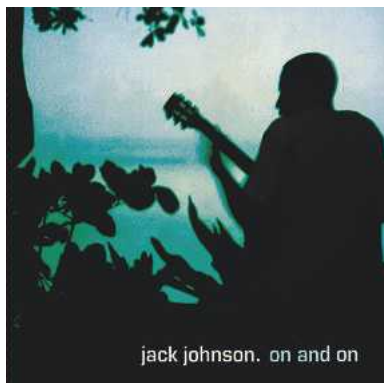
BLU-RAY



VINYL



DOWNLOAD



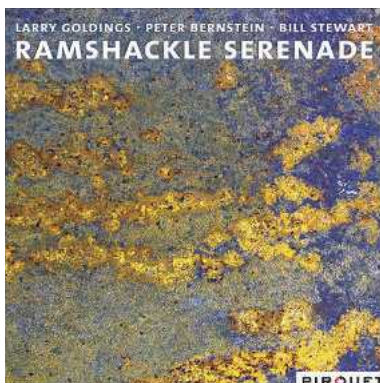
## JACK JOHNSON

On And On (96kHz/24-bit; FLAC)\*

[www.hifiresaudio.com](http://www.hifiresaudio.com); Universal Music 075012

*On And On* (2013) was the second album from Hawaiian-born surfer Jack Johnson recorded in his own Mango Tree studios, since when he has released four further studio albums and three live recordings, as well as writing the songs for the 2006 animated movie *Curious George*, in between his extensive charitable activities which include education in schools about nature conservation, etc. It features his song 'Gone' which was covered by Black Eyed Peas (as 'Gone Going') on the band's album *Monkey Business* where Johnson sang the chorus. The recording is up-front and intimate, Johnson's voice and intricate acoustic guitar closely mic'd, while fellow players Merlo Podlewski (bass) and Adam Topol (drums) appear well balanced throughout these soulful and often spirit-lifting ballads. But is it worth having in a 96kHz/24-bit container? Probably not. *JB*

Sound Quality: 70%



## GOLDINGS, BERNSTEIN & STEWART

Ramshackle Serenade (96kHz/24-bit; FLAC)

[www.hifiresaudio.com](http://www.hifiresaudio.com); Pirouet PIT3077

Often recording as 'The Larry Goldings Trio' this longstanding collective of American jazz virtuosi Larry Goldings (keyboards), Peter Bernstein (guitar) and Bill Stewart (drums) cover all manner of musical moods in their latest collaboration *Ramshackle Serenade*, from the rubato rumination of the album's title track to the Brazilian-flavoured 'Luiza', interspersed with a smattering of blues, swing and soulful grooving to keep listeners enthralled throughout. The seductively rich textures and colourful tones of Goldings' Hammond B3 organ (so reminiscent of the sounds favoured by Focus's frontman Thijs Van Leer) have been captured exquisitely by this impressively dynamic recording released on the German label. The musicians really do sound like they're playing together in a believable space, spread across a wide soundstage. Great stuff! *JB*

Sound Quality: 85%



## JOHANN STRAUSS

Vienna SO/Manfred Honeck (48kHz/24-bit; FLAC)

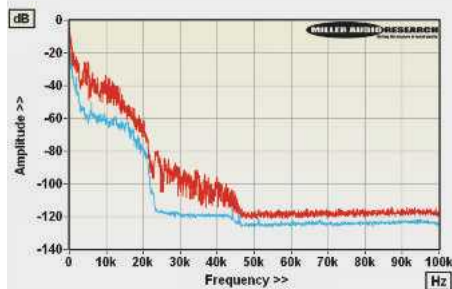
[www.hifiresaudio.com](http://www.hifiresaudio.com); VSO WS005

It would be hard not to succumb to the very real charms of this programme of polkas, waltzes, etc, by the three sons of Johann Strauss – replete with effects like insects' wings buzzing (string tremolos in 'The Bee'), cuckoo and other birds ('Im Krapfenwaldl'), or the comic anvil blows of 'Feuerfest'. Currently with an extended contract with the Pittsburgh Orchestra, the Austrian conductor Manfred Honeck – he first graduated from playing zither to viola – has made a special study of the genre. The playing is carefully balanced, the VSO set well back in the lively acoustic of the Salzburg Grosses Festspielhaus. But there's a certain 'flatness' when you compare the champagne sparkle and variety to be found with Boskovsky's mid-'60s Decca versions with the city's premiere league Strauss orchestra, the Vienna Philharmonic, still sounding amazingly vivid as CDs. *CB*

Sound Quality: 75%

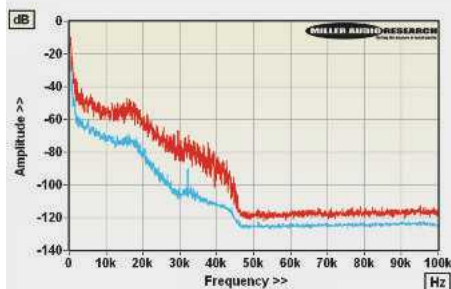


### LAB REPORT



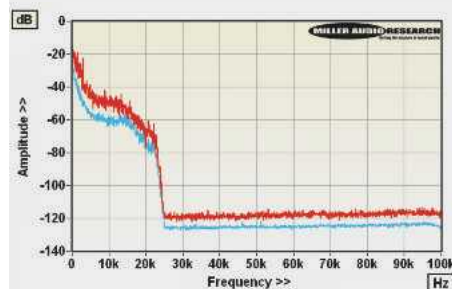
While this download will light the 96kHz LED on your outboard USB DAC, spectral analysis clearly reveals it to be a 44.1/48kHz upsample with bursts of distortion >20kHz caused, presumably, by compression in post-production. *PM*

### LAB REPORT



Much of the ultrasonic energy arising from this digital recording is associated with the gentle percussion [as in track 8, above] but could also be a product of distortion from downstream limiters. The dynamic range is still very good. *PM*

### LAB REPORT



Bearing in mind the energy and potential bandwidth of the Vienna SO it's a mystery these recordings were not made (or offered) in a 96kHz format. The truncation of frequency response is very obvious from this 48kHz download. *PM*





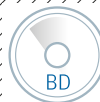
COMPACT DISC



SUPERAUDIO



DVD



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VINYL



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### RACHAEL DADD

*We Resonate*

Talitres TAL080

Experimental folk multi-instrumentalist Dadd is one of the quirkiest singer-songwriters on earth but she's also one of the best. I'll never forget when I first heard her, in 2008, as part of Whalebone Polly, singing the weird little ditty 'Our Socks Forevermore'. It was obvious that a refreshing new talent had arrived, and this album is a joy from start to finish. Songs like 'Three' and 'Bounce The Ball' are as appealing as they are odd, and her use of exotic rhythmic devices including prepared-piano, a typewriter, boxes of matches and even her baby's heartbeat in the womb, makes it a richly eclectic sonic treat. Dadd will probably never become a star, but I bet she'll still be making captivating music 20 years hence. *JBk*

Sound Quality: 90%



### FIELD REPORT

*Marigolden*

Partisan Records FRM1

This is the kind of album that doesn't get made any more: the acoustic singer-songwriter classic. Chris Porterfield, the main man of Field Report, is a smart, sensitive, folksy composer blessed by a seemingly natural aptitude for combining complex lyrical ideas with melodies that become increasingly memorable after a couple of plays. Much of the album deals with his struggle to overcome creeping alcoholism and, although I'm not sympathetic to drunks whining on about their miseries, Porterfield wins me over by not romanticising his problems. If you love Neil Young, Bon Iver, David Gray or Bright Eyes, you'll find much here to cherish. *JBk*

Sound Quality: 90%



### THE FLIES

*Pleasure Yourself*

Library Music Recordings LIB003LP

Search for The Flies online and you'll get loads about an obscure '60s band, and more about American post-grunge outfit The Flies, but these Flies are a new combo fronted by Sean Cook, formerly of Spiritualized, and this is their superb second album. The first one came out in 2007 and blew the critics away, since when they've been working on this follow-up. Quite why it has taken seven years I don't know, but it's a wonderfully atmospheric, not to say creepy, offering. Tracks often start out like MOR pop gems, but invariably descend into dark labyrinthine caverns of the soul, like some unholy collaboration between Burt Bacharach and David Lynch. Fabulous. *JBk*

Sound Quality: 88%



### MOZART'S SISTER

*Being*

Asthmatic Kitty AKR124

Montreal-based Caila Thompson-Hannant is the pulsing electronic heart of Mozart's Sister and she will either become gigantic or remain forever consigned to critics' darling status. Her debut is a curious hybrid of sophisticated soul-pop vocalising set against often unsettling electronic soundscapes generated DIY-style on a cheap sound card. It often sounds like she's not quite sure what she's doing, but there's an undeniable charm to her songs, and her potential is enormous if she can adapt to a slightly more mainstream approach. For adventurous listeners, this is a stimulating debut, but others might prefer to wait a couple more years to let her mature. *JBk*

Sound Quality: 85%



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DVD



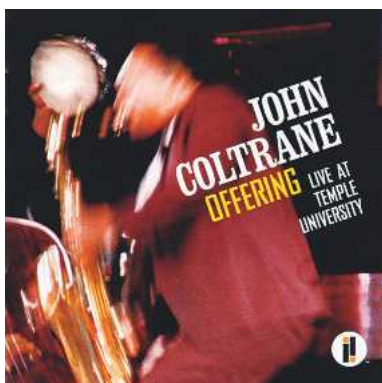
BLU-RAY



VINYL



DOWNLOAD



### JOHN COLTRANE

**Offering: Live At Temple University**

*Impulse/Resonance Records B1963202 (two CDs or two LPs)*

It was at this famous, or notorious, Philadelphia concert in November 1966 that Coltrane astonished the audience when he stopped playing and started singing. With Pharoah Sanders also on saxophone, Alice Coltrane on piano and Rashied Ali on drums, you hear the final quintet line-up, as on *Live In Japan*, except that bassist Sonny Johnson replaced Jimmy Garrison. This first complete, 'official' issue has been lovingly remastered to extract the most from the original 7.5ips tape, but the band balance is inevitably poor, dominated by the saxophones, and it's mono. Even so, if you're ready to follow Trane in that final exuberant phase, this is essential. *SH*

Sound Quality: 75%



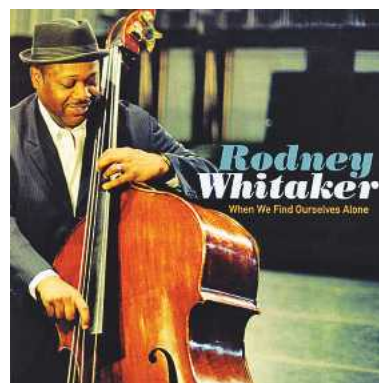
### NIGEL PRICE ORGAN TRIO

**Hit The Road**

*33 Jazz Records 33JAZZ241*

It's hard now to believe that the Hammond sound ever went out of fashion, but it did. Guitarist Nigel Price helped to fuel the revival as a member of organist James Taylor's quartet before forming his own Organ Trio in 2002. Here, still with original members Pete Whittaker at the keyboards and Matt Home on drums, Price's Wes-like virtuosity and taste shines out on every tune. Finally, Greek saxophonist Vasilis Xenopoulos has a guest spot on 'Hot Seat', named for a chair that was once kept for Charlie Christian at Minton's and which, amazingly, Price now owns. Doing bebop like this, the Trio prove that after all these years, they're not slowing down one bit. *SH*

Sound Quality: 85%



### RODNEY WHITAKER

**When We Find Ourselves Alone**

*Mack Avenue MAC1088*

After several records under his own name, the Detroit-born bassist recently co-lead on two with drummer Carl Allen. Here though, he's happily reunited with some old bandmates, as he'd long ago worked alongside pianist Bruce Barth, and with saxophonist Antonio Hart and drummer Greg Hutchinson, in Roy Hargrove's band. To this classy quartet, Whitaker adds his daughter, Rockelle Fortin, on songs ranging from a dramatic 'Autumn Leaves' to a soul-styled 'Mr Magic'. You hear the influence of Abbey Lincoln even before she launches joyfully into 'Freedom Day', one of the tracks that really soars on this warm and swinging album. *SH*

Sound Quality: 85%



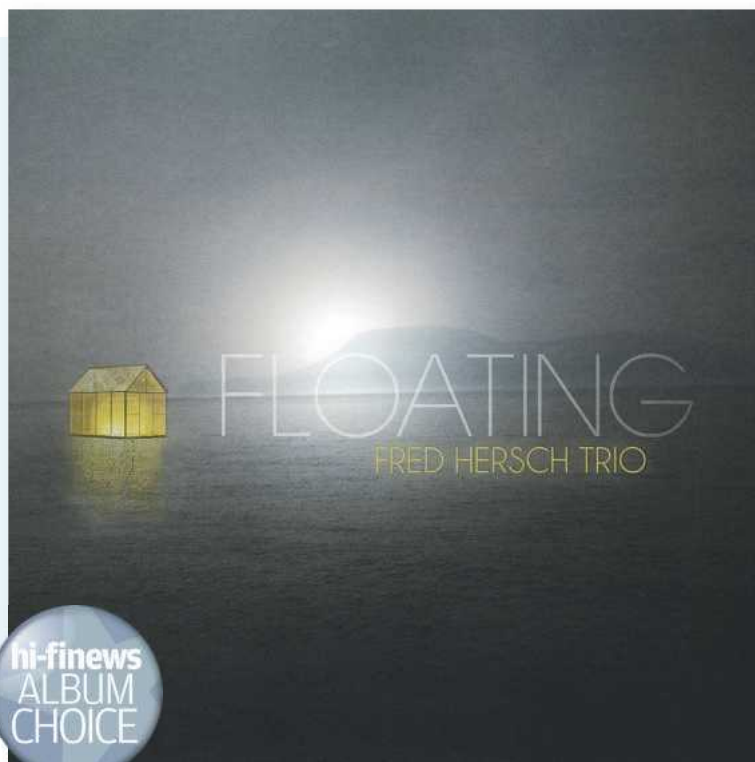
### FRED HERSCH TRIO

**Floating**

*Palmetto PM2171*

Recording consistently since 1984, Fred Hersch has sometimes seemed likely to take on the mantle of Bill Evans, to whom he paid tribute with his 1990 album *Evanescence*. More recently, he's won acclaim for a string of live recordings, including *Alive At The Vanguard* with John Hebert on bass and Eric McPherson on drums. For *Floating* Hersch took this well-established trio into the studio but as he says, it's 'sequenced the way we play a live set.' After a re-rhythmed 'You And The Night And The Music' come the spacious and transporting title piece, more originals, a delightful 'If Ever I Would Leave You', and finally Monk's 'Let's Cool One'. And it is a perfect sequence, leaving you eager to listen again from the start. *SH*

Sound Quality: 90%



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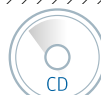
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**BEETHOVEN**

Piano Concertos 3 and 4

Maria João Pires, Swedish RSO/Daniel Harding

Onyx 4125

Dedicating her Onyx debut CD to the memory of Abbado, Pires offers her first recordings of these two concertos. And she could not have found a better partner than Daniel Harding (remember his 1999 set of Beethoven overtures on Virgin Classics?) – the orchestral detailing is exemplary. Pires seems to be at a musical peak here, every phrase full of subtle observations; and the sound of her Steinway is wonderful. If I'd heard this coupling when I began collecting these pieces on LP I don't think I would have looked further! What's not to like? Nice artwork but a rather tight folded card container, and a note by Pires that, sadly, doesn't amount to much. Qoboz lists a 48kHz/24-bit download. *CB*

Sound Quality: 95%



**BRUCKNER**

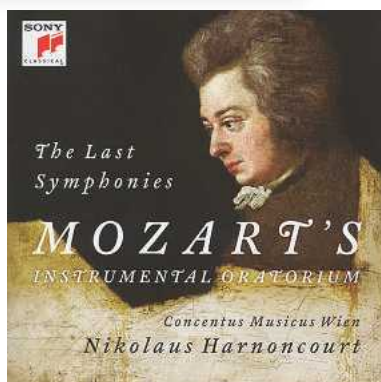
Symphony 7

Budapest Festival Orchestra/Iván Fischer

Channel Classics CCSSA33714 (SACD hybrid)

Iván Fischer has set the cat among the critical pigeons with his flowing tempo for the *Adagio*: which seems to me to suit an overall conception implying parallels with Schubert's 'Great C major' symphony. But the speedy finale robs it of weight – and 'finality'. However, this is a well played and recorded Bruckner 7 which many will welcome as the antidote to the slow soul-searching practised by many conductors (eg, as in the Barenboim Berlin Staatskapelle recording). On the other hand it may strike you as curiously impersonal, notwithstanding Fischer's euphoric short foreword in the booklet. *CB*

Sound Quality: 70%



**MOZART**

Symphonies 39-41

Concentus Musicus Wien/Nikolaus Harnoncourt

Sony 8884302635 (two discs)

Harnoncourt is convinced that Mozart's last three symphonies were conceived as a single entity, from the *intrada* of No.39 to the grand finale of the 'Jupiter'. So in these new recordings with his old Vienna group the G-minor follows straight on without a pause. The performances – blurred in an echoey acoustic (the Musikverein!) – offer disturbing extremes of tempi and dynamics. The heavy accents at the start of No.39 and through its Minuet obfuscate any melodic lines; and Mozart's amazing link between the halves of the finale of No.40 is completely fractured. Save your money and watch the COE versions on YouTube. *CB*

Sound Quality: 65%



**EL MAESTRO FARINELLI**

18th century vocal and orchestral music

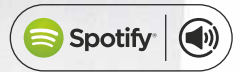
Bejun Mehta, Concerto Köln/Pablo Heras-Casado

Archiv 479 2050

There's some thrilling music-making here in a programme of scarcely known overtures (by Jomelli, Marcolini, Porpora, Traetta), sinfonias (CPE Bach, Johann Hasse), dances and arias (Corradini, De Nebra). The programme is based on what Carlo Broschi, *aka* the castrato Farinelli, might have introduced to the Spanish court of King Philip V. I didn't like (or review) Heras-Casado's Schubert on Harmonia Mundi but he's in his element here. And have a look at the Universal promo film with the animated counter-tenor Bejun Mehta [<http://www.deutschegrammophon.com>] and you'll have your debit card out within minutes! *CB*

Sound Quality: 85%





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## Paul Miller Editor

Technician and writer on all things audio for some 30 years, Paul Miller took over the editor's chair in 2006. He invented the QC Suite, used across the audio industry

# Making sense of sound

Ultrasound, spectacles, dark rooms, blind listening tests and the effect of a good meal all play their part as **Paul Miller** suggests there's a lot more to appreciating great hi-fi sound than our ears!

Prompted by the release of a new hi-fi supertweeter a couple of years ago, I wrote an Opinion page that postulated an alternative mechanism by which we might perceive audio signals beyond our supposed 20kHz limit (and by 'our', I mean healthy youngsters who have not already ruined their hearing with ear buds). Could our hearing mechanism be more directly coupled to ultrasound via the aqueous humour of the eyes for example? And what of wearing glasses – could these windows on the world also draw the curtains over an 'invisible' world of audio [*HFN* May '12]?

I'm not returning to this specific subject now and nor do I wish to steal Jim Lesurf's thunder when, next month, he discusses the impact of his bad eyesight on hi-fi listening. Nevertheless, as I was also short-sighted long before I was an audiophile, I can certainly empathise! I am also convinced that hearing is easily influenced, to different degrees, by our other four senses.

### THE LIGHT SWITCH UPGRADE

It is a common misconception that closing your eyes doesn't affect your hearing. It does, but not in terms of basic frequency response. The results of a standard auditory test, as we respond to test tones replayed over headphones, shouldn't really alter if our eyes are open or closed unless, of course, the individual is very easily distracted.

However, place yourself in a spacious environment with very little illumination – anything from a darkened two-channel listening room to a quiet countryside location at night – and your spatial acuity improves by way of compensation. It's an evolutionary trait designed to assist our



ABOVE: A sound-reinforced concert at the Albert Hall. Your eyes tell you the music is on the stage

hunter/gather forebears from being preyed upon in the dead of night. In our modern era it simply helps us sink into the music more easily and effectively.

Both sight and hearing are directly involved in our perception of sound. You can prove this to yourself the next time you visit an amplified concert. With eyes focused on the stage *seeing* the instruments being played we are

typically convinced that the sound source is also on the stage. Try closing your eyes and, depending upon where you are seated, the source of the music will often shift to another location in the venue, revealing the position

of a bank of reinforcing loudspeakers. The Albert Hall can be a particularly convincing test bed for this little experiment!

### STEREO ARTIFICE

Back home, our hi-fi systems have to create that same sound image without the benefit of the performers playing at the end of the room. This is the artifice of stereo, a deceit

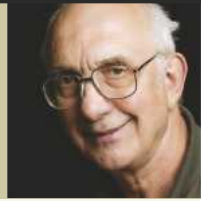
we all know to be remarkably effective given good media and a sympathetic replay system, including the room. Turning the lights down low allows us to focus more attentively on building a mental picture of the musical event.

Seeing the replay equipment can also impact on our perception of sound. It's the essential premise behind so-called blind listening tests. Indeed, Wharfedale demonstrated decades ago that brightly coloured loudspeaker grilles can change listeners' impressions of tonal balance.

Similarly, staring at a very big loudspeaker often precipitates an expectation of a grander soundstage than a modest standmount. Under these conditions it's easy to create a perceptual conflict by secreting a subwoofer in the room. Interestingly, this confusion doesn't arise if both large and small speakers are auditioned from behind an acoustically transparent curtain.

If our vision can drive auditory expectations then what of our other senses? I'm often left wondering if the psychology of listening to music isn't equally as important as the nuts and bolts – the physics – of its reproduction. 🗣️

'Sight and hearing are both involved in our perception of sound'



## Barry Fox Technology journalist

Barry Fox trained in electronics with the RAF and worked as a patent agent, but he gave that up to enter journalism. He is one of the world's top technology writers

# Try before writing

It's only by taking the time and effort to see how products perform under real world conditions that problems come to the fore. To cut corners is to do readers a disservice, says **Barry Fox**

The only time an *HFN* reader's letter really stung me was when someone accused me of not actually trying an audio device – a Roberts radio that records DAB and FM broadcasts to SD card – before writing about it here [see *HFN* Jul '12].

It's always been a written-in-stone rule for me to try equipment and software before commenting on it. Trying is time-consuming and frustrating, because all too often the people selling the products turn out to know painfully little about how they work.

Of course, it's much easier just to go to a prepared-earlier demonstration, or even just switch on a box and see if the LEDs glow. But all too often the hidden nasties only crawl out of a device, and the hidden benefits only shine through, after real world serious use.

### POWERFUL TOOL

The Roberts RecordR radio, which the reader was referring to, may look like a kitchen radio but the SD capture quality equates to broadcast quality. So it's a potentially powerful tool. But the user interface is clunky and you need a computer to erase individual recordings. I said so because I had spent time trying it.

Roberts now has a new more substantial radio, the Stream 631i, which cleverly glues together CD play and recording of DAB, FM and internet streaming, to SD card or any connected USB storage.

It could be a really useful tool, but Roberts' publicity people seem all at sea over what it can and can't do. So I'm not going to recommend the Stream 631i until I have tried it.

In today's networked world, Wi-Fi range is a serious issue. Network

connections mysteriously fail when doors round the house are closed. The answer is a Wi-Fi Extender or Repeater, which picks up the signal in a room where it is weakening, and re-broadcasts it. This is tricky because the receive/re-transmit process has to maintain encryption to stop neighbours or passers-by accessing the network.

The neat and inexpensive (around £20) TP-Link Nano TL-WR702N can be used to boost a weak Wi-Fi signal or convert an Ethernet-wired connection into a Wi-Fi signal. But the operative word here is 'can'.

### A LOT OF SKILL

I found out the hard way – because I insisted on trying the device before writing – that switching the Nano's mode of operation, or changing any of its settings, needs a computer and lot of skill. For example, the PC's Network Adapter settings (IPv4) must be reset from Auto to Manual mode, then set back again. The instructions are sketchy, too. Need I say more?

Belkin now offers a much simpler Extender. The F9K1015 costs around £30 and looks like a nightlight that plugs into a mains socket. It also needs a computer, or tablet, to set up but is far easier to use

than the TP-Link Nano. But because I insisted on trying before writing I have to add the caveat that although I quickly got the Belkin Extender working with one Wi-Fi router (by Huawei) I've yet

to get it to extend the range of a BT Hub.

Am I doing something stupid? Or have I discovered some basic incompatibility with some BT hardware? Because the Belkin product is new it's too early for others to have hit the same issue. More tests are needed before drawing conclusions.

What I do know for sure, because I have finally got the maker to acknowledge my findings, is that there is a basic problem



ABOVE: Roku Streaming Stick and remote

with some of the recently launched Roku Streaming Sticks. These are clever little £50 dongle devices that use Wi-Fi to access internet radio, music and video sites, and connect to any device that is equipped with an HDMI input.

The first downside I discovered from real use was the need to enter credit card details even to access free content sites. The second, and more serious, discovery was that after a few days use the remote control suddenly stopped controlling the dongle. So the device was effectively useless.

### GUARDED ADMISSION

An internet search revealed that other users had hit the same problem. An expert support call from California was arranged and then cancelled at the very last moment, with the reason given that Roku 'have been looking into this issue and are still doing so.'

I asked Roku for comment and eventually got back the guarded admission: 'We've recently been made aware that certain UK customers... have had an experience where the remote stops communicating with the device. We are investigating the issue.'

The last I heard was that Roku is still investigating and had nothing more to say. Life really would be much easier if I just regurgitated company claims. ☹

'Am I doing something stupid? Or have I discovered a basic incompatibility'



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## Barry Willis

Journalist for top American audio-video publications

While his main interest is high-end audio, Barry Willis also writes about the culinary industry, visual art and theatre for a huge variety of US newspapers and magazines

# Taking the plunge

There's now a seemingly endless choice of music to buy online, but what if the recording you want is available only as a download or the method of payment doesn't suit? **Barry Willis** is in a quandary

For music lovers, the internet has made life abundant with opportunities. We can gorge to satiation from a seemingly infinite smorgasbord. There's far more variety than was ever possible in the pre-'net era, even for those who listened to music constantly, and aggressively pursued new recordings.

But in many ways it's also made life more difficult. Case in point: Vitamin String Quartet's *Tribute To Nirvana's Nevermind*, music I heard between acts at a recent theatrical performance. I was so taken by this music that I emailed the company manager, who put me in touch with the sound designer, who in turn informed me about the group, whose oeuvre is pop and rock given the chamber music treatment.

### EXTRAORDINARY EFFORT

Vitamin String's website features dozens of pages of their recordings (see [www.vitaminstringquartet.com](http://www.vitaminstringquartet.com)), with short low-resolution samples, and the opportunity to buy digital downloads – or, in a few cases, compact discs. Despite having covered the advent of downloads from the beginning, and having brought home many

recordings on flash drives, I have yet to buy a download. If factory-made hard copies are at all available, I will make extraordinary efforts to get them, even if it means waiting weeks for a used disc from a source such as Spun.com.

On the group's site, *Tribute To Nirvana's Nevermind* appeared not to be available as anything but a download. This put me in a bit of a quandary. Should I pay for a download of unknown quality, continue searching, or give up entirely on getting music that had really moved

**RIGHT:** The 'quirky jazz combo' Fishtank Ensemble (l-r) – Douglas Smolens, Fabrice Martinez, Ursula Knudson and Djordje Stijepovic. For more see [fishtankensemble.com](http://fishtankensemble.com)



me? A few days' wait and a Google search on the title led me to Amazon and a used copy of the CD – something I had assumed did not exist. Here I had to choke back persistent reluctance to purchase anything from the online giant, because I hate what it's done to local retailers.

But there was no other way to get this music. I couldn't go into my town's only remaining record store and have them order the disc, because it was no longer current. And even if it had been, it would have cost twice as much as buying a used one through Amazon. So

I swallowed my principles and reluctantly placed my online order.

Then there is the case of Fishtank Ensemble's *Edge Of The World*. I had heard a snippet of this quirky jazz combo's recent release on a radio programme and would have loved to purchase it through my local record store, where I asked the proprietor if he had it or could order it.

His answer to both questions was 'No', and that led me back to the group's website ([fishtankensemble.com](http://fishtankensemble.com)) to order the disc. But their only accepted method

of payment is PayPal. My account was depleted of all but a few dollars, requiring a funds transfer before the order could be initiated. I then discovered that this would take 'three to five days'.

All of this seems much more troublesome, and much less fun, than in the glory days of Virgin and Tower record stores, where it was not only possible but likely that you might find anything you were hunting for. What's more, outings to such places often resulted in unanticipated purchases, as well as unpredictable social encounters.

### SO TWENTIETH CENTURY

Perhaps this is all an exercise in nostalgia. A friend of mine, a semi-retired academic, has just sold her home in the Berkeley hills and is moving to a townhouse much smaller. The buyers of her home, a young professional couple with two small children, toured their new residence and could barely disguise their amusement at my friend's modest music library of a few hundred classical, opera, and jazz CDs.

For them, the format of choice is music streaming continually from the clutter-free universal content library. Who would want to do otherwise? Quaint as Edison's cylinders, hard copies of music are so 20th century. ☺

'I swallowed my principles and reluctantly placed my online order'



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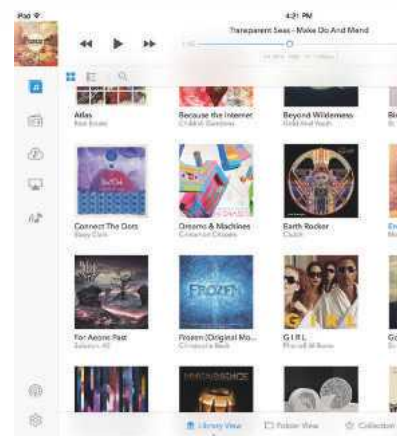
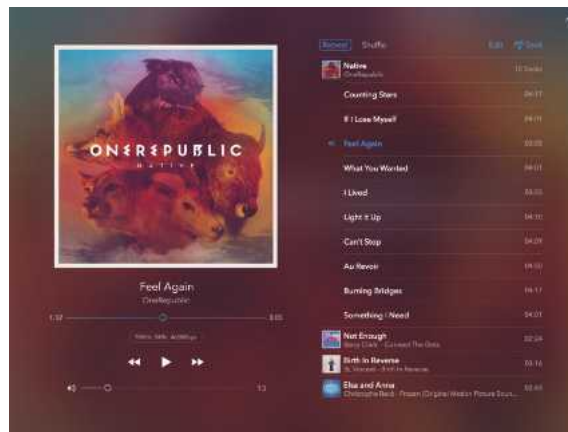
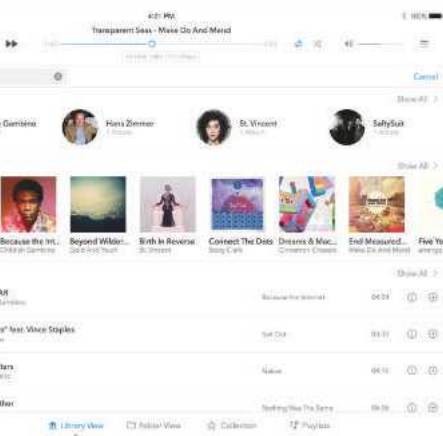
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## Jim Lesurf Science Journalist

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

# One bit bias?

If you find that DSD/SACD sounds better or worse than files rendered at 192kHz/24-bit, could it be down to the amplifier you use? **Jim Lesurf** explains why he believes this could be a possibility

**S**ACD, DSD, and '1 bit' modulation systems seem to be coming back into fashion again. Around ten years ago I spent some time investigating SACD and DSD, trying to understand the details. As I did so, I exchanged a number of emails with other engineers interested in the topic.

My main concern was that there might have existed flaws in the modulation schemes employed by the DSD encoders used to generate SACD, which had gone unnoticed. However, I ran into a brick wall. Although Philips/Sony published a number of engineering papers showing examples of DSD encoders, whenever I asked I was told that the ones they used in practice were different and 'better'. But their details were confidential.

### HIDING PLACE FOR BUGS

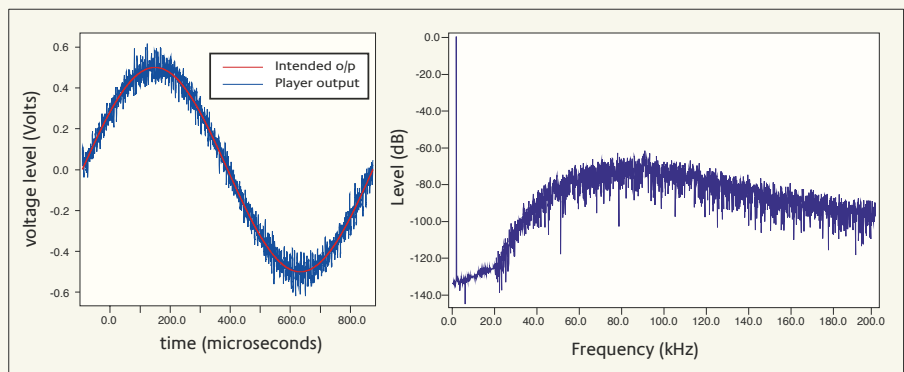
The published designs I saw had quirks. But it was impossible for me – or any other independent engineer – to duplicate or analyse the 'confidential' versions. Alas,

secrecy can be a hiding place for bugs.

However, as I investigated further, SACD and DSD began to look like they were heading the same way as DVD-A: valued by a niche market

at best, consigned to the hi-fi history bin at worst. So I shelved my project. Now, DSD has risen from the near-grave in a new form, one that offers very high bitrate 'audiophile file formats'. This set me wondering about an issue I'd noticed when I first looked at the format.

When doing wideband measurements of the output of an SACD player I noticed that the level never seemed to go below about -50dBFS, even when no music was being played. This struck me as an oddly high level of background noise for what



**ABOVE:** Graphs show an example of output influenced by ultrasonic noise from an SACD player

were high quality professional recordings. Then the penny dropped. I was seeing the ultrasonic 'hash' that can accompany low-bit digital systems.

If you look at the output from a DSD demodulator (*ie*, the equivalent of a DAC) on a wideband oscilloscope or spectrum analyser you may see this ultrasonic residual. On a spectrum analyser it can appear to be at quite a low level. This

is because the ultrasonic power is divided into many frequency 'bins'. So you have to add together all the components well above about 20kHz to find the total power of the unwanted

ultrasonic 'noise' or 'hash'. As a result, what can look like -80dB or less on an analyser can represent a much larger total.

We don't hear this directly because it is at very high frequencies. But might this explain why some people think SACD/DSD sounds 'different'? Not because they can hear the ultrasonic hash itself, but because of an indirect consequence.

Suddenly 'tape bias' came to mind. This is the technique whereby a high level ultrasonic signal is used to linearise the behaviour of analogue tape recordings and

alter the results. The question that came to mind was whether or not this might affect the output stages of, say, a Class AB power amplifier? Could it change bias levels or linearity, altering the audio performance in subtle but audible ways?

For a typical Class AB power amplifier the bias applied between the output devices may be quite small, and even a modest change can alter the amplifier's behaviour. This is something that anyone designing or tweaking such an amplifier will know from experience. A slight adjustment of just a few millivolts can affect not just an amplifier's distortion levels but sometimes even its stability.

### DIFFERENT POWER AMPS

Even allowing for the power amplifier including circuitry to roll away ultrasonic frequencies to a reasonable extent, this might still happen. Maybe the effect will improve the audible performance in some cases and degrade it in others, yet leave other amplifiers unfussed.

So if you find DSD/SACD sounds better or worse than 192kHz/24-bit, maybe you should experiment with different power amps and find out if that affects the differences you hear. As to what happens when you play analogue reconstructed from DSD/SACD using a 'digital' power amplifier, heaven only knows! ☺

'Might this explain why some people think DSD sounds "different"?'





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Roy Gregory, The Audio Beat - July 2013

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Robert Harley, The Absolute Sound - September 2012

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## 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

# Simple pleasures

As well as offering fresh takes on computer modelling and hardware, British designer Susan Parker has developed a range of electronics. **Steve Harris** is invited to hear her vinyl-based system

There's a lot to be said for keeping things simple, but in audio, the simple things that actually work have a lot of science behind them. A case in point is the well-known family of metal-cone speaker drive units originated by E J (Ted) Jordan. Ted Jordan first heard a GEC 8in metal-cone speaker while working in the company's radio lab in the early 1950s.

Later, at Goodmans, he found that the flexing of the cone played a necessary role in the treble performance. He concluded that a smooth, extended response could be achieved by controlling this flexure through the design of the cone profile.

Jordan's research led to the Goodmans Axiette full-range driver. But he felt that this still lacked the 'life' of the GEC unit, and went on to develop his own light metal cones.

### UNUSUAL CARTRIDGE

In America, Nelson Pass made his name as the creator of the original Threshold amplifier and, of course, Pass Labs.

But he also put his knowledge and experience into the design of a very simple, low-power amplifier for DIYers, the First Watt.

Recently, and nearer home, I met another designer

whose avowed intention is to keep things simple. As an engineer and electronics designer by profession, Susan Parker has originated many products in other fields, but her hi-fi designs appear under the name Audiophonics [[www.audiophonics.com](http://www.audiophonics.com)]. She has now completed the audio chain by designing and building a rather unusual cartridge.

Like many other builders, Susan started with the Jordan drive units, but unlike anyone else, she installed them in

**RIGHT: Innards of Susan Parker's elegantly simple Zeus power amplifier, which uses input and output transformers with MOSFET current amplification**



8in marble spheres: 'Life expectancy, 1000 years plus for the enclosure/stand (the drive units may need refurbishing before this).'

Having developed the Sphere, Susan became dissatisfied with the amplifier sound that it revealed.

'I decided to go back to first principles. A loudspeaker is a mechanical transformer with an electrical coil, so it's an interface between the air and an inductor. I said, what is likely to be the best way

of coupling to a transformer, for impedance matching?

'And I thought, well, a transformer can be coupled to another transformer. Most valve or tube amplifiers have transformers of necessity. But I wanted

to use MOSFETs as followers for current amplification, effectively, rather than voltage amplification. I decided to go the whole hog and use a transformer on the input as well. Then ensued about two years of development, which also had a number of respected names in the industry telling me that I was not doing it right!

'The preamplifier is a single-ended version, using a stepped attenuator transformer. The overall circuit is extremely simple. Input transformer; power MOSFET;

line driver transformer; power stage input transformer with a step-up; pair of power MOSFETs; output transformer. I'm able to achieve below 0.001% THD at a watt of output power into 8ohm. With no global feedback.'

### PLUG-IN STYLUS

Finally, wanting a high-quality cartridge and unimpressed by the high cost of moving-coils, Susan decided to build 'the best moving-magnet possible'.

Using a plug-in stylus assembly with a high-ratio line-contact profile from Jico in Japan, it's a low-output, low-impedance design, which gives an extended frequency response like that of a MC.

'I used 3D printing to make the body components. And because I do stuff with transformers, I was able to wind the coils, initially by hand, although I subsequently invested in a nice machine to do it. The magnetic circuit is built in six layers of 0.1mm mu-metal, which is laser mask etched.'

Listening to vinyl on Susan's system is a joy. It has a purity and rightness about it that draws you into the music, with effortless detail and natural dynamics.

Playing *Dark Side Of The Moon*, we held our breath as we waited for the clocks. When they struck, they were in the room. Simple. ☺

"I hand-wound the coils and used 3D printing to make body components"



## YOUR VIEWS

# Sound Off!

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.

## THE PLATTER MATTERS OWNERS OF SONY DIRECT-DRIVE DECK BEWARE

I greatly enjoyed reading Adam Smith's Vintage Review of the Sony TTS-8000 turntable in the September issue. I have great affection for the big Japanese direct-drive decks of this era. Adam is correct to point out that the condition of the magnetic strip under the platter is critical as any damage to it will cause a cyclic speed 'jerk' which is very obvious and renders the deck unusable.

However, this problem will manifest itself whether the Xtal Lock function is on or off because the magnetic reading head is always in circuit – not just when the Xtal Lock is on, as Adam suggested in his review.

By the way, the magnetic material is most easily damaged by careless removal of the platter or by exposing the deck to dampness. Owners of any Sony direct-drive turntable from the 1970s and '80s would be wise to guard against these things.

*Finbar Robbins, via email*

Adam Smith replies: Thanks for the information Finbar. I've dug out the TTS-8000 service manual and you are quite correct – my apologies for the misleading comment in my review. Frankly, it's a slightly unusual way of

doing things as one might reasonably expect the drive waveform for the adjustable-speed mode simply to be generated inside the unit and not rely on any feedback. Still, I'm sure Morita-san and his team of engineers knew what they were doing!

However, this arrangement does of course mean that maintaining the condition of the platter's ferrite coating is even more important than a user might suspect. And you are quite correct in pointing out that a slip of the hand when removing the platter is one of the most common sources of damage to this design.

I suspect it is this aspect of the Japanese direct-drive turntables of this era that deter many people from owning them. Tales of unobtainable ICs and models beyond repair are rife on audio internet forums, but the speed control chip for the Technics SP-15 is about the only example I can think of where the former is actually the case. As for irreparable decks, I often think it's a case of people being unwilling to attempt this, rather than it not being possible.

Regardless, many of these magnificent design statements still offer superlative performance when they are working. To my mind it seems a shame not to enjoy this – even if only for a finite time!



ABOVE: Sony's TTS-8000 fitted with a matching plinth; tonearm is an SME 309

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

## Amp changed the face of hi-fi!

BUT MY BELOVED DEVIALET DOES HAVE A DOWNSIDE...

For many years as an audiophile I have been reading reviews and listening to new bits of kit at my local dealers. I regularly upgrade components in the hope of getting a little nearer to the perfect system – the one that sounds as if I am truly present at the event recorded.

If I am honest, I know that when it comes to the equipment I have bought over the years the law of diminishing returns set in many years back. But I've gained a lot of a pleasure trying out different items and listening for subtle improvements.



ABOVE: The Devialet 200 amplifier with its remote

But things changed once I purchased a Devialet 200. I no longer need a preamp, nor a phono stage nor a D/A converter. Most of my cherished interconnects, so carefully selected, are redundant. Now finally, with the company's SAM software having just been released for my Cremona M loudspeakers, it appears I may not even need my subwoofer. My wife, however, is very pleased to see so much equipment and cabling disappearing from our home.

So Devialet has fundamentally changed the face of hi-fi. And for the good. I can now get even more pleasure from listening, though greater satisfaction through upgrading is going to be difficult to achieve. For readers interested, as well as the Devialet and Cremonas I use a Michell Orbe SE turntable with Ortofon Windfeld cartridge in an SME Series V arm and enjoy high-res downloads via an Oppo BDP-105, its digital output hooked directly into the Devialet.

Aside from another Devialet 200 to run twin mono units, what can I reasonably do to satisfy my need to tweak?

*Martin Phillips, via email*

Paul Miller replies: There's still plenty of opportunity to 'tweak' your Devialet, Martin. These amplifiers really respond to a clean mains supply and I've found a good 240V regenerator, specifically the bigger PS Audio models, can lift their performance still further. Also, thanks to the input options, you might experiment with different Ethernet and USB interconnects [see *HFN* Jul '14] while mix 'n matching new speaker cables.

## Lanes On Your Entertainment Superhighway

# Keep to the same DAC

DOES THE USE OF DIFFERENT COMPONENTS MEAN GROUP TEST LACKED CONSISTENCY?

Thank you for an interesting set of comparative network media player reviews [see *HFN* Sept '14], which is very relevant given that this way of listening to music is the future.

In reaching my own decision on which player to buy I was only able to audition two models in your test: the Cyrus Stream X Signature and the Naim ND5 XS. While I certainly agree with your relative assessment of these two players, I think your review process is flawed.

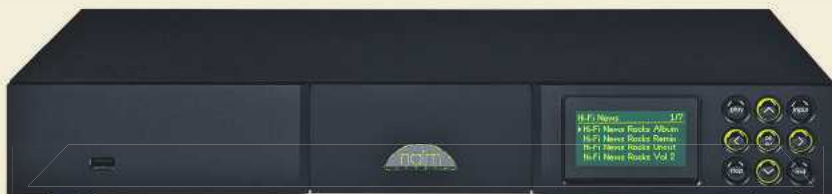
If, instead of reviewing network media players, you had been reviewing preamps, I am absolutely certain that you would have used the same power amp throughout and not one from the same family as the preamp. So why did you not assess the relative sound quality of the different network players by using the same DAC throughout?

Your test was only really of use to prospective purchasers wishing to buy a combined 'player' (Ethernet-to-S/PDIF converter) and DAC.

*David Lovell, via email*

John Bamford replies: I would concur, David, had our group test been an appraisal of Ethernet-to-S/PDIF converters, but we were testing network music 'players'. We consider a player to be a component that pulls data over Ethernet from a server, renders the music file and converts it into an analogue signal that any audio system (with a spare Aux line input) can reproduce.

When a CD spinner has only a digital output we call it a transport. As the Cyrus in our group was an odd man out in *not* having an on-board DAC we purposely partnered it with a DAC from the same manufacturer, otherwise our methodology would indeed have been flawed.



ABOVE: The Naim ND5 XS – the pick of our group test in terms of pure sound quality

# Ken's having a laugh...

'MIDNIGHT' BASS IS 'A MUFFLED MESS' DECLARES READER

In Ken Kessler's review of the Light Harmonic Geek Out EM he recommended some music, specifically Gladys Knight And The Pips' 'Midnight Train To Georgia', as a must have. I sought out a copy.

Ken mentions copious amounts of bass, however it's a muffled mess whether listened to on my PMC BB5 XBD-A system or Resonance Labs Herus USB-to-headphone DAC with Audeze LCD-2 headphones. Ken's surely having a laugh. For what it's worth, I suggest he seek out a copy of Aretha Franklin's 'Ain't No Way'. The central voice is amazing!

*Dan Simpson, via email*

Ken Kessler replies: With all due respect, the bass on my copy of 'Midnight Train



ABOVE: Gladys Knight And The Pips

To Georgia' is clean, and subtle, yet substantial and truly tuneful. Not sure what Mr Simpson means by 'muffled' – maybe he prefers drier bass that's more 'up front'? Cue to 1m 33s – just the bass guitar: pure class.



RJ/E Forest



RJ/E Cinnamon



RJ/E Vodka



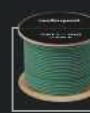
RJ/E Diamond



Cat 600 Pearl



Cat 700 Pearl



Cat 700 Forest



Cat 700 Carbon

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 rooms away.

AudioQuest refers to its pre-terminated leading-edge 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 unique-to-AQ additional technologies.

The particulars of the RJ45 connectors have also received extreme attention. The plugs used on the Vodka and Diamond models (and available for use with bulk Cat 700 models), feature a unique patented transition-compensating system which reduces reflections caused by the impedance mismatch where 4 twisted pairs meet a straight line of 8 plug contacts.

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## Behind the midrange driver

WHY NO MENTION OF MID-DRIVER TECH USED WHEN REVIEWING LOUDSPEAKERS?

I notice that when loudspeakers are reviewed, great attention is paid to describing the style of the cabinet, its construction and the materials used. The design and make-up of the drive units are also gone into great detail. Yet seldom is any mention made of what is behind the midrange driver.

For example, does it fire back into the main cabinet body and risk being coloured by the bass driver, or does the speaker under review have its own enclosure, as do some models by Monitor Audio and Spendor and, indeed, my old Cambridge R50 loudspeakers, which featured a transmission line behind the midrange unit?

I would love to know why this aspect of loudspeaker design is never addressed in *Hi-Fi News* as it seems very important to me.

*Hartley Pascoe, via email*

Keith Howard replies: Mr Pascoe won't need me to tell him that loudspeakers can't always be neatly pigeonholed and don't always conform to a notional norm but that said – and without having amassed hard evidence to support what I'm about to say – this is what I understand to be the typical situation regarding midrange driver enclosures in modern speakers.



ABOVE: The imposing Cambridge R50 features a four-way transmission line

If we are considering a true midrange driver (by which I mean a driver of diameter intermediate between the bass driver and tweeter) then it would be surprising for it not to have an enclosure of its own within the main cabinet, for two reasons. First, as Mr Pascoe implies, it is widely considered advisable to isolate the driver acoustically from reflections and resonances within the enclosed air 'used' by the bass drivers; second, it will normally be the case that the midrange driver's physical parameters (particularly total Q and equivalent volume of compliance) require a smaller box volume than demanded by the bass units.

The enclosure for the midrange unit doesn't have to be elaborate: Don Barlow showed years ago that a thick-walled cardboard tube takes a lot of beating.

Where the speaker is a two-and-a-half-way design with at least two bass drivers, one of which operates only at bass frequencies and is rolled off thereafter leaving the other to carry the midrange alone, then the two drive units may well share the same rear volume, although in more elaborate designs there can be an internal cabinet partition between them.

Exactly what form of cabinet construction is used in any one speaker is not always apparent from manufacturers' literature, and cutaway drawings of cabinet construction are normally offered only by manufacturers who believe they have something to crow about in this department. In some countries reviewers disassemble loudspeakers to reveal their construction and contents, but I'm not the only one to regard this practice with horror as there is no guarantee that the speaker will be reconstituted to its original state when reassembled.

I would also counsel against making simplistic assumptions about loudspeaker performance based on supposed 'ideals' of cabinet construction since this is, in so many respects, a complex area. For instance, is an enclosure with generous internal wadding to suppress reflections and resonances assuredly better than one with less internal damping? Given the nonlinearity inherent in the acoustic behaviour of fibrous tangles, particularly if they are not well supported, it seems to me inadvisable to be dogmatic about it – and the same applies to other aspects of cabinet design.

## WIRELESS FRONTIER?



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 power-transfer cables, for the best sound and video, please visit [audioquest.com](http://audioquest.com) for more details.

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# Can we all be experts now?

WHY THE EASE OF OWNING MULTIPLE HEADPHONES GIVES AN INSIGHT INTO REVIEWERS' TASTES

The burgeoning headphone market described by Ken Kessler in recent 'Off the Leash' columns has two characteristics that deserve comment. First, the enthusiast can now own multiple headphones in a way that was never possible with loudspeakers. This allows for constant comparison in the comfort of one's home beyond the capacity of the wealthiest enthusiast for loudspeakers. As a result, we can now check out the views of experts to an extent never possible with other components. Not only does this encourage valid dissent, it also gives readers a real insight into the taste and bias of reviewers. In short, we can review the reviewers.

In his recent group test of portable supra-oral [sic] headphones [see *HFN* Aug '14], Keith Howard dismissed a group of popular models for being uniformly bass heavy and lacking in detail. I have all these headphones and find them neither clouded nor excessively bass heavy. Certainly they differ from each other and, to my ears, the Sennheiser Momentum On Ear, for example, has a more pronounced bass than the Beyer T51p which, if anything, inclines towards a metallic edge. However, to me, the Audio-Technica



ABOVE: The PSB M4U 2 from *HFN* Dec '13

ATH ES88 is rather thin in tone in comparison to the Philips Fidelio M1.

This is not to say I am right and Keith is wrong, but it does demonstrate the possibility of informed disagreement in a way that wouldn't be feasible if, for example, Keith had been comparing floorstanding loudspeakers. So when it comes to headphones we are less likely to take a reviewer's choices on trust. This represents a significant democratisation of opinion.

Following Keith's reviews over a period allows the forensic reader to form an impression of his preferences or biases. He clearly prefers detail and bright lighting to warmth and a bass rich acoustic. Perhaps the best example of this was his dismissal of the PSB M4U2 [see *HFN* Dec '13], a model that has been universally praised and represents one example (the other is the NAD Viso HP50 not yet reviewed by Keith) of a headphone from the respected loudspeaker designer Paul Barton.

Barton espouses a response curve labelled 'Room Feel', reflecting work done in North America by Sean Olive, *et al*, and apparently rejected by Keith. This work advocates a bass shelving of the type which may characterise the group Keith has dismissed. Once this is realised, his reviews fall into place and can be taken with a pinch of audio salt.

Clearly Keith is at variance with a number of other experts (including Tyl Hertsens) and a few tyros like myself. How interesting it would be to learn of the preferences and opinions of other *Hi-Fi News* stalwarts on commonly available headphones. Why not start with passing the Momentums round the office? Would there be a consensus on their bass response and its effects? And at least we're free (almost) to disagree.

*Professor Roger Ellis, via email*

Keith Howard replies: There's no point in Prof Ellis and I continuing to disagree about the sonic merit or otherwise of particular headphones. I myself said in one reply to him [see *HFN* Feb '14]: 'It takes some effort on the readers' behalf to appreciate where each reviewer is coming from, how well informed he is, and whether they have empathy for his world view, but the solo review at least allows that world view to be expressed and subsequently embraced or rejected.' I really



ABOVE: Group Test of portable supra-aural headphones, which appeared in *HFN* Aug '14

don't see the merit in repeating this message every few months.

But it is worth noting that the headphones which I perceive as having a near-neutral tonal balance typically have something close to a flat diffuse-field-corrected frequency response on the artificial ear. The bass excess I hear from many modern headphones isn't illusory: you can clearly see it in the measurements.

I hope Prof Ellis and other readers really do adopt a 'forensic' attitude when considering other headphone reviews. If they do I believe they will commonly find lamentable inconsistency regarding what good sound comprises, and often little if any attempt to describe tonal balance. Such reviews are essentially worthless in that they prevent readers deciding – without assembling a large collection of headphones – whether they and the reviewer are on the same wavelength, and whether the product reviewed should be of interest to them.

An essential quality of any journalist, of course, is that they strive for accuracy, in which spirit I have to correct these errors in Prof Ellis's text: (1) 'supra-oral' should be supra-aural; (2) I have reviewed the NAD Viso HP50 [*HFN* January '14]; (3) Room Feel is based on research conducted at Canada's National Research Council; (4) my review of the PSB M4U 2 was not a 'dismissal', as my Verdict, reproduced below, makes clear.

'Much as I applaud PSB's wish to reassess the vexed issue of headphone tonal balance, I'm not convinced that its new target response will win over all headphone listeners – particularly those who put an emphasis on clarity and pace, rhythm and timing. That's a matter of personal preference, but the M4U 2's headband resonance issue and its polarity inversion in active mode are both avoidable flaws.'

# Not just Pi in the sky

MORE HELP WITH ACHIEVING HI-RES COMPUTER AUDIO ON A SHOE-STRING

I felt I had to write a little addition to the letter from Paul Williamson published in the August issue regarding the Raspberry Pi and the follow up from Adam Tate, which appeared in the October edition.

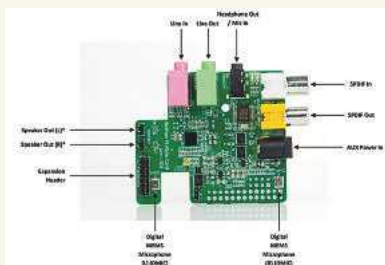
Like Adam, I used a Squeezebox Touch. I loved this little unit: load some software (Logitech Media Server, now called LMS) onto your PC, rip your music to a hard disk, point the server at that and bingo, you can stream music with either a direct audio out or digital out, straight into your DAC. The result can be high quality music – up to 192kHz/24-bit if your DAC can take it. However, I was never really that happy about leaving first a PC then a laptop running 24/7 in order to be able to access my music whenever I wanted it.

Enter the Raspberry Pi and Squeezeplug. As Adam explained, Squeezeplug ([www.squeezeplug.eu](http://www.squeezeplug.eu)) is pre-written to load LMS and set up the Pi as what is called a Headless Server, which means it has no screen. Your USB or NAS is attached to the Pi and this controls everything in the background while you use the player (like a Squeezebox Touch).

Then there is the Wolfson Audio Card [see [www.wolfsonmicro.com](http://www.wolfsonmicro.com)] which, when piggybacked with the Pi, makes any additional Pi set up in another room act as a high quality streamer with DAC, which can then output straight audio at very good quality or, better, digital S/PDIF out, which can be fed into your system like any other digital medium.

My point is that you do not really need to know anything about Linux or programming to use these free downloads. You just need to be methodical and follow instructions. When setting up the Pi you can even use another free program on your PC called Putty [see [www.putty.org](http://www.putty.org)], which lets you open the Pi remotely. You can then do all the changes and set up via your PC screen. You only really have to do this once, as once up and running you can forget about the Pi and just listen to the music.

This makes it simple for people like me who know very little about these things. The real appeal is that



ABOVE: Diagram of Wolfson Audio Card showing analogue and digital ins and outs

you can have streaming music in all of your rooms with touchscreen players for less than £70 for the server and around £35-£50 per player.

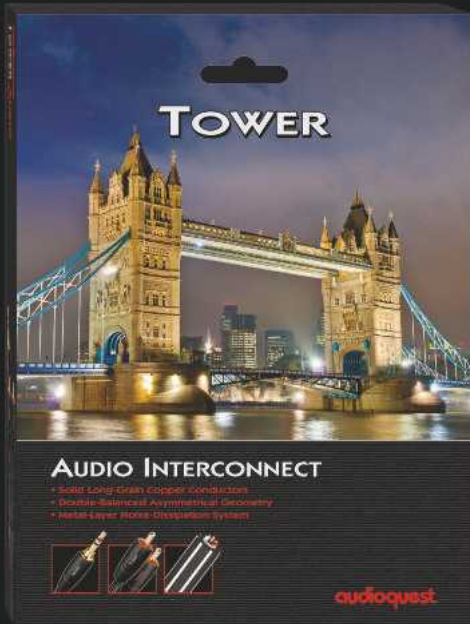
There will always be those who only want to buy equipment that they simply plug and play – and there is nothing wrong with that – but the Pi offers cut-price entry into the world of computer audio. If you just try and create a server/player in the first instance, using free software, then you are probably risking £80 for the lot. And if you really cannot get things working and decide to give up, the components will still command a sensible resale value of around £50.

Paul and Adam have told us of the ways in which they managed to get this little device working. It was a process that Paul considered frustrating while Adam found it to be straightforward. I hope I have shown that there are other methods, which are easy and complete and likely to give many users just what they want for just a little effort and a little money.

*Andrew McBride, Hants*

Jim Lesurf replies: Until recently, 'DIY' in audio tended to mean using a soldering iron and being able to understand circuit diagrams, or building your own loudspeaker cabinets. As Andrew makes clear, the RPi now allows audiophiles to experiment with finding new approaches to digital audio. Some require serious programming skills, but others just mean downloading and using software from the net and learning how to use it.

The RPi is small and cheap enough to play with. For more on the Wolfson card see [www.element14.com/community/community/raspberry-pi/raspberry-pi-accessories/wolfson\\_pi](http://www.element14.com/community/community/raspberry-pi/raspberry-pi-accessories/wolfson_pi).

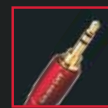


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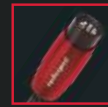
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**Hi-Fi News**



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# Logic dm 101 turntable

Long gone, but not forgotten, this British turntable from the early '80s was one of a handful of decks to give the LP12 stiff competition. How does it shape up today?

Review: **Adam Smith** Lab: **Paul Miller**

**W**hen you look at the UK turntable market in the '70s and '80s, it's clear one deck dominated: the Linn LP12. Various challengers to the throne came and went, with varying degrees of success, but there is one name that still lingers in the consciousness of many vinyl fans who remember the period – somewhat surprisingly given that the company in question appeared quietly on the scene in 1981 and then just as quietly faded away again. The company was Logic Limited, and its dm 101 gave the LP12 real competition.

## NEATLY INGENIOUS

Unveiled in 1981, the dm 101 bore the initials of the two men behind the company: Dave Griffiths and Marten Long. The turntable was made in Leamington Spa, using parts manufactured in-house and appeared at first glance to be yet another variation on the suspended subchassis theme, with its sturdy platter belt-driven by the then ubiquitous 24-pole synchronous AC motor. However, under the skin, things were rather different and quite neatly ingenious.

One of the criticisms levelled at the LP12, Ariston, and Thorens suspended subchassis designs is that they are inherently unstable. This is because, it is argued, the subchassis is pushed up against the underside of the plinth due to the fact that the suspension springs are in a continual state of compression. If you try to



**ABOVE:** The dm 101 may look like a typical suspended subchassis turntable but here the heavy subchassis and platter hang from three points, each comprising a pair of springs set at an angle

compress one of these springs using your hands, the issue becomes clear – unless you push perfectly straight down onto the top of the spring it will cant over to one side and 'ping' out of your hands.

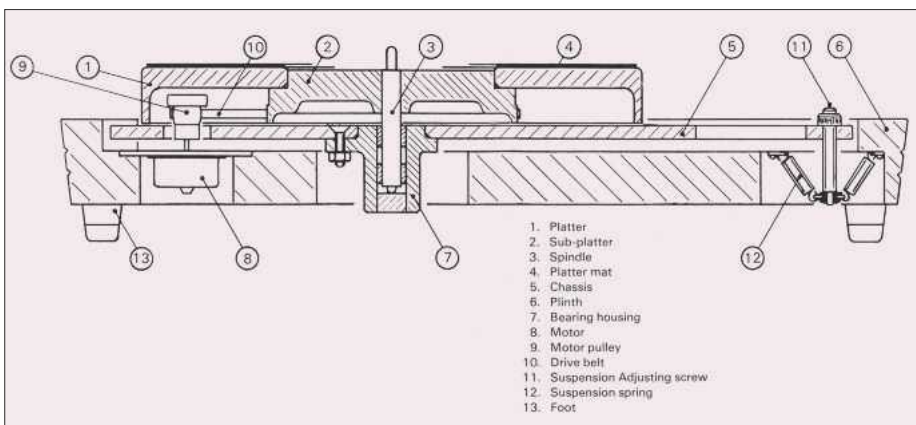
Some designs, such as the Michell Gyrodec, reverse this layout and have the subchassis 'hanging' by the springs, but Logic took this further. With the dm 101,

the subchassis is not a thin pressing but a solid lump of 8mm-thick aluminium, with studs protruding from its underside. These locate into plastic cups, each of which is attached in turn to the main plinth by two springs – both hanging down in a state of extension rather than compression.

## BALANCING ACT

The advantage of the spring arrangement is taken a step further when one considers that as the subchassis twists in the plinth as a result of any movements, one spring shortens and the other lengthens by the same amount. This holds the whole set-up in a state of balance.

It's a clever system and works well. Although the deck appears wobbly on first encounter, it is actually surprisingly stable in use and it's also easy to attain the correct vertical bounce that ensures



**LEFT:** Illustration from original Logic sales brochure shows cross-section of turntable. Note suspension springs and adjusting screws



optimum operation. The icing on the cake is that the studs on the subchassis are adjustable from above, so there is no need for any special cradles, jigs, or crawling around on the floor underneath in order to set the deck up correctly.

The sub-platter, which supports a precision machined 3kg main platter with integral felt mat, is another praiseworthy aspect of the design. On the early models, speed change was entirely manual but, again, the implementation differed slightly from that found on

other decks of the day. Consider for a moment a turntable of this type with a standard, fixed diameter sub-platter. If one sets and aligns the suspension with the belt set to deliver 33.3rpm,

when it's moved to the larger diameter pulley step to give 45rpm, the set-up is no longer optimal. This is because the belt is now under higher tension and tugs on the suspended platter with greater force. To

ameliorate this, Logic not only made the motor pulley stepped but also the sub-platter, thus keeping the tension on the belt consistent at both speeds.

Of course, the dm 101 is a low-volume British product from the 1980s, so there are a few aspects of its engineering that leave something to be desired. On the suspension front, later decks added another central spring around the bearing housing as part of an upgrade called the

'Mass Centre Suspension Kit'. This aimed to stabilise and control the movement of the set-up further. Unfortunately, while the aim was achieved, it makes correct set-up both time-consuming and frustrating. The upgrade also interferes with the

arm cable routing which, on all models, has to be laid under the subchassis towards the bearing and then down onto the main plinth and out in the correct way, so as not to interfere with the suspension. Frankly,

### 'The dm 101 will draw you in with its subtle, but alluring, sound'

**Logic DM101**  
Logic Ltd, 6 Guy Street, Lutterworth, Leics, MK14 6AA. Tel: 01530 203202

**Features and design**  
Released shortly after the completion of the last edition, the Logic has since been available in somewhat limited numbers, and the findings of this review are destined to increase the designer's potential. In several respects the performance is very good indeed, but weaknesses are present in the subchassis engineering which is believed to have limited the ultimate performance obtained. Logic have had this matter in mind but they have not so far provided us with a solution.

The subchassis is open, fitting in a recess in the upper surface of the main main plinth. Slown from a thick, stainless-steel aluminium alloy plate, and asymmetrically shaped to reduce self-resonance, the chassis is supported at its three extremities on a total of six small diameter coil-springs acting as a sort of 'web'. Vertical movement is stable, and the lateral rocking mode is good, but a significant torsional compliance extends up to 12Hz, well above the fundamental suspension resonances in the 3-6Hz range. This torsional mode gave rise to doubts concerning chassis stability, and it conspicuously seems to affect stylus dynamics.

A useful feature is the ability to tilt the sub-chassis right out for anti-filing and dust-droppers, while the levelling points are locking sabbat head bolts, conveniently adjustable from above and clear of the platter. The precision machined two-part alloy platter of the belt drive model weighs 3kg. It is fitted with a toroid-style mat and runs on an impressive-looking main bearing. This has a 12mm shaft and a single point (shaft) ball, plus a rigid phosphor-bronze sleeve exhibiting excellent tolerances. Spaced clockwise is a plain bearing. The precision machined main bearing is a steel shaft and a single point (shaft) ball, plus a rigid phosphor-bronze sleeve exhibiting excellent tolerances. Spaced clockwise is a plain bearing.

So far all the Logics I have seen produced quite a strong smell when running; this has been identified as hot resistors in the lamp and motor

control circuitry and, although no danger is involved, personally I do not like the smell. Some audible hum is also produced by the synchronous motor.

**Lab results**  
Weighted wow and flutter was an excellent 0.05%, following stabilisation after start-up. The time required for the drive to settle after start-up was a rather long five seconds. Flutter and rumble were also very good when measured and measured. The wow and flutter were significant in A/B comparisons – and this had to be taken into account during audio testing. The wow and flutter was a satisfactory 0.35%, and the DRF was 80dB. From the spectrum analysis it can be seen that the suspension of main-related rumble components was very good, with barely any visible difference between the static electrical breakdown, acoustic, breakthrough and vibration isolation were excellent and proved to be a very high feedback immunity. However, shock destination, torsional mode. We also observed a promising disc impulse responses, showing X10 scaling; noticeably is the scarcity of the low-frequency long wavelength components which were often encountered with other models. The Logic's standard disc support gave quite good transient damping, but the alternative Audio Ref showed a superior control in the midrange area.

**Sound quality**  
The sonic performance showed that the Logic has the makings of a fine turntable. The low-frequency range was unusually clean, even, detailed and well extended, while feedback was

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held well at bay, and the general tonal balance with the standard mat was both neutral and yet at the same time sufficiently 'lively'. The 'Vita midrange' resonance, when passing the Hells, the Hellas or Alston 'open' tweeter results. With brighter and more 'forward' ear-ridges such as the Technics 505 and Karat, the Audio Ref mat helped to control the musical case which could be made relative to a small loss of image stability and central focus, which was probably the result of chassis nervousness, tied to the torsional mode.

**Conclusion**  
The Logic demonstrated many strong points in its technical and subjective performance, and can be recommended for its exceptional bass neutrality and good stability. If the manufacturer can solve the marginal suspension issue (and the small too if possible), they will have a very good deck on their hands. But until this is done any recommendation must be provisional.

**GENERAL DATA**

Wow and flutter	0.05%	Very good
Type of motor	Asynchronous	Very good
Wow and flutter (20 sec)	0.35%	Very good
DRF	80dB	Very good
Breakthrough	0-600Hz	Very good
Acoustic	0-600Hz	Very good
Vibration	0-600Hz	Very good
Stylus	12mm	Very good
Platter	3kg	Very good
Mat	Toroid	Very good
Support	Standard	Very good
Impulse	Standard	Very good
Damping	Standard	Very good
Control	Standard	Very good

**Disk impulse transmission, magnified X10.**

**Disk impulse: Audio Ref mat (X10 scaling)**

**Rumble (0-500Hz) (left: above, electrical only; below, total)**

**Breakthrough (0-600Hz) (top: above, acoustic; below, electrical)**

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**ABOVE: Front view of the deck shows the rectangular red on/off switch. The bulb inside the switch acts as a fuse to cut off power to the motor in case of electrical malfunction**

there's no need to feel hard done-by if your dm 101 is missing this central spring.

More concerning are the electrical aspects of the turntable. The standard, manual-speed change version of the deck simply makes use of the motor and its associated phase shift capacitor, plus an illuminated on/off switch. That's it. There's not even a fuse, the intent being that should electrical maladies rear their heads the bulb in the switch would blow and cut power – a poor idea. Even worse was the later, and somewhat infamous, dm 101 Electronic, which added push-button speed change via some circuitry of dubious merit.

### ABSENT TRANSFORMER

The motor in the Electronic was still an AC type, similar to the one used for the standard model, but driven by a circuit containing an internal oscillator, a couple of op-amps, and some power transistors to alter the frequency of the drive waveform for each speed. Unfortunately, the essential component that was missing was a transformer, as the mains was reduced to the appropriate level for the circuitry by a linear arrangement of power resistors, Zener diodes and capacitors that dropped the voltage suitably.

The upshot of this was that the only thing protecting the user from an electric shock was the plastic control plate, and things overheated within the circuit very quickly at any sign of a problem.

Ultimately, the manual speed change variant is less stressful to live with, if one can ignore the fact that the belt has a reluctance to stay on the 45rpm step. Set

**LEFT: Hi-Fi Choice magazine recommends the dm 101 for its 'exceptional bass neutrality and good isolation' in this contemporary review**



## VINTAGE HI-FI

**RIGHT & BELOW:** Plan view of deck shows 3kg main platter made from diecast aluminium while (below) can be seen the stepped motor pulley, sub platter and peripheral drive belt

it like this and switch the deck on and the belt generally pings straight back to the 33.3rpm pulley. The trick is to gently spin the platter up by hand gradually and then switch on simultaneously.

The dm 101 was supplemented by the Datum tonearm and Claro Black and Gold cartridges to offer a complete record playing set-up. The first Datum was essentially a lightly tweaked Syrinx LE One, but this was superseded by the Datum II and the Datum S – both of which were manufactured in-house by Logic.

The two arms were similar in design but the 'S' was of higher specification, offering better bearings, a headshell machined from solid aluminium, monocrystal silver wiring throughout and a tungsten counterweight.

Sadly, by 1986, Logic Limited had ceased trading. The company was acquired by Manticore, with the Datum S design forming the basis of Manticore's Musician and Magician tonearms.

### ADAM LISTENS

Equipped with an SME 309 arm and Audio-Technica AT-OC9ML/II cartridge, it wasn't difficult to understand why the dm 101 might well have had people in a certain turntable factory in Scotland a little concerned. It didn't take too long to realise that the deck has an inherent sense of 'rightness' about its presentation.

What's more, it's an easy turntable to listen to. No matter what kind of music passed beneath the stylus, the dm 101 had a relaxed air of assured confidence. It won't grip you by the seat of your pants and take you for a wild ride. Rather, it gently draws you into the music being played with its subtle, but alluring, sound.

'The Logic excelled when it came to sheer atmosphere'

Spinning 'Raising Venus' from Malia and Boris Blank's *Convergence* album [Universal 374 593-2] showed the dm 101 in a fine light. Malia's vocals caressed the ears in a most pleasing manner while her voice had a reassuringly solid presence between my loudspeakers. Meanwhile, Boris's Yello-esque bass notes rang out through my room with real depth and form,

underpinning the track perfectly. Yes, there are vintage direct-drive decks that might sound a little snappier in the bass in terms of absolute timing while a well-fettled idler design will certainly pack more of

a punch. But I never felt short-changed by the Logic's low end. It took all kinds of bass instruments easily in its stride, maintaining a firm sense of grip on rhythms and endowing each with a pleasing sense of realism and no shortage of insight.

Speed stability was also highly commendable. The Sweet's sixth album, *Level Headed* [Polydor POLD5001], may not be a conventional choice with which to evaluate a turntable's performance but it's filled with violins, sustained synthesiser notes and even a harpsichord, thrown in for good measure, so it reveals any pitch

**RIGHT:** Original Logic sales material with specification sheet offering key figures including rumble, wow & flutter, weight and dimensions

warbles perfectly. The Logic passed this test with flying colours and once again showed itself to be quietly, but eminently, capable of maintaining a grip on a wide variety of musical action.

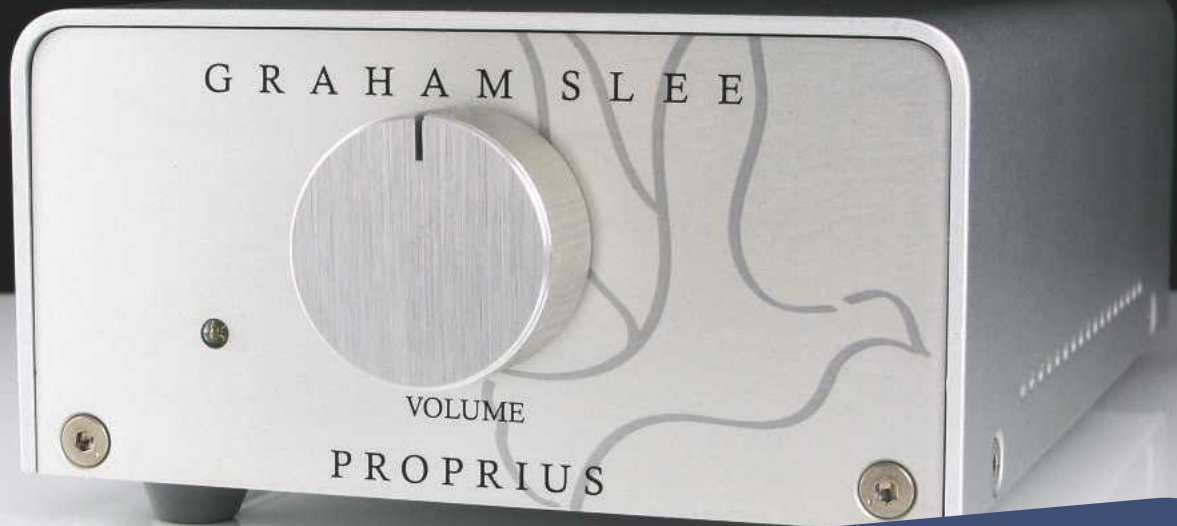
### WASHED LANGUIDLY

Of course, a good belt-drive deck can pay great dividends when it comes to spatiality and sheer atmosphere and the Logic excelled in this area. 'We Let The Stars Go' from Prefab Sprout's *Jordan: The Comeback* [Kitchenware KWLP14] was beautifully expansive in all directions and, again, the performance washed languidly from my loudspeakers while Paddy McAloon's vocals were focused superbly centre-stage.

While the dm 101 may lack the stock LP12's feisty musicality and addictive toe-tapping rhythmic ability, it scores in other



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## VINTAGE HI-FI



**ABOVE:** A look at the deck from the rear shows the rubber feet, two of the three screws used to level the subchassis, and spring-loaded hinges to hold the dust cover

areas. Its bass is deeper and more insightful and it has a purer and less coloured midband. You could think of the Linn as an exuberant Labrador puppy with instant appeal that's loved by many, whereas the dm 101 has a more dignified air of sophistication and maturity. More a well-trained guide dog perhaps!

### BUYING SECONDHAND

While not especially rare, dm 101s don't come up for sale all that often. Performance-wise, there is little to tell between the standard, upgraded suspension and Electronic types so there is no need to wait for any particular version to appear on the secondhand market unless you have a specific reason for doing so.

The manual speed change variants are safer, but I would recommend fitting a 1A fuse into the mains plug rather than the more common 3A value as this is the only thing protecting it! The same goes for the Electronic version, naturally. Should the worst happen however, all components are standard and

readily available still, so a burnout need not be the end of the deck.

When it comes to the suspension, the deck cannot use the commonly available Linn/Thorens-type springs if replacements are required, but the springs themselves are largely robust. The plastic mountings to which they connect for fitment of the subchassis have been known to fall apart with age, but a little ingenuity with a rubber grommet or three works wonders.

While the twin-stepped sub-platter arrangement is ingenious, the steps on it aren't especially wide, so if the suspension is set too high or low then the belt will not ride correctly and this will, in turn, affect turntable speed. It can also make the aforementioned issues of trying to successfully attain 45rpm even more frustrating.

Finally, do bear in mind that the highly specific routing of the arm cable through the plinth does use up a lot of wire. If your chosen arm's cabling isn't very long then you might find very little left hanging out of the back of the deck for connection to your phono stage. ↴

### HI-FI NEWS VERDICT

The dm 101 is a fascinating mixture of ingenious design, fine engineering and occasional shoddiness – perhaps more so than almost any other deck. That said, it has a neutrality and sense of poise that can make many of its contemporaries sound a little confused, and a good example setup correctly is capable of a captivating and rewarding sound. Find a pre-cherished sample and you won't be disappointed.

Sound Quality: 82%

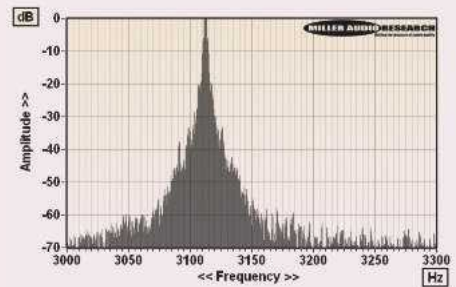


### LOGIC DM 101 (Vintage)

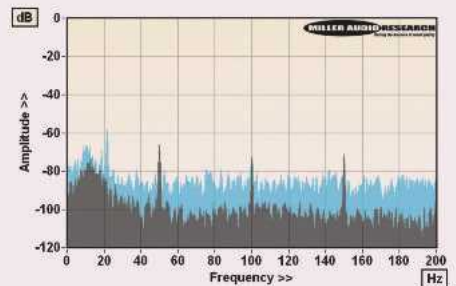
On many occasions when we've tested brand new turntables whose absolute speed is slightly high, I've commented that this is probably a good thing as motors typically slow with age. The 24-pole synchronous motor employed by Logic is still going strong in this vintage dm 101 but, as the wow and flutter spectrum illustrates, it's also running rather obviously slow at -1.1% under speed [see Graph 1]. Contemporary reviews criticised the deck for running about 0.5% slow. However, cyclical speed variations remain firmly under control, the sharpness of the spectral peak testament to the low 0.03% peak wow and the perceived pitch stability reported by Adam in his review. Broad and largely uncorrelated flutter amounts to 0.05%, bringing the total peak-weighted W&F to 0.08% – still creditable for a deck of this age.

Logic's 12mm shaft/phosphor bronze bearing assembly also looks to be in fine fettle as its DIN-B weighted through-bearing rumble of just -72.7dB (re. 1kHz/5cm/sec) still bests many a modern deck. As does, I'm bound to say, the -69.4dB achieved through the groove and this with the original felt mat still bonded in place. The unweighted rumble spectra reveal no obvious structural resonances [black trace, Graph 2 below] once the suspension has been left to settle, while hum and noise – at least partially assisted in this example by SME's superior arm cabling – is also low at -63.7dB (re. 5cm/sec).

Readers may view a comprehensive QC Suite test report for the Logic dm 101 turntable (with modern SME 309 arm) by navigating to [www.hifinews.co.uk](http://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). Wow is low but absolute speed has dropped by -1.1% to 33.0rpm



**ABOVE:** Unweighted bearing rumble from DC-200Hz (black infill) versus silent LP groove (blue infill) re. 1kHz at 5cm/sec

### HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	32.96rpm (-1.11%)
Time to audible stabilisation	6sec
Peak Wow/Flutter	0.03% / 0.05%
Rumble (silent groove, DIN B wtd)	-69.4dB
Rumble (through bearing, DIN B wtd)	-72.7dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-63.7dB
Power Consumption	5W (1W idle)
Dimensions (WHD) / Weight	480x380x150mm / 13kg

**ABOVE:** Advert for the later, electronic speed-control version of the dm 101

変容

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# We use a ray gun

Peter Fryer explains how laser holography is used to improve loudspeakers



Hi-Fi  
News  
March  
1978

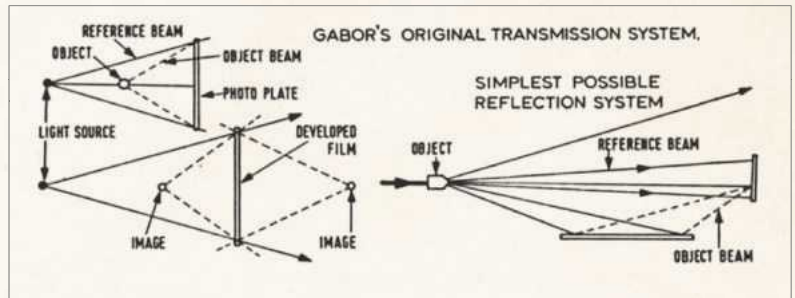
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from our vast  
archive of  
features and  
reviews from  
yesteryear

What is a hologram? It is actually a photograph which, when seen with the naked eye, looks like a smoky glass plate or plastic film with funny smudges and rings all over it. However, when illuminated with coherent light from a laser, three-dimensional images are created which have the eerie property that one can look behind and around them.

## BEFORE THE LASER

Holography itself was invented long before the laser, by Professor Dennis Gabor, but he was only able to use the very weak and unsatisfactory sources of coherent light available at the time, so that holography marked time until the laser was invented.

In Gabor's original system [Fig. 1] a divergent beam of light strikes a small object and most of the light, being unaffected, passes on to strike the photographic plate directly; this forms the 'reference beam'. Some of the light, however, is bent or



ABOVE: Fig 1 – Gabor's system and Fig 2 (right), Leith and Upatneiks' laser version

diffracted round the object and so forms the 'object beam'. These two beams then interact with each other to form a system of 'interference fringes' where they overlap, and some of these fringes are captured by the photographic plate.

If the object is removed and the reference beam alone is allowed to fall onto the developed photographic plate, the recorded lines or 'fringes' bend some of the light in the reference beam into an exact replica of the light which originally came from the object.

Unfortunately some of the reference beam is bent into another image in line with the object, but on the other side of the photographic plate. Light from one image therefore messes up the light from the other. This fact, together with the weakness of coherent sources originally available, meant that holography was little used in the 15 years following its discovery.

The laser, a powerful source of 'coherent' light, became available in 1961 and Leith and Upatneiks applied it to holography in 1962. They solved the problem of separating the two images by using a reference beam which fell on the photographic plate at a different angle from the object beam [Fig. 2]. On reconstruction with the reference beam, one image is once again formed on the object (or at its former position), but the other image is no longer in line with it and can therefore be neglected.

It should be emphasised that one does not look at a hologram but *through* it to the reconstructed

scene hanging in space behind it in true '3D'. The hologram therefore acts like a window onto a scene that may no longer be there.

The next significant advance came in 1965, when Powell and Stetson (and Burch) observed the dark lines, also called 'fringes', which occurred on the reconstructions of objects that had been vibrating while being holographically recorded. They went on to derive the complex relationship between the fringes seen on the object and the actual motion that had been taking place during recording.

Since then, double exposure techniques, which see two holograms taken one after the other on the same photographic plate, have been used.

## CONTOUR MAP

These techniques allow two different positions of the object to be recorded at different times and then played back simultaneously. Light from the two reconstructed images then interacts or interferes to give a set of dark lines on the object, each line corresponding to a half wavelength change in object position between exposures. So we now have a contour map showing how much the object moved between exposures.

But how can this system be of any use to us when the object is continually vibrating? The answer is to use what are known as stroboscopic techniques.

With the basic stroboscope, what we do is simply to illuminate a vibrating object with a series of

very short flashes of light. Each flash occurs at the same point in each successive object vibration. If the object were a vibrating loudspeaker cone we could arrange the light to flash only when the cone was fully out. The cone would then appear to us to be stationary and fixed in the 'out' position.

Now we can adapt this system to holography by taking one exposure with the cone stationary and then, with the cone vibrating, we can arrange for the laser to flash on only when the cone is 'out', thus forming the other exposure.

The lines on the image so formed on reconstruction with the reference beam show how much each part of the cone was vibrating in the 'out' position compared with the stationary or rest position.

For a more permanent holographic

record of cone motion there are two types of approach. The first is the 'time averaged method', in which a photographic plate is simply exposed to the light reflected from the steadily vibrating cone. The hologram produced is a kind of average of all the positions occupied by the cone during the exposure.

For a normally vibrating object the result is similar to the hologram that would have been produced by exposing the plate only to the two extreme ends of the movement,

simply because the object spends most of its time there. It can be shown that the brightness of the lines seen on the object follows the lower curve [see Fig. 3], where the peaks correspond to bright lines and the dips to dark lines, and where we move from no vibration on the left-hand side to larger and larger vibrations across to the right.

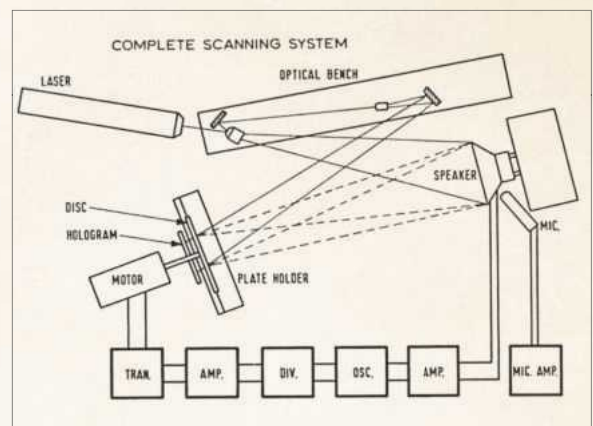
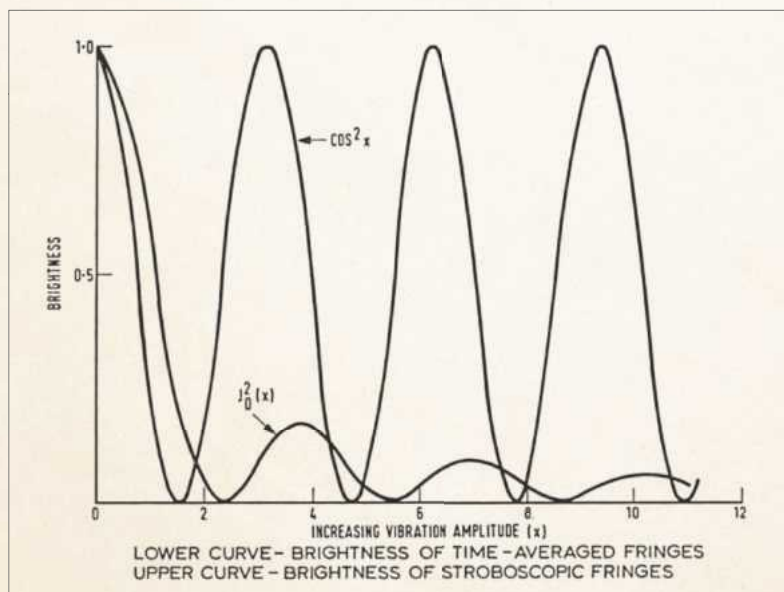
Alternatively we may use the 'stroboscopic frozen fringe technique' where the plate is exposed to the stationary object and then exposed again to any desired part or 'phase' of the object's vibration cycle by appropriately choosing where the laser light is made to flash on. On reconstruction

with the reference beam, both images are produced at the same time, giving a permanent record of the dark and bright lines. Pictures that are made in this way are called frozen fringe stroboscopic holograms.

### FRINGE BENEFITS

This technique has the advantages that the fringes are equally bright out to regions of high vibration amplitude [upper curve in Fig. 3] and are thus easier to interpret. This is because each fringe corresponds exactly to an increase in the vibration amplitude of one half wavelength of the light used. Now,

**'A hologram acts like a window onto a scene that may no longer be there'**



**ABOVE: Fig 4 – illustration of a complete laser scanning system. Radial slits in a rotating disc allow both object and reference beams to pass through to the photographic plate**

however, the areas which are not moving at all are not so easy to pick out because they are merely as bright as all the other bright regions.

Another disadvantage is that at least 90% of the light from an ordinary laser will be wasted because the stroboscopic action must switch off the light for nine-tenths of the time.

To overcome the various difficulties a new method of scanned holography was devised and used to study loudspeakers. With the basic version of the scanning technique, a disc with a number of radial slits is placed immediately in front of the photographic plate and both the object and reference beams pass through the slits to fall on the photographic plate [illustrated in Fig. 4]. The plate holder is designed to prevent any air-current effects which might arise from proximity of the spinning disc.

### TWO EXPOSURES

During one cone cycle a given slit moves across the whole hologram. The next slit will trace the same path during the next cycle, and so on. By taking two exposures, one with the cone vibrating and one with it stationary, a whole series of frozen fringe holograms is taken along the photographic plate.

On reconstruction, fringes corresponding to any part of the cone cycle may be seen by looking through the appropriate section of the hologram. Thus the need for a live hologram to set the 'phase' of the strobe action is removed as we have preserved the whole vibration cycle on one hologram.

This first scanning system still requires two exposures to form the two separate images required →

**LEFT: Fig 3 – graph showing variations in the brightness of lines on the object with increasing (cone) vibration (from left to right)**



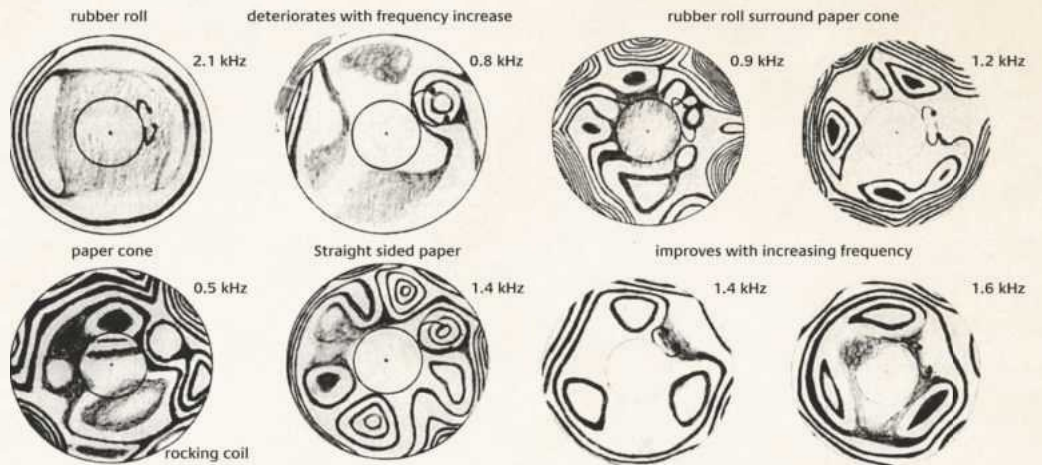
## FROM THE VAULT

for the frozen fringe hologram, so a second system was designed to eliminate the small time delay between exposures during which paper cones could sag a little.

With this system, two slits trace the photographic plate during one cone cycle to obviate the need for a second stationary exposure. Each succeeding slit traces the opposite half of each cycle. On reconstruction, fringes are seen on the cone corresponding to all the amplitude differences between opposite parts of the vibration cycle.

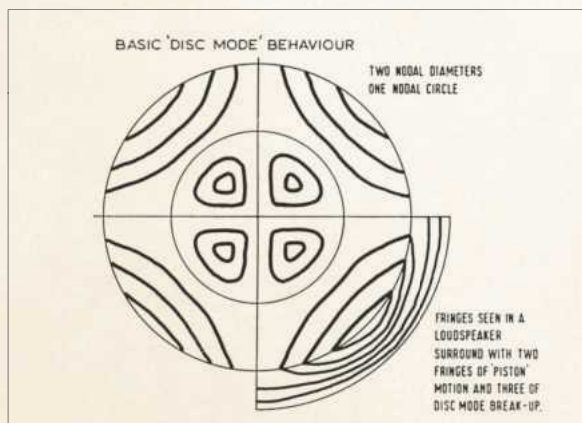
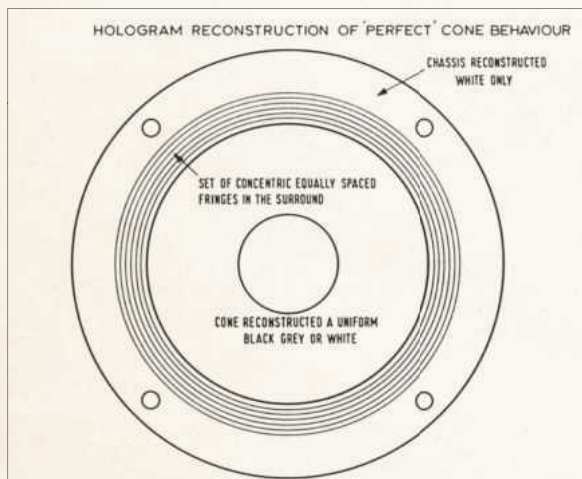
### HARMONICS REVEALED

For instance, we will be freezing both the point in the cycle when the cone is fully out and the point where it is fully in (as well as all the intermediate points). There is therefore one point along the hologram where the peak-to-peak fringe system is seen, with lines corresponding to interference between the two maximum points in the object's vibration cycle – so the need for a second stationary exposure is removed.



**ABOVE: Fig 5 – varieties of effects with different paper cones**

**BELOW: Fig 6 – ideal cone exhibits no fringes while Fig 7 (bottom) illustrates regular modes which can indicate issues**



An interesting phenomenon known as the 'blinking system' was discovered with this technique. It could be seen that every now and then along the hologram, corresponding to different parts of the vibration cycle, thicker darker lines blanked out the more normal thinner ones, which could still be seen lurking in the bright parts of the more coarse blanking system.

These thick fringes are not related in pattern to the usual ones, but theory shows that they are due to subharmonics (ie, frequencies produced by the speaker which are half or some other sub-multiple of the input frequency), and in fact a further scanning system has been devised which shows up subharmonics only!

Turning now to particular types of drive unit, investigations on paper cones have shown that the fringes systems seen can be very complex and difficult to interpret [see Fig. 5]. The ideal speaker would produce no lines or fringes at all on its holographic reproduction. This is because it should be operating like a rigid piston pushing and pulling the air as one solid unit. But even if it does 'break-up' and neighbouring regions of the cone surface do their own thing, this is not necessarily as bad as it would at first appear, because in some cases sound radiated from neighbouring regions of equal amplitude but opposite phase will mutually cancel close to the loudspeaker, with minimal effect on the response curve.

Only sound from break-up regions which is not cancelled close to the speaker unit – such as that from an asymmetrical breakup pattern – will affect the response curves of paper cones. With cones of other constructions all the breakup regions may well contribute to the response curve without mutual cancellation. However, it is possible to categorise the fringe systems seen into seven main types drawn from the systems seen on vibrating discs.

These range from the ideal piston system where no fringes are seen on

**'Theory shows that thick fringes are due to speaker subharmonics'**

the cone itself but where the surround shows several circular concentric fringes [Fig. 6], to the worst type where the cone breaks up

into asymmetrical areas going up and down in turn. Other systems like 'rocking' and 'edge bending' are self-explanatory.

### FRINGE TYPES

Some of the more regular modes are shown in [Fig. 7]. Each kind of fringe pattern has either a characteristic sound or a consequence of another kind associated with it. For instance, 'rocking fringes' may not actually affect the sound output in any way but indicate that early failure of the unit may be expected. Edge bending fringes are usually associated with surround-to-cone 'mismatches' which can have a serious effect on the sound, and so on.

As with most loudspeaker measurements, interpretation is therefore not a simple matter, and ↻





## FROM THE VAULT

the use of the measurement system may therefore depend on an ability to interpret the results usefully.

The results on sandwich and plastic cones have so far proved to be the most useful, and have helped in giving significant improvements in performance. Sandwich cones are made by sandwiching a layer of expanded polystyrene between two aluminium skins.

The response curves of a typical sandwich bass unit, without crossover are illustrated in Fig. 8a. It can be seen that peaks of high amplitude occur when this speaker eventually breaks up, even though this happens at frequencies several octaves higher than with equivalent paper units. The lower curve [Fig. 8b] plots the results of a treatment suggested by holography, which showed that all the breakup modes of are circular in character.

In fact if all speakers were completely uniform in their physical properties only circular patterns would occur, because the way they are supported and driven tends to favour these patterns exclusively.

Indeed, some physical properties of sandwich and plastic cones change by as little as 5% from one part of the cone to another, whereas some paper cones have shown changes as large as 100%.

### ONE FELL SWOOP

The fact that sandwich cones always have a point of maximum breakup movement at the voice-coil allows us to damp out all the unwanted vibrations in one fell swoop without great loss in sensitivity by attaching a damping bung to the coil with a 'lossy' glue.

Plastic cones also tend to break up into circular patterns because of their uniform physical properties. However, the damping bung method is not so effective, so another approach was tried and proved to be successful.

In this case lines of holes in a kind of breakwater pattern were applied to the cone and each hole was filled with damping material.

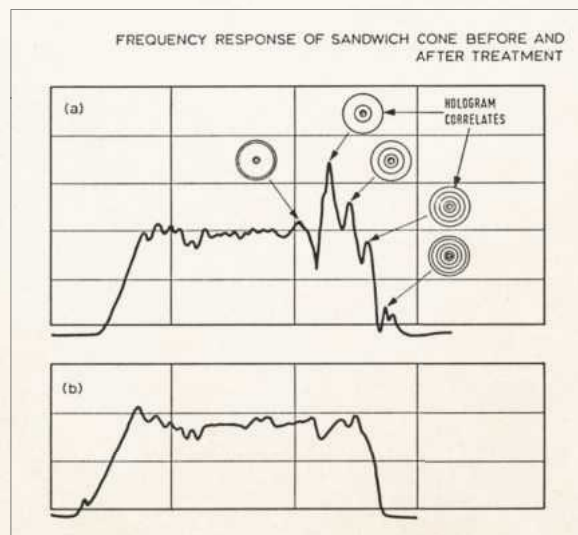
The use of holography in the design of dome tweeters is a further

**'Holography can indicate why a loudspeaker may fail in service'**

example of how it enables the designer to see how the driver is actually departing from desirable behaviour. Dome tweeters often have a central region that gets 'left behind' as the voice-coil goes up and down. Cone profiles which minimise this defect can be chosen with the aid of holography.

We have seen that holography can give indications as to why a given loudspeaker may sound bad,

or may fail in service, and can even give pointers as to what to do about the problem. The sensitivity of the technique is just right for looking at midrange units and tweeters, where more traditional techniques like the ordinary strobe are no longer sensitive enough. ☺



**ABOVE:** Pages from the March 1978 issue of *Hi-Fi News* in which Peter Fryer (then working for Rank Hi-Fi) describes how laser holography is employed to study and improve speaker performance

**BELOW:** Fig 8 – response curves of a typical sandwich bass cone without crossover. The lower curve (b) shows results after treatment suggested by holographic analysis



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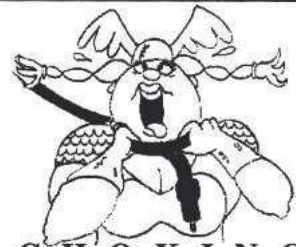
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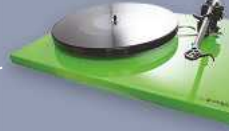
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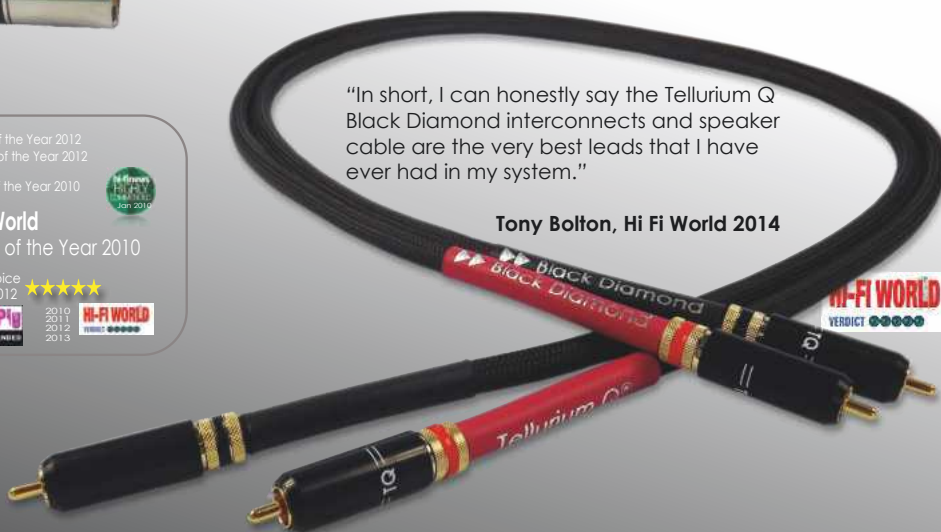
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# OFF THE LEASH!

KEN KESSLER TELLS IT LIKE IT IS...

It would take Ken Kessler over a month to listen to all the music on his iPod. But what about quality?

Whenever there's a massive leap in technology, resulting in instant obsolescence for an elder form, the world is suddenly flooded with severely out-dated kit. Do you know *anyone* who would rather use a typewriter than a word processor? To put it another way: when's the last time you opened a bottle of Tipp-Ex?

Provided the obsolete hardware doesn't need external input that has ceased to exist (eg, analogue TV broadcasts), boys' toys are immune to the phenomenon. A look through any Sunday colour supplement will show you, in the interior design articles that appeal to Londoners who weekend in Whitstable after paying £50,000 for an 8x12ft beach hut, retro isn't solely the province of LP devotees.

## COOL ONCE MORE

Fountain pens, mechanical watches, vintage cars, Aga cookers, film cameras... even cassettes are alleged to be cool once more. A friend recently asked me where she might find a turquoise Dansette in mint condition. Exhortations about what it will do to her records fell on deaf ears: 'They're already scratched and knackered.'

Backlash against a computerised age? Perhaps, but we can no more ignore a world led by the internet than we can return to



leeches. Despite articles in tech magazines about 'How to erase your digital footprint', few of us want to give up Google, ordering stuff online, streaming TV shows we missed, to say nothing of serious, work-related tasks like doing one's book-keeping. Even the guy who looks after my car – an old-school, local spanner-spinner – is fully-wired.

## BEEN THERE, DONE THAT

Readers of *Hi-Fi News* include everyone from mono-loving, single-ended triode fans to

those who can argue about codecs into the wee hours. Common to all is a passion for sound quality, which means the most realistic-sounding playback that a system can provide. What

worries me is there's no indication that 'the next generation' gives a monkey's about it.

Ever since the iPod and iTunes appeared, two aspects of music retrieval have taken precedence over everything else: portability and convenience. The former hasn't been an issue since the Walkman appeared 35 years ago. Pocket-sized, with headphones and freedom from AC? Been there, done that.

It's the storage/convenience differences between that first Walkman and today's players that make the new stuff an advance. The increase in the capacity of digital storage brought gains from a cassette's 120min to many weeks' worth. My 160GB

iPod still has 20GB to fill, and it would take 42.8 days to listen to it once.

Wandering through stores I won't name, I see today's 15-40-year-olds lusting after hardware so shamefully awful that I'd rather suffer the inescapable wow-and-flutter of a cassette player. They buy according to the colour of the phone into which they'll transfer their compressed downloads, to be accessed though headphones conceived for looks, first and foremost.

Whether you consider this ironic or disgusting, many of those vile-sounding headphones were probably designed, or at least signed-off, by an alleged musician. Even that term is moot, because I don't consider sampling, and shouting lyrics with no attempt at actually singing, to qualify one as a 'musician'.

I do not deny my status as elder exhaust, but I don't need measurements to tell me that today's norm for acceptable sound quality is lower than at any period in my time on this planet. I'd rather not exacerbate this further by citing the hoary truism that hi-fi quality parallels the music with which it is contemporary; as proof, many of the world's most desirable classics were produced when The Beatles were current: 1962-1970.

Sadly, I hear little new music that warrants state-of-the-art replay, and that which does either comes from older artists, or younger artists in love with the past.

## NEW PLAYERS

Which brings us to the latest serious attempt at saving us from poor sound quality. Much as I adore the Astell & Kern player, the interface is clumsy compared to an iPod's, and the price is high. The Pono should sell for a third of the price of the A&K, or the same as a 64GB iPod touch, but with 128GB storage and space for an SD card. I pledged \$400 on Kickstarter straight away. (Yeah, the Buffalo Springfield edition...)

Its champion is Neil Young, a musician who has defended analogue ever since CD reared its head, with the admirable Ayre Acoustics contributing audiophile credibility. Will landfill be needed to swallow unwanted iPods and smartphones? I doubt it. But here's hoping I'm not clutching at straws. ☺

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