



**Now ear this!**

Six headphones tested from Audio-Technica, Beyer, Grado, HiFiMAN, Sennheiser & Shure

**Retro**

Naim's NAT 01: Britain's greatest audiophile tuner?



# Hi-Fi Choice

**PASSION FOR SOUND**

www.hifichoice.co.uk

Issue No. **359**

June 2012

**£3.99**

## School of rock

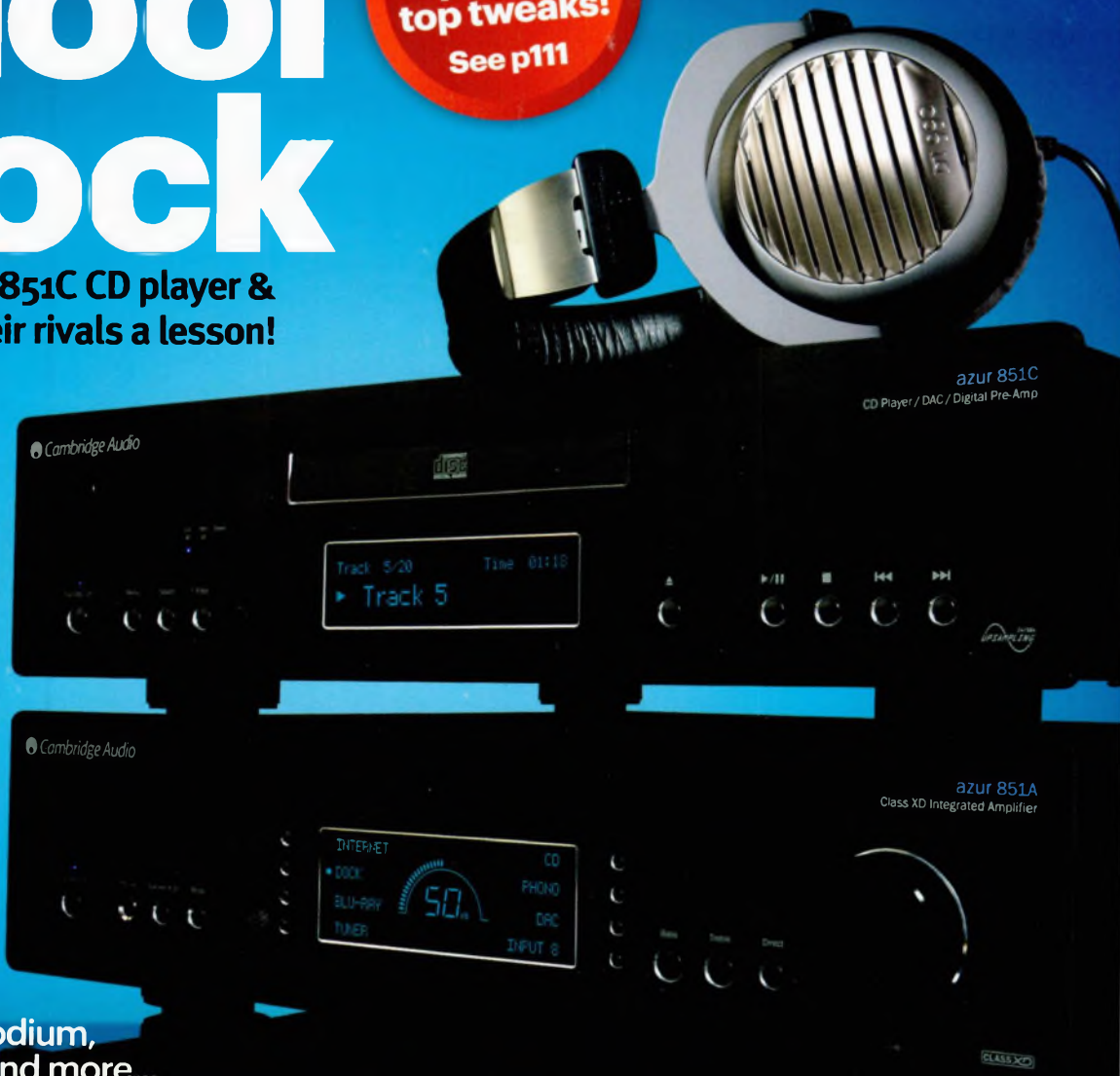
Cambridge Audio's new 851C CD player & 851A amplifier teach their rivals a lesson!

**Net set**  
Pioneer's new N-50 digital streamer

**Tune-up toolkit**  
How to get the very best sound from your system!

**27**  
top products from Audio Origami, Black Rhodium, Origin Live, Townshend and more...

**NEW**  
7 pages of top tweaks!  
See p111



**Word perfect**



Our verdict on Audiolab's new 32-bit M-DAC



**Stand made**

PMC twenty.22: serious small speakers



# SET YOUR MUSIC FREE

  
MARTIN LOGAN

*'Seduces the listener with realism and a sense of scale...  
The Summit X will own your heart from its first notes'*

**Ken Kessler, Hi-Fi News** (November 2009)

*'Reference-grade performance that you'd struggle to match  
at double the price'*

**Alan Sircom, Hi-Fi+** (Issue 66)

*'The Summit X is just too addictive to live without. I'm putting  
my money where my mouth is and buying the review pair as  
my new reference loudspeakers'*

**Howard Kneller, SoundStage!** (September 2009)

**N**othing brings music to life like  
MartinLogan speakers. Unique  
technologies, seamlessly fused to  
create a sound so spacious, so open, it  
makes ordinary speakers seem hopelessly  
constrained.

26 years of electrostatic evolution has led to MartinLogan's latest creation: the mighty Summit X. Key to the new speaker's extraordinary performance are its advanced XStat™ electrostatic panel and perfectly integrated Controlled Dispersion Powered Force™ woofer section, effortlessly extending bass response to subterranean depths.

Yet the Summit X never sounds heavy. On the contrary, its performance is extraordinarily fast and open, painting an image that dances boldly before the listener, fully scaled and unconstrained, a sound that's natural, effortless and startlingly real.

The pinnacle of MartinLogan's hybrid electrostatic technology, the Summit X joins an extensive range of speakers encompassing freestanding, on-wall and in-wall models, from affordable hybrid designs and standalone subwoofers to the awesome CLX – the best full-range electrostatic speaker money can buy.

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**Tune-up toolkit** Get the best sound around!



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**Retro** Naim's classic NAT 01 tuner revisited

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**T. Rex** Electric warrior

**BADGES EXPLAINED**

▶ OUR AWARDS



**EDITOR'S CHOICE:**  
Awarded to those products that are judged to deliver reference-standard performance



**RECOMMENDED:**  
Products that we feel meet a high standard of performance



**GROUP TEST WINNER:**  
Comparative tests can only have one winner, and this badge says it all!



With its new 851C Compact Disc player and 851A integrated amplifier, Cambridge Audio faces a rather odd – and admittedly novel – problem. Simply put, its latest products are better than its brand!

Now, don't get me wrong. I don't mean to slight the company's good

name – since its inception it has made many fine and worthy budget hi-fi separates. Trouble is, the new 851s are neither fine *nor* budget. They're superb, and strut firmly into the 'mid-price' sector of the British hi-fi market. Easily able to compete in sonic terms with the Cyruses and Roksans of this world – marques that have traditionally resided a notch or two above starter separates – the new 851s change the rules of Cambridge Audio's game...

It's precisely because the company has never sold expensive kit, that it has never had the chance for its badge to attain snob appeal. The name isn't the sort of thing you'd boast about to your friends at work or down the pub, in the way you would, say, with Krell. Ironically though, the engineering quality is superlative, with sonics to match. The 851s are so skillfully executed that aspects of their performance compete with some very desirable premium priced kit at several times the price.

So would you have the new 851s in your home? While not at all unattractive, they're hardly the last work in exotic aesthetics. But don't let that, or the humble name, put you off. If you're currently in the market for excellent separates that give near-high end performance for a fraction of the price, go and hear them now. For yours truly, *performance* is the real name of the game!

**David Price** Editor  
david.price@hifichoice.co.uk



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**FOCAL**  
utopia series



**Focal Scala Utopia Speakers**

Scala Utopia delivers incredible musicality. Everything is just so easy for this loudspeaker. Easy to set up or install, Scala is a prestigious and fascinating loudspeaker without the common drawbacks.

0% finance example: £263.88/month\*

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0% finance example: £122.21/month\*

**To arrange a personal audition of the Focal Utopia Grande EM, Stella EM, Maestro EM, Scala, Diablo, Viva or Sub EM, please call Jordan Acoustics.**



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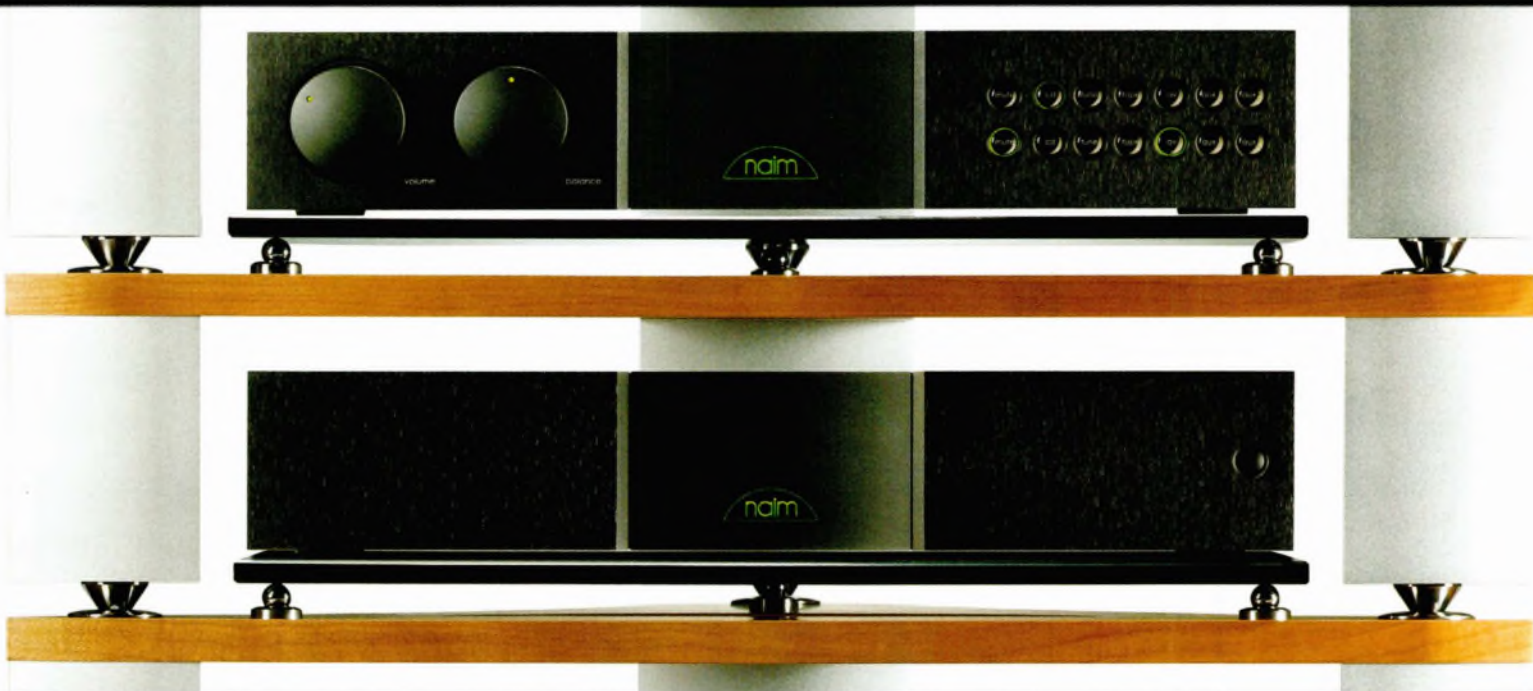
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# naim

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Building a true high-end system is not about collecting brands based on reviews. It is about finding a true synergy between components that sound magical together. That palpable reproduction, full of dynamics and realism just how the original artist intended. Fingers on frets, breathing of vocalists, the tautness of a drum skin... the devil is in the detail. **That's why we love great hi-fi and that's exactly why you should give us a call.**

part exchange\* ▶ large selection of used items ▶ home demonstrations\*



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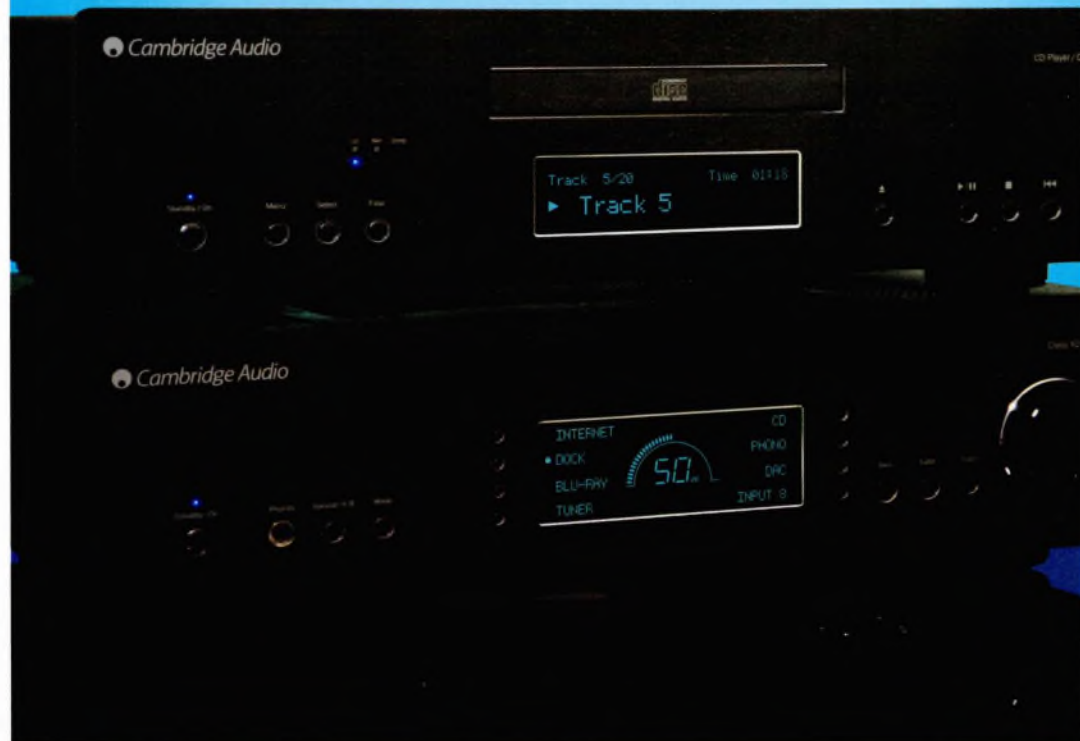
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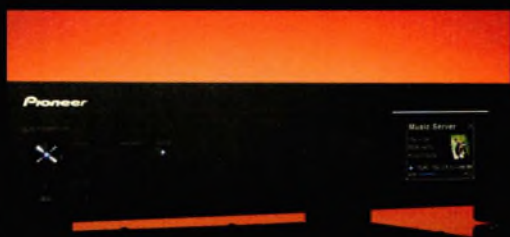
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**Never miss an issue – turn to p39 for our latest subs offer**



# Chemical reaction

Leema's new Elements series of 'mini components' looks set to cause quite a stir in the world of affordable audiophile hi-fi, says **David Price**...

**PRICE:** £1,195 EACH  
**AVAILABLE:** NOW  
**CONTACT:** 01938 559021  
**WEB:** LEEMA-ACOUSTICS.COM

**L**eema's new range of compact, high quality separates is called Elements. It includes a CD player, a digital streamer, an amplifier, phono stage and DAC, all said to be high performing products in their own right, rather than just simply pretty 'lifestyle' designs.

unbalanced connection. This also allows the connection of two stereo Leema power amplifiers, which when controlled by Leema's Intelligent Protocol System produces a neat bi-amped stereo amplifier package.

The new DAC is the first stand-alone design from Leema; its Quattro

Elements separates are said to be high performing products, rather than just pretty 'lifestyle' designs...

The Leema Elements Integrated Amplifier sports what the company says is, "the most comprehensive set of inputs and facilities of any Leema product to date", a decent 56 watts into 8 ohms and 112 watts into 4 ohms (claimed) output power, and the option of an onboard Digiboard upgrade card (£295) offering a 24-bit/192kHz DAC with coaxial and optical S/PDIF inputs, plus 24/192 asynchronous USB. The LIPS system bus allows for easy integration with any other Leema hi-fi separates.

The Elements CD Player has a TEAC disc transport with extremely low levels of jitter, typically around 50pS@1kHz, says the company. Leema's latest Quattro Infinity Multi-DAC uses multiple 24-bit/192kHz multi-bit delta sigma data converters and dual analogue outputs are provided for both balanced and

Infinity DAC topology, first seen in the range-topping Antilla LIS Eco CD player, has been further developed and improved, it is claimed. All the inputs offer full 24/192 capability, and the latest asynchronous and multi-frequency adaptive modes ensure perfect synchronisation with the source, "for almost invisible levels of jitter", says the company. There's an analogue volume control to allow the Elements DAC to be used as a preamplifier. Factor in infra-red remote control, a mute button and an on-board headphone amplifier and it's a versatile little box.

The new Leema Elements Streamer incorporates Leema's Quattro Infinity DAC, automatically detects any UPnP or DNLA compatible computer, server or NAS drive connected to the network and presents the music files and cover art "on an attractive and



easily navigable colour display", Leema says. Additionally, direct access is provided to vTuner's premium internet radio service which offers over 25,000 streamed radio stations categorised by both genre and country.

Apple ID certification allows USB connection and control of Apple devices such as the iPhone, iPod and iPad. Full infra-red remote control is included and iPhone or Android phone control is possible using apps such as UPnP Player or Plug Player. For an exclusive review of the new Leema Elements CD player and amplifier, look out for the very next issue of *Hi-Fi Choice*!



Hit it!

**THE BRITISH MUSIC** scene was rocked last month when Adele's second long-player *21* overtook Pink Floyd's *Dark Side Of The Moon* in total albums sold. With over 4,142,000 copies sold, it is now the seventh biggest-selling album of all-time and just 12,000 copies away from displacing Dire Straits' *Brothers In Arms* from the number six spot.

Adele Laurie Blue Adkins is proving a world-wide music industry sensation. The Tottenham-born chanteuse is enormously successful in commercial terms, and there are no signs of the pace lessening. *After Brothers in Arms*, *21* will be on track to usurp Michael Jackson's *Thriller* album, no less! According to *Music Week*, the UK's top 10 selling albums are:

1. *Greatest Hits* – Queen (5,864,000 copies sold)
2. *Sgt Pepper's Lonely Hearts Club Band* – The Beatles (5,045,000)
3. *Gold: Greatest Hits* – ABBA (4,992,000)
4. *(What's The Story) Morning Glory?* – Oasis (4,520,000)
5. *Thriller* – Michael Jackson (4,272,000)
6. *Brothers In Arms* – Dire Straits (4,154,000)
7. *21* – Adele (4,142,000)
8. *Dark Side Of The Moon* – Pink Floyd (4,116,000)
9. *Bad* – Michael Jackson (3,960,000)
10. *Greatest Hits II* – Queen (3,888,000)

**Toppermost of the poppermost:** Queen's *Greatest Hits* and The Beatles' *Sgt. Pepper...*





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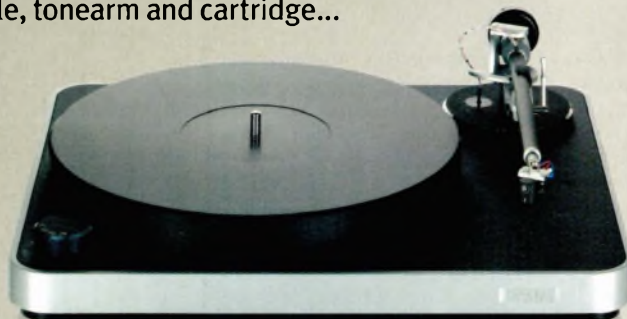


# All together now

Clearaudio's new combi includes the Concept turntable, tonearm and cartridge...

**T**he Clearaudio Concept turntable has been, according to the company, its most successful turntable to date. Features include a resonance-optimised chassis, a decoupled DC motor with low noise bearings and a polished tempered steel shaft in a sintered bronze bush. Its speed runs up to 78rpm.

The tonearm is friction-free with a magnetic bearing, and comes bundled with a Clearaudio Concept MC cartridge that's said to establish a new price/performance benchmark; it is constructed from an alloy of aluminium and magnesium. This is pre-installed and factory-aligned, making for a readily set up deck that's said to give a true plug and play vinyl experience.



**PRICE:** £1,650 **AVAILABLE:** NOW **CONTACT:** 01252 702705 **WEB:** CLEARAUDIO.DE/

## Rogue gallery

Simple set up with new phono preamp

**A**udiofreaks has just announced the new Triton, the latest phono preamplifier from Rogue Audio. This swish new phono stage offers, says the company, an outstanding performance at a modest price level.

With four different gain settings (35dB, 45dB, 55dB, 65dB), eight resistive loading options and four capacitance settings, the Triton will sound stunning with almost any cartridge ever produced, it's claimed. All loading options are accessible through a convenient hatch plate in the cover, making fine tuning of your vinyl setup easy.



**PRICES:** £995  
**AVAILABLE:** NOW  
**CONTACT:** 020 8948 4153  
**WEB:** ROGUEAUDIO.COM

## Sky high

**CARDAS AUDIO** has introduced a new range of cables. First up is the Sky speaker cable (£549, 2m) which, says Cardas, employs the same conductor found in Clear Light Speaker cable, with a dielectric of PFA and air-tubes and soldered spades. While not suitable for bi-wiring, the Cardas Clear Jumpers (£269) use the same conductor as Clear Speaker Cables and are terminated in the same way, featuring forged connectors for those wishing to bi-wire.

The Clear phono cable is a four conductor version of the Clear interconnect and uses the same Matched Propagation conductors to achieve its most revealing phono cable, say Cardas. It is double-shielded to protect the delicate low level signals, important for this application, while its sonic character is reported to be both neutral and refined, with excellent extension at both ends of the frequency range. Available with a Straight DIN or Right-Angle DIN connector to SRCA male RCA plugs, it costs £999 for 1.25m.

The new Clear Headphone cable has a separate cable for each ear with Matched Propagation conductors and is "one of the best upgrades you can make to your headphones". Available with connectors for Sennheiser, HiFiMAN and AKG (stereo 6.3mm jack and Cardas Golden XLR connectors), prices start from £499 for a 1.5m pair. It's also available in lengths of 3 and 4.5 metres.

**cardas.com**



## Whistle while you cook

**FOR THOSE WHO SPEND** a lot of time in the kitchen and like to listen to the radio, Roberts has come up with a good idea. The MessageR DAB/FM radio is a clever digital tuning clock radio which lets you record voice messages – perfect if you suddenly remember something while in the middle of preparing dinner, as you won't need to write it down, and you can even set a time for the voice memo to go off!

It's available in cerise pink or flaming red to inject a splash of colour, or if you fancy a more simplistic look choose white or black. Other features also include a useful egg timer, a mood light with eight brightness settings, as well as ten station presets, snooze function and sleep timer, so it's also handy for the bedroom. Price is a keen £99.99.

**robertsradio.co.uk**





# 6 Essential Questions To Ask Before Upgrading

## 1 Do I need to invest more than the value of my current arm to get an upgrade?

You can actually invest less and still get a massive upgrade. This surprises many, but at Origin Live we think well outside the box - to create both much higher performance and higher value designs than normal. For example one editor stated in a review of the Silver arm "Price tag is laughably low .... could probably charge 5 times the amount .... words can't express how good this is ... one of the designs of the decade."

## 2 Is it worth changing my arm?

Users say they could never have imagined the level of improvement achieved by simply upgrading their arm. The below comment is typical.

*"I'm extremely impressed with the sound and happy I made the right choice with your tonearm. I feel there's no other tonearm that could come close to the dynamics it produces. The sound I'm getting now is pure perfection. I am in total analogue heaven and enjoying my vinyl investments for the first time. In the past I was not happy with the sound and not interested in playing any vinyl. Now I'm looking forward to an entirely new experience. I feel very fortunate in discovering your product." Craig Larson*

It is worth adding that a tonearm upgrade is far more significant and cost effective than a cartridge upgrade.

## 3 Who has an arm to suite my budget and needs?

The range of Origin Live arms is probably the most extensive in the world. Designs range from £4500 down to £250 - including a 12" version for every model.

## 4 What about new innovations and materials - what do I believe?

The need for trusted high performance arms has never been greater. At Origin Live we have devoted over 25 years of continuous development into ultimate sonic performance.

Origin Live arms consistently win awards around the world, year on year, a testament to their leading performance. For example the Onyx arm won "The tonearm of the year 2011 award" in Hi Fi World. In addition to this, review endorsements from respected magazines could not be higher with comments such as;

*"So far ahead of the pack... looks about to lap them"*  
STEREO TIMES,

*"The best arm I've heard"* HI FI WORLD.

## 5 Changing a cartridge is easy but I'm not sure about my tonearm?

Arm installation is usually easier than cartridges, with help from adaptors and guidance - Visit our web site for help or phone us.

## 6 What if I am not happy that the arm lives up to the claims?

You may be apprehensive about an investment of this nature without hearing it in your system first. Every arm ordered through Origin Live comes with a one month, money back guarantee if you are not absolutely delighted (dealers can offer this at their own discretion).

## Why not start enjoying an entirely new level of performance?

To find out more, please visit our web site. You can order the arm of your choice either directly or through one of our dealers.



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Reproducing the original sound



# Light fantastic

Densen's new Superleggera CD player arrives in the UK

**T**he new B-475 CD player is the second Superleggera product from Densen (the term *superleggera* will be familiar to connoisseurs of expensive, light weight sports cars). In the B-475, the huge power supply has its own compartment, and there's a heavily tweaked CD transport mechanism with external clock control to avoid jitter; it uses the same high precision clock at both sending and receiving end of the datastream.

The B-475 sports a digital input, allowing it to be used as an external DAC for a source like a Sonus system or a Squeezebox, for example. The DAC is a 24-bit type which is

mounted under a shielded box, to avoid digital interference on the analogue stages. Connections include double gold-plated RCA phono outputs, coaxial digital output, and a digital output which allows for easy upgrading to an offboard Densen DAC.

Sonically, the B-475 is the result of head honcho Thomas Sillesen's professed desire to make a machine that will be a benchmark for CD players not only at the player's price point, but much higher too. It is available in either albino finish with chrome buttons, or black with either chrome or gold buttons, and is on sale now.



**PRICE:** TBA **AVAILABLE:** NOW **CONTACT:** +45 75 18 12 14 **WEB:** DENSEN.DK/

# Mighty mini

New TEAC hits the mark

**T**EAC's new CR-H700 is a CD player, 40-watt amplifier, FM/AM/DAB/internet radio player and Airplay streaming device in one compact chassis. It brings hi-fi-quality sound to Apple Macs, PCs and iOS devices, thanks to the addition of Airplay technology, as well as vinyl replay from a suitable turntable, using the built-in phono stage. It will also allow users to play music stored on computer hard drives and NAS devices over a wired (Ethernet) or wireless (wi-fi) connection. iPods and USB drives can also be connected via the unit's fascia-mounted USB socket where MP3, WMA, WAV, AAC and FLAC files can be played.

Users have full control of the unit, including basic iPod functions, with the supplied remote commander, while Airplay users can enjoy their music collection in full using their iOS devices, says TEAC.



**PRICE:** £450 **AVAILABLE:** NOW  
**CONTACT:** 0845 1302511  
**WEB:** TEAC.CO.UK

# Blue note

New baby Arcam converter is Bluetooth-friendly

**S**treaming high quality music from your favourite mobile device is now easy, according to Arcam, with its rBlink Bluetooth-equipped DAC. Engineered by Arcam, and using the APT-X transmission system, the compact, light rBlink allows any Bluetooth-equipped music device to quickly and easily send music straight to a high quality hi-fi system.

The device sports a high-end PCM 5102 24-bit converter chip to convert the digits to a line level analogue output, ready for connection to any audio system equipped with an auxiliary input. Installation is easy, with a simple pairing system for new devices, says Arcam. Watch out for a review of this in the next issue of *Hi-Fi Choice* magazine!



**PRICE:** £150 **AVAILABLE:** NOW **CONTACT:** 01223 203200 **WEB:** ARCAM.CO.UK



# Finger on the pulsare

New phono stage hopes to build on success of its predecessor...

**S**ince its introduction two years ago, Avid's premium priced new Pulsare phono stage has received critical acclaim and awards all around the world, the company says.

The new Pulsare II builds upon this success, claims Avid. It retains the features of the previous model, but is now enhanced with switchable mono facility and subsonic filters, conveniently operated from the front fascia panel.

Resistance values can now be customised; internal RCA sockets allow different resistance plugs to be fitted to alter the default 47k setting, so perfect cartridge matching becomes simple. This is done internally to maintain the shielding of the fully balanced circuit and prevent unwanted noise. In keeping with all Avid products, manufacturing is done within the UK, at the company's new factory near Huntingdon.



PRICE: £4,300 AVAILABLE: NOW CONTACT: 01480 869900 WEB: AVIDHIFI.CO.UK

## Power points

**ATLAS CABLES** has launched a range of new high-performance mains power products as part of its Eos line. Five new items have been released, including a new high-performance four-way mains distribution block, three high-end mains cables and a new purpose-designed audiophile mains plug.

Eos high-end mains cable allows hi-fi systems to deliver greater levels of information, says Atlas, and effectively acts as a filter against harmful incoming AC-power-dumping disturbance and airborne RFI. Prices are £160 for the EOS 25q 13A plug to rhodium 10A IEC plug (1 metre) and £200 for the EOS 4sq 13A plug to rhodium 10A IEC plug (1 metre).

The new four-way mains distribution block has also been designed to reject EMI and RFI. 'Star Wiring' is used for the positive, neutral and ground. This means that each power socket is wired directly to the point where the power enters the board, providing total isolation from each other, it's claimed. The internal wiring is the same OFC cable with Teflon dielectric, as used in Atlas Cables Eos mains cable range. Prices are £500 for the UK 13A 220v four-way, £550 for the Schuko 220v four-way, and £546 for the new Nema 110v four-way.

The Eos Power Plug is the same product that is fitted to the Atlas Eos power cables, enabling electrically competent consumers to assemble wires with high-quality plugs in their own homes. The Power Plug has copper-bronze pins which are highly polished then plated with 1.25 microns of pure rhodium, a metal alloy which provides a cleaner sound, it's said.

Prices are £52 for the UK 13A 220v plug with silver fuse (10A), rhodium-plated copper pins, £45 each for the Schuko 220v plug, rhodium-plated copper pins, £50 each for the Nema 110v plug, rhodium-plated copper pins, and for the IEC 220v plug, rhodium-plated copper pins 10A rating.

AVAILABLE: NOW  
WEB: ATLASCABLES.COM

## NEWS IN BRIEF

• **CABASSE** is launching a limited edition of its iO2 speaker system finished in a high lustre piano black. Intended for use as a stereo pair or as part of a multi-channel system, the iO2 is a compact satellite speaker which features a 13cm Duocell mid/bass driver and 25mm rigid dome high frequency unit in a coaxial arrangement. The production run is strictly limited, so people are advised to get their orders in quickly with their local Cabasse retailer! Prices range from £539 to £899. [cabasse.com/en](http://cabasse.com/en)



• **SENNHEISER** has just announced its latest in high-end headphones – the HD700 (£599). The ear cups have been specially designed at an angle for optimal sound projection and to direct the sound waves naturally into the ears. Listeners are able to enjoy a complete sound experience thanks to the HD700's powerful neodymium magnet system that guarantees detailed, life-like audio reproduction from 10 to 42,000Hz, the company claims. As per Sennheiser tradition, it's said that the earcups are completely open to give a more spacious recorded acoustic. [sennheiser.co.uk](http://sennheiser.co.uk)



• **PASS LABS** owner Nelson Pass wishes it to be known that he is not retired (*Dealer systems, HFC 356*), but still a very active figure in the world of hi-fi!





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## Electrocompaniet EMP 2 Multiplayer

Blu-ray, DVD, CD, SACD, DVD Audio

Electrocompaniet EMP 2 is a fully fledged and versatile player with support for all modern audio and video formats and media. Included Blu-ray in 2D and 3D, CD, SACD, DVD and DVD Audio. Modern video- and audio processing in both two- and multichannel gives excellent picture quality and HighEnd sonic quality.

Lots of connections give great flexibility both for use in a surround or stereo set-up, or a combination of the above. The EMP 2 is a real multiplayer that works perfectly as a Blu-ray player in a multichannel set-up and as a two-channel CD/SACD player. For connection to your surround system you can choose HDMI or 7.1 RCA connectors.

We have equipped the EMP 2 with our newest DAC and analogue output section. The connection to your stereo system is by balanced XLR connectors, the way you would expect from Electrocompaniet.

In addition to playback of all available disk format the player also works as a streamer for music and pictures that are stored on you computer, USB memory stick or E-SATA disk.

Made in Norway

[www.electrocompaniet.no](http://www.electrocompaniet.no)



# School of rock



Cambridge Audio has replaced its top CD player and integrated amplifier with smarter, punchier designs.

**Jason Kennedy** marks them for value...

## DETAILS

**PRODUCT:** Cambridge Audio 851C and 851A  
**ORIGIN:** UK/China  
**TYPE:** CD player and integrated amp  
**WEIGHT:** 851C 8.5kg, 851A 15kg  
**DIMENSIONS:** (WxHxD)  
 851C: 430x115x360mm  
 851A: 430x115x385mm  
**FEATURES:**

- 851C: digital inputs, 2x coax or optical S/PDIF, AES/EBU, asynchronous USB
- digital outputs: coax or optical S/PDIF, AES/EBU
- analogue outputs: RCA phono, XLR balanced D/A
- analogue devices AD1955 24-bit
- digital filters: steep, linear phase, minimum phase
- 851A: rated power: 120w/8 ohms, 200w/4 ohms
- analogue inputs: 7x RCA phono, 2x XLR balance
- analogue outputs: record, pre
- RS232 control
- remote control

**DISTRIBUTOR:** Cambridge Audio  
**TELEPHONE:** 0870 900 1000  
**WEBSITE:** cambridgeaudio.com

**W**hen Cambridge Audio was revived by Audio Partnership back in the nineteen nineties, it was building a range of entry-level components that took on the likes of Marantz and Denon, with keen pricing and all the right features.

It went on to do more substantial and ambitious products to take on established British brands like Arcam and Creek, a state of affairs that was consolidated with the arrival of the Azur 840 amp and CD player.

These were £750 a pop, which seemed big money for a brand associated with budget components, but they garnered a lot of critical acclaim and have only now been replaced. And replaced with the rather similar looking Azur 851 range; despite outward appearances, there's been a very substantial price hike which takes the marque into altogether more rarefied company. Take a closer look at the end products however, and the 8 series has been radically reworked.

The casework finish is now brushed all over, which gives the impression that it's entirely aluminium – it nearly is, but there's a steel chassis underneath. Still, that stylish venting and precision metalwork means that it looks the money in the way the previous finish didn't. The display is no longer LCD, but something called DFSTN or Double Film Super Twisted Nematic, if that means anything to you. It doesn't to me, but it does look significantly better and is easier to read in bright light conditions.

Under that high-class skin you find a massive toroidal transformer at the heart of the amp's power supply, the extra capacity meaning that electrical and physical noise is kept lower.

The Azur 851A is the least changed of the two components here; it retains the 120 watts per channel specified output into eight ohms, but the Class XD output stage has been refined, quite possibly to combat a criticism made of the 840A that it lacked fluidity and finesse. Class XD is not, as the name suggests, a variation on a Class D switching technology, but a linear topology that





is closer to Class AB, but with a twist of Cambridge's making that attempts to remove zero cross distortion, a feature of all Class AB designs [see *How It Works*, p19].

For an idea of how much success the company has had with its latest tweaks see *Lab Report* p18. The biggest component change is a new volume control; what was a resistor ladder and relay design has been replaced with a fully balanced silicon gate control.

The Azur 851A retains a feature that is unique among amplifiers at this price – the option of being able to give your own choice of name to all of its nine inputs. In these days of myriad sources, most manufacturers have abandoned the old CD, tuner, tape-type input names in favour of numbers. Speaking from experience, this is an approach that's fine if you don't change things too often or have a great memory, but it can certainly get confusing when you chop and change equipment. It's also rarely any use to those unfamiliar with the set-up. The naming feature is, therefore, very useful to reviewers, or anyone who connects more than a couple of sources to their amp.

On the back panel it retains two sets of speaker terminals, but a second set of balanced inputs replaces the multi-room

socketry of the 840A; all that remains for the benefit of the custom installer is an RS232C socket, a pair of control bus RCAs and an IR emitter input. While there are seven RCA inputs and two XLRs, if you use the latter this reduces the RCA count to five pairs as it's an either/or system; still it should be enough for most situations.

The Azur 851C is quite a different beast to its predecessor in all but appearance. For a start it has a new transport mechanism built from parts sourced from multiple suppliers. The structure is bought in without servos, so that Cambridge can install Philips servo circuitry which is controlled by a chip that the company programs in-house. The problem with existing off-the-shelf transports is that they are not primarily designed for reading Red Book CDs and cannot be customised for this purpose. The servo is the heart of a disc drive; it controls the motors for the laser and communicates with the chip that provides the user interface, scanning buttons, and so on...

## They compete with the best in class when it comes to sound, in a league of their own...

When this player was launched at CES in January, Cambridge told me that it contains the best DAC that they have ever built; it is *not* as one might expect the internals of a DacMagic Plus, although it shares a number of key elements with that model, including the DSP circuitry, 24-bit/384kHz Anagram upsampling algorithm, jitter reduction and digital filter. What differentiates them is a pair of Analogue Devices DACs run in dual differential mode that produces a balanced current output that is very different to the Wolfson convertor in the DM Plus.

You can select one of three filter options on the DAC side of the 851C and it's interesting to note Matt Bramble's response to my question about which he preferred (see p18). He said that this depends on the nature of the signal. This unit also has a digital volume control and this, combined with the multiplicity of inputs, means that it can be used as a digital preamplifier.

If you don't need to accommodate analogue sources, it could be paired with a power amp or active speakers. So far Cambridge Audio doesn't have an 850 series power amp in its range, but the word is on the street that this state of affairs may well change in future.

The 851C has inputs for three digital sources, including that rare beast, an AES/EBU socket. Perhaps – let's be frank here – undoubtedly more useful is the asynchronous USB input that accepts signals up to 24-bit/192kHz. You'll need to install

Cambridge's driver software to provoke a Windows-based computer to provide this sample rate, but Mac users (as with so many things in the world of computing) can of course get straight to it.

### Sound quality

When I got the player up and spinning I was able to fully appreciate the new display system which places white characters on a black background for excellent legibility; it also became clear that the player now provides track identification where this is on the disc, and even from CD-Rs burnt with iTunes.

To get some perspective on the situation, a sample of this player's predecessor – the 840C – was given the same amount of warm up and the opportunity to strut its stuff, delivering a sound that made it a lot of friends at its price point, yet one that seems positively crude by comparison with the 851C. The new player is remarkably refined, clean and revealing; it's really not hard to hear why the price has risen to the extent that it has.

The newcomer is a rich and sophisticated sounding machine that delivers remarkable tonal depth from a good recording. I enjoyed its rendition of a Gillian Welch song, the voice and two guitars being delivered in an open and three-dimensional fashion that proved rather too diverting. After all, this reviewing business is serious stuff, and one is not supposed to get distracted by the music, but in this instance it could not be avoided. Even though the piece is quite laid-back the timing is well defined, subtle but very effective and clearly adding to the enjoyment of the music.

Imaging is strong too, the player creating a distinct sense of solid voices and instruments in a soundstage that varied to reflect the recording, but never seemed constrained. Cornelius' *Fit Song* provided the material for the 851C to show off its low-end potential, this is did with some panache delivering a kick drum of clear shape and power with distinct leading and trailing edges. This combined with decent extension made for a meaty sounding instrument, just the way it should be. Switching to the same track via the USB input resulted in a subtle thickening of the bass which, while slightly deeper, lacked the transient thrill of the disc. The result from this input is pretty engaging nonetheless; I threw one of the densest tracks I have in the library at it and it had little difficulty unravelling the multiple rhythmic strands.

I compared this input with a standalone Rega DAC and found that the latter's ability to hook you into the music was not one that the Cambridge *quite* could match. But it does, however, deliver a cleaner and more dynamic version of events that clearly has greater resolving power in most respects.

After a while it occurred to me that you can try different filters on this player, so I





## Q&A

JASON KENNEDY SPEAKS TO CAMBRIDGE AUDIO'S TECHNICAL DIRECTOR MATTHEW BRAMBLE...



**JK: Why the significant price hike above the 840 range?**

**MB:** Both units use some new and expensive parts; the 851C for instance, uses our new transputer-based USB interface for 24-bit/192kHz USB Audio and the 851A uses a new balanced topology for the volume control with two volume ICs and all the associated components. The 851C now uses our ARM controlled S3 servo in place of the old servo, and both units employ a new reverse double film display. Plus, as you might expect, manufacturing costs and raw materials are certainly higher now than when we launched the 840 series...

**What has been changed in the Class XD outputstage?**

The output stage topology itself remains unchanged, although we have tweaked the XD circuitry and the way that it now modulates the crossover displacement current with both level and frequency.

**How has the volume control changed in the 851A?**

It's completely new. We are now using two silicon gate volume controls in a fully differential configuration, as opposed to the single-ended resistor ladder we used before.

**Which is your preferred filter setting on the 851C?**

I personally prefer to use minimum phase for uncompressed audio and the steep filter for compressed files over USB.

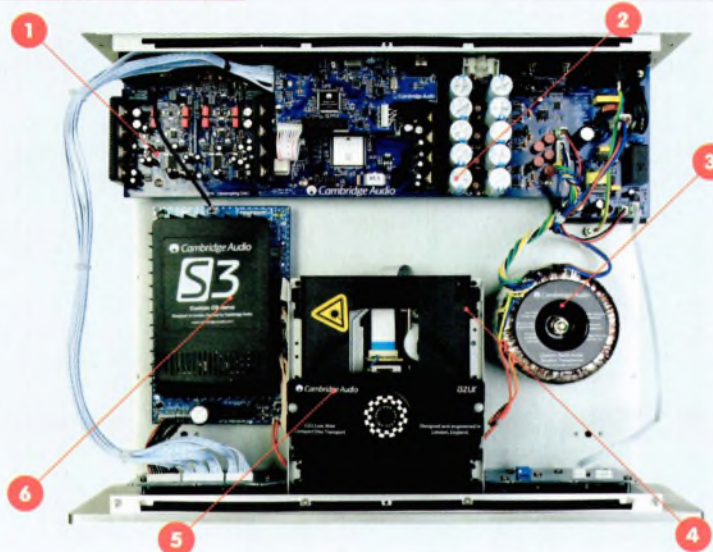
**Do you make a power amp that could be used with the 851C, or if not, is this on the cards?**

It's on the cards...

**Is the volume control in the 851A superior to that in the CD player?**

Actually no, they are largely equivalent. The difference is that the 851C volume can only act on digital sources as it's all done in DSP. The 851A one has to be analogue. I think that it's pretty hard to distinguish between the two.

## LAB REPORT - 851C



- 1 multiple regulators surround twin Analog Devices AD1955 DACs
- 2 custom low ESR/ESL power supply electrolytics
- 3 large toroidal transformer feeds all-linear PSU
- 4 'dumb' CD drive designed specifically for Compact Disc
- 5 rubber damped Japanese sourced laser block
- 6 CA's third gen S3 servo electronics control drive

### ON TEST

Whether used for CD replay or as an outboard DAC with another digital transport or USB service, the 851C offers a remarkably high and consistent performance. The balanced (XLR) outputs are set to 4-3V from a usefully low 450ohm source impedance while all sources (CD/digital) benefit from a wide 112.5dB A-wtd S/N ratio. This includes USB which maintains a true 24-bit performance up to 192kHz with no

downsampling (using Cambridge Audio's Class 2 USB drivers).

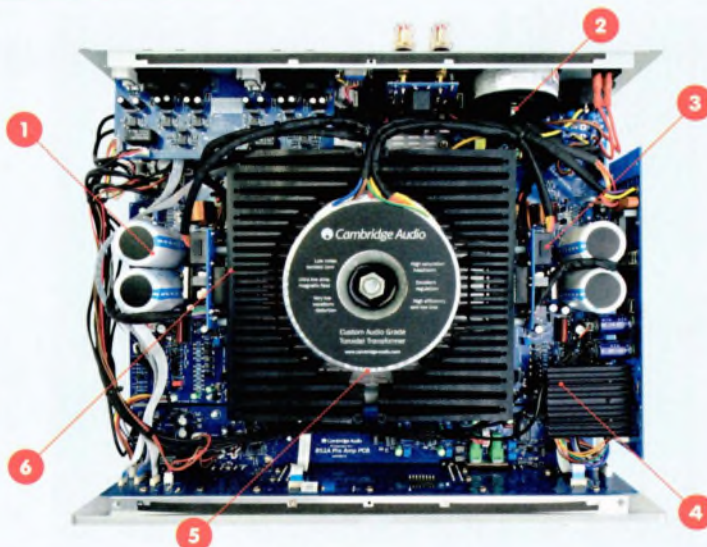
Distortion is lowest through the midrange using 24-bit S/PDIF digital inputs (0.0002%), closely followed by 24-bit USB (0.00025%) and 16-bit CD (0.0003%), but the order is slightly different at 20kHz with S/PDIF (0.0003%), CD (0.0004%) and USB (0.001%). Either way, all these figures are spectacularly low. There is a bigger response modification with

Filter C (-0.35dB vs. -0.08dB/20kHz) although Filter B has the biggest impact in the time domain.

Otherwise, the response stretches out to -1dB/45kHz with 96kHz sources and -2.9dB/90kHz with 192kHz sources.

Jitter is vanishingly low at <math>100\text{ps}</math> with 24-bit S/PDIF inputs and <math>20\text{ps}</math> with USB inputs up to 96kHz sample rates. It's as clean as the proverbial digital whistle. **PM**

## LAB REPORT - 851A



- 1 custom low ESR/ESL power supply electrolytics
- 2 separate toroidal transformer for preamp stage
- 3 rectifier feeds supplies for right power amp.
- 4 multiple linear power supplies for preamp stages
- 5 large toroidal transformer for power amps
- 6 extensive heatsinking helps screen toroid

### ON TEST

In terms of raw power, this new 851A is fundamentally no less capable than the 840A that I measured in 2006, but CA's revisions have still brought subtle improvements in performance. Once again it clearly bests its 2x125W rating by delivering 2x155W/80hm and 2x260W/40hm with almost identical output to the 840A under dynamic conditions at 185W/80hm and 305W/40hm. Into lower loads there are differences that reflect

changes to the 851A's output protection – the 840A squeezed out 485W/20hm while the 851A is 'limited' to 310W/20hm. With any sane loudspeaker this is unlikely to make a practical difference. The lower 0.03ohm output impedance of the 851A and wider 91dB A-wtd S/N ratio (re. odBW) are, however, enhancements worth having.

CA's Class XD topology always delivered low levels of distortion but

tweaks made to its profile have propelled the 851A into another league. Instead of distortion that was lowest at 0.0008% around 40-50W output (increasing to 0.004% closer to 1W), the 851A holds true to 0.0003-0.0005% from 1-100W/80hm through the midrange. Distortion also increases rather less at higher frequencies than via the 840A – 0.005% versus 0.11% at 20kHz (10W/80hm). **PM**



**CONNECTIONS**



- 1 RS232-C connector for custom installers
- 2 USB digital input with switchable ground lift
- 3 balanced analogue XLR audio outputs
- 4 balanced analogue XLR audio inputs
- 5 preamp outputs for external power amp
- 6 two pairs of stereo binding posts

gave the second, minimum phase setting a try, the change although gentle in the short term has quite a significant effect on the key quality of musical engagement. The 851C went from being refined and polite to revealing and musical. This was the difference between listening with the head and the heart – as music is a form of emotional communication the latter setting is for my money where it's at.

The 851A amplifier reflects the changes to the CD player inasmuch as it is distinctly more refined and tonally rich than its predecessor the 840A, which is what I expected given the changes made and the increase in price. What did surprise me was the increase in musicality; the melody is far more obvious and you are drawn into the music to a far greater degree.

**This refined and revealing pair delivers a dynamic, clean and engaging result**

This is presumably due to the refinements that have been made to the Class XD output stage and a very welcome upgrade. The 840A was always a powerful and highly featured amplifier, but it could sound a little grey and lacking in grace in absolute terms. The same cannot be said of its replacement, which is also capable of delivering precisely defined three-dimensional imaging when connected to the right ancillaries, in this case a Resolution Audio Cantata DAC and Bowers & Wilkins PM1 speakers. I got a

beguiling result with the HDtracks' 24-bit/96kHz version of Fleetwood Mac's *Rumours*, which put Christine McVie front and centre in the room. This amp is rather effective at creating a sense of palpability, even a standard cut of James Blake's *Limit To Your Love* came through with startling vivacity, the bass on this was pretty tasty, too.

It has sufficient power to deliver tuneful and extended bass even with speakers that are less efficient, and it does get surprisingly close to the end stop with quiet material via the PM1s. I got to -13dB with the *Hot Club of San Francisco* and that was hardly at full chat, however that recording is from the Reference Recordings HRx series and does have unusually wide dynamic range. Chances are I was playing it at a higher level than usual because the amp has such a low noise floor.

Another track in the same series, Rachmaninov's *Symphonic Dances* required a similar output level, but was delivered with considerable grandeur and dynamic impact, so maybe I was pushing the envelope a little hard!

**Conclusion**

These two components may be considerably more expensive than their forebears, but the upgrade in both sound and finish is more than sufficient to warrant it. They now compete with the very best in class when it comes to sound and are pretty much in a league of their own when it comes to features, the ability to trim gain and balance for individual inputs as well as the option of naming them and



**THE AZUR 851A** is the second Cambridge Audio amplifier to use Class XD operation. Pioneered in its 840A predecessor some five years back, the system was originated by design engineer Doug Self.

'XD' refers to 'Crossover Displacement', which is a unique power amplifier topology designed to give Class A-like operation at low levels, moving to an enhanced version of Class B at higher volume levels.

Distinct from Class AB, XD feeds a controlled current into the output stage in such a way that the usual Class B crossover points no longer occur either side of zero volume – which is the worst possible position in terms of distortion – but instead are displaced to a single point where the transfer functions of the transistors are better matched, at a significant output level where it's far less audible.

Class XD operates completely outside of the feedback loop, so isn't directly involved in the signal amplification itself, says Cambridge Audio.

adding tone changes is the stuff of high-end processors.

What's more important, however, is the fact that these features don't get in the way of the music; this refined and revealing pairing delivers a dynamic, clean and engaging result with pretty much anything you care to play. And the fact that the 851C can do so with a hi-res signal from your PC is the icing on the cake. ●

**Hi-Fi Choice**

**OUR VERDICT - 851C**

- SOUND QUALITY** ★★★★★ **LIKE:** Vast feature set; DAC functionality; ultra revealing yet highly refined sound
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Nothing!
- BUILD QUALITY** ★★★★★ **WE SAY:** A major advance on its already capable predecessor, the new 851C is a superb sounding digital hub that gives great hi-res and silver disc playback
- FEATURES** ★★★★★

**OVERALL**



**Hi-Fi Choice**

**OUR VERDICT - 851A**

- SOUND QUALITY** ★★★★★ **LIKE:** Extraordinary array of features; refined and revealing sound that puts musicians in the room
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Could have a little more romance, but would that get in the way of the transparency?
- BUILD QUALITY** ★★★★★ **WE SAY:** Smooth, svelte sounding amp with power
- FEATURES** ★★★★★

**OVERALL**





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nothing less...”



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aspect of vinyl playback”  
Diva IISP Michael Fremer, *Stereophile*, January 2011

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# How we test

Hi-Fi Choice employs the most rigorous test and measurement regime in the business. Here's how we do it...

## Unique group tests

This month's special headphone group test is backed up by a comprehensive set of lab tests, explains **Keith Howard**...

### GROUP TESTS

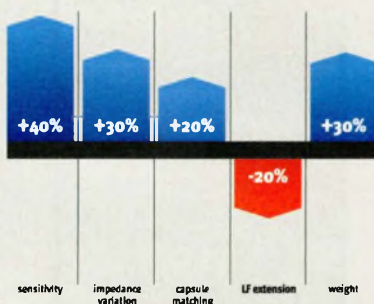
**REVIEWING HEADPHONES** properly isn't easy, which is why few hi-fi magazines try. Anyone can don a pair of headphones, play some music and pronounce on their sound quality – but to back up the listening experience with empirical evidence you have to perform acoustic measurements. With headphones that requires costly specialist equipment, experience and custom-written processing software...

The most important item is an artificial ear – one that doesn't just provide the same acoustic conditions as a real human ear but which also imitates the mechanical properties of the outer ear (pinna), so that any physical distortion of the ear caused by wearing the headphone is mimicked in the measurement. That's why we use an artificial pinna modelled on real ears.

Once you have the right artificial ear you need to know how to use it properly. You have to make sure every time you perform a frequency response measurement that the headphone is correctly sealed to the artificial ear, otherwise low frequencies will be lost. And you have to take account of the fact that each time you remove, replace and re-measure a headphone, its response changes because the capsule is positioned slightly differently.

To account for this we perform multiple measurements on each capsule to generate an averaged response – and use special processing software to analyse where in the frequency range the largest differences occur. More custom software then adjusts the averaged capsule responses to produce a corrected response that better represents what you actually hear.

### RESULTS AT A GLANCE



#### SENSITIVITY

This determines how loud the music is at a given volume control setting. We measure the sound pressure level achieved on our artificial ear for an input of 1V rms at a frequency of 1kHz, averaged for the two channels.

#### IMPEDANCE VARIATION

Most headphones have an input impedance that varies with frequency across the audible range, which modifies the frequency response according to the source impedance of the headphone outlet. This figure represents the change in frequency response, 20Hz-20kHz, with a source impedance of 10 ohms.

#### CAPSULE MATCHING

No two headphone capsules have the same frequency response, and any disparity can result in shifts in the stereo image. Response also varies according to the placement on the ear, so we perform ten separate measurements on each capsule and average the results to determine their disparity from 40Hz to 10kHz.

#### BASS EXTENSION

Headphones, like loudspeakers, differ markedly in the depth of bass they can deliver. We derive this figure by averaging the -6dB frequency ref 200Hz of both capsules, taking great care to ensure effective sealing to the artificial ear measuring device.

#### WEIGHT

The weight of a headphone isn't the only issue which determines its comfort, but is a key factor. We weigh the complete headset, including the connecting cable with quarter-inch jack plug (which often involves the fitment of a supplied adaptor).



#### THE ARTIFICIAL EAR:

This eerie-looking item is the artificial ear we use for headphone testing. Key elements of the GRAS 43AG ear and cheek simulator are fitted within a laminated MDF block which provides the means to mount the headphones on the artificial ear as on a real head.

## HOW WE TEST

### REFERENCE SYSTEM

- Compact Disc player:
  - Cyrus CD 8 SE2
- Headphone amplifier:
  - Musical Fidelity M1 HPA

### TEST MUSIC

SCRITTI POLITTI  
CUPID & PSYCHE



RUSH  
SIGNALS



CONGO ASHANTI  
CONGO ASHANTI



REM  
OUT OF TIME





# Group**test**

HEADPHONES £195-£350

## Now ear this!

Whether you want the best sound from your music portable, or crave better sonics than your speakers can give, headphones are a smart option, says **David Price**...

**HEADPHONES HAD MADE LITTLE IMPACT** on British music lovers until recently. Historically, we've not had high-density housing to contend with, so most audiophiles choose proper loudspeakers as their transducer of choice. Nor have British commuters been as interested by portable audio as some others, as so many of us drive to work in cars rather than travel on trains.

Recently however, there are signs that we're finally going headphone crazy, with a ten percent year-on-year rise in sales, a profusion of new models, and a growing interest in 'designer' brands, such as Skull Candy and Beats by Dr. Dre. Headphones, it seems, are moving from studio monitoring tools to full blown lifestyle accessories...

This hasn't passed the hi-fi sector by, either. Many folk are looking for their first proper pair of cans to turbocharge their iPods, and don't mind spending a few hundred quid. Others seek a serious alternative to their speakers, craving a shortcut to superb sound without having to spend thousands.

The six 'phones you see here are targeted at precisely these buyers. They're not day-glo red, haven't been voiced by a rapper and don't represent a shrewd career move by a celeb in search of an endorsement. Instead, they're serious, studied designs from companies with provenance in headphones stretching back as far as fifty years – almost all of which have connections to pro audio.

Many are now looking for their first proper pair of headphones to turbocharge their iPods...

There are two types on test, open and closed-back. Like iPhone vs. Android, this is one of those debates that draws strong opinions on either side. Open-backs tend to be more spacious sounding, while closed-backs often have tauter bass. Ultimately though, it comes down to the quality of the design itself, and the sort of sound you prefer.



### ON TEST



**Audio Technica ATH-A900x**  
£290 **p25**

Beautifully made, soberly styled and sporting a relatively unusual (for a hi-fi headphone) closed-back design, this is the company's best 'affordable audiophile' product. Its new range is beginning to win friends in the UK, having long been popular in its native Japan.



**Beyerdynamic DT-990**  
£315 **p27**

The Beyer brand has been around for many years, but has never quite achieved the success that the quality of its products would suggest it's possible. The open-backed DT-990 is one of the German company's best sellers, and has a very popular following.



**Grado SR325is**  
£350 **p29**

Here's an American name that was once famous for its phono cartridges, but is now making real inroads into the headphone market, with a string of rave reviews over the past few years. This new open-backed SR325is looks a million dollars, but does it sound the part?



**HiFiMAN HE-300**  
£290 **p31**

Unlike the other marques here, which have been around for a great many years, HiFiMAN is a relatively new company, and specialises in headphones only, rather than microphones and phono cartridges. Will the company's open-backed HE-300 last the distance?



**Sennheiser HD650**  
£265 **p33**

Ask any audiophile to name a serious headphone and they'll likely utter 'H-D-6-5-0' back to you. A sort of BMW 5 series of 'phones, everyone knows these open-backed cans to be top quality, and there's even an aftermarket cable market that's grown up around them.



**Shure SRH940**  
£195 **p35**

Few names can match Shure's in the great audio scheme of things; its phono cartridges were de rigueur in the seventies, its microphones are highly popular on the pro audio side, and now it's pushing its headphones, too. This closed-back design promises much.







The Shape of Brilliance



## DALI Introduces FAZON F5

- Award Winning High Definition Loudspeaker



FAZON F5 is the image of future loudspeaker design and performance, matching the varying moods and needs of your day. From sleepy radio listening in the morning and reflecting music enjoyment in the evening FAZON F5 gets shape into sound and sound into good shape.



IN ADMIRATION OF MUSIC



# Audio-Technica ATH-A900X £290

This new Japanese designed closed-back headphone stands out from the crowd...



## DETAILS

**ORIGIN:** Japan/China  
**TYPE:** closed-back  
**WEIGHT:** 350g (excl. cable and connector)  
**FEATURES:**  
• 53mm drivers  
• 'Wing Support' headband  
• 3.5mm adaptor  
**DISTRIBUTOR:** Audio-Technica  
**TELEPHONE:** 0113 277 1441  
**WEBSITE:** eu.audio-technica.com

**T**he first of two closed-back designs here, rather than sitting on the head, the new ATH-A900X attempts to seal out the outside world and lock the music in. The company's trademark self-adjusting 'wing support' is interesting – the headband is effectively bent rubberised steel with cantilevered foam contact points. Its design is like no other here, and ensures a comfortable fit on a wide range of heads. The earcups are light, non-resonant aluminium alloy with soft vinyl covered padding. The transducers inside sport 53mm drivers with CCAW voice coils.

Despite the relatively heavy 350g weight (excluding cable and connector), the '900X is never a chore to wear, although the vinyl earpads can get a bit sweaty. The

non-detachable 3m OFC headphone cable ends in a 3.5mm mini-jack plug; a 6.3mm is supplied. Overall build quality – aside from the so-so vinyl covering on the earpads – is outstanding; the '900 feels built to do a job rather than down to a price.

## Sound quality

The Audio-Technica presented an highly impressive face to the world. If this was in any way representative of the standard of the group, I mused, then the group would be superb. Tight, taut, smooth, even, tuneful and delicate, there wasn't anything I could discern to put me off declaring them the winners and going home early!

Kicking off with Scritti Politti's *Small Talk*, I was greeted with a big hearted, powerful, tuneful sound. Yet it wasn't in the least bit coarse or harsh, as some 'big sounding' phones can be. Bass was excellent, being full bodied and tuneful; you could easily hear the bass synthesiser modulating up and down in a musically coherent way. It also timed well, syncopating superbly with the hi hat and electronic snares. Still, capable as it was technically, there was always the slightest sense that the AT was going through the motions; it was accurate rather than passionate.

Moving up to the midband, the '900 proved finessed, presenting a very accurate rendering of singer Green Gartside's voice, where most others sounded hard or edgy. His vocals were very intelligible, feeling up close and personal, the AT giving the impression that you could hear right into the vocal booth.

Treble was very good, extended and atmospheric; it caught the harmonics of the lead digital keyboard, for example, imparting in all its glory that familiar 'chiming' sound that so pervaded nineteen eighties pop! Hi hats on Rush's superb *Subdivisions* shimmered in a most charming and beguiling way, rather than reverting to a generic sandpapery headphone sound. Again, it was to prove up there with the best of the rest in treble refinement and purity..

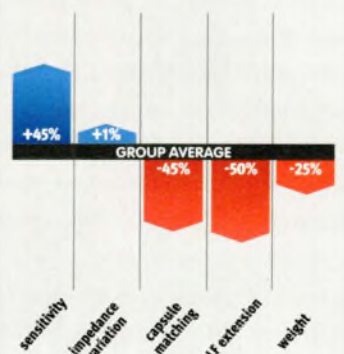
Timing was great with Congo Ashanti's *Days Chasing Days*, the AT

keeping everything in its place, letting you hear different musical strands playing separately better than almost all here. The song's strong bassline showed off the firm, tuneful, controlled low end and highlighted the interplay between the hi hat and snare rim shots. It stayed graceful under pressure too, with the fiendishly complex and busy Rush track coming over all of a piece, whereas other products here were hanging on for dear life. Overall then, this proved an excellent headphone.

## ON TEST

By a comfortable margin the ATH-A900X is the most sensitive headphone in this group, so is well adapted to use with iPods and other mobile devices as well as domestic hi-fi equipment, although you may have to use a low volume setting. Over the range 20Hz to 20kHz its impedance modulus varies from 39.6 ohms minimum to 48.7 ohms maximum, resulting in a negligible 0.33dB variation in frequency response from a 10 ohm source. The diffuse-field corrected frequency response indicates an excess of upper bass of about 5dB centred on 100Hz and a suppressed presence band, suggesting that the ATH-A900X will sound on the warm and soft side of neutral. Bass extension is fair at 38Hz and the earpads provided a fairly reliable seal during testing. Capsule matching, 40Hz to 10kHz, is worst of the group at 27.9dB, but the largest disparities occur above 5kHz. KH

## RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY** ★★★★★ **LIKE:** Sensitivity; classy styling; comfort; clean, accurate sound with strong bass  
**VALUE FOR MONEY** ★★★★★ **DISLIKE:** A little 'matter of fact', lacks emotion  
**BUILD QUALITY** ★★★★★ **WE SAY:** Excellent premium priced phones with strongsonics, great build and real comfort  
**COMFORT** ★★★★★

### OVERALL





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# Beyerdynamic DT-990 £315

A high quality, premium priced German-designed headphone that's won many friends...



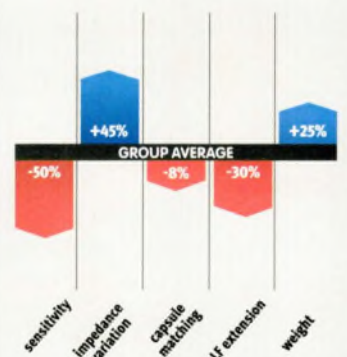
Others such as the Grado and Shure were splashy and prone to sibilance. Hi hats on the Congo Ashanti track were right on the money, steely and sonorous, yet still decently smooth, making for a highly satisfying listen.

The Beyer proved an excellent all-rounder in the way I'd expected the Sennheiser to be, but wasn't. It is one of the smoothest and easiest to listen to here, without sounding in the least bit boring. It doesn't have masses of character, it's just a subtle, capable music maker that gets on with the job, comfortably!

## ON TEST

With a sensitivity over 20dB lower than the group-leading Audio Technica, the DT 990 is an unusually insensitive headphone and so not well suited to use with mobile audio devices. Its high impedance, which varies between a minimum of 564 ohms and a maximum of 711 ohms, is in part responsible, but ensures a trifling 0.03dB frequency response variation from a 10 ohm source. Diffuse-field correction of the response indicates excess lower midrange output of almost 7dB at 140Hz and mild presence band suppression followed by a spike in output at 6.7kHz, suggesting a laid-back tonal balance with some fiery sibilants and cymbals. Bass extension is fair at 33Hz and earpad sealing was good during the testing. Capsule matching, 40Hz to 10kHz, is a little disappointing at ±5.4dB, but much of the disparity occurs over a narrow range between 4kHz and 6kHz. KH

## RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY** ★★★★★ **LIKE:** Smooth and sumptuous sonics, yet musically enjoyable too; comfortable to wear

**VALUE FOR MONEY** ★★★★★ **DISLIKE:** Plasticky build; styling; hard to drive

**BUILD QUALITY** ★★★★★ **WE SAY:** Very strong across the board sonically, only the so-so styling detracts.

**COMFORT** ★★★★★

### OVERALL



## DETAILS

**ORIGIN:** Germany  
**TYPE:** open-back  
**WEIGHT:** 290g (excl. cable and connector)  
**FEATURES:**  
• low mass diaphragm  
• alloy trim  
• 3.5mm adaptor  
**DISTRIBUTOR:** Polar Audio  
**TELEPHONE:** 01444 258258  
**WEBSITE:** polaraudio.co.uk

**A** direct rival for the Sennheiser HD650 in terms of price, design and overall aspiration – this is a modern, upmarket German designed headphone.

A largish open-back design, it has a robust sprung steel headband that's generously padded and covered in high quality vinyl. The transducers are affixed to the headband by an anodised alloy bracket, and the earcups themselves are plastic with substantial alloy trims. A low mass diaphragm is used, said to give electrostatic-like transient speed.

The earpads are covered in a sumptuous velvet material, and proved very comfortable in use, whilst lacking the HD650's vice-like grip on one's head, for example. Beyer claims this is the lightest headphone in its class, but at 290g (excluding cable and connector) that's not quite the case. The cable is single-sided, which is more user-friendly than conventional double-

sided designs, but isn't detachable. It's 3m long and terminates in a 6.3mm jack plug; a 3.5mm adaptor is supplied. Build quality was high, although not as good as the Audio-Technica, and all that bling-tastic silver trim wasn't to my taste.

## Sound quality

I was greeted with a very relaxed and tuneful presentation from the open-backed Beyer, with a wider and fruitier sound than the AT, plus a more fluid midband. It felt like I'd just moved from the circle of the concert hall to the stalls in many ways, the DT-990 giving more direct, involved sort of sound.

In a way, you could liken the Beyer's low-frequency performance to that of a good reflex ported speaker; it breathed well, sounded supple and fulsome, and lacked the sense of order of the Audio-Technica (which itself could be likened to an infinite baffle speaker). By comparison to the rather 'proper' sound from the AT, the Beyer was far less willing to stand on ceremony, and just jumped into the musical deep end. Lower bass was less strong, but upper bass sounded more sumptuous, and it felt less like it was on best behaviour. Indeed it proved highly enjoyable with the Congo Ashanti track, where it was less wooden sounding than both the AT and the Sennheiser, for example. The Beyer wasn't outstanding in the bass department, but neither did it show the slightest hint of discomfort.

Midband was excellent; superior to most here in the sense that it was less constrained and more intimate; it was as if you were getting right into Green Gartside's vocal booth rather than standing outside looking (and listening) in. It may have been less ultimately detailed than the AT for example, but it certainly wasn't any less enjoyable; the Beyer's superior rhythms shone through.

As the Rush track demonstrated, treble was very strong by the standards of the group, and certainly superior to its Sennheiser rival by comparison, which appeared dull.







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# Grado SR325is £350

The retro styling of this American design reflects its long pedigree in the headphone market...

## DETAILS

- ORIGIN:** US  
**TYPE:** open-back  
**WEIGHT:** 323g (excl. cable and connector)  
**FEATURES:**  
 • hard alloy earcups  
 • long crystal copper wiring  
 • 6.3mm jackplug  
**DISTRIBUTOR:** ArmourHome  
**TELEPHONE:** 01279 501111  
**WEBSITE:** gradolabs.com

Looking like it has just escaped from 1978, the chintzy metal detailing and grille give this headphone a retro feel, despite only first recently being launched in 2009! An open-backed design, it sports metal alloy earcup housings. Inside, 'ultra high purity long crystal' copper voice coil wiring is used, a material which the headphone cable shares. The transducers are said to be matched within 0.05dB tolerances. Its spongy foam earpads and a thinly padded vinyl covered headband are hardly the stuff of luxury, but the Grado is actually very comfortable to wear; it grips the head just enough to seal in the sound

but doesn't give you that head-in-a-vice feel. A thick 2m cord is terminated in a 6.3mm jack-plug. The sense is of a quality headphone, but it's sadly let down by the nasty cheap cardboard box packaging.

## Sound quality

This is a very distinctive sounding headphone – in its way the most extreme of the group. It was very forward, fast and engaging – and indeed efficient. The first thing I had to do was to turn the headphone amp down again, as the Grado went dramatically louder than the Beyer with the same amount of power – a good sign for portable users with weedy headphone output stages.

Bass wasn't so distinguished. The Grado gives you the sense of listening to a taut pair of standmount speakers; it's more about speed and grip than serving up a large and sumptuous sound. Across all types of music, basslines bounced up and down like the proverbial puppy on a trampoline – usefully supple and lithe. But still I got the sense that this headphone saw the bottom end of the frequency range as simply something to link up with the midband – and what a spectacular midband that was...

Musically, this headphone proved tremendously capable; snare drums on the Scritti Politti track sounded more like firecrackers going off, so fast and visceral were they. Meanwhile Green Gartside's vocal strains assumed an almost euphoric feel; they suddenly seemed to make sense for the song and give it the passion and emotional purchase it lacked through the more 'hi-fi sounding' Beyer and AT phones. The downside of all this was that tonally the Grado was too rough and thin; there was little sense of the tonality of acoustic instruments in the classical recording.

Treble through the Grado was no great shakes; crisp and fast but sandpapery and unatmospheric. It didn't capture the shimmering harmonics of Scritti Politti's keyboards as the Beyer had, for example. But still this headphone

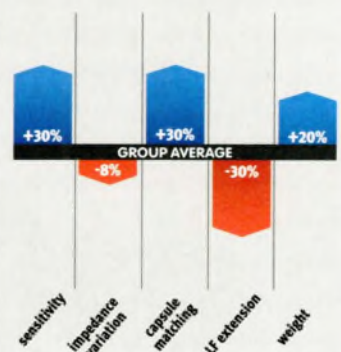
sounded so involving and musically engaging that I didn't care so much. Once again I focused on the midband which was flawed but fun.

The REM track came over quite dynamically compressed; it made everything sound loud and hard, even the quiet bits! With the slick reggae music of Congo Ashanti, bass sounded overblown, as if the mixing desk had been turned up too much, and the Grado struggled to keep up. Yet despite all its many faults and inconsistencies, it remained a rollickingly enjoyable listen.

## ON TEST

One of the more sensitive headphones in this group, the SR325is is suited to use with a good range of audio sources, including battery powered mobile devices. It's a medium impedance design with a minimum modulus within the audible range of 31.9 ohms and a maximum of 39.1 ohms, which results in a negligible 0.39dB variation in frequency response with a 10 ohm source. Diffuse-field correction of the frequency response indicates about 6.5dB of excess bass output at 80Hz, but the presence band energy of other Grado models has been tamed, so the SR325 should sound more tonally neutral if less overtly detailed. Bass extension is fair at 33Hz, but the SR325's foam earpads provided a less than consistent seal in the testing. Capsule matching error is low for a headphone at ±2.4dB, the largest disparities occurring between 400Hz and 600Hz and above 3.5kHz. KH

## RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Cool retro styling, metal construction; comfy; wonderfully musical nature
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Tonally thin, uncouth treble; fiddly cable
- BUILD QUALITY** ★★★★★
- COMFORT** ★★★★★ **WE SAY:** Absolutely brimming with character but its sound isn't for all!

### OVERALL





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# HiFiMAN HE-300 £290

The least expensive headphone from a new brand winning friends at the high end...

## DETAILS

**ORIGIN:** USA/China  
**TYPE:** open-back  
**WEIGHT:** 270g (excl. cable and connector)  
**FEATURES:**  
• 50mm drivers  
• detachable cable  
• storage case  
**DISTRIBUTOR:** Electromod  
**TELEPHONE:** +44 (0)1494 752171  
**WEBSITE:** electromod.co.uk

**T**he cheapest in a new range of headphones sharing American and Chinese origin, the HE-300 is HiFiMAN's only dynamic design; its pricier designs are orthodynamic or 'magnetostatic'.

It's a largish open-backed product, weighing in at a reasonable 270g (excluding cable and connector). A padded vinyl headband links to tough silver plastic framed transducers, with generous padded earcups covered in velvety material. The 50mm dynamic drivers have light metal grilles to keep the external world out. Build quality is generally very good.

The cable is made of interwoven, single-crystal copper; a 6.3mm jack plug is fitted to one end, whereas the other ends of the cable 'Y' have individual gold-plated miniature

screw connectors to each earcup. The HE-300 is extremely comfortable to wear, I found, never giving the sensation of wearing a clamp on your head. Thumbs aloft for the supplied case, which puts the Grado's flimsy box to shame!

## Sound quality

Another distinctive performer, this headphone sounded quite unlike the others here. It lacked the crispness of the AT, the smooth warmth of the Beyer, or the energy of the Grado. Indeed it wasn't so engaging in emotional terms. But further listening revealed strengths not seen elsewhere in the group...

Bottom end performance was good; low bass proved very strong, while upper bass was less prodigious but always grippy. Indeed it seemed as tight and taut as the AT closed-back model, yet better able to communicate dynamic accents. As the Congo Ashanti track showed me, I could really hear when the kick drum was, errmm, kicked! Bass notes also started and stopped very well, getting my feet tapping like few others here.

Tonally it was quite dry across the midband, stripping orchestral music of its timbre and thinning out pianos, for example. But again the HE-300 kept everything in proportion; here was no sense of things being compressed or boosted. Later listening on classical music showed how the HE-300 could put orchestral instruments neatly into perspective, telling me all about their relative sizes, rather than just shovelling them at me, Grado-style! Indeed I did find this rather self-effacing headphone to be a welcome relief from the 'character' of some of the others. It lets you step back from the action and survey the soundstage from afar. Like the AT, this headphone gives you a 'global' perspective.

On Scritti Politti, I actually found myself hearing things I'd not heard before; lots of little production details that all the other 'phones subsumed into the mix. The downside was the treble which

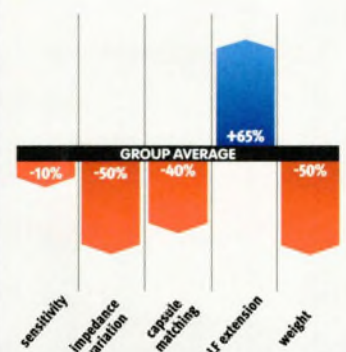
seemed curtailed, sucking air and space out of the recording and lopping the top harmonics off pianos. Some will find it dull.

Not slow though. Fine transient speed made the preceding three rivals seem slightly soft and diffuse. On the crowded and dense Rush track, guitar notes started faster and decayed more cleanly via the HE-300, leaving spaces big enough to walk in. Strong, fast and detailed yet tonally dry, the HiFiMAN won't have universal appeal but is still capable in its own special way.

## ON TEST

With a sensitivity of 105.7dB at 1kHz the HE-300 is at the lower end of sensitivities within this group, so it's best suited to use with domestic hi-fi sources rather than mobile devices. Its impedance modulus varies across the audible range between a minimum of 53.1 ohms and a maximum of 95.7 ohms, sufficient to give it the largest response variation on a 10 ohm source of 0.64dB. This is acceptable, but the variation with higher impedance sources will be more pronounced. Diffuse-field response correction shows a 10dB peak at 40Hz, which may please bass freaks but not others, and there is also some presence band excess. Unsurprisingly, bass extension is the best in group – and the HE-300's large earpads provided a wonderfully consistent seal during testing. Capsule matching was poor at ±7.7dB with the largest disparities occurring above 1kHz. **KH**

## RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY** ★★★★★  
**VALUE FOR MONEY** ★★★★★  
**BUILD QUALITY** ★★★★★  
**COMFORT** ★★★★★

**LIKE:** Big bass; strong rhythms; comfortable; fine build  
**DISLIKE:** Cerebral sound; curtailed treble  
**WE SAY:** High quality, composed, clean sounding design that's best for classical music.

### OVERALL



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# Sennheiser HD650 **£265**

A popular premium priced headphone, this is a modern-day audiophile favourite...

## DETAILS

**ORIGIN:** Germany/Ireland  
**TYPE:** open-back  
**WEIGHT:** 260g (excl. cable and connector)  
**FEATURES:**  
 • Duofoil transducers  
 • damped frame  
 • detachable cable  
**DISTRIBUTOR:** Sennheiser UK  
**TELEPHONE:** 0800 652 5002  
**WEBSITE:** sennheiser.co.uk

**L**aunched eight years ago, this headphone has become an audiophile favourite – its combination of quality, sound and price has proved hard to beat.

A conventional open-backed design, it sports patented Duofoil transducers with two Mylar films per side to make one rigid diaphragm, plus special acoustic silk for uniform damping. The coils are ultra-light aluminium with Neodymium Iron magnets. The frames are said to be made from damped fibre, and the grilles are black stainless steel.

The 3m cord is made from OFC copper, Kevlar-reinforced, and is detachable – this has spawned a whole industry making aftermarket HD650 cables; those from Stefan Audioart are my personal favourite. It's terminated with a 6.3mm jackplug and 3.5mm adaptor.

At 260g (excluding cable and connector), the HD650 is light but not comfortable. It fits too tight on the head; I got a sense of my skull being in a vice, albeit a well padded one! Build is good; its dull grey 'engineering plastic' finish isn't luxurious but certainly lasts.

## Sound quality

Despite its redoubtable reputation, I found the HD650 unremarkable in any particular respect, although good across the board – with the accent on its communicative and incisive midband. Starting at the bottom, and things were firm and powerful. As the Congo Ashanti track showed, low frequency extension was very good, but the real deal was the octave above the lowest, which sounded stronger and more commanding than most other phones here, pushing the groove along on a wave of upper bass.

Although the '650 proved reasonably tuneful low down, compared to the AT, Beyer, Grado and Shure it was still a little plodding. Instead it relied on its grippy, detailed midband to deliver a sense of musical urgency. Indeed, its bass sounded slightly clinical, obviously more at ease playing a Kraftwerk bassline than Bernard Edwards! Compared to many other headphones here, it actually felt as if the Congo Ashanti track had been slowed down in tempo.

Across the midband, the HD650 was captivating. It pushed the music things forward, making for an involving listening experience, yet never got harsh. Scritti Politti had a fine sense of proportion; rather than throwing everything at you as per the Grado, it got everything just right spatially. Powerful and bracing like few others here, it avoided sounding over the top. Pianos rang with harmonics, had real physical presence and fine decay – you could hear notes start and stop, fading away into the back of the mix.

The big let down was the treble. The HD650 seemed to accent the upper bass through to the upper midband, whilst leaving the very top sounding curtailed. Whereas the

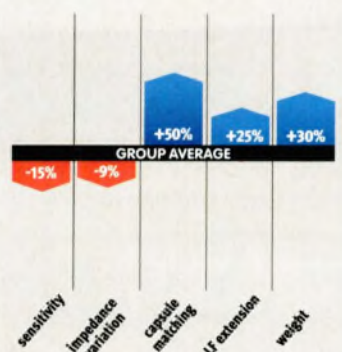
Audio-Technica, for example, had sparkled with Neil Peart's hi hat work on the Rush track, the Sennheiser felt rolled off. Still, it was pretty smooth, showing little in the way of coarseness.

Taut and controlled, yet detailed and spacious, the HD650 is a class act that seems to exceed the sum of its parts sonically. Forgive it its frequency extreme foibles and lack of comfort, and enjoy how it takes you right to the music. Its fine combination of core competencies is why it has sold so well.

## ON TEST

One of the higher impedance models in this group, the HD650 consequently has one of the lower sensitivities, so it's best restricted to indoor use with mains-powered hi-fi equipment. Impedance modulus varies over a wide range from a minimum of 100 ohms to a maximum of 433 ohms, but these figures are high enough to ensure only a 0.09dB variation in frequency response with a 10 ohm source. Diffuse-field frequency response correction suggests that the HD650 will have one of the most neutral tonal balances in this group, aside from a modest 4dB upper bass peak around 100Hz and mild presence band and upper treble suppression. Bass extension is good at 22Hz and the oval earpads provided a very consistent seal during testing. A capsule matching error of just ±1.3dB is remarkable for a headphone, the matching up to 6kHz bettering most loudspeakers. KH

## RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY** ★★★★★  
**VALUE FOR MONEY** ★★★★★  
**BUILD QUALITY** ★★★★★  
**COMFORT** ★★★★★

**LIKE:** Big, expansive sound that's fairly musically insightful  
**DISLIKE:** Subdued treble; the vice-like grip on your head isn't comfortable!  
**WE SAY:** Strong all rounder, but looking less assured nowadays

### OVERALL

★★★★★





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# Shure SRH940 £195

Classic American closed-back design from a company famous for its pro audio heritage ...



## DETAILS

**ORIGIN:**  
US/China

**TYPE:**  
closed-back

**WEIGHT:**  
322g (excluding cable and connector)

**FEATURES:**

- 40mm driver
- coiled and straight headphone leads
- spare earpads

**DISTRIBUTOR:**  
Shure

**TELEPHONE:**  
01992 703058

**WEBSITE:**  
shure.co.uk

**A** company with a great pro audio pedigree, Shure has recently begun to put itself back on the hi-fi map with its latest headphones.

The second of two closed-back designs here, the '940 is a little smaller than some, with 40mm drivers sporting neodymium magnets. The frame is good quality plastic, yet not the equal of the HD650, for example. The lightly padded headband attaches to plastic earcups which sport silver metal trims and soft velour earpads.

There's a choice of coiled and straight headphone leads (2.5m and 3m respectively), plus an additional set of earpads, and a zippered, hard travel case. Despite being fairly

heavy at 322g (excluding cable and connector), the Shure proved surprisingly comfortable to wear, more so than the other closed-back model (Audio-Technica), for example. Overall build wasn't so good, however, feeling plasticky.

## Sound quality

Just as the German Beyer and Sennheiser didn't sound a million miles apart, so the American Grado and Shure were certainly on the same page in performance terms. Indeed the Shure could be described as a 'Grado in a suit' – still full of energy, but altogether tidier, more couth and less unruly!

Once again, listening showed that the differences between individual brands far exceeds those of type; the Shure is a closed-back design, but didn't especially sound like one with Congo Ashanti's *Days Chasing Days*. Lower bass was tauter and fractionally better extended than most, but it was only the tidiness and linearity of the upper bass that truly gave away its closed-back design. Everything was clean, in proportion and never overwhelmed by the rest of the music, unlike open-backs such as the Sennheiser which were fuller low down and duller further up.

The midband was spry and dry like the Grado, and shared most of its excellent speed and detail too, but didn't quite have its compatriot's supernatural exuberance. Still, the latter will sound way over-the-top for many, so the Shure is a well judged compromise. It's certainly fun to listen to, going straight for the beat and running with it on the Rush track – despite the multiple overdubs the Shure scythed through the mix to render rhythm guitars and vocals cleanly yet movingly.

It proved far tidier than the SR325 is overall, with more control and less sense of compression, making for a clean, grippy balance that was closer to that of the Beyer and Sennheiser. It bettered the AT in the midband indirectly because its treble is tidier, and this has knock-on effects further down the audio band. As such Green Gartside's vocals came over with

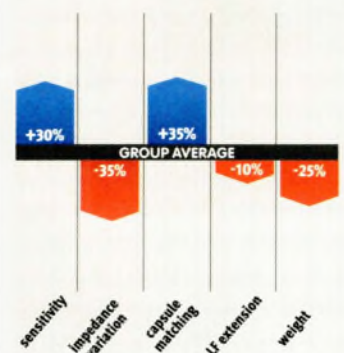
greater clarity and smoothness. Cymbals meanwhile, were very good by the standards of the whole group, giving the headphone a satisfyingly airy feel at all times.

Overall, the Shure proved a clever compromise. Tonally a little dry and not the warmest lower down, it nevertheless proved rhythmically very lively and surprisingly detailed whatever type of music you threw at it. Something of a jack of all trades, it offers some of the virtues of all the others here, in its own charming and affordable package.

## ON TEST

A high sensitivity of 113.5dB at 1kHz ensures that the SRH940 is a genuine all-rounder, suitable for use with mobile audio sources as well as domestic hi-fi. Of medium impedance, its modulus varies between a minimum of 36.8 ohms and a maximum of 50.1 ohms, sufficient to result in the second highest frequency response variation of 0.51dB with a 10 ohm source. Diffuse-field correction of the frequency response reveals what should be the most tonally neutral headphone here, with a mild peak of less than 3dB at 300Hz and a droop of 2dB at 3kHz being the notable features of an otherwise almost flat trend from 50Hz to 10kHz. Bass extension is fair at 29Hz but the earpads provided the most inconsistent seal during testing. Capsule matching is fair also at 23.2dB, but there was significant disparity between 90Hz and 200Hz as well as above 4.5kHz. KH

## RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY**  
★★★★★

**VALUE FOR MONEY**  
★★★★★

**BUILD QUALITY**  
★★★★★

**COMFORT**  
★★★★★

**LIKE:** Fast, neutral and dynamic sound; high sensitivity; comfortable

**DISLIKE:** Plasticky build

**WE SAY:** Surprisingly enjoyable and versatile headphone with a strong sound that takes you right to the heart of the music

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# Listening test verdict

**David Price** puts the this month's group testing into context. How do the contenders fare in the great scheme of things?

Headphones are often very much a matter of taste. That's why I can't emphasise too much that you should use this test as a starting point from which to do your own auditioning, rather than treating it as gospel.

Some will love the Grado SR325is, but I did not. I liked, and indeed enjoyed it, but to my ears it was simply too flawed. Heroically flawed mind you, going down in a blaze of glory! Its ability to capture the drama and power of music was second-to-none here – it positively fizzed with enthusiasm. Trouble is, the Grado is tonally dry and coarse sounding, making hard work of music that demands accurate tonal portrayal.

Next came the HiFiMAN HE-300; this was very well balanced in many ways, and excellent in terms of conveying the 'pace, rhythm and timing' of the music, not to mention the overall dynamic scale. It's a strong performer, but again its dry tonality didn't endear it to me. Still, well worth an audition.

Shockingly, the mighty Sennheiser HD650 comes next. It's still a nice headphone to listen to; crisp, clean and musically engaging. But others here highlighted its poor treble response; it should do better in this respect. Comfort wasn't good either. The HD650 is by no stretch of the imagination a bad headphone, it's just that the competition is getting better.

The Shure SRH940 ranks third. I was amazed, frankly. It is plasticky and garish to look at, but worked very well as a music maker. It had superior treble to the HD650, yet sounded more musical too. Bass wasn't brilliant in terms of weight, but it was even and tuneful, and got the job done. Factor in the low price and high comfort, and it certainly makes a great case for itself!

Beyer's DT-990 never seemed excellent at anything, it was just extremely strong and capable right across the board, and had absolutely none of the various flaws, foibles and quirks of most of the others. It's comfortable, too; if only it didn't look like it was auditioning for MTV!



The Audio-Technica ATH-A900x did the best job, to my ears. It's a true full-range headphone, with a deep and even bass, a wide, detailed and smooth midband, and an extended treble that proved more polished than the others here. Yes, it's a little analytical by nature, but across a range of music it delivered sufficient detail and polish to more than make up for this. A very fine headphone design.

## RESULTS AT A GLANCE

Make/model	Audio Technica ATH-A900x	Beyerdynamic DT-990	Grado SR325is	HiFiMAN HE-300	Sennheiser HD650	Shure SRH940
Price	£290	£315	£350	£290	£265	£195
Sound	★★★★★	★★★★★	★★★★☆	★★★★★	★★★★★	★★★★★
Value	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Build	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Comfort	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Conclusion	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Key features	Beautifully built, soberly styled and comfortable design with an extremely powerful, clean sound	Neat modern headphone that's comfy to wear and a great listen. Unusually vice-free in all respects!	Amazingly exuberant, almost euphoric sounding performer, but tonally thin and coarse	Really solid design with great rhythms and dynamics, although lacks warmth and charm	Clean, open, spacious sound impresses, but treble only so-so; uncomfortable	Don't let the cheap build fool you, this is a great music maker with surprising polish
closed back	Yes	No	No	No	No	Yes
open back	No	Yes	Yes	Yes	Yes	No
detachable cable	No	No	No	Yes	Yes	Yes
carrying case	No	Yes	No	Yes	No	Yes
minijack adaptor	Yes	Yes	Yes	Yes	Yes	Yes

## TRY WITH THESE

**CD PLAYER:**  
Cyrus CD 8 SE2 **£1,200**

The winner of *Hi-Fi Choice's* recent CD player group test, there's a lot to love about this svelte silver disc spinner. Aside from the fine build and aesthetics, its smooth, musical sound positively sparkles through a good set of headphones. Any of the above designs would be a pleasure via the Cyrus.



**PORTABLE:**  
Apple iPod Classic 160GB **£199**

Whilst not the very best sounding digital portable, the big iPod has several things going for it. First, its headphone output stage is a little beefier than other iPods, and second it has a massive hard drive that lets you store a lifetime's worth of music in uncompressed .WAV format. For something so quaint, it still packs a not inconsiderable punch.



**HEADPHONE AMPLIFIER:**  
Musical Fidelity M1 HPA **£499**

Some designs are easier to drive than the others, so get the very best from them a top-notch aftermarket amp such as this is recommended. A gutsy design that's smooth tonally yet very detailed, it makes any of the models tested here sing. It even sports twin 6.3mm sockets, for listening in company!



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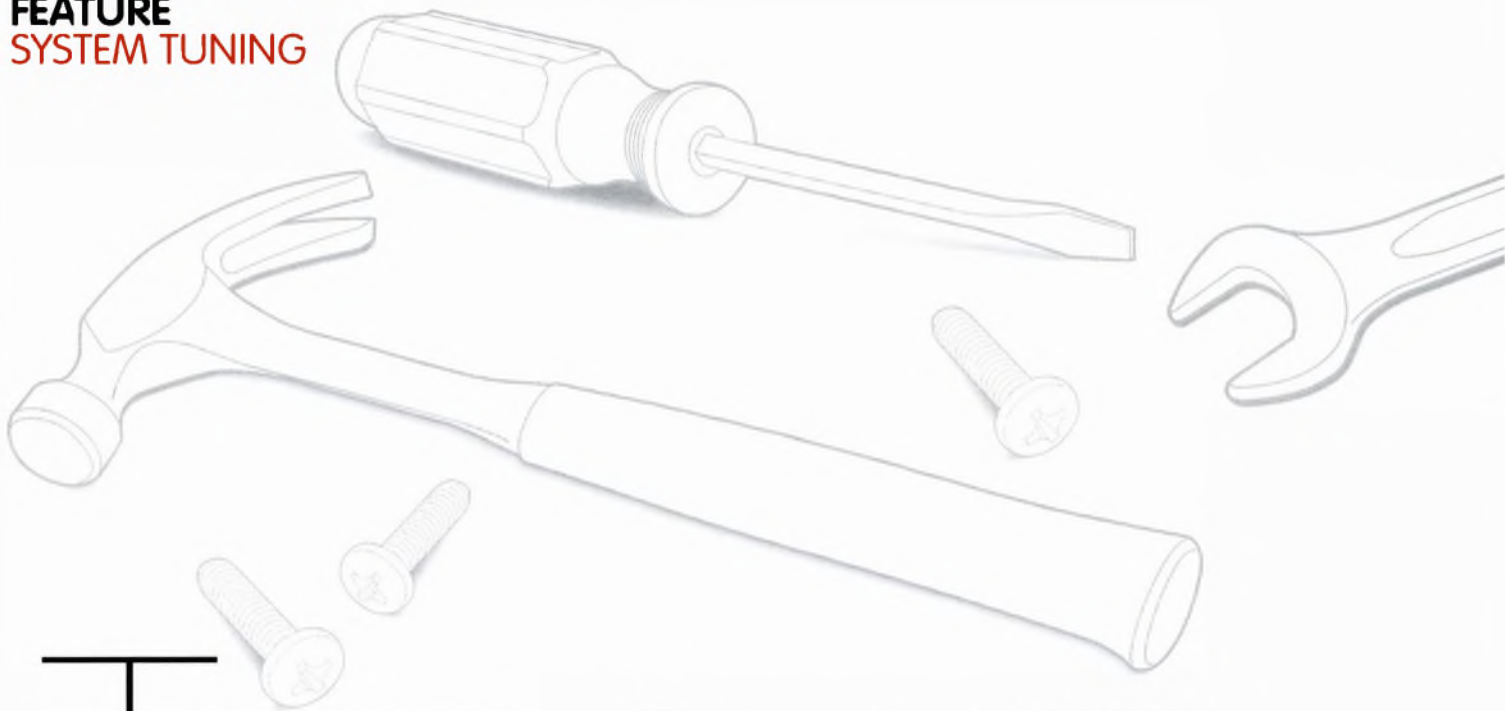
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# Tune-up toolkit

Spring has sprung and there's no excuse not to spruce up your system!  
**David Price** has the knowledge needed...

**H**i-fi magazines are packed with reviews telling you how much sweeter your life will be if you only had this or that bit of kit. And who knows, they might just be right. But less often stated is the blooming obvious, that your existing system is invariably capable of better – *without* going to the expense of buying new hi-fi. Here's an easy guide to system tuning...

## Bad vibes

In the case of hi-fi, it's vibration – rather than money – which is the root of all evil. Mechanical devices such as turntables and CD transports don't work as well as they should when subject to ground and air-borne resonances; the sound comes from your loudspeakers and feeds straight back into your hi-fi, upsetting it. More recently, we've found that electronics are microphonic too, so this same effect works with amplifiers as well. And it's not subtle; siting your system in such a way as to minimise vibration makes a big improvement, tightening up the bass, cleaning up the midband, smoothing out the treble – to a surprising degree.

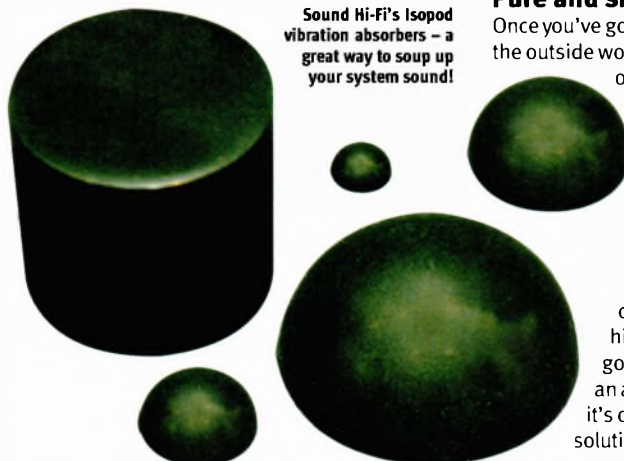
For best results, stand each hi-fi component separately. You can buy expensive, beautiful looking support racks which look great and provide excellent vibration isolation; the likes of Quadraspire and Audiophile Furniture do these. But even just using a coffee table and improvising a subtable will help. A slab of MDF

with Isopods (or similar types of feet made from Sorbothane rubber, or even tennis balls cut in half) works a treat. Least elegant but most effective is a bicycle inner tube under a glass or MDF slab, partially inflated to provide a gentle springiness. Works great, but it isn't pretty!

## Pure and simple

Once you've got your equipment isolated from the outside world, you can now concentrate on your contacts. It's impossible to over state the difference this makes, as each phono plug and socket is a possible point of information loss. The problem is that metal socketry oxidises over time; even in the cleanest household an invisible film of 'gunge' covers the surface. Historically, hi-fi manufacturers have fitted gold-plated phono sockets in an attempt to minimise this, but it's only a partially successful solution; the gold plate itself affects

Sound Hi-Fi's Isopod vibration absorbers – a great way to soup up your system sound!





the sound. Properly clean electrical contacts add sparkle to the music; there's a sense of openness, delicacy and atmosphere that is simply lost with dirty ones. Bass gets tauter and fuller, treble lighter, smoother and more open. Midband cleans up and widens out. The differences can be staggering, and the joy of it all is that it costs pennies to do...

The easiest, but not quite the cheapest, way is to periodically clean your phono plugs and sockets with a special solvent, such as Kontak, Blue Horizon's Clean It or Caig De-oxit. Apply the solution to cotton buds and/or pipe cleaners, work them around the phono connectors and pins, and gently inside the sockets. Always disconnect the hi-fi from the mains while doing this, of course.

Cheaper, but slightly less effective cleaning solutions include isopropyl alcohol (from a dispensing chemist) mixed 50:50 with distilled water, or even (what used to be called) tape-head cleaner (which is effectively the aforementioned, just premixed). Really heavily oxidised socketry can be successfully rejuvenated by abrasive cutting compounds such as T-Cut or Brasso in really extreme cases; this might be necessary for phono sockets on equipment over twenty or thirty years old, to hack the crud off before you subsequently apply the contact cleaner.

**Kontak contact cleaner – gets your gold phonos glistening like little else...**



### The mains thing

Stop! Before you spend hundreds on fancy mains leads, you should be aware that real sonic benefits can be had from organising your mains in a better way, and keeping your contacts clean. First, avoid multi-socket mains junction boxes if possible, plugging each component into its own wall socket. If you've only got a double wall socket, then plug the



**MK's Toughplug is an excellent affordable upgrade to worn out mains connectors...**

amplifier into one of the wall sockets and the junction box into the other, running all the source components, DACs and phono stages off that. If you must use junction boxes, use only good ones, preferably unswitched.

Just as with phono socketry, always ensure all your mains plugs are clean, using the cleaning method detailed above. If you are electrically competent, it's even worth opening up the mains plug (disconnected from the mains, of course!) and cleaning the fuse and fuse holder in the manner previously shown. If the mains plug pins are really dirty, you might like to consider buying a good quality new mains plug such as an MK Toughplug; Mains Cables R Us (mains-cables-r-us.co.uk) have a range of plating options and prices.

### Laser love

Relying on lasers to read the discs, it's only natural that digital disc players suffer over time with dirt, dust and general airborne detritus getting on the lens. Smokers will be especially prone to that horrible sound of discs skipping, as CD error correction quits working and puts its hands up in surrender. Often, it's simply a dirty laser lens that's responsible for disc read errors, especially in smokers' houses, not the dying laser that so many fear.

**IsoTek's Ultimate System Set-up Disc is a great tweaking companion!**



Cleaning laser lenses can be done manually or automatically. The easy way is the latter; just buy an automatic CD lens cleaner disc from the likes of Audio-Technica. This special CD is a breeze to use, taking just twenty seconds to restore your lens, making for a clearer, smoother sound. Others are available from a variety of retail outlets such as Amazon, Maplin, etc. If this doesn't work, then get your machine cleaned manually at your local service centre – the technician will gently wipe the laser lens with cleaning solvent and polish it off. It's only half an hour's work and should yield sonic dividends.

On the subject of clever CDs, there are a range of system tweaking discs, from Densen's DeMagic to IsoTek's Ultimate System Set-up Disc. We've found these two to have positive, albeit subtle effects; they're well worth investigating for the general health of your hi-fi.

## Digital disc players suffer over time with dirt, dust and general airborne detritus getting on the lens

### Spin doctoring

Turntables demand an entire set-up manual of their very own, but simple attention to detail across a range of areas will bring a huge improvement in sound. First, ensure the deck is placed well, by which I mean level and on a good system support or a wall shelf – in some ways this is the most desirable way to site a turntable, as it effectively gets it off the floor (upon which a standard system support rests), nullifying so many of those nasty ground-up vibrations. It's also important to point out that all turntables sound much better without their dustcovers. If you think about it, a dustcover is like a huge resonance trap; just as a satellite dish catches radio waves and feeds them down, so a turntable lid sends airborne vibes straight back into the plinth. So for the best sound, go topless!

The next thing to remember is that phono cartridges should always be securely fixed to the headshell. Use a good quality alignment protractor such as that from Ortofon, Avid or Townshend – an excellent, albeit more expensive gadget is Mobile Fidelity's GeoDisc. Then, when the cartridge is in the right place in the headshell, secure it with quality Allen bolts (such as those from SME), tightened hard. Not too hard mind, or you'll crack your cartridge body or headshell! Also, remember that when fitting your cartridge, don't touch the bare cartridge pins as the dirt from your fingers will degrade the electrical connection and sully the sound – if possible, always clean them with contact cleaning solution anyway.

The whole topic of tracking force arouses strong passions amongst vinyl junkies, but here goes: don't trust your tracking force to your tonearm, unless you have ▶



## FEATURE SYSTEM TUNING

Ortofon's T-Force stylus pressure gauge is both cheap and accurate. Who could want more?



a particularly expensive one. Ortofon's T-Force stylus force gauge is accurate and cheap, and if you want a digital one then there are plenty more from the likes of Shure, Ortofon and Clearaudio, for example. Generally track your cartridge at its recommended weight; although experimenting within the specified range is permissible. Never think that tracking lighter will reduce record wear; it induces mistracking which has precisely the opposite effect.

The condition of your turntable's main bearing is vital to good sound, so always remove the outer platter when moving it around. Be wary of heavy turntable mats or record clamps that could overload the bearing. Old main bearing oil can be flushed out with detergent, the bearing cleaned with isopropyl alcohol and then refilled to the recommended level with a good fully synthetic motor oil such as Redline. Indeed, there's a range of bespoke oils on the market such as Audio Origami's Booster Oil, and Origin Live Turntable Oil, which are also worth investigating.

Belt drive turntable owners beware: drive belts should be renewed if loose, and then periodically lightly cleaned with alcohol on a lint-free duster. Always check the cleanliness of the belt's path (i.e. the surfaces it touches, such as the drive pulley and inner platter) and clean them if necessary. This really does make a huge difference to the speed stability of your deck, with a resultant tightening in the bass and improvement in midband and treble focus. Obviously if yours is a direct drive, don't worry!

A clean stylus essential, too. Generally a wipe from back to front with a light artist's brush removes dust painlessly, but for dirtier diamonds a wet clean with fluid such as Stanton's SC-4 (£14) or Mobile Fidelity's LP-9 (£20) does the job better. Take care not to get fluid onto the upper part of the cantilever, as it can work its way up into the suspension with unfortunate results. We at *Hi-Fi Choice* are also big fans of Missing Link's VP DustBuster (£20), which is an easier 'dry cleaning' method.

### Boxing clever

No, it's not the nineteen seventies anymore! In the bad old days, people used to stick their speakers on the floor, or behind the sofa even. Only the hardcore audiophiles of the day used stands, and these normally came with castors on! Loudspeaker best practice is different now, and stands rule. We recommend a good sturdy sand-filled design for standmounters, such as Atacama Nexus i for smaller speakers and Partington Super Dreadnought for larger ones. There are countless good designs on the

market; the main thing to look out for is solidity of construction and stability.

Choose stands that place your speaker's tweeter at roughly ear height when you're sitting in your listening position. Wherever you choose to site your speakers, aim for rigidity: the more they wobble around, the more you lose dynamics and clarity. Again, IsoTek's Ultimate System Set-Up Disc is excellent for correct speaker placement. Don't be afraid to experiment; time spent on this can reward massively over the course of your system's life.

Once on the stand, loudspeakers can be further tweaked. First, make sure they're sitting securely; Blu-tack can be used for this, if you don't wish to spike your speakers to the stand top-plates. Many speakers also benefit from having their drivers tightened – often the Allen bolts or screws securing them to the front baffle are too loose, making for diffuse imaging and muddy bass. Ported designs with over-full bass can benefit from having their ports blocked or restricted with foam rubber or cork – even old socks will do in extreme cases.



A good pair of speaker stands, such as Atacama's Nexus, is an essential for any non-floorstanding speaker...

### BEFORE & AFTER:

The difference between a system that's had a few simple tweaks done to it and one that hasn't, can be quite shocking. All the more so considering the price of levelling the kit properly, isolating it sensibly and cleaning the contacts – which can be as little as pennies! Indeed, it's so great that a budget system costing under £1,000 can soar above a poorly fettled but far more expensive one. Just get the basics right and you'll enjoy a far smoother, more open and expansive sound, that's more detailed yet more relaxed. Instruments hover in space in your room, rather than being locked inside the loudspeakers, images sit squarely in position and vocals pour out into the air rather than sounding like ghosts in a machine. But there's always more – the tweaking never stops...

## MASTERCLASS

### Malcolm Steward details his own personal system set-up philosophy...



### Support structures

Hi-fi furniture is a vital topic and one that should not be overlooked. Too many people buy it on its appearance, ignoring the effect it has upon the performance of the equipment it is supporting. I have always believed in using the same 'brand' throughout to achieve consistency of design philosophy and, hence, performance. My current Quadraspire Sunoko Vent supports deliver the sonic goods, are simple set-up and resilient and robust.





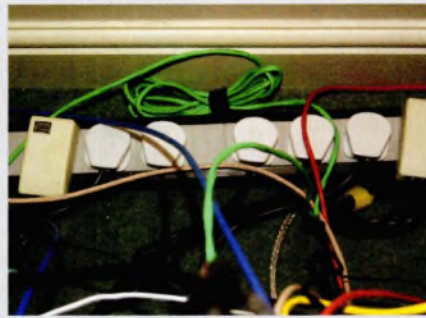


The way in which support furniture is arranged depends upon what it is supporting: ideally it will all be set-up identically, but source equipment – in particular turntables – demand scrupulous set-up of the supporting structure. The table should be adjusted so that its supporting surface is perfectly level in all directions: this can usually be achieved by adjusting spikes under the shelf or on the base of the support. If there is no provision for any such adjustment one can always revert to a trick I learned in high-end retail back in the eighties: stand the support on coach bolts driven into the flooring. Adjusting those bolt heads can then supply the levelling you require. This is also a useful dodge when it comes to levelling loudspeakers or their stands. Always aim to level stands with as much of the spike as possible still inside the support, and ensure the spike locknuts are fastened firmly.

### Dress to impress

Cable dressing is not just a Naim Audio fixation: correctly arranging cables should improve the performance of *any* hi-fi. Dressing means organising them such that they 'flow' naturally – without any stress-inducing twists or physical tension – from their source to their destination. Naturally, they should also be arranged such that interconnects – and Cat6 cables – do not run parallel and close to mains or speaker cables, and so on.

Furthermore, 'spare' cable should never be coiled (to form, effectively, a massive air-cored inductor), and cable should never be cable-tied or taped to the supports of any furniture (in particular to any ferric structures). Nor, ideally, should it be left in contact with the floor or



make an occasional exception for loose-fitting Velcro ties for tidying up mains leads and Ethernet cables – separately, of course. I have forsaken the 16-way mains Hydra lead that I made to feed the system and now use a more conventional, modified, 12-way, Brennenstuhl mains distribution block with two, four-way, Hydra leads and manufacturer-supplied IEC cables. I also use a Russ Andrews Silencer mains distribution block for connecting any switched mode power supplies that I am sadly obliged to use.

### Back fire

Begin by positioning your speakers so that they fire down the length of any rectangular-shaped room. This usually works better than having them fire across the smaller dimension – but do not let anyone put you off trying this arrangement if you want to. I have found that certain loudspeakers simply work better firing across the room while the majority – including the near six-foot tall, NEAT Ultimatum 10 XLS I installed – deliver their best performances firing down it. There are few absolute rules about placement and rooms. Generally though, a room in which you can comfortably hold a conversation will generally work successfully for loudspeakers.

Assuming you're using speakers that do not need to be placed hard against a rear wall, begin by placing them about half a metre from the back wall and at least one and a half metres from the side walls. A good initial arrangement is an isosceles triangle with the listener at its apex. For any speakers, try placing them so that they are initially about three metres from the listener (and three metres from each other as well), then adjust from there. Listen initially for a natural sounding tonal

balance: bass instruments should be clearly audible, as should those generating high frequencies. Neither band should be obvious or prominent. Moving the speaker towards the wall will increase the low end output, which will, by default, appear to decrease the top end response or, at least, muddy it somewhat and reduce its definition and clarity. The trick is to find a position where every instrument is clear and expressive: try listening to acoustic jazz – saxophone, piano, drums, and acoustic bass – and make sure you can follow each instrument easily throughout. (Try the 1957 Art Pepper album *Meets the Rhythm Section*; the music and the recording are truly spell-binding!)

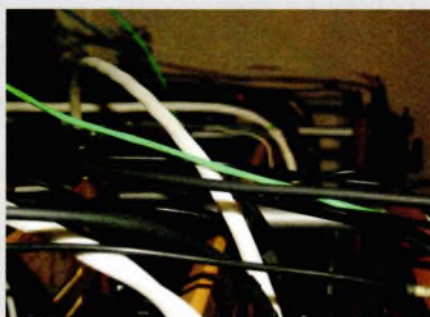
Once you're happy with the overall performance, you can begin to experiment with toe-in – angling the speaker cabinets to align the drive units towards the listener. Remember that all these adjustments should be particularly fine: move the speakers a centimetre this way or that, a few degrees inward or outward is all that is required. Such adjustments will help focus the sound and improve the solidity and stability of the stereo image. Do remember, however, that not every loudspeaker is capable of creating 'holographic' or three-dimensional images.

Ask your dealer for advice regarding your particular model. Once you find the ideal spot you might like to mark that position with tape – in case you subsequently want to install coach bolts or screws in which to locate the floor-spikes, either those of the speaker or of the stand.

### And finally...

Don't place anything – like a large empty coffee table – between you and the loudspeakers. It will act like a sonic 'mirror' and reflect the sound about the place rather than allow it to travel straight to your ears, which is the desired effect. Also avoid soggy sofas; leather seating appears to me to have just the right mix of reflectivity and absorption and, of course, comfort. Similarly, I do like record, book and CD storage shelves and cabinets scattered about a room. Just be certain they are not too tidy or uniform. The reason? Well, they act as sound diffusers and the irregular surface can usefully aid that 'break-up' process.

If you have moved into using NAS drives and networked computers to supply streamers in your system, there is no need to position them in your music-room or lounge. A study, office or under-stair cupboard makes an ideal home for such devices. Just be consistent with your cabling and use Cat 5e, at least. Avoid shielded cable types anywhere in your network as these can create earth loops, which are not good news. You might also like to consider replacing any switched mode power supplies with linear, regulated, analogue types, which tend to interfere far less with the home's mains supply.



walls of a room (from which it can absorb vibration). Ideally cable will leave whatever equipment it is connecting and touch nothing else at all until it reaches its destination/source... and that includes the shelving supporting the equipment!

Speaker cable usually needs to contact the floor because of its length, but this can be avoided or mitigated by using lightweight foam rubber – short lengths of the stuff plumbers use to insulate water pipes, which can be much cheaper and just as effective as the purpose built and ridiculously costly cable support accessories designed to do the same. I do not approve of plastic cable ties, but I











# Twenty twenty vision

Has PMC's twenty.22 standmount loudspeaker got what it takes to break the sound barrier?

**Jason Kennedy** finds the angles...

**P**MC makes loudspeakers for both the professional and domestic markets, a state of affairs that could mean that you are able to listen to an album that was made with PMCs through PMCs! I have been to a couple of studios that use the things however, and never have I been able to replicate the results I encountered there. But then again neither do I have such a carefully treated listening room nor such substantial active PMC loudspeakers...

The principle that the sound of a record made in a studio is the sound that the engineer heard through the monitors is a good one however – so to begin to approach that particular absolute you need a loudspeaker with the same characteristics. It would be useful to know which albums have been made with PMCs, the company lists the organisations and artists, but not the precise albums concerned.

The twenty in this speaker's name is an indication of the years that PMC has been making loudspeakers, a period that started with co-founder Pete Thomas making prototype pro monitors in his garden that soon found favour among domesticated audiophiles. The twenty.22 is the larger of two standmounts in the twenty series, a range that's distinguished by sloping cabinets and two-way operation. They also incorporate PMC's advanced transmission line (ATL) venting that's claimed to use the rearward output of the main driver to produce extended bass, while making the drivers easier for the amp to control.

The trapezoidal cabinet is not merely a styling exercise; it brings a variety of advantages to the product, along with the inevitable increase in cost of manufacture. These include natural time alignment of the drive units, the tweeter's motor system is closer to being directly above the woofer's when viewed from the side.

The shape is inherently stiff and though the internal surfaces are parallel they are dislodged so that in a reflex speaker, at least, you would get less internal reflection. As this is an ATL, the bracing that forms the line stops any reflection and kills all but low frequencies prior to them getting into the room.

The twenty.22 incorporates a 6.5inch mid/bass driver that's based on the design created for PMC's Fact models; it has a cast alloy chassis and a lightly doped natural fibre cone. Although there is another speaker in PMC's catalogue with this basic spec, the TB2i, that's where the similarities end as this driver was created specifically for the twenty series and works into an ATL that's 33 percent longer and crosses over at 1.8kHz, rather than the 2kHz of the TB2i. The crossover is a fourth order type with steep 24dB/octave slopes, so there is very little overlap of output between drive units.

The tweeter is a 27mm soft dome developed in cooperation with Norwegian driver mongers SEAS,

## DETAILS

**PRODUCT:**  
PMC twenty.22  
**ORIGIN:** UK  
**TYPE:** standmount loudspeaker  
**WEIGHT:**  
8kg  
**DIMENSIONS:**  
(WxHxD)  
184x410x367mm  
**FEATURES:**  
• tweeter: 27mm Sonolex soft dome  
• woofer: 170mm doped cone  
• quoted sensitivity: 90dB  
• quoted impedance: 8 ohms  
• 20 year warranty  
**DISTRIBUTOR:**  
PMC  
**TELEPHONE:**  
0870 4441044  
**WEBSITE:**  
pmc-speakers.com

and has the challenging task of providing output all the way from 1.8 to 25kHz, according to the specs. The metal grille is a key part of the design and not merely a protector, it helps to achieve consistent dispersion across the audio band, a quality that PMC considers extremely pertinent to achieving good results in differing rooms and for listeners outside of the sweet spot.

The twenty.22 is available in one of three real wood veneers or diamond black and, while it can be happily accommodated on most 60cm stands, does look rather better on the dedicated stand that PMC has had made for the purpose. This is raked to match the speaker for greater aerodynamics, not that there's much danger of them taking off. There are two pairs of terminals for bi-wiring/amping purposes and the speaker is supplied with magnetic grilles

## Sound quality

To my ears, PMCs always sound open next to conventionally aspirated loudspeakers and the twenty.22 is no different – possibly down to the ATL system which seems to let the speaker breathe in a fashion that reflex ports do not. In practice, this means that many others sound compressed by comparison, even those that are pretty impressive by the standards of the genre.

## There are few standmounts that offer the degree of musicality that the 22 can deliver

The twenty.22 has little in the way of cabinet colouration that I can detect; the sound it produces seems to have a greater freedom of expression and this means you hear more variety in recordings. But it takes a bit of acclimatisation, initially the concern is what's happened to the bass? You get used to the sound of reflex cabinets and take their version of low frequency sound as the norm, but it ain't necessarily so. Going back to such a speaker after this PMC makes the bass sound thick and congested. True enough, it sounds heavy, but has relatively little vitality, speed or texture.

The twenty.22 does not appear to have a hump in the response to give you the sensation of low bass, an approach employed in many small reflex designs. Instead it focuses on delivering an exceptionally clean, fast and revealing sound that doesn't



## Q&A

JASON KENNEDY SPEAKS TO PMC'S PETE THOMAS ABOUT THE TWENTY.22...



**JK:** Can you name a few albums that were made using your monitors?

**PT:** Just out of the current 'top twenty' you can include Emeli Sande – *Our Version of Events*, Adele – *21*, Ed Sheeran – *+*, Lana Del Rey – *Born To Die*, *Keep Calm and Relax*, Katie Melua – *Secret Symphony*, Adele – *19*. Then there are countless historic albums, which include the entire Genesis and Elton John back catalogues and so many more...

### Why 22?

The launch of a new range in our twentieth year gave rise to the 'twenty series' and the 22 is the second largest in the range.

### What are the main differences between this and a TB2i?

The physical differences are the drive units, cabinets, crossovers, terminals, grille fabric and badges... in fact every element is different. Sound wise, they are far more transparent, produce a deeper, cleaner soundstage and the bass timing is really on the button.

### Why go for a 4th order crossover, surely 1st order types are simpler and thus more transparent?

Quite the opposite, simple crossovers don't allow perfect tailoring of the frequencies which means the drivers receive frequencies that are not suited to their individual responses, causing an unnatural and coloured sound. Sophisticated steep order crossovers also increase the driver's power handling and widen dispersion. There is a drawback, they take far longer to design and are far more costly to build, but the rewards speak for themselves.

### You have used traditional driver technologies in the twenty series, no beryllium or metal, etc. Is this a cost consideration?

No, it's a performance consideration. Paper and fabric are still amongst the best cutting edge materials for moving coil speakers... and paper has the benefit of ninety years development in its application for speaker drive units.



**THIS LOUDSPEAKER** sounds quite significantly lighter, faster and more open than the vast majority of the competition, but the downside is that the bass doesn't have the weight of some of the better examples of the reflex ported breed.

A B&W PM1 costs £1,995 and has a rather more slick overall finish, albeit with considerably less real wood veneer. It can't compete with the dynamics and speed of the PMC, but does deliver rather more precise imaging. Its slimline tweeter enclosure avoids baffle edge problems and produces a solid, three-dimensional rendition of voices and instruments that few can compete with. It also has a deliberate low-frequency hump in its response to offset its relatively small volume.

The twenty.22 has an immediacy and freedom from boxiness in the bass that makes for a more lifelike overall sound. It produces a wide and high soundstage of electrifying vivacity, but you will need one of the floorstanders from the twenty series if you want trouser-flapping low end.

## IN SIGHT



- 1 27mm Sonolux soft dome tweeter gives crisp highs
- 2 angled front baffle gives a degree of time alignment
- 3 back panel sports gold plated speaker binding posts
- 4 PMC's advanced transmission line venting
- 5 170mm doped natural fibre coned mid/bass driver

attempt to plumb the depths or shake the floor, but gives you all the texture and shape of bass notes.

This was apparent with Meshell Ndegeocello's *The Way*, a track that often sounds thick and overly heavy, but with the PMCs gained a new lease of life because the music wasn't being bogged down in bass. It's an extreme example, but possibly also a reflection of the monitors used during recording and mastering, either way it was nice to hear it in such nimble and vital form. Vital is the word; everything has a bit more life and energy. It's a bit like a horn speaker in this respect, but without the tonal variations that accompany most examples of the breed. What I enjoy is the unfettered nature of the sound, it seems to be free of the usual constraints which means that there is more of the acoustic from the recording and less box character.

Live music benefits hugely from this approach, you can feel the tension in the atmosphere and the way it effects the performance, Keith Jarrett's *Testament* disc being a case in point. It's almost as if the presence of the audience pushes him to express himself with greater eloquence and clarity than on studio recordings, where there's no emotional feedback.

Another live piece is Paul McCartney's rendition of *Mother Nature's Son*. This has an immediacy and naturalness that's uncanny with this PMC; everything about it is effortless, from the melody to the phrasing. It's almost enough to get me digging out my Beatles LPs! But not quite, instead I lined up another vintage classic, Muddy Waters' *Folk Singer*, another very simple recording of three

musicians from before the time when limiting/compression was used on vocals. When the vocals are coming from someone like Waters through this loudspeaker you do need to be careful with the volume control; the dynamic range is alarming and this speaker is easily fast and open enough to let you know it!

## Conclusion

The second loudspeaker I have auditioned from PMC's twenty series, it has reinforced my opinion that Pete Thomas is among the very best designers in this field. There are very few standmounts which offer the degree of immediacy, openness and musicality that the twenty.22 can deliver. It's a style of presentation that might not initially appeal to those in love with reflex style bass, but after half an hour of familiar music you will have great difficulty tearing yourself away. If you're in it for the enjoyment of music in any or all styles then this angular beauty is one fine conduit to happiness ●

## Hi-Fi Choice

### OUR VERDICT

#### SOUND QUALITY



#### VALUE FOR MONEY



#### BUILD QUALITY



#### EASE OF DRIVE



**LIKE:** Immensely open, dynamic and fast with massive musicality  
**DISLIKE:** This is a tough one, but a bit more image precision would be nice

**WE SAY:** Highly capable and entertaining speaker that gets straight to the heart of the music

### OVERALL





**“A delight to the eyes and ears!  
Beautiful to look at and a truly  
wonderful listening experience”  
– one of our satisfied visitors**

**OATLANDS  
PARK HOTEL**  
HiFi Show Report  
24-25 March

**A new show in a new venue with seriously interested visitors – an excellent show.**

New to the UK were the **VTL MB-185 Series III** mono block valve amplifiers, working magnificently with the **Focal Scala Utopia** loudspeakers.

New to most visitors were the deceptive **LeadingEdge** equipment platforms that hide astonishing talents inside beautiful furniture.

We ran a Prize Draw for a **VertexAQ** Silver Jaya mains filter. Each day we gave a one-hour room acoustics seminar: “Making the best of the room we have.”



**MB-185 III** mono block amplifiers, with EL34 valves and variable Damping Feedback for precise speaker matching

Many hundreds of visitors came to the room, a good number stayed for long periods and some came again for an extended listen. Some of their comments:

- Superb sound
- Very nice-sounding system. Never heard dCS sound better and always liked the Focal sound, especially that tweeter
- Again one of the best sounds at the show
- Very dynamic and clean system. A delight to the eyes and ears! Beautiful to look at and a truly wonderful listening experience
- Demo of Puccini, Scala, VTL – Brilliant!
- Very smooth, articulate sound
- Nice sound. Focals can convey a sense of scale easily
- As always, the best sounds in the show! Keep it up Jeremy!!

The components in the system were: • dCS Puccini CD/SACD player and U-Clock • VTL TL-6.5 valve preamp • VTL MB-185 Series III mono block valve amplifiers • Focal Scala Utopia speakers • LeadingEdge equipment racks • VertexAQ mains cleaning and system cabling.

**The deceptive LeadingEdge equipment racks were new to most visitors.**

The LeadingEdge platforms are deceptive. Within their cabinet-quality build are serious audiophile talents:

- vibration-draining to clear haze and muddle and improve timing
- RFI and EMI screening to remove more hash, distortion and glare
- panels to reduce airborne sound interference
- isolation from external vibration.

The gains in performance from these racks are truly awesome and pound-for-pound are better value by far than upgrading the major boxes.

There is more detailed description on our web site under Essentials.



LeadingEdge racks are modular and can be built up from a single platform

**We worry.** Do visitors think they could never afford the sound they hear in all our demonstrations? The praise for our sound is consistent – at every show.

Yet the major components differ every time, from good but unpretentious to some of the world’s best.

*What is consistent is the VertexAQ system-wide treatment that removes damaging vibration and RFI and EMI pollution – items starting around £360. That’s the magic ingredient. Read more on our web site under Essentials.*

Our next show will be at Whittlebury Park near Silverstone on **22nd and 23rd September**. We’re already planning another major launch, perhaps our best system yet ...

**Customers say** we make some of the best sounds at shows and in our studio they have ever heard, so you know we can do the same in your home. Our advice takes account of your best components and guides you where change is needed, in stages you can afford.

You avoid expensive mistakes, enjoy music and save money in the long run.

*Just listen and you’ll know*

CD: Accustic Arts, Bel Canto, dCS, Gamut, Resolution Audio, Vertex AQ dac-1, Wadia. Vinyl: Aesthetix, Clearaudio, Graham, Lehmann, Transfiguration.  
Tuners: Magnum Dynalab Amplifiers: Accustic Arts, Aesthetix, Bel Canto, CAT, Gamut, Sonneteer, Storm Audio, VTL.  
Loudspeakers: Audio Physic, Focal, Gamut, Kawero, NEAT, Totem. Cables: Chord Co., DNM, Nordost, Siltech, Tellurium, VertexAQ.  
Mains: Vertex AQ. Supports: Arcici, Black Ravioli, Hi-Fi Racks, Stands Unique, Vertex AQ



# Word perfect

Audiolab's much heralded M-DAC digital convertor is finally here. **Richard Black** finds its performance adds up to something special...

**A**mong the names to conjure with in digital audio over recent years, John Westlake's has come to figure very highly. He has been behind many of the Audiolab products we've waxed lyrical about in past issues of *Hi-Fi Choice*, and before that was involved in some justifiably celebrated products from Cambridge Audio (the original DacMagic) and Pink Triangle (the Da Capo, one of the most sought-after of the first wave of audiophile DACs, back in the 1990s). His latest magnum opus is this, the M-DAC.

There are a number of things interesting about this product, but surely the most noteworthy is its wide range of filter options (many of which we've encountered already in the excellent Audiolab 8200CD). This makes it one of the most sonically tweakable DACs on the market.

A brief digression on the subject of filters, if you'll indulge me. Digitally encoding audio inevitably requires some filtering, which simply means limiting of bandwidth. If you don't do this, all sorts of bizarre and unpleasant distortions arise. There is such a thing as a filterless DAC

## ▶ DETAILS

**PRODUCT:** Audiolab M-DAC  
**ORIGIN:** UK/China  
**TYPE:** DAC  
**WEIGHT:** 1.5kg  
**DIMENSIONS:** (WxHxD) 250x59x252mm  
**FEATURES:**  
 • balanced (XLR) and unbalanced (phono) analogue outputs  
 • electrical and optical digital outputs  
 • 2 each electrical and optical digital inputs (max 24-bit/192kHz)  
 • USB digital input (max. 24-bit/96kHz)  
 • can control media player on PC/Mac via USB  
 • digital gain control  
**DISTRIBUTOR:** IAG  
**TELEPHONE:** 01480 447700  
**WEBSITE:** audiolab.co.uk

(Audio Note, for instance, makes them) but this simply means that the filtering is in effect carried out by the loudspeakers, the air and your ears instead! The vast majority of DACs use digital filtering to present an undistorted analogue signal to the world, but there are various ways to do this. And by far the commonest way of doing this is – surprise, surprise! – a compromise, achieving okay performance from relatively simple hardware of very well-documented design.

With the huge advances in designing and manufacturing digital integrated circuits, requirements for simple hardware have receded and the option now exists for audio designers to implement more sophisticated filters. Trouble is, there's no consensus on what the best filter type actually is. Options include filters with near-perfect amplitude response but lots of ringing, or no ringing but poor amplitude response, or good amplitude response from a filter with no pre-ringing, but plenty of post-ringing, and more. Audiolab is not the only manufacturer to have seized on this divergence of opinion





directly observable at the analogue output using conventional test methods and equipment. On the other hand, specialist audio cables suffer from the same issue and there's no shortage of people prepared to put their hand on their wallet and swear they make plenty of difference! These options are available in 'Optimal Transient' mode, as XD and DD versions.

Selectable filtering isn't the only handy thing the M-DAC does. It's got a volume control which can be taken out of service if you prefer to use your preamp, but with five digital inputs on the M-DAC itself you may not actually need a separate preamp – this is it! There's a balance control too, like the volume control calibrated in accurate dB steps. If you wish, you can set the display to indicate signal level for each channel, and it can display either nominal or exact incoming sample rate, possibly useful for fault-finding. The display can even indicate track and time information from a CD; who knew that information came down the S/PDIF digital link? No, I didn't either!

With computer audio such a common source these days, more and more manufacturers are including details of how to ensure bit-perfect replay, and Audiolab does this in its instruction. It goes one further in making a 'bitperfect' test available, which is very clever and simple, relying on a file which you download from the Audiolab website. It's very comforting to know that you are playing back an uncorrupted file. If you're using Windows XP, which has a habit of altering the least significant bit (LSB) of the audio data, you can use the 'LSB restoration' feature of the M-DAC to correct the damage done.

Finally, and it gives me great pleasure to report this, practically all this stuff can be controlled remotely. It's remarkably rare to find a remote control included with any DAC, but Audiolab has done it and I for one

am grateful. The remote's nothing fancy, but who cares? It does a valuable job.

Electronically, the M-DAC is based around a high performance DAC chip from ESS, which converts to a very high technical standard. It's followed by op-amp chips, as is the case in most converters, but the M-DAC also includes discrete transistor circuitry, an extremely rare detail at this kind of price. The headphone output is also driven by discrete circuits. There's copious power supply filtering all over the place and heavy-duty jitter attenuation to ensure that jittery sources are still optimally converted.

### Sound quality

With all the options available, it's hard to know where to start the listening, so I plumped for the 'sharp roll-off' digital filter (much the same as most CD players) with a budget CD player as the source connected via an electrical S/PDIF link, and output volume fixed. Very much the plain vanilla setting in other words, but probably the simplest way of assessing basic performance. And as I'd rather expected, performance is in fact anything *but* basic...

There's near-faultless extension at frequency extremes. Bass is beautifully extended but never in any danger of exaggeration or overhang, while treble is sweet and open. It's treble that most obviously reacts to changing the digital filtering settings, seeming to gain a little in extension when one switches to 'Optimal Transient' but, as it seems to us, gaining in transparency in 'Optimal Spectrum' mode. This is a hard one to call as some recordings just don't show up the difference, but with the clearest recordings, including some I'd had a hand in making, I definitely felt that Optimal Spectrum had the edge all round over the longer term, though Optimal Transient can sometimes be more immediately ear-catching.

as an opportunity to offer selectable filters so that you can tune the sound to your taste.

John Westlake however has taken things a stage further. Within some (not all) of the filter types, he has made available options related to how the DAC processes the data internally. This is pretty subtle stuff and Audiolab makes no claim that the results are

### CONNECTIONS



## Q&A

RICHARD BLACK TALKS TO AUDIOLAB DESIGNER JOHN WESTLAKE...



**RB:** How did the M-DAC come about?

**JW:** It had its origins in work that Dominik Peklo and I did before joining International Audio Group (Audiolab), but it also grew through our work on the 8200CD, CDQ and DQ.

**What's the thinking behind XD and DD processing?**

XD and DD filters are variations of the original Optimal Transient filter. The XD filter results in a mathematically identical output as the Optimal Transient filter, but the results are achieved via computationally different processing, altering second-order effects such as internal PSU modulation. The Optimal Transient DD filter takes this further by using corrective processing to null these effects.

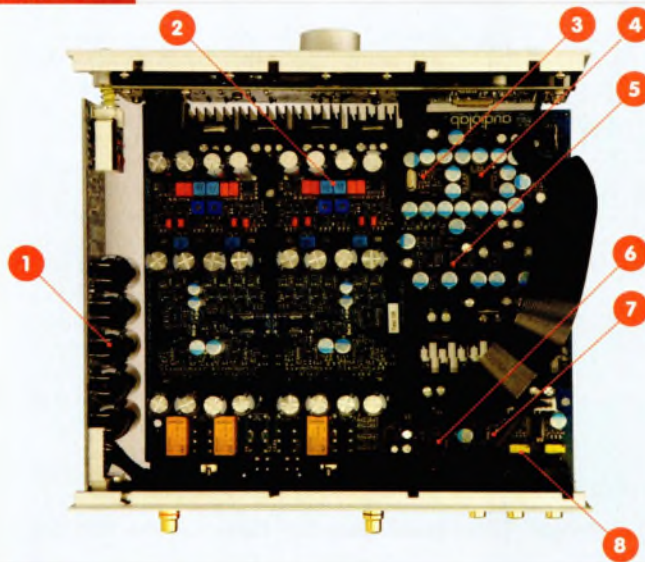
**Can the M-DAC really restore bit-perfect audio after Windows has fiddled with the LSB?**

Yes it can, as can be verified using the M-DAC's built-in Bitperfect Test. The LSB restoration will work for files with original bit depth of up to 20 bits at sample rates up to 96kHz played on Windows XP through DirectSound or waveOut. In other words, you can now listen to a lossless CD or even HDCD music straight from iTunes or Windows Media Player with no feelings of guilt. Unfortunately, Vista and 7 both employ a limiter that's kicking in any time the music is hitting peaks, irreversibly changing all the samples nearby the peaks. Again, the M-DAC's real-time bit depth analyser and peak meter make it possible to observe this behaviour.

**What are the advantages of the discrete J-FET circuits?**

The M-DAC's fully discrete analogue circuits make up an extremely linear output stage without relying on overall global feedback, to linearise the design. They are also highly immune to RF demodulation. RF leakage from the digital conversion process is one of the main reasons we believe conventional digital designs have a tendency to sound 'hard' and 'bright'.

## IN SIGHT



- 1 1st stage PSU converts raw AC mains to DC
- 2 left channel balanced Class A output stages
- 3 5th overtone low jitter clock
- 4 ESS 32-bit Sabre DAC
- 5 cascaded asynchronous time domain isolator
- 6 asynchronous USB interface
- 7 1st stage jitter attenuation stage
- 8 transformer isolated coaxial inputs



**AMONG DACs** we've reviewed recently, the Rega DAC (HFC 357) is the closest in price to the M-DAC. It too offers user-selectable filters, though doesn't have the other processing options of the M-DAC. Nor does it have the informative display, a headphone output, a remote control or balanced outputs, so Audiolab can apparently justify the extra £100 easily enough.

Sonically the comparison is interesting. I found lots to like about the Rega, including a similarly effortless way with detail and very good extension in both treble and bass. The one thing it fell behind with was imaging, which seemed a touch distant. Now I haven't mentioned imaging as regards the M-DAC, simply because I was hardly aware of it. Going back and listening specifically for that, though, I found images were about as solid and believable as I've ever heard. And this certainly includes recordings I personally had a hand in making. The Rega is a very fine product, but I feel the M-DAC just edges past it.

One of the beauties of having all these filters available is that some music may seem more convincing via a different filter. A solo piano recording seemed to have just a shade more body to it using the 'Minimum Phase' filter, for instance. My investigation of the filters was certainly aided by the very high-quality headphone output, which drove all in my large collection of 'cans' very convincingly, and to very high levels when required. Interestingly though, my conclusions as to which filter was preferred for which music once or twice differed, depending on whether I listened through headphones or speakers.

That this DAC clearly offers some of the most detailed – and at the same time most musically bewitching – sounds I've heard from any digital source. It is, as it should be, largely immune to the differences between sources and gets the best from CD, streamed audio and local computer playback with the greatest of confidence. It simply revels in the kind of tricky multi-layered sound that can so often trip up modern audio electronics.

As with all the best kit, it's up to you how you listen; if you just want to let the sound wash over with you, you'll be carried away in no time, or if you prefer to listen closely and analytically you'll find the information you seek with very little effort on your part.

A quick word about practicalities. I mentioned above that I started with the M-DAC in fixed-volume mode, but engaging the volume control convinced me that this is also a perfectly sensible way to listen.

Performance as a digital preamplifier is excellent, and the gains to be made from eliminating a unit (i.e. the preamp) from the signal chain don't seem to have a price on them. And while it doesn't affect the sound, the unusually informative display and remote control combine to make this one of the nicest DACs to use that I've encountered at any price. I couldn't convince myself that I could hear any gains from the DD/XD processing, but everything else about the M-DAC is so easy to recommend that it comes out a clear winner.

## Conclusion

With excellent sonics across a wide range of sources, fine build, superlative ease of use and a vast feature count, it's very difficult *not* to rave about the new Audiolab M-DAC. It's a landmark product, just like John Westlake's original DacMagic was all those years ago. If you're looking for a digital-to-analogue converter at or anywhere near this price, you surely must hear this. ●

## Hi-Fi Choice

### OUR VERDICT

- |                                 |                                                                                             |
|---------------------------------|---------------------------------------------------------------------------------------------|
| <b>SOUND QUALITY</b><br>★★★★★   | <b>LIKE:</b> Beautifully clear and detailed sound; strong on rhythm; impressive feature set |
| <b>VALUE FOR MONEY</b><br>★★★★★ | <b>DISLIKE:</b> Fragile power connector; that's all!                                        |
| <b>BUILD QUALITY</b><br>★★★★★   | <b>WESAY:</b> Raises the bar for what an affordable – or in some ways any – DAC can achieve |
| <b>FEATURES</b><br>★★★★★        |                                                                                             |

### OVERALL





REAL STORES • REAL PEOPLE • REAL PRODUCTS • REAL VALUE



**ARCAM** adds four **NEW** models to its rSeries

**rPAC**  
USB DAC / HEADPHONE AMP  
£149

**drDock**  
DIGITAL DOCK FOR IPOD / IPHONE / IPAD  
£199

**rLink**  
OPTICAL / COAXIAL DAC  
£149

**rBlink**  
BLUETOOTH DAC  
£149



**STORES  
NATIONWIDE**

- Aberdeen\* 01224 252797
- Basingstoke\* 01256 324311
- Blackpool\* 01253 300599
- Brentwood\* 01277 264730
- Brighton (Hove)\* 01273 733338
- Bristol\* 0117 974 3727
- Bromley 020 8290 1988
- Camberley\* 01276 685597
- Cambridge\* 01223 304770
- Cardiff\* 029 2022 8565
- Chelsea\* 020 7352 9466

- Cheltenham\* 01242 241171
- Chorleywood (Watford)\* 0845 5046364
- Enfield\* 020 8367 3132
- Epsom\* 01372 720720
- Exeter\* 01392 218895
- Glasgow\* 0141 332 9655
- Guildford 01483 536666
- Holborn\* 020 7837 7540
- Kingston\* 020 8547 0717
- Leeds (Wetherby) 01937 586886
- Loughton\* 020 8532 0770
- Maidstone\* 01622 686366
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- Portsmouth\* 023 9266 3604
- Preston\* 01772 883958
- Reading\* 0118 959 7768
- Sevenoaks 01732 459555
- Sheffield\* 0114 255 5861
- Southampton\* 023 8033 7770
- Swansea\* 01792 474608
- Swindon\* 01793 538222
- Tunbridge Wells 01892 531543
- Warrington\* 01925 632179
- Weybridge 01932 840859
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- Yeovil\* 01935 700078

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**LEEMA ELEMENTS CD PLAYER / AMPLIFIER**  
The Elements Series is the latest in the line of Leema high-performance audio equipment.



**ROKSAN CASPIAN M2 CD / AMPLIFIER**  
The M2 amp boasts 85wpc and five line inputs while the matching CD features a 24-bit DAC plus dedicated power supplies for the outputs.



**AUDIOLAB 8200CD OLED • 8200A CD / AMPLIFIER**  
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**MARANTZ CD6004 • PM6004 CD / AMPLIFIER**  
This award-winning CD player and amplifier is the result of extensive research and development by Marantz's engineering team, under the direction of Brand Ambassador Ken Ishiwata.



**ROKSAN KANDY K2 CD / AMPLIFIER**  
The award-winning Kandy K2 amplifier and the matching K2 CD player deliver the sort of performance that will satisfy both the music aficionado and the hi-fi enthusiast.



**ARCAM FMJ CD17 • FMJA18 CD / AMPLIFIER**  
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**DENON CEOL RCD-N7 CD NETWORK RECEIVER**  
This network CD / iPod receiver lets you set your iPod or iPhone in its dedicated dock and enjoy music with high-quality sound or listen to internet radio.



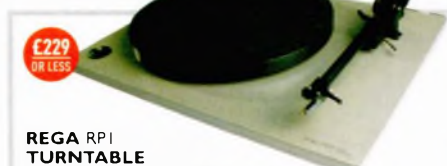
**MARANTZ M-CR603 CD NETWORK RECEIVER**  
Features CD playback, a DAB/DAB+/FM/AM tuner along with a USB connection and network capability via its ethernet port.



**ARCAM SOLO MINI CD RECEIVER**  
The award-winning Solo Mini provides premium performance in a discrete and stylish unit.



**PROJECT DEBUT CARBON TURNTABLE**  
With its Carbon arm tube and supplied Ortofon 2M Red cartridge, the Debut Carbon sets new standards in its price range.



**REGA RPI TURNTABLE**  
Excellent build quality, reliability and ease of use combine to make the RPI a product that will offer a lifetime of musical enjoyment.



**PROJECT XPRESSION III TURNTABLE**  
Features an improved, carbon-fibre tonearm, superior isolation feet and comes supplied complete with a factory-fitted and aligned Ortofon 2M Red cartridge.



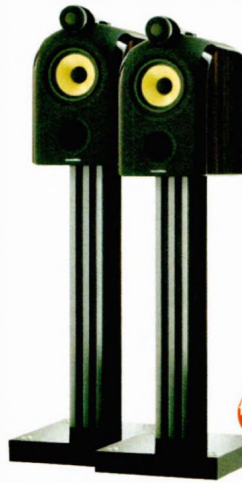
**SPENDOR A-LINE**  
A3 • A5 • A6 • A9

These high performance, floor-standing speakers combine smart styling with natural veneer finishes. Each model benefits from important advances in Spendor's drive unit technology, cabinet design and crossover engineering.



**MONITOR AUDIO GOLD GX**

Monitor Audio's new Gold GX speakers use technology that has filtered down from their flagship Platinum PL range. The range comprises two standmounts, two floorstanders, two centre speakers, a pair of surround speakers and a single subwoofer.



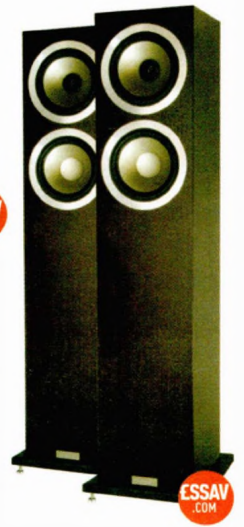
**BOWERS & WILKINS PMI**

This luxury, compact loud-speaker is the latest in a long line of Bowers & Wilkins audiophile mini monitors. It offers an extremely high-quality audio performance and features several technological innovations including a new tweeter and ground-breaking cabinet design.



**TANNOY REVOLUTION DC6T**

Award-winning compact, floor-standing speakers featuring Tannoy's unique Dual Concentric™ drive unit along with luxurious real wood finish trapezoidal cabinets.



**PMC TWENTY RANGE**

The twenty series is the next generation of elegant, hand-crafted British loudspeakers that follow in the lineage of worldwide acclaimed PMC designs. The 4 models use PMC's innovative ATL™ technology, providing a supremely rich and detailed performance ideally suited to all styles and sizes of interior.



**CYRUS CYRUS 6A • 8A AMPLIFIER**  
Part of Cyrus' new range of hi-fi separates. Both the 6A and 8A are also available with the option of a high quality DAC module.



**ARCAM FMJ D33 SUPER DAC**  
High-end DAC featuring an asynchronous USB input, usable with both PCs and Macs, along with two optical, two S/PDIF electrical and AES/EBU professional grade digital inputs.



**DENON DBP-2012UD UNIVERSAL DISC PLAYER**  
Enjoy exceptional sound and picture quality from many formats including SACD, DVD-Audio, 3D Blu-ray and your home network.  
**ALSO AVAILABLE:** DENON DBP-161 IUD £249



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Medium sized bookshelf speaker with extended bass, open mid-range, astonishing transient response and exceptional high frequency clarity.



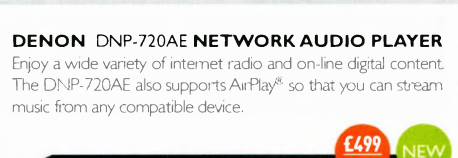
**PIONEER N-50 NETWORK AUDIO PLAYER**  
Audiophile Network player supporting AirPlay® and DLNA wireless technologies, allowing you to stream music wirelessly from your iTunes libraries or iOS devices.



**ARCAM SOLO NEO NETWORK MUSIC SYSTEM**  
Combines superb music performance, network audio capabilities along with an internal CD player and radio tuner.



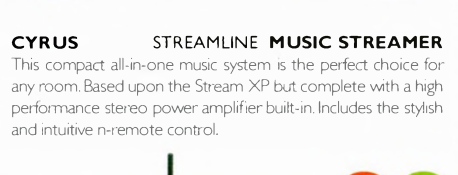
**NAIM SUPERUNITI MUSIC STREAMER**  
Combines all Naim's experience in integrated amplification and audio streaming into a single casing, the SuperUniti is the reference all-in-one player in the Uniti range.  
PLEASE NOTE: Naim products are not available at all stores.



**DENON DNP-720AE NETWORK AUDIO PLAYER**  
Enjoy a wide variety of internet radio and on-line digital content. The DNP-720AE also supports AirPlay® so that you can stream music from any compatible device.



**MARANTZ NA7004 NETWORK AUDIO PLAYER**  
This AirPlay® compatible player lets you connect to all your favourite music, whether it's from your PC, external hard disc or as an FM / DAB radio station broadcast or even on the other side of the world via internet Radio.



**CYRUS STREAMLINE MUSIC STREAMER**  
This compact all-in-one music system is the perfect choice for any room. Based upon the Stream XP but complete with a high performance stereo power amplifier built-in. Includes the stylish and intuitive n-remote control.



**SONOS - THE WIRELESS Hi-Fi SYSTEM**  
Play your digital music all over your house without a PC in every room. The award-winning Sonos lets you play your favourite tunes all over the house and control them from the palm of your hand. You can even play different songs in different rooms.

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SOUND & VISION





# Higher and higher

The latest NaimUniti music system runs at up to 24-bit/192kHz resolution, but does that make it twice as nice, asks **Jason Kennedy?**

**T**he NaimUniti is a component for all purposes; it plays CDs, tunes into almost any radio station, controls an iPod, streams music from an external drive and has a built-in amplifier. Since its launch in 2009 it has spawned a mini-me in the UnitiQute and been beefed up to create the SuperUniti. Well, now it's the NaimUniti's turn for a revamp, in the form of a new processing board. This is for streamed sources only – essentially anything that arrives via the Ethernet input – and doubles the maximum input sample rate from 96kHz to 192kHz, for around £250.

The NaimUniti is an extremely versatile single box product – it's got to be the most hardcore alarm clock radio in the business – and is all you need if your music is on hard drive or

CD. You need speakers of course, and ideally a wired internet connection, although it operates wirelessly if maximum sound quality is not essential. However if that's the case there's little point in spending this much in the first place! All the set up menus can be viewed on its three-inch display, which uses Naim's default colour green for the text; this is legible so long as you're within a couple of metres. It's far easier to use the N-Stream app that's available for Apple touchscreen devices, especially if you want to look for music on an attached NAS drive or scroll through the enormous variety of internet radio stations that are available.

The new processor benefits from what Naim has learnt about board layout over the last two years and is faster and more efficient than its predecessor. As a result it will

## ► DETAILS

**PRODUCT:** NaimUniti  
**ORIGIN:** UK  
**TYPE:** One-box system; CD player, streamer, radio and amplifier  
**WEIGHT:** 11.3kg  
**DIMENSIONS:** (WxHxD) 432x87x314mm  
**FEATURES:**  
 • analogue inputs: 3x RCA phono, DIN, 3.5mm mini-jack  
 • analogue outputs: RCA phono line, DIN pre-out, 2x sub  
 • digital inputs: 2x coaxial, 2x TOSLINK, iPod  
 • formats: Internet radio (WMA, MP3 Streams, MMS), playlists (M3U, PLS) MP3, M4A, AAC, Apple Lossless, Windows Media, LPCM 16-bit/24kHz, WAV, FLAC, Ogg Vorbis, AIFF  
**DISTRIBUTOR:** Naim Audio  
**TELEPHONE:** 01772 426 600  
**WEBSITE:** naimaudio.com

improve the sound of all various music file types that it can stream, not just the high resolution ones with greater than 96k sample rates. There is more of this becoming available but it still represents a very small proportion of the whole, even if you're an audiophile. One useful new feature is the ability to play Apple Lossless (Apple's answer to FLAC), a format that few streamers can deal with natively. This despite it being a popular choice among iTunes users who appreciate quality but don't want to have to house full size AIFF files. You can't stream your iTunes library to the NaimUniti sadly, but you can take all the albums that you've ripped in iTunes, put them onto a NAS drive with suitable UPnP software such as Twonky or Assett and play them from there. Or you can go down the full Naim route and use a UnitiServe to store your CD collection on and enjoy the sound quality benefits this brings.

As an amplifier, the unit has three analogue inputs on RCA phonos and an input for a Naim phono stage on a DIN socket; another DIN is available as a preamp out but you can get a line out via more conventional RCAs. There are also two subwoofer outs and four digital inputs on the back. If you have an iPod it's possible to bypass its internal DAC and extract a digital signal through a front panel USB connector that can also be used for music stored on a USB stick. This





input cannot however take the digital output from a computer, as the NaimUniti is not a USB DAC in the conventional sense.

With its black casework and anodised front panel, the NaimUniti is an understated piece of kit, but attention to detail in its construction is unusually high. Naim doesn't change the appearance of its products very often and this is key to the allegiance that users feel toward the brand, but don't let the plain looks give the impression that they are straightforward black lumps. This unit is among a very small number of streamers that take the issue of isolation completely seriously, by decoupling as many elements as possible, to minimise the amount of spurious energy that gets to the sensitive boards within.

## You've got to love the way it combines serious sound with consummate convenience...

In practical terms the lack of a knob for the volume control can be an issue, but as a rule I used the remote handset or N-Stream to control output level. With the CD loader on the front panel there isn't any space for a knob, but there are buttons for the purpose and it doesn't take too long to remember which ones to aim for. The hinged disc loader seems like the sort of thing that should work forever, it's never going to get stuck like a drawer or refuse to play like a

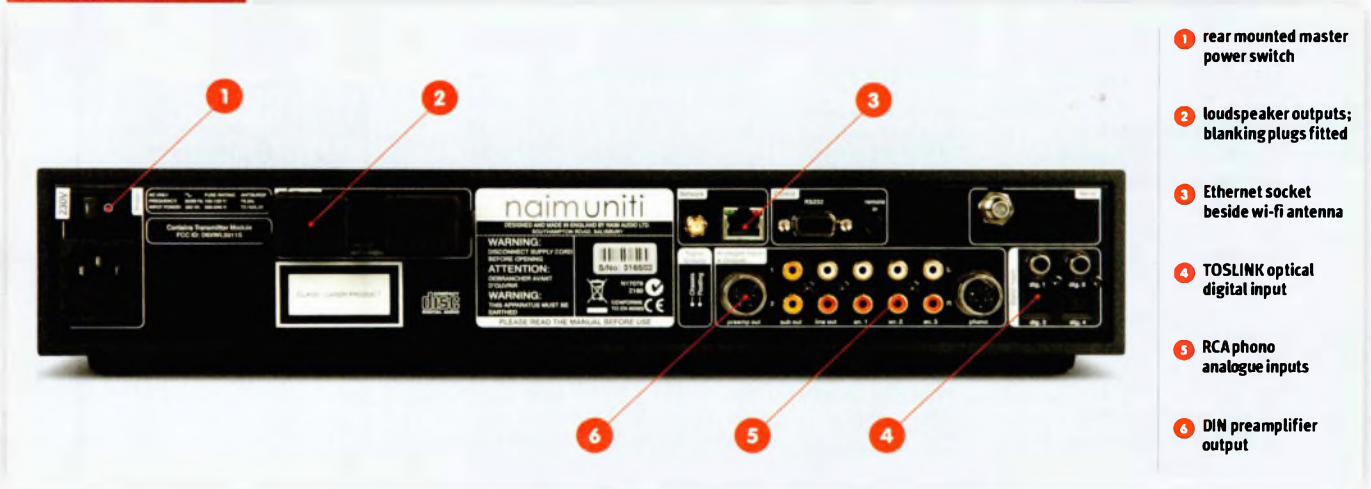
slot. The only drawback is that you have to remove and replace a puck when changing discs; this soon becomes second nature.

The other thing I really enjoyed about the Naim is its internet radio which allows you to find on-demand programming with the same ease as you can find live broadcasts. Go to BBC Radio 6 Music, for instance, and it lists the various presenters on the station, and selecting one plays their last broadcast show – this is a lot easier than with many streamers I've encountered.

### Sound quality

Although this is only a 50 watt amplifier it has little trouble driving a range of speakers; I kicked off with Bowers & Wilkins 802 Diamonds, as is my habit, but also tried

### CONNECTIONS





## Q&A

JASON KENNEDY SPOKE TO NAIM'S STEVE HARRIS ABOUT THE NAIMUNITI 24/192..



**JK:** This already seems like a very good component, what benefit does the extra 96kHz bring?

**SH:** The NaimUniti 24/192 version brings some significant improvements. Firstly the ability to play files at up to 24/192 resolution. This is helpful as more music that was originally recorded in Sony's DSD format becomes available, as this is often transcoded to 24/176.4. Next the processor is more powerful, giving faster navigating of menus, etc. The streaming board layout is better optimised for audio, and the wi-fi is now giving better speed and more resilience. Finally the overall sound quality is improved when streaming regardless of resolution of files.

### Why does Naim prefer the streaming approach to the USB DAC?

There are two reasons why Naim has prioritised the development of streaming over USB. Streaming by comparison is well developed and relatively stable technology-wise. This allows Naim to be sure of a consistent platform and longevity of performance. USB DACs, however, are in their infancy and the delivered performance is changing/improving all the time. This would make it difficult to deliver a product to a customer with a good expected performance over time. The second reason is that computers generally carry lots of noise on their ground lines and this is easily transferred to a hi-fi system via USB. Most USB DACs, even isolated ones, sound better with another stage of external isolation.

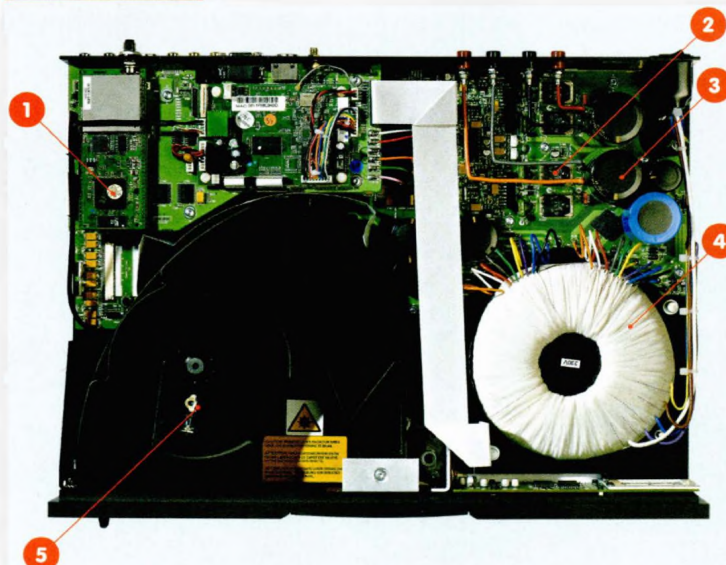
### The use of green on black for the display does not aid clarity; would you ever consider white on black text?

We don't like the look of white text on black on our products and don't think it's easier to read. Our research indicates that our customers like the green on black and use iPads for maximum convenience.

### This product demonstrates the superiority of streamed files over CDs. Is it solely demand that keeps CD players in production?

You haven't tried the Naim CD55!

## IN SIGHT



- 1 Texas Instruments main DSP chip
- 2 MOSFET power output chips
- 3 power supply smoothing caps
- 4 toroidal power transformer
- 5 sliding disc tray and mech



**LIKE EVERYTHING** else in the chain of an audio system, the quality of the router, switch and NAS drive you use affects the end result. Naim lists the NAS drives it recommends on its streaming forum, but the key quality to look for is a minimum amount of platters within the drive (which means avoiding massive amounts of storage, no more than a terabyte in a single drive).

Another useful thing to include is a switch between the router and the NAS/streamer, and here you want to look for maximum bandwidth – so 1000Mbps not 100. Routers are also critical when it comes to ease of set up, unfortunately the BT Homehub is not a good choice if you want to stream with ease. Netgear's very reasonably priced 1000 series designs are good, as are dearer options like Apple Extreme.

I used a Netgear DG834G and a 1TB WD Live NAS running Twonkymedia which wouldn't stream AIFF files, but it produced revealing and enjoyable results nonetheless.

PMC twenty.24s and Guru QM10twos, none of which indicated that the Naim was having difficulty. It's capable of delivering weighty and controlled bass that's high on texture and tactility; it's a drier sound than average but one that you quickly adjust to as the music draws you in. Timing is as ever with Naim components a major strength, it's totally on the ball and keeps the groove locked down in a fluent and cohesive manner. This is all the more apparent where artists play with the beat, shifting it in subtle ways that when exposed so effectively allows a tune to take on a whole new dimension. It makes other seemingly well timed components seem somehow one dimensional in this critical respect, and it's easy to hear why music lovers get hooked on the Naim sound.

Not having a 24-bit/96kHz NaimUniti to hand, it's impossible to say what the new board brings to the party, so I compared high and standard resolutions versions of a Genesis track from *Foxtrot*. In fact I played the CD in the unit first and then streamed a rip of from a NAS drive, the latter approach brings in considerably greater detail and image depth, the music file making the disc sound relatively crude and flat. A 24/176 version of the same track dramatically increased spaciousness and the sense of dimensionality, each note having a longer decay which in turn makes instruments sound that much more real. It's the sort of improvement that will turn you into a hi res file hunter.

With the limited quality of internet radio broadcasts, the results vary enormously – but the best, such as an HD stream of BBC Radio 3, sound remarkably convincing. Even the listen again programming is highly enjoyable – spacious even – when decent material is being played.

## Conclusion

I had the latest NaimUniti for a good while, and got to compare it with a number of alternatives. While some were stronger in one respect or other, in terms of sheer musicality, nothing else came close. Overall then, this is a remarkably effective piece of kit considering how much it does and how well it does it. Of course, those wishing to play music at truly bombastic levels through less sensitive speakers will need more power, but for most it's a very effective one-box solution. You've got to love the way it combines serious sound with consummate convenience – surely what good living is all about? ●

## Hi-Fi Choice

### OUR VERDICT

- |                                 |                                                                                                                  |
|---------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>SOUND QUALITY</b><br>★★★★★   | <b>LIKE:</b> Consistently engaging, invigorating and revealing sound                                             |
| <b>VALUE FOR MONEY</b><br>★★★★★ | <b>DISLIKE:</b> A volume knob would be nice, as would a free N-Stream app                                        |
| <b>BUILD QUALITY</b><br>★★★★★   | <b>WE SAY:</b> All the audio you need to enjoy your digital music collection and the radio stations of the world |
| <b>FEATURES</b><br>★★★★★        |                                                                                                                  |

### OVERALL





# Box-Design by Pro-Ject

*Where performance meets convenience*

Whether you want to add an iPod or computer music library to your existing Hi-Fi setup, or you're starting a main or secondary system from scratch, Box Design by Pro-Ject Audio Systems is a fantastic way for all music lovers to bring more high-quality audio into their lives. Every Box Design product combines premium build-quality and exceptional sound with a small size and an attractive price.

## Stream



### Stream Box DS

The Stream Box DS is one of the most affordable Streaming Clients available with high-end specifications.

- Stream 24-bit/192kHz HD Music
- Wi-Fi or Ethernet Connectivity
- Play from USB Hard-Drives
- Gold-Plated RCA Analogue Out
- S/PDIF Digital Out
- UPnP and DLNA Compliant
- Built-In Internet Radio Platform
- Play Digitally from Apple Devices
- Solid, Vibration-Free Construction
- Apple Authenticated

## Play



### Dock Box S Digital

- Take Pure Digital Feed from any Docked Device.
- Built-In 24-bit/192kHz DAC
- Gold-Plated RCA Analogue-Out
- S/PDIF Digital Output
- Apple Authenticated



### Tuner Box S

- Low-Noise FM Tuner
- Manual or Automatic Tuning
- High-Contrast Display



### DAC Box S USB

- High-Quality D/A Converter
- S/PDIF, Toslink & USB Inputs
- 24-bit/96kHz TI Chip

## Listen



### Speaker Box 5

- Two-Way Bookshelf Speaker
- Bass-Reflex System
- Three High-Gloss Finishes
- Magnetically Shielded
- Easy Placement Within a Room



### Stereo Box S

- Integrated Amplifier
- 30 Watts Per-Channel
- Great for Desktop Systems



### Head Box S

- One Headphone Socket
- Rotary Volume Control
- Low-Noise Semi-Conductors

## Expand

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Box Design have just announced a new series of high-end power cables and distribution blocks at surprisingly affordable prices.

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Box Design by Pro-Ject Audio Systems is distributed in the UK by Henley Designs Ltd.  
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# Blue sky thinking

With its flexible input options, can Blue Horizon's new Profono revitalise the phono stage market?

**Jason Kennedy** decides...

**S**hortly after the turn of the century I was interviewed by a TV news crew about the likelihood of vinyl making a comeback. I don't recall what inspired them to think it might, and I hadn't seen anything to make me think it was. But lo and behold, the format has made a remarkable resurgence and 'Record Store Day' is now happening in the UK. This can only be a good thing, we in audio appreciation circles

have long known that vinyl is the king of formats and for once we're not alone!

But getting great sound out of vinyl is not straightforward, even in the area of amplification. Signals produced by phono cartridges are tiny at the best of times, and piddling if we're talking moving coil types. As a result you need a very quiet, low distortion amplifier with built-in equalisation to get the sort of results that keep this format at the top of the

## ► DETAILS

**PRODUCT:**  
Blue Horizon Profono  
**ORIGIN:** EU  
**TYPE:** MM/MC phono stage  
**DIMENSIONS:** (WxHxD)  
170x70x110mm  
**FEATURES:**  
• gain options: 41, 50, 61dB  
• shunt resistors supplied: 100, 470, 1,000 ohm  
• input impedance: 47k Ohm  
• input capacitance: 47pF  
**DISTRIBUTOR:**  
Blue Horizon  
**TELEPHONE:**  
01276 501 392  
**WEBSITE:**  
bluehorizonideas.com

audio tree. Blue Horizon – which is part of the IsoTek group – reckons its new Profono stage is among the best in class, claiming that it competes with alternatives at twice the price.

The Profono includes a couple of interesting angles that, while they don't guarantee success, should help in the quest to make a decent phono stage. Prime among these is the use of interchangeable shunt resistors in place of impedance switching. The theory goes that switches in the signal path have a degrading effect, so it's a good idea to avoid them if possible.

For precisely this reason, Blue Horizon provides three pairs of shunt resistors that plug into loading sockets on the stage and give three levels of impedance. If you don't use any of them, the impedance is the 47k ohm that suits moving magnet cartridges. Three impedance settings isn't that many, however, so the company offers to supply a pair of custom-made shunt resistors free of charge, once the customer has registered the product.



**HOW IT COMPARES**

**THE CONTRAST** between the Profono and a less than youthful Trichord Dino+ could not be more stark (this model has since been upgraded to Mk2 form, but has the separate PSU, currently £570).

The Trichord gives a warmish, smooth and fluid sound that is typical of what many love about vinyl, it has lovely easy timing and produces expansive soundstages. The Profono on the other hand is taut, precise and almost starkly revealing. If you get the front end sorted and your records aren't tired, then it's the way to go.

It competes with hi-res streaming in terms of realism thanks to the direct, unprocessed nature of vinyl and unearths uncanny amounts of detail in a coherent and dynamic way. It's also a bit more exciting than the Creek Wyndor (HFC 302); that £1,500 unit is super-refined but doesn't have the transparency on offer here.

Gain is adjusted with switches; it seems the things can't be totally avoided, but it's very useful to have this facility because of the wide variation in output among MCs in particular. There are three levels of gain to choose from and these are designed to suit the majority of cartridges. Inevitably there will be some very low output examples that require extra stepping-up.

In an effort to keep noise at bay the power supply is separate to the amplifier box and housed in the plug-top style. The stage itself is very nicely put together with a matt aluminium case that combines corner extrusions with slots for the side panels, the whole lot being clamped between chunky end cheeks, or cheeky end chunks if you prefer [no we don't - Ed.]. The reasoning behind all this metal is that it shields the internal electronics which should keep RFI (radio frequency interference) out, so that the signal is uncontaminated - when you're amplifying by 61dB it's critical to keep noise to a minimum. The shunt resistors are housed in polished RCA phono plugs and, so long as you don't lose them, are as easy to change as a dip switch.

**Sound quality**

If Keith hadn't told me that the Profono had some German design input, I suspect I would have guessed it. This is a lean, mean, crystalline clear stage that opens a very wide window on the output of the cartridge, and if the vinyl that it's reading is not pristine you get to hear all about it. I suspect that the first cartridge I tried, a van den Hul Frog,

on the Rega RP6 turntable is not the best match, because it's rather too good at digging out the problems with worn vinyl. My initial experience with Rickie Lee Jones' *Flying Cowboys* was somewhat undermined by this combination and the relatively soft presentation of a Trichord Dino Plus proved more relaxing, if less revealing.

Putting on a less well played and phenomenally well produced cut of Patricia Barber's *Café Blue* was more rewarding. This superb recording always sounds good, but the extra depth and leading edge definition of the Profono brought out a very distinct acoustic character to the voice and added texture and precision to the double bass. It allowed me to appreciate that audiophile records do, occasionally, contain great music!

**A welcome addition to the range of variable and impedance phono stages available**

I moved on to Leo Kottke's *Great Big Boy*, which is not a special pressing but a great sounding LP. This gave up much of its micro dynamics and a well-defined sense of space, but still erred a little on the intellectual rather than musical side. I tried a different set of shunt resistors, dropping impedance from 1k ohms to 100 ohms, but that just robbed the sound of energy, so I took drastic action and changed cartridge.

With a Zu Audio bodied Denon DL304 in the Rega arm, things fell

into place rather nicely. This cartridge has a bit more romance than the Frog and offsets the Profono's slightly lean balance to a tee. Now Kottke's guitar playing was tight and fast, upbeat but not in your face, and thoroughly engaging...

The 304's low compliance is a better match for the medium mass of the tonearm, which explains why things improved, that and the warmer tonal balance. As ever with transducers and amplifiers, the same goes for speakers, it's the match that counts. You can have the world's finest single-ended triode amp, but if your speakers strength's lie in a different sphere to those of the amp, then the result will never match let alone improve upon the sum of the parts.

Just for good measure I brought out a big gun - the SME 20/3 with a Series V arm bolted to a van den Hul Condor MC that takes no prisoners in its quest for analogue audio nirvana. The Profono proved itself more than able when it came to revealing the combination of definition of detail and world class timing that this pairing can deliver. Now the finger clicks and double bass on the Patricia Barber track were in the room and defining the beat with the minimum of effort, leaving plenty of space for the chanteuse to sing us the sad *Ballad of Billie Joe*.

**Conclusion**

Blue Horizon's Profono is a welcome addition to the range of variable gain and impedance phono stages available to the serious vinyl enthusiast. Its transparency reveals an awful lot of what that the cartridge pulls out of the groove, but it is slightly lean in the bass, and thus works better with more fruity and powerful sounding cartridges. An impressive new phono stage at a genuinely democratic price, this product deserves an audition. ●

**Hi-Fi Choice**

**OUR VERDICT**

**SOUND QUALITY** ★★★★★ **LIKE:** Ultra revealing, 'warts and all' presentation; useful impedance matching facility

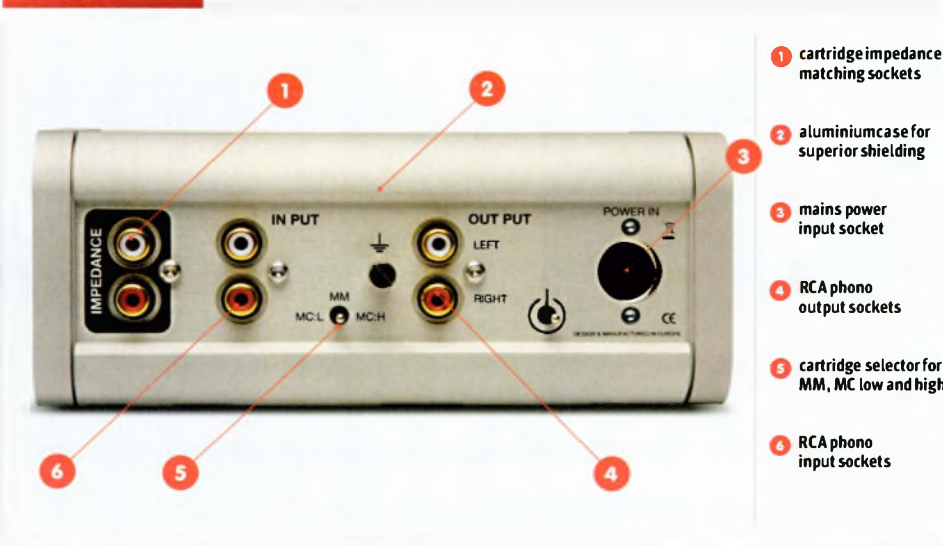
**VALUE FOR MONEY** ★★★★★ **DISLIKE:** A little bit too stark for less than pristine front ends and well used vinyl

**BUILD QUALITY** ★★★★★ **WE SAY:** One of the most revealing phono stages in its class, but some will seek more romance from vinyl

**FEATURES** ★★★★★

**OVERALL** ★★★★★

**CONNECTIONS**



# icon Audio



## Our Stereo 60 MK III KT120

### 75+75 Watts pure valve integrated/power amplifier



*We have a passion for making well engineered Valve Amplifiers.*

Introduced in 1957 the excellent GEC KT88 high power "Kinkless Tetrode" enabled new standards of amplifier performance to be set. Forty three years later Tung Sol has eclipsed this with their new KT120. A remarkable design with 50% more power. At this time we were updating our highly successful Stereo 60 MK II with improved power supply, driver circuit and also designing our Low Distortion Tertiary output transformers. So we took the opportunity to design the Stereo 60 III (and MB90 II) around the new KT120. (Tung Sol tell us that as far as they know we were the first in the World). The finished amplifier has exceeded our expectations and has been one of our most successful models gaining excellent reviews in Hi Fi World, Hi Fi Plus and voted "Outstanding Product" in Hi Fi News group test, beating much more expensive competition. Not only is this amplifier technically excellent in all the usual parameters but sonically praised by leading reviewers. As the loading of the KT120s is relatively low this should give long life and good reliability. The design is relatively simple using only four valves per channel based on GEC/Mullard designs we could use more and make it **technically** better but not sound any better! After all we are making a musical instrument not a piece of Lab equipment. We prefer to let our amplifiers sing their own song by means of using quality components, traditional "point to point" wiring and our own David Shaw designs. That way we are able to guarantee our four cornerstones of **Quality Performance** and **Value**. And in the future, **Service** when you need it. In this age of "built in obsolescence" it may be unfashionable to talk about repairs and spares but our commitment to future service means you should be able to enjoy your amplifier for at least 20 years.

#### **Performance:**

The Stereo 60 III is amplifier for those needing high power excellent dynamics and low distortion. It may be used as an integrated or power amplifier with separate pre-amp. Virtually any kind of speaker may be used including electrostatics and "difficult loads" down to 1 ohm are no problem (4-8 Ohm nominal). The Stereo 60 may also be used in "Triode" mode, at about 50% of normal power. Adequate for less demanding situations the different characteristics of triode operation lend themselves to more relaxed listening, some preferring this mode all the time.

Our new series of "Low Distortion Tertiary" output transformers are the best we have ever made, enabling us to reduce global feedback by about 10%. All of our amplifiers are designed in Leicester; they are commissioned and serviced by the people that designed them so you can be sure of long term performance. We incorporate a "standby" switch in order to protect those precious cathodes from ion bombardment until they have warmed up.

All of our amplifiers are hand made using "point to point" soldering without using printed circuit boards. We are convinced this sounds better. It allows for very easy servicing, upgrades and modifications. Remote controlled volume is useful for fine tuning your listening level to match your taste. High quality components are used throughout including an "ALPS" volume control, silver plated PTFE audio cable SBB capacitors audiophile resistors. Power Amplifier operation is possible by selecting a lower "gain" on the rear of the amplifier (this is not done with attenuation which would lose quality). Loudspeakers of nominal impedance between 3 ohms and 10 ohms may be used with virtually no reduction in power or quality. A choke regulated power supply adds a richness to the sound quality that silicon devices alone are unable to do. Tape and other methods of recording and playback are catered for by the "Tape Monitor". Also useful for Home Cinema applications.

In short we have created an amplifier of excellent flexibility and quality which retains the qualities traditional of traditional design and performance.

From £2,199 (Complete inc VAT) Upgradeable See also our similar MB90 KT120 mono blocks and other award winning amplifiers on our website







**Our Four Cornerstones are: Quality – Performance – Value – Service You won't be disappointed!**

Feel free to ask which amplifier is right for your room and speakers? Their all made for different situations, and all have different personalities! Designed in Leicester by David Shaw. Hand built in our factory in China. Finished and tested in Leicester. We design and wind our own transformers using the best 5N copper and LG iron. Using top worldwide parts from Rubicon, ALPS, Jensen, JJ, SCR, Full Music. Our commitment to quality and service means you are assured of advice, upgrades, and service for at least the 20 year expected life of our amplifiers. You're assured of good performance new or second hand!

<h3>MB845 i mono blocks</h3> <p>Fabulous huge 845 triode mono block amplifiers. NEW improved version of the original. Now with "Low Distortion Tertiary" transformers 90+90w. <b>5 Globes Hi Fi World</b> <b>From £3849.95</b></p> <p><i>Low Distortion Tertiary Transformers</i></p>  <p><i>all designed by David Shaw</i></p>	<h3>ST20PP 15+15W Amp</h3> <p>Guaranteed to amaze and delight you Mullard's amazing EL84 makes this amplifier perform way beyond its modest size. Now with headphone socket. Not sure about valves? Try this with our money back guarantee. <b>Only £549.95</b></p> <p><b>4+Globes Hi Fi World</b></p>  <p><i>Low Distortion Tertiary Transformers</i></p>	<h3>NEW Stereo 60 MK III 75+75w</h3> <p>Total redesign with new KT120s New Tertiary transformers New power supply, very low distortion. Huge power in 1 box! <b>"OUTSTANDING!" Hi Fi News group test April 2012</b></p> <p><b>5 Globes Hi Fi World</b></p> <p><i>Low Distortion Tertiary Transformers</i></p>  <p><b>From £2199.95</b></p>
<h3>KingSound Electrostatics</h3> <p>Compact, Efficient &amp; Beautiful. 3 way design, smaller than a full range panel needing only 40 Watts to fill the average room with sublime sounds. Stunningly transparent. Excellent deep bass from hybrid ABR Only 121Hx28Wx31D (cm) <b>£1999.95 Now Only £1399.99</b> <small>(limited offer)</small></p> 	<h3>The Icon CDX1 CD Player</h3> <p>Several unique features 3 power supplies. Valve rectifier, valve &amp; choke regulated. Hard wired analogue output stage. With a top quality 192kHz 24bit player. Upgradeable. <b>From £1299.95 (upgradeable)</b> <b>"Great for any mood or style of music"</b> <b>Awarded 5 Globes Hi Fi World</b></p> 	<h3>LA4 MK II Line Preamp</h3> <p><b>"...Major on musical flow and attention to detail, Distortion very low 0.0003% Enormous headroom, bandwidth very wide, very low noise..." NK Hi Fi World, awarded 5 Globes</b> <b>From only £999.95 (upgradeable)</b></p> 
<h3>MB150 150w Mono Blocks</h3> <p>150+150w of pure UL valve power (or 100 + 100w of pure triode). Using 4 KT90, KT88 or KT120. Based on our award winning MB90s. Unlike transistors, these giants retain the Icon warmth and texture at volumes, giving massive headroom and very low distortion. Various upgrades available. <b>Now available with the new KT120!</b> <b>Only £2999.00 Pair 4+ Globes Hi Fi World</b></p> <p><i>Low Distortion Tertiary Transformers</i></p> 	<h3>Our Best Ever Mid Range Amplifier!</h3> <p>Stereo 40 MK III our best ever value amplifier. It has everything! 40+40 watts, Triode mode, Valve rectifier. Remote control. Tape loop. Standby switch. KT66/KT88 EL34/6550 compatible. <b>Two rave reviews in HFW and HFN.</b> <b>From Only £1399</b> <i>New 243 Model Now In Stock!</i> <b>"...Bristling with musical energy, smooth &amp; sweet..."</b> <b>P Rigby Hi Fi World</b> <b>Awarded 5 Globes</b></p> <p><i>Low Distortion Tertiary Transformers</i></p> 	<h3>NEW ST40 III 6AS7 Pure Triode Amp</h3> <p>30+30w pure triode. No feedback. Created as an affordable alternative to the high cost of 300Bs All the attributes of vintage triodes only £60 for a new set of output valves. Warm creamy sound lots of detail. Astonishing sound stage. All the other features of our Stereo 40 III inc remote control <b>From only £1,549.95 complete</b></p> 
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**Common Features:** Icon Designs by David Shaw. Hand built "Point to Point" wiring. Designed and finished in Leicester UK. No printed circuit board. ALPS Volume control. Gold plated terminals. Audiophile components.

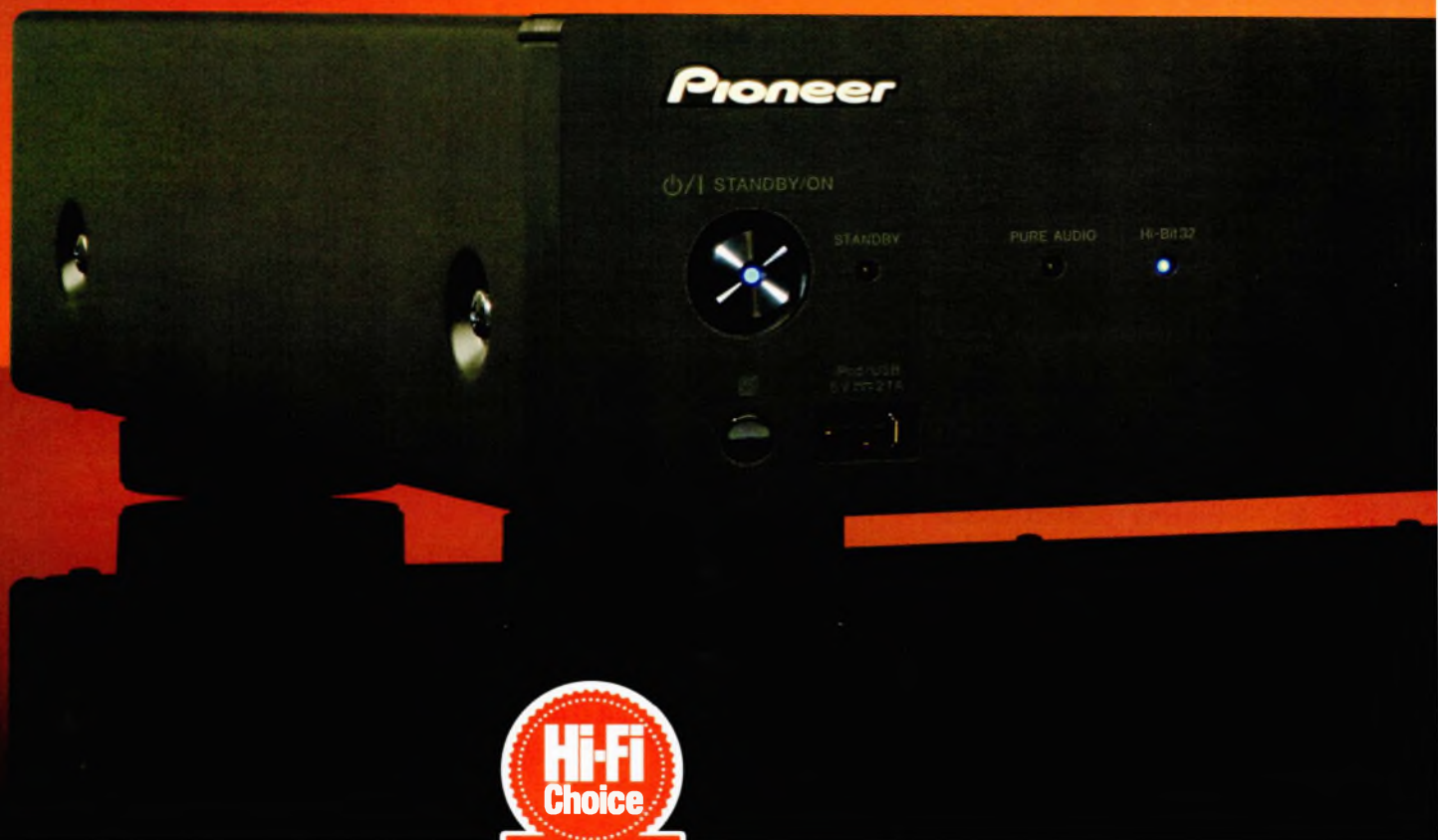
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# International net set

Digital streaming done in a Japanese style means super slick products such as Pioneer's new N-50-K, says **Malcolm Steward...**

**I** was very pleased when Pioneer recently launched its new Elite series N-50 network audio player, which is said to be designed for people wanting to play media, 'in the best possible sound quality'. But if I'm being honest though, it was the build and functionality that this company could bring to the breed that I was really interested in.

The N-50 is designed to provide access to music files wherever they are stored – PC, NAS, HDD, iPod/iPhone/iPad, or USB – as well as internet radio programmes. Pioneer has also integrated asynchronous USB DAC functionality and DSP processing, to make sure the requirements of 'even the most demanding audiophile' are met.

So the N-50 can be regarded as a source just like any other; in fact its multiple DAC connections make it a useful digital input expander for an integrated or preamplifier. The unit offers analogue and digital output connections and so can be connected to a line-level analogue input with a pair of RCA cables, or it can be digitally connected using coaxial or optical leads, to an appropriate input on a DAC or AV receiver.

The N-50 inspires a definite pride of ownership, perhaps more so than others in its price band. To begin with, it's a weighty beast that uses a 'rigid under-base' construction to provide stability and superior damping. This aims to eliminate the influence of external vibration. Inside, the componentry is split into

## ► DETAILS

- PRODUCT:** Pioneer N-50-K  
**ORIGIN:** Japan/China  
**TYPE:** network audio player  
**WEIGHT:** 7.3kg  
**DIMENSIONS:** (WxHxD) 435x99x330mm  
**FEATURES:**
- front-panel USB and iPod connectivity
  - hi-res FLAC & WAV
  - short signal paths
  - Apple AirPlay
  - 'high-accuracy master clock'
- DISTRIBUTOR:** Pioneer GB Ltd  
**TELEPHONE:** 01753 789789  
**WEBSITE:** pioneer.eu/uk/

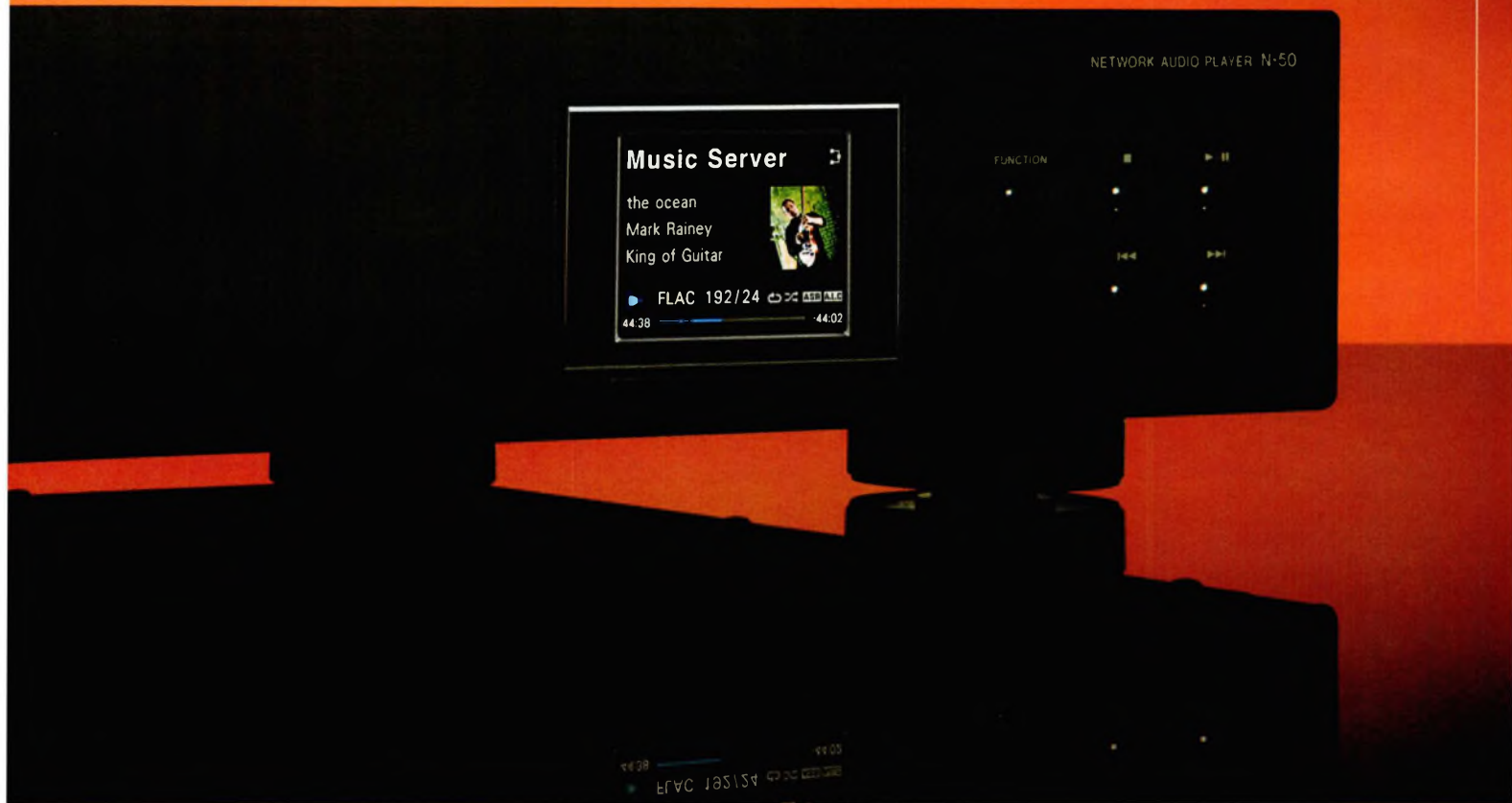
digital and analogue sections with separate power transformers for each.

As one might expect, there is a delightful degree of over-engineering about the N-50; the thought that the engineers did everything the budget and their brains would allow to refine its performance shines through in the sturdy build quality.

There is also a Sound Mode function, which allows the user to employ or defeat various fripperies such as the Auto Sound Retriever or Hi-bit 32 mode. These, like the Auto Level Control, are best ignored. My advice is to stick with the Pure Audio setting, which uses the shortest signal path and completely bypasses the DSP circuitry to deliver the cleanest sonic performance.

Having seen it advertised for sale at £499, the N-50 looks to be in competition with other network players such as the Cambridge Audio NP30, Marantz NA7400 and the Denon DNP720AE. I have to admit that the N-50 is definitely the most attractive looking of this collection. Even though the front-panel display is only a 2.4-inch OLED, it is a colourful and comfortable device – although the display and its ergonomics still had me reaching for an iPad to control the N-50's various functions. Nobody yet seems to have found the ideal way to 'drive' popular UPnP (DLNA) servers like Asset and





Twonky, especially when they are fronting a large library and being viewed on a typical machine fascia display. Thus far, the Apple iPad seems the best option, provided there is an app available for the streamer. Pioneer provides one free on the iTunes store.

What truly sets the N-50 apart from the rest is its input roster and facilities. The device is copiously equipped, starting with its DLNA Certified UPnP server, that will allow the player to retrieve music from sources such as NAS drives or network-attached computers. Using this protocol, the N-50 will handle a variety of formats and play MP3s, CD-rips and 24-bit/192kHz high-resolution FLAC and WAV files. The unit also has a USB-enabled AK4480 DAC

### The Pioneer N-50's own particular tonal balance is one that many listeners will happily enjoy...

that enables a direct asynchronous connection to be made between the Pioneer and a laptop computer. In this mode, the N-50 master clock provides the timing for the file-transfer to give the best achievable audio results.

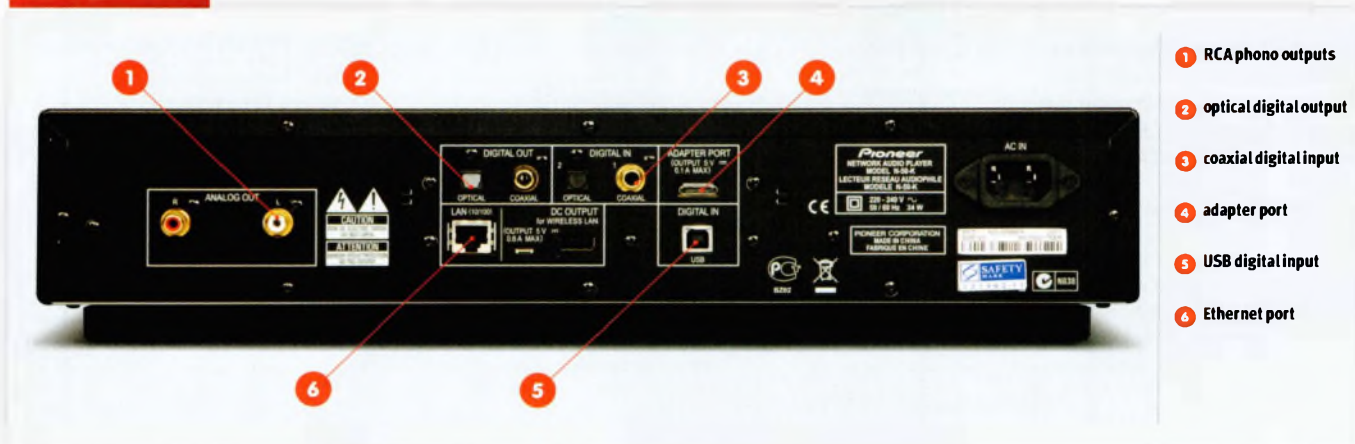
The N-50 can also act as a digital convertor for a CD player or other digital source such as an iPod. It will further play music files sourced from a USB storage

device such as a memory stick or a USB disk drive. It's also equipped with Apple Airplay and Bluetooth facilities, although you will need to purchase an adaptor to enable the latter. The device is only equipped for wired LAN connections, but there is a wireless adaptor available too, if you feel the need for wi-fi – not that you should consider it if you're looking for the finest audio performance. Still, it should be okay for listening to compressed music.

### Sound quality

Listening to the N-50 running off a UPnP source – on a Vortexbox Appliance – the sound struck me as being refined and pleasant, albeit with no sharply defined

### CONNECTIONS



- 1 RCA phono outputs
- 2 optical digital output
- 3 coaxial digital input
- 4 adapter port
- 5 USB digital input
- 6 Ethernet port

## Q&A

MALCOLM STEWARD SPOKE WITH PIONEER'S PRODUCT EXECUTIVE, GEOFF LOVEDAY ABOUT THE N-50...



**MS:** How do the DSP facilities attempt to make low bitrate audio more attractive?

**GL:** Our proprietary Auto Sound Retriever technology is the answer, it is specifically designed to improve the sound quality of low bitrate content playback by interpolating the data lost during compression. Also, using Pioneer-original algorithms, our Hi-bit 32 Audio Processing expands the input bit signals to create a natural and analogue-like waveform, reproducing rich audio, even from minute signals. High-resolution 24-bit/192 kHz audio sources can be expanded to 32-bit/192kHz signals. The feature is also effective for CD audio played on a disc player.

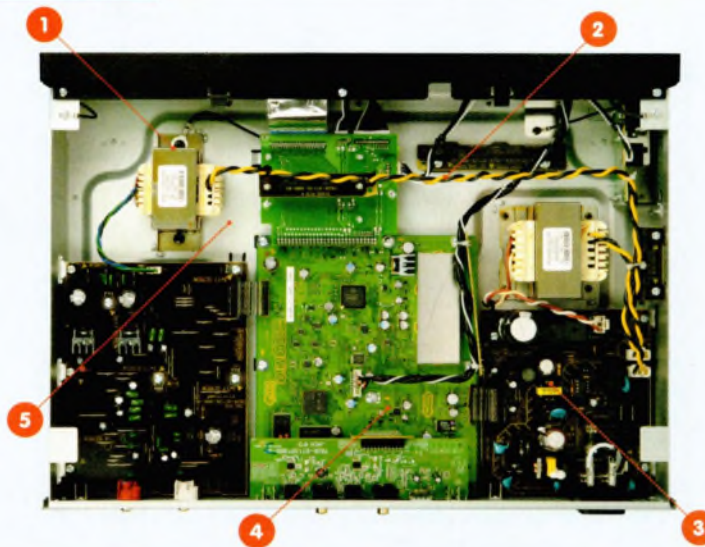
**Do you envisage most people using UPnP or direct USB to access the N-50 from their computers?**

We envisage the N-50 being used as a high-quality playback device for consumers' music libraries, be it digital, on disc or in analogue format. The fact that the N-50 can act as a high-quality outboard DAC, as well as a streaming device/interface makes it highly versatile. The asynchronous USB DAC provides playback of files up to 32-bit/192kHz and by controlling the clock speed of the source device, it ensures the highest possible accuracy in data transfer completely avoiding any audio jitter. The ability to access and control the N-50 using our control App for Apple iOS devices and Android also gives the user huge control and access to a multitude of content.

**It seems brave to make wireless an add-on when so many people seem to want it despite its limitations. Is that Pioneer's subtle way of saying they should use (better) wired connections?**

The reason for this is simple, our engineers wanted to ensure and maintain the cleanest possible signal path in order to achieve the highest quality audio reproduction possible. Introducing wireless signals into the unit could potentially cause interference with the purity of the signal quality, so with this in mind the decision was made to leave this as an optional extra for those consumers who require it.

## IN SIGHT



- 1 frame-type power transformer feeds analogue board
- 2 neatly done internal wiring; short power and signal paths
- 3 power supply board sits next to rear IEC mains input
- 4 main board uses surface mount devices
- 5 thin pressed steel base is par-for-the-course at this price

## HOW IT COMPARES

**THE PIONEER** faces the Marantz NA7004 as its main rival, which in many ways it is very similar too. Both are purposed primarily to use Ethernet connections, but both do AirPlay. Both have displays; the Marantz's is much easier to read, the Pioneer's much nicer to look at.

Sonically, the Marantz just about edges it; it's not quite so smooth and soft as the Pioneer, getting deeper into the music. Still, the Pioneer sounds smoother and more couch; good though the Marantz is, it's not the world's sweetest sounding creation.

Another key rival is Logitech's Squeezebox Touch. Much has been written about this over the past year; suffice to say it's a landmark product in its superb feel; that touchscreen works beautifully.

Nevertheless, the Squeezebox Touch isn't a brilliant hi-fi performer; the built-in DAC is so-so at best. But hook it up to the likes of Arcam's rDAC (£300) and it becomes a potent mix; a combination good enough to really worry the Pioneer N-50 sonically.

leading edges to reinforce the sense of rhythmic urgency. The player demonstrated a perfectly decent sense of timing, although it wasn't what you'd exactly call invigorating on albums such as Albert Lee and Hogan's Heroes upbeat *Like This*.

I found this applied regardless of whether I was using the internal or an external DAC – although in all fairness the N-50 perked up after some serious and prolonged running in. Although never less than enjoyable, it never quite fully scaled the heights of being a compelling listen. The internal DAC is a fine performer in its way, with a nicely considered and even sound, although of course it lacked the urgency and passion of more expensive devices such as Naim's n-DAC.

Interestingly, its sonics ran counter to the typical crisply etched and detailed 'Japanese sound' – the Pioneer tended to soften leading edges and reduce dynamic contrasts. This lends music a warm and smooth feeling, which is perhaps desirable considering that much of the music played through devices such as this will be fairly lo-fi, compressed files. Indeed its relaxed nature proved a great strength on some occasions, such as with low-bandwidth internet radio where it rendered stations as easily listenable provided one did not wish to listen too critically.

I found the best audio performance seemed to come from inserting a quality USB memory stick with a few FLAC albums into the fascia panel USB port. The music gained crispness, with great detail and rhythmic clarity that encouraged vigorous toe-tapping. Somehow it

seemed the most compellingly natural sounding input. It had believable *chiaroscuro*; there was a genuine gradation of tone from guitar generated by the pressure of the player's fingertips on the fretboard. These shifts in tonal colour moved the playing from being just a case of playing to that of performing with sincere expression.

## Conclusion

The Pioneer N-50's gentle tonal balance is one that many listeners will enjoy. Certainly, you can extract more from networked and computer audio with this sort of voicing, yet for other listeners wanting more musical insight – desperate to extract that last percentage point of performance from recorded music – it will fall down by sounding too smooth. Essentially then, this new Pioneer is ideal for those wanting a slick, sleek, do-it-all design with Japanese production values and an inoffensive sound. And why not – let's face it, many do! ●

## Hi-Fi Choice

### OUR VERDICT

#### SOUND QUALITY



#### VALUE FOR MONEY



#### BUILD QUALITY



#### FEATURES



#### OVERALL



**LIKE:** Smooth and friendly sound; super build; display; functionality

**DISLIKE:** Small screen size; laid back sonics not for everyone

**WE SAY:** Not the bleeding edge of computer audio, but a high quality all round introduction to the subject



**£700**  
**TRADE-IN DISCOUNT**  
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*\*DP-1*

# ROKSAN

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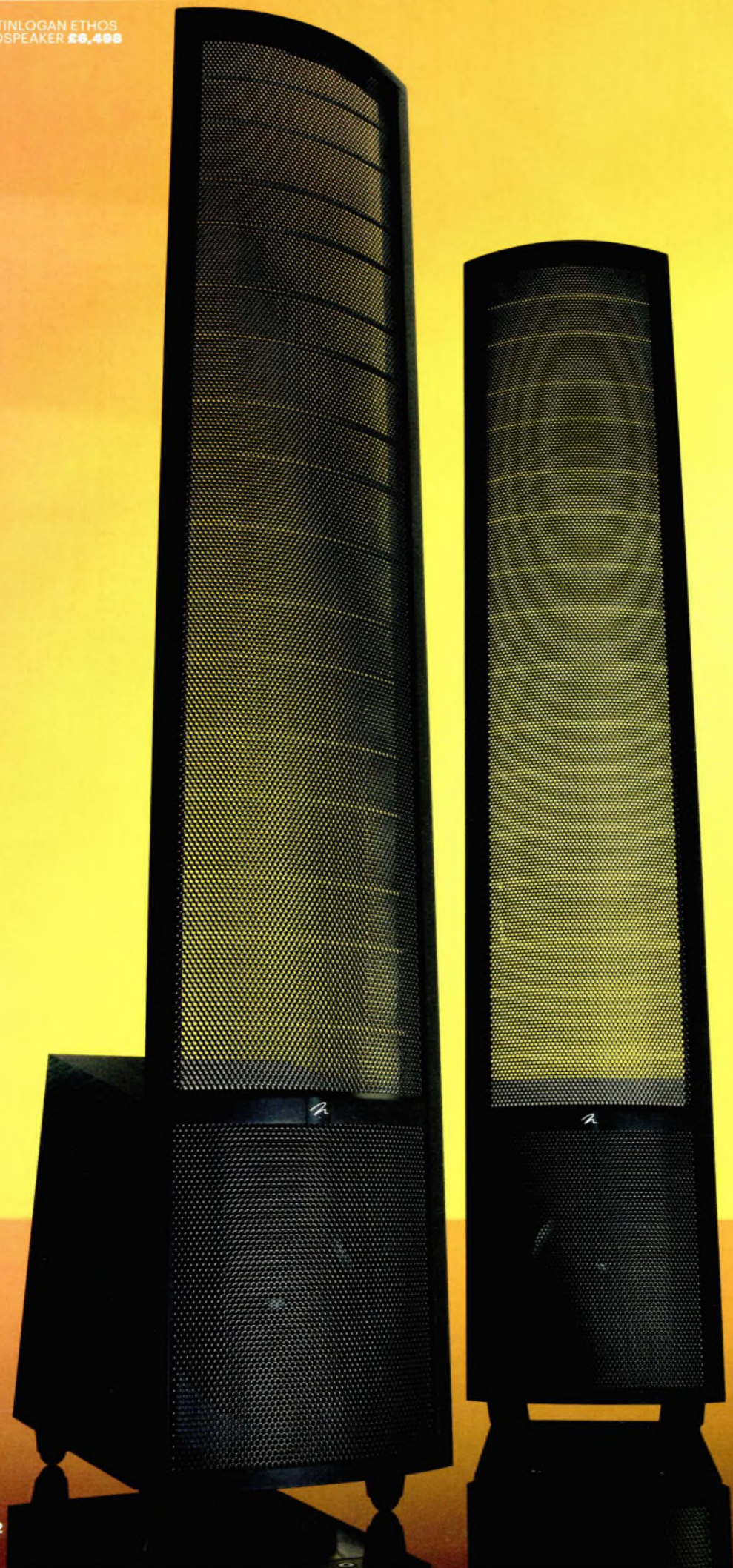
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\* Offer expires: 31<sup>st</sup> August, 2012







# Static electricity



Loudspeaker hybrids sometimes give the worst of all worlds, but MartinLogan's new Ethos brings the best, as **Channa Vithana** discovers...

**D**espite the company's relatively low UK profile – the name MartinLogan doesn't quite roll off the tongue in the same breath as KEF or Tannoy – its customers tend to be devotees, disciples even. Owning a MartinLogan loudspeaker isn't just a happening, it's a passion.

MartinLogans inspire emotions in their owners as an exotic, high end sports car would. They're more than just functional objects, they're things to covet, obsess over. You need to invest time in them, to get the positioning and set-up just right, and considerable sums of money are necessary to purchase ancillaries capable of driving them to get them to give of their best.

As any Quad electrostatic owner knows, panels are great in some respects. They run rings around conventional moving coil designs in so many ways, from their excellent dispersion characteristics to the superb transients – the super-light film used to move air is so much more responsive than a monster magnet heaving a big, heavy cone back and forth. They give a delicate and subtle sound that classical music fans in particular love. The trouble is that the panels don't have a particularly large excursion; a good moving coil bass unit can shift far higher volumes of air.

This is precisely why MartinLogan has built its business around hybrids, which use electrostatic panel drivers, that cross over to large, conventional units for lower bass duties. This attempts to give the best of both worlds – the physicality of a moving coil bass driver allied to the delicacy and subtlety of an electrostatic panel.

The Ethos is very tall at 1,507x273x463mm, albeit not so heavy at 19kg. The semi-translucent look of its electrostatic treble and midrange driver is visually arresting, the elegantly curved and angled panel is superbly designed from high-quality

aerospace aluminium, enclosing a plasma-bonded diaphragm polymer film. Beneath and behind this sits the 200W actively driven bass driver. A 24-bit Vojtko DSP 'engine' trims the response of the bass driver to the panel, with plus or minus 10dB adjustment to tailor the amount of bass produced from the cabinet to the listener's room. As I later discovered, this is an important facility. The bass cabinet itself sports an aluminium coned active driver, bolstered by a down firing, passive polypropylene coned drive unit.

Each cabinet rear also incorporates an IEC mains input for power, and very nicely designed single-wire

## DETAILS

**PRODUCT:**  
MartinLogan Ethos

**ORIGIN:** USA

**TYPE:** hybrid electrostatic loudspeaker

**WEIGHT:**  
19kg

**DIMENSIONS:**  
(WxHxD)  
273x1,507x463mm

**FEATURES:**

- specified sensitivity: 92dB
- specified impedance: 4ohm
- specified frequency response 34-23,000Hz
- high frequency/midrange driver: 1,118 x 234mm XStat CLS electrostatic transducer panel
- 203mm aluminium cone PoweredForce active bass driver with 200w/4ohm Class D amplification
- 203mm polypropylene cone passive radiator

**DISTRIBUTOR:**  
Absolute Sounds

**TELEPHONE:**  
020 8971 3909

**WEBSITE:**  
martinlogan.com

binding posts. Its rear section comes in a choice of high quality Black Ash, Dark Cherry or Flamed Teak standard real wood finishes.

## Sound quality

Without doubt, the MartinLogan Ethos is one of the most distinctive and in some ways sublime sounding devices I've heard. It's everything a high-end loudspeaker should be – charismatic in its own unique way, striking sounding and yet seriously subtle too. After careful set-up and a good long warm up, what you first notice is the wonderful dispersion qualities, as it spreads music around the room. In particular, vocals and individual instruments are exactly, yet engagingly reproduced, and it was especially so with Michael Jackson's *Thriller*. I was bowled over by the way these speakers communicated his subtle intonations and distinctive phrasing of lyrics.

With the bass control set correctly, the texture of instruments such as Eddie Van Halen's electric guitar on *Beat It* and the tunefulness and extension to the Louis Johnson bass line to *Billie Jean* were a pleasure. The overall sound of *Thriller* was so compelling, the speakers pulling me right into the mix and holding me transfixed. The Ethos' ability to communicate the effortlessly propulsive musical timing of percussion, brass, synthesiser, bass and vocals on *Wanna Be Startin' Somethin'* was a joy.

**Beautifully built and sonically arresting, the Ethos is an excellent music-maker...**

I think it's fair to say that the MartinLogans do this sort of music superbly, offering that lovely electrostatic treble and mid with a bass you'd never get from a thin film stretched across a panel. Yet when asked to play classical music, it has a delicacy that shows its strength in depth. With the *Scarlatti Harpsichord Sonatas* by Blandine Verlet, the intricate phrasing of the playing was carried beautifully, all set within an unforced recorded acoustic.

Coalescing large and densely layered ninety-plus piece symphonic orchestration with complex electronica, the *Tron Legacy* original soundtrack by Daft Punk had great scale and power – indeed the spoken-word track by Jeff Bridges within *The Grid* had texture that



Rear mounted bass level control, speaker terminals and mains input



Hidden below the front firing active bass unit is a downfiring ABR



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RP6 record player by REGA.

**ARCAM** cinema systems



SUPERUNITI music streamer by Naim.



PMI speakers from B&W.



## Q&A

DAVID PRICE SPEAKS WITH MARTINLOGAN'S JUSTIN BRIGHT AND JOE VOJTKO...



### DP: What are the advantages and disadvantages of electrostatics?

**ML:** Because the electrostatic diaphragm is essentially massless, it is capable of responding to each individual sonic event with extraordinary speed. MartinLogan electrostatic speakers output a more focused dispersion pattern, which maximises the direct sound field and minimises the reflected sound fields and room reverberation. The result is that the sound stage is there, the original room acoustics are preserved and you are transported into the performance. One disadvantage is the added circuitry required to drive an electrostatic panel, which includes a bias supply and audio transformer. The large transducer size is also a disadvantage when compared to their moving coil counterparts. MartinLogan has addressed both of these issues by developing lower cost, highly reliable electronics and by making the transducers transparent and very thin.

### What frequency does the panel crossover to the bass unit, and why?

Real world sound sources radiate sound so that each frequency reaches the listener at exactly the right moment. MartinLogan electrostatic loudspeakers utilise a single transducer capable of reproducing most of the audio spectrum. This unique property of ESL transducers means that MartinLogan loudspeakers crossover at lower frequencies – typically 250 Hz – thus assuring that each audio event reaches your ear at exactly the right time.

### Do your electrostatic panels have superior dispersion?

The single ESL transducer results in a continuous dispersion pattern through most of the midrange and up to the highest frequencies. The cone midrange has wide dispersion, however its dispersion narrows as frequencies increase – until it crosses over to the tweeter. The tweeters typically have very wide dispersion at the crossover frequency. So the midrange-tweeter combination changes the speaker's dispersion pattern over a relatively small frequency range.



**AT PRICE RANGES** just above or below the £6,498 Ethos, there is strong competition. While not quite as good at timing, in comparison the Ethos still outperforms the Bowers and Wilkins 804 Diamond, which can sound somewhat nasal and midrange restricted. Compared to a well-sorted Quad 2905 electrostatic, the Ethos still cannot completely 'disappear' from being 'heard as a box' due to its bass cabinet, but it sounds better throughout the frequency range with superior low frequency tunefulness and wider, more even spatiality across the listening room.

The Ethos also outperforms the Sonus faber Cremona M floorstander; the beautiful Italian doesn't time as well as the ML with slightly lagging bass in comparison. Yet still the Sonus faber has more affinity with symphonic classical music, and has a better built and finished cabinet – and is even more elegantly designed.

*A special thanks to Steve Wilcock of KJ West One, who delivered us the review samples!*

## IN SIGHT



- 1 steel frame houses panel
- 2 XStat CLS electrostatic panel
- 3 active bass level control
- 4 loudspeaker binding terminals
- 5 active bass unit; passive below

splendidly conveyed the actor's vocal gravitas. At high volumes though, the Ethos reminded us that it's not immune from the laws of physics; it couldn't quite comfortably convey the symphonic orchestration that creates the grand, sweeping vistas in the score – the film soundtrack sounded a little forced as a result.

Trying Brahms' *Piano Concerto No.2 in B Flat Major, OP83* (a 1959 recording) played by the Berlin Philharmonic Orchestra and conducted by Herbert von Karajan, and César Franck's *Symphonie D-Moll in D Minor* (1976) performed by Orchestre De Paris and conducted by Daniel Barenboim, elicited a similar result. I loved the delicacy of the instrumental timbre, these loudspeakers giving a 'hear through' experience to the recorded acoustic in a way that would make the even the excellent conventional coned loudspeakers available at the price sound nasal and congested. It was only on loud orchestral peaks, at high volumes, that they betrayed the limitations of their ability to move air. That said, this was rarely obvious with big, punchy power pop; the Mobile Fidelity pressing of *Kick* by INXS sounded propulsive with textured, tuneful bass lines, crunching guitars and excellent vocals.

Overall, the active bass driver integrates extremely well with the electrostatic panel – something that earlier generations of MartinLogan loudspeakers didn't do quite so well. The result is a big, wideband sound

with oodles of air and space in the treble, an expansive and delicate midband with excellent image placement, and a big-booted bass. Right across the frequency spectrum, this loudspeaker sounds even and open, and is a pleasure to listen to.

## Conclusion

Beautifully built, arrestingly styled and sonically special when configured correctly, the new MartinLogan Ethos is an excellent music-maker with its own unique beauty. But as with all high-end loudspeakers, whether or not its own particular blend of talents suits you is something that you can't decide from reading reviews alone. I'd suggest you go for an extended audition, with your favourite music and ideally the amp you'd be driving it with. If you're anything like me, you'll find it an uplifting experience. ●

## Hi-Fi Choice

### OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Outstanding midband and treble gives air, space and great vocal timbre; tuneful bass
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Lacks scale and power of rival box speakers
- BUILD QUALITY** ★★★★★ **WE SAY:** Gorgeous loudspeakers, brilliantly talented in some respects, and a joy to have in the home
- EASE OF DRIVE** ★★★★★

### OVERALL





# K2 Series

by Roksan Audio

"In short, the K2 system delivers musical delicacy and drama in flawlessly balanced proportion... That it looks so polished and presentable is an added bonus."

- Hi-Fi Choice, January 2009



# M2 Series

by Roksan Audio

"The Roksan has solid stereo imagery and helps the ear interpret delicate ambient information."

- Hi-Fi Choice, November 2010 (Integrated Amplifier and CD Player)



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# Hi-fi choices

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## THIS MONTH:



**JIMMY HUGHES**  
**EXPERTISE:** REVIEWER

**ANYONE WITH A** record collection as large as Jimmy's can't be all bad. Oh, and he's reviewed a breathtaking number of products over the years, and is still standing!



**ED SELLEY**  
**EXPERTISE:** REVIEWER

**FOR THE BEST PART** of ten years, Ed was developing and supporting products from some of the biggest names in audio. Enjoys blogging about his favourite tunes too.



**TIM JARMAN**  
**EXPERTISE:** ENGINEER

**ELECTRONICS BOFFIN** Tim drives a 1959 Beetle and maintains the best B&O resource on the internet. When he's not rebuilding faulty review kit, he enjoys scouring audiojumbles.



**PATRICK CLEASBY**  
**EXPERTISE:** TECH GEEK

**PATRICK WORKS** in a high-level technical support role in the broadcast industry, when not fiddling with his new iPad and his rapidly expanding eighties LP record collection.

bowled over by the sound, proving to myself (at least) that I hadn't completely lost the plot.

For readers who missed the review, the inscription you're referring to was on the PCB of the Apollo-R CD player. I really must say I like your style, leaving all those cryptic messages on Rega

Thanks Terry... I really must say that I like your style, leaving all those cryptic messages on Rega circuitboards. Can I take it that one day you'll leave us the answer to life, the universe and everything?

circuitboards. Can I take it that one day you'll leave us the answer to life, the universe and everything? Or maybe just the location of where all Roy Gandy's old green paint pots are buried?

**Overkill:** Quad's new QSP stereo power amp should give Audiolab's new 8200MB monoblocks a hard time in the sonic stakes, says DP...

### Overkill?

I own a Marantz CD 6004 CD player, Audiolab 8200A integrated amplifier, PMC DB1i loudspeakers, plus Chord Company power cord and speaker cables. The soundstage and midrange is good but I do believe I have yet to release the PMCs' full potential. Should I upgrade by adding one power amp to bi-amp it, or use the 8200A as preamp?

I've been thinking of adding an Audiolab 8200M (125W) or 8200MB (250W). Which one is better or are there other, better power amps? If I use the 8200MB, would I overkill the speaker (given PMC's rated max 150W)? I listen to female vocals and pop songs most of the time, while my budget is around £1,000. My listening area is 3.5 square metres.

**Robin Chong, Singapore**

**ES says:** It is always easier to damage a pair of speakers with a lower powered amp being provoked into distortion than with one of a higher output than the speakers are technically rated for. With this in mind, the larger Audiolab amp would be my choice here. It faces no shortage of competition though.

If the price in Singapore is similar to the price in the UK of £999 each, there are some other options. The phenomenal Onkyo P-5000R can be had for similar outlay and this is well able to drive most loudspeakers to great effect.

**DP says:** In many ways it makes sense to stick with the Audiolabs, not least for reasons of aesthetic matching. But Quad's QSP power amp (£1,200) offers 140W per side with arguably superior sound. Certainly its predecessor, the 909, was hi-fi's best kept secret – an extremely unprepossessing little product that had oodles of power and a clean, musical sound. So I would certainly audition the Audiolab monoblocks against the new QSP. Given both are products of International Audio Group you shouldn't find it a problem to find a dealer that stocks both.

### Tubular Belles

Hi David, cracking review of the Rega DAC (HFC 357) – thanks for that! You commented on the

inscription on the PCB, "best used with EL84 valves" – and to answer your question about whether that refers to me or the DAC, the answer is both! Still, you'll get a better sonic performance with the DAC and EL84 valves instead of me! But seriously, this came from when I was designing the Rega DAC and was using a Leak Stereo 20 and a passive pre for testing, and the DAC really sung driving the Leak Stereo 20. If ever you're in Southend drop by and I'll demonstrate them to you!

**Terry Bateman, Rega Research Ltd**

**DP says:** Thanks Terry. It wasn't just me who was impressed with your Rega DAC that we reviewed in the April issue of the magazine. My entire listening panel was





### Wall flowers

I have been a reader of your fine magazine for more years than I will ever admit to. I have a Meridian 200/203, Audiolab 8000s and 8000p, Rogers Studio 7s and Monitor Audio RSW12. I listen to all types of music and can also patch the TV and Blu-ray through the system to make the best use of the sub.

I live in a two-bedroom Victorian Cottage and the Rogers are taking up too much room – they have done so for the past fifteen years so I think that it's time for a change. Could you recommend some small loudspeakers that

### The Rogers are taking up too much room. Could you recommend some small loudspeakers?

I can wallmount? They need to be good with music and movies; price is no object; if they are £3,000-plus then so be it. And where could I demo them please? Quality of the sound is the overriding principle, of course.

**Alan Heath**

**ESsays:** *There are realistically three ways of going about solving this problem. Theoretically, any standmount speaker can be persuaded to work on a wall bracket provided you can find a bracket that supports the weight of the speaker. If you were to look at ranges from Omnimount and Vogels, there are many designs available, but 10-12kg is pretty much the upper limit for speakers. This does include some highly capable designs such as Bowers and Wilkins fabulous PM1 loudspeaker, which I love!*

*The second is to choose a speaker that has a wall bracket available from the same manufacturer. PMC make one for the DB1i, Wilson Benesch have some wall mount options for their products and Dynaudio are similarly accommodating. These brands are probably your best bet for actually hearing the speakers in combination with the brackets.*

*The third option is a bit leftfield but might be worth considering. If you feel you are going to be in that room for some time to come, you might want to look at some in-wall models. The American brands make a wide variety of models, some of which are serious audio products, although ones that are very hard to audition in situ!*

**DP says:** *Hi Alan – the Audiosmile Kensai is a superb small speaker, which would wall mount very easily; indeed you may even be able to Blu-tack it to your windowsills, so compact is it. It's a remarkably clean, open and smooth sounding little speaker, barely putting a foot wrong in any respect; its only constraint, of course, is the lack of bass. Currently a pair costs well under £2,000, which would give you some spare funds to invest in better amplification.*

*The easiest and cheapest solution would be to seek out a pair of Audiolab 8000Ms secondhand, which would be a big improvement on your single stereo 8000P. This would also give a punchier sound with stronger bass, which the Kensais would love. They produce a surprisingly big sound providing you have an amplifier that sounds like it goes to the gym!*

### Two's company

I was hoping you could shed some light on the stereo recording process, or maybe develop an article on whether speakers and headphones technically perform the same task? It seems to me that loudspeakers construct a soundstage in an entirely different way to headphones, in that each ear receives the information from both audio channels, with the brain using the differences in phase, etc., to locate the 'position' of the original sound in space. Such differences allow for depth perspective (among other things), as long as the recording was mastered as though the microphones were positioned in the plane of the artist and his or her instruments.

Headphones, on the other hand, provide each ear with only a single channel, so can only perform the same trick if the stereo microphones are positioned in the listener's ear position, so all of the timing/phase information is included in the recording for that channel (a bit like current 3D video technology that is shot with a binocular camera and then filtered using glasses).

I guess the 'correct' transducer depends upon what the original method or intention of the sound engineer, so my question is this: How is music recorded, and is it the same for live and studio recordings? I would think that this fundamental question is more relevant to issues of fidelity than the many subtle criteria which we apply to transducers in order to tell good from bad.

**John Burke, Australia**

**JMH says:** *The placement of loudspeakers is very room-dependant, but a good place to start is the classic 'golden triangle', where the distance between the loudspeakers is roughly equal to the distance between the listener and the plane on which the loudspeakers are located.*

*You're basically correct with regard to the difference between stereo heard through loudspeakers and headphones, John. But even with loudspeaker listening, there are differences depending on whether you listen in the nearfield, or at a greater distance. Nearfield listening allows the ear to detect subtle phase differences between the two channels – something is lost as you move further away.*



**Wall flowers:** As small speakers suitable for wall mounting go, Audiosmile's Kensai is one of the very best, thinks DP...



### The message

Hi guys – I've been reading your magazine for a number of years now, along with quite a few others and was pleasantly surprised to find that David Price is now your new editor (he always amuses me with his turn of phrase), but I'm just wondering what has become of Paul Messenger? He appears to have disappeared from these pages. Best wishes and keep up the good work.

**Martin Ebdon**

**DP says:** Hi Martin – thanks for your kind words. You'll be happy to know that Paul is alive and well elsewhere in hi-fi land, editing a certain other hi-fi magazine that's famous for its critical reviewing style (that's yer lot as far as clues go, I'm afraid)!

### Hands across the water

Dear *Hi-Fi Choice*, I enjoyed the new format of the closing pages of the April issue, and thought that Webwatch is a good feature. I had never heard of HDtracks and thought I would give it a go.

There is a good selection and I was particularly taken by the idea of having Keith Jarrett – the Koln Concert and John Coltrane – *Love Supreme* in 24-bit/96kHz format. Unfortunately the website would not offer these downloads to me as it had detected that I was not resident in the US.

After trying several more options, I realised that nothing was on offer to UK residents and indeed the 'FAQ section'

**The hi-res sound of Rod Stewart awaits British audiophiles, as soon as HDtracks gets going in the UK!**



confirmed this. Has anyone found a way to work around this problem?

**Michael Ross**

**ES says:** Hello Michael – you make a good point. HDtracks has started limiting its transactions to the US for licensing reasons, as this changes from country to country. I do sincerely hope that this will change, and the site will show its full potential in the very near future.

**PC says:** This is a classic 'licensing by territory' issue, but up until recently UK audiophiles had been working around it by taking the PayPal payment option and using a non UK-specific email address. Apparently a little dissembling in the area of physical address was necessary – i.e. leaving your country as US – after all, with a download, delivery doesn't really depend on where you are. However, more recently HDTracks was forced to add restrictions for certain labels for legal reasons, (basically the major ones – the stuff we're all after), detected by ip address...

Lacking a global licensing model for legal audiophile downloads (and lacking a British HDtracks competitor), some people have opted to use dubious technology to get around this constraint – essentially a paid-for service to spoof a US ip address. In no way do we advocate something which could be construed as illegal, of course!

On a recent visit to the States (I have family there) I was moved to download their latest offering, a glorious 24/192 version of 'Every Picture Tells A Story' by Rod Stewart.

Once you've endured HDtracks' slightly clunky Java download manager's machinations, you're away with the best digital can offer. Personally, I can only say I hope the UK gets an HDtracks equivalent (or indeed the very same) as soon as humanly possible!

Headphone listening is binaural, and sometimes recordings are made with this in mind – for example, so-called 'dummy head' recordings where microphones are placed in the 'ears' of a dummy head. The idea is capture the way sound reaches the ears via the head, and accurately transmit the experience via headphones.

Going back to the 1970s, some headphone amps (and the headphone sockets on amps) deliberately introduced a bit of crosstalk (it was usually called 'blend') to reduce left/right separation so that the image seemed more centred. Don't forget that many older recordings (those from the 1960s especially) were more obviously 'stereo' (or multi-mono) with wider separation than we typically hear today. For example, early Beatles recordings often feature extreme channel separation. Everyone loved that sort of thing at the time!

**TJ says:** There's much more to making a record than setting up the mic, adjusting the levels and pushing play and record. Engineers frequently add a certain amount of reverb and phase shift to optimise the soundstage and imaging for an average-sized listening room where the loudspeakers are correctly placed; this is a fundamental part of producing a stereo recording.

Headphones, on the other hand, give a binaural presentation since there can be no interaction of the two sound sources before they reach the ear. This tends to give an exaggerated soundstage and a very solid centre presence, which although not technically correct, can be quite pleasurable.

**PC says:** Stereo has always been a rather artificial construct (remember the dispensable early Beatles stereo LPs and the 'back to mono' movement?), and you draw out many of the considerations.

The very existence of hi-fi stereo headphones was spurred by the desire to 'scrutinise' the new stereo format, but headphone listening is, in most cases, not the intended primary listening platform. Pink Floyd members may disagree... Stereo placement in rock recording (even for live efforts) is generally created artificially in the mix by adjusting a stereo source or panning a mono track between the two channels. These days

this is usually done in Digital Audio Workstation software or using digital boards for such, and previously it was achieved through an analogue board. If specific effort has been put into emulating real instrument positions, this is either faked up or we come to Mid and Side and SoundField miking techniques, which are placement-oriented and more common in live jazz and classical recordings.

Interestingly, your reference to mics in the listener's ear position is essentially what is known as binaural recording, and is the one area in which 'correct' playback really should be restricted to headphones to get the real-life placement effect – the effect through speakers can be disconcertingly weird and 'non-stereo'. This is a specialist area, with variants including dummy head (mics in a dummy) and live

### The early Beatles recordings often feature extreme channel separation

head (mics inside a person's ear, for those who assert the shape of the human pinna is essential for correct binaural). Uses in rock include the holophonic experiments on Roger Waters' 'The Final Cut' and 'The Pros and Cons of Hitch Hiking', leading towards the more artificial Q-Sound on 'Amused To Death'. Tchad Blake is also a proponent and some binaurally recorded material is used on the Finn brothers' album 'Finn', ironically Pearl Jam's 'Binaural' doesn't actually contain much!

Mastering has no real influence on real or virtual microphone placement, taking place after a final mix has been created. It should be noted that mastering engineers invariably master for speakers, with the odd bit of ghetto-blast (probably iPod dock these days...) testing thrown in for good measure.

Beyond stereo, the B-format material from SoundField recordings, and some binaural recordings, can also be put through digital processing to render them into 'naturalistic' 5.1, but who is interested in that these days? Going back to Stereo – just listen to your transducers of choice and enjoy that sound field, whether it is real or imagined!



**All together now**

Wow, did I receive a big surprise to find out that David Price was the new editor of *Hi-Fi Choice* (who is in charge at *Hi-Fi World*!).

Although I am not a subscriber, I do purchase hi-fi magazines quite regularly and have since 1980. I love esoteric cables, but I do not feel that anything beyond a decent well made cable makes any difference in sound, other than for speaker cables that are undersized and cannot handle the current requirements for the speaker in question. I have done many tests and for the life of me all I can hear is the faintest of difference, not enough to warrant the expense. I use many cables in the studio and for my hi-fi set up. I own Audiolab, Krell, Genelec, Rotel, Westlake, Bryston and Onkyo gear.

I love cassettes, but the hiss alone is the single biggest let down over digital sources, although I am not a fan of MP3 other than appreciating its convenience (24-bit/96kHz digital files do sound very good though). I love vinyl as well; it was the former main source of sound and is still viable but certainly more delicate and costly. I also like open-reel machines and their sound. Each has its place for sure. But for ultimate portability nothing beats a tiny MP3 player, however I would prefer they start making FLAC or WAV players with good headphone amplifiers, good dynamics and frequency response.

I do buy used gear from all over the place and would say that out of some one hundred purchases, I've only had two or three bad issues. What you buy, from whom you purchase it and what you pay are the biggest factors in determining your experience.

**Jimmy Kostelidis, Canada**

**DP says:** Hi Jimmy – yes, here I am at *Hi-Fi Choice*! Meanwhile, *Hi-Fi World's* founder and publisher Noel Keywood is now editing his magazine, and, of course, I wish him well.

Going back over your points in reverse order, and I must say your experience with classic hi-fi buying seems altogether happier than mine. I should take you on my next buying mission next time perhaps, as my second-hand purchasing carries a rate of attrition that's about ten times worse than yours! Approximately one in three of my



**All together now:** Jimmy Kostelidis wants a FLAC playing portable with a top-notch headphone amp built in. Come on Apple, give us an iPod Pro!

used purchases fail, and if it's via a certain popular online internet auction site, then it's worse still. Perhaps it's the odd sort of kit I tend to buy, or maybe it's just good old fashioned bad luck – don't ask me to choose your lottery numbers for you!

There are a number of digital portables with good headphone amps built in – most of them, in fact, with the sad exception of the iPods (which if anything seem to have got weaker and harsher over the years, not better). This is a shame because the products themselves are so wonderfully well rounded in other respects. My experience is that the latest generation of Sonys is excellent in sonic terms. I am getting increasingly impressed with hi-res, but still think vinyl has an inherent musicality that all the digital formats lack.

If you can't tell the difference between good cables and bad cables, then I'd very respectfully and politely suggest that your system doesn't need good ones anyway! While I know for a fact that there are many overhyped, over marketed average bits of wire around (none of which you'll see reviewed in this magazine), that's not to say that cables don't make a difference...

**TJ says:** Its been a long time since tape hiss has been discussed (or even mentioned!) in a hi-fi magazine! These days it should not be a problem, modern tapes like TDK SA are pretty

quiet and if your deck is correctly calibrated there isn't much of a sonic penalty in using Dolby NR for noise-sensitive recordings (e.g. music with a lot of silences and rests in it). Basic signal to noise performance with SA is about 55dB on a good deck with a 10dB improvement for Dolby B and a 20dB improvement for Dolby C; remember that no LP-based system could ever hope to match this 75dB signal to noise ratio! Beyond this you get into the realms of dBX and JVC's Super ANRS, both of which seem to introduce problems of their own. As a regular cassette user I find Dolby B more than adequate for most recordings.

Frankly, DP's poor experience with used hi-fi I think is explainable in statistical terms by his staggeringly unreliable Marantz CD-73 CD player, which seems to develop a new malaise every time he so much as contemplates spinning a silver disc, let alone gets it out of the jewelcase. Then there's the fact that he likes, and buys, weird stuff like Sony V-FET amps which are surely a walk on the hi-fi wild side. The serious point is that, like all machines, hi-fi gear needs maintenance, yet on the whole people don't bother – so there's often a backlog of 'issues' to sort out post-purchase. To me that's all part of the fun!

**To Haf and Haf not**

I was hoping you could help me with a couple of things? I have been trying to find reviews for the Hafler 9270 power amplifier, Hafler 945 preamplifier/tuner and the Bose 901 series VI direct/reflecting loudspeakers. Also what the Hafler 9270 amp would be rated at?

My system consists of the above, also Rega Planar 2 turntable and a moving coil, Arcam Alpha One CD player. As you are no doubt aware, Christchurch suffered two

major earthquakes in which I lost the Hafler amp, preamp/tuner and my Bose 901. As I can replace my Bose 901s, I would appreciate your recommendation on what product I should consider to replace my Haflers (based on their specs and quality as well as the rest of my systems components). Thanks for your time much appreciated.

**Russell Martin, New Zealand**

**DP says:** Hi Russell – having suffered severe damage to my own system in a flood a few years back, you have my sympathy. And I'd like to extend my best wishes to you and yours, and your compatriots in general, after the quake(s). I have a natural empathy for New Zealanders as I very nearly grew up as one!

But I digress; the Haflers are good mid-nineties transistor amps, something of a cult product in some ways and a favourite of the soldering iron-wielding tweaky brigade. The 9270s pumped out about 135W, if memory serves, and were quite smooth. They'd have to be, frankly, were you not to go deaf listening to those 901s of yours, which are by any standards 'an acquired taste'! As someone who's acquired some exotic tastes in loudspeakers myself, I'm not having a dig, just saying that the 1968-designed Bases are way out of the mainstream in sonic (and engineering) terms, and hard to match.

I'd be tempted to go for a tube amp to drive them, something along the lines of the Icon Audio Stereo 300B/II (£2,200 in the UK), which has a punchy, ballsy sound, but is creamy and expansive too. It even has a tape monitor switch for your

**To Haf and Haf not: It's not every day we get asked what's best to drive a pair of Bose 901 loudspeakers! DP thinks an Icon Audio tube amp should do the job**





### Funky town

If you had to choose from among the following speakers, what would be your recommendation to fit a 17 square metre room, no matter what amplification is being used (my music style is funky)? [1] KEF R300 or R500 [2] Epos Elan 15 or 30 [3] PMC GB1i [4] Rega RS5 [5] Monitor Audio GX100. Do you have any other suggestions?

**Darko, Serbia**

**JH says:** Were I wanting to get funky with any of those designs – and who wouldn't – I would be making a beeline for Epos and Rega. Both companies have a grasp of timing that means their products generally excel with uptempo music.

Given that the larger Rega RS7 was the Hi-Fi Choice 2012 Award winner for speakers over £1,000, I have every confidence that the RS5 should exhibit some of the same star qualities.

### Cable talk

Hi, my new amp is a Unison Research Preldo, with Revolver 5 speakers. I'm using my old Naim speaker cables and wondered what you would recommend as a suitable replacement cable?

**Jim Brown**

**TJ says:** Loudspeaker cables are less critical with valve amplifiers than with their solid-state counterparts, because the damping factor (amplifier output resistance divided by the loudspeaker impedance) that you can achieve is always going to be low due to the inevitable output transformers in the amp.

Naim cables are also characterised by their low self capacitance, due to their wide conductor spacing and this can also be seen as a good thing under most conditions.

The basic advice would be to audition any possible replacements carefully and assure yourself that any audible changes you observe are to your liking. Chord Signature deserves a privileged place on your shortlist.



Super sonic: Townshend Maximum supertweeters can give brilliant results with a wide variety of loudspeakers, even if you're not a bat...

Bose active equaliser, and puts out a claimed 35W RMS per channel, plenty more than the minimum 10W recommend by Bose. This would be a great synergistic match, but may not push things to particularly high sound levels in your room, so if this is important to you, look to the likes of a Musical Fidelity M6i (£2,500, UK). It puts out 200W, which should provide the sort of seismic sensation you're sadly all too familiar with! The M6i will be altogether brighter, sharper, faster and tighter, but the 300B will be more musical and tonally satisfying. Either should be an advance on your long, lost Haflers. Best of luck.

### Super sonic

Dear Jimmy Hughes – I see you reviewed the last version of Townshend's supertweeters and that they received the Hi-Fi Choice Award 2011. I found this interesting as I still run your tweak from about twenty years ago using the Motorola Piezo horn tweeters with a resistor and capacitor. I swear by this tweak for all the reasons written about supertweeters and the advantages of such over the years.

My question is, would the Townshends be a good upgrade over the Motorolas (easy to hear)? They certainly go much higher up to about 70k as opposed to the Motorolas at 40k. Certainly the Motorolas are excellent value for money. In order to get the Townshends however, I would have to take a punt and mail order them to New Zealand, but I assume that they are very good?

**Robert McAdam, New Zealand**

**JMH says:** Hi Robert, I'm glad to hear the Motorola supertweeters are still giving you pleasure. Unfortunately, I have to admit that a set of Townshend Maximum

supertweeters sound even better – as they darn well should, given the increase in cost! I use a set myself, and swear by them. You'll experience a similar kind of improvement in clarity and immediacy, but the Townshends sound cleaner and produce a better separated and more detailed result. Being a ribbon design, they're far more linear than the Motorola horns. I would suggest using the Townshends at their minimum setting (1), though this is down to personal taste of course. Indeed, I believe DP goes for altogether different settings with his Quad ESL-989s.

**DP says:** I can also vouch for the Townshends. I've used them for many years with great results, particularly so with Quad Electrostatic speakers, firing sideways out into the room. They improve the general air, space and smoothness of the sound in a subtle way, but when you remove them from your system it suddenly becomes far less 'listenable', so they're obviously very worthwhile. Don't forget that we're running a review of the very latest model, just tweaked by Townshend and slightly restyled, in this issue's Choice Extras section – turn to p111.

### Cyber counter

I have been following your new website and was hoping to see some brand new reviews, but it seems that they are not available. Are you putting up only old ones? In particular, I'm looking for the latest AuraNote Premier review.

**Dennis**

**DP says:** Hi Dennis – the new Hi-Fi Choice website is a complement to, not a replacement for, Hi-Fi Choice magazine in print form. As such, we're uploading hundreds and hundreds of 'back reviews', to help readers when buying secondhand and/or assessing new products in context to what's come before. But we're not putting up the very latest new reviews, as this would conflict with the print magazine. We hope you buy HFC, read and enjoy it, then use the website as a companion resource.

**ES says:** I have had my Web hat on and I've been adding material to the new website. As David says, the idea is that the older reviews are available as a reference for people considering those products new and used. More recent reviews will be added (in fact, I added the Aura Note review you mentioned earlier this week), but this will be after the magazine has passed through the shops.



Cyber counter: Hi-Fi Choice online – not a replacement for, but a companion to, Hi-Fi Choice magazine...



**Cat-aclysm!**

Dear Dave – sorry but couldn't resist sending this photo of how to make Acoustic Energy Aegis 1 speakers more appealing! The one on the left is Mimi, the one on right is Pico (he's a bit of a nightmare, like most male Bengal cats). They're my partner's cats. If they were mine they'd have my Michell GyroDec trashed in a matter of minutes!

I remember *Hi-Fi Choice* magazine years back had various people sending in photos of their pets (usually cats), curled up on warm amps, and this picture just reminded me of some of those! **'Stu'**

**DP says:** *Thanks Stu – my own "four legged furry man" (as The Mighty Boosh describe cats), also called Mimi, is a seven-year old ex-stray tabby of near obese proportions. He (don't ask why he's got a female name) has managed to rip my house to bits, but for some divine reason neglected to start on my hi-fi – yet! Mine is not to reason why, only to thank God...*

*All of us here at Hi-Fi Choice love cats, including production editor Richard and design editor Corin. Indeed I was also thinking of punting your letter over to Jimmy Hughes – who's feline-friendly – but then again I'd doubtless have received a long reply extolling the virtues of 'organic damping' and 'biological sound-field diffusers' in one's listening room. Errr, so I decided not to!*

*So readers, should you have any pics of pets interacting with your stereo system, don't be afraid to send them in. Meanwhile Mimi and Pico get honorary HFC Recommended badges!*

**LETTER OF THE MONTH**

PRIZE WINNER!

**OVER THE PAST FEW MONTHS I'VE NOTICED THAT YOU ARE**

building up your website, putting old reviews up. Is this because you are trying to offer an alternative to the material already on the web for hi-fi fans? I do enjoy some online audio magazines but I think others are patchy sometimes.

On several internet hi-fi forums, people have accused journalists writing in 'print' magazines of being too friendly with hi-fi manufacturers. But the way that some online reviews read, they seem like hobbyists going 'weak in the presence of beauty', as they get matey with certain companies having been given a product to write about. So I am not so sure about online after all!

Will *Hi-Fi Choice* ever be a purely online magazine, or are you going to stick with what some people on the forums call the 'dead tree press' for the long term? I would be very interested in how you see the future of the magazine and indeed the publishing industry in general

**Jules Tate, Hong Kong**

**DP says:** *You're right that we're building up our website, putting legacy reviews up. This is to help readers wanting to buy older kit and/or to get a sense of perspective in the great scheme of hi-fi things. I am not trying to compete with online hi-fi magazines; as far as I'm concerned, it's each unto their own. We all have our own favourites and that's fine. But when comparing the so-called dead tree press with the online equivalents, do try to keep a sense of perspective...*

*The usual criticism that's levelled at print magazines by some posters on hi-fi forums is that we're all in the pocket of manufacturers. Well, given that we have business dealings with some of them (i.e. they advertise), there's obviously a relationship there, and part of my job is to make sure it's as scrupulously fair as possible. It's my role to ensure everything is done for our readers, first and foremost.*

*Of course, reviewers have their favourite brands. And it's absolutely fine if they give them good reviews – providing they make a cogent, well argued case for why they like them. Readers can then make up their own minds about whether that product is for them. What I don't like, and reject, is writing that sidesteps logical argument, and instead is more about people venting their own personal prejudices. And as far as certain reviewers doing specific brands (Malcolm Steward, who's a Naim fan, reviewing Naim kit for example), that's fine providing other reviewers also review them at other times. I want to give as broad a coverage of products as I possibly can, and resist the temptation to ghetto-ise brands.*

*As far as your comparison with online reviews goes, it's important to point out that we subject our group test reviews and our lead review to a full set of measurements from Miller Audio Research. All the results are available for you to scrutinise online; see the button at the bottom of our title page on the website. This is something no online hi-fi magazine offers; Paul Miller has reviewed many thousands of bits of kit over many years (sorry Paul, not trying to make you sound old!), and is very well respected in the industry.*

*Personally, I don't see any real opposition between online hi-fi mags and print ones – they do things differently. Online reviews tend to be done by enthusiasts with narrow product experience. Hi-Fi Choice on the other hand has been going nearly forty years, reviewed huge numbers of kit, uses trusted measurements and goes on the record month after month – with constant feedback from readers. Online publications cannot claim this. Overall though, there's room for us all – print mags, online, forums and so on.*

*As for whether Hi-Fi Choice will one day exist online only, personally I hope not. Computers, iPads, etc., are great, but the tactility of a paper magazine cannot be beaten as far as I'm concerned.*



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# Are You Buying Pre-Ruined

## The Music Chain

Much is written about music and the musicians who entertain us, and we rightly exalt great musicians. But there is an interlinked chain of participants, two of which I believe are crucial to our music scene in today's world. For centuries the music chain was a very short one – composers or songwriters, musicians and listeners, and the judgement on quality was immediate. Recording technologies have changed all this exponentially.

Today, we listen to most of our music from a recording and this gives recording engineers the opportunity to avoid poor acoustics, duff notes and off days. This, of course, means the chain has grown to include the recording engineers, the music distribution system (retailers or downloads), hi-fi manufacturers, hi-fi sellers and the hi-fi purchasers, the latter being the listeners. I should start by saying that hi-fi has become an adulterated term that no longer has its original meaning because it's applied to much equipment that certainly should not be termed high-fidelity.

It's said that a chain is only as strong as its weakest link. However, I believe there are two particularly strong links that, if removed from the chain, would seriously damage the quality of recorded music. These are the audiophile, or hi-fi connoisseur, and the specialist hi-fi retailer, the latter in nearly all cases also being the former because it's their interest that has driven them into their particular business. These are the people who most appreciate how exciting and involving music can be and how it can deliver an emotional experience.

## Hi-Fi Connoisseurs

So why is the hi-fi connoisseur so important to the music industry? By their nature, audiophiles are generally avid music lovers who enhance their enjoyment through listening to music at its very best

quality level, which means playing great recordings through hi-end hi-fi to achieve the most outstanding results. Without the audiophile, the main driver for quality would probably be removed from the chain. Let's be honest, over recent years the majority of music listeners now settle for MP3 convenience and, therefore, mediocre sound quality, that is 'pre-ruined' music. If the pendulum ever swings so far that all but a few listen to highly compressed formats such as MP3, music producers will not waste their resources on producing high quality recordings because it would be commercially unnecessary, even if their recording engineers wanted to achieve the best they could. After all, an MP3 or AAC file, the iTunes default format, downloaded at 128 kbps (the most popular download speed), is about one-eleventh the size of a full resolution CD track, 1411 kbps, so the quality is inevitably far inferior. Information is irretrievably lost and the full dynamic range is lacking. Using an iPod while jogging does not really raise a quality issue but playing low-resolution tracks through an iPod docking station that feeds into a decent hi-fi system, is a disaster area. It's rubbish quality made louder. Fortunately, there is still significant demand from audiophiles committed to sound quality to sustain the production of high quality recordings, but it would be a tragedy if there weren't. For example, most classical recordings downloaded as an MP3 or AAC file are a complete waste of time because there is so much information missing that they are reduced to just the essence of a tune.

## Specialist Hi-Fi Retailers

Just as essential a link in the chain as the hi-fi connoisseur is the specialist hi-fi retailer and the two are rightly dependent on each other. Without the specialist retailer the hi-end hi-fi manufacturer would have to rely on the internet and hi-fi magazine reviewers to try and assess the relative merits and performance of their products against that of their competitors –

a notoriously unreliable decision making process. Specialist hi-fi retailers are constantly being offered new products for assessment and potential stocking and, as it is also their hobby as well as their livelihood, they are greatly interested in achieving the best performance and seeking out the most outstanding products and combinations. More than that though is their relationship with audiophiles for, if they are to stay in business, they must satisfy the most discerning customers in the industry. The reality is that audiophiles and specialist hi-fi retailers are essential to each other.

## Future of Recorded Music

What are the future prospects of maintaining high quality music recordings? We must hope that audiophiles, or hi-fi connoisseurs, or perhaps most accurately described, music lovers, will continue to drive the demand for quality. But another important reason for hope within the mass-market is that there is no longer any overriding reason for MP3 and AAC to have such a following. These formats were designed to overcome very slow download speeds and expensive memory capacity. These are not significant factors for most people now. Full resolution, CD quality, downloads are already available and should become the norm as long as the general public can be made aware of the tremendous quality benefit. This has happened with HD TV so we know this awareness can grow rapidly. In the meantime, we must highly value hi-fi connoisseurs and specialist hi-fi retailers, of which the ones listed on this page represent the UK's finest. Specialist dealers know how to choose the products that combine as a superb system and how to get the best out of it by expert installation in the home. If there's a price premium over an internet purchase, it's probably a small one, but it's unquestionably worth the difference.



# Music?



The specialist dealers below have been selected because they are known to do an excellent job in guiding customers towards hi-fi that will give years of musical enjoyment and total satisfaction.

## OUR TOP 20 UK HI-FI DEALERS

### SOUTH

#### Ashford, Kent

SOUNDCRAFT HI-FI  
40 High Street.  
t: 01233 624441  
www.soundcraft.hifi.com

#### Chelmsford

RAYLEIGH HI-FI SOUND & VISION  
216 Moulsham Street.  
t: 01245 265245  
www.rayleighhifi.com

#### Colchester

NEW TECHNOLOGY UNLIMITED  
33 Sir Isaac's Walk.  
t: 01206 577682  
www.newtechnologyunlimited.com

#### Kingston-upon-Thames

INFIDELITY  
9 High Street,  
Hampton Wick.  
t: 020 8943 3530  
www.infidelity.co.uk

#### Maidenhead

AUDIO VENUE  
36 Queen Street.  
t: 01628 633995  
www.audiovenue.com

#### Rayleigh, Essex

RAYLEIGH HI-FI  
44a High Street.  
t: 01268 779762  
www.rayleighhifi.com

#### Southend-on-Sea

RAYLEIGH HI-FI SOUND & VISION  
132/4 London Road.  
t: 01702 435255  
www.rayleighhifi.com

### LONDON

#### Ealing

AUDIO VENUE  
27 Bond Street.  
t: 020 8567 8703  
www.audiovenue.com

#### N1

GRAHAMS HI-FI  
190a New North Road.  
t: 020 7226 5500  
www.grahams.co.uk

#### SW11

ORANGES & LEMONS  
61/63 Webbs Road.  
t: 020 7924 2043  
www.oandlhifi.co.uk

#### SW20

O'BRIEN HI-FI  
60 Durham Road.  
t: 020 8946 1528  
www.obrienhifi.com

### SOUTH WEST

#### Bath

AUDIENCE  
14 Broad Street.  
t: 01225 333310  
www.audience.org.uk

#### Exeter

GULLIFORD HI-FI  
97 Sidwell Street.  
t: 01392 491194  
www.gullifordhifi.co.uk

### MIDLANDS

#### Banbury

OVERTURE  
3 Church Lane.  
t: 01295 272158  
www.overture.co.uk

#### Birmingham

MUSIC MATTERS  
363 Hagley Road, Edgbaston.  
t: 0121 429 2811  
www.musicmatters.co.uk

#### Coventry

FRANK HARVEY  
163 Spon Street.  
t: 024 7652 5200  
www.frankharvey.co.uk

#### Leicester

CYMBIOSIS  
6 Hotel Street.  
t: 0116 262 3754  
www.cymbiosis.com

#### Nottingham

CASTLE SOUND & VISION  
48/50 Maid Marian Way.  
t: 0115 9584404  
www.castlesoundvision.com

### NORTH

#### Cheadle

THE AUDIO WORKS  
14 Stockport Road.  
t: 0161 428 7887  
www.theaudioworks.co.uk

#### Chester

ACOUSTICA  
17 Hoole Road.  
t: 01244 344227  
www.acoustica.co.uk

#### Hull

THE AUDIO ROOM  
2 George Street, Hedon  
t: 01482 891375  
www.theaudiroom.co.uk

#### York

SOUND ORGANISATION  
2 Gillygate  
t: 01904 627108  
www.soundorg.co.uk

## STAR QUALITIES

VALUE FOR MONEY ..... ★ ★ ★ ★ ★  
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FACILITIES ..... ★ ★ ★ ★ ★  
VERDICT ..... ★ ★ ★ ★ ★





# Do it clean

You don't need a champagne budget to get a great sound, says **David Price** – just spruce your existing system up!

**I** race cars, play tennis, and fondle women – but I have weekends off, and I am my own boss! That, dear reader, is the general public's perception of the life of a hi-fi journalist (summed up by Dudley Moore's brilliant portrayal of a playboy in the motion picture *Arthur*, of course). Some folks I meet at shows think we scribes live a life of grand luncheons with manufacturers all day, then sit in repose before £100,000 hi-fi systems all night!

Well sadly it *ain't* so. But still this job does have its compensations, and listening to music is one of them. Having heard so much hi-fi in my twenty year writing career, I'd rather hear as little of the actual equipment as possible, thanks very much!

As you might expect, stuff comes in and out of my own reference system as fast as data down my phone line – or so it seems. There's a constant throughput of review kit, and doing regular monthly group tests means it's never a dull moment, with so much to hear...

Surprisingly perhaps, the sort of differences you come across, even in products of a pretty similar price group, are substantial. Even my recent dalliance with a stack of £300 cans has had me scratching my head in despair, amazed at the vast differences between the various models.

For example, on one hand is Grado's SR325is. This is – in some respects – one of the best headphones I've ever heard in my life. Akin to popping some kind of magic music pill, sitting back and being amazed, it makes even the most dull song seem like the musical equivalent of a life-and-death situation, where the adrenaline is rushing and the heart pumping. Nothing, not even the musical equivalent of Mogadon, comes over in a prosaic, perfunctory way.

However, this headphone is coarse and unsophisticated. Not painfully so, but still it makes even the smoothest, syrupy vocal strains metamorphose into something altogether different – Smokey Robinson becomes Rod Stewart, Sade becomes Suzi Quattro.

On the other hand, there are cans such as the smooth, uber-refined Beyer, which calms, relaxes and balms – where the Grado adds grit, the Beyer brings beauty. Just a few pounds separates the two, but there's a vast sonic gulf – two products that like Marmite and Russell Brand, some love and others hate.

To me, that's the joy of this job. Despite the ongoing digification of the hi-fi world, there remains a wide selection of products with wild differences in sound between them. As my reviewing so often reminds me, if sonics are

important it's simply not good enough to buy the one that's easiest to find discounted online.

## Less is more

Nor can you necessarily expect cheap products to be worse than more expensive ones. Every group test I've done has thrown up surprises, from the Rega DAC which was only mid-way up the group test price ladder, to the Cyrus CD8 SE v2 which was one of the cheapest CD spinners in the test, price is no measure of ability.

In conventional reviews, this month the Cambridge Audio 851C and 851A really impressed, as did the humble Audiolab M-DAC. Neither of these are by any stretch of the imagination high end products, yet I've genuinely heard them sounding way better than a number of high end designs I've had for review in my own system. The great thing about hi-fi as a hobby, aside from that amazing connectedness to the music it can bring, is that bargains are always there to be had!

So, the word is – buy intelligently. Use your ears and go forth and audition all these fine new products now! But hang on a minute, because there's one thing here we forgot, which is that you can most likely effect a dramatic change to your system's sound by the simple expedient of tuning it. Rather like an ailing sports car that's been around the block a few too many times without the right maintenance, most people's systems are actually capable of far superior results if their owners only knew it.

For me, one thing I like to do when I'm not living my (alleged) 'hi-fi playboy' lifestyle, is fettling my system. I've found that when well set-up, a group of pretty inexpensive components can sound way better than a bunch of expensive ones carelessly thrown together. There are big differences between hi-fi products at a similar price, but even larger ones between an averagely set-up system and the very same components expertly installed and meticulously calibrated. I just cannot overstate what a vast difference this can bring.

The nice thing about all this is that a well set-up system is almost free to achieve, and could represent just as much – if not more – improvement to your system's sound, with far less financial grief. So, like Dudley Moore's Arthur Bach, when your dad cuts off your inheritance and suddenly those Krells now seem an impossible dream, break out the Kontak and get cleaning! Despite what all the clever showroom talk might tell you, there really is no substitute for fettling your system in a thorough, methodical way.

Like an ailing sportscar that's been around the block a few too many times, most people's systems are actually capable of far superior results if their owners only knew it...



**DAVID PRICE**  
Audiophile, record collector  
and *Hi-Fi Choice* editor



# The right profile

It's one of the fundamental tenets of serious audio that loudspeaker positioning is critical, says **Richard Black...**

**P**lonk your loudspeakers down at random, we're always told, and the system will most likely sound nothing like as good as it's capable of. And indeed practically everyone who's ever fiddled with a stereo system will attest to the truth of this proposition...

On the other hand, to quote that doyen of loudspeaker designers, Ted Jordan, "live sound always sounds live in any space. We should demand no less of loudspeakers." Which is a fair point – but can't be taken to extremes. Just ask someone in your household to talk to you while walking round the room and you'll soon notice a change in their voice as they approach a wall or corner, or stand close to a bookcase, for instance.

This is all to do with the way sound reflects around the place, and with the way its behaviour varies depending on frequency. The sound spectrum is generally considered to cover a range of 20Hz to 20kHz, which is a 1,000:1 ratio, with a corresponding range of wavelength from 16m down to 16mm. Sound waves react to solid objects very differently depending on their wavelength, so that a piece of acoustic foam the size of a person's hand placed in front of a full range loudspeaker will do practically nothing to the bass response, but will almost entirely absorb the top octave of audible sound.

The sound emitted by a conventional box-type loudspeaker superficially appears to come straight out of the front, but it's obvious it comes out to some extent sideways as well, or you wouldn't hear much off-axis – which you do, even outdoors where there are no walls to reflect sound around. But again, the extent to which this happens depends strongly on frequency. For most of the lowest three octaves of hearing (160Hz downwards) the sound is effectively radiated in all directions equally because the dimensions of the speaker are significantly less than a wavelength.

So one has to take into account the effect of nearby walls which reflect sound just like a mirror reflects light, though maybe not quite so efficiently. In particular, the wall directly behind the speaker will reflect the low frequencies straight back towards, and past, the speaker itself. If that wall isn't far away, the reflections can add to the sound emitted directly by the speaker and increase the amount of bass heard further down the room.

## Off-axis response

In a nutshell, that's why the most sensitive positioning parameter for most speakers is distance from the back wall. Too close and the bass becomes boomy; alternatively, the speaker might have been balanced for close-to-wall positioning, in which case having it out in the open will result in the sound seeming thin.

Distance from side walls is also important, not least because the off-axis response of most speakers is anything but linear. It may not seem of great importance what off-axis is like, given that speakers are conventionally listened to, and measured, on-axis, but if the off-axis response is uneven then so too will be the spectrum of reflections reaching us via the walls or indeed the floor. Changing the position of speakers in the room will change the spectrum of the reflections, so it's no surprise that overall sound quality will alter.

It might seem that the answer is to eliminate reflections, but apart from the fact that it's very difficult to do at lower frequencies, that also makes the room very uncomfortable to be in. Can you imagine living in a house, sitting in your listening room, with no windows or mirrors? Recording studio monitoring rooms often use this approach to a limited extent and also use diffusers (which, as the name implies, diffuse reflections rather than keeping them focused), and if domestic considerations don't intervene it can help in a domestic listening environment, too. But one little-appreciated secret of some of the best speakers is simply that they have a better-controlled off-axis response than their competitors. If you want to read up on this further, there's some interesting and digestible stuff at [linkwitzlab.com](http://linkwitzlab.com).



Ask someone to talk to you while walking around the room and you'll soon notice a change in their voice as they approach a wall or corner...



**RICHARD BLACK**  
Prolific musician, recording engineer and reviewer



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# Now that's what I call...

Cheap! The hi-fi world is rocked as **Jimmy Hughes** declares that he thinks MP3 downloads are quite good value...

I finally did it! (Trumpet fanfares, roll of drums.) I downloaded some music, from the interweb to my hard-drive. Gasp. Actually, to be strictly accurate, it wasn't *quite* my first time. I'd downloaded hi-res music files while reviewing some Linn kit a couple of years back.

But I'd never actually bought a download for my own use – I always avoided doing so, preferring to buy the CD. So, what happened? What went wrong? Well, I was searching Amazon for the complete Glazunov symphonies conducted by Vladimir Fedoseyev – as you do. (I originally bought this set on vinyl around 1982, and hoped to find it on CD.) Alas, it's now out-of-print, and only obtainable as an MP3 download. Bah! I was just about to pass on to something else, when I noticed the price; just £6.99 for over five hours of music. Not bad...

My objections to MP3 downloads were and are twofold – price and audio quality. Obviously, anyone with an interest in good sound will want something better than MP3. So, with many MP3 downloads priced the same (or more) than an equivalent CD, it's a no-brainer; buy the CD!

But what if the download was massively cheaper; would this tempt one to compromise? Indeed, one might well be tempted! But, perusing Amazon, you see huge pricing chasms between CD/MP3. Bernstein's DG Mahler 6 symphony (2CDs) costs £12.49 as an MP3 download. Ouch...

Yet his complete DG Mahler cycle (11CDs) can be had as an MP3 for just £18.99. That's much better value. At the time of writing, buying Bernstein's DG Mahler set on CD would cost you about £33, so choosing to download represents a worthwhile saving. But, even this looks a half-hearted bargain when you consider some recent offerings sourced from the Swedish BIS label. BIS recently completed a cycle of the six numbered Tchaikovsky symphonies with the Gothenburg Symphony orchestra conducted by Neeme Jarvi.

## Rip me off – I'm an audiophile

Each separate full-price issue is a hybrid SACD costing about £13.50 per disc. So, buying the cycle on six separate SACDs would set you back around £81. The six discs are also available as a boxed set (CD only, not SACD) for a more wallet-friendly £28.

It gets worse. For those happy with an MP3 download, the entire set can

be had for a mere £5.99! Osmo Vanska's excellent cycle of the Sibelius symphonies (including the world premiere recording of the original version of the 5th symphony) is also available – for just £7.99. Now that's more like it! At such prices, many of us may be willing to compromise on sound quality. Sonically, the Fedoseyev Glazunov MP3 set is very acceptable; perfectly listenable. While the sound lacks a certain depth and range (it's a bit flat and compressed), it's okay...

Jarvi's Tchaikovsky Symphonies Cycle has garnered mixed reviews. The general consensus seems to be good, but not outstanding, performances. But for collectors, what's interesting about this set is not the symphonies but the fill-up pieces – some of them fairly rare.

Now, thanks to the internet, you can download the entire set for not much more than a *cafe latte*, and decide yourself from the comfort of your listening chair. Like what you hear, but MP3 sound quality still an issue? The six discs are available separately as hybrid SACDs...

Anyway, the upshot is, I'm now tempted to try MP3 downloads. If the price is right, why not? It's a fast, inexpensive way of checking things out. For those tentatively dipping a toe in areas of music that aren't familiar, it's a cost-effective way of discovering if you like something.

Ironically, since revisiting Fedoseyev's *Glazunov*, I'm not sure I'd now want to buy the set on CD unless very cheap. The performances are certainly good, but Svetlanov and Rozhdestvensky are musically superior and better-recorded. And anyway, I still have my original LPs...

Anyone with an interest in good sound will want something better than MP3. So with many MP3 downloads priced the same (or more) than an equivalent CD, it's a no-brainer; buy the CD!



**JIMMY HUGHES**  
Classical music buff,  
audiophile and hi-fi reviewer



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# Feel the heat

The temperature of spaces, music and hi-fi is fascinating, says **Channa Vithana**...

**R**ecently I completed an exhibition called Music Architecture Poole (MAP) at Lighthouse, Poole's Centre for the Arts. The exhibition included a full-size music practice room, made of reclaimed plywood, built up in layers. The construction offered a sustainable method of building a musical space with the mass and faceted nature of the layers of plywood offering some good and controlled acoustic qualities that would distinguish it from an ordinary room with no 'tuning'. The plywood had a nice aroma, and a visually natural warmth when lit artificially or through daylight, expressing the colour and texture of the wood which musicians and visitors liked.

This acoustic space, depending on instruments, could accommodate two to four musicians and one or two audience members. When up and running with musicians of all types (ranging from skiffle, to folk, trumpet and rock) it was noted by more than one player that the space sounded better when it warmed up through use (due to the mass of the space it would warm up fairly quickly).

I found this experience fascinating, but not altogether surprising, as other musicians – primarily piano players – have told me that their instruments, once rigorously tuned (sometimes for periods lasting several months), sounded more consistent when there was constant temperature where the piano was located, and that any large shifts in temperature would adversely affect the sound quality, and therefore, playability.

Indeed Slash, the naturally gifted guitarist, formerly of Guns 'N Roses, mentioned within his biography, written with Anthony Bozza (Harper Collins, 2007) that he has very carefully tried to recreate (though not perfectly) the exact guitar sound from the legendary 1987 *Appetite for Destruction* recording period, where he noted that even the room temperature affected the sound that was created.

## Noble warming

In hi-fi, when optimising a system for reviewing or listening with friends, the sound quality usually improves after a little warm-up. Naim Audio for many years recommended that their equipment be kept switched on for optimum sound quality and that from new the electronics would need some time for

running-in to sound at their best, rather than straight out of the box.

The warming-up of hi-fi electronics (and running-in of loudspeakers, etc.) can have a very positive effect on the outcome of the sound quality. I have noticed with some systems, even fully run-in, that the amplifier and CD player sound at their best when left on for twenty four hours in comparison to starting cold from switch-on. Here the comparison of 'cold' and 'warm' can be quite marked – the difference is rather noticeable as the sound, when warmed up, is rendered with a deeper, higher resolution musicality. Everything gels and sounds effortless, like musicians playing for real. In vinyl systems, have you noticed that a cartridge sounds better after playing one whole side of an LP first before proper listening – try it and hear what's a very noticeable improvement!

With warm-ups in hi-fi, I would recommend caution though, and always consult the manufacturer(s) first on how long to leave equipment on for. For example I would not want to leave a full Class A amplifier (such as an excellent sounding Sugden IA-4) on for more than the required listening session, as these devices get very hot to the touch – particularly noticeable when the weather is blazing hot summertime! Likewise with valve amplifiers, a little warm-up (about thirty minutes) before starting, and then switch off as soon as possible after listening, should prolong valve lifespan.

Somewhat like having a nice evening meal with a glass or two of wine in harmonious surroundings and with good company, I would recommend spending some time getting the temperature of your spaces and not just the hi-fi or the musical instruments right, as when done well you might just be in a more receptive mood to enjoy the music.



The warming-up of hi-fi electronics, and running-in of loudspeakers, etc., can have a positive effect on sound quality...



CHANNA VITHANA  
Reviewer, design aficionado and music fan



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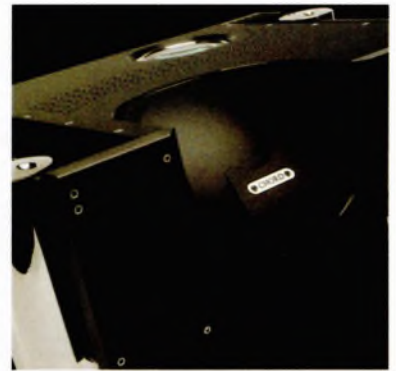
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# On the buses...

To USB or not to USB? Serial tweaker **Jason Kennedy** ponders the problem after Bristol's recent *Sound and Vision* show...

**A**t the *Sound & Vision* show in Bristol I heard two demonstrations of the differences brought about by upgrading USB cables between a laptop and a DAC. In both cases it was an Arcam D33 DAC for some reason, maybe they're really sensitive to cables! More likely it's that Arcam had managed to infiltrate a number of systems with what would seem to be rather a good convertor.

Chord Company's Americana enthusiast in residence, Nigel Finn, showed me what Sarum, the company's most ambitious USB cable to date, could do in the context of a system made up with Bonnac amps and Kudos Cardea Super 10 standmount speakers. He played me a standard black freebie USB cable then went over to the Chord Company's Silver Plus type and finally the new Sarum model. The differences were pretty distinct and made a good case for the newcomer, mind you at £750 one would hope so. However, it did deliver a considerably more resolute, three-dimensional and effortless result that bore more than a passing resemblance to high-quality analogue sources. Which can't be bad given the less than highly tuned nature of the playback system being employed on the Macbook supplying the signal...

Nigel also mentioned that DACs sound better with just one digital source connected; the presence of another, even if it's not active, degrades the result. An inconvenient truth for those of us whose Rega DACs are running a multi-source AV system in the living room!

## Vertere reality

In the AudioQuest room Rob Hay was also demonstrating USB cables, this time with Decibel software on the Macbook and PMC twenty.21 standmount speakers. It was too busy to sit down, but even standing to one side the improvement wrought by going from a standard cable to AQ's entry-level Forest was pretty clear. This £25 cable delivered distinct three-dimensionality and improved timing. In the noisy environs of a hi-fi show it made a more obvious difference than the subsequent upgrade to a dearer AQ model. If there's anything that these two demonstrations reveal, it's that computer audio is easily as sensitive to cabling as anything else.

Touraj Moghaddam, formally of Roksan, was taking a different tack in his Vertere dems. He had set up a budget system to demonstrate that when combined with a good cable it's possible to get cracking sound from the headphone output of your iPod or laptop. His base system of Marantz PM5004 integrated and Dali Zensor

speakers retailed for £340, this combined with a £95 minijack to RCA D-Fi cable delivered an astonishingly coherent and dynamic sound with a Sony Vaio laptop.

Prior to Bristol, Vertere had lent me a prototype of its now fully productionised USB cable made of the same D-Fi wire. This, despite its 5m length, delivered the best result I've yet achieved with computer audio. It is not the most expensive cable I've tried (1m is £65), but it does a similar thing to the analogue interconnect, focusing the image and the timing with well-defined leading edges and high musical coherence. With the Resolution Audio Cantata Music Centre and ATC SCM150 active speakers, the result was dangerously diverting, revealing that the Cantata is a significantly better DAC than it is a CD player, but I suspect that is due to the limitations of disc spinning as much as anything else.

I didn't have a shorter length of D-Fi USB to make the comparison, but have been told by two keen eared, professional members of the audio R&D fraternity that longer USB cables actually sound slightly better than standard lengths. Neither wanted to be named for fear that such heresy might bring them into disrepute, but if my results are anything to go by they are probably right. When I first started using the Cantata with USB, its maker specifically warned me against anything over a metre, with two being the absolute limit. So it's very interesting to note that the rules may have to be rewritten for this particular connection, the question is why?

I have been told by two keen eared, professional members of the audio R&D fraternity that longer USB cables actually sound better than standard lengths...



**JASON KENNEDY**  
Former *Hi-Fi Choice* editor  
and veteran hi-fi scribbler

# Salisbury thrill

Naim's classic NAT 01 tuner ranks as one of the all-time great hi-fi radios. **Tim Jarman** tells its story...

**A**pproximately once every decade, a very special FM tuner comes along. In the nineteen sixties it was Bang & Olufsen's sleek Beomaster 5000, in the seventies it was Yamaha's exotic CT-7000 – and then in the eighties it was Naim's turn with the quirky NAT 01.

Designing high quality radio tuners requires a different set of skills to those needed for amplifiers, phono stages and the like, as the frequencies to be handled are orders of magnitude higher, the signals smaller and the need for stability on another level altogether. So the NAT 01 was an important litmus test for a serious high end brand such as Naim Audio. It had to be good – if it was merely fair-to-middling, the tuner may have been quickly forgotten, but the damage done to the marque would have lasted far longer.

Naim's involvement in tuners began in 1981 with the stillborn NAT 301. After a further three year wait, the first model to go on sale was announced; the NAT 01 was an ultra high end FM-only design housed in two separate boxes (the second being the dedicated NA PST power supply unit) whose high asking price put it right at the top of the tuner market.

In 1986 the '01 was joined by a second cheaper model, the NAT 101. This used a mechanical tuning dial instead of a digital readout and was powered by the well-established SNAPS power unit, which by then had been available for some time for use with other Naim equipment.

The NAT 101 was replaced in 1989 by the NAT 02, which looked like the NAT 01, but did not need a separate power supply as everything was built in. Around this time the NAT 01 was

restyled along with some of the other units in the Naim range, with the new 'Olive' series casework, and subsequently remained in production in this form until 2002, when both it and the NAT 02 were dropped. From 1993 to 2000 another basic model, the NAT 03, was also available, and now we're left only with the relatively low end NAT 05, a version of which is still available today.

## Tuning in

So what's inside the two black boxes that makes the NAT 01 so special? The NA PST power supply unit contains a well specified DC power supply which provides four stabilised voltages to the tuner. In our review example (built in 2000), the circuit and construction appears identical to the NAT 02, so there is little, if anything, to separate the two models in this area. The NAT 01 tuner unit also shares much in common with the NAT 02, but of course moving the power supply out makes more room inside to finesse the design, so one finds that the former is just that little bit more elaborate.

In particular, the output filtering and buffering are given more

prominence, and even though the same basic chips and circuits are used for the bulk of the receiver and the stereo decoder there is a little bit extra added to each stage in the NAT 01. Both share Naim's excellent FM tuner front end module, which unusually for a tuner made by a small company was constructed in-house. Optimised for audio quality under good signal conditions, this unit is reputedly the making of Naim tuners, although the current NAT 05XS has sadly reverted to a mass-produced AM/FM front end shared with a number of other makes.

Even though the NAT 01 has a digital frequency display, it is not a 'digital tuner' as such; the tuning itself is purely analogue and is voltage-controlled by a multi-turn potentiometer on whose spindle the tuning knob is directly mounted. The display then is passive and merely indicates the frequency to which the tuner is set by measurement and multiplication, and even though the numbers move in fairly coarse 100kHz steps, the resolution of the tuning control, being analogue, is theoretically infinite – although the strong AFC

**One of just a handful of superlative FM tuners, Naim's NAT 01 is a brilliant buy if you can find one...**







is pin-sharp in a way that only a handful of the very best FM tuners can manage. The orchestra is given both width and depth by the NAT 01 to the extent that pinpointing each instrument is child's play; this is an area where lesser tuners

**Its clean, minimalist styling works even today; what dates it most is the DIN socket-festooned back panel!**

action and the muting circuit disguise this somewhat.

There are no other controls aside from the power switch on the NA PST unit, so the AFC, muting and stereo decoder switching cannot be overridden manually. This fits in perfectly with the idea of an easy to operate tuner intended for the high quality reception of strong signals from a decent aerial system. But it's a culture shock if you are used to the endless controls of some Japanese tuners such as the previously mentioned Yamaha CT-7000!

Two small green arrows in the display indicate the presence of a signal (this appears before the muting has been released) and the operation of the stereo decoder, and the main display too, gets a little brighter when a station is correctly tuned, and the sound is finally allowed to issue forth. Ergonomically it is just about perfect – it is hard to overstate just how nice this little box is to use, and it makes the likes of Yamaha's CT-7000 (which appeared some seven years earlier) feel clunky and cumbersome. The only downside is that there's no facility to store preset stations – this is a nuisance in one sense, but in another forces you to tune the unit manually every time you need to change stations, which is a lovely process! The NAT 02 incidentally operates identically; clearly the Naim crew knew when they were on to a good thing...

### Sound quality

Since a great deal of attention was paid to phase accuracy when the NAT 01 was designed, you would expect it to deliver an expansive and detailed soundstage, and sure enough it does. The wide bandwidth this requires, of course, means that a first class aerial system is a must – forget bits of wire nailed to the curtain rails as they just won't cut it at this level! With a good aerial it's easy to forget that you are listening to a radio broadcast. Certainly BBC Radio 3 on the NAT 01 does not sound like the poor relation to either CDs or LPs, since the imaging

really struggle.

Tonally it is 'matter of fact' and a little bit dry, albeit nowhere near as oppressively so as the modern NAT 05XS – I really admired the even-handedness of the presentation. Losing myself in Radio 3's excellent concert broadcasts was so easy since there is nothing at all that causes annoyance or fatigue. Commercial pop stations were less successful, but I can't think of any tuner that can effectively undo the harm caused by excessive processing of the sound prior to broadcast.

Losing myself in Radio 3 concerts was so easy since there's nothing at all that causes annoyance or fatigue...

Here I found the NAT 01 always to be slightly uncomfortable, as if it were impatiently yearning for a better signal to decode. Really, it is wasted on programmes which are specifically made to sound good on cheap sets.

Returning to the BBC, I found that like the NAT 05XS, the '01 was at first a shade too dry to really bring out the voices on Radio 4, but its precision rendering of texture went a long way to make up for this – the news is all a bit grim at the moment, but was made just a little bit more bearable delivered by a fine tuner like this! A lack of richness around voices was my only complaint, but since this is a consistent trait with Naim tuners I suspect that it is a matter of taste rather than of technical ability. Naim products, especially from this eighties era, all seem to be voiced this way.

### BUYING

**Sadly, the high original cost of the NAT 01 (it cost £1,200 in 1989, when the NAT 02 could be had for a mere £700!) means that there are not that many in circulation. You'll have to pay nearly what it cost originally to bag a really good example, which if you are lucky will have had a return visit to Naim sometime in the recent past for a check over and a tune-up. Naim offer excellent repair facilities for all its equipment, so you can buy the NAT 01 second-hand with reasonable confidence.**

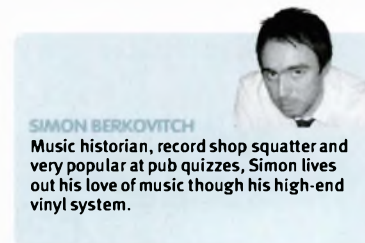
**The design is also sturdy with no obvious inherent weaknesses or flaws (other than wear in the tuning control which causes both the tuning and the display to jump about), but you should still ideally try before you buy as you will be spending grown-up money on something which could be over twenty five years old. Also don't forget to budget for a proper aerial if you don't already have one, and quality interconnect cable with a DIN connector at the tuner end – unlike the modern NAT 05XS the outputs are not duplicated with RCA connectors.**

### Conclusion

The current NAT 05XS costs about the same as a good second-hand NAT 01, but is a very different beast and will appeal to a different type of audiophile. The modern '05XS obviously offers the convenience of preset stations and remote control (and it is still readily available), but to me it lacks the magic of its ancestor with its special and unique front end unit, finely honed receiver circuitry and unusual two-box layout.

So if you're a dyed-in-the-wool FM addict, the Naim NAT 01 still makes a lot of sense today – it's a useable classic in the same way that a nineteen eighties Porsche 911 is, for example. Having lived with one for several weeks, I can report that it is indeed a pleasure to own, either as part of a classic Naim system or as an addition to something more modern or diverse. It's just a shame that there aren't more to go round. ●

# 1978



**SIMON BERKOVITCH**  
Music historian, record shop squatter and very popular at pub quizzes, Simon lives out his love of music through his high-end vinyl system.

It's all about the underground in this month's *Year in Music*, as **Simon Berkovitch** digs deep, uncovering 1978's true musical movers and shakers, fighting guerrilla warfare against a bland mainstream...

**J**ust ten years on from our last *Year in Music* (HFC 358), hippie is a dirty word, but the Open University lecturer look reigns supreme on the high street. Psychedelia, Prog and Glam are now considered relics from a bygone age – despite great popularity just a few years previously. In the musical underground, the shackles of guitar-heavy punk are off, replaced by the freedom of post-Punk, a genre in which experimentation is positively encouraged. But in the mainstream, slick, soulless pop reigns supreme on the airwaves and artists previously labelled as rebellious as they were creative – like The Rolling Stones – are considered out of touch and artistically barren. Welcome to 1978...

by and remembered for the Bee Gees' contributions (*Night Fever*, *Stayin' Alive*, *How Deep Is Your Love?* and more), the soundtrack double album is released in January, hits the top spot on the US album charts and remains there until that summer, shifting millions during its twenty four weeks at the top. Any lingering arguments that the Punk explosion of the previous couple of years had swept away the old order withered in the face of such eager consumerism...

Aside from the Bee Gees, the other success story of *Saturday Night Fever* was actor John Travolta. 1978's other cinematic smash – *Grease* – also tugged on record buyers' purse strings and made a sizeable impact on the UK singles chart, as the actor – together with co-star Olivia Newton John –



Where popular music was once lean, angular and rebellious in the 1950s, 60s and early 70s, it was now bloated and complacent by comparison...

### Excess all areas

Where popular music was once lean, angular and rebellious in the 1950s, 60s and even the early portion of the 70s, it was by now bloated and complacent in comparison. Public acceptance of mainstream mega-artists – think Elton John, post *Exile* Stones and Crosby, Stills and Nash to name a few offenders – had seen pop music taking a turn for the worse...

Following a dramatic 'hair and flare' reinvention, sixties pop act the Bee Gees were now, incredibly, elevated to the new rock royalty – thanks to the power of cinema in capturing the public's (lack of) imagination and the phenomenon of disco.

The film *Saturday Night Fever* was, by now, unstoppable – as was the inevitable soundtrack album. Largely dominated

notched up two number one singles (see *Novelty Reggae and Matchstick Cats and Dogs*) in the UK.

Further indication that mainstream music had run out of imagination comes from California Jam II. The line up of this massive American festival, held at the Ontario Motor Speedway in California and documented on a cash-in double album, reads like a celebration of both soft rock and bankrupt ideas – Ted Nugent, Aerosmith, Santana, Dave Mason and Heart all jostle for position for the crown of blandest musical act. Thankfully, 1978's major label releases weren't all mining this barren seam...

### Street Hassle

Write Lou Reed off at your peril. The former leader of The Velvet Underground, perhaps

the ultimate cult group, may have turned in a series of patchy albums since 1972's dark Glam masterpiece *Transformer*, but *Street Hassle* was an unexpected delight. Lyrically and musically compelling – none more so than on the epic, bass-driven title track, complete with a guest appearance from Bruce





Lou Reed's excellent 1978 offering *Street Hassle* was an unexpected return to form...

# LOU REED



## ▶ NOVELTY REGGAE AND MATCHSTICK CATS AND DOGS

Never mind the Punks. As the UK number one singles in 1978 reveal, the 45-buying public was much more interested in novelty reggae, diluted disco and frighteningly twee songs about the artist Lowry...

Althia and Donna *Uptown Top Ranking*  
 Brotherhood of Man *Figaro*  
 Abba *Take a Chance on Me*  
 Kate Bush *Wuthering Heights*  
 Brian and Michael *Matchstick Men and Matchstick Cats and Dogs*  
 Bee Gees *Night Fever*  
 Boney M *Rivers of Babylon*  
 John Travolta and Olivia Newton John *You're the One That I Want* and *Summer Nights*  
 The Commodores *Three Times a Lady*  
 10cc *Dreadlock Holiday*  
 The Boomtown Rats *Rat Trap*  
 Rod Stewart *Da Ya Think I'm Sexy*  
 Boney M *Mary's Boy Child - Oh My Lord*

## ▶ SYNTH BRITANNIA

Five seminal broadcasts from the post-Punk electronic underground:

**Human League *Being Boiled***  
 Light years away from the wedding disco classic *Don't You Want Me*, the League's debut is a DIY minimal synth classic, with suitably deadpan, oddball lyrics from singer Phil Oakey; "Listen to the voice of Buddha..."

**The Normal *Warm Leatherette***  
 The sole single from The Normal (AKA Mute Record's founder Daniel Miller) takes lyrical inspiration from author JG Ballard's controversial novel *Crash* and splices it with gnarly, pulsing electronics.

**Throbbing Gristle *United***  
 Throbbing Gristle's most accessible pop outing, *United* was memorably reviewed by author Jon Savage as "Syd Barrett meets Kraftwerk in the lab and TG walk away laughing", summing up this gem beautifully.

**Thomas Leer *Private Plane***  
 Leer's whispered, reverbed vocals (to avoid waking a sleeping girlfriend) and heavily-treated instruments (to mimic synthetic sounds as real synths were out of budget) is a brilliant example of how necessity is the mother of invention.

**Cabaret Voltaire *Extended Play***  
 A healthy disregard for traditional instrumentation and miles of tape loops at their disposal, Cabaret Voltaire were always going to make a mark on the post-Punk landscape. They had been manipulating sound since 1973, just waiting for the rest of the world to catch up...

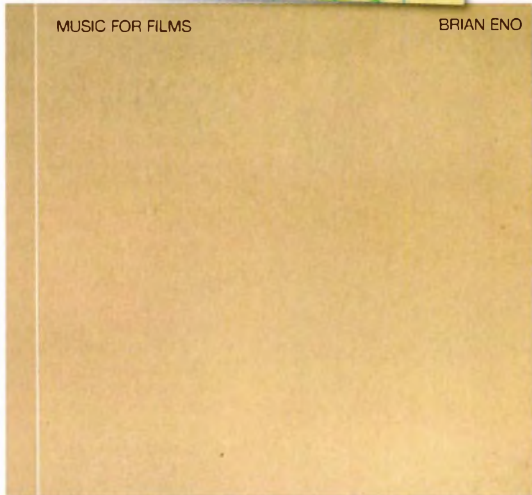
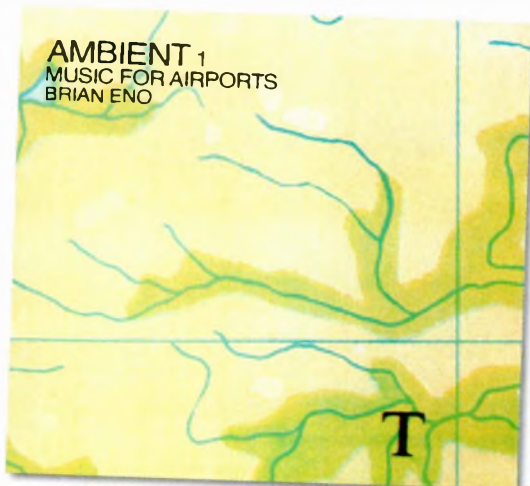
# THE YEAR IN MUSIC: 1978



1978 was the year post-Punk came to fore, beginning to establish a foothold in the British singles charts alongside more mainstream fodder. There was a wealth of new material that melded much of the speed and anger of Punk with a more considered, melodic sensibility, such as Blondie's landmark *Parallel Lines* album (above).

Springsteen – *Street Hassle* is as intense as Reed's early Velvets work, eight solo albums in.

Other major label treats came from the US New Wave, with great albums from Patti Smith Group (*Easter*), Blondie's *Parallel Lines* and the Ramones' *Road to Ruin*, but it was former Roxy Music synthesist (and Glam rock superstar) Brian Eno that made the most waves with his quiet revolution: Ambient



music. Both *Music for Films* – a collection of short, Ambient pieces intended for use in, you guessed it, film scores – and *Ambient 1: Music For Airports* saw the light of day in 1978, spawning an entirely new genre – unfortunately one that quickly devolved into New Age Musik.

## Easy... Cheap... Go and do it!

In direct contrast to the general lack of creativity displayed in the mainstream, the UK underground was *bursting* at the seams. Punk rock had clearly demonstrated that making music – and 7-inch singles and LPs, for that matter – wasn't just the preserve of mega-wealthy rock stars and major record labels...

In part spurred on by the release of the *Spiral Scratch* EP by Mancunian Punk pioneers Buzzcocks – on their own label, New Hormones, no less – the floodgates for independent labels were now open, often

## Punk rock had clearly demonstrated that making music wasn't just the preserve of mega-wealthy rock stars and record labels

for one-off releases by obscure artists. For example, The Desperate Bicycles' fantastically monickered second release – *The Medium Was Tedium*; a pressing of just 1,000 copies – even incorporated a call to arms for the post-Punk movement: "It was easy, it was cheap – go and do it!" Just like Virgin a few years previous, independent record shops like Rough Trade became labels and distributors to serve the needs of musical cottage industries nationwide and beyond.

With names like New Hormones and Factory, new independent labels were as much about art as they were about getting records into the shops. Perhaps, the most infamous of these labels was Industrial Records, created as a home for experimental musicians Throbbing Gristle (TG). TG are the greatest example of what was possible in the post-Punk landscape, as their music, lyrical subject matter and presentation was alien even to Punk. Their 1978 LP *D.o.A* continues to inspire and fascinate nearly thirty five years later.

## Magazine and Public Image Limited

As Punk had mutated into post-Punk, the back-to-basics "three chords played like lightning" ethic ceased to apply – and the musical landscape became more adventurous. Howard Devoto was the aforementioned Buzzcocks original frontman and had quit the



group, inspired by the Sex Pistols, after the release of *Spiral Scratch*. His next move was the brilliant Magazine, perhaps the ultimate post-Punk group.

In direct contrast to the dumbed-down mainstream, Devoto relished using his grey matter, littering his adventurously arranged songs with literary references aplenty. In guitarist John McGeoch, later to play with both Siouxsie and The Banshees and Public Image Limited, Devoto had also found the perfect musical foil on 1978's superb debut album *Real Life*.

Public Image Limited was what Johnny Rotten – now plain old John Lydon – did next after the break up of the Sex Pistols that January in San Francisco. Forget the Lydon who hawks butter and appears on car crash reality TV – the 1978 version was a man with an *avant-garde* plan. The first album from Public Image Limited, *First Issue*, is still an exhilarating listen – a fabulous, glorious collision of dub reggae basslines, experimental guitar textures and Lydon's furious howl, increasingly reminiscent of Renate Knaup's hysterical vocals on classic 1970s Amon Düül II albums. It's oddly overlooked, yet no less important than any Sex Pistols waxing.

Again, like Throbbing Gristle and many other musicians exploring the potential of the new-fangled electronic synthesisers in 1978 (see *Synth Britannia*), here was a music that, unlike the Pistols, owed practically nothing to good old rock 'n' roll. ●



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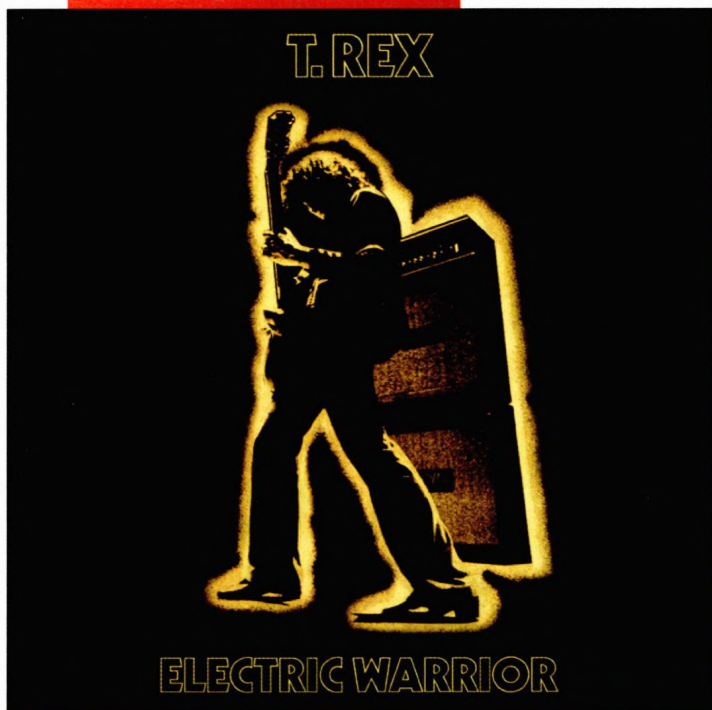


**97 ELO**  
ELO 1

# Music reviews

Our choice of the latest music releases...

## ALBUM OF THE MONTH



**T. Rex**  
Electric Warrior  
universalmusic.com

★★★★★

Universal

2-CD deluxe set; Super-deluxe set with added DVD; vinyl; digital

**EVEN DAVID BOWIE**, the acknowledged master of chameleon-like ch-ch-ch-changes, never underwent a transformation as radical as the one effected by Marc Bolan in 1971. Out went the hippie mystic who played acoustic guitar sitting cross-legged on the floor, accompanied only by bongos. In came a brazen, pouting pop star with glitter under his eyes, playing an electric guitar, bopping around the stage and wiggling his hips, while a full-on rhythm section pumped out a four-to-the-floor backbeat. Out went the whimsically poetic lyrics of “my people were fair and had sky in their hair” in favour of pop rhymes such as “beneath the bebop moon I want to croon”, the line which opens *Electric Warrior*.

The album marked Bolan’s transformation from counter-culture

cult into teenybop pop idol, as Tyrannosaurus Rex mutated into T. Rex. As a result, Bolan lost virtually all of his former audience overnight, including close friend John Peel, who had read a fairytale on the group’s first album; after superstardom cast its spell, the two men never spoke again.

There’s no doubt this dismissive response to T. Rex’s glam-rock reinvention was coloured by the po-faced musical snobbery of the ‘prog’er; music which attracted hordes of screaming pre-pubescent girls and bands that pranced around on *Top Of The Pops* were simply not regarded as credible by ‘serious’ music fans. Forty years on such attitudes seem unbelievably misguided. Even Bolan’s nonsensical lyrics can be seen in the great Little Richard *Tutti Frutti*

This album marked Bolan’s transformation from counter-culture cult into teenybop pop idol...

tradition and *Electric Warrior* has long since taken its rightful place in the canon of classic pop.

Remastered by producer Tony Visconti – who was also at the helm back in 1971 – the reverb-drenched sound of the album’s original 11 tracks is warmly reupholstered to enhance the sense of kitsch pop melodrama, Visconti’s string arrangements swooning over a simple 4/4 beat that betrays Bolan’s love of the early rockabilly pioneers.

Historically, *Electric Warrior* was the very first glam-rock album, Others, by Bowie and Roxy Music, took the genre in a more ‘grown-up’ direction. Some, such as

Gary Glitter and Mud, reduced it to a farce. *Electric Warrior* sits somewhere in the middle and what comes across listening to the album in 2012 is its simple, carefree sense of hedonistic *fun*. Bolan might have been desperate to become a pop star, but you can hear on tracks such as *Get It On* and *Life’s A Gas* that, (at this stage in his evolution, at least) he wasn’t guilty of taking himself too seriously.

As ever with these ‘anniversary’ reissues, the original album comes with a host of extras, including the non-album single *Hot Love*, B-sides and an entire disc of demos and out-takes. The most instructive of the ‘extras’ is a cover of Carl Perkins’ *Honey Don’t*, which makes explicit the extent to which Bolan’s shtick was in many ways a swaggering, glammed-up makeover of the sound invented at Sun studios in Memphis in the mid-1950s. All in all, *Electric Warrior* still sounds as fresh as the day Bolan was (re)born to boogie. **NW**  
**Standout tracks:** Get It On (Bang A Gong); Life’s A Gas; Rip Off; Jeepster

Marc Bolan’s finely honed pop sensibility offended serious prog people like John Peel...



HOT PICK



**Talk Talk**  
Spirit Of Eden  
emimusic.com

★★★★★

2-CD box set; vinyl

EMI

## VETERANS OF NEW WAVE

synth-pop with a string of hit singles which often found them compared to Duran Duran, 1988's Talk Talk songwriters Mark Hollis and Tim Friese-Greene took a radical left swerve on their fourth album. Banning their manger and record label from the studio, they spent a year overdubbing and layering a palette of improved sounds, often working by candlelight or in the dark to create the desired ambience.

When they emerged, the sessions had been edited into a 42-minute suite of remarkable, indefinable music, which mixed rock, free jazz, classical and ambient forms, tranquil but intense in equal measure. EMI sued them, claiming the album was not "commercially satisfactory". True, it was probably unmarketable and lacked anything resembling a single. But it anticipated trip-hop and 'post-rock', influenced Radiohead, the Verve, Portishead and Elbow and is today acknowledged as a masterpiece of rare audacity and imagination. **NW**

**Standout tracks:** The Rainbow; Eden; Desire; Inheritance; I Believe In You; Wealth



**The Small Faces**  
Ogdens' Nut Gone Flake

universalmusic.com

★★★★★

Universal

3-CD (expanded edition)

**PACKAGED** in the world's first round LP sleeve, *Ogdens' Nut Gone Flake* signalled the transition of the Small Faces from purveyors of quality pop singles to bona fide album band and topped the charts for six weeks in the summer of 1968. One of the weirdest albums ever to achieve such eminence, much of the record was constructed around a surreal fairy tale about a boy called 'Happiness Stan'.

The songs established Steve Marriott and Ronnie Lane as songwriters with a classic English sensibility of the Ray Davies/Pete Townshend school.

The reissue includes both mono and stereo mixes and a bonus disc of demos and out-takes. **NW**

**Standout tracks:** Lazy Sunday; Afterglow (Of Your Love); Song Of A Baker; Mad John; Rollin' Over

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HOT PICK



**Rimsky-Korsakov**  
Mlada - Magical Opera-Ballet

melody.su

★★★★★

Melodiya

3-CD box set

**ALTHOUGH SOME** of the music from *Mlada* is occasionally heard in the form of orchestral suites, the work itself is virtually unknown. This Russian studio recording, made as long ago as 1962, was never issued in the West. The performance conducted by Svetlanov is predictably vivid and full-blooded, and he revels in the music's brilliant colours, creating an impressive sense of atmosphere.

The recording is remarkably crisp and clean, with lots of detail and some impressive stereo. Technically, it's every bit as good as anything being done in the West at that time. The digital transfer to CD has been very expertly done, and for lovers of Russian opera, this is an absolute must! **JMH**

**Standout track:** Disc 1, track 9



**Sibelius**  
Symphonies 2 and 5  
Osma Vanska (cond)

bis.se/

★★★★★

BIS

CD (Hybrid SACD)

**HAVING ALREADY** recorded the complete symphonies of Sibelius for BIS with the Lahti symphony orchestra, Osmo Vanska has now begun a new cycle with the Minnesota orchestra. His new performances are extremely well-shaped and immensely assured. Alas, there are one or two fussy details which give cause for concern, and interrupt the naturally inexorable flow of the music, but overall these interpretations remain thought-provoking.

The BIS recording is exceptionally rich and sonorous, with natural timbres and a wide dynamic range. The end result sounds noticeably more open and transparent than the old Lahti set, and that's praise in itself. **JMH**  
**Standout track:** 3

**two or more groups, notably pianist Otis Spann and harmonica player Little Walter Horton.**

Originally released in 1966, the recordings have a very distinct acoustic that's as authentic as the music being played, it's clearly of its age but has no serious shortcomings and even uses stereo, albeit largely in the dual mono style. It has plenty of substance however, and decent bandwidth.

The standout contributions include Junior Wells' Chicago Blues Band, featuring Buddy

**Guy, who do a good line in protest songs, while Otis Spann's partnership with excellent drummer SP Leary whips up some fine driving boogie.**

Quality inevitably varies, but the highlights are rare gems and it puts together combos that didn't normally record together.

The cover image makes Chicago look like a tough place back then, maybe that's why they produced such tough tunes. **JK**

**Standout tracks:** Vietcong Blues; Spann's Stomp; Stealin' Back



**ELO**

ELO 1

emimusic.com

★★★★★

EMI

2-CD set

**WHEN THE** Electric Light Orchestra recorded its debut album in summer 1971, the two main protagonists, Roy Wood and Jeff Lynne, were still making pop singles with The Move. ELO was intended as the outlet for their more 'progressive' tendencies and the album they fashioned remains a unique and impressive work (Wood had formed Wizzard and ELO went on to become a slicker creature under Lynne's leadership).

The ambitious 'baroque-and-roll' feel owes much to *Day In The Life/Strawberry Fields Forever* era Beatles. Today it sounds like a landmark in rock/classical fusion that has worn the test of time better than similar experiments by ELP/Deep Purple *et al.* **NW** **Standout tracks:** 10538 Overture; Look At Me Now; The Battle Of Marston Moor; Queen of The Hours

**BLU-RAY DVD****The B-52s** With the Wild Crowd Live in Athens, GA eagle-rock.com

★★★★★

Eagle Vision

DTS-HD Master Audio 5.1, LPCM 2.0, Dolby Digital 5.1 **ATHENS**, Georgia's second most famous band, the B-52s, returned to their hometown in February 2011 to give their fans an excuse to dress up

**Barry White**

Let The Music Play

mercuryrecords.co.uk

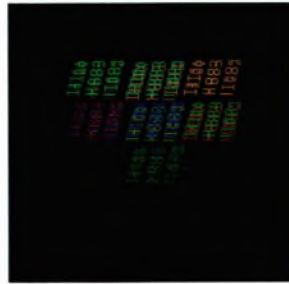
★★★★★

Mercury

CD

**OFTEN PORTRAYED** as a figure of fun, the truth is that Barry White's carefully evolved loverman shtick incorporated some of the most beguiling arrangements, iron-clad melodies and, yes, one of the most impressive voices in popular music. The beauty of his sound is that while it works perfectly well as background for intimate moments, it also has more than enough intelligence and panache to reward close attention.

Remastered from the original 1976 tapes, there are only six songs, along with four alternative versions from the time. The lush orchestrations sweep and sway and on his only album to highlight the end of a love affair rather than the beginning, Barry's majestic baritone sounds even more plaintive than usual. **DO** **Standout tracks:** You See The Trouble With Me; Let The Music Play

**Portico Quartet**

Portico Quartet

realworldrecords.com

★★★★★

Real World

CD

**TWO ALBUMS IN** and London's forward-looking jazzers have taken a left turn, eschewing their swinging brand of street-level busking for something altogether more ambient and electronic. Keir Vine adds washes of synths and sampled keyboard sounds and there's less obvious virtuosity from the saxophone of Jack Wyllie, whose playing reveals more of a debt to the plaintive lines of Jan Garbarek than the fluting pyrotechnics of Andy Sheppard.

Close, warm and intimate are the adjectives that spring to mind when you dip into this constantly shifting cinematic soundscape. Fans of Radiohead will probably find this a much more accessible brew than the band's previous efforts, with the emphasis on building moods and tones rather than rapid improvisation. **DO** **Standout tracks:** Window Seat; Spinner

**HIGH RESOLUTION DOWNLOADS****OCDC**

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★★★★★

NaimLabel

24-bit/48kHz



**GET THE BLESSING** THIS ISN'T rock

and isn't really jazz either. I guess that's why OCDC were once labelled, completely

meaninglessly, as jazz-punk... However, while the music has a pop sensibility it also swings and grooves relentlessly. Much of this appears to be because of the band's use of the bass guitar as a lead instrument.

The 24-bit recording allows all of the instrumentation, especially the bass and brass, plenty of free space in which to manoeuvre and express themselves while the players create intricate melodies and riffs in which there are strong suggestions of rock and even some gentle, loving trip-hop influences. **MS**

**Standout tracks:** Americano Meccano; Adagio In Wot Minor

**Ilya**

Fathoms Deep

bowers&amp;wilkins.co.uk

★★★★★

B&amp;W

24-bit/44.1kHz



**THE BAND** here is fronted by Joanna Swan, a woman with a gentle but engaging voice that is as sweet

and versatile as it is intriguing. She puts it to excellent use, drifting effortlessly between bossa nova and bluesy jazz, along with a host of eclectic points in between.

The 24-bit recording serves her vocals beautifully, as it does the small combo backing her, whose dynamic playing it captures accurately and with considerable feeling. The initial studio set-up was intended to record the band and singer performing live. Although this did not occur the set-up was not altered and the recording retains a fine feel of spontaneity about it. **MS**

**Standout tracks:** Port Erin Fair; 20 Fathoms Deep



# Minor Chords

**Ed Selley** samples a small but perfectly formed electronics and loudspeaker pairing from Chord Electronics and Dynaudio...

**I** should have kept my big mouth shut. Having celebrated the relatively compact nature of the last beautiful system, I find myself in the company of a set-up that makes it look positively elephantine. In fact, when I look at the individual components that make up the Chord Electronics Chordette range, I'm pretty sure I owned larger cassette Walkmans back in the day...

What you see here is a fully functioning system able to support multiple inputs, replay the highest quality digital formats without batting an eyelid and possessed of sufficient amplification to handle a wide variety of speakers. Not enough? It also features incredibly clever analogue-to-digital conversion and a truly wonderful headphone amp. It does all this from four components that even when placed in their dedicated rack wouldn't trouble a coffee table, let alone a dedicated hi-fi stand. And the system is finished with a discrete pair of standmounts that pack a truly considerable punch.

**The Chord units manage to deliver an insight and detail that's impressive...**

## Spin cycle

Chord Electronics has been more experimental than many of its competitors for some years now, but the Chordette range takes this even further than before. Each of the ten-strong range is a 16 centimetre wide by 4 centimetre deep 'block' of aluminium that looks like the results of leaving the larger Choral series on a really hot wash.

## COMPONENTS



### 1 CHORD CHORDETTE QUTE HD DAC £990

A new arrival in the range, the Qute HD is a 192kHz-capable DAC that features a custom asynchronous USB connection that can also handle DSD. Coaxial and optical inputs are also fitted.







**2 CHORD CHORDETTE PRIME PREAMP £1,680**

The Prime allows for multiple inputs – four analogue and one digital – to be connected to the Scamp power amplifier and also adds remote control, and the ability to output sources to a computer or recorder.



**3 CHORD CHORDETTE TOUCAN HEADPHONE AMP £990**

The Toucan headphone stage can receive signals over RCA, XLR and USB and output them via two 'phone sockets. Perfect for his and hers silent disco evenings – or his and his!



**4 CHORD CHORDETTE SCAMP POWER AMP**

The Scamp is a 35W power amp that can be used as a standalone amplifier via the small control on the rear, or USB input. It can also be used as a 60W mono amplifier.



**5 DYNAUDIO FOCUS 160 LOUDSPEAKER £1,600**

Smallest member of the Focus family, the 160 is a two-way standmount speaker making use of the company's proprietary drive units in a rather handsome gloss finished cabinet.







**LEFT:** Dynaudio's Focus 160 stand-mounting speaker provided a compact but super sounding companion to the Chord electronics...

This is backed up by an optical output offering the same functionality. I'm struggling to think of any similarly priced preamp that can do that. In the same way, the Qute HD might look like another USB DAC entering a crowded market, but it has a party piece of its own. The USB input, as well as offering 24-bit/192kHz functionality via asynchronous coding, can also handle DSD – the native format of SACD.

At the moment, the ability to send the Qute HD files of this nature is limited, but if you wanted pretty much the most future-proof partner going for your computer audio needs, this is it.

The components are also beautifully built. Each Chordette is a fabulously solid, almost jewel-like construct that encourages you to ignore the remote and interact with them. If the silver is a bit shiny for your liking, then a whole range of colours are available to suit.

Furthermore, if these units aren't the ones you think you might need, the range also features phono stages, network streamers, Bluetooth capable amps and even a tiny Media PC. Within the same four shelves of this Index rack, you could carry out a wide range of functions.

### Perfectly finished

Next to all this diminutive wizardry, the £1,800 Dynaudio Focus 160 speaker partnering the Chords can seem rather staid by comparison. It's nonetheless a handsome looking pair of speakers. The gloss black cabinets

The quartet you see in the photos (p99) comprises the £1,680 Prime preamp, paired with the £990 Scamp power amp, with £990 Qute HD DAC acting as source. In case I wanted to listen through headphones instead of speakers, I was thoughtfully provided with a £990 Toucan headphone amplifier. All four components are pictured in the dedicated Index stand that can be ordered in varying heights, and added to at a later date if you wish.

With every justification, you can look at these little aluminium blocks and think serious prices. The Chordettes are not a stripped down 'lifestyle' product however. Take the Prime preamplifier, for example. This offers four pairs of analogue RCA phono and one USB digital input. More unusually the USB is bi-directional – meaning the Prime can send a digital stream of whatever source is playing through it to a recorder, no less.







are perfectly finished and have a satisfying heft to them. Dynaudio ownership has always been about the drivers however, and the 160 is no exception. As well as the 28mm soft-dome tweeter with precision coating, it features an enhanced version of the 17cm 'MSP' bass driver. If you get unnaturally excited by drivers, and who doesn't [errm, most people – Ed.], I've long felt this woofer with the distinctive vented dustcap is one of the best looking in the business – it always suggests that they'll take whatever you throw at them and come back for more.

Like all Dynaudios, the Focus 160 is a 4 ohm design with only average sensitivity. The Scamp power amp is as clever as the rest of the range, but with only 30 watts on tap, was it going to be enough to drive them properly? Or was I going to find myself making use of the Toucan headphone amp instead?

### Genuinely hi-fi

As it turns out, good as the Toucan is (and believe me it is *very* good), the Scamp has more than enough power to get those MSP drivers working, and turns out to be the perfect (aluminium) foil for the Dynaudio. As before, these may look like lifestyle products, but their performance is genuinely hi-fi and one that is also very distinctively Chord Electronics as well.

The new 24/96 download of Nirvana's *Nevermind* gives a great idea of what this system is about. Although the recording is better than the original (it could hardly be much worse), it is still rough and ready. The Chord units manage to penetrate

the superficial wall of sound and deliver an insight and detail that is highly impressive. More importantly, in doing so they don't lose the sheer fury of the piece. It is as blistering today as it ever was, but presented in a way that brings far more of it to your attention than was previously the case.

Give the system something less frenetic, like Ali Farka Toure's and Ry Cooder's *Talking Timbuktu* and this insight persists. The position and number of the supporting musicians all of a sudden becomes self-explanatory, while the Dynaudio's reproduce the surprisingly deep bass of the album with an assurance that belies their relatively modest dimensions. Above all it is the tonality that is spellbinding. This system sounds utterly believable with voices and instruments in a way that means the suspension of disbelief that you are listening to the real deal is incredibly easy.

If you were looking for the star player in this very talented team, the prime candidate has to be the Qute HD DAC. Having installed the custom USB software on my laptop, it rewarded me with a truly fabulous performance, totally devoid from the slightest trace of 'digital' artifice. Timing is pin-sharp, bass tight and beautifully textured and the overall balance possessed of the same extraordinary naturalness that infuses the entire system. Chord has long been a specialist with digital and this little DAC seems to have all of that knowledge condensed within it. The company makes better DACs, but this is still quite special.



**DISTRIBUTOR:**  
Chord Electronics  
**TELEPHONE:**  
01622 721444  
**WEBSITE:**  
chordelectronics.  
co.uk  
dynaudio.com

Finishing off with the brand new *Blues Funeral* by Mark Lanegan is a sublime experience. The surreal *Ode to Sad Disco* could well be the most unlikely dance anthem of the year and this system nails it. Lanegan's rasping voice – the man sounds like he starts every morning with a pint of nails and sandpaper – is presented with absolute assurance over the sprawling combination of synth and guitar that is given order without being dissected. The Dynaudios keep an iron grip on the thudding bass line and combine a pleasing visceral 'thwack' with no trace of overhang or bloot. The Scamp had enough left in the tank to give me the levels I wanted with no sign of strain

This is my sort of hi-fi. It is tremendously clever – I am sure we put a man on the moon with less processing power than is used by one of the trademark field gate arrays in the Qute DAC – but there is no trace of that technology dominating the musical performance. It sounds rich, fast and wonderfully natural. It is unfazed by anything you think to throw at it and has enough power to do justice to any normal British listening room.

There will be those who want more casework for their outlay, or who aren't quite ready to leave CD behind or, indeed, people who want their hi-fi to look more like a hi-fi. If you have no preconceived ideas about what hi-fi should be then sit down and listen to these little metal boxes with an open mind. I am pretty sure you will soon be wondering what to do with all the space they are going to free up. Believe me, grand hi-fi was never so petite! ●

# Minitest

A phono stage is an essential element of any vinyl system. **Richard Black** tests four budget examples...

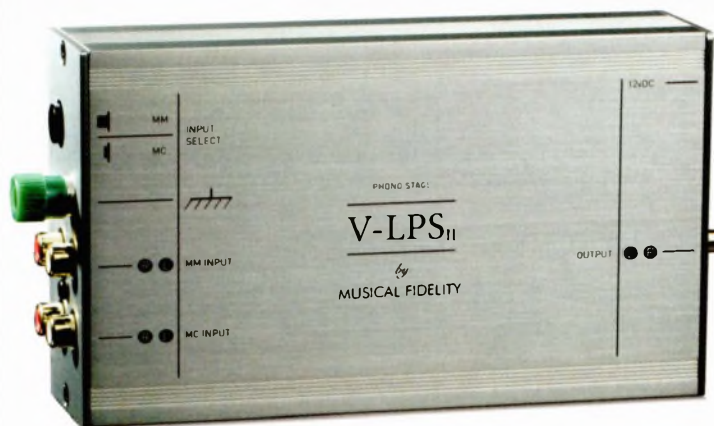
## Clearaudio Nano H

PRICE: £250 CONTACT: 01252 702705  
WEBSITE: CLEARAUDIO.DE

**BARELY LARGER THAN A PACK OF PLAYING CARDS** (8cm wide, 9cm deep and 2cm high), the Nano is surprisingly heavy, due to its physical construction. It's built into a machined-out solid lump of aluminium, the circuit board occupying a relatively small amount of space at the back. Despite this, it manages to offer the choice of moving magnet or moving coil sensitivity, a subsonic filter and user-adjustable loading on the input, all of these accessed via miniature jumpers underneath the unit. That doesn't leave much room for the loading components though, and an in-line load on the input sockets might be more practical. This version of the unit includes a headphone output. Overall gain of the unit can be adjusted via a top-mounted rotary control, making this very flexible in use.

Sonically, it's a lively unit with excellent rhythm and attack. I enjoyed it particularly with moving magnet cartridges, finding it a good match to their typically slightly mellower sound, but it achieves plenty of insight with moving coil models, too. It's not the absolute quietest around, and I found it a tiny bit sensitive to hum, which was almost certainly being picked up from household RF appliances (cordless phones and the like). I dealt with this simply by taking care with positioning. That done however, I found the sound clear and detailed, with a neutral and unforced tonal quality that makes protracted listening a pleasure.

**VERDICT** **HIGHLY ADAPTABLE** and generally very capable, with particularly fine sound from MM cartridges; it does seem a little prone to interference, however.



## Musical Fidelity VLPS II

PRICE: £100 CONTACT: 020 8900 2866  
WEBSITE: MUSICALFIDELITY.COM

**MUSICAL FIDELITY'S** V-series products are packaged like accessories and sold at highly attractive prices, but there's not much to suggest that this is a cut-price bit of design. Quite the opposite, frankly. The smart aluminium case is nicely finished and helpfully legended on the top so one doesn't have to squint at the ends to locate sockets, and it offers both MM and MC cartridge compatibility. There's no gain adjustment on offer, which shouldn't be a problem in most situations as gain and headroom have been carefully judged and it would be a pretty obscure (and likely expensive) cartridge that would give problems. The layout with inputs at one end and outputs at the other may not always be convenient but I rather like it. Internal component quality is nothing amazing, but there's a surprising number of them!

I was impressed by performance with both kinds of cartridge. To the extent it is possible to be sure, given of course that cartridges differ, I felt it is perhaps the most consistent of these four between MM and MC sources. It has a strong and clear bass with excellent timing. In addition, it has a commendably neutral midrange which really brings out all the different tonal qualities of the instruments in a large-scale recording. This makes it a good choice for classical music – I felt it struggled just a little with some very 'hot' audiophile cuts but otherwise I couldn't find anything else to criticise at the price.

**VERDICT** **VERY GOOD ALL-ROUNDER** with much better resolution and tonal neutrality than one would expect at the price. Super competent overall.





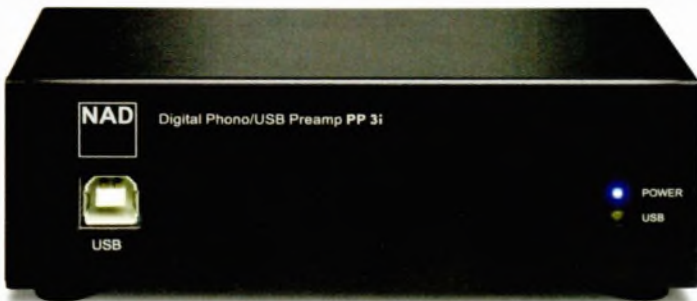
## NAD PP3i

PRICE: £115 CONTACT: 01279 501111  
WEBSITE: NADELECTRONICS.COM

**THE BIG DISTINGUISHING FEATURE HERE** is a USB socket on the front of the unit. Not content with fitting a dual-mode (MM/MC) phono stage into the case, NAD has added an analogue-to-digital convertor so that this unit can be used to digitise your LP collection, feeding the data to your computer. You even get a mini-CD-ROM included in the box, with suitable software for doing basic mastering. Sockets are included for a line input, too, which as NAD suggests can extend the possibilities to digitising cassettes and other analogue sources. It all adds up to quite a feature count, and the build quality is nothing to complain about either. We found interfacing the unit to a computer absolutely trouble-free.

We found the MM input a little on the noisy side, the character of the noise making us wonder if interference from the digital parts might be to blame. With MC cartridges though, this phono stage is astonishingly quiet, the best of the four by a clearly perceptible margin and bearing comparison with kit at several times the price. It may be truly budget hi-fi, but it's got more than a hint of the high end about it in the way it picks out detail. Bass isn't quite the most solid, but high treble is very sweet and the midrange is impressively neutral, with just a hint of coloration in the upper midrange now and then, detectable on female voices and some melody instruments. The ADC does its job well and results via digital out are very close to those heard via line out.

**VERDICT** **ALTHOUGH MM PERFORMANCE** isn't quite the equal of that via MC, the sound this unit produces is impressive for the price, and the ADC works very well.



## Pro-Ject Tube Box II

PRICE: £290 CONTACT: 01235 511166  
WEBSITE: PROJECT-AUDIO.COM

**I HAVE ALWAYS LIKED THE LOOK** of the Pro-Ject 'Box Series' components, but the Tube Box is simply adorable, reminiscent of classic valve amps but still unmistakably modern. It's actually a mixed valve/solid-state circuit, taking advantage of the low noise of semiconductors alongside the melodiousness of valves. The latter are a pair of ECC83 dual triodes, and they are well protected in those funky-looking valve cages. Both MM and MC cartridges are catered for, gain being fixed in each case, and there's also a switchable subsonic filter. Headroom seems just fine for both cartridge types.

I found the noise floor a little higher than with the others in the group for MC cartridges, but with MM types it's as good as any. Even with an MC source though, noise is lower than that from all but the quietest vinyl pressings. Even subliminal noise can sometimes contribute to a masking of detail, but in this case any such effect must be minor in the extreme as I found this, on the whole, a very detailed sounding unit. The one qualification to add is that sometimes the detail can be a bit intangible – it's all there, but if one tries very hard to follow it, things seem to swim very slightly out of focus. This is an occasional downside to valve circuits, basically making them less suited to analytical listening. In general musical terms though, this is very enjoyable indeed, with great rhythm and captivating levels of communication. ●

**VERDICT** **NOT ALWAYS THE MOST ANALYTICAL**, but just lovely to listen to, with delightful melodic qualities and firm but never over-present bass.



Now that very few integrated amplifiers include a phono stage, dedicated phono amps have become more popular. There's a lot to be said for keeping the phono stage separate anyway, not least that it can

be positioned close to the turntable and further from amplifiers with their large mains transformers. All of these models rely on a remote 'wall-wart' power supply, so there's no likelihood

of hum pickup there either. The leads from the tonearm will probably include a ground lead which is best connected to the grounding post on the phono stage, reducing hum below audible levels.

For sale / Wanted

# Hi-Fi Choice Reader Classified

Welcome to *Hi-Fi Choice* Reader Classified, a free private ads service for buying and selling second-hand hi-fi components.

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Please note that this service is open to private advertisers only.

## FOR SALE

**CYRUS** Pre VS2 preamp (brushed black), excellent condition, boxed. £350: **02476 440058 (Coventry).**

**TRICHORD** Dino 2,+NCP5U+top Trichord power cord, pristine, £525. Abbingdon Music Research IC-777 high-quality interconnect, brand new, £130. FunkAchromat turntable mat, 5mm, unmarked, £35. Orbis Blues Collection, complete, including magazines and binders, £100. Negotiate on p+p. **01582867139 or email mikethompson48@hotmail.com (Bedfordshire).**

**TECHNICS** SL1210 Mk2 £249, Garrard 401 plus power supply £1,200. Very good condition: **0207 499 8729 (London).**

**NAIM** C35i integrated amp perfect sound and condition, plus remote with box, £430. Collection preferred: **07792241875 or 0117909 0033 or email yyy777yyyb@hotmail.fr (Bristol).**

**ACOUSTIC ENERGY** Linear One speakers (piano black), easy amp load, mint, boxed, manual, £75, Pure DAX-701 ES digital tuner (silver), mint, boxed, manual, £50: **07941174804 (Slough, Berks).**

**PRO-JECT** Debut 111 turntable (black) with Ortofon OM 5E cartridge, little used, very good condition, £120. Sony TC-K611S stereo cassette deck with 3 headed, Dolby S, excellent condition, £50: **01303 863 424 (Kent).**

**NORDOST** Blue Heaven interconnects, 1 metre, RCA connectors, 2 pairs, boxed (£125 per pair). £60 per pair or £100 for both. Chord Prodac Pro Digital, 1 metre, boxed (£85) £40. QED reference HDMI, 1 metre (£80) £40: **07870 159725 or email johnsidebottom@hotmail.co.uk (Somerset).**

**NORDOST** Flatline Blue Heaven speaker cables – banana plugs one end, other unterminated. Stereo pairs 1 x 4.5m (cost £1,030) and 1 x 2.5m (cost £630). Unused/

new. Bargain at £550 ono. **01945 463077 or email: deregle1@aol.com (Wisbech).** **SOMETHING SOLID** speaker stands. Fully welded construction (black). 63cm high, mass filled, spiked feet. Photo available. Ring for other dimensions. VGC. £50: **01582 423791 (Beds).**

**NAD** C315BEE amplifier, 40W, 6 line inputs, plus matching C515BEECD player, Titanium, remotes, boxed, £100 each. Both for £200 and free NAD 4225 tuner. Gale silver monitor bookshelf speakers, (black ash), boxed, mint, £40: **01706 345418 or email: hfc@rodtheobald.force9.co.uk (London).**

**AUDIOLAB** 8000P power amp (silver) and 8000C preamp (black), perfect sound and condition. £495 the pair: **07816 758688 (NE London).**

**TECHNICS** SL1210 Mk2, very good condition, £249; Garrard 401 plus power supply £1,200: **0207 499 8729 (London).**



Cyrus Pre VS2 preamp at a bargain price!

**MARANTZ** PM6004 integrated amp, 2 months old, (£310) £175; Quad 11L (Birdseye maple), excellent condition, £150: **07733428736 or email gill@gillbrears.plus.com (West Yorkshire).**

**NAD** 5320 CD Players x2; NAD Amplifier 302; NAD tuner C422; Heco bookshelf speakers. £100 or will separate: **01491 628000 or email: brian@bspmedia.com (Oxon).**

**QED** Signature Audio XT, 1 metre, new, boxed, £95; Signature Silver Spiral 1metre £75: **01639774144 or email: alwyn.mackie@ntlworld.com (London).**

**TIVOLI** Model One radio, designed by Henry Kloss, (maple/Hunter Green), with original box and instructions, brand new, £65: **07970 142144 or 01745 833183 (Denbighshire).**

**NAIM** CDx2 CD player, exceptional condition, complete with all packaging, £1,650; Naim NAC 282 preamp, complete with Naim NAPSC, exceptional condition, complete with all packaging £1,150; Focal Electra 1027 Be speakers, superb sound in exceptional condition, complete with all packaging £2,200: **07866 423572 or email: adrian.ford@btinternet.com (Devon)**

**ICON AUDIO** Stereo 60 Mk3, KT120 valves, Jensen capacitors. Up to 85W, virtually mint condition, original box, packaging, manual, valve cover, meter for checking valves bias. Buyer collects. £1,400 ono. **01889 575653 or email: derrick@forsters2.plus.com (Staffordshire).**

**JOHN SHEARNE** Phase 6 Reference preamp (with MM phono board), £225, 2x John Shearne Phase 3 Reference stereo power amps, £215 each (£595, if all three amps purchased together). Each amp has received £300 of internal component upgrades carried out by Audiocom and are finished in a high-gloss black with gold knobs, all in excellent condition with boxes: **01202 515474 or email: johnlangley17@talktalk.net (London).**

**AUDIOLAB** 8000P power amp (silver) and 8000C preamp (black), perfect sound and condition. £495 the pair: **07816 758688 (NE London).**

**SUMIKO** Blue Point No 2 cartridge, approximately 100 hours use, boxed, £85: **07800 606892 or email: schandler@dopag.co.uk (Worcestershire).**

**BEL CANTO** CD2 (silver), psu, box, manual, excellent condition, £1,195; Avondale Monoblocs, psu (ncc200 boards), built into 3 slim Italian cases, excellent condition £495.

**BUYING TIPS** **BUYING SECOND-HAND** can be a great way to pick up a bargain. A formerly expensive second-hand component might well prove a better long-term bet than a brand-new product if the price is right. **DO SOME RESEARCH** on which brands have a good service back-up, so if something does go wrong, you can get it fixed. Unless you purchase from a dealer, you're unlikely to get any warranty, so it's up to you to ensure the fitness of any gear that you buy. **USUALLY** speakers should be less prone to breakdown than amps, and amps should be more reliable than CD players. But any abused component could be trouble – have a proper demo and judge the seller as well as the goods!



**07733174990 or email: paul.g7@fsmail.net (London).**

**MARANTZ** CD17KICD player, Jamo Concert 8 loudspeakers, Arcam Alpha 8R, 8P amplifiers, rack, stands and cables. Mint condition, offers: **01706 622608 (Lancashire).**

**ASTIN TREW** AT8000 phono stage, 6 months old, 2 year guarantee, (£880) £500: **07729 600847 (West Sussex).**

**MARANTZ** SA11S1 SACD player, 1 year old, (£2,000) £400, Yamaha TK781 DAB/FM tuner (£130) £40. Buyer must collect: **01302 538027 (Yorkshire).**

**DENON** D-100 system (tuner, CD tape), with remote and Mission speakers, manual and brochures £225. Buyer collects: **01268 772403 (Essex).**

**ROKSAN** Radius 5 turntable, with Rega RB600 tonearm and Goldring GX1022 cartridge, superb condition, clear acrylic version £700: **01484 427426 (West Yorkshire).**

**RUSS ANDREWS** HP1/PA1 preamp/power amp, excellent sound, all VGC, interconnect included £500. Will demo, buyer collects: **01483 891925 (Surrey).**

**KRELL** 350m mono amps for sale, £3,500. Drive anything, VGC (black), including brand new 13-amp audiophile power leads. Collection only: **01926 653421 (West Midlands).**

**PRO-JECT** Xpression II turntable, boxed with instructions. Excellent condition £75 inc p/p; Marantz CD-65II SE boxed c/w manual and remote, VG condition, still sounds great! £25 inc p/p: **07514443626 (Cumbria).**

**SPENDOR** SP2/3 speakers (rosewood) £2,000, with very heavy cast AE Stands (£600). In superb condition. All boxes included: **0115 9288006 or rolfyjordan@gmail.com (London).**

**MICHELL** Syncro turntable with arm and Ortofon VMS 30, £340. Tannoy Cheviot speakers £650. Audiolab 8000a amplifier £160. All in excellent condition: **01708 522788 (Essex).**

**TECHNICS** SL1210 Mk2, very good condition, £249.

Garrard 401 plus power supply £1,200: **0207 499 8729 (London).**

**KENWOOD** HD-600 HD compact component system, includes amplifier, tuner, cassette deck and CD player. KEF Coda speakers and IXOS Deadrock stands. Will accept best offer: **07747 864305 or email: behjat.reza@yahoo.co.uk (Surrey).**

**REGA** 3 full ISOKINETIK upgrades without arm £200, with RB250 Cardas wired Michell weight upgrades £400; arm alone £200: **01606784767 or email: peterscott341@tiscali.co.uk (Cheshire).**

**KUDOS** R23in speaker stands £55. Target speaker wall stands, spiked £30. Bang & Olufsen Beocord 2400 cassette £50. Technics 8020 24-band graphic equaliser £60: **01708457691 (Essex).**

**QUAD** II classic integrated amp, light use, 2 months only, boxed, excellent phono MM/MC tape loop (£4,500) £2,900. Buyer collects: **01277 841493 (Essex).**

**AUDION** Premier 2-box valve preamp, mint condition, (£2,500) £900. Audio Research D130 transistor power amp, mint condition, (£2,000) £500: **07767 444488 (Bucks).**

**BOWERS & WILKINS** 684 (light oak), mint, boxed £350 plus £20 carriage: **002476364111 or email: tony.hodgkinson2@btinternet.com (West Midlands).**

**KRELL** RFBP 250 watt monoblocks, Audio Research Reference 3 preamp. Gamut L3 speakers with stands, Transparent interconnects and speaker cables. For photos, details, prices: **07899 721899 or email: yatestherapy@googlemail.com (London).**

**CYRUS** CD XT SE transport (black), with remote, £750. DAC X (black), £750. Both in excellent condition and boxed with instructions: **01883 741843 (Surrey/Kent).**

**ROKSAN** Xerxes (black ash finish) with XPS7 power supply. All excellent condition, new belt, TMS3 bearing, RMA450: **07972 533063 or email: gzoo@gmx.com (Cumbria).**

**WANTED** Complete fluid damper kit for SME series1115 tonearm: **01382 644815 (Dundee).**

**LEAK** Trough Line stereo valve tuner in steel case, with Stereo 30 Plus transistor amp in wooden case £80. Also Goldring Lenco turntable £50: **01474 872863 (London).**

**TECHNICS** SL1210 Mk2, very good condition, £249. Garrard 401 plus power supply £1,200. Can post items if needed. **0207 499 8729 (London).**

**BOSEENDORFER** AC1 loudspeakers (black/ivory). Good condition. Boxed. £600: **01926 259022 or email: davidhardy18@talktalk.net (Warwickshire).**

**GRAHAM SLEE** Novo headphone amplifier, hardly used, boxed with manual £130, Pioneer 505 precision CD player, boxed. **07818 658722 (Warwickshire).**

**BRINKMANN FEIN** phono amp 2006, RCA outputs, volume control, separate power supply (black). Superb finish and build (£1,050) £275. **07411 388152 (Herts).**

**WANTED** Marantz DR-17 digital recorder. **01395 576644 or email: jmichael.brittain@yahoo.com (Devon).**

**WANTED** Ultra High Power Amplifier Construction by Nick Sheldon (Babani Press, 1989). **0859 341984 or email: drzacharysmith64@yahoo.co.uk (Norfolk).**

**AVI** Biggatron standmounts (cherry), Partington stands, Bowers and Wilkins 684 floorstanders (cherry), excellent condition £550: **07982 794884 (Essex).**

**DYNAUDIO** Excite X12 loudspeakers (rosewood), full Russ Andrews upgrade, as new, boxed (can demo) £495 (including p&p): **01524 34627 (Lancashire).**

**CHORD COMPANY** Epic Twin speaker cable, factory terminated, £85: **01986895940 (Suffolk).**

**WANTED** Pink Triangle Anniversary or upgraded (DC motor) PT Too: **01445 781498 (Scotland).**

**EXPOSURE** 2010S CD player, £190. Roksan Radius 5, clear acrylic version with Rega RB600 tonearm and Goldring GX1022 cartridge, £700: **01484 427426 (West Yorks).**

**AVI** Reference CD player S2000 MC, used as transport with Audiolab DAX, £550. van den Hul Wind speaker cable (5-metre pair) £120 buyer collects: **02085908530 (Essex).**

**NAIM** Fraim. Consisting of a base and a standard shelf. Maple with silver upright. Fabulous condition/like new. Only two years old. (£1,680) £1,100. Includes three floor spike protectors.

Collection preferred.

**020 8372 8376 or email: gigglesn01@hotmail.com (London).**

**TAG MCLAREN** PA10 preamp (black). Excellent, near mint condition with low usage and original box. Includes MM/MC phono stage built in. (£850) £275: **07854 658 281 (London).**

**ATACAMA** Equinox, two hi-fi bases £50 (each) and one AV base £100. Graphite stand and anthracite glass in good condition: **01253 729944 or email: AtacamaStands@tesco.net (Lancashire).**

**MONITOR AUDIO** (bronze) BR5 speaker package, walnut finish, boxed with instructions and in good condition £650 (pick up only). **07534 457859 (West Yorkshire).**

**SONY** ST-S311 FM/AM tuner, mint condition (black). Owned from new with original box and instructions, AM loop aerial etc., upgraded power lead. £350: **01766 781211 (Porthmadog).**

**BOWERS & WILKINS** 800 Matrix loudspeakers (black), mint condition with Krell bass alignment filter amp, Class A (£15,000 and £1,950) £1,850. Outstanding sound and dynamics: **03531 2014427 or email: booning4@hotmail.com 003531 2014427 (Ireland).**

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Ed Selley brings you our pick of this month's top hi-fi websites...



## DISCOGS

### discogs.com

Discogs is an online marketplace specialising in music. It represents shops and traders from around the world and offers a bewildering variety of music for sale. The result is like a more focused Amazon marketplace, where you can compare prices from around the world for both new and used albums. Sellers include private individuals and record stores and Paypal is generally the normal method of payment, although some of the larger traders support cards. Pricing is usually competitive and often cheaper than elsewhere – with stores being listed together, it is easy to compare prices and sellers know this.



One of the best features of Discogs is that doing a search for a particular album will show you all of the different versions that have been released and the various formats it's available on, including limited editions and variations in the track list that frequently exist from country to country. This is helpful if you are trying to work out if that copy of *Back to the Egg* by Wings is an ultra rare and valuable coloured vinyl edition or, tragically, just a Wings album!

## THE AUDIOPHILE CLUB OF ATHENS

### aca.gr/

There are many theories as to why Greece currently finds itself in such a parlous financial state. If any leading economists were to happen upon this site, they might be forced to add the intriguing possibility that the country is currently destitute because a determined collection of individuals in Athens spent the entire Gross Domestic Product of the country on hi-fi!

This is probably the most extraordinary collection of images of high end hi-fi on the web. Incredibly rare products seem to have found happy owners here, and you can often find info on products that rarely make it to shows let alone to dealers. There are also some interesting articles on high end

products and the various systems that belong to members. The forum area splits into a section in Greek and, perhaps more surprisingly, an English area as well which seems to welcome input from new members. This is a wonderful celebration of the high end in its purest form and is well worth checking out.



## ICRATES

### icrates.org

iCrates is an online magazine that is devoted to music. Each issue is themed and the articles each month are based around this. The theme as I write this is 'The Vocal Issue' and articles include a piece on the history of the vocoder, a look at the early solo albums of Frank Sinatra, and the history of Kumbaya and its rise to fame and fall into mockery. There are also a wide variety of album reviews as well, which can be searched by genre and give you the chance to read about some rare and interesting albums that you might otherwise miss.

No discussion of iCrates would be complete without mentioning the truly fabulous iPhone app that accompanies the website. As well as mirroring the online magazine content, the app features a search function for albums. This uses information from sites like Discogs (see above) to give you an up-to-date valuation for pretty much anything. Most impressively this can be accessed by scanning the barcode of the album which will start a database search. You need never stand in a record shop wondering if you're holding a bargain or a bank breaker again. ●



## THE VINTAGE KNOB

Mildly amusing name aside, this site is a must-visit for anyone with an interest in classic hi-fi. Whether you're looking for some information on the dusty relic you've recently unearthed in an attic or if you've been seriously bitten by the vintage bug, this site is a veritable goldmine of information. The layout is logical enough and allows you to search by manufacturer. Clicking on the photo will bring up a potted history of the product and some images usually harvested from period brochures.

This is a great site to while away some spare time if you're stuck for something to do. The product information has a slightly tongue-in-cheek style which I find appealing, and it features information on some of the finest flowerings of Japanese high end. Many of these products are extremely rare (unless of course you're the editor, where you're probably using it as a doorstep!) and this is one of the few sites I know of that supplies information in English rather than Japanese. The lists seem to be updated fairly regularly with new material including some on European brands as well.



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What Hi-Fi? Sound & Vision magazine Awards 2004



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## Townshend Audio Maximum supertweeter

**T**here are dark areas in hi-fi, little nooks and crannies which are largely unexplored. Not many, I grant you, but they do appear here and there. The supertweeter is one of them, but curiously wasn't until relatively recently...

Lest we forget, back in the nineteen seventies, such devices were all the rage. You could buy them built in to loudspeakers; audiophiles of a certain age will remember monster boxes with arrays of different drivers, seemingly peppered all around their wide front baffles. Or you could even find standalone supertweeters on sale at your friendly local Tandy electrical store!

These days though, owning supertweeters is almost something you've got to admit – rather than announce – to your friends. You may have to prepare yourself for ridicule, along the lines of, "meet David, who's just paid £900 for something that reproduces sound he can't actually hear!" Expect to have your motives questioned, your sanity reassessed and spouses filing for divorce rubbing their hands together with glee...

Trouble is, supertweeters *do* work. There, I've said it now! It is true that, to an extent, much of what they reproduce is beyond audibility. It's also true that if you're running a CD source exclusively, much of what's beyond audibility is not available to you anyway. Yet still I have found that a good supertweeter seems to have the same sort of smoothing, relaxing effect on the music you *can* hear. It's kind of like having a subwoofer set very low, just gently 'complementing' (as opposed to boosting) your bass – everything just calms down, eases and appears a good deal more natural.

### Sound quality

Via vinyl – a Lyra Dorian cartridge (with its lively top end) sitting in a Sony PS-8750 turntable feeding Musical Fidelity's AMS-35i amplifier, I found the sound of my resident Quad 989 electrostatic loudspeakers to be noticeably better. The Quads have a poor high frequency response, doing little of any worth above 15kHz to my ears. Kicking in, only very gently, at around 12kHz, and then rising slowly in output until 20kHz when they're flattish up to 70kHz (+/-3dB, claimed), the Maximums added much needed air and space to the proceedings, making the 989s sound more extended.

It was particularly welcome on rock – the hi-hat work on REM's *Near Wild Heaven* suddenly glistened, whereas it had previously sounded dull and overdamped, like Bill Berry had left a wet face flannel on his China Boy cymbals. At the same time, it picked out high vocal harmonies, making them smoother yet more intelligible. It added sparkle to Randy Crawford's sublimely soulful strains on *You Might Need Somebody*, seemingly pulling a veil away from the music and augmenting the sense of the space within the recorded acoustic. With classical music,

the effect was even more apparent, my favourite DG recording of Beethoven's 6th Symphony feeling like it was no longer recorded in a village hall.

With more conventional loudspeakers with a better high frequency response, the Maximum supertweeter continued to work its magic, albeit less dramatically. It always gave a greater sense of ease and smoothness; it was a subtle effect but worth having. It still worked surprisingly well with CD, despite its top end response 'falling off a cliff' at around 20kHz, although the real treat was with vinyl, hi-res computer audio and, of course, SACD...

**The hi-hat work on REM's *Near Wild Heaven* glistened, whereas previously it had sounded dull...**

As per earlier incarnations, this latest Maximum comes in a petite (50x30x100mm) case finished in stainless steel mirror; round the back is a new black rear panel. Inside is a powerful neodymium magnet and an ultra thin eight micron pure aluminium ribbon, said now to be more robust with respect to overload on this newest version, plus a simple crossover to set the sensitivity. All copper conductors, including the matching transformer windings and the aluminium ribbon, use Townshend Audio's Deep Cryogenically Treated (DCT) process. Output may be set to suit loudspeakers with sensitivities from 80-110dB, adjusted in steps by a rear-mounted switch. The kit comes with two 1.5m DCT cables, for wiring to the main speaker terminals. Townshend says they work connected directly across the output of amplifiers up to 350W.

Overall, the build and finish of the Maximums is very good, but its small size is the trump card, allied of course to the excellent performance. Frankly, if you're running an old budget system, there are better ways to spend your money, but for those costing over £5,000, it's well worth investigating if you fancy a walk on the wild side! **DP**



### DETAILS

**PRICE:** £899  
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## Origin Live Damping Feet and Pads

**O** rigin Live Damping Feet are purpose-made rubber feet designed to fit audio equipment such as turntables, CD players and amplifiers where their existing feet are secured with M6 screw threads. Very often, such equipment is supplied with low cost plastic feet that do little more than prevent your shelf or hi-fi unit from getting marked!

To install the new feet, the old ones are simply unscrewed from the base of the unit and the new ones fitted in their place. The new feet are also supplied with a set of four composition disc pads designed for placing under the feet for additional damping.

These conically-shaped rubber supports absorb vibrations generated by the equipment itself and also from external sources. With a CD or DVD player, for example, reducing vibrations that get fed back to its laser system allows the unit to spend less time correcting errors produced by mechanically induced jitter. One of the reasons why you hear sonic improvements to the sound when vibrations are reduced is that the player can then focus on top quality reproduction, unsullied by vibration.

### Sound quality

After fitting these feet to a CD player that had been originally fitted with plastic legs, there was indeed a discernible improvement in overall clarity. When the pads were placed underneath the feet, there was a further benefit in terms of an enhanced clarity and crispness to performances.

The damping feet and pads are supplied as a pack of four. The pads are also available separately as a set of four. **NR**



#### ► DETAILS

**PRICE:** £12 -  
£39.95  
**CONTACT:**  
02380 578877  
**WEBSITE:**  
ORIGINLIVE.  
COM

#### OUR VERDICT



## Audio Origami Digital Stylus Scales

**O** ne of the many vitally important adjustments required for setting up a tonearm is the correct calibration of stylus force. The 'playing weight' settings on a tonearm are notoriously inaccurate and, what's more, the arm has to be calibrated to set the zero point once the arm has been levelled by eye. It is far better to use a stylus gauge to provide the playing weight and there have been many devices in the past for this purpose, including the classic Shure SFG-2 stylus balance.

However, with the advent of modern technology, digital stylus gauges are far more accurate and easier to use than any mechanical balance. One such device is supplied by Audio Origami – it's a digital gauge that can measure to within 0.01g and can weigh up to 5g – more than enough for a modern cartridge.

### In use

Using the device is simplicity itself. The gauge is placed on the turntable and turned on by pressing the centre button. You wait until 0.00g is displayed and the stylus is then gently lowered onto the weighing platform. When the display has stabilised, the weight is read from the display.

There is a 'T' tare weight button that temporarily resets the zero of the scale to a higher value. You can also switch between grams, ounces, troy ounces and carats using the 'M' mode button, so it is also useful for weighing your gold and diamonds!

Very easy to use, much easier to read than a conventional balance and very keenly priced – what more could you want? **NR**



#### ► DETAILS

**PRICE:** £20  
**WEBSITE:**  
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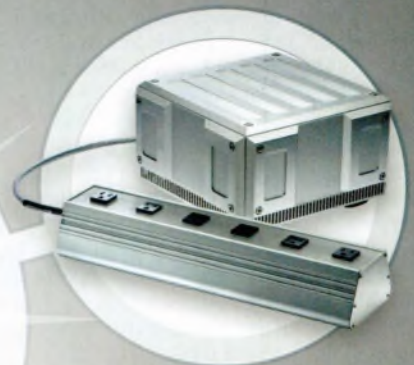
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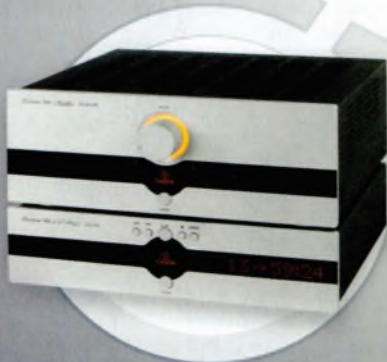
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**Because the Mains Matters...**



## Black Rhodium Twist speaker cable

**T**wist is Black Rhodium's most affordable loudspeaker cable. It might also be its most flexible cable, as it is certainly the most floppy such wire cable I've encountered in some time! It's made of two-core, tin plated copper conductors with a 0.75mm square cross section that are twisted together to provide a degree of noise rejection and insulated with silicone rubber – the real source of the flexibility. It's a simple and easy to route cable that the company recommends for custom installation as well as standard speaker wiring at very low cost, given its British manufacture. Twist replaces Rumba in the range although both seem to be listed on its site, however the new cable has double the insulation thickness of Rumba which apparently provides greater protection against electromagnetic (EM) and radio frequency (RF) interference. The price quoted is for unterminated cable.

### Sound quality

In my system, Twist turned in a very decent sound. It had fine timing, all in the context of a smooth, relaxed tonal balance. As the company's Graham Nalty points out, it's designed to tame the excesses of budget systems rather than provide maximum transparency and that seems to be the case. It's not as dynamic, revealing or precise as DNM Stereo Solid Core but that's over £11/m and designed to reveal as much as possible. Twist delivers voices and guitars in a fluid and effortless style, and produces the snap of a snare drum with only a little bit of thickening. A well thought out cable that will bring a touch of class to budget systems at a very reasonable price. *JK*



#### ► DETAILS

**PRICE:** £3.50  
(PER METRE)

**CONTACT:**  
01332 342233

**WEBSITE:**  
BLACK  
RHODIUM.  
CO.UK

#### OUR VERDICT



## Halide Designs S/PDIF Bridge



**I**f you have a decent DAC or CD player with a digital input that has traditional coaxial or optical S/PDIF inputs but want to try streaming from a computer, a USB to S/PDIF bridge such as this is the key. There are a few examples of the genre on the market, most of which require at least a coaxial cable to link converter to DAC and some a USB cable as well, but the Halide Designs Bridge has the advantage of incorporating six feet of cable – thus eliminating extra connections. It's an asynchronous USB converter based on Wavelength Audio's Streamlength technology, a company that has been making USB DACs for longer than I care to remember. The Bridge accepts signals up to 24-bit/96kHz and does not require a software driver. It's cryogenically treated and all the circuitry is contained within the optional RCA or BNC coaxial plug.

### Sound quality

In the absence of another S/PDIF bridge I tested this by comparing it with a USB cable from my MacBook into the Resolution Audio Cantata DAC. It doesn't concede much to the USB connection, and has a slightly richer balance than Chord Silver Plus USB that some will enjoy. It's open but a bit thicker through the lower registers, which helps kick drums but slows the pace a little. Vertere D-Fi USB cable is notably more coherent and well timed. However the result with the Bridge is clean, dynamic and timely. It may not beat a decent CD transport and standard coax cable, but that's not the point. Rather, it makes a reasonably priced introduction to computer audio – and that, friends, is a world of adventure! *JK*

#### ► DETAILS

**PRICE:** £279

**CONTACT:**  
01206 820 805

**WEBSITE:**  
ISTEREOS.CO.UK

#### OUR VERDICT



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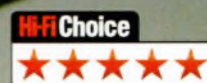
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## Epoz

# Aktimate Micro iPod speaker system

**A**nother day, another iPod speaker system. It was initially B&W that set the ball rolling for hi-fi-credible iPod boom boxes, and since then there's been a raft of products following in its wake, from the likes of Arcam, Monitor Audio and NAD.

But not everyone wants an 'all-in-one'; some yearn for a more conventional twin-speaker solution, and that's where Epoz comes in. The Australian company has a range of such offerings, of which this is the smallest.

The Aktimate Micro is designed for use with an iPod or a computer, intended to fit in neatly on a desk where it is claimed that it will deliver better results than normal computer loudspeakers and basic iPod docks. The setup consists of two smallish (145x200x240mm) two-way loudspeakers, each with a 25mm soft dome tweeter and 100mm Kevlar mid/bass unit. One contains a 40W amplifier at the rear and an iPod dock on the top, as well as conventional rotary controls for volume and source selection. The other is just a regular passive loudspeaker.

As well as the dock, there are also inputs for line level analogue and the USB output of a computer, giving three potential sources which can be switched between without the need to disconnect anything, a neat arrangement compared to some I have encountered. A complete set of cables is included, so whichever source you choose there is everything you need to get going right away; overall the package appears well thought out and easy to operate.

Technically the Micro uses a Class D amplifier powered by a switched mode power supply and includes a 16-bit DAC for the USB input. The amplifier's response has been tailored to match the characteristics of the loudspeakers and it produces roughly four times as much power at 50Hz (low bass) as it does at 1kHz (mid-band reference). This compensates for the small cabinets and cone area, as does a horn-loaded bass port at the back of each enclosure. Measurements revealed a substantial DC offset of 115mV at the passive loudspeaker output of the amplifier, as well as considerable amounts of unfiltered switching noise from the Class D amplifiers centred around 430kHz. Both of these effects are undesirable and should be addressed by the designers with some urgency.

### Sound quality

My Aktimate system came finished in high-gloss red with black trim, a striking combination, although black and white are also available. Using the USB input the speakers gave a pleasing sound at low listening levels in their intended role as a desktop loudspeaker. Playing *Mmm Mmm Mmm Mmm*

by the Crash Test Dummies revealed impressive vocal clarity in the near field, as well as a reasonable sense of space and depth. Bass was rich, if a bit heavy, and tended towards being 'one note' in its nature – this isn't uncommon when all the stops are pulled out in an attempt to get decent low note performance from small speakers. The midrange sounded sucked-out and lacked textural detail; it did Tori Amos no favours in *A Sorta Fairytale*; she was somewhat lost in space amidst the bass overhang of the track's rhythm section.

### Using the USB input, the loudspeakers gave a pleasing sound at low listening levels...

Increasing the volume above normal listening levels was not particularly successful. The Micros go loud easily but the massive cone excursions of the woofers show that all isn't well as most of the remaining control of the low end is lost. Also, disappointingly these days, the iPod dock takes only the analogue signal from the Apple device. Curiously, to obtain the maximum output you need to feed 650mV of signal into the 3.5mm socket; a well specified computer soundcard may be able to achieve this but it is beyond the realm of most portable equipment, so you may well not get the full sound level available.

The Aktimate Micro is a pretty little desktop loudspeaker system with a decent range of facilities and a good finish. It has a big bassy sound, but isn't happiest when pushed to high levels. A nice product then with its own special strengths, but competition is very stiff. **TJ**



#### DETAILS

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## Musical Fidelity V-Link 192

If you've got music stored on a computer hard drive, and want to play it through your hi-fi, you need a DAC (or CD player) that has a dedicated USB port. Alas, many older digital products don't have this. But panic ye not! That's where Musical Fidelity's new V-Link 192 comes in.

Costing £229, this little silver box can handle sampling frequencies up to 192kHz. It sits above MF's popular (and keenly-priced) 96kHz-compatible V-Link II in the range. Sampling rates switch automatically, and 24-bit resolution is achieved.

Processing always takes place at the native frequency of the input source connected – the V-Link 192 does not upsample incoming signals. Front panel lights indicate the sampling rate selected – so you always know what you're listening to.

The unit is usable with Windows XP (and MAC OS-X 10.6.4) onwards, and power is drawn via the USB cable, so no external power supply is called for. The V-Link 192 features galvanically-isolated asynchronous digital inputs/outputs for optimum noise-free transfer of digital signals. 24-bit/192kHz capability makes it suitable for hi-res source material, of course.

### Sound quality

Sonic performance proved outstandingly good – crisp, clean, neutral, open and very detailed. USB material sourced from CD sounded better than CDs reproduced by a top-class (£7k) CD player, I found.

For those wanting to play USB sources into a DAC (or CD player) only having an S/PDIF or AES/EBU digital input, the V-Link 192 represents a simple elegant solution that delivers state-of-the-art performance at a nice price. **JMH**



#### DETAILS

**PRICE:** £229  
**CONTACT:**  
020 8900 2866  
**WEBSITE:**  
MUSICALFIDELITY.  
COM

#### OUR VERDICT



## Meicord Opal Ethernet cord

The Opal Ethernet patch cord, which costs between £72 and £96 – depending on length (1, 2, 3 and 5 metres including snag-resistant connectors) – is the finest of its type that I have seen. My only criticism of the cable concerns its stiffness – it is nowhere near as flexible as most 'regular' patch leads – but that shouldn't pose any insurmountable problems in most systems.

### Sound quality

I tested the cable in my regular music network, which consists of Gigabit switchgear and unshielded Cat 5 and Cat 6 cabling. (It is inadvisable to mix shielded and unshielded cables in one's network; although one might imagine that shielded cables are best, I prefer unshielded types). Using a variety of music files – the majority of which were 16-bit/44.1kHz resolution, the 3m Meicord cable sounded superior to a 1m manufacturer-selected example, which had been supplied with a £100 router, when used between a switch and a media player on an electronically 'busy' equipment rack.

Through the Meicord, the music seemed blessed with more weight, solidity and authority. It was more convincing, both in tonal terms, where instruments had more credible timbre, and in its timing, where music had a more persuasive and cohesive sense of flow.

The differences heard weren't 'night and day', but the improvement garnered was well worth having. In a finely honed system the audible differences were subtle, but nonetheless appreciable. They strike me as worthwhile if you want the finest performance from an audiophile-grade networked hi-fi system. **MS**



#### DETAILS

**PRICE:** £72-£96  
(1-5 M)  
**CONTACT:**  
07908 056978  
**WEBSITE:**  
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## Russ Andrews SuperKord Classic- SD II mains cable

**R**uss Andrews is a well-known name in high-end mains cables and the company now claims to have taken the Kimber weave range of cables to new heights with the introduction of the SuperKord SD II range.

These new mains cables utilise 'Sawyers Discs', which are named after one of the designers, Dr Craig Sawyers, who developed the Sawyers Disc II (SD II) technology. This terminates every wire within the cable using a series of perforated discs and components that are encapsulated in a wooden pod situated at each end of the cable. The result is a cable that has enhanced RFI-reducing properties compared to those of a straightforward woven cable.

In addition to the Sawyers Discs, a proprietary earth enhancement is also fitted to these SuperKords with the aim of attenuating noise on the earth wire. The cable is terminated with a high-quality 13A mains plug fitted with Russ Andrews fuse and a Wattgate IEC socket.

### Sound quality

So how does it sound? One of the nice things about mains cable testing is that it is pretty easy to swap between cables. I used the cable with my valve CD player and also with the power supply of my valve preamp and phono amplifier. Running the equipment with the SuperKord lead resulted in a perceptible reduction in background noise, including noise from the spikes generated by refrigerators and other electrical equipment. This reduction in the noise floor gave rise to a clearer and cleaner sound.

Even more significant was the noticeable improvement in overall refinement across a wide range of music, together with a discernible ease in the way the music was reproduced when compared to a standard lead. The sound was fuller somehow and more compelling to listen to. Not bad for a mains lead! **NR**



### DETAILS

**PRICE:** £736 (1 M),  
£766 (1.5 M),  
£796 (2 M)

**CONTACT:**  
02380 578877

**WEBSITE:**  
RUSSANDREWS.  
COM

### OUR VERDICT



## Avid HiFi Level 45 turntable spirit level

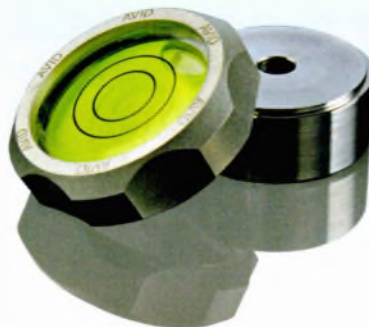
**T**here are many adjustments required to set up a precision instrument like a record deck, one of which is to ensure that the turntable is perfectly level. The best way to accomplish this is to use a spirit level. Many such levels can be used effectively to level a plain flat surface. If you wanted to check a turntable, you would need to place the level on the platter, but that would, of course, upset the balance with a suspended platter. One would, therefore, need to use multiple levels placed in opposite pairs and equidistant from the centre, which is not a very satisfactory method! So the best way to level the platter correctly is to use a device that fits over the centre spindle, and this is where the Level 45 comes in...

It's manufactured in stainless steel and is supplied in two parts – a fitting that slips over the centre spindle and the precision level that fits on top. Furthermore, the stainless steel fitting, when used on its own, is actually a handy 45rpm adaptor.

### Sound quality

The stainless steel level can, of course, be used on its own to level up other items of hi-fi, but the real benefit for record decks is the ability to level the platter itself – even on suspended designs. Total weight of the two parts is approximately 180g, which is the weight of a high-quality LP! Using the Level 45, suspended turntables can therefore be reliably set up so that when the record is played, the platter will be running level.

It may seem pricey for a spirit level, but for me it's worth it – the wee Avid gizmo looks gorgeous and works a treat. **NR**



### DETAILS

**PRICE:** £40  
**CONTACT:**  
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## ACT for Mac – donateware

Scott C. Brown

**B**efore we move away from Mac-world apps, it is worth rounding off with the everyday use programmes which become essential in the maintenance of specialist metadata tags.

X Audio Compression Toolkit seems to have been around forever – it must be ten years or so since I found what at first just appeared to be a front end to an assembly of powerful open source audio utilities.

After a period of stasis, Scott C. Brown has resumed development and added some great functionality, like pre-emphasis calculations and rudimentary DVD-Audio authoring. However xACT's main application was always flipping between the various compressed and uncompressed lossless formats, maintaining data (if not metadata) integrity at all times.

The recent addition to the Utilities tab which has now made xAct use a daily occurrence for me is the ability to remove and recalculate ReplayGain tags – the use of which in Logitech Media Server or other server apps can balance disparate playback levels (there's sometimes a vast level difference between CDs mastered in the early eighties and those remastered these days).

So, if like me you have previously ripped FLAC from rippers which didn't add ReplyGain tags at the point of creation, you can regularise your library by adding them retrospectively. This is a great way of working out if you've ripped the old or the new versions of CDs which have no extra tracks to help, or just done those crappy, clipped remasters twice! Compare some original versus remaster RG numbers and despair... **PC**



### DETAILS

PRICE: £FREE

WEBSITE:

XACT  
SCOTTCBROWN.  
ORG

### OUR VERDICT



DOWNLOAD

## XLD for Mac – donateware

tmkk.pv.land

**X**Lossless Decoder can perform many similar functions to xACT, such as flexible transcoding including Lame MP3 and HE-AAC, but adds super-accurate CD ripping which makes it the Mac equivalent of Exact Audio Copy for PC. In common with EAC, this includes support for AccurateRip from Mr. Spoon (owner/presiding genius at dbpoweramp maker Illustrate).

AccurateRip is an online-hosted, community-populated database of hashes (checking data) created and submitted from correctly calibrated ripping gear. Basically it gives a level of confidence in how similar the results of your rip are to the consensual standard. If all tracks indicate an accurate rip you can be pretty certain you have ripped the disc flawlessly. If not, you have surface scratches, an unusual pressing or just an obscure disc...

Much like the retroactive ReplayGain use of xACT, XLD has recently added a hidden ability to retrospectively AccurateRip check pre-existing FLAC tracks. Just use File + 'Open Folder as Disc...' and the magic AccurateRip 'Yes' indication at the bottom left means the disc is recognised and can be checked against the online database. A few minutes of processing will give you a log of the FLAC accuracy (and RG levels) identical to the one obtained when ripping a silver disc. In this way I have found deficient rips from earlier ripping servers I have used.

XLD feels like a more commercial package than xACT, but both developers are doing such sterling work that in my opinion they're equally worthy of your donations! **PC**



### DETAILS

PRICE: £FREE

WEBSITE:

TMKK.PV.LAND.  
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Distributed in the UK by Seymour Distribution Ltd.



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Hi-Fi Choice ISSN 0951-1115 is published monthly 12 times per year by MyHobbyStore Ltd, c/o USACAN Media Dist. Svc. Corp. at 48 River, Danbury, CT 06810. Periodicals postage paid at Plattsburgh, NY POSTMASTER: Send address changes to Hi-Fi Choice c/o Express Mail, P.O. Box 2926, Plattsburgh, NY 12903-0226.



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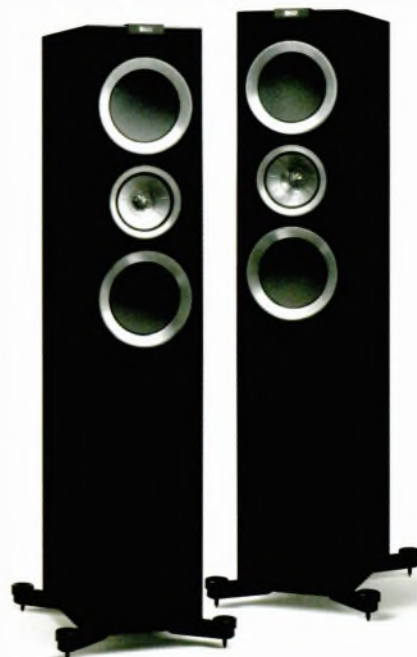
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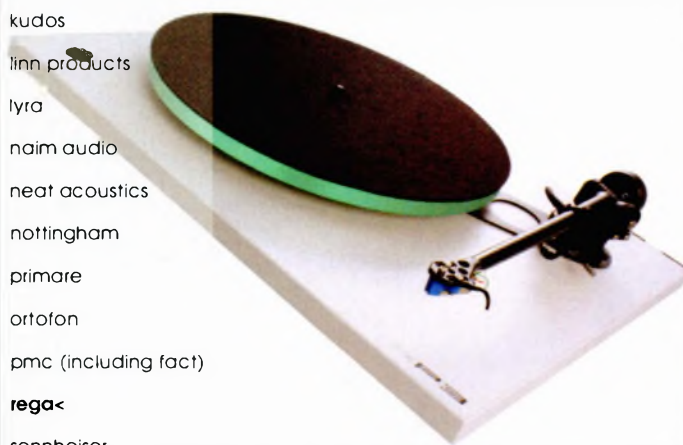
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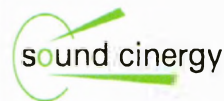


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WE HEAR...

ZINGALI ISN'T A NAME THAT'S BIG IN BRITAIN, but the Italian company hopes to change this state of affairs with its new Twenty Two series. Each loudspeaker uses a special horn loaded tweeter, and there's a wide range of finishes. Prices are expected to range from £2,500 to £12,000 per pair, and the new range is out now.

THE EVER ENIGMATIC LFD (Low Fuzzy Distortion) is doing something that happens once in a blue moon – namely launching a new product. The “very new” LFD Silicon Signature power cord comes in two versions at identical prices; the Red cable has Gold plating on the pins and the Blue one has Rhodium. Designer Dr. Richard Bews wouldn't comment when asked what the sonic differences between the two cables are (which will surprise those who know him)! LFD makes no official claims for the sound. Prices weren't confirmed at the time of writing.

IT'S NOW THE TURN OF seminal seventies funk outfit Earth, Wind & Fire to put their name to one of Monster's headphones. It's reported that the Rock and Roll Hall of Fame Inductees and eight-time Grammy Award winners are said to have inspired Monster's new Gratitude 'phones. On sale next month, they'll come in a special carrying case for under £200...

WORD IS THAT RUSS ANDREWS HAS a new tweeky mains socket out. The UltraSocket is a single outlet socket only, for use as a replacement for existing single sockets, or with the double-width faceplate for the replacement of double wall sockets. Russ says that removing the internal connector bars in standard double wall sockets improves the sound.

THROUGH THE PAST, SMARTLY...



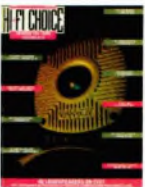
**HI-FI CHOICE ISSUE 228**  
JUNE 2002  
Hi-Fi Choice went DVD-mad 10 years ago with a review of Sony's new £500 multi-disc player, although naturally being hi-fi buffs first and foremost, reviewers Alvin Gold and Paul Miller concentrated on the SACD/DVD-A aspects of this group test badge winner. For those

audiophiles, who preferred vinyl, the Buyer's Guide offered a turntable catch-up feature from HFC regular Jason Kennedy, while Paul Messenger got very excited about the £9,000 plus Infinity Prelude loudspeakers. In the real world, an asteroid the size of a football pitch just missed the Earth by 200,000km, while The Who's bassist John Entwistle died of a heart attack at the age of 57.



**HI-FI CHOICE ISSUE 106**  
JUNE 1992  
Free with the June issue was a handy pocket guide aimed at improving the sound of your system. Editor Andy Benham called it “a homage to tweakerly” in his introduction, and likened its format to a science fiction or fantasy novel! A magician's hat adorned the cover, so its hints

and tips took on a magical quality. More fanciful tales were also on hand in an exclusive chat with audiophile Spike Milligan, whose pride and joy was his wind-up gramophone, although such instruments were probably the last thing on the mind of Venezuelan revolutionary Carlos (the Jackal), as he was hauled off to jail. Meanwhile, in Brazil, ecologists held the first 'World Ocean Day'...



**HI-FI CHOICE ISSUE 59**  
JUNE 1988  
Her Majesty the Queen's big announcement in June 1988, was the removal of jockey Lester Piggott's OBE for tax irregularities. HFC Editor Paul Messenger's big announcement, on the other hand, was the appointment of Alvin Gold as the mag's new loudspeaker guru,

bringing to the task what Paul called, “his entertainingly wry sense of humour.” Seeing as Alvin's first job was reviewing 40 standmounts, he certainly needed a sense of humour, although it was probably easier than filling out a tax return form! Do-it-yourself enthusiasts were also catered for in a focus on kit amplifiers; a hobby from the 1950s that was evidently making a comeback.

The 1970s spawned some memorable hi-fi, but surely Lecson's AC1/AP1 was the most striking. This beautiful preamplifier/power amplifier pair was designed by Alan Boothroyd, latterly of Boothroyd-Stuart Meridian. It won a British Design Council Award in the year of its introduction in 1974, and was selected for the New York Museum of Modern Art (MOMA) permanent collection two years later.

Now, to coincide with this year's London Olympics, the Victoria & Albert Museum is running a 'British Design 1948-2012: Innovation in the Modern Age' exhibition, in which the Lecson Audio system is featured. For details, see [www.vam.ac.uk](http://www.vam.ac.uk).



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DESERT ISLAND DISCS

This month it's the turn of HFC editor David Price to choose four of his favourite albums...



**KRAFTWERK**  
COMPUTERWELT  
Surely the most complete all round Kraftwerk LP; timeless melodies, hypnotic beats, and sumptuous textures mark this out as a sublime slice of early electronica.



**BEE BOP DELUXE**  
MODERN MUSIC  
One of the best guitarists of the 1970s, Bill Nelson crafted songs like few others. I love this album's mix of plaintive lyrics and soaring riffs.



**4 HERO**  
PLAY WITH THE CHANGES  
An eclectic mix of musical styles done to superlative standards; great songwriting, skilful orchestration and lovely production.



**THE SMITHS**  
THE SMITHS  
A major musical moment for yours truly, it still sounds fresh 30 years on. Morrissey's lyrics span tragic to laugh-out-loud funny; Marr's songs are inspired.



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