

HI-FI WORLD

OCTOBER 2011

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AUDEL ART CG 618
loudspeakers **EXCLUSIVE!**



NAIM NDX/ UNITISERVE
network music player



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LOGAN
ELECTROMOTION**
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- > MUSICAL FIDELITY M1 VINYL phono stage **EXCLUSIVE!**
- > CARTRIDGE MAN CONDUCTOR tonearm
- > DAC SUPERTTEST: 8 models compared



11 PAGES OF LETTERS - THE BEST WINS A PAIR OF KEF Q100 LOUDSPEAKERS! (UK ONLY)

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ADL

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Furutech is justifiably proud of its reputation for engineering, build quality and performance, and has won the loyal support of audio enthusiasts worldwide for their finely made and beautiful sounding cables and audio accessories. Now Furutech greatly expands its reach with a new entry-level line called ADL (Alpha Design Labs). ADL was created by Furutech to imbue its Pure Transmission Technology into carefully engineered innovative designs that everyone can afford. ADL components and cables are made with the same dedication to total resonance control and refinement as all of Furutech's many cables and accessories.



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ALPHA Line - 1

ALPHA Line - 2

ADL GT40 USB DAC with Phono stage !



The GT40 records vinyl and other analog sources at 16/44.1 or 24/96 using its bidirectional USB connection and switchable Line, Phono MM/MC analog inputs, plus it features L/R analog outputs, a separate headphone amplifier, gold-plated Teflon-insulated RCA jacks in a high-quality aluminum chassis with a beautifully machined volume knob. CD Redbook 16/44.1 and especially 24/96 files reveal a vivid, captivating sound unheard of at this price.



Formula 2 USB cable

Alpha design Labs Tokyo Japan

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welcome

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Paul Rigby, Adam Smith, Rafael Todes



It amazes me how fashions in hi-fi come and go, and how product types seem to loop back. Surely the greatest 'revival' of all time has to be the resurgence of vinyl; it's amazing to think that about a decade ago it really looked like the end of the road for the humble LP record, but now it's flourishing. And another equally unlikely come back has been made by the DAC...

Reflecting the fact that we now live in a world of PlayStations, Sky boxes, DVD and Blu ray players, DAB radios and satellite receivers – as well as our hi-fi digital music sources – those little black boxes, filled with silicon chips doing arithmetical calculations at dizzying speeds, are well and truly in demand again!

That's why this month we've brought you a digital to analogue convertor supertest, which rounds up no less than eight of the things across a range of price points. The good news is that they're capable of bringing surprisingly fine sound for a modest outlay; all provide a handy boost to your computer sound, whilst most will turbocharge your network music player and/or mid-price CD player into something sounding very fine. Read all about them on p19.

Of course, it's the first time round in the big wide world for network music players. They've been on sale for nearly a decade now but it's only in the past few years that they've got easy to use and capable of serious sound. And it's only very recently that we've had any choice of proper hi-fi products, such as the brand new Naim NDX. Here's a great high end design that's supremely flexible, easy to set up and sounds fine – you'll find it on p50.

Electrostatic speakers were never in fashion, so you could hardly say they went out! Sad really, as they have so many benefits when done well – and Martin Logan does just this. The ElectroMotions are reasonably affordable hybrid designs, that attempt to give you that magic 'stat' sound without tears, and succeed. See our review on p12.

Of course, this month's *Hi-Fi World* has much, much more for your surprise and delight too – that's one thing that's never going to change. Enjoy!

David Price, editor



hi-fi world

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LONDON NW6 5LF
www.hi-fiworld.co.uk

verdicts

- ● ● ● ● ● ● ● **OUTSTANDING**
- ● ● ● ● ● ● ● **EXCELLENT**
- ● ● ● ● ● ● ● **GOOD**
- ● ● ● ● ● ● ● **MEDIOCRE**
- ● ● ● ● ● ● ● **POOR**
- £ **VALUE**

- simply the best
- extremely capable
- worth auditioning
- unremarkable
- seriously flawed
- keenly priced

ELECTRONIC MAGAZINE

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testing (see www.hi-fiworld.co.uk for full explanations of all our tests)

To ensure the upmost accuracy in our product reviews, *Hi-Fi World* has extremely comprehensive in-house test facilities, and our test equipment - from big names like Rohde & Schwarz and Hewlett Packard - is amongst the most advanced in the world.

Loudspeakers are measured using a calibrated Bruel & Kjaer microphone feeding a Clio-based computer

analyser, using pulsed and gated sinewaves, in a large room to eliminate the room's influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer.

No other UK hi-fi magazine has in-house testing, and none has access to such advanced tests across all types of equipment. That's why you can depend on *Hi-Fi World* reviews.



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World Radio History

"The whole auditioning process took about 30 seconds. Play a piece of music on GII Mini Sub. Play it again on Aquarius and wonder why you were so attached to the GII Mini Sub." "Very highly recommended"

HI-FI PLUS. ISSUE 68,



SIRIUS



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ORION



VISION



SIGMAS



TITAN



WIN THE SUPERB **TEDDYPARDO TEDDYDAC** DIGITAL TO ANALOGUE CONVERTOR WORTH **£1,158** IN THIS MONTH'S GREAT GIVEAWAY!

Here's your chance to win one of the best of the new crop of DACs, as reviewed by Alvin Gold in September 2011's *Hi-Fi World* and by Tony Bolton in this issue! Here's what Alvin said...

"When I opened the box I found a conventional looking DAC in a slimline black anodised housing staring out at me. It measures 62x170x250mm, and weighs around 2.2kg, and there's not a teddy bear in sight. Teddy is simply the first name of the company CEO. The biggest surprise to me was that it comes from Israel, a small country with a good record in high tech which is home to a very tiny number of audio brands, of unusual distinction. The company was set in 2006 to make high performance power supplies built around the proprietary SuperTeddyReg low noise regulator, which is also available to the DIY

market. More recently TeddyPardo started producing small to medium size power amplifiers in various configurations. The DAC is their most recent introduction. It has four inputs, two via S/PDIF phono interconnects with a third accessible via a TOSLINK optical alternative using quality WBT NextGen inputs and output sockets. There is also a single USB input. No less than 10 SuperTeddyRegs are specified, with separate analogue and digital blocks fed from separate transformer secondaries, which occupies around two thirds of the internal PCB surface area, it uses the well liked Wolfson Micro WM8741 DAC chip – one of the company's very best – and WM8804 digital receiver. Very accurate 1.1pS low jitter clocks are specified, and the output filter is based on a proprietary single ended zero feedback buffer using JFETs instead of the more usual op-amps.

The baseline audio sound quality

is smooth, elegant and natural, with unusually lifelike vocal reproduction. The DAC's character and evident transparency should also suit a range of solid-state and tube based players; it did work unusually well musically with a range of challenging material on test. It impressed with the music of Alkan played by Marc-Andre Hamelin, whose large, powerful hands work well on disc. Music sounds detailed and three dimensional with the kind of muscularity, physicality and presence that is sometimes missing from the reproduced article. Best of all perhaps is that there is little sign of the artificiality that sometimes plagues digital hardware like this. The music breathes realistically, without the stilted hard-nosed edge that too often denotes solid state digital reproduction. It would be going too far to suggest that the TeddyPardo is valve-like or that it has genuine analogue pretensions, but it certainly hints at this kind of voicing. It comes very highly recommended."

For a chance to win this great prize, just answer the following four easy questions. Send your entries on a postcard only by 30th September 2011 to:

**October 2011 Competition,
Hi-Fi World magazine,
Unit G4, Argo House,
The Park Business Centre,
Kilburn Park Road,
London NW6 5LF.**

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QUESTIONS

[1] Teddy refers to what?

- [a] the first name of the company's CEO
- [b] a popular teddy bear
- [c] Teddy Pendergrass
- [d] President Roosevelt

[2] Where is the company based?

- [a] Israel
- [b] Jordan
- [c] Palestine
- [d] Iran

[3] How many SuperTeddyRegs are specified?

- [a] 10
- [b] 1
- [c] 100
- [d] 0

[4] Its sound hints at what, according to Alvin?

- [a] analogue or valve-like voicing
- [b] pro audio sound
- [c] live concert feel
- [d] digital character

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entries will be accepted on a postcard only

**JULY 2011 NUFORCE ICON 2 AMPLIFIER & AMPHION ION LOUDSPEAKER WINNER:
Mr. E. Fordem of Accrington**

news

JADE WARRIORS

Wharfedale's new Jade Series speakers are said to deliver high-end performance and stunning build quality at surprisingly affordable prices. Positioned above the Diamond 10 Series, the range comprises four stereo speakers; the Jade-1 and Jade-3 are both standmount models, while the Jade-5 and Jade-7 are floorstanders. There are also two centre channel models, the Jade-C1 and Jade-C2, and a wall-mountable speaker for surround sound use, the Jade-SR. Customers wishing to add an active subwoofer may choose a model from the forthcoming Wharfedale PowerCube range. The Jade Series features proprietary techniques and technologies throughout, some of which have trickled down from the work undertaken in developing Wharfedale's forthcoming flagship speaker – the Airedale Heritage Classic. The result is a range of loudspeakers capable of "exceptional sonic detail and expression across a wide range of music, free from coloration, ambivalent to its surroundings and faithful to the original recording", the company says. Prices range from £599.95 per pair to £2,695.95, with a choice of Black Oak or Vintage Cherry finishes. For more details, call +44 (0) 1480 447700 or click on www.wharfedale.co.uk.



K CLASS

Robert Koda's new Takumi K-10 line stage preamplifier is an attempt to create the ultimate preamplifier, the company says. "The 27kg copper encased machine reaches a kind of sound quality few had expected to ever find", they add. By unique arrangement of semiconductors the preamplifier is said to provide total freedom from "power supply sound", superb measured performance and an elegant simplicity that stands firm under the dynamic conditions music signals present. Factor in "superlative component selection and matching, hand construction of the highest calibre" and it's an ambitious product – but so it should be at £25,000! See www.robert-koda.com.



SHOW TIME

Manchester's Home Entertainment Show is claimed to be the biggest Home Electronics Show in the North, and the second largest show of its type. It's on Saturday 22nd October and Sunday 23rd October, 2011, at the Renaissance Hotel, Deansgate, Manchester. You'll be able to try and buy high quality hi-fi, 3D plasma and LED TVs, and get some great discounts. For more details, click on www.manchestershow.co.uk.

RECEIVING LOUD AND CLEAR

NAD's new £795 T748 A/V Receiver is said to offer "excellent build quality, unmistakable NAD sound, and the latest digital video features". It has seven channels of power, plus the company's proprietary Enhanced Ambience Retrieval System surround mode for converting stereo source material. All surround sound formats are decoded by "the most up-to-date high speed DSP", including Dolby TrueHD and DTS Master Audio, NAD says. There's also a preamp output for connection to an external power amplifier. Consumers will also appreciate the support for analogue video, Audio Return Channel and Consumer Electronic Control on HDMI, simplifying integration and increasing flexibility with multiple digital video devices. The user interface is said to be "easy to use, flexible, and intuitive". For details, click on www.NADelectronics.com.

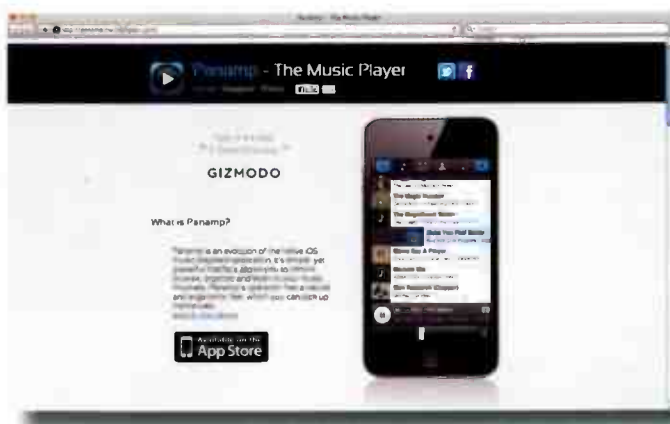


MUSE-ICAL YOUTH

Philips' new Muse 3 boasts sound quality that's "truly a notch above", it's claimed. It sports Philips Full Sound technology which uses a powerful processor and a specially developed algorithm to enhance the quality of compressed MP3 files to make them sound more like the original recording, the company says. In addition to its supplied headphones, the Muse 3 also has an inbuilt speaker for sharing music or movie tracks, plus a 3.2" touchscreen in the 16:9 format for video and TV replay. Rather than having a traditional graphic equaliser, Sound Personalisation allows listeners to adjust the sound by running their fingers around the screen between the four corners marked 'powerful, warm, sparkling and vocal' and sound is automatically adjusted towards that style.



The Muse 3 also includes Philips SafeSound, which can constantly analyse the sound level and alert the listener if the volume and exposure could have a possible impact on their long-term hearing. The player supports all the main audio formats with FLAC and APE lossless as well as MP3, WMA, AAC, Ogg Vorbis, Real Audio and WAV, it also supports multiple video formats such as MPEG4, WMV9 and RMVB. Available in 8GB and 16GB memory sizes, there's plenty of storage space as standard but should even more space be required there's a microSD card slot for even greater storage capacity. The player also comes with FM radio with 20 presets. The GoGear Muse is available now in 8GB and 16GB memory sizes with estimated selling costs of £109.99 and £139.99 respectively. See www.philips.co.uk.



PAN EURO

Panamp is a new iPhone music player application that's said to be an evolution of the native iOS music playback application. Its "simple, yet powerful" interface allows you to control, browse, list and listen to your music intuitively, the company says. It lets you display your library using the player's cascade view. Songs are displayed below the album, the albums are displayed below the artist - all on the same view. Playback controls are said to be on-screen throughout the app, equipped with fast and efficient gesture controls to put your entire library at your fingertips, and you can browse your entire music catalogue by any method and add the tracks with a simple swipe to your queue. A seamless list of tracks is gathered, allowing you to create the perfect soundtrack on the go, the maker says. Find it in the App Store now, or click on <http://panamp.cleverandson.com>.

DIVINE PRESENCE

New British specialist Epiphany Acoustics announces the EHP-1 headphone amplifier, which is said to "cut no corners in the design nor when specifying the premium components used". Its full Class A design uses specially optimised shielded op-amps in a dual mono configuration followed by a high power discrete MOSFET output stage. A robust linear regulated power supply using a toroidal transformer and copious filtering capacitance lets the amplifier perform at its peak, the maker says. The EHP-1 comes with one input, a line out so that it can slot into an existing system and also has a variable output, allowing it to be used as a high quality preamplifier. It comes in a custom steel enclosure with a hand finished solid walnut front panel and a power cable is included. There's an introductory price of £180 for the first 20 pre-orders, after which the price rises to £245. For details, click on www.epiphany-acoustics.co.uk.





THE SUN AND THE RAIN

Acoustic Energy's latest Extreme loudspeakers bring audiophile sound to alfresco entertainment whatever the weather, it is claimed. The Extreme 5 (£99.90 each) and Extreme 8 (£299.90 each) now benefit from a range of voicing improvements, with drivers up to 8 inches for serious bass. Both models marry a high efficiency horn-loaded soft dome tweeter with a mid-bass driver featuring AE's signature aluminium cone. The sealed cabinet design uses long-throw motors specially created for the Extreme range. Extensive outdoor testing at AE's Gloucester factory lead to a high-order crossover packed with audiophile components including polypropylene capacitors and air-cored inductors. The weatherproof cabinets are made from an advanced reinforced and mineral-loaded polymer, selected from an array of possible materials for its acoustic properties by AE Chief Designer Mat Spandl. The Extreme 5 uses a 110mm aluminium cone mid/bass driver and is ideal for smaller gardens and more discrete installations. The flagship Extreme 8 utilises a 160mm version of AE's signature high-power alloy cone driver to deliver deeper bass and very high levels. Available in UV-stable black or white, they come complete with matching paintable grilles and an innovative, easy-to-fit wall bracket. Click on www.acoustic-energy.co.uk or call +44 (0)1285 654 432

SOOLOOS FIT

Meridian has launched the latest build of their Sooloos 2.1 software. This update means that in systems where the Sooloos system core runs on one of the company's latest products – Media Core 200, Media Core 600, and Control 15, – support is now there for 176.4kHz and 192kHz sample rates. To help integrate this higher resolution content with Sooloos' powerful search and discovery features, metadata and cover art will (where available) be brought in with the media being imported and/or downloaded from the Sooloos metadata cloud in the same way as with other imports. All media on the Meridian Sooloos system is stored at its full sample rate. For details, click on www.meridian.co.uk



JAZZ MONSTER

Monster announced the new £300 Miles Davis Trumpet headphones at the recent Montreux Jazz Festival. Created in conjunction with Miles Davis Properties, LLC, they are being offered as a specially packaged set along with the seminal Miles Davis album 'Sketches of Spain', in specially remastered Monster High Definition Stereo Sound.

This is "specially engineered to capture the music's true harmonic depth and resonant tonal characteristics", the company says. The new phones feature aesthetic cues taken from Miles Davis' trumpet, including mouthpiece shaped earpieces and a striking gold/brass finish, with a Miles Davis silhouette and etched signature on the cord. The headphones also come with a special magnifier that allows users to see the miniature laser-etched Miles Davis signature and Monster logo on the trumpet housing! They are claimed to feature the world's smallest drivers, and are being made available with the Monster ControlTalk headphone cable which can be used with Apple's iPhone and iPod for music playback control as well as to take hands-free calls with iPhone and many smartphones. For details click on www.monstercable.com.



SWISS WATCH

Geneva's swish Model S iPod speaker system now has DAB radio functionality, as well as iPod and FM radio playback, touch-sensitive controls and an alarm clock. It retains the piano lacquered cabinet in shimmering white, red, black or silver finishes. Price is £379 including remote control. For details, click on www.sav-distribution.co.uk or call +44 (0)843 2897195.

CONCERT FOR ONE

B&W has launched its new £149.95 C5 in-ear, noise-isolating headphones, which are said to offer “pristine sound quality on the move”. They sport a Micro Porous Filter which acts as a diffuser, to provide a spacious sound despite them being an in-ear design, it’s claimed. Their proprietary Secure Loop design is said to be “an ingenious innovation where a cushioned loop fixes quickly and comfortably in the inner ridge of the user’s ear”. This is said to hold the C5 in place for improved sound, and also makes it ideal for use on the move and during activities. The Secure Loop is infinitely adjustable, so it works with anyone’s ears. The Tungsten Balanced design means that the high-mass material is located closer to the user’s ear, for an improved seal. The C5 is made from high-grade aluminium for a premium-quality finish, and has been designed specifically to work with Apple devices; it comes supplied with a ‘Made for iPod, iPhone, iPad’ remote and microphone. Audio playback will work with most devices that have a standard headphone output.

See www.bowers-wilkins.co.uk.

CANDID CANOR

Three and a half years ago, editor DP was beguiled by a quirky CD player going by the name of the Edgar CD-1, which promptly disappeared without a trace. Well, the Slovakian brand is back, but under a new name. Canor are making great claims about their reliability and consistency, and have developed two pieces of equipment which thoroughly burn in valves and then test them for reliability, noise and other aspects of performance. This means that Canor’s products “combine the wonderful audio performance typified by the best valve equipment with the consistency and reliability of the best solid state equipment”, the company says. Sound Foundations are importing the majority of the range including a headphone amplifier, three phono stages, two CD players and two amplifiers. The first products to arrive are the VR series integrated amplifier, Compact Disc player and phono stage. Prices range from £2,400 for the TP306 VR phono stage to the £3,500 TP106 VR integrated amplifier; the CD2 VR CD player costs £2,600. For details, click on www.soundfoundations.co.uk.



CLEAN MACHINE

Clearaudio’s new Smart Matrix Professional record cleaning machine is said to offer improved cleaning performance, noise levels and finish, over the standard machine. Made in the Clearaudio factory in Erlangen, Germany, the vacuum turbine, gears and motor are the same quality units used in Clearaudio’s high-end Matrix record-cleaning machine, giving even very dirty records a deeper, more thorough clean, the company says. The new vacuum components combined with the damped chassis significantly reduce noise levels during the vacuum process. Bi-directional cleaning allows the dirtiest records to be cleaned. The new chassis makes the Smart Matrix Professional worthy of being placed beside the hi-fi system rather than hidden away in a utility room, it’s claimed, and there’s even an optional dustcover. The 12kg 345x345x245mm machine is said to give a 65dB noise level, and use 460W of power. A three year warranty is offered. Price is £930, plus £65 for the dustcover. For more details, contact Audio Reference UK Ltd. on +44 (0)1252 702705 or click on www.audioreference.co.uk.



VITAL SIGNS

In celebration of its eightieth anniversary, Vitavox has launched its new website at www.vitavoxhifi.com. It will be showcasing the S2 pressure unit, described as “a landmark product in British audio history and in near continuous production for over sixty years”. This is joined by the AK range of 15” alnico magnet cone drivers and a new, all hardwood, variant of the CN157 radial dispersive horn. Cabinet loudspeakers available include the classic CN-191 [pictured]. Vitavox also offer a full spare parts and refurbishment service for existing customers all around the world.

Motion Sensing

Alvin Gold tunes in to Martin Logan's latest affordable electrostatic hybrid loudspeaker, the ElectroMotion...

There are only two *really* important brands of electrostatic loudspeakers, and MartinLogan is the other one. Many years ago, when MartinLogan was a fledgling, the company was hamstrung by talented but sometimes flakey drive units, and by hybrid moving coil bass drivers that didn't match the aspirations of the electrostatic mid and treble drivers. In the end, the solution was not to get rid of the moving coil bass drivers, but simply to do them better. In fact MartinLogan has been on a trajectory of increasing refinement with all their drivers, and also with the physical structure of their speakers which look and work better than ever.

The first model in recent times that really set a high standard was the Summit, which also set a new standard for affordability and stereo imagery at the time. The more expensive models now integrate much better than before, and handle the crossover region between bass and mid/top with greater aplomb. Over the last few years new models have been introduced at progressively lower prices levels, and the ElectroMotion, reviewed here, which is a completely new model, is a remarkably fine newcomer that takes the formula one step further. It is by any standards an unusually

cost-effective design, and it is also beautifully packaged and presented.

Like earlier models in the MartinLogan range, it is tall, slender, and sports a slimline electrostatic panel that tilts gently backwards. The panel (which covers everything north of 500Hz) takes up the top two thirds of the speaker, and is radiused to control imagery. In common with all MartinLogans in recent times, the bass section houses an 8 inch bass driver mounted in a heavy bottom vented section of the enclosure. As with all electrostatics, the electrostatic panel needs a polarising voltage and it is supplied by a high voltage circuit that shares space with the bass driver and crossover.

The crossover still makes an appearance of course; the bass section hands over to the electrostatic panel at 500Hz. The power supply is a diminutive unit with a two-pin mains plug attached along with a length of slender cable to carry the voltage to a suitable input on the back of the speaker. The supply is about the same size as a phone charger.

The speaker inputs are in the form of elegantly designed press buttons, which open up wide enough to accept 4mm plugs and which clamp the input plugs with some force when released. The speakers are also supplied with four rubberised feet, whose rubber





tips can be removed to reveal carpet piercing spikes.

The ElectroMotion is a stereo loudspeaker pair, but as you would expect it can be supplied in a form suitable for multichannel applications by adding the EM-C2, a centre channel loudspeaker and the EM-FX2 surround sound speaker which are part of the same range. Of course, there are also subwoofers in the range, and although not strictly necessary much of the test was conducted with a recently introduced REL subwoofer – there's more on this under the sound quality crosshead.

MartinLogan speakers have always been well presented, but the materials didn't *always* suit their

function. For example there was time when the frame around the electrostatic panels lacked rigidity, with the result that on listening closely, structural resonances and colourations were audible. This despite the fact that people who should know better always claimed that they were colouration-free because there was no enclosure.

"It's hard not like a loudspeaker such as this – the things it does well, it does brilliantly..."

Wrong on both counts! The enclosure – or frame in this instance – is made from a combination of aluminium and unspecified composites.

In fact there is more to the enclosure than this. First, as you will have noticed, the panel is very slender side to side – I think narrow is the technical word – but it is quite sharply curved in the horizontal plane. The panel is 35 inches tall, and the fact that it is tilted slightly back means that floor reflections are partly suppressed. The 'curvilinear XStat design' is a fancy way of describing the horizontal curvature. The panel radiusing means that the centre line of the panel bulges out towards the listening seat, and the speaker produces a wider spread of sound in front of the speaker than behind, where the sound is focused into a relatively narrow beam.

Damping the rear radiation can be achieved using drapes or furniture near the rear wall, and because the spread of sound is restricted it is easily damped in the same way if required. Similar observations apply to the sides. As long as the speakers are a foot or so clear of side walls, reflections which would muddle imagery are limited. These comments apply to the electrostatic panel, and not the bass, whose output is not as focused, but in general this will pass unnoticed in practice. The bass driver is an 8 inch unit, high excursion, high rigidity pulp cone unit, designed in house for reflex (port) loading.

SOUND QUALITY

Despite being tall, and not exactly pocket size, the ElectroMotion is easily manhandled. Their narrowness is a factor of course, and so is the weight – each speaker tips the scales at a mere 16.1kg, and can be 'walked' into and out of the excellent packaging readily. Another factor here common to all MartinLogans is that the electrostatic panel is

protected by perforated panels. Visually, this renders them semi-transparent. They barely block light from rear windows, for example, which goes a long way to reducing the loudspeaker's visual bulk.

Another factor in the practicality equation is that the speaker has a claimed sensitivity of 91dB (in our test they came out at 87dB

rather than 91dB, but this means they on a par with many moving coil designs) and they are abstemious in their power demands. The way they deliver power, in particular their dryish bass delivery, and their unusual throw (common to many line source loudspeakers) means they appear to be more sensitive than the raw numbers suggest, and certainly more so than many moving coil speakers in the same price range.

It is true that impedance drops to around 1 Ohm at 20kHz, which is par for the course with MartinLogan electrostatics, but so little power is involved at this frequency that this has no practical implications – that has been my experience with this marque anyway. If it does with your choice of music you would need to fear for the long term health of your hearing. As the lab tests indicate, they don't need much, if any toe in, despite what the otherwise excellent instruction manual suggests. You can use the ElectroMotion with small pre power amps, or with a medium power integrated amplifiers or receivers – start your search at 50 Watts or so.

The one performance area that cannot be shortchanged however is sound quality. The ElectroMotion can sound bright and grubby if given half a chance with an unsympathetic choice of amplifier or source component.

Earlier MartinLogan models





Jo Sound

Jo 45/1

*"their spirit makes
music joyful rather
than merely
pleasant - in this
respect they're
divine..."*

HI-FI WORLD



David Price
September 2011



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were open to criticism on the grounds that the bass and the mid/top (the stomping ground for the ESL driver) was rarely completely at one. The ElectroMotion, which is MartinLogan's least expensive full range speaker, resolves this complaint almost completely. The worst you can say is that the lean quality of the mid and top is somehow mirrored in the performance of the bass driver. In fact the bass is quite well extended from the relatively small bass bins. Although not exactly muscular or meaty, it is reasonably well articulated, with realistic tonality and a meaningful sense of depth and weight, and a tuneful quality to match.

The real magic of the ElectroMotion however is higher up the band, the area generated by the electrostatic panel, where the speaker is fast, highly detailed and assured, and once again completely seamless. Even without stretching to more costly models in the range, this model is notable for its almost holographic stereo imagery and its presence.

Refinement is also part of the equation; tonal colours are explicit. And in common with many MartinLogans, the ElectroMotion is almost magical with human voice, as I quickly discovered with some well liked recordings of Mahler and Richard Strauss. I enjoyed the speaker with full throttle recordings (including a notable transmission from this year's Prom performance of Mahler's 'Resurrection', which I had previously attended on the night, played by the Simon Bolivar Youth Orchestra), but its real *métier* is chamber and small scale music making.

Some may want a little more weight than the basic vanilla speaker can provide, and for them a subwoofer would be an obvious addition. In

this case one of REL's new R series subwoofers added just the weight and authority that may be required in many systems, but without loss of articulation, or unwanted boxiness. I am not



suggesting that a subwoofer is necessary, merely that the speaker is good enough that it can be stretched even further with a well chosen subwoofer, even when partnering a two channel system, assuming careful setup.

CONCLUSION

It's hard not like a loudspeaker such as this. The things it does well, it does brilliantly, and they're a vital part of the musical transmission chain – tonal accuracy, spatial imaging, transient speed, microdynamics. The things it does less well – bass and outright dynamics – it still does well enough so as not to become a distraction. Earlier MartinLogans were obviously flawed in the lower regions, but the new ElectroMotion raises the game for a hybrid of this price. Overall then, the ElectroMotion is a superb and relatively affordable (in the context of high end, at least) new loudspeaker.

MEASURED PERFORMANCE

MartinLogan's electrostatic panel gives an even output from 400Hz to 18kHz, free from major peaks or dips, when measured on-axis. There is a small plateau lift in output around 1.5kHz and this will give the speaker a little extra presence. With electrostatics though this is usually less obvious and unpleasant than with other loudspeakers. Off axis the result was similar, except upper treble above 5kHz starts to fall away. The best result was just slightly off-axis by a few degrees so the loudspeakers can be pointed straight down a room, rather toed-in to point directly at listeners.

Output from the bass unit was in good balance with the electrostatic panel, the downward firing port taking over from the bass unit below 80Hz. It works smoothly down to 25Hz our red trace shows, imposing good acoustic damping upon the bass unit, seen both in the breadth of its acoustic output and in the wide dip around 36Hz in the impedance curve. Bass quality should be good and deep bass apparent at times.

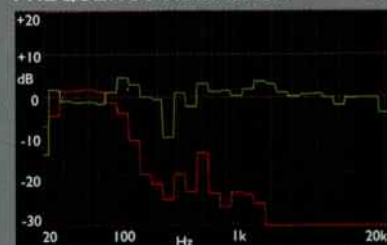
As electrostatics go, sensitivity was high, measuring 87dB from one nominal watt (2.8V) of input. The ElectroMotion doesn't need lots of power to go loud and around 60 Watts should be enough for most rooms. Our impedance curve shows impedance sinks to 1 Ohm at 20kHz, as it does with most electrostatics, and not all transistor amplifiers will be happy about this if strong treble exists in a recording and volume is high. Impedance measured 5.3 Ohms overall however, largely because the bass unit has a 4.7 Ohm D.C. resistance.

As expected an analysis of the

loudspeaker's decay spectrum over 200mS showed a very clean result, as expected from an electrostatic panel with no surrounding cabinet. Even the bass bin looked clean, in spite of small cabinet size. Bass distortion was very low at less than 1%, apart from a small peak around 40Hz where it reached 4%. The profiled port was unusually linear too, with just 4% distortion at 40Hz. The electrostatic panel also measured well over its operating range with distortion typically 0.1%, much lower than cone loudspeakers.

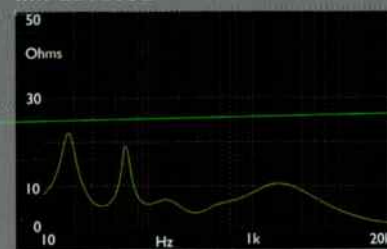
The ElectroMotion measured well in all areas. The bass cabinet in particular looks stronger than previous designs, better damped and likely less boomy as a result. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●●●
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- FOR**
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 - soundstaging
 - value
- AGAINST**
- needs decent front end



Hi Life

David Price tries the latest and greatest incarnation of what's effectively the spiritual successor of Sony's Walkman Professional cassette player, the HiSound Studio 5 digital portable...

In all my years of reviewing, few products have struck me as powerfully as this one. Yes, I admit it's a bit odd getting into a tizzy about something as humble as a portable MP3 player, but the HiSound Studio 5 is about as specialised as it's possible to make this sort of thing. It is so appallingly bad in some respects, yet superbly skilled in others, that you can't let it pass unnoticed...

A couple of years back, the original arrived on my desk with a thump. I say 'thump' because it's one of the few digital portables that could break your toe if you dropped it from chest height, and after that it would probably make a dent in your floor as it bounced. It's fairly small in terms of height and width, but it's deeper than any of its rivals, and comes with the tiniest screen anyone has seen on a product of this type since the original Diamond Multimedia Rio from 1999. Frankly it looks, feels and functions in a completely anachronistic way – if they ever make a drama set back in 2001, this would be the ultimate personal gadget prop!

The upside is that it's built like few others. No sorry, let me correct that – it's built like *no* others. It's incredibly robust and feels like it's been hewn from a billet of solid aluminium; indeed it has. It's like HiSound simply filed away a small hollow in the middle to put in the battery and the chipset, then gave it coat of black paint. Actually though, its uniqueness extends to more than the casing, as HiSound claim to have taken a lot of trouble with the

analogue output stage of the player, making it arguably the world's first 'audiophile' digital portable. Indeed, if the immensely fiddly, user-unfriendly control layout is anything to go by, it surely must be!



The Studio 5's claim to fame is its full Class A analogue output stage, which is of course no bad thing. Additionally, the company says it's now been upgraded with newer chips and supporting circuitry, giving a claimed 8% increase in volume, making it "a few times louder than any other brand", the company says.

Actually the previous, original, version of this player went louder than any other digital portable I've ever tried, so I'm not sure how necessary this was unless you're running a pair of full size Sennheiser HD650 headphones with it all the time. There's even a 3.5mm line input

jack provided (along with the 3.5mm headphone out) should you wish to use the amplifier section of the Studio 5 with something a little less punchy! Indeed there's an HDMS function in the settings menu that sends the full signal, bypassing the digital volume control, to the headphone jack, so you can use it as a line level source in your hi-fi. The circuitry has been tweaked for better sound by listening – which is something many rival portables seemingly cannot claim.

The original Studio had a battery life of nearly 100 hours; HiSound say this is now reduced due the higher power consumption of the electronics inside, and claim 80 hours. I'd say this wasn't far off, keeping yours truly occupied for a full week of pretty intense usage. The player handles 16/44 FLAC, although it wouldn't play my 24/96 test file of The Moody Blues 'Nights in White Satin'. It did play 16/44 .wav files, and also WMA and AAC (the latter of which is not claimed). Unlike the Mk I version that Tim Jarman tested, this new one doesn't have a radio – no loss as the previous one's wasn't much cop. It isn't supplied with a charger, although I found a TomTom USB charger charged it well; better than via the normal mini USB to USB lead used to connect it to your computer.

Speaking of which, file transfer is done in precisely this way; via 'drag and drop'. It's a good deal slower than syncing an iPod, for example, and this is only the beginning of the moaning. The HiSound isn't *anywhere* as easy to use as Apple's rival Classic, has far less storage – a silly 4GB on the supplied machine (the original had 8GB!) and less even than the cheaper iPod Nano. The little OLED

is crisp but ridiculously small and obstructive; it's got tiny scrolling text which is stupidly hard to read. Navigation is similarly fiddly – the main central gold button is the on-off switch but does other things too, such as play/pause, whilst the left and right buttons do track selection and the bottom and top ones take care of volume. It's not impossible, but you do need to get the hang of it – unlike an iPod. One great feature is the Micro SD card slot: Amazon is currently listing a 32GB for just £34 – giving you 38GB of total storage which is an awful lot of music for a flash memory-based machine. You can also click the cards in and out like

a twenty first century cassette, so you're not limited to the same 32GB (or 16, or 8, etc.). Overall then the HiSound is variously clunky, fiddly and quirky to use – but how does it sound?

SOUND QUALITY

The previous Hi Studio was very good, although it could be criticised for sounding a little 'stark' in the way that, say, Sugden Class A amplifiers do. By this I don't mean harsh *per se*, but still rather brightly lit – as well as being very clean, detailed and musical of course. The new Studio 5 isn't that far away from its predecessor, but I feel the new circuitry has taken

the brightness down a notch or two, making the player a lot more forgiving of poor source material, whilst still very detailed and incisive. This player shines a powerful searchlight onto your music, and is all the better for it, providing you're listening to good quality files. With your common or garden 128kbps MP3 it's not a pretty sound, but it flies with 16/44 .wavs or suchlike.

For example, powering a pair of Jays v-Jays headphones, I was absolutely gobsmacked by the maturity of the sound issuing forth, when playing a 16/44 .wav recording of Christopher Cross's 'Ride Like the Wind'. It was quite simply the full 'hi-fi' monty; I could hear detail, delicacy, speed, depth, power and space; rather than being a two channel black and white digital facsimile of the original track – as per Apple's iPod Classic 160GB I had on hand for comparison purposes. I was delighted by the vibrant piano sound with its sparkling harmonics and bold accenting, allied to the fine snare drum and hi hat cymbal work going on behind. Cross's near-falsetto vocals, hardly the easiest thing for a digital portable to reproduce, were vibrant and expressive. Overall, the HiSound maintained great grip on the proceedings, and I began to forget what I was listening through.

Moving to some classic house from The Reynolds Girls, and 'I'd Rather Jack (Than Fleetwood Mac)' was a delight; truly powerful sequenced bass synthesiser notes greeted me, along with an infectious percussive backing courtesy (I guess) of Roland TR808 cowbells. When the vocals jumped in the HiSound proved impressively smooth yet expressively musical in a compelling way, and as the track got busier instead of going all foggy and vague on me, it continued to grip. With its analogue HDMS engaged, I ran the Studio V to my main system, whereupon it acquitted itself just as well as an average budget CD player could; running off flash memory is no bad thing for a digital source!

CONCLUSION

HiSound's Studio 5 sounds excellent, looks a bit weird, works awkwardly and costs a little over the odds – an unusual collection of attributes, admittedly! I loved it, and you may too, but only if you're looking for something very different to your average iPod-a-like experience. It faces stiff competition, all of which beat it in respect of convenience, functionality, connectivity – but none can match sonically. If this is how you like it, then what are you waiting for?

THE RIVALS

SONY NWZ-A845 16GB £160

Expensive yes, but the Sony is a formidable package. Its thin (7.2mm) metal body is exquisitely finished, making the iPod seem cheap, and is very light at 62g. The 2.8" OLED display is peerless colour. The control buttons feel as easy to use as the iPod (which The digital noise cancelling making it great for noisy comm will still want to upgrade to Sennheiser MX550s. It's 'drag and drop', and Sony Transfer' software that lets plays all major formats, around 30 hours via music, the Sony has a sparkling amplifier punches out enough bass is subtle and smooth enough for Classical. FM radio is a let-down though. Video is excellent, with smooth motion and sparkling clarity; an optional cable lets you hook it up to your TV for SD quality pictures. A swish, stylish and superbly made package that offers strong sonics – although not as detailed or incisive as the HiSound – at a far more attractive price.



for clarity and striking crisp, making it almost is saying something). phones work well, mutes, but audiophiles superior sounding easy to upload using even supply 'Content

it work with iTunes. It even BBC iPlayer. Battery life is one third of that on video. Sonically, sound that's full of beans; the amplifier delight dance music fans but is

APPLE IPOD CLASSIC 160GB £195

The sixth generation of Apple's venerable iPod is a classy package. It's quite a bit larger than the HiSound (at 104x62x11mm), but weighs a little less at 160g. It's unique for sporting a very large hard disk, giving 160GB of storage, but this means a thirst for batteries (around 30 hours) and – in theory at least – inferior sound. The largish 2.5-inch colour LC display with LED backlight is excellent and way better than that of the HiSound; its 320x240 pixel resolution makes watching videos a reality. The iPod integrates beautifully with iTunes, the ease with which it works making the Studio 5 look positively medieval. Only sound quality lets it down; it's not bad, but lacks charm, feels a bit chilly and doesn't have the incision or natural musicality of either the HiSound or the Sony. The main criticism is that it's mechanical and matter of fact; rather charmless in fact. Of course, one of the umpteen latest generation docks around means you can port its sound out digitally, thus bypassing its budget Wolfson DAC and analogue output stage if you wish to use it as a 'digital transport'. A very fine product then, just not as focused on the audiophile as you'd have hoped.



VERDICT

Charismatic digital portable that's poor in several areas but inspired in one – sound quality. If this is your priority, then nothing compares.

HISOUNDAUDIO PDAA-1 STUDIO 5 £275

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FOR

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AGAINST

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Jools Holland



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- ▶ 60 Watt, 4.8 x 16 x 22 cm steel and aluminium construction
- ▶ Backup music to external USB hard disk for safe keeping
- ▶ You can use it with your existing hi-fi or on its own



Jools Holland has always loved music of every kind and during his illustrious musical career he's bought and collected 100s and 100s of CDs and albums many of which he continues to play on his weekly radio show. Trouble was, the space they took up, keeping them in some sort of order, the need to find a certain album and then a particular track was always hugely time consuming. Then Jools was introduced to the Brennan JB7. Now his whole collection is stored on something no bigger than a hardback book. Titles of his CDs, albums, even the tracks are automatically recognized and finding them again using the remote control takes just seconds.

"I can honestly say I've rediscovered lots of my music purely because the Brennan has made it so accessible. Just to be able to find what I want instantly rather than have to wade through CD after CD is a joy!"

Jools Holland pianist, bandleader, composer, singer and television host. He was a founder of Squeeze and the multi-million selling Rhythm and Blues Orchestra. He has collaborated with many artists including Sting, Eric Clapton, George Harrison, B.B. King, David Gilmour, Amy Winehouse and Bono. He tours regularly with his Rhythm & Blues Band and currently hosts 'Later...with Jools Holland' on BBC2.



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DAC'S Entertainment

This month's Hi-Fi World brings you a digital-to-analogue convertor extravaganza, with eight DACs ranging from £300 to £1,500. Tony Bolton does the listening, bit by bit...

Five years ago it was phono stages, two years ago it was turntables – and now the area of specialist hi-fi that seems to be growing the fastest is the humble DAC. Digital to analogue convertors are having something of an Indian summer; they were all the rage in the late nineteen eighties when people realised they could upgrade their middling CD players with the likes of Arcam's Black Box or Audio Alchemy's Digital Decoding Engine. Then strangely the breed went into long term decline, to the point where just a few years ago there were hardly any on sale. But then suddenly we started to see a whole new wave of DACs, many with 24/96 functionality and/or USB connectivity.

The reason for this, I think, is

computer audio. And if you're in any doubt about this, then think on this – all the units tested here except the Lite DAC-83 come fitted with a USB input. Modern DACs are where computers meet serious hi-fi – the fact that the majority also sport XLR balanced connections, once the preserve of high end hi-fi equipment, is testament to this.

Each unit was run in for forty eight hours using the Isotek Burn In disc, and then I spent a day with each one feeding it with signals from the Leema Acoustics Antilla CD player, our digibox and DVD player and, where appropriate the USB connection to the hard-drive on my MacBook on which I tried both recorded music and various music videos on YouTube.

Finally, I spent an evening listening

to each one back to back playing a Deutsche Grammophon CD of Placido Domingo singing a selection of arias (and specifically, Bizet's 'La fleur que tu m'avais jetty' from 'Carmen'), Ravi Shankar 'Live at the Monterey Pop Festival', using the final track called 'Dhun', and finally a CD by the Poppycocks. And so, without more ado, lets find out what happened...

THE CONTENDERS:

ARCAM RDAC	£299	P20
EMOTIVA XDR-1	£349	P21
MUSICAL FIDELITY M1 DAC	£400	P23
CENTRANCE DAC MINI	£720	P24
WYRED 4 SOUND DAC 1	£899	P25
LITE DAC -83	£995	P26
TEDDY PARDO TEDDYDAC	£1,158	P27
CALYX DAC 24/192	£1,495	P29



ARCAM rDAC £299

Cambridgeshire based Arcam were amongst the first to introduce a free standing DAC with the Black Box in 1987. They have now produced this small (160x111x40mm) but beautifully finished cast aluminium box called the rDAC as part of their Solo range. Although simple in looks, with the front displaying four LEDs for source selection, controlled by a button on the top, the internals are well specified with the digital conversion being carried out by a Wolfson 8741 IC. To overcome jitter problems associated with computer generated audio Arcam have licensed the Asynchronous USB Technology from high end manufacturers dCS.

In addition to this, a wireless version is available, the rDAC KW which connects to the rWave wireless USB dongle or rWand iPad/iPod dongle, which removes the need for locating the computer near the hi-fi.

Apart from the USB and wireless connections, both coaxial and optical S/PDIF sockets are provided, with power being supplied by a compact wall-wart. The analogue outputs are via a pair of RCA phono sockets.

SOUND QUALITY

Starting off with the Domingo piece, I found the sound to be quite lively with a definite shape to the recorded acoustic. The opening oboe and violins were very distinct, as was Domingo's voice, which I felt had a slight nasal quality in the upper midband. This slight forwardness helped to provide some definition as the lower strings and the harp joined in, but I was not entirely convinced that it was true to

his voice.

Putting on the Shankar piece proved that the lustre in the presentation was not necessarily a bad thing. The sitar produces what are probably amongst the more complex sounds, with the fundamental of a note being enhanced by a multitude of harmonising strings, each with their own harmonic structure. Played through this DAC the separation of the different strands of sound allowed an insight into the fingering of a man with true mastery over his instrument. The relationship between the sitar and the tabla was displayed almost as a conversation with the complex beat of the music, especially the speedy teental beat,

being both energising and easy to follow. As such it was a highly satisfying listen.

Rhythm again came to the fore when playing the Poppycocks tracks. I enjoyed the energy transmitted in the music, but felt that singer Miles's voice lacked a little lower end shape to be truly realistic.

The rDAC proved entertaining and involving to listen to, without ever descending into harshness, and this was especially apparent via USB where it rendered computer audio files with a panache that was unexpected at the price. Overall, considering its low cost and superb build and connectivity, it turned in a very good performance.

MEASURED PERFORMANCE

Frequency response measured flat from 2Hz to 20kHz our analysis shows, with just a small loss at high frequencies. This is hardly enough to affect tonal balance though, but the rDAC will not sound as easy in its balance as earlier Arcam DACs.

Distortion levels were low and very much like the other DACs. With a 16bit digital input distortion at -60dB measured 0.186%, very similar to the DACmini. Figures were a bit higher at upper levels, around -6dB, but the rDAC was within a whisker otherwise of its rivals in this group, showing just how convergent the technology is in stock form. The rDAC's distortion values were low all round, including at -60dB with a 24bit input, where we measured 0.025%, a very low value, if not quite the lowest possible.

Output was normal enough, close to Philips' standard at 2.2V and EIAJ Dynamic Range a good 101dB.

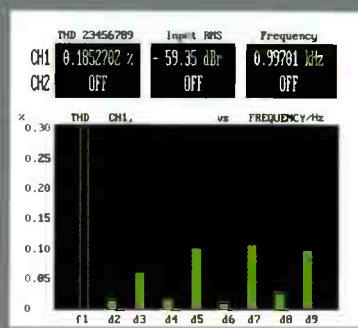
Arcam's rDAC turns out a good set of figures in every area and should have good sound quality. NK

Frequency response measured flat from 2Hz to 20kHz our analysis shows, with just a small loss at high frequencies.	-60dB	0.19
This is hardly enough to affect tonal balance though, but the rDAC will not sound as easy in its balance as earlier Arcam DACs.	-80dB	4.6
Distortion levels were low and very much like the other DACs. With a 16bit digital input distortion at -60dB measured 0.186%, very similar to the DACmini. Figures were a bit higher at upper levels, around -6dB, but the rDAC was within a whisker otherwise of its rivals in this group, showing just how convergent the technology is in stock form. The rDAC's distortion values were low all round, including at -60dB with a 24bit input, where we measured 0.025%, a very low value, if not quite the lowest possible.	Separation (1kHz)	118dB
Output was normal enough, close to Philips' standard at 2.2V and EIAJ Dynamic Range a good 101dB.	Noise (IEC A)	-116dB
Arcam's rDAC turns out a good set of figures in every area and should have good sound quality. NK	Dynamic range	101dB
	Output	2.2V

FREQUENCY RESPONSE



DISTORTION



VERDICT

Beautifully presented and lively sounding DAC with the option of wireless connectivity.

ARCAM RDAC £299

Arcam
+44 (0)1223 203203
www.arcam.co.uk

FOR

- vibrant sound
- superb build and finish
- asynchronous USB
- wireless option

AGAINST

- slight upper midband sheen



EMOTIVA XDR-1 £349

Costing £50 more than the Arcam is the Emotiva XDR-1, hailing from Tennessee in America. This DAC is designed to be a preamplifier in a digital-only hi-fi system and boasts six inputs; two coaxial and optical S/PDIF, a USB and AES/EBU. To complement this there is a choice of balanced or unbalanced outputs, both of which are of a fully discrete dual mono design. The Asynchronous USB input handles all bit/sample rates without drivers, but input rates higher than 24/48 are downsampled.

The slim metal casework houses an Analog Devices multibit Sigma-Delta AD1955 conversion chip and an 8x oversampling digital filter. This supports all sampling rates up to 24/192. Volume is controlled by a digital unit accessed either via the button on the front or from the milled aluminium remote control. This also duplicates the rest of the front panel controls for source selection and dimming of the Vacuum Fluorescent Display mounted in the centre of the front panel. The socketry is mounted at the back of the 432x50x355mm case.

SOUND QUALITY

This DAC is bigger than the Arcam both physically and sonically. The Domingo piece was replayed with a greater sense of depth and solidity to the sound and, I felt, a better tonal balance to his voice. The stereo image was a little narrower than the Arcam managed but it felt more precisely framed. The string sounds were also smoother and seemed to be better balanced with the lower frequencies. This was confirmed when playing the Ravi Shankar

recording, the tabla having more of a thud as the player's palm slapped the skin, and the alteration in the shape of his hand as he performed was a little more obvious. The sitar also benefitted from this somewhat more laid back sound, with the detail of the picking of the strings being better focused.

The Poppycocks CD was also better handled, with a more realistic vocal sound, although I felt that there was still a bit of tonal inaccuracy here. Listening again through Stax electrostatic earspeakers confirmed this – it was close but not quite right for me. The percussion in this recording is a bit messy, but the Emotiva did

quite a good job in disentangling the splashiness of the cymbals. They still sizzled a bit, but not as obviously as with the Arcam. Playing all of these tracks through the balanced connections improved the detail of the stereo image, although its size remained resolutely within the speaker boundaries. This ability to resolve sound was tested with some 1960s pop videos on YouTube. The recording quality of these isn't great, but I found them more approachable through this DAC than some of the others in this test.

For its price this is a fine performer, offering a taste of high end features and sound at an affordable price.

MEASURED PERFORMANCE

Frequency response measured flat from 5Hz to 10kHz, with just a slight roll off at high frequencies, measuring -0.6dB at 20kHz, just enough to ensure the sonic balance is not a bright one.

Distortion levels were low with 16bit and 24bit signals, measuring 0.2% and 0.06% respectively – good figures up with the best. Results were identical from unbalanced phono and balanced XLR outputs, but the latter gave better channel separation – 122dB against 104dB. With a -80dB signal dithered by 1LSB Gaussian dither, distortion was just 2.3% with 16bit so dithered CDs will sound smooth. Low distortion and quantisation products contributed to an EIAJ Dynamic Range value of 100dB via unbalanced and balanced outputs. Surprisingly, this fell to 99dB with an AES/EBU balanced digital input.

At maximum volume the XDR-1 delivered 2.12V output, a normal enough value right on Philips spec.

The Emotiva XDR-1 measured well in all areas and should deliver good sound quality. NK

Frequency response (-1dB)

2Hz - 20kHz

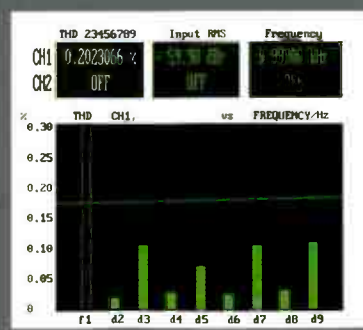
Distortion	%
0dB	0.005
-6dB	0.002

-60dB	0.2
-80dB	4.5
Separation (1kHz)	104dB
Noise (IEC A)	-108dB
Dynamic range	100dB
Output	2.12V

FREQUENCY RESPONSE



DISTORTION



VERDICT

Keenly priced, smooth sounding, flexible DAC/preamp with excellent connectivity.

EMOTIVA XDR-1 £349

Item Audio

+44 (0) 1782 621225

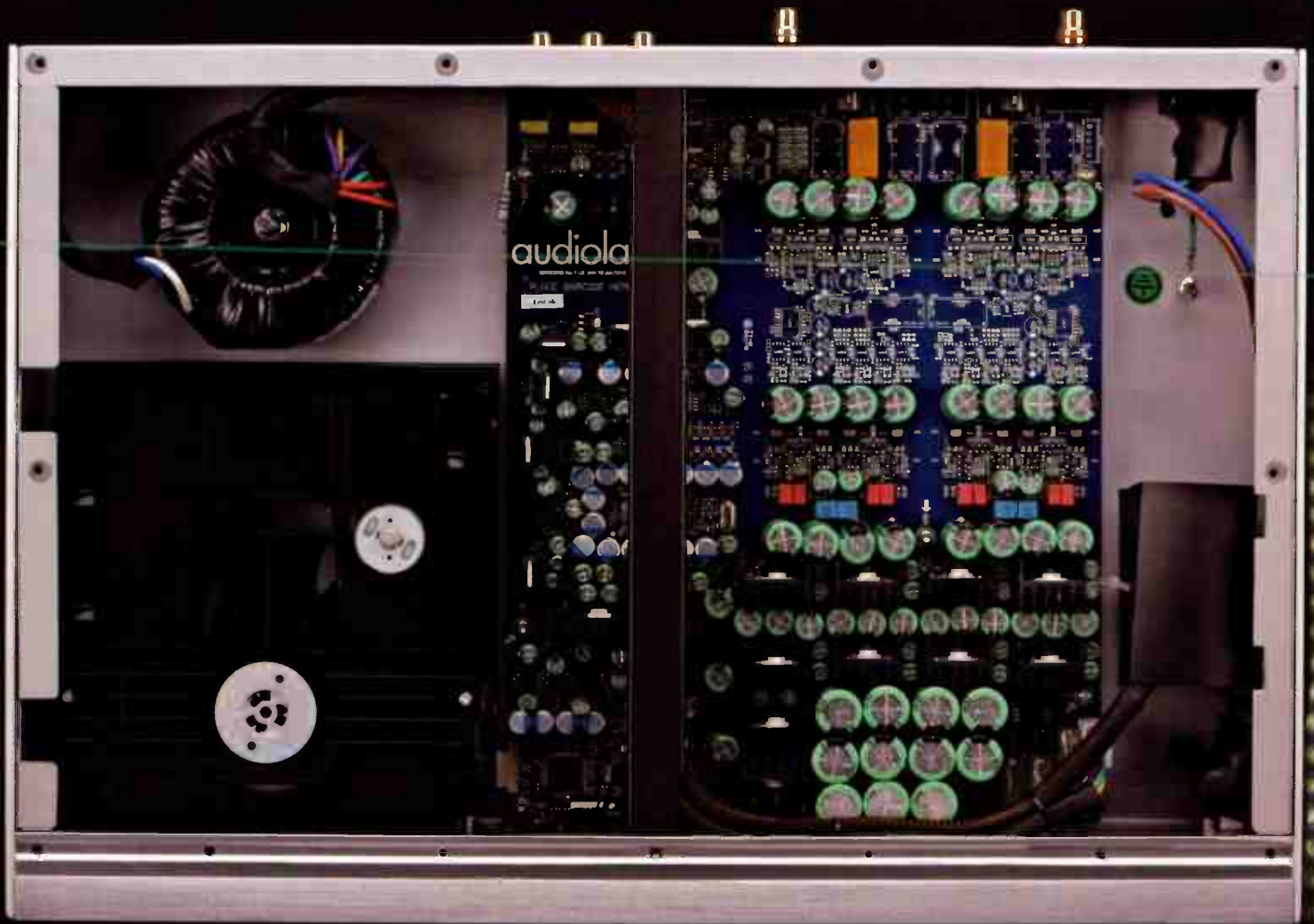
www.itemaudio.co.uk

FOR

- six inputs
- remote control
- balanced outputs
- smooth, detailed sound

AGAINST

- nothing at the price



TRUE BEAUTY IS ON THE INSIDE

Comprising over 1700 components, 34 regulated power supplies, and using precision SMT manufacturing on a four layer PCB (Printed Circuit Board), the Audiolab 8200 CD/CDQ has one of the most advanced internal circuit designs in the industry - truly a beautiful piece of engineering.



8200CD - Dec 2010



8200CD - Dec 2010
8200A - Sept 2011



8200CD - Oct 2010
8200CDQ - Sept 2011



8200CDQ - Aug 2011

audiolab

8200 SERIES

Sovereign Court, Ermine Business Park, Huntingdon, PE29 6XU Tel.+44(0)1480447700, Fax.+44(0)1480431767 www.audiolab.co.uk



MUSICAL FIDELITY M1 DAC £400

Musical Fidelity were another manufacturer who spotted the potential for separate DACs early on and have been making them for twenty three years. This latest model, introduced in the Spring of 2010, again offers balanced inputs and outputs, as well as the usual S/PDIF options and USB connectivity. Like the Emotiva, the unit links up to either Windows or OS.X operating systems with no drivers required. The DAC circuit is a 24bit Delta-Sigma dual differential design, with 8x oversampling up to 192kHz. This is housed a neat 220x100x300mm case and weighs 3.4 kg. The power circuit incorporates choke filtration on the power supply. The controls are very simple, and it's a very well built and finished unit at the price.

SOUND QUALITY

Playing the Bizet recording immediately brought out a different character to the track. The bass had a shape that the previous DACs had outlined, but here it was fleshed out. The midband was open and explicit, with clear rendering of vocals, and the stereo spread was the largest of the group so far, the sound seeming to extend quite a way to either side of the speakers, which made for a wholesome listening experience. Tabla on the Shankar track had a real depth as the skin was hit; I felt properly aware of the impact of the palm. However, the speed and urgency of the playing seemed a little less pronounced than the Emotiva and Arcam, and the complex rhythms of dadra seemed to

lose some shape and definition.

Moving over to the conventional four beat rhythms of the Poppycocks guitar pop, and order was restored to the timing, although I felt that the band were playing with a little less enthusiasm than previously. The spaciousness of the sonic image allowed me to focus more on the guitar effects and fills.

Digging into my laptop's hard drive for some uptempo trance

produced a deep and moderately paced bass sound, complemented by the detail of the treble showing off some of the electronic sounds and effects. The M1 DAC gave a very good performance overall, with oodles of detail, space and air – albeit less bass than the Emotiva and slightly more pedestrian rhythms on rock. Svelte and civilised, this will appeal to classical music fans especially.

MEASURED PERFORMANCE

Frequency response from the M1 DAC shows a small lift at high frequencies, measuring +0.2dB at 20kHz, our analysis shows. This is enough to add a sheen to treble and at times might even make the M1 DAC sound a little hard.

Distortion levels were low much like the other DACs, in spite of upsampling. With a 16bit digital input distortion at -60dB measured 0.18% and 4.75% at -80dB. With 1LSB of Gaussian dither applied this dropped to 2.6%, good for 16bit. These figures were maintained through the XLR outputs, which measured identically even though XLR gives 4V out, double that of the phono outputs. The distortion performance was also unaltered when using an AES/EBU balanced digital input from our digital generator, even with a linear 24bit signal. However, as a 24bit, -60dB input produced just 0.016% distortion via XLR out the M1 DAC was still up with the very best DACs available, showing it is very linear.

EIAJ Dynamic Range measured 101dB, as good as it gets, and noise a very low 120dB with a OFS input, upsampling having an effect here it seems.

Musical Fidelity's M1 DAC produces an excellent set of figures but is likely to have a slightly brighter balance than rivals. NK

Frequency response (-1dB)
CD 2Hz - 20kHz

Distortion	%
0dB	0.001
-6dB	0.001
-60dB	0.18
-80dB	4.7

Separation (1kHz)	114dB
Noise (IEC A)	-120dB
Dynamic range	101dB
Output	2.0V

FREQUENCY RESPONSE



DISTORTION



VERDICT

Well specified and very svelte sounding performer.

MUSICAL FIDELITY

M1 DAC £400

Musical Fidelity

+44 (0) 20 8900 2866

www.musicalfidelity.com

FOR

- expansive stereo
- delicate, detailed treble
- overall refinement
- balanced outputs

AGAINST

- slightly light bass



CENTRANCE DAC MINI £720

Founded in 2000, Centrance develops, licenses and distributes audio products and has worked with industry names such as Waves, Benchmark, Lavry and Mackie. They also design chips for Analog Devices and Texas Instruments as well as many others. The DAC Mini is unusual for featuring a headphone output with volume control, and line level analogue inputs which allow it to be the hub of a combined digital and analogue system, although the volume control is only active for the headphones.

The aluminium casework can be specified with a black anodised scratch resistant finish, but in standard form is intended to be a match with that on the current range of Mac Minis. The dimensions are identical at 164mm width and depth and 42mm high, making for an aesthetically pleasing combination. Although obviously designed with Macs in mind it is compatible with Windows operating systems as well as all major game consoles via the USB input. There are also coaxial and optical S/PDIF connections but no balanced inputs or outputs.

SOUND QUALITY

Sonically it proved to be a real ear opener, providing the first really three dimensional soundstage of this group, along with a full bodied sound that was agile and well defined, letting me enjoy the detail in the strumming of the harp in the Bizet piece, or the flutes complementing the sound of Domingo's voice. With the

Monterey recording, for the first time I was aware of the outdoor ambience surrounding the sitar and tabla, both of which seemed to interact with each other with greater accuracy. The speed and attack of the teental rhythm had an urgency that only the Arcam had come close to displaying, and it was the first of these DACs to disentangle the slightly phasey effect of the audiences rapturous response at the end of the concert.

Treble definition also benefitted the Poppycocks CD, taking the splash out of the cymbals, and vocals finally acquired a truthful timbral balance. Even dodgy YouTube transfers of 1960s videotapes were played in a palatable manner, and it sang with high quality .wav files. As such I am truly impressed with this machine – although nearly twice the price of the other DACs tested so far, the performance made the extra cost really worthwhile.

MEASURED PERFORMANCE

Frequency response measured ruler-flat from 5Hz to 20kHz our analysis shows, but there is actually a slight increase in high frequency output over a wide band so the DAC Mini may well have quite a sheen to its sound or sound a little hard in its treble.

Distortion levels were low, much like the other DACs. With a 16bit digital input distortion at -60dB measured 0.187%, much the same result as the other DACs, but a good low value all the same. Linearity over the dynamic range was good, so even a dithered (1LSB, Gaussian dither) signal at a low -80dB managed a reasonable 2.4%. With a 24bit input the DAC Mini produced a low 0.04% at -60dB, similar to other DACs if not up with the best which can manage 0.015%. Output was a normal 2V and EIAJ Dynamic Range a healthy 100dB.

The preamp has no gain, simply passing a signal through from phono inputs to outputs, but the signal path is active as it overloads at 10V output. This is acceptable though. The volume control does not work here either, only affecting headphones.

DAC Mini produces a fine set of results, but it may well have a brighter balance than others. NK

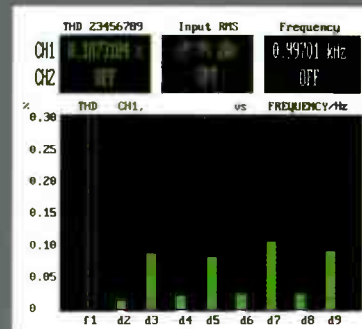
Frequency response (-1dB)
CD 2Hz - 20kHz

Distortion	%
0dB	0.0005
-6dB	0.0006
-60dB	0.19
-80dB	4.6
Separation (1kHz)	118dB
Noise (IEC A)	-111dB
Dynamic range	100dB
Output	2.0V

FREQUENCY RESPONSE



DISTORTION



VERDICT

Well specified DAC/headphone amplifier with a super, three dimensional sound.

CENTRANCE DAC MINI £720

SCV London

+ 44 (0) 20 8418 1470

www.scvlondon.co.uk

FOR

- refined tonality
- expansive soundstage
- rhythmically engaging

AGAINST

- nothing



WYRED 4 SOUND DAC-1 £899

WYRED 4 Sound offer two DACs in similar casework. Both feature an ESS Reference Audio ES9018 Sabre 32bit DAC chip, the company's ESS Time Domain jitter reduction technology, with discrete output stages featuring both balanced and unbalanced connections. The DAC-1 reviewed here foregoes the AES input, volume control and remote control of the DAC-2 but costs £400 less. All of the digital, output and USB boards are designed to allow for future upgrades as they become available. You get a pleasingly styled metal box which measures 212x106x350mm, finished in a crackle black finish reminiscent of the dashboard of 1960s MG motor cars! There are three buttons, two move the input selection up or down between the two coaxial or optical sockets or the USB input.

SOUND QUALITY

After the rather energised nature of the CEntrance, the Wyred 4 Sound offering was the polar opposite, sounding quite reserved by comparison. Playing the Domingo CD I found the soundstage rather more compact, fitting very firmly in between the speakers but full of detail. I was impressed with the smooth and even flow to the sound but felt it was a little reserved even when listening through the Stax earspeakers plugged directly into the RCA output sockets. Changing to the XLR connections went a long way to opening up the presentation, although I still felt that this unit would never forget its manners.

The soundstage acquired more depth and there was a greater sense of space between Domingo's voice and the different instruments of the orchestra.

Ravi Shankar's sitar was more prominent in the mix than through the CEntrance, but the tabla lacked a little of the latter's impact and weight. However the detailing of the player's hands on the instrument was exemplary. Rhythmically it coped quite well with the complex Indian

beat structure, but reminded me a bit of the Musical Fidelity here, and seemed to lack a little integration between the striking of the tabla and the strumming of the sitar. It was quite happy with more conventional pop sounds and beats, whether they came from CD or my hard drive, but for me remained a slightly uninvolved listen. For others though, it may be just the smooth, calming performer they need to tame an otherwise over-exuberant system.

MEASURED PERFORMANCE

Frequency response measured ruler flat from 5Hz to 20kHz our analysis shows so the DAC-1 from Wyred 4 Sound will sound tonally even. In practice this can result in a little top end sheen or brittleness from CD. Distortion levels were low with 16bit and 24bit signals, measuring 0.19% and 0.025% respectively. These are good figures and interestingly via the balanced XLR output the 0.025% figure for 24bit at -60dB dropped to 0.015%, quite a significant fall. So there is clear benefit in using the XLR output from this DAC, even though the 16bit result did not change. By any standard the DAC-1 is linear and measures very well, 24bit PCM from XLR being as low in distortion as is possible. We have never recorded a better result.

Output from the phono sockets was a high-ish 2.6V and from XLR no less than 5.2V. The EIAJ Dynamic Range figure was an excellent 101dB, about as good as it gets again.

The Wyred 4 Sound DAC-1 measured very well in all areas. It is a whisker ahead of most rivals and its sound may well reflect this, especially from the balanced XLR outputs. NK

Frequency response (-1dB)	CD	2Hz - 20kHz
Distortion		%
0dB		0.009

-6dB	0.0035
-60dB	0.19
-80dB	4.6

Separation (1kHz)	110dB
Noise (IEC A)	-116dB
Dynamic range	101dB
Output	2.12V

FREQUENCY RESPONSE



DISTORTION



VERDICT

Consummately smooth sounding DAC with well mannered sound.

WYRED 4 SOUND

DAC-1 £899

Item Audio

(T) +44 (0) 1782 621225

www.itemaudio.co.uk

FOR

- pleasant, refined sound
- detailed soundstage
- balanced outputs

AGAINST

- too laid back for some tastes?



LITE AUDIO DAC-83 £995

Lite Audio, based in Guangzhou City in Guangdong province in China, have been designing and manufacturing digital electronics and CD transports for just over ten years. The DAC-83 is the current flagship model in the range. As befits such a status, it is a large and heavy item, the DAC unit measuring 430x70x330mm and the separate, dual mono Class A power supply measuring 150x70x330mm. Both feature aluminium casework and chassis, and are connected by two cables with lockable connectors at the DAC end. Inside the DAC are four Burr Brown PCMI704UK chips, offering upsampling of the signal to the 24bit 192kHz output. There is also a de-jitter circuit to clean the clock and a Class A output stage.

External controls are limited to a power button on the PSU and five buttons to select from the choice of coaxial, optical, AES/EBU or I2S inputs. The latter is used to connect the matching LT -One CD transport. Purchasers wishing to use USB connections are able to buy either an Audio DG Digital interface or a Kingrex USB to S/PDIF convertor from distributors Ampcity.

SOUND QUALITY

Starting listening with the Bizet, I felt that the focus of the sound was on the midrange and upper mid frequencies, while the extreme treble seemed to taper away into nothingness. I liked its nicely shaped bass too, but it wasn't quite of the floor-shaking variety, exhibited elsewhere in this test. The soundstage was about halfway between the

expanse of the Musical Fidelity and the compactness of the Wyred 4 Sound, but the way it was filled was both detailed and engaging.

When listening to Ravi Shankar I found myself getting totally involved in the music. The investigation of the sitar's harmonics was very good as was the speed and attack of the tabla, although it didn't have quite the impact that both the M1 DAC and the DAC Mini displayed. The applause at the end was only moderately resolved, the higher frequencies rendering it a little messy.

The same applied to the sizzling high hats in the Poppycocks recordings, but this was compensated to a degree by the easy way in which the beat of the music propelled it along.

Again I found the vocal sounds reasonable, but not totally accurate in tonality, but close enough to be acceptable. However the sheer musical nature of this DAC shone through. It's a musically convincing performer then, although not as accomplished as others in terms of timbral and textural resolution.

MEASURED PERFORMANCE

Frequency response of the Lite DAC-83 rolls off at high frequencies to measure -1dB down at 20kHz our analysis shows. This will give an easier sound than the other models, all of which measure flat. The roll off isn't great enough for a warm balance to be obvious.	-60dB -80dB	0.57 4.7
Separation (1kHz)		111dB
Noise (IEC A)		-105dB
Dynamic range		98dB
Output		2V / 4V

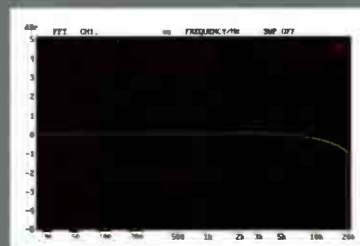
At -60dB distortion levels were high with 16bit and 24bit signals, measuring 0.57% and 0.46% respectively via the balanced XLR output and the unbalanced phono outputs. These are not very good figures, as comparison with the other DACs on test here shows. The EIAJ Dynamic Range figure was affected by this, measuring 98dB - lower than usual, if not by a large amount.

Output from the phono sockets was a normal at 2V and from XLR 4V. The Lite DAC-83 will have an apparently smoother or easier sound than the other DACs and twin power supplies may bestow other benefits, Distortion was high though. NK

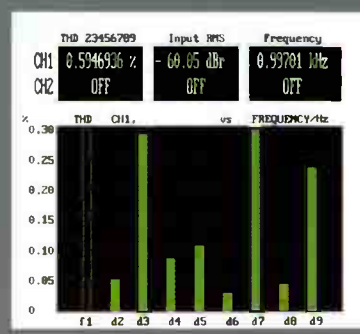
Frequency response (-1dB)
CD 2Hz - 20kHz

Distortion	%
0dB	0.038
-6dB	0.009

FREQUENCY RESPONSE



DISTORTION



VERDICT ●●●●●
Chinese designed and manufactured DAC with detailed and involving sound.

LITE AUDIO DAC-83 £995
Amp City
+ 44 (0)20 3384 6392
www.ampcity.co.uk

FOR
- well defined sound
- rhythmically engaging
- very solidly built

AGAINST
- lacks deep bass



TEDDY PARDO TEDDY DAC £1,158

Israel is not generally thought of as a centre for hi-fi excellence, but if this DAC is an example of what the country has to offer then it is hiding its light under a bushel! This unit looks deceptively simple with just a source selector knob on the front to choose between the two coaxial and one optical input, or the USB connection. Inside the 250x170x62mm casework is a Wolfson Micro WM8741 converter chip which operates up to 24/192 on the three S/PDIF inputs and up to 48kHz on the USB circuit. Output is via RCA sockets only, although there's an extra cost option of XLR. It's a sturdy and robust unit which looks purposed for pro audio use – there's certainly nothing flashy in terms of styling!

SOUND QUALITY

My first impression, as the oboes and violins introduced Domingo's vocals, was the almost gliding smoothness of the sound. Accompanying this was a full bodied bass, which fleshed out Domingo's voice in a pleasing manner. There was definitely more weight and substance to the sound than either the Wyred 4 Sound or the Lite Audio, and it shared the CEntrance's ability to project dimensionality to the soundstage which made for a far more satisfying listen.

When presented with the Monterey recording, the same spatial depth shone through. It contrasted the twang of the sitar against the visceral thud of the tabla, each having a defined space and interaction both rhythmically and musically. I found it a thoroughly absorbing listen, that

transmitted the building excitement of the music as few other machines here managed to do. The beats were hypnotic and the finale had a vividness that I am more used to hearing from my vinyl copy of this recording. It had an evenness and naturalness to the flow of sound that made it stand out.

High frequencies were well behaved, even when provoked by the relatively poorly recorded percussion

on the Poppycocks CD, and I felt that this came sonically very close to capturing the essence of the sound. Feeding USB signals into this DAC again resulted in sounds that were presented with a level of decorum that only the CEntrance had so far managed. A very fine performance indeed, and one which makes it seem well worth the four figure price tag asked for this DAC.

MEASURED PERFORMANCE

Frequency response of this DAC stretches flat to 19.5kHz our analysis shows. This is a bit lower than the usual 21kHz though and quite obviously the DAC uses steep filtering to eliminate unwanted out of band aliases, noise, etc. Steeper filtering is little used except in the few DACs with selectable filter options, from Cambridge Audio and Audiolab for example, but there is plenty to suggest that it does improve sound quality. Response flatness of this DAC points to even tonal balance in use however, the small response limitation will be undetectable in itself.

Distortion was much as expected over the dynamic range of CD but interestingly – perhaps due to the deep filtering reducing in-band quantisation noise – EIAJ Dynamic Range was very high at 100.25dB, just fractionally below some DACs in this group. With a 24bit input distortion dropped to 0.04% at -60dB and 0.4% at -80dB both very respectable results.

Output was a normal 2.2V and both noise and separation figures good.

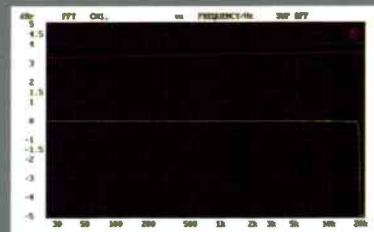
The TeddyDAC has very effective filtering, more effective than most DACs and this gives a better measured performance than most DACs available. NK

Frequency response (-1dB)
CD 2Hz-19.5kHz

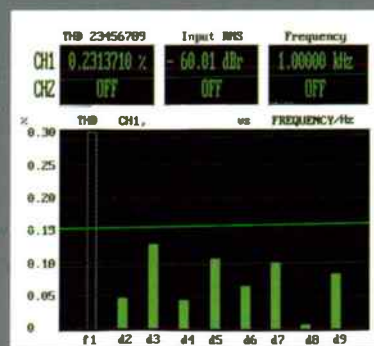
Distortion (%)

0dB	0.035
-6dB	0.0097
-60dB	0.22
-80dB	4.6
Separation (1kHz)	110dB
Noise (IEC A)	-112dB
Dynamic range	100dB
Output	2.2V

FREQUENCY RESPONSE



DISTORTION



VERDICT

Highly refined and musical sounding DAC with excellent build to boot.

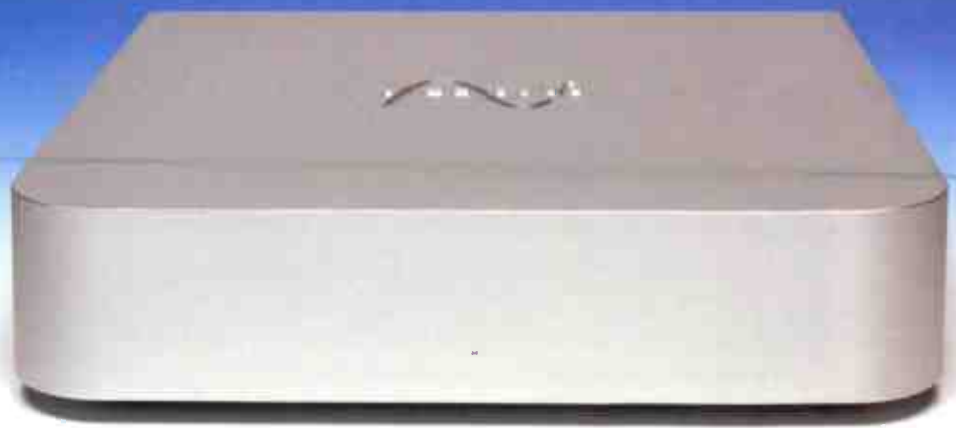
TEDDY PARDO
TEDDY DAC £1,158
Audiocom International
+44 (0) 1646 650046
www.audiocominternational.com

FOR

- smooth and sophisticated
- excellent soundstaging
- musically involving
- strong bass

AGAINST

- balanced XLRs optional



CALYX 24/192 DAC £1,495

Calyx is a brand name for the Digital and Analog Company Ltd of South Korea who have been making amplification chips for OEM use since 1999. In 2008 they started making a range of digital amplifiers, active loudspeakers and the 24/192 DAC we're looking at here. It comes in either black or the brushed aluminium of this example in a 220mm square, seemingly solid block, with gentle curves to the front corners, and stands 45mm tall.

The front contains a single LED which changes from red to purple when locked onto a signal which is fed from the choice of either USB or coaxial input. A small flick switch on the back selects the appropriate socket. Outputs are either via RCA or XLR sockets. Internally it is well specified with no less than eight DACs per channel which are 32bit 400 kHz capable, and two different clocks, one for the 44.1, 88.2 and 176.4kHz family and the other for the 48, 96, 192kHz grouping. It is capable of decoding USB signals at 24bit 192kHz. Mains is supplied through its own internal regenerator, although it will also run from USB power only.

SOUND QUALITY

Coming after the truly excellent performance of the Teddy DAC, I was pleased to find that the Calyx offered sound in a similarly comprehensive and engaging manner. Domingo sounded alive and lovestruck as he produces the flower given to him by Carmen, and this passion, combined with the openness and detail of the soundstage made for one of the

strongest performances of this piece during this review. Again the subtle details that separate a performance from a recording were present when listening to Shankar playing 'Dhun'. I was totally involved in the power of the performance and immersed in the twists and turns of the music, one moment following the beat, another swept along by the uplifting flow of the sitar. The whole sound seemed very well integrated. Even the somewhat messy applause at the end was quite well resolved.

Listening to the Poppycocks, and I felt it rendered vocals very

convincingly, although the CEntrance managed the bass guitar with a bit more body and strength. The messy percussion was quite well resolved, and I thought that the speed and attack of the drums was about right, giving the music a level of excitement that only the CEntrance and the Teddy DAC matched. USB performance was also very good, finding a level of detail in often poorly recorded material that most of the others here couldn't match. A very strong all rounder then, but expensive and it faces robust competition at the price.

MEASURED PERFORMANCE

Frequency response analysis shows the Calyx is flat from 2Hz to 20kHz, with just a small roll down at high frequencies. This is unlikely to affect tonal balance in any obvious way, but it will ensure the Calyx does not sound 'sharp' or glassily hard.

Distortion levels were low and very much like that of most competitors. With a 16bit digital input distortion at -60dB measured 0.19% and with a 24bit digital input this dropped to 0.045%, a low value if not quite as low as possible.

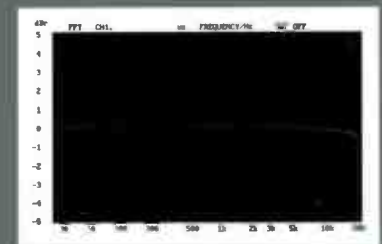
Output was high, close to Philips' standard at 2.2V from the phono sockets, but a massive 6.9V from the XLR balanced outputs. Otherwise performance was identical from both. The EIAJ Dynamic Range was good at 98dB, if not quite up with the best.

The Calyx DAC 24/192 measured well in all areas but it is very much one of the herd measurement wise, with no outstanding properties. NK

Frequency response (-1dB)	CD	2Hz - 20kHz
Distortion	0dB	0.0006
	-6dB	0.0009

-60dB	0.19
-80dB	4.6
Separation (1kHz)	150dB
Noise (IEC A)	-114dB
Dynamic range	98dB
Output	2.2 / 6.9V

FREQUENCY RESPONSE



DISTORTION



VERDICT ●●●●●
Solidly made and excellent sounding DAC from South Korea.

CALYX 24/192 DAC £1,495
Bit Perfect
☎ +44 (0)151 609 1830
www.bitperfect.co.uk

FOR
- smooth sound
- emotionally lucid
- heavy duty build

AGAINST
- poor connectivity

First, a word about our methodology. Obviously we've chosen a wide range of DACs, spanning a £1,000 price gap. You wouldn't expect the cheaper ones to beat the pricier ones, but still this 'supermarket sweep' gives a good idea of what extra you can, or can't, get for your money. As such we get excellent performers at both low, middle and high price points, and others which are good but not so remarkable given their cost. This is what the globe ratings represent; a £700 five globe isn't better outright than a more expensive four globe product, but certainly is better relative to its price rivals.

"you're bound to find one of the DACs here perfectly suited to your number crunching needs!"

And so to putting them all into context! I've based the following ratings mostly on sonic performance, with flexibility and value factored in. It's worth noting that all units tested here proved really rather good, and the cheaper units here offered a very good-to-excellent level of performance for their price point, so all are worth investigating, dependent upon your budgetary restrictions...

In eighth place is the Arcam rDAC. For its price it is a fine little package, with a bright, spry and musical midband, but it's just a little rough and ready compared to the just £50 more expensive Emotiva. The Arcam's packaging, build and functionality are superb however, especially if you're going to use it for computer audio where it shines brightest thanks to the Asynchronous USB connection. Overall it's a great budget do-it-all design, one for which I have respect.

Just pipping it is the Emotiva XDR, which brings the advantages of a smoother, better balance sonically, plus a wider variety of inputs, and remote control, which if you use it as a preamp as well as just a DAC, is a boon. It's only £50 more than the Arcam, yet offers more extras than the price difference would suggest. Still, it can't hold a candle to the rDAC's lovely industrial design.

In sixth place came the Wyred 4 Sound DAC-1. The presentation was almost the exact opposite of the expansive sound of the Musical Fidelity M1 DAC, being quite tightly controlled – I found it a bit cerebral and lacking in any form of emotional display. Bizet's 'Flower Song' should

be an impassioned plea from Don Jose to Carmen, but this DAC seemed to rob it of that intensity, leaving instead a pleasantly sung but otherwise unremarkable performance of a song. I don't doubt that some will prefer it to the larger and/or more exuberant nature of some other units here, though – it's horses for courses...

In fifth place is the Musical Fidelity M1 DAC. It possessed one of the widest soundstages displayed in this group regardless of price, which is a real achievement. It was also refined and 'expensive' sounding, giving a particularly nice rendition of classical music, even if it was a tad airbrushed and glossy in absolute

terms. The downside was its rather laid back approach to rhythms, which stopped it from being a giant killer...

Next up, in fourth place I put the Lite Audio DAC-83. I have described it as an engaging listen, and it was, but sonically I felt that it was bettered by other designs. The focus was very much around the midrange of sounds, and while this carries most of the musical information that we respond to, especially at this price I would have liked to have heard better defined treble, and more weight and shape in the bass. It was very good indeed, but not quite up to the best of the rest at its price point.

So now we come to the podium positions and here the choice became even more difficult! All three of the remaining contenders acquitted themselves well tonally, spanning the frequencies in a pretty even handed way. Each managed a respectable level of dimensionality in their staging of the music, and all coped well with what for me was the most difficult test, that of successfully representing voices in a realistic manner. So at this point I start adding and subtracting brownie points for connectivity and price to try and

ascertain the final order of merit.

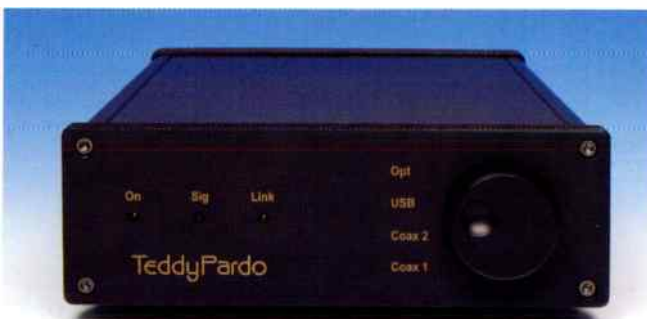
Headphone users will go straight to the CEntrance DACMini, while those who already have satisfactory bass output in their system might find the sound verges on the bass heavy on occasion, and would prefer the slightly more moderated performance of either the Calyx or the Teddy DAC. So in the end I have placed the Calyx in third place. Although the most expensive here, and offering a very sophisticated and detailed presentation of music, it is slightly restrictive in some environments in only having USB and coaxial inputs.

In second place was the CEntrance. Again the sound was superb, but may be a little big for some tastes. However the wider choice of connections makes it a more flexible device and the £720 price tag may well make it the first choice for a lot of potential purchasers.

So that leaves the Teddy DAC as this month's winner. Like the previous two it offers a very detailed, well presented and engaging sound, and I



Best for value: CEntrance DAC Mini



Best for sound: TeddyPardo TeddyDAC

have no doubts that it will satisfy the majority of listeners with its super smooth presentation of digitally stored music. Alvin Gold loved it in his full review last month, and I have to concur. But as always, it's best to listen for yourself if you possibly can; sound is an intensely personal thing and we all respond differently. You're bound to find one of the DACs here perfectly suited to your number crunching needs! **TB**



Few's Company

Thanks to their exotic price tags, Esoteric's C-03 preamplifier and matching A-03 Class A 50W power amplifier aren't products for everyman, but those who can countenance them should be impressed, says David Price...

Esoteric is Teac's high end brand - a Lexus to the Toyota. Whilst times may be tough, it's always interesting to walk on the wild side and fly first class so to speak, meaning Class A. The pre-power combination you see here is both brand new, and quintessential Japanese high end. It's from Esoteric's

Master Sound Works series, which shows the meticulous attention to detail that the company - and its country - is famous for. The Esoteric C-03 preamplifier (£7,995) is built for the matching A-03 (£8,495) power amplifier, the latter producing just 50 very pure watts.

Unusually for Japanese preamps, the C-03 is sparsely outfitted. The

C-03 still has them, but they're on the remote control, leaving the preamplifier to have an unusually clean look with just source selector, volume control, power on/off and a central dot matrix display. Suffice to say it's sublime to the eye and to the touch. At 445x129x383mm and weighing 22kg, it dwarfs most integrated and power amplifiers.



powerful electron microscope. It let you hear right in to the mix in an exacting and relentless way. It's both breathtaking and quite unfamiliar for ears more attuned to British products. Our reference Musical Fidelity AMSS0 for example, sounded veiled compared to the A-03, which seemed to strip out a layer of haze from the sound, add speed and fire a piercing white halogen beam onto the upper midband. But don't get me wrong, it wasn't bright or harsh in the least, just as 'well lit' as a cupboard with a hundred watt bulb inside. It made the rival AMSS0i seem positively sepia tinged and almost 'dim' by comparison.

For example, Sade's 'Smooth Operator' had me gripped; rather than a languid cafe jazz standard, it felt like I'd entered a high energy jam session with Ms Adu and the band, who was belting it out at one hundred miles an hour. All those gentle percussive stops and starts, which give the song a soft but infectious gait, had become dramatic dynamic peaks to break up the chorus and the verse. Those quiet tom-toms, playing so sweetly at the back of the mix, had become fierce weapons which almost had a projectile-like velocity. That saxophone, supposed to be a lilting motif at the back of the mix, was now deployed as an incendiary lead instrument that was positively ruling the rest of the mix. And whilst it was extremely intense and almost 'brilliant white' in its tonality, I don't think I ever heard the Esoteric sound harsh.

Elton John's 'Goodbye Yellow Brick Road' showcased the Esoteric combination superbly. It showed its ability to track every individual strand in the mix, project it confidently and boldly out into the listening room, and show absolutely *no* sign of strain or indecision on musical crescendos. Instead, the Esoteric pre-power

The company talk in terms of optimal layout "with the highest grade of components". For example, the input and output audio boards sit one above the other in a dedicated compartment at the rear of the chassis close to the rear ports, for shorter signal paths. The C-03 is a dual mono discrete transistor design; many believe this to sound better than op-amps (integrated circuits) if done properly, including myself. The output stage delivers signals to the external power amplifier via an output buffer circuit with the same high voltage design as their super-high end monaural D-01 digital converter, says Esoteric. Furthermore, each channel has its own dedicated power section and large 200VA toroidal transformer.

Twin Burr-Brown T1s were chosen for the volume control amplifiers. While control of left and right channel balance, input sensitivity, and total gain, are controlled by a microcomputer. This is isolated from the audio circuits by a photo-coupler to prevent interference with the sound, and the C-03 turns off the microcomputer a few seconds after you stop using the volume control. Five analogue inputs are offered (three RCA, two XLR), and three outputs. Cleverly, the input and output terminals are mounted on thick 2mm steel rear panel plates that are connected to the inner board with flexible copper wire, isolating the inner board from the adverse effects of cable transmitted external vibrations, and there's a 5mm thick bottom plate.

The A-03 power amplifier is vast at 445x220x430, and measures 38kg. Only behemoth rivals like Musical Fidelity's AMSS0 which we use in the *Hi-Fi World* office system make it seem a sensible size! As per most Japanese high end designs, it's full Class A so only puts

out a very catholic 50W RMS per channel [see MEASURED PERFORMANCE]. Yet it's engineered like the proverbial battleship; better possibly. It sports large dedicated toroidal transformers for the left and right channels, separate dedicated compartments for the power transformer, power circuits and the voltage and current amplifier stages. Chunky transistors with a current supply ability of 17 amps for continuous output, and 34amps for sudden bursts, are fitted in the current amplifier stage, five of which are mounted in a parallel push-pull configuration for each channel. It can be used as a monoblock, bridged, offering 200W at 8 Ohms, Esoteric says.

The A-03 features a 'warm up' mode which lets the amp be warmed up to play music using only 55% of the standard power consumption, taking a trifling 220W!

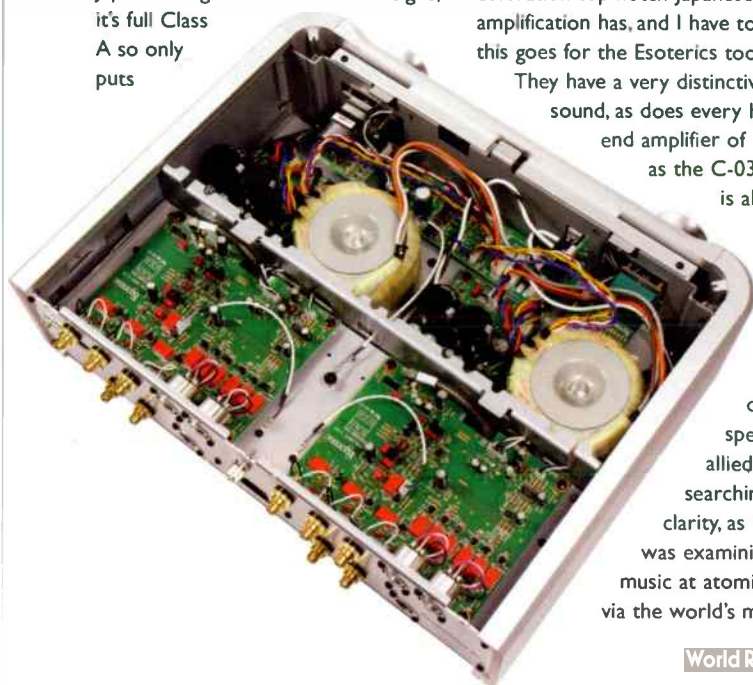
Round the back, there's switches for either mono or stereo operation, and RCA phono or XLR input selection, plus an IEC mains in. The speaker terminals are fancy looking WBT-0710Cu types with conductor cores of pure copper with gold plating, Esoteric says. As with the C-03, a highly rigid body is used. As per the matching preamplifier, the finish is superb and gives away nothing to any other high end product I've tried. It is exquisite.

SOUND QUALITY

The Esoteric combo was a little dry and stark from switch-on, but after about thirty minutes it began to relax. It was clear that balanced operation sounded best, so I soon migrated to XLR connectors, including for the source. I am always struck by the incredible precision and almost complete freedom from coloration top notch Japanese amplification has, and I have to say this goes for the Esoterics too.

They have a very distinctive sound, as does every high end amplifier of course, as the C-03/A-03 is all about

dizzying speed, allied to searching clarity, as if it was examining the music at atomic level via the world's most





Storm Turntable

“ ...a highly capable deck that sits comfortably and against stiff competition - excellent value for money. ”

Acoustic Signature Storm Turntable
Awarded 5 stars - Hi-Fi World Review

VERDICT ●●●●●

Advanced technology combined with micro-precision engineering from Germany underpins the quality and value of these superb turntables.

Owning an Acoustic-Signature turntable could be your best long term investment in the supreme medium for music reproduction – prices from £1,632 to over £20,000.

Distributed in the UK by:



Tel +44 (0)1491 629629 | info@airaudio.co.uk | www.airaudio.co.uk

DEALER ENQUIRIES VERY WELCOME

manufacturers website www.acoustic-signature.com

simply holds on tight to the music, offering seemingly effortless reserves of power and tremendous headroom. Again, in this respect it appeared more dynamically unfettered than the rival Musical Fidelity AMS50. I heard a beautifully silky top end, the Esoteric combo seemingly gilding the hi-hat cymbals. At the same time, snare drums were arrestingly punchy, the A-03 summoning up seemingly effortless reserves of power. Elton's piano was bracing, its rich harmonics ringing out of both loudspeakers in a way rarely heard on other equipment, and that backing violin sound was wonderfully wiry and sinewy yet never harsh. Midband detailing was superb, the guitar sounding crisp

was a soaring, towering, crashing masterpiece through the Esoterics, giving a seat of the pants listening experience that had my flares flapping, yet never once descended into harshness, despite the rather dry and hard sound of the CD remaster. I was greeted by those wonderful close-miked vocals, rendered in a raw and earthy way (no airbrushing here), underpinned by that sublime guitar riff crashing and growling behind, punctuated by a drum kit that sounded as bracing as a strong wind off the north sea in November. The snares were electrifying, practically nailed down to the furniture in a precise position in the mix, delivering shocking bursts of power from an

in the shape of Beethoven's 'Missa Solemnis in D major' (Berlin Philharmonic, Karajan, DG). Here the startling clarity of the Esoterics came to the fore, rather than their obvious power and grip. Those haunting and ethereal voices were a joy, and the amps' superlative upper midband clarity gave tremendous texture to oboes and strings, while female solo voices had a disarmingly icy quality about them. I was again struck by the dynamic ease of this combo; it doesn't shout out at you or give you a headache, but nor does it compress the sound and/or go all gooey or woolly when asked to track the music properly. The result is that the music seems to get louder, then quieter, then louder again, remarkably easily; there is seemingly effortless power to capture varying intensities of voices. Add this to its ability to hear right behind to the back of the recorded acoustic, even at the most intense dynamic crescendos, and you have a mightily revealing and incisive combo, but no less musical for it. Its breathtaking incision captured the brooding, haunting feel of this piece of music brilliantly, and I was smitten.

VERDICT ●●●●●
Breathtaking clarity and poise, allied to true musicality make this one of the best solid-state pre-power amplifier combinations on sale right now.

ESOTERIC C-03 £7,995
ESOTERIC A-03 £8,495
Symmetry Systems
☎ +44 (0)1727 865488
www.symmetry-systems.co.uk

- FOR**
- startling midband clarity
 - fast, grippy, powerful bass
 - silky, shiny treble
 - effortless at high levels
 - build, finish, design

AGAINST

- price



enough to crunch but still skillfully separated from the rest of the mix.

Despite all this lovely textural information, and that almost heightened sense of the intricacies of the recording, the Esoteric combo still proved musically very lucid; it was all analysis and deconstruction. I was struck by how this combo conveyed the rhythmic aspect to Elton's piano playing; the piano sounded gorgeous all right but this wasn't where my attention was focused. Instead I was beguiled at the way Elton was using his ivories as a percussive instrument, as much as it was a melodic one. The C-03/A-03 conveyed the starts and stops of his hands on the keyboard in as vibrant a way as it did the ringing harmonics of the piano itself. At the same time, it served up a staccato snare drum allied to dull, tightly damped thudding kick drum; rarely have I heard Elton John in such an intense way. Bass notes started and stopped as fast as an LED strobe light.

If Elton John was suddenly given the incision and bite of Led Zeppelin, then Led Zeppelin themselves were all the more profound a listening experience. 'Whole Lotta Love'

amplifier that sounded not in the least bit phased. I loved the way that, even on the crescendos where we had that deep, grumbling bass guitar, screeching lead guitar and snarling vocals all running up against one another, the drums didn't fade back one jot – instead they got louder and louder as the music called for them so to do. This combo was a revelation with John Bonham's stunning percussive power, with drum breaks like machine gun volleys, hanging off the beat so as to convey tension like a coiled spring. So yes, the Esoterics can do rock, and I have to say better than pretty much any other Japanese high end pre-power I've heard.

After the intense, pulsating power of Led Zep II, it was time to move on to altogether more rarefied pastures,

CONCLUSION

Yes, it's expensive. But if you're in the happy position to be able to afford this combination, and crave clean, pure, unsullied amplification that's both analytical yet tremendous fun to hear, then I doubt you can get substantially better than this. You can certainly get *different*, but as solid-state high end goes this is full of Eastern promise.

MEASURED PERFORMANCE

The A-03 produced 50 Watts into 8 Ohms and 81 Watts into 4 Ohms, whilst running warm but not hot to the touch when idling. Class A amps actually cool down as more power is drawn but with music this is not apparent. With good power regulation and a very high damping factor of 84 the A-03 is likely to have firm, punchy bass, much like the similar Musical Fidelity AMS50 we use as a reference transistor amplifier.

Distortion levels were low and primarily second harmonic in nature. The distortion pattern remained stable as output increased so there is little change in the transfer characteristic and this should help keep the sound character free.

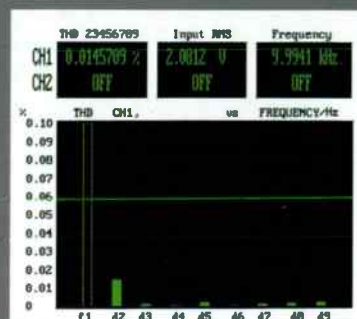
Fed from the C-03 preamplifier via balanced XLR cables, input sensitivity of the combination measured 400mV via RCA and XLR socket inputs. Surprisingly for a modern amplifier gain rolls off below 10Hz, but this is still low enough to produce good subsonics.

The Esoteric C-03/A-03 pre/power

combination measured well in all areas and will likely give excellent Class A sound characterised by clear, open sound with tight, powerful bass. NK

Power	50 Watts
Frequency response	10Hz-54kHz
Separation	95dB
Noise	-108dB
Distortion	0.014%
Sensitivity	400mV

DISTORTION



mail



Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q100 loudspeakers.

LETTER OF THE MONTH PRIZE



KEF Q100 LOUDSPEAKERS

For more advice see Letters from earlier issues at www.hi-fiworld.co.uk/letters

A pair of KEF Q100 loudspeakers are on their way to **J. ROBERTSON** Letter of the Month winner in our **SEPTEMBER 2011** issue.

Letter of the Month

SYCOPHANTIC REVIEWS?

Having been an ardent reader of Hi-Fi World since jumping ship back in 92' and not missing an issue to date, I feel it is pertinent to raise a couple of issues that have concerned me recently and have started to spoil almost 20 years of my reading pleasure from the most competent and realistic audio magazine on the market.

My first concern is regarding companies that advertise with you and the almost sycophantic praise they receive with their products e.g. Inspire Hi-Fi and Icon Audio. I have nothing against either manufacturer, but it does seem their reviews appear unchallenged and dare I say biased. I accept hi-fi is purely subjective in terms of preference to sound, yet I find neither brand offers anything out of the ordinary with the exception of the PS3 phono stage which I thought to be good value.

My next concern/shock regards AS's review of the X100 tonearm in this month's issue. I've enjoyed many an article from the pen of AS but this review makes ludicrous claims ("the new standard") about what is surely an uninspiring attempt to copy the Funk FXR, which you made tonearm of the year recently and as a result of DP's review and audition, I duly purchased. Yet AS makes no mention of this, other than what can only be perceived as an insidious attack on the Funk and other designs that use the Rega platform!

What's going on then? Am I just being cynical? Or is there something readers like myself (which have collectively brought HFW to where it is today) should know about? Please get



Valve amplifiers are heavily dependent upon transformer quality, and Icon Audio make their own.

back to doing what you do better than the rest – review hi-fi that is affordable or at least attainable over the passage of time and many months saving!

Regards

Joe Cohen

Considering the Funk Firm FXR arm, I agree that it is a fine product; well worthy of our award last year and you can be rightly proud that you own an item designed by one of the finest vinyl minds in the hi-fi industry.

I have often said that if some others showed even half the engineering ingenuity exhibited by The Funk Firm's Arthur Khoubesserian, the world would be a much more interesting place.

The trouble is, having spent time with both the FXR and the Inspire X100 in my own system, it all boiled down to the fact that I simply preferred the X100, with no other underlying axe grinding. In fact, I deliberately chose not to mention

the FXR in the review, lest this come across to readers as an intended slight, which was most certainly not the case.

I cannot help feeling that your description of the X100 as an "uninspiring copy" of the FXR is incorrect at best and insulting at worst. I know for a fact that it was been under development for a considerable time and also that Robert Isherwood is certainly not the sort of designer who sneers at another product and thinks "I can make a better copy of that". Whilst ostensibly visually similar, the FXR and X100 have different bearings, different wiring, different arm tube materials and geometry and different headshell construction; with all this taken into consideration I can't help thinking you are letting appearances deceive you. **AS**

Hi Joe If we're handing out plaudits based on advertising as you fear, we'd not be handing out plaudits to those

Of all the magazines around, I think it's hard to argue that we take a hard-nosed, advertising driven editorial stance, given that we spend so much time and magazine space writing about things you can't buy new any more!

Instead of getting all conspiratorial, I'd suggest you asked more questions about why we like particular brands at certain times – which would prompt us to explain ourselves better, perhaps.

Thanks for asking the question you did in a civilised and courteous way, which is more than some internet forum conspiracists. I'd simply say that – whilst there are always some subjective disagreements – you're perfectly at liberty to research our findings using your own ears and I think you'll find we're far more right than wrong about things. Certainly, the large amount of mail we get suggests that most of our readers think this to be the case. **DP**



The Funk FXR is the arm Joe Cohen purchased after we praised it. And it remains a great arm...

companies not advertising. This is self-evidently not the case, nor has it ever been. Hi-Fi World has probably done more to champion the cause of 'classic' (i.e. used, old, obsolete) audio than any other magazine. So if our editorial was advertising driven, Noel wouldn't be championing Garrard 401s (who knows, maybe he's tried to get Plessey advertising with us!), I wouldn't be singing the praises of a long-deceased pair of Yamaha speakers and indeed Hi-Fi World wouldn't have promoted, variously, valves, vinyl, direct drive turntables and cassette, when there was precisely zero business to be transacted from them! And why do you think all the other mags went into AV when we did not? For the advertising!

Hi Joe. Those that get good reviews tend to advertise with us. It's this way around, not the other way around! And all is not quite so simple as it may appear. For example, we gave Icon Audio mediocre reviews for some years and owner David Shaw was upset and annoyed by them. He did in the end improve transformer quality by changing supplier and this brought about the sound quality improvement needed and glowing reviews.

Behind this lies quite a complicated story in truth, as you might suspect as he now has his own engineering team and factory in China, my report reveals in this issue, so he is more proactive than most. He does not now use subcontractors, keeping both quality and price under

firm control. I feel our enthusiasm for his products is more than justified.

He told me recently that it was a World Audio Design KT88 amplifier that set him off along the valve path – and we used Britain's best designer, Andy Grove, and its best transformer manufacturer, Morite, to produce the transformers of our amplifiers. This is where and how the standard was set.

Since Hi-Fi World is well known worldwide – including China – as a magazine expert in valve technology it is hardly surprising that Icon Audio get the best response from advertising with us. It is simple commercial logic; they're not going to place an ad in Woman's Own...

I do understand that continual praise of a certain limited range of products looks suspiciously like some form of favouritism, but if you look closely you will see this is not so. Rega, for example, get constant praise and I know owner Roy Gandy well, but do they advertise? No!

If praise is "sycophantic" then do you suggest we should not praise good products? Should I not have praised Creek's Destiny 2 amplifier that I thought was wonderful (and they don't advertise either), because this would be sycophantic? How do we convey outstanding quality then?

You might like to read below the opinion of someone who bought the Inspire turntable modification package that DP raved about recently. **NK**

LINN LP12 INSPIRE

I bought May's Hi-Fi World, the one with a review of the Vivid LP12 upgrade, and was very impressed with the review. I have a large vinyl collection, and always enjoy reading vinyl-related articles, so last month's magazine was especially interesting. I know you have always favoured vinyl as a format, even through the lean times of CD dominance. Now, it seems that vinyl is truly making a comeback judging on the number of new releases and re-releases being issued in the format. At last, sense is returning. Digital will always win out on convenience, but there's something so right about a decent vinyl set-up. Mind you, I've been listening to vinyl for over 40 years, so maybe I'm just tuned into it. Also, holding and reading a CD insert pales in comparison with holding and reading an album cover. I know, it's nothing to do with the music, but it adds to the experience.

Now, to the main point of this letter. I have an LP12 which I bought around '83 or '84, and thought it was reasonably well sorted; Cirkus bearing, Trampolinn base, Ittok LVII arm and



Roger's Linn LP12 turntable got an Inspire upgrade.

Lingo power supply.

Your review indicated that the Vivid upgrade would achieve quite considerable improvements, and I must admit I had my doubts that improvements to that extent could be achieved in my case. After all, I thought my LP12 was pretty good. Anyway, I decided to find out, so I made contact with Robert at Inspire Hi-Fi, who suggested I bring my LP12 for a comparative audition. As I live only 30 minutes from his unit this wasn't a problem, and a date and time was agreed.

I have to say, I was absolutely amazed at the difference I heard after only one track. What did I hear? An invisible veil had been removed from in front of the speakers, the whole sound was tightened up, timing was improved as was instrument placement. The music flowed, it had my foot tapping and sounded so much better. The thought of returning home with my LP12 was too much to bear, and so I placed an order and left it with Inspire.

Robert did an excellent job fitting the new parts and rebuilding my LP12. I've now been listening to my Vivid LP12 at home for a few weeks, and am still amazed at the improvements in sound quality. It's going to take a while, but I want to go through my record collection.

I decided to re-read your review, and was amazed at how accurate it is. That doesn't sound good, let me rephrase it. I'm amazed at how closely I can relate to the contents of the review. I've seen so many glowing reviews in magazines that I think I've become a little immune to them, and sometimes 5 stars (or globes) are awarded for products, which if I invested in I feel would only provide subtle improvements. However, in the case of the Vivid LP12 upgrade, it's worth every penny, and the improvements would be even more marked when carried out on a lower spec'd deck than mine. I shall be eternally grateful (well, for a long time anyway) that I bought your magazine and read the review. Keep up the good

work at Hi-Fi World and many thanks to Robert at Inspire Hi-Fi,

Roger

The quality of the LP12 Vivid mods package was such that I felt a detailed four page 'rave review' was necessary. It's a great value package – you only need to look at what Linn Products charge for their mods to see the sort of value for money the Inspire kit represents – and I had to say so. It is a really great product, even if some seem to think praising it amounts to bias! **DP**

BOUNCING BACK

I am coming back into the hi-fi market after some years. I have some funds to improve my system and would like some advice regarding upgrading it. The system is quite old but functions well. It comprises a Linn LP12, Cirkus, Lingo, Trampolinn, Ittok, Dynavector Karat, Naim 32.5 preamp, 140 power amp, Hi-Cap psu, Epos 14 speakers, Teac D700 CD drive and Benchmark Dac Pre. The Naim amps were completely rebuilt by Naim 2 years ago. The result of this service was superb and is thoroughly recommended. However, I have the impression the Naims have a certain heavy feel about the sound that may not be in more modern equipment.

The speakers are very old and I am sure modern components will be more expressive.

I have a feeling the amp or the speakers should be first. I have thought of a Naim 200/202 and Hi-Cap or an ATC 2150 integrated or even a Leema Tucana as potential upgrades. What are your thoughts? If I change the amp, could you recommend a phono preamp for under £1,000 that will deliver a similar or better sound than the Naim preamp?

With regards to replacing the Ittok, can you recommend an alternative that is not in the same price league as the current Ekos? Are any of the Origin Live arms good alternatives and would they work with the Karat which I think is a great cartridge. Incidentally do the SME arms work with Linn decks or are they too heavy?

For the speakers, I am at something of a loss to know where to start. My room is 15' by 13'. I like the traditional Naim characteristics of speed, tempo, foot tapping factor but also want a good voice reproduction. I have read of the ProAc Studio 140, the Neat IsoBaric range, some of the PMC speakers that have good bass from small cabinets or perhaps something in the Spendor range.

On the CD replay front, I am fairly happy with my current equipment. However, the drive is quite old and has been rebuilt once some years back. Can you recommend an alternative to go with the Benchmark?

I also want to stream computer music to the DAC from a PC on another floor in the house. The DAC does not have an ethernet connector. Could a Logitech Squeezebox deliver a good solution? Do you have any experience of using Devolo Powerline adaptors to connect the computer to the system over the mains as my wife is not keen on having network cabling run around the house. Perhaps a Sonos wireless system would be the answer?

I am interested in new products but could easily go secondhand, especially



Leema Tucana amplifier – a favourite with reviewer Tony Bolton and a great sounding amplifier with an expansive sound.

for the amplifier or the speakers. Your comments will be most welcome.

Robert Harris

It's very difficult to recommend a change from your Naims without you listening first, as they have such a distinctive sound (particularly the older, eighties-era Naims such as yours) which you might rather like. You certainly can't get the classic Naim sound from a new Leema Tucana, so you have to ask yourself just what you're trying to achieve by changing them? Certainly the Tucana would give a sweeter and more expansive sound than your Naims, with a solid bottom end and a more extended top, but it likely won't have that seat-of-the-pants feel your current classic combo offers. I really think you've got to go to a dealer to find out; try to audition a modern Naim separates equivalent and take it from there.

My suggestion for a phono stage would unhesitatingly be the ANT Audio Kora 3T Ltd., at around £1,000; this is smoother, more dimensional and far more organic sounding than your NAC32.5 phono stage, yet just as grippy and fun to listen to.

The Origin Live arms are excellent, and I'd say the Encounter Mk3c would be your logical choice at £1,345; in his Timestep SL1200 review a few months back, Rafael Todes found it more musical and natural than the SME309, so it's not just me who likes them! You'd find the OL arm to be more expansive, dimensional and detailed than the Ittok LVII, and lacking its characteristic 'zing'. I do like the Ittok, but it's no match for a serious modern arm with a low-resonance armtube. SME arms do work on Linns, but I don't find them a particularly synergistic match. As an alternative to the OL, the Funk Firm FXR II (£1,175) would be one to try; it's a little less tonally transparent and a touch more upfront, but riotously good fun to listen to.

I would not advise Spondors if you're graduating up from Epos ES14s; you might find them a touch too tame. ProAcs are good, as are Neats, but my taste would be Yamaha Soavo 2s (£1,200) with your particular front end. Cyrus's CD XT se CD (£1,550) is the best affordable silver disc transport, in my view.

There are many possibilities for your network music player - Cambridge Audio's NP30 (£400) feeding your DAC is probably the right sort of solution for you; Squeezeboxes are good but it's worth spending a little more on

the Cambridge if you possibly can, for superior sound. I'd personally err against the Devolo powerline solution, simply because you don't want too much 'noise' on the mains if you're a serious analogue listener. The Sonos system is nice and slick but a little pricey; the Logitech Squeezebox Touch is a good cheap alternative.

DP

PERSONAL GAIN

I used to be very happy with my vinyl system, and I still should be, but unfortunately I'm not. My system was a Townshend Elite Rock/ Excalibur/ Dynavector DV20X High Output Moving Coil. The rest is Quicksilver V4 Monoblocks, Quicksilver Full Function Pre Amp, Celestion A3 speakers, the other sources aren't relevant here. The turntable sat on a Voodoo Airtek platform.

I ended up with two Townshend Rock References, one SME V tonearm, one Excalibur. After a demonstration, some debate and advice over coffee with the very nice Audio Origami chappie, it was decided that The Reference with the SME V would stay,

Got a Partridge Transformer step up 1:50, which should provide oodles of gain for my valve pre input (never had this with the Dynavector). I got the gain, but also got an awful lot of hum with it, unbearably so.

I am trying to find a solution, I could obviously swap back in the Dynavector, but having heard what the Transfiguration could do at the demo, I know I'd rather find a solution. Should I be thinking of an alternative solution to increase my gain or is the fault lying with earth loop hum issues. Can I apply some design to the Valve amp and come up with a higher gain Valve I/P stage myself to give me the gain I need without introducing the hum, or should I be looking at alternative inputs.

I loved the Quicksilvers, I like what they did with my old set up, I am really looking to get my frustrating problems resolved. Always wanted a Rock Reference and I'm sure my issue is gain, so that's what I'm after - gain without hum. For other readers, beware of the pitfalls of Low OIP MC's, careful what you wish for.

**Ewan Scott
Aberdeen**



A high quality Moving Coil step-up transformer from Music First Audio can be put in front of a valve phono stage to eliminate hiss.

and this came with a Transfiguration AF1 cartridge, with the tip in very good condition under a 60x Magnifier. It also sounded brilliant in the demo, which was using as additional equipment, old Yamaha NS1000M speaker driven by a large Marantz solid state amplifier, not sure what!

All sounded fine, Rock Reference, SME V, Transfiguration, splendid, always liked the Elite Rock and thought this would be similar, just a little "moreish". I think his Solid State amp had a lot of gain.

I got all this home and after final hook up, the Transfiguration sounds really nice, but a tad dull and lacks high frequency extension, it's a bit like listening through a veil. At higher volume it sounds similar, but, there is noise starting to swamp through the signal, not crackly, just a constant shhh. I thought Signal to Noise Ratio, low OIP MC cartridge, get a step up transformer.

Other readers are using Moving Coil cartridges without your problems Ewan. Valve phono stages are too noisy for quality MC cartridges unless an input transformer is used, as you found out.

Putting a transformer between cartridge and amplifier may break the ground connection. If this is the case, then the grounds simply need to be reconnected by using a wire to link the signal cable screens to the amplifier input earth at the phono sockets.

If the transformer had an earth link between primary and secondaries then you have a hum loop and a mains ground needs to be broken somewhere. This is more difficult and contentious, because it potentially compromises safety. The usual solution in amplifiers to use an earth lift resistor and I think I am right in saying the Icon Audio ground



Triangle Antal loudspeakers stand tall at 1.2metres and give great sound quality over a big sound stage.

switch does this. I should explain that an 'earth lift' doesn't disconnect the earth; it allows enough current to flow to cause a 13A fuse to blow should chassis work become live, but it usefully attenuates low voltage earth currents that cause hum.

The ideal solution would be to buy an Icon Audio valve phono stage and plug its output into a line input of course. But you may just be able to eliminate hum by rearranging the earths. I presume you are not suffering hum induction, which is a different problem. If this is the case, moving the transformer around, especially turning it 90 degrees, is likely to help. You would need to experiment to find the best position. The input transformer must be placed as far away as possible from mains transformers, to avoid their hum fields. **NK**

POWER GAMES

I wondered if you'd like to air your opinion about a frequently stated view on amp and speaker matching. I've read in other hi-fi journals - and I hope I understand it correctly - that in order for short, louder passages of music not to sound "squashed", mega-watt amps are required. These would include those where specs beyond 250 Watts per channel are the norm. Those who express this viewpoint have far more experience of hi-fi and products available than myself, and my intention

is not to belittle that - but aren't a few wires being crossed here?

In the 1980's as a teenager, I bought a Sharp Radio Cassette, specified as 60 watt PMPO (Peak Music Power Output (Peak Music Power Output I think that stood for) per channel. Having a sneaky peak at the back of the speaker drive units, they stated a power handling of about 8 Watts RMS, which means the amp driving them was probably less than that in RMS terms. What I am getting at is that surely the above referred to crescendoes in music that "only the mega watt amps reproduce correctly" have more to do with peaks (PMPO) than RMS power. The articles I've read don't appear to make this distinction when advising of a suitable WPC rating.

My Rega Mira 3 amplifier is rated at 61 watts RMS per channel - which, by my rough calculations, ought to have a PMPO of about 5 times that - 300 watts! Surely this is enough to reproduce peaks satisfactorily in the average living room (14-20ft)? Am I right in thinking that when the mega-watt amp argument states that, for example, 500 WPC is needed to reproduce short peaks, what they actually mean is Peak Output?

Craftily, they mention a few "well-chosen" amps that reproduce 500 watts RMS, hoping that their readership will not notice the difference? Thus, hi-fi punters are encouraged to believe that a power upgrade from their "meagre" 80 or so WRMS amp is necessary!

I would have thought that the chief

issue is making sure that the chosen speakers are capable of handling more than enough watts RMS per channel for any given amp output, also expressed in WRMS. I have never known any but the beer-budget ghetto blaster manufacturers of yore to quote PMPO - so I am supposing that the mega-watt amp argument can safely be ignored.

Furthermore, as one of my favoured dealers said when I auditioned the Mira 3, specifications are "just numbers" - what's more important is whether they reproduce the sound you are after. If they measure well, it's a bonus!

By the way, when I eventually upgrade my speakers, I will be looking for a little extra emotional involvement, particularly in the vocals, and a little extra scale in the stereo imaging department. My Rega R3's are a great speaker, and tonally hit all my right buttons. But they're a tad short; therefore, when seated, performers appear about 3ft high and don't project into the room as perhaps they ought.

Can I leave you with a couple of my favourite demo suggestions - primarily for the music, but also for aspects of hi-fi goodness? These are Nitin Sawhney's 'Beyond Skin' album (for bass and stereo reproduction, plus its tendency to change mood from colossally loud crescendoes to near silence at a pinhead) and Jamie Cullum's song 'Fascinating Rhythm'. Performing live, Cullum often dances around the piano, knocking on the wooden casework, plucking the strings inside, and the production on the above mentioned track mirrors this rather well!

Mark Pearce

The issue of power can get very complicated, especially when we start talking about peak-to-mean ratios, which are typically are very



A low power amplifier that sounds very powerful, the Musical Fidelity AMS50, simply because it has a huge, high current power supply.

high (45dB or so) with demo CDs like Hugh Masekela's 'Stimela' (Train To Zimbabwe) so popular at shows, yet very low with much compressed Rock, at 15dB or so. These are commonly quoted figures, but let's look at them quickly.

Modern loudspeakers typically produce 87dB SPL at 1m from 1 Watt input power. This will drop by approximately 4dB at 2m and 8dB at 4m. At 4m distance you will perceive 79dB from one loudspeaker, and 82dB from a stereo pair. You need to hear around 95dB on peaks if music is to sound loud, or 13dB more power than 1 Watt, which is 20 Watts. I have checked all this many times with real, live measurements whilst reviewing to ensure I am working within equipment limits, using peak reading 'scopes and a Bruel & Kjaer SPL meter and they are real values, I can assure you. In a 28ft square room and at 12ft from the loudspeakers I rarely get more than 10V maximum (17 Watts) into each loudspeaker and actually find myself listening at much less.

The power required jumps up rapidly if you want to go much louder. Add 3dB and you need 40 Watts, add another 3dB and you need 80 Watts (giving 101dB SPL peaks). I find it difficult to survive these levels but some may not. For 107dB peaks you then need 320 Watts but it is horribly loud! I suspect most people listen at modest levels and need very little power. High volumes become a real nuisance to others in adjacent rooms, buildings etc and this alone commonly puts a practical limit on usable volume.

High power amplifiers often sound tighter and punchier even at low levels, but this is down to their beefier power supplies being able to deliver more instant current. The Musical Fidelity AMS50 we use is an example: it delivers barely 50 Watts but sounds far more powerful because it has such a massive power supply and can swing plenty of instantaneous current.

If you like tall loudspeakers that image well try Triangle Antals. They produce a massive sound stage and very clean dynamics. **NK**

AS YOU LIKE IT

I have been interested in hi-fi since 1992 when, at the tender age of fifteen, I saved up for a Marantz CD52MkII (which, incidentally, still provides CD-spinning duties in my home cinema system in the lounge). Time spent studying, working abroad and being generally broke has meant I have never really had the opportunity to build the kind of system I would like, however, and

even today my Aura VA100 Evolution, which is virtually the same age as the Marantz, continues to sit at the heart of my proper hi-fi, driving a pair of more recent Quad 11L2 speakers and Grado GR80i headphones in a small 6x3m listening room.

The Aura has seen better days; there's a lot of crackle and the left channel is prone to drop out whenever the volume control is rotated, though it will settle down once the right volume has been set but for now I think a thorough clean-up of its rusty innards



Spendor SA1 would sound nice with an Aura VA100 amplifier, says David.

will have to suffice, until funds allow me to replace it with something like the Creek Destiny 2 you reviewed a couple of months back, perhaps driving a pair of Spendor SA1s, which I liked very much when I heard them on the end of a Naim Supernait and think would cope well with having to be placed close to a rear wall. Any thoughts on how such a combination might work? And any suggestions of other equipment I should listen to as and when I am in a position to buy (remembering this would be at the top end of my budget)?

What I would really like advice on, however, is how to improve the digital front end of the system on a budget of about £700. About three quarters of my listening is to CD via a 1998 Arcam Alpha 7, though I also listen to my iPod quite a bit (via its headphone jack at the moment) and very occasionally to my old Sony Minidisc player as I have concerts and book dramatisations recorded from Radio 3 and 4 on MD. I don't listen to my computer at all, not least because it doesn't have speakers, but it is on a desk just next to the hi-fi and I guess there are occasions when it would be useful to have it plugged in, although I think it unlikely it would become a regular listening source.

So I think my options are basically a good external DAC like the Arcam rDac,

Rega Dac or Musical Fidelity M1 Dac or a CD player with digital inputs I could stretch to both the Audiolab 8200CD or Marantz SA-K1 Pearl Lite (which is down to £700 and unlike the others wouldn't need an additional iPod dock to strip the digital signal as its front-mounted USB port does this).

You've reviewed most of these I think so could you advise me which you think would offer the best sound quality, and which might best suit my system. I listen to a wide variety of music, lots of classical, especially small-scale chamber

music, but also jazz, latin, soul and rock: everything from Schubert to Supertramp to the Stylistics in other words. Do you think the SACD-capabilities of the Marantz might make it worth considering even if its CD playback isn't quite as strong as the Audiolab, say, or my Arcam feeding one of the external Dacs? I don't own any SACDs but flicking through BBC Music magazine's round-up of the latest classical releases made me realise that, in this genre at least, SACD is alive and kicking, and I notice that the upcoming remastering of Pink Floyd's studio albums will be available on SACD.

James Philips

An Aura VA100 driving the Spendor SA1s should work well, although nowhere near as well as the Creek Destiny 2 doing the same job; the latter is superb and in another league to the Aura, which was always good for the price but nothing too special sonically. My personal favourites at roughly that price would be the Audiosmile Kensai (£2,100) if you have a small room, or the Monitor Audio PL100 (£2,600) if you have a larger but still compact room. If you couldn't afford these new then there's always the secondhand market.



The Emille Allure phono stage has a beautiful sound but is expensive. It is one of the very best.

If you're looking for a standalone DAC, then the CEEntrance DACmini is the class of the £700 field right now, although given that your silver disc spinner is ageing I'd go for a replacement CD player and for this I'd recommend the Audiolab 8200CD (or CDQ if you need DAC functionality) for around £900. The SACD question is another debate in itself; if you're a big classical fan and expect to buy half of the Linn Records catalogue in future (with all those SACDs), then yes, seriously contemplate the very fine Marantz SA-K1 Pearl Lite. But if it's just a passing interest then I'd say the Audiolab 8200CD CD player would do better on standard Red Book CDs. **DP**

ALLURE

I'm looking to upgrade my phono stage. My system - Linn Sondek upgraded drastically, Graaf MB50b using KT90s. I know that you tend to recommend the Icon PS3, but is it easier to listen to than say the Emille which is certainly easier to look at? I listen mostly to 60's 70's jazz but not exclusively.

Dave Gibson

The Emille Allure is more expensive than the Icon Audio stages and reflects this in its sound. It is less mellow and dark of tone, more sunny in its nature, meaning it has a lovely open sparkling quality with a delicious euphonic tone, and not the sharpness or hardness of treble so common in much high end equipment. Emille know how to tune subjectively and do so for a lighter demeanour than Icon Audio. If you have the cash it is a great way to splash. But what cartridge are you using? A phono stage like the Emille Allure deserves use with the best moving coils. **NK**

GOING DOWN A SIZE

Hello, I'm moving my hi-fi to a small room (8 x 10 foot) and need to change my Sugden Class A monoblock pre-power amplifiers for an integrated or pre-power with a small footprint. I noticed that in the March 2011 issue of Hi-Fi World that the Creek Destiny 2 amplifier, favourably reviewed by Noel Keywood, was quoted as having reducing distortion at progressively lower power levels, therefore promising very good sound quality at lower listening levels.

For someone used to a very high quality Class A Solid State amplifier, does this solid state device from Creek make better sense from a sound quality

CD-only source, on a 3-tier Townshend rack with top surface 60cm wide by 45 cm deep, assumed to be necessary positioning for valve power amps. Sound quality is the all important criteria for me, musical tastes truly variable, I listen at less than 90dB peaks, I own three loudspeakers; Pinsh Model 1, Quad 11L Mk1 and Acoustic Precision FR1 can all be employed, I use the Pinsh pair at the moment.

Simon Bance

Hi Simon – that is a small room and Sugden amplifiers are hard to easily improve upon. The Creek would be an option but it is far too powerful for you. I suggest you consider a small Class A Single-Ended (SE) valve amplifier, like the excellent Almarros from Japan. They are compact at 36cms wide and 33cms deep, so will fit your rack easily. It is usual to place valve amplifiers lower down in a rack (or on the floor) and they demand 20cms clear space above at least, so this is a minimum shelf spacing. You get 20 Watts of the finest sound quality ever from these amplifiers, the 318b being an amplifier I remember well. Not for nothing are SE amplifiers said to offer the best sound, but they do need to be good ones. **NK**

ARMS AND THE MAN

I am running a Michell Orbe with the full Perspex base and have been using an SME M2/9 with an Ortofon Jubilee until now. As an aside, this arm was



For ultimate quality in a small room, an Almarro 318b Single-Ended pure Class A amplifier is ideal.

perspective than a valve integrated amp such as an Icon Audio Stereo 40 MK 111 or similar? Or, should I really look to a 300B or similar (valve type, PP or SE) monoblock power amp pair with a small footprint and preamp? Basically I need to be able to get the amps and

a bit grey sounding but has improved drastically when I changed the external VDH cable to a VDH Orchid. However, I have purchased an Origin Live Conqueror (weight specified as 950g plus say 10g for the Ortofon cartridge). The Rega armboard I had spare is too

heavy for the suspension with this so I need some help from someone who has solved this dilemma. Is there an alternative armboard available for the OL Conqueror? Does it require taller spacers to get the correct arm height above the platter? Do I need additional weight on the opposite side of the chassis to balance the heavier arm? If so, please suggest mass. Any other tips for setting it up? Or am I an optimist?

Just for the sake of being comprehensive, most of my personal listening is done via the following: the Jubilee feeds an EAR 88PB phono pre, Chord Signature to a Carry Xciter and Sennheiser HD800 with Cardas cable upgrade. It is toe curlingly good and I hope the Conqueror will add a permanent smile to my face.

Prior to the Jubilee I had a Sumiko Blackbird running into a GSP Era Gold which cured me from moving magnets. I also tried the Blackbird into a Synthesis Brio tubed phono stage. This gave the most emotional sound I have ever heard and was especially beautiful with the late Dame Joan Sutherlands performances. However, I could not really sit there shivering and crying all the time while listening to music so I gave it a pass (a lack of technical info and reviews on the Synthesis also contributed).

What about a future article on transformer step ups and selecting the optimum transformer impedance?

Adrian J van Tonder
Melbourne
Australia

Hearing a tube phono stage for the first time, the Audio Innovations P2 I reviewed in our Feb 1996 issue, stunned me. I had never heard an all-valve stage with valve regulated power supply before and what it did seemed magic. Nowadays they are becoming ever more popular and those that use them would understand what you are saying about hearing live vocals through such a device. They seem able to differentiate between live and processed better than solid-state stages, where everything sounds processed, even when it is live! But that's the killer transistor for you.

Music First Audio have sent us a super transformer stage that disappeared pretty sharpish into the lair of our editor and there's been a lingering silence ever since. We can expect to hear more soon, I suspect.
NK

Hi Adrian - one phone call or email to Michell Engineering (www.michell-engineering.co.uk) will get you your Origin Live armplate, in the correct weight and height. You don't

need extra plinth balance weights if you get the right arm plate, and my suggestion for the best set-up of the arm would be to read the instructions thoroughly! **DP**

ANY QUESTIONS

Last year, in the January edition, you were kind enough to publish quite a long letter of mine. In it I touched on DIY and World Audio Designs kits, in particular the WD25T. I'm writing to ask if you could help with five things:

- I've tracked down the components for the WD25T (I already had a pair of Millennium tweeters) and plan to pick them up while on a trip to the US next week. When World Audio Designs was operational, did you have a friendly cabinet maker who built the boxes? If so, are they still in business, and might they be willing at least to cut the panels for me? I have all the original drawings, but getting the panels pre-cut would make the project much easier.

- When assembling arcena, was the MDF on the inside or the outside?

- Can you remember who supplied the reticulated foam for the port?

- A couple of years ago, I was in touch with Peter Comeau about working

out a crossover for some speakers I had built, using SEAS bass units and the Millennium tweeter. Subsequently, he went off to IAG but do you know if he's ever back in the UK, and whether he is still willing to do freelance work? If so, do you have a contact email for him?

- I think one of the lost British geniuses of amplifier design is Brian Powell of Crimson, whose products as far as I can see are only available in Canada. Not long ago I put together a couple of amps using his boards. I'd like to re-house them in slightly better metal boxes, with a rebuilt power supply and much larger transformers. Do you know of a firm that will do custom-designed metal cases for a reasonable price?

I would very much appreciate your help with these things if you have time. I remain a loyal reader of Hi-Fi World, which I still think ranks with Hi-Fi News+RR as the only Hi-Fi comics worth reading. Incidentally, is there a way I could get my hands on a copy of the February 2010 edition, as somehow I missed it?

Finally, and following my letter that you published, I continue to use my Sony MZ-RH1 as the device for turning my

vinyl into 44.1KHz WAV files. Its plugged into the tape loop of my amp, driven by an Akiva. The results are rather better than using one of those dreadful USB turntables. I'd be interested to know whether you've tried this, and what you think of the results. The CDs I've made from the files can sometimes sound friendlier than the commercial CD version, and remind me of a discussion I had years ago with Julian Vereker not long after he'd started experimenting with their own recording onto CD (somewhere I still have that earlier Naim T-shirt captioned The Pits over a close-up of a CD). If only Sony could have built the capacity to record at 96 or even 192KHz into the MZ-RH1.

Charlie Haswell

Hi Charlie. For loudspeaker cabinets speak to Richard at Arcaydis (see <http://www.arcaydis.com>). Alternatively, try your local timber merchants, those with a wood cutting service. Getting bespoke cabinets made is expensive.

The same applies to metalwork. A one-off prototype chassis stamped and folded to our specs, from engineering drawings, cost us around



The World Design WD25T loudspeaker, designed by Peter Comeau before he disappeared into China to work for IAG.

£500 in the past. That does not include any finishing, such as paint or silk screening. Do you want to pay this? It is common to buy an aluminium case from RS Components and cut, drill and finish it by hand to avoid such costs.

Peter Comeau now heads up acoustic design at IAG and you can read more about him in this issue

in my China report. He does not provide outside design work. I got the feeling he is more than busy with the design load as things stand.

And don't forget World Design and its forum are still running; see www.world-designs.co.uk. **NK**

Hi Charlie - the Sony MZ-RH1 is an excellent little gadget, and capable of very good recordings at 16/44 uncompressed PCM. It's a great shame it didn't come out five years earlier, whereupon it may have taken the portable world by storm. Whilst a full size DAT recorder might do slightly better (especially a Sony one with SBM) it's certainly no toy and I hope it gives you years of service!

DP

CABLES

Many thanks for printing my letter in June's edition. However, perhaps I should have made it clearer that my suggested test scenario only applied to mains cables.

I appreciate that interconnects and speaker leads may well have an effect, as they carry actual sonic information. But how can a mains cable affect sound?

From an engineering point of view the requirements of a good power supply are to provide a high quality DC output that is designed to be immune to the wild vagaries of domestic AC mains supplies. To this end power supplies have evolved with their elegant designs and custom components and nowadays produce rock solid DC outputs, effectively isolated from the quality of the AC input. Indeed, the huge inductances of massive (toroidal) transformers provide a powerful band-pass filter, blocking any frequencies higher than 50 Hz.

So to test if mains cables do have an effect, (and the man at the show isn't doing something other than switching cables during demonstrations!), it isn't a matter of signal input-output comparison, but rather comparing the sonic output for a particular (fixed) input before and after changing the mains cable.

When I was a student, many years ago, I worked in a lab that had a sound spectrograph. This contraption produced a paper analysis of a sound interval in terms of three dimensions: time, frequency and energy. (It burned a patch onto a rotating drum while the frequency was scanned - the darker the burn mark, the higher the energy at that frequency.) We used to feed it from giant Ferrograph tape recorders! I bet you'd like such equipment in your Olde Worlde section!

I'm sure we could find the equivalent modern version of the

spectrograph, and borrow one for a test. A lot of people would be interested in the results.

Mark Lee

We use a three dimensional decay spectrum to measure colouration in loudspeakers, but do not publish it for lack of space. I suspect this is the sort of display you are referring to. You can see them on our website, in the Loudspeaker section. Spectrum analysers have long had such a display, usually termed a "waterfall" plot. Hewlett Packard's HP3561A, released in 1984 (we have three of them), has such a display for example. **NK**

SECONDS OUT

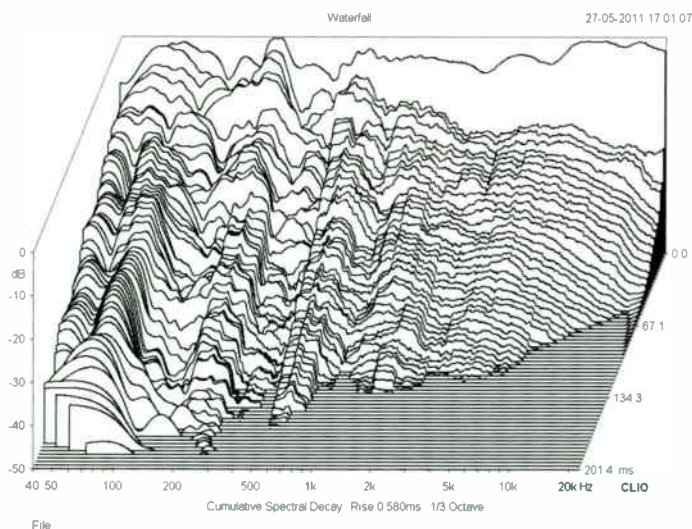
I was intrigued by your article 'Second Chance' in the June 2011 issue, in which three of your writers assembled an affordable system based on a second-hand source component. Coincidentally, at the same time I was engaged on a very similar exercise aimed at providing me with a modestly priced second system for a small but snug (12ft x 8ft) sitting room-cum-library off my main lounge where I like to sit occasionally with my morning coffee and read the

his advice and suggestions invaluable. I gather Gary and his business partner are both keen musicians and clearly love hi-fi just as much as their satisfied customers.

I built the system over several weeks, starting from what you would probably say was the wrong end, i.e. with speakers and stands. However, Gary gave me a great deal on a pair of Dynaudio Audience 42 speakers and the astonishing Partington Dreadnought stands (did the designer source them from a North Sea oil rig, I wonder?), coming in second-hand at under half the normal retail price of the units together.

Next, I bought from another online seller a Fatman Wi-Tube Hybrid Valve Amplifier (28 watts output) with the accompanying FatDock Blu iPod dock (£395). Yes, I know the amplifier is a hybrid beast but I was seduced by the unusual and dinky looks of the two components, which seemed perfect for the room they would occupy.

Then came the need for a CD player and again it was back to Audio Emotion. Gary found me a second-hand Primare PD12, a heavy and solidly built unit, to use as a transport - once more for an excellent price. Because I also



A waterfall plot shows time, frequency and amplitude on the three-D graph. We use them to assess colouration in loudspeakers.

papers.

I had already decided on two things: 1) I wanted it to be based around a valve amplifier, since I have never previously owned one in all my years of buying hi-fi; 2) It would have to come in at under two grand, since anything more expensive couldn't be justified by the amount of use it would get.

As it turned out, two-thirds of the system was acquired second-hand or discounted from one of your regular advertisers, Audio Emotion of Leven, Fife, Scotland, where the ever-helpful Gary was a positive joy to deal with. I found

wanted to stream Internet radio, iTunes and WMA files on a memory stick from an Acer netbook laptop, he suggested a Musical Fidelity V-DAC which has a switch to toggle between coaxial/optical and USB inputs.

With Chord Company interconnects and QED XT400 X-Tube speaker cables, the whole lot came in at around £1,500, a saving of something like £700-£800 if I had had to buy everything at original cost price.

Though the Fatman amp only has two phono inputs, by employing a cable comprising two phono outputs to a



Roy Stockdill's system, unique in the UK he tells us - and very nice too.

3.5mm jackplug going into the auxiliary input of the FatDock Blu dock, I am even able to run a cassette player into the system, making four sources in all, i.e. CD, iPod, laptop and tapes.

Of course, the system doesn't have quite the same power and slam of my main system in the lounge (Michell Gyro SE in beautiful black and gold/Rega RB250/Ortofon Rondo Red; Musical Fidelity X-series phono and headphone amps; the barrel-shaped versions; Roksan Caspian CD player and FM tuner; Caspian pre-amp and two power amps bi-amping Living Voice Avatar speakers; Yamaha HDR-CD 1500 hard disc/CD recorder; Musical Fidelity M1 DAC), but that lot cost many times more than my second system and has to fill a much bigger room.

The system I have described, built largely with second-hand components, is giving me much pleasure and was assembled for a modest outlay. Moreover, I have only praise for the enthusiasm and excellent advice of one of your advertisers. Thanks, Gary of Audio Emotion!

In case it is of interest, I attach a photo of the system. I doubt there is another quite like it in the country!

Roy Stockdill

Thanks Roy - good for you. Enjoy your 'second chance'! **DP**

FOUR ON THE FLOOR

I have a Technics SL1200 Direct Drive turntable in the loft. I am planning to put a redundant (due to upgrade) nearly new Goldring 1042 on it. My question is in relation to a suitable arm which will deliver the best bang for the buck.

I've shortlisted a few and I understand you cannot recommend but wondered if you could talk me through the subtle differences between the Jelco 750, Audio Origami'd Rega

RB251, Origin Live Silver or an SME 309. A short appraisal of each would be absolutely brilliant.

Steven Summerscales

Okay Steve. The Jelco 750 is effectively a reborn classic S-shape design from the nineteen eighties; indeed it has its roots in Japan back in the seventies, all told. It's sweet, smooth, warm, a little opaque and woolly and vague but a nice listen. It's an upgrade on the stock Technics SL1200 arm but not a dramatic transformation, in my view. The Audio Origami RB251 is an excellent 'rebuild' of the stock Rega, and offers fine grip of all frequencies, with an especially clean midband and a more lyrical nature than the standard arm. It's a big improvement on the Jelco. The Origin Live Silver is a little more expensive, and whilst earlier designs were Rega RB250 based it's effectively a completely 'clean sheet' design now. It's more relaxed and spacious than the cheaper

of the four; the OL Silver gives a more naturally musical sound, even though the SME is admirably clean and detailed and dimensional – as well as giving the impression (at least) of being the most robust. I'd probably go for the Origin Live Silver if you've got the dosh, or the AO-modded Rega if you haven't. Hope this helps! **DP**

SERIES ISSUE

I am at present thinking of upgrading my Rega P9 deck to an SME 20/3. Present system includes Icon Audio PS1 phono amp, Icon LA4 pre amp and MB90 mono blocks. Speakers are Castle Howards.

My main question is do I go for the SME V tonearm or the equivalent 12" arm? What are the pros and cons of these two arms? I would also want to upgrade my cartridge, Dynavector 10X (high output MC) to a standard MC such as the Ortofon Cadenza Blue. Would this be a good match for the SME set up or should I consider other makes for this deck and arms?

Some time in the future, after the deck upgrade, I will need to consider upgrading the 'speakers which are 10 years old. I have always had Castles since my original Richmonds some 30+ years ago. I fancy the Tannoy Definition 8 or 10 floorstanders. I have a living room of approx' 19' by 28' and listen to mainstream classical, rock/pop, blues and jazz. I would appreciate your views on these possible upgrades.

Roger

The SME V is all about tautness and definition in the time domain. It has tremendous dynamics but some find it a little cold and short of emotion. The SME312 is a much less obvious sounding arm, character-wise. I use the 312S and love its smooth, easy, open sound. Long 12in arms tend to be like this, but the 312S is a very



An SME309 arm suits the Technics SL1200 well - they are a hi-tech combo.

AO modded Rega, with a wider soundstage and a less stark tonality. It's better than the AO in my opinion, in a subtle way. The SME 309 is by far the nicest to look at and use, and offers a very polished sound – but so it should being the most expensive. I wouldn't say it was the best sounding

good example as the big 'uns go. An Ortofon Cadenza Blue is fine choice for the SME and your Icon Audio products.

Your room is big enough for either Tannoy DC8s or DC10s. I found the DC10s more remarkable of the two and it is one of the best

loudspeakers I have heard for a long time, except there was just too much bass unless the foam port bungs were used. The DC10, perhaps because of its cryogenic treatment, delivers swathes of gorgeous detail and true deep insight, without artificial enhancement. In this area (and in many others) it is ahead of the pack. Only Martin Logans and 'speakers like the Eminent Technology LFT-08b come close, but their presentation is entirely different. Tannoys are all about visceral experience, without compromise to quality. If you want get blown across your room – in the best possible way – get a Tannoy! **NK**

IN THE CAN

Is it possible to purchase a pair of speakers to match the performance of my AKG k701 headphones? I have £1,000 to spend and being single, size, style, colour et al. are not at all important.

Peter Denham

Hi Peter - yes it is. My £1,049 would go on the ELAC BS243, which has a similar sort of sound to your AKGs; clean, expansive, detailed and precise. **DP**

THE QUADFATHER

I am a bit of a surround sound/quad nut, and regret the passing of the recent phase of SACDs (and even DVD-As) being released with full surround mix, as (done well, with the right music/source) a surround album can bring something extra to a listening. I can't wait for the (at last, finally etc) release of Pink Floyd's 'Wish You Were Here' in 5.1 in November!

What components would you use in an ultimate surround system, running in quad? I presume a Marantz UD9004, an Oppo BDP-93, or even a Townshend Audio Glastonbury or a Muse Polyhymnia (I'd never heard of either of these until a Google search for high end universal players listed them, but they look wonderful). However, they don't seem to play Blu-rays which rules them out these days (thinking of the 2L catalogue...).

Presuming that the receiver of choice has phono outputs, so (say) a couple of Leema pre/power amp combos feeding... well, what do you suggest?

Being surrounded by four electrostatics is an endearing image, or even four Tannoys - four Westminsterers being fed by some ultra-high end valve amps would be possibly the ultimate, if you have the room size...!

A major source of coloration of a speaker's output is the physical case and speaker cone etc (ignoring the

electrical side for now). How about using something to energise the air directly, such as pulsed lasers (but at what colour frequency?), or even high-power electromagnets, arranged in a circle (like a Pink Floyd circular screen of Vari-lites) and pulsing (like an electrostatic) the sound out both front and back, so they would need to be away from walls...

A lot of energy would be needed to affect the air and produce a reasonable volume in this way - if it could be done at all - but if the control is linear and predictable across the whole of the audio range (a big "if", I know!) then maybe physical speaker cones, ribbons and electrostatic plates days are numbered(!)

Taking this further, if we ever develop a practical force field, and Star Trek-like tractor beams, then we'd be half way there to music out of thin air. At the extreme is either pumping music down wormholes in space (sound from a vacuum!), or (more likely) a direct (wired, though wireless would be possible using the spine or brain as an aerial) connection to the brain, bypassing the acoustic domain of speakers/air/ears and keeping the number of transducers to a minimum (just a microphone) as everything else is electronic anyway. Analogue amplification throughout, with valves, of course...!

Next week, how to get electrical signals down a wire without any metal core (this is assuming that electricity travels through space itself and not the wire...) and records that float on a

issue, p34), using an Onkyo PR-SC886 surround-sound preamplifier and that was pretty good. But guess what, I spotted a five channel surround-sound valve amplifier at the Mei Xing factory on my recent visit to them - see the picture.

As surround-sound can be as much about visceral experience as it is about sound quality I feel big Tannoys would be best - and a brace of DC6s, 8s or 10s would be practical, if a little expensive.

The most brilliant or daftest loudspeaker idea ever was developed in Germany, by Sennheiser I recall. Where two very high frequency audio beams meet, at a distance from the acoustic transmitters, they intermodulate to produce a low frequency audio (difference) signal. This means inaudible high frequency audio beams can be aimed at someone at a distance and they will hear audio 'in the air' that no one else will hear. Isn't this magic? It is - and it works too.

So what's the snag? Why are we not all sitting in rooms with small, high power acoustic transmitters in the corners sending beams to our ears, so we hear music as if wearing invisible headphones? The beams only intermodulate when the medium is stressed to non-linearity, meaning huge acoustic levels must be used. Cats and bats wouldn't use this system if offered it free.



The Ming Da MC-5S five channel surround-sound valve amplifier, spotted recently in their China showroom.

rotating (and very carefully controlled) column of air while the grooves are read by lasers. I know it was done many years ago (the lasers bit) but with modern control systems and computers surely we could do a better job?

Yours (who's probably been exposed to too much science fiction than is good for him, but we can all dream)

**John Malcolm
Wiltshire**

Er, yes John. Exposed to some strong beverage too, perhaps? I put together a valve amplifier based surround-sound system a few years ago (July 09

Humans might find it involves "health difficulties". An intriguing idea, but not one with much future I suspect.

Electricity does travel in space as radio waves and it can carry music or we wouldn't have Radio 1, which can probably be picked up on the moon.

Lasers reading LPs was a horrible idea doomed never to work because they read all the dust and groove damage that a stylus sweeps aside or avoids; I heard the Finial once: it sounded like a noisy CD player.

Keep dreaming John, but try green tea instead, as I have been forced to do recently in my travels. **NK**

Moving On

David Price tries Pure's MOVE 2500 portable digital radio for size...

I could bore for Britain about the problems that DAB radio has, but I shan't. I must mention however that one of the flawed format's greatest challenges is portable use. This is because DAB receivers typically use a lot more power than analogue radios (hence lots of heavy batteries in portables), and that DAB isn't great at penetrating inside or between buildings in built-up urban areas, or in vales and valleys in the countryside.

As such, any manufacturer who makes a DAB portable is undertaking a project which could easily end in tears. Indeed, even the mighty Sony managed to come up with one of its all time worst ever products when attempting a Digital Radio Walkman, the hapless XDR-M1. Rarely, when reviewing a portable, have I ever found something so obviously unfit for purpose. I took it out and about in Bristol city centre – in a decent DAB reception area – only to be assaulted by constant 'bubbling mud'...

Bonne chance then to Pure's Move 2500. The company's parent, Imagination Technologies, has a large stake in DAB, having designed a lot of the electronics in DAB radios since its inception, so you'd expect a state-of-the-art chipset. But what this £89.95 radio also needs is decent build and packaging, and that's precisely what they've given it.

The radio's casing has a black anodised aluminium fascia with a matt finish, and an iPod-a-like polished stainless steel rear which looks lovely but of course shows every micro-scratch it picks up – it's a shame Pure don't supply a little fabric slipcase. The orange backlit LC display is excellent, crisp and clear with plenty of information including a battery gauge. It's very much akin to a standard Pure DAB portable in what it displays, including scrolling radio text, station name, etc.

The control system is an iPod style rotary dial; not quite the same in operation but it's similar enough

not to confuse those used to Apple's layout, without infringing patents! It works well, and overall the radio is nice to use. Pure quote the battery life as 14 hours, although I got just over ten hours continuous from one charge of the internal rechargeable Lithium Ion battery. That's terrible compared to an analogue portable, such as Sony's SRF-M96 which gives nearly thirty, but by the standards of DAB portables, it's excellent and Pure deserve congratulations for taking it into the realm of the practical – not something you could say about DAB portables of just a few years back!

The Pure has a single 3.5mm minijack headphone socket, and comes supplied with a set of silicon tipped in-ear noise isolating earphones of decent but unexceptional quality; I ended up doing my listening with Sennheiser MX550 ear buds, which were an improvement. There's also a mini USB socket, which is used both for charging (a charger is supplied, but it can also be charged via a computer USB socket) and firmware updates. There are 10 presets on both DAB and FM, and bass and treble can be set via the set-up menu.

IN ACTION

With fine build, a decent display and nice navigation, all the 'vital signs' of Pure's 2500 look good, but what of its actual performance? First, I found this little radio had a far better sensitivity on DAB than earlier portables I've tried, although still the 2500 only picked up 31 of 40 DAB stations available in my area (west Wiltshire). Along the Kennet and Avon canal, where I live, the signal is poor on FM, AM and DAB alike, and so I was impressed to find the Pure holding pretty stable during one of my epic fifteen mile Sunday walks along the towpath. I didn't get a single dropout, although a good part of my expedition was done to low level 'bubbling mud' sounds in the background. In these fairly adverse rural conditions (for DAB), I'd say the Pure performed well. On FM too it



held well, almost matching my usual walking companion, a Sony SRF-M96.

In terms of sound, FM was good but not special, whilst DAB was DAB-like! Actually, I've heard far bigger full size radios making DAB sound worse, so it's thumbs up for the 2500. I don't like DAB (and it doesn't like me), but still the Pure makes it as agreeable as it can be from a portable – an impressive feat. Via the Sennheiser earbuds, music sounded decently smooth, warmer than expected, and flowed well – it's perfectly listenable if you're not expecting miracles. Via FM, the sound gained detail, depth and a degree of musicality which made listening fun, so Pure haven't just added FM to tick a box on the spec sheet.

The result is a radio that, unlike so many DAB portables before it, is actually capable of doing a good job out and about; you'll find it a reliable listening companion; well built, nicely finished, decently specified and capable of doing the job without complaint. I'd have liked it to be a little smaller and lighter (it's not as big as an iPod Classic but significantly chunkier than an iPod nano), with a better battery life, but as it stands it's still perfectly useable. Overall, an impressive bit of kit for the money – if DAB is your bag!

VERDICT

Likeable, capable portable with satisfying sound quality.

PURE MOVE 2500 £89.95

Pure
 ☎ +44 (0)845 1489001
 www.pure.com

FOR

- well made
- crisp display
- decent sound quality

AGAINST

- limited battery life
- no case provided

Block Party

Alvin Gold has a blast of Icon Audio's MB150 monoblock power amplifiers...

I don't suppose it was going to be long after joining *Hi-Fi World* that I would become immersed in the world of antiquarian valve based amplification, whether I wanted to or not – and they don't come much more thoroughbred or antiquarian than Icon Audio. The company claims to be neither anti-digital nor anti-solid-state, but firmly believes that a good analogue signal fed through a good thermionic valve amplifier has a great deal to offer.

Icon Audio was founded by David Shaw, who designs the amplifiers and other components at the company headquarters in Leicester, but who spends much of his time in China supervising production and quality control, before shipping the products to the UK for assembly, customisation and final testing; each Icon Audio amplifier chassis is manufactured in China, which is

the secret of street-friendly pricing, as it is for many other brands. In Icon Audio's own words, everything in their amplifiers is serviceable and replaceable; the valves of course, but also key passive components which can be specified when ordering, even the transformers.

In common with all Icon Audio amplifiers, the MB150 (which is supplied in pairs for stereo use) is hand-built, and features a point-to-point silver-wired circuit for sound quality reasons, rather than a circuit board. It's a three stage design, with a Class A triode front end inspired by the Leak Troughline designs, with classic 1940s designed 6SN7 driver and phase splitter valves dating back to the nineteen forties, alongside the older, bigger 6SN7 dual triode dating from the start of that decade. Four KT90 tetrodes operate in a parallel push-pull configuration, in Ultralinear and Triode mode; a front panel mounted switch selects between either all-triode, which produces 100 Watts, or ultra-linear which produces 150 Watts.

A combination of carefully selected modern and classic audiophile components together with custom hand-wound transformers completes the design. Custom wound transformers are used, and a low source impedance high capacity choke regulated power supply. The

amplifier is built into a heavy gauge steel chassis, with 20mm alloy front panels, and Plexiglass valve covers. The MB150s can be upgraded with Jensen copper foil paper-in-oil capacitors, and the first stage 6SN7 valves upgraded to Full Music 6SN7 or Treasure CV181s, which duly bring the amps up to 'Signature' status for an additional £800. Icon Audio say that they will be making an ongoing change to KT120s in the output





stage as a matter of course, but that customers can still have KT90s if they choose.

Although not up to the standards of more expensive Audio Research fare, the Icon Audio monoblocks were well finished for their £2,799 price point, with a nice smooth paint finish and a generally sturdy feel befitting a largely handmade product. It proved straightforward and reliable in operation, and warmed up quickly;

there is a standby switch included specifically to ensure to ensure this is the case.

SOUND QUALITY

On the whole, listening to music through a valve amplifier offers a rather different listening experience to that of transistor, and the differences don't always necessarily favour thermionic valves – there's a sense of some things being better,

others worse. But all the same the Icon Audio proved a strong performer across all fronts, with no serious sense of compromise for those used to solid-state.

Running in triode mode especially, you'll instantly recognise that the MB150 has a softish quality, presumably because the amplifier doesn't always damp the load quite as effectively, and the sense of detail is also reduced a little because of

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the truncated treble response. But it's very smooth and open when run this way and you soon begin to forgive it a slight lack of grip. Music becomes mellifluous yet fun, and there's no sense of coarseness or grain anywhere to be seen. Images

dynamics of their music making. But the MB150 offers large scale, full-fat music making that is essentially free of any mechanical edge or artifice.

In ultra linear, high feedback mode, the Icon Audio amps worked well using a passive preamplifier, in

Think of the ultra-linear configured MB150 as a valve amplifier for solid-state aficionados.

CONCLUSION

In ultralinear mode the Icon Audio twosome proved itself to be a fine power amplifier with power by the bucket load and enough muscle to cope with musical dynamics in a realistic way. It tracked musical dynamics well, and will cover a broad range of volume levels in most domestic UK listening rooms – only with insensitive loudspeakers in truly large rooms will you want for more power, especially on large scale

"the Icon Audio proved a strong performer across all fronts, with no serious sense of compromise for those used to solid-state..."

hang nicely in space, apparently unconstrained and able to breath freely in a most healthy way.

Even in the lower powered triode mode, I soon realised that there's plenty of power to drive the music along. The use of entirely separate left and right channel amplifiers, together with the relatively robust output transformers on tap produces a life-size soundstage, with realistic tonal colours, and the amplifier had the ability to retain the tension, drama and power of musical performances intact. Some smaller valve amplifiers, and (dare I say?) some solid-state amplifiers of all sizes tend to shrink the scale and

this case the Creek OBH-22, which also has the benefit of being cheap and unusually transparent. Icon Audio's own LA4/II is a well respected design comes recommended. The sound wasn't as sweet as in triode mode, but showed plenty of get-up-and-go; it didn't sound as subtle and refined but here its muscular quality is guaranteed to win it friends.



orchestral music. In triode mode it was altogether sweeter, more subtle and better matched to smaller scale programme material

such as chamber, vocal and instrumental. Overall a fine package

then; flexible, well made and good sound, its engineering and pricing are undeniably impressive.

MEASURED PERFORMANCE

In UltraLinear (UL) mode and set to Low sensitivity (i.e. high feedback) the MB150 delivers 112 Watts into 8 Ohms and 4 Ohms. It manages this across the audio band too, being able to swing full output without excessive distortion at 40Hz and 10kHz, so the MB150 has a lot of wallop as valve amps go.

Power output in triode mode was little lower than UL, measuring 72 Watts. With large, good quality transformers and feedback the MB150 produces little distortion in the midband, just 0.01% at 1 Watt. Distortion increases to a still low 0.07% at high frequencies but this was predominantly second harmonic and will not be audibly obvious. Bass distortion measured 0.5% worst case near full output but it comprised low order third harmonic and was correlated to the test signal with changing level, so will not be noticeable.

The Sensitivity switch alters feedback, Low sensitivity meaning high feedback, and High sensitivity low feedback. As changing feedback alters measured performance radically, the position of this switch determines much more than just sensitivity; it also alters frequency

response, distortion and output impedance, Low sensitivity/ high feedback giving the best results and being the default setting. When set to Low, sensitivity measured a very low 1.6V so a preamp is needed. Switching to High alters the figure to a more normal 0.8V, but reduced feedback lowers the upper frequency response limit to just 15kHz (-1dB), which will introduce warmth to the sound. Distortion increases too, but with valve amplifiers this is not especially noticeable, as the harmonics are low order and correlated to the music signal. What is noticeable however, is reduced damping factor (i.e. raised output impedance). This falls from 20 to 10 using the 4 Ohm output (10 to 5 from 8 Ohm output) and under damped (bassy) loudspeakers will develop a slightly boxy, boomy quality. Balancing this, over damped designs with tight bass will ease up a little and sound more fulsome. Although reducing feedback in a valve amplifier worsens its measured performance, in practice the subjective impact can be quite complex and loudspeaker dependant. An easier, more spacious sound is generally the result,

with boomier bass a possibility, depending upon the loudspeaker being used.

The MB150 is a power house of an amplifier that measures well and has some effective tuning options. It will definitely have a lot of kick, likely more than most solid-state amplifiers and a damping factor of 20 suggests better than usual bass control. NK

Power	112watts
Frequency response	5Hz-45kHz
Noise	-112dB
Distortion	0.07%
Sensitivity	1.6 / 0.8V
Damping factor	20

FREQUENCY RESPONSE



VERDICT

Fine and flexible 'affordable high end' tube monoblock package with power not normally associated with valves allied to sweetness and spaciousness.

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- FOR**
- power
 - spacious soundstaging
 - sweet midband (via triode)
 - flexibility

- AGAINST**
- slight lack of bass grip

Going Green

David Price powers up Naim's brand new NDX network music player and UnitiServe NAS drive...

Naim's new NDX is a purist, purpose-designed high end network music player with DAC functionality, and is surely what the Salisbury company's acolytes have been waiting for; for several years now...

The princely sum of £2,995 buys you the basic NDX (add £300 more for DAB functionality), putting it in competition both with Linn's £1,800 Majik DS and their latest £4,500 Akurate DS, which along with the £12,950 Klimax DS had pretty much sewn up the high end digital streaming market until recently. So for many Naim owners, plus a great many others who are thinking of investing in a network music source, the arrival of NDX is not before time!

It's more versatile than its direct Linn rivals. Although there's no CD player (*a la* Uniti) or hard disk (*a la* HDX) – you do get a high quality digital to analogue convertor with similar, albeit less expensively implemented, internals to the Naim DAC, plus network and internet radio functionality, plus iPod/USB connectivity and a choice of power supply upgrades. In short, this is the Naim's future digital source in its purest form. It's designed to interface with an uPNP touting computer, and/or a Network Attached Storage device such as Naim's own purpose-designed £2,095 UnitiServe [see box]. What you have here then, is the ability to play out digital audio from your CD player (as a transport, via TOSLINK, BNC or coaxial digital inputs), a computer or NAS drive (wired via Ethernet or wireless), or a USB stick or iPod (via direct digital connection, not its analogue output).

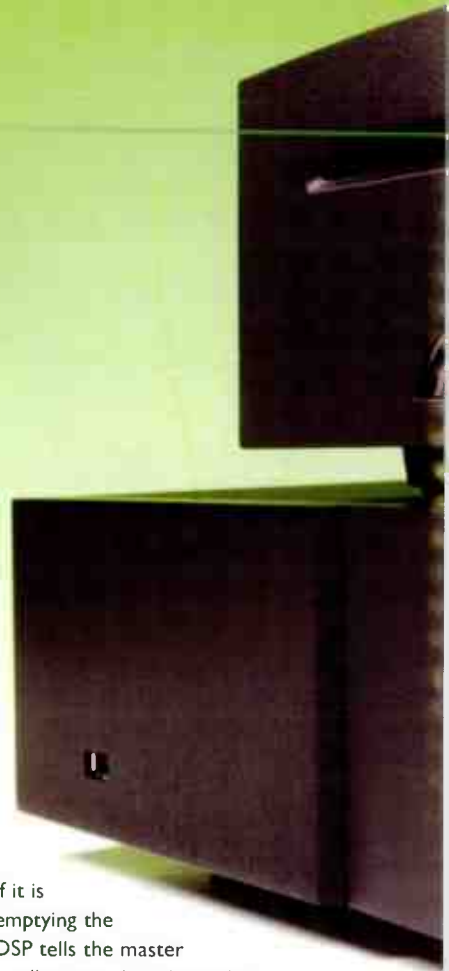
NDX can stream audio files, including iTunes libraries, stored on a computer or on network storage, via UPnP. It can play FLAC, WAV and AIFF files up to 24/96kHz resolution, as well as WMA, MP3, MMS, AAC and Apple Lossless (from iPods). NDX also recognises M3U and PLS playlists formats and supports gap-less playback on all lossless formats. It also plays internet radio, and of course there's the optional FM/DAB tuner.

It has three control options, the most straightforward being its backlit control buttons operating in conjunction with its smallish green OLED display – for general use this is all you need. Then there's the supplied remote control handset and the free Naim n-Stream iPhone app, which also allows input and volume control of Naim preamplifiers and DAC. For me, this latter option was vastly preferable, giving a far nicer feel to using the NDX, although the first option makes it considerably easier to use manually than the Linn DS products.

The NDX is similar to the Naim DAC but with added networking functionality. Naim's Steve Sells describes it as being, "identical to the Naim DAC in its conversional principle, however there are differences in the physical components used, such as the master oscillator circuit, isolation, the actual DAC chip and analogue filter components". As per the Naim DAC, an ultra-low jitter master clock is used to control the digital audio data flow into the NDX's powerful SHARC DSP 'brain' (which runs Naim authored code). "If the buffer is getting full the DSP tells the master oscillator to very slightly speed up and then hold its speed. Conversely

if it is emptying the DSP tells the master oscillator to slow down then hold", says Steve. The data is then oversampled at a very high frequency and then clocked out to the DAC chip using a fixed-frequency local master clock, sent over optical isolation, gated immediately before the DAC chip by the same master clock. "The DAC output is filtered in the analogue domain to remove the remaining quantisation noise", adds Steve.

The NDX uses the same 16 times oversampling filter as the Naim DAC, implemented in the SHARC processor. The chosen filter is a modified Butterworth filter to which additional poles are added to prevent too much phase shift occurring within the audio band. The filter runs as efficiently as possible, using only five lines of assembly code. This ensures both low arithmetic noise (fewer additions and multiplications that cause rounding) and low power supply noise (since the DSP draws less current when it is not calculating). The DAC chip used in the NDX isn't the Burr Brown PCMP1704K as seen in the Naim DAC, but a Burr Brown PCMI791A, latterly of the HDX, used in 16 times external oversampling mode and running at a maximum sample rate of 768kHz. The analogue output filter is





multi-stage seven-pole filter; six Burr Brown OPA42 op-amps perform the filtering, said to be chosen for their superior sound. A combination of Sallen-Key and multiple feedback low pass filters are used to implement the seven-pole filter.

The NDX sports a standard Classic range non-magnetic extruded aluminium case (10kg, 432x314x87mm), with a six-layer main PCB inside and galvanic isolation between key sections of the circuits, to reduce noise transfer to the analogue domain from the digital circuits and connections. A 200VA toroidal transformer is fitted with independent power supplies for each section of the signal path; four separate secondary windings feed four separate power supplies for isolation. Naim say the reservoir capacitors "are larger than would typically be used to reduce the unregulated voltage noise and provide increased short-term current capability". Low noise LM317/337 regulators smooth the unregulated voltage from the reservoir capacitors.

Voltage supplies to many of the digital circuits are double or triple regulated to further reduce noise, Naim say. The NDX can also be powered by an external Naim XPS (£3,195) or 555 PS (£5,450) power supply should you wish to get the very best out of it.

IN USE

Getting going wasn't especially difficult. After switching on the unit, you go into the settings menu (via the remote control) and let it scan for networks; it found my wireless router

recommend wired connection via an Ethernet cable for best sound, and after a week or so living with Wi-Fi, the NDX's larger of two supplied aerials poking up from behind its case, I duly obliged. The matching UnitiServe NAS was also configured and the NDX found it easily enough; this stayed plugged into my router by Ethernet cable at all times. Having done a 'factory reset'

"able to play any of the important current file formats, the NDX is truly extensible and future-proof..."

easily enough and password entry was straightforward. It's important at this stage to point out that Naim

to test the 'cold start' set up of the NDX, my only stumbling block was forgetting to set the audio outputs

to RCA phono (which is what I'd plugged in the back); I eventually found that the unit defaults to DIN unless told otherwise...

Compared to rival network products from Linn, the presence of more buttons and an informative display makes it an easier product to use, and it's more versatile too with easy DAC functionality and iPod connectivity. The n-Stream iPod app. was very swish, and would be my chosen method of talking to the NDX if you've got an iPhone, iPad or iPod Touch. I found the NDX always sounded better after it had been on for a couple of hours.

SOUND QUALITY

Given that the NDX has so many source options, I first elected to listen from the UnitiServe via wireless. Kicking off with some classic Steely Dan, and I was struck by the clean, crisp nature of the sound – very much in the mould of the Naim DAC I reviewed a couple of years ago. The soundstage was wide and well delineated, with instruments occupying their own space in the mix in a confident, assertive manner. My ear was drawn to the percussion, and its interplay with the lead keyboards, and the way this syncopated with Donald Fagen's vocal delivery. He had his characteristic nasal whine alright, but it was carried with clarity and precision, and the NDX wasn't afraid of tracking the dynamic accenting of

with subtle detail. Treble too was open and precise, with a nice crisp sound to rock hi-hat cymbals, just as they should have. Switching to wired connection seemed to confer a very subtle improvement in solidity and focus, while the treble seemed just a fraction more relaxed. Whilst I think there was a marginal improvement in sound, I'd suggest that the main benefit of going wired is the increased stability of the connection, especially when playing hi res files (or you've got a buggy home Wi-Fi), more of which later...

Staying wired, and I was impressed with the Naim's rendition of Sade's 'Why Can't We Live Together?'; it's a slick piece of early eighties cocktail jazz, but the NDX/UnitiServe managed to make it sound rather less bland than others do. Whilst the original 'shock and awe' Naim sound has pretty much gone now, and in its place is a smoother, darker and more velvety version of the same, the musicality that the marque is famous for hasn't been diluted. Possibly the NDX lacks the Linn Akurate's *nth* degree of dynamic attack, and its super dry incision, but I'd say it still managed to convey the emotional dimension of a recording better than I've heard from any other network music player of late. In the case of the Sade track, my attention was drawn to her voice, which was carried really rather beautifully; you could hear the fact that she'd put her

NAIM UNITISERVE

This is a special, premium priced Network Attached Storage device, purposed for CD ripping and storage use. A NAS is, in simple terms, a computer that's connected to a network designed solely to provide file-based data storage services to other devices on the network. The £2,095 UnitiServe is a NAS with a 1TB pipeline low noise hard disk drive built in, along with a high speed CD-ROM drive; it's designed for you to 'feed it' CDs, which it duly rips to the hard drive in uncompressed, uncompactd .WAV format, whilst going online to find the album, artist and track name 'metadata'. It's perfectly pos-

bluster and bravado, but still it works. Via the UnitiServe, the sound had a lovely poise that totally belied its hard disk roots; it sounded more like I had a half track open reel on the end of that Ethernet cable, running at fifteen inches per second instead of 7200RPM. As a network music player, the NDX/UnitiServe is one of the best I've heard, and certainly one of the neatest.

There's more to the NDX than computer networks however; I was interested to try its DAC functionality; this isn't a mere afterthought on Naim's part, as they've made three inputs available, plus iPod/USB. I duly hooked up a high end Esoteric P30 transport to the Naim, via its coaxial input, and fed it with UB40's 'Signing Off' album. Cueing up the really rather lovely paeon to (Martin Luther) 'King', and I found the sound changing subtly. Low frequencies seemed slightly stronger and more pronounced, and the soundstage stretched wider, while the NDX seemed better able to communicate the textures of instruments such as clarinets, which were delivered in a more natural way. Hi hat cymbals however seemed a little more ragged, and this was confirmed when I went back to Sade, this time on CD, for direct comparison purposes. As a network player, the NDX sounded fractionally smoother, yet a little less visceral – almost like the difference between coaxial and optical digital connections, dare I say! As a DAC then, there's an awful lot going for the NDX. I'd say the Naim DAC has more



his vocals. It made for a lithe, gripping and musically satisfying presentation than gave no cause for complaint. The Naim proved very musical, sounding a tiny bit warmer and more 'organic' than Linn DS sources I've had in my reference system; the latter perhaps more explicitly detailed but drier and more analytical with it.

Whilst bass wasn't exactly lacking, as per the Naim DAC I did think it wasn't quite as assertive as it could be. It gave a lovely supple sound, firm and grippy alright, and this tied in nicely with a clean and smooth midband which sparkled

heart into the song in the recording studio. Delicate, dark and deep, it was as if she was using every last percentage point of her lung capacity to belt out this classic 1972 Timmy Thomas song. In my experience, I'd venture that a Linn DS would be focusing more on the recording's quality, rather than that of the artist.

Rhythmically, the NDX proved excellent; the interplay of snare drums and bass guitar was immensely satisfying, for example. It's not quite as explicitly stated as Naim's CDX2 I'd suggest, instead working more around subtlety and poise rather than

sible to use other NAS drives with the NDX, and there are a number of far cheaper alternatives, but Naim hope its seamless visual and operational integration will cause customers to opt for its device.

The UnitiServe can actually act as a standalone CD transport, giving a digital datastream via its rear panel BNC or TOSLINK digital outputs, so you can actually use it with the NDX without using its networking connectivity – a simple digital interconnect will suffice. It's a suggested partner for the Naim DAC, for example. In addition, UnitiServe can play most common audio formats off its hard drive from files stored on a network providing they are not subject to Digital Rights Management (DRM). WAV, FLAC, AIFF, ALAC and AAC together with MP3 and more are easily found, with Network Scanning, and played.

This includes hi-res music files up to 24bit/192kHz, the current limit of S/PDIF and TOSLINK standards. Ripping uses the same Naim secure ripping engine as the HDX.

It's controlled as a player by a Naim Handset, an Apple iPod Touch or iPhone running the Naim app, or by a computer running an internet browser supporting Adobe Flash. PC users can also run the Naim Desktop Client giving an explorer style interface for control and set up. Naim recommend that a second backup of all music is kept, ideally off site, as drives can fail and even Raid 5 NAS stores can become corrupt.

The UnitiServe comes in a Naim 'half width' UnitiQute-style box (207x87x314mm, 5.6kg) which is finished to the same high standards as the NDX. It has a central slot, into which the CD is loaded, whilst the illuminated

logo also serves as an on/standby button; the device shouldn't be just switched off, but rather this standby button used. This gives it time to do some housekeeping and save everything safely on its internal disk. In use the UnitiServe was simple enough, although with several CDs I fed it, it could get quite noisy as the disc was read and re-read at high speed – there was quite a lot of vibration. Also, a couple of my CDs came up with the incorrect track information, the database that the unit polls obviously having erroneous disc data on it. For most of my ripping though, it was just a case of popping in a CD and coming back in a minute or two, whereupon the wee Naim had ripped it and quietly spat it out, and was waiting patiently for another. As such it's an excellent, easy to use computer audio product, but expensive.

transparency – almost too much for some tastes – and a fraction more rigour as it incises into whatever it's asked to play. The NDX is a slightly less exacting listen, just a fraction more relaxed and diffuse, and some listeners might even prefer this.

Upping the ante and moving to 24/96 FLAC via my computer, and 'Nights in White Satin' by the Moody Blues was a treat. It's not really fair to compare CD with hi res, as the ease with which the latter falls out of the speakers – no longer sounding like it's the aural equivalent of toothpaste being squeezed out of blocked tube – is always impressive. There's a wider, more three dimensional soundstage, bigger and more expressive bass (that always makes CDs sound like cardboard, by comparison), and a beautifully smooth upper mid and treble that's quite other worldly for someone who's only lived with Red Book digital. Ditto The Beatles' 'While My Guitar Gently Weeps' via 24/96 FLAC; it's not a brilliantly recorded song but it doesn't matter, as the hi res simply makes you less aware of the technical limitations of the recording, not more – letting the music's flavour flood out. With hi res music files, the NDX really shows its mettle.

Should we be amazed? Not really, as I was hearing SACDs sound even better ten years ago, but the point is that networked digital is flexible enough to be whatever you want it to be, and doesn't have to rely on Sony selling however many million discs a year (which it failed to do with

SACD) to make things viable. Able to play any of the important current files formats, the NDX is truly extensible and future-proof.

CONCLUSION

Another Salisbury thrill, the NDX is a great product and comes to the market at the right price. Its elemental sonic signature is close to the Naim DAC, which means fast, clean and dynamic. It interfaces beautifully with UnitiServe or a music computer, yet functions as an excellent conventional DAC, boasts direct digital connectivity iPod, internet radio and USB. It's very well made, upgradeable by a choice of power supplies and is nicer to use than most network music players. As such, what's not to like? Ultimately, more performance is available to those with more money, but at its price the NDX is surely peerless – and of course highly upgradeable. It's the best case I've heard for going green...

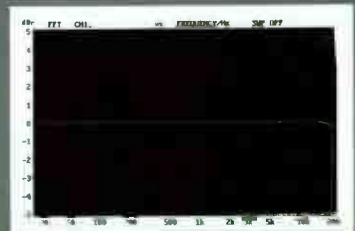
FORMATS SUPPORTED

Internet radio (Windows Media-formatted content, MP3 streams, MMS), Playlists (M3U, PLS), MP3, AAC (up to 320kbit/s, CBR/VBR) Apple Lossless (from iPod), Windows Media-formatted content-9 (up to 320kbit/s), WAV and FLAC (up to 24bit/96kHz via UPnP or USB only), AIFF, Ogg Vorbis

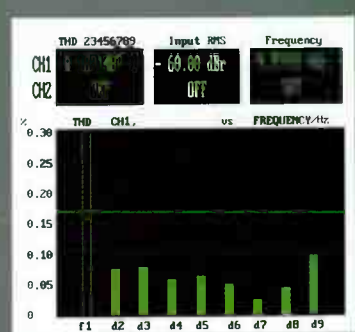
MEASURED PERFORMANCE

Frequency response of the NDX internal DAC was perfectly flat to 21kHz our analysis shows, and with a very slight lift apparent the NDX will not have a warm balance; it is likely to sound quite lively and detailed.	-60dB -80dB	0.18 4.6
Converter linearity through the dynamic range was very good, up with the best, distortion at 0dB measuring 0.0012% and at -60dB just 0.18% with a 1LSB dithered signal. Dither is less needed with 24bit resolution and without it distortion from the NDX measured a very low 0.05% at -60dB, showing the DAC is able to make the most of high resolution signals.	Separation (1kHz) Noise (IEC A) Dynamic range Output	128dB -107dB 100dB 2.1V

FREQUENCY RESPONSE



DISTORTION



With such good linearity the EIAJ Dynamic Range value was likely to be good and it hit an impressive 100dB. Output from the RCA sockets was a normal 2.1V, noise low and channel separation very high.

The NDX has a very good digital to analogue convertor section and should give excellent analogue sound quality. NK

Frequency response (-1dB) CD 2Hz - 21kHz	0.0012 0.001
Distortion 0dB -6dB	

VERDICT ●●●●●
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FOR
- excellent sound
- flexibility, connectivity
- direct digital iPod play out
- straightforward set-up

AGAINST
- UnitiServe price



Fine Art

Adam Smith paints you a word picture of Audel's Art CG618 loudspeakers...

Only recently, after a work colleague was telling me about some Italian hi-fi separates he had seen on everyone's favourite auction site, the topic of the number of Italian hi-fi manufacturers in general cropped up. After I had rattled off Audia, Monrio, Zingali, Sonus Faber, Unison Research, Audio Analogue, MEL Audio and Vyger, I must confess that I was struggling to name any more. Although some have come to mind since, it seems doubly ironic that the small neat boxes that arrived at Smith towers recently, hail from that wonderful

country; the mainland of which is a regular holiday haunt for my wife and I. Audel loudspeakers are actually based a little further afield however, in Casteldaccia near Palermo in Sicily.

In true Italian fashion, these are most certainly *not* humdrum black boxes, and Audel state that "every Audel loudspeaker is produced to become an outstanding piece of art for your home, built with high quality materials and components, hand-made by passionate people and experienced craftsmen".

As I heaved the first one out of its box, I realised that the end product certainly lives up to this

description, being neat, incredibly stylish and receiving a firm stylistic thumbs-up from the whole household.

The CG618s are the centre models in the Reference range and make use of a 6.5in woofer and 27mm tweeter in an 18 litre enclosure, hence the model number. These are bracketed in the range by the CG509 standmounters that use a smaller 5in woofer and 27mm tweeter in a 9 litre enclosure and the CG Towers, offering twin 6.5in drivers in a floorstanding enclosure just under a metre in height. The cabinetry on all models is quite



"I was instantly struck by their sheer verve, pace and turn of speed..."

unusual, consisting of layers of laminated birch wood, fitted together with high quality adhesives and then pressed and finely sanded, in an arrangement that Audel refer to as 'Multipanel'. The technology is used across all the company's products in the Reference series, as well as their Design range which includes the Fred and Ginger, which are in the shape of a male and female outline, and the Hi-Fido loudspeaker, which is styled in a decidedly canine manner. I promise you I haven't lost the plot – check out www.audel.it!

The CG618s however are more serious beasts and to this end come equipped with SEAS drive units, namely the HI456 bass driver that uses an edge coated cone of reed and paper pulp and a matching SEAS Prestige series tweeter. These are linked by a second order crossover network that uses good quality components including Jantzen Z-cap capacitors and, praise be, soldered driver connections with not a hideous push-on tag in sight.

Build quality of the loudspeakers

is very fine, although I was surprised to find a thinish screw-on wooden rear panel, which contrasts with the very solid and inert Multipanel cabinet.

One problem was that one of the review loudspeakers was making random odd noises; on removing the rear panel I found that the crossover components are located on what looks like a PCB, but actually has no copper track; all wiring is point to point. This is certainly no bad thing sonically, but on the troublesome unit some components had parted company with the board and were floating around inside, causing rattles. Relocating these easily cured the problem, but I hope this doesn't happen with subsequent examples of this loudspeaker.

The website shows optional matching stands for the CG618s but these were not supplied for the review, so instead I fitted the supplied spikes to the bottom of the cabinet and perched the Audels atop my Atacama SL600 stands in order to commence listening.

SOUND QUALITY

With the GC618s thoroughly warmed up and run in, I was instantly struck by their sheer verve, pace and turn of speed. It is often said of turntables that the models with impeccable timing seem to make records seem as if they are spinning faster; listening to the Audels I half wondered if my CD player was doing the same. Give the CG618s something smooth and languid and they flow beautifully, but turn up the wick and they almost feel like they are going to leap off their stands and bounce around the room with excitement. Jazzanova's 'Takes You Back' pumped out with feeling and fine impact, and Music go Music's 'Light of Love' almost took my breath away with the speed of its delivery.

Moving to more insightful programme material, and the second thing I noticed from the GC618s was their incredible imagery. Like my own Leak 2075s, the Audels are handed, with the tweeter on each cabinet offset, and setting the loudspeakers up so that these are towards the

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Standards

centre threw performers vividly into the centre of my room. Having recently rewatched one of the old 'Star Wars' films, I was actually reminded of R2D2 beaming the holographic projection of Princess Leia's "Help me Obi-Wan" message – the Audels seemed to be doing exactly the same with everything that I put through them!

The upshot of this was that the CG618s had no trouble filling my room with sound. My Naim Supernait was given an easy time thanks to their high impedance load and the result was an overall sense of stress-free music effortlessness. Orchestral



material coalesced into a delightfully cohesive performance across the front of my listening room, with the Audels projecting a highly ordered sense of scale and spatiality. In fact they layered the instruments of the orchestra into vivid rows more easily than many loudspeakers I have heard at the price, resulting in a palpable sense of depth and atmosphere. The upshot of this was an impressive sense of intimacy during the more languid passages, but a front row seat in the heart of the action when things became more vivace.

Undoubtedly aiding in this cohesiveness are the high quality drive units, which rendered instruments very well indeed. Snare drums had a delightfully snappy sense of immediacy and cymbals were crisp and shimmering in their metallic decay, but without falling prey to any splash or sibilance. The rise in treble output noted by Noel in the measured performance can indeed be heard as an overall brightness to the loudspeakers'

character, but they are not in any way uncouth, speaking volumes for both the quality of drive units, and the efficacy of the way in which they have been mated. As a result, flutes were bright and clear but not aurally assaulting, and violin strings were palpable and vivid but without any sense of screech or discomfort. Furthermore, the crucial crossover region, which can make or break vocal performances in particular, was even-handed and smoothly fluid, leaving singers projecting expertly above the backing track.

At the low end, Audel have again judged the CG618s' tuning well overall. They have not made any attempt to wring the very

last ounce of bass from the compact box, but the fact that the enclosure is wider and deeper than many other ostensibly similar standmounting designs means that a little extra oomph is available where it is most needed. Consequently, bass was punchy and solid, with the speakers' overall bright character adding a decent dollop of upper bass clarity and insight to everything. The only area in which the CG618s stumbled at all was when playing punchier material. It was possible to feel the rear board playing along whereas the rest of the cabinet was



inert. Unfortunately this translated into very subtle bass overhang at times, with a firm thump losing a degree of tautness. The frequency range affected seemed narrow, so this aspect only reared its head occasionally.

CONCLUSION

In many ways the Audel Art CG618 loudspeakers showcase the best of the country from which they hail. They are innovatively designed, come wrapped in a typically Italian stylish exterior and are never less than thoroughly entertaining to listen to. Just like their Italian automotive brethren, the overall package is addictively enticing. I enjoyed my time evaluating them and, frankly, my listening room will be a more drab place once they're gone. Admittedly, they are rather expensive; their style comes at a price so value will be in the eye of the beholder.

REFERENCE SYSTEM
 Garrard 301 turntable
 Inspire X100 tonearm
 Ortofon Kontrapunkt b cartridge
 Anatek MC1 phono stage
 Naim Supernait integrated amplifier

MEASURED PERFORMANCE

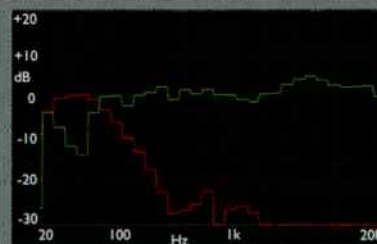
The CG618 has a flat and even frequency response up to 3kHz our analysis shows. Audel have lifted treble though, in the usual attempt to improve apparent speed and detail, and with output peaking by +5dB at 5kHz this will be aurally quite obvious. The CG618 will have a bright balance and may sound sharp at times.

Bass output was even down to 65Hz, below which the port takes over, extending output down to 25Hz, a low value for a small loudspeaker. The port is broadly tuned so will exert good damping and this promises firm and even bass, free from boom. Better still, bass distortion was very low, measuring 2% at 40Hz from the drive unit and 7% from the port. All in all then the CG618 has a good measured bass performance.

The decay spectrum was none too even in spectral distribution so some colour or 'character' may be apparent. Sensitivity was a little low at 86dB, mainly because impedance was excessively high at 12 Ohms; this under utilises amplifiers.

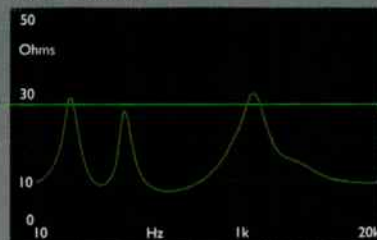
The CG618 turned in a good set of results in most areas, but has limitations, excessive treble and high impedance being to the fore. NK

FREQUENCY RESPONSE



Green - driver output
 Red - port output

IMPEDANCE



VERDICT ●●●●
 A welcome addition to the market, these loudspeakers are an impressive blend of style, pace and imagery.

AUDEL ART CG618 £1,925
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FOR
 - magnificent imagery
 - punch and verve
 - styling and finish

AGAINST
 - needs careful partnering

WORLD STANDARDS

Your guide to the best products we've heard that are currently on sale in the UK...

TURNTABLES

REGA RPI 2010 £225

Pleasing sound, fine build and ease of set-up and use make this a great first 'real' hi-fi turntable.

REGA P2 2008 £300

Excellent value for money engineering, easy set up and fine sound.

REGA P3-24 2008 £405

Seminal affordable audiophile deck with fine bundled tonearm. Tweakable, and really sings with optional £150 outboard power supply.

MICHELL TECNODEC 2003 £579

Superb introduction to Michell turntables - on a budget. Top quality build and elegant design mean it's still the class of the mid-price field.

FUNK FIRM VECTOR II 2009 £860

Innovative engineering gives a nimble, pacy and musical sound that's one of the best at the price.



MICHELL GYRODEC SE 2005 £1,138

Design icon with superlative build and finish. Sound is beautifully smooth, effortless and exceptionally expansive. No longer peerless at the price, but still a brilliant platform.

MARANTZ TT-15S1 2005 £1,299

Cracking all in one deck/arm/cartridge combination, this must surely be the best sounding 'plug and play' package at this price point.

ROKSAN RADIUS 5.2 2011 £1,450

Although getting expensive, the latest Radius is a highly grown up package with a flowing yet engaging nature; a fine package.



AVID DIVA II SP 2010 £2,000

New twin belt drive and power supply make this a more commanding performer, although there's a substantial price hike. Speed, dynamics and detail are hard to beat anywhere near the price.

INSPIRE ECLIPSE SEv2 12 2010 £2,349

Finely engineered, smooth and detailed sounding deck offering valuable twelve inch tonearm compatibility.

NOTTINGHAM ANALOGUE HYPERSPACE 2010 £2,390

Deliciously spacious, lyrical and beguiling sounding turntable, but lacks ultimate grip.

MICHELL ORBE 1995 £2,500

The top Michell disc spinner remains a superbly capable all rounder with powerful, spacious sound that's delicate and beguiling.

DR FEICKERT WOODPECKER 2010 £3,445

Elegant deck with great low frequency solidity, coherent soundstaging and a precise midband.



LINN LP12SE 2010 £3,510

Surely hi-fi's most iconic turntable, the legendary Sondek goes from strength to strength. New Keel subchassis and Radikal DC motor add precision and grip to one of the world's most musical disc spinners. Expensive, though.

ACOUSTIC SIGNATURE STORM 2011 £3,612

An excellent high end design with a smooth, solid, open and lyrical sound and razor sharp styling and build.

FLETCHER AUDIO OMEGA .5 2010 £3,699

Charming high end turntable that's a fitting testament to the late Tom Fletcher.

PALMER 3 2010 £3,750

Eccentric hand built high end turntable with a pleasingly smooth, sweet and lucid sound.



E.A.T. FORTE S EVO 12 2010 £4,750

Excellent premium price turntable with power, precision and passion aplenty, but relaxed and easy going by nature too. Great value package with the Pro-ject Evo 12" arm option.

ACOUSTIC SOLID ONE 2007 £4,050

Huge turntable, both in terms of sheer mass and sonic dynamics. Fit up to three arms and enjoy, just don't damage your back moving it...

SME MODEL 10A 1995 £4,556

Exquisitely engineered deck and SME V tonearm combo that's an extremely accomplished performer with classical music.

AVID VOLVERE SEQUEL 2007 £4,600

Stylish high end vinyl spinner with industrial strength build quality and a sound to match. Exceedingly neutral yet powerful sound is edge-of-the-seat stuff.

BRINKMANN BARDO 2010 £5,845

Unique high end direct drive turntable with amazing grip and focus, albeit not the most romantic of natures.



McINTOSH MT10 2008 £8,995

Big, expensive, controversially styled and glows more than some might consider necessary, but an astonishingly good performer.

EAT FORTE 2009 £12,500

Lavishly finished two box, two motor turntable with gorgeous Ikeda 407 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.

TONEARMS REGA RB251 2009 £136

Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counterweight modification.

MICHELL TECNOARM A 2003 £442

The late John Michell's clever reworking of the Rega theme, using blasting, drilling and rewiring! Surely the best overall performer under £500.

ORIGIN LIVE**SILVER 3C** 2010 £599

Excellent mid-price tonearm with a clean and open yet lyrical sound.

**HADCOCK GH-242****EXPORT** 2010 £770

Consummately musical, lyrical sounding tonearm, but needs the right turntable. Excellent value.

SME 309

1989 £767

Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

FUNK FIRM FXR II 2010 £1,175

Clever reworking of the ubiquitous Rega platform, the FXR II gives a wonderfully musical, almost unipivot like performance.

**AUDIO ORIGAMI PU7** 2007 £1,300

The classic Syrinx PU3 updated to spectacular effect. Hand made to order, with any mass, length and colour you care for. Fit, finish and sound truly impressive.

NAIM ARO

1987 £1,425

Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

HELIUS OMEGA

2008 £1,595

Stylish and solid lump of arm with fabulous build quality, that turns in a dynamic and weighty performance.

SME SERIES IV

1988 £1,620

Offers nine tenths of the SME V's magic at just over half price. Exquisitely built and finished, and a design classic. Faces stiff competition these days, but lovely nevertheless.

SME 312S

2010 £1,750

Twelve inch magnesium alloy armtube plus SME V bearings makes an impressive transcription tool with an insightful yet composed sound. Superlative build completes the package.

**GRAHAM PHANTOM** 2006 £3,160

Sonically stunning arm with magnificent bass dexterity and soundstaging. Build quality up to SME standards, which is really saying something!

TRI-PLANAR PRECISION

2006 £3,600

Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

SME SERIES V

1987 £2,389

Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

LINN EKOS SE

2010 £3,700

Subtle mods over the years, including revised bearings and the recent new wiring has kept it a serious contender in the superarm stakes. Has a commanding musicality all of its own.

OL ENTERPRISE 3C 2010 £4,500

Few if any pivoted arms come close to this arm's combination of liquid musicality and forensic grip.

CARTRIDGES**AUDIO TECHNICA AT-95E** 1984 £25

Great starter cartridge that's detailed and musical beyond its price. Superglue the stylus in for better sound!

AUDIO TECHNICA AT-F3/III 2010 £189

Great value entry level moving coil with detail and grip you just can't get from similarly priced moving magnets.

ORTOFON 2M RED/BLUE

2007 £60/£120

Modern, high resolution budget moving magnets that are always an engaging listen.

**GOLDRING G1042** 1994 £239

One of the best MMs going, with sweet and extended treble and punchy, muscular bass.

ORTOFON VIVO BLUE 2011 £275

Super new budget moving coil cartridge from respected Danish manufacturer; a real step up from previous efforts.

DENON DL103R 2006 £295

Awkward to get working properly with a poor mounting arrangement, yet it rewards with a musical performance that makes similarly priced cartridges sound cold.

DYNAVECTOR DV10X52003 £295

Distant descendent of the classic Ultimo 10X, this has warmth and sweetness in spades, allied to a punchy bass. Beats G1042 comfortably.

ORTOFON 2M BLACK 2007 £350

Staggeringly good high-end MM that uses a stylus from the MC Jubilee and easily rivals similarly-priced MCs

DYNAVECTOR DV20X-H2003 £395

Deliciously sweet sound with fantastic get-up-and-go makes this a great value budget MC. High output version works a treat with valve phono stages too.

**AUDIO TECHNICA AT-OC9MLIII**

2010 £399

New stylus and cantilever breathe life into this feisty, punchy and detailed performer.

ORTOFON RONDO BRONZE 2005 £500

Excellent mid-price moving coil with real rhythmic alacrity and a decent deal of finesse.

LYRA DORIAN 2007 £649

Incisive and musical, this baby Lyra is one of the most powerful and revealing MCs at its price point. Beware the sharp treble, though!

**BENZ MICRO GLIDER L2** 2008 £650

Crisp, clean and detailed MC; particularly impressive at both ends of the frequency spectrum

ZYX R-100H 2005 £799

Exceptionally tight sounding and detailed cartridge with the musical skills to match, this is up with the best at the price, with a presentation all of its own.

TRANSFIGURATION**AXIA** 2007 £890

Musically adept and highly resolute cartridge with impressive tracking abilities. Top end lift means careful matching required, however.

BENZ MICRO WOOD SL 2010 £945

Highly finessed Swiss moving coil that plays music with riflebolt precision.

**ORTOFON CADENZA BLUE** 2009 £1,000

Musical, out of the box sound, allied to real finesse, makes this a great do-it-all high end moving coil.

ORTOFON CADENZA BRONZE 2010 £1,350

Smooth and engaging high end MC with a slightly warmer and more relaxed presentation than its superb bigger brother.

ORTOFON CADENZA BLACK 2010 £1,650

Ultra incisive, transparent and dimensional moving coil with grip and punch aplenty.

ORTOFON MC WINDFELD 2008 £2,250

Ortofon's new flagship MC is a sophisticated and alluring performer that takes the vinyl experience to a new level.

KOETSU RED K SIGNATURE 2007 £2,399

The new K Signature adds a hefty dose of insight and finesse to the already impressive Red and the results are fabulous.



DIGITAL SOURCES

MUSICAL FIDELITY V-DAC 2010 £170
Clear, concise, low distortion sound belies giveaway price. Supelative value for money.

CAMBRIDGE AUDIO DACMAGIC 2010 £230
A flexible new DAC, this is an impressively rhythmic and detailed performer.

ARCAM rDAC 2010 £300
Cracking budget DAC sporting a fulsome and musical sound with gorgeous build and styling.

MUSICAL FIDELITY MI DAC 2010 £400
Surprisingly sophisticated upsampling DAC with oodles of detail and air, but bass isn't quite as powerful as it could be.

STELLO DA100 SIGNATURE £750
Superbly finessed sounding DAC at the price, with strong driving bass and plenty of air and space.



CAMBRIDGE AZUR 840C 2006 £800
Well built CD player with a silky, yet detailed sound and a whole host of useful facilities. Excellent value for money.

NAIM CDSi 2008 £895
Naim's new italic 'i' variant improves even further on the original mid-price classic, offering super tight, grippy and musical sound.

ROKSAN KANDY K2 CD 2010 £900
A charmingly musical performer at the price, this is a surprisingly sophisticated CD player for the money.

BENCHMARK DAC-1S 2009 £930
Power, precision and poise - allied to real seat-of-the-pants musicality, this DAC justifies its premium price.

MUSICAL FIDELITY M3 CD 2011 £995
Excellent mid-price machine with slick slot loading and an open and inviting sound.

ELECTROCOMPANET PD-1 2011 £1,250
Quirky but highly capable digital convertor with an effective wireless radio option (£250) and balanced outputs.

SIMAUDIO MOON 300D 2010 £1,290
Lovely fluid sounding DAC with a deep, dark, velvety tonality.



CYRUS CD8 SE 2008 £1,350
Bespoke Servo Evolution mech makes this the most musically engaging machine at the price, with super smooth tonality to boot. Optional PSX-R adds bass and dimensionality.

DENON DCD2010AE 2010 £1,700
Powerful, open sound allied to a rich tonality and satisfying subtlety make this an excellent mid-price buy.

NAIM DAC 2010 £1,995
Superb high end digital convertor with a probing, punchy and forensically detailed sound.

MERIDIAN G08.2 2011 £2,400
Everyman's modern high end CD player, the stylish, well made Meridian has an extremely enjoyable yet refined and accurate sound.

MARANTZ SA-KI PEARL CD 2010 £2,500
Finely honed affordable high end silver disc spinner, this has a musical lucidity that's unexpected at this price.



LEEMA ANTILLA IIS ECO 2011 £2,995
Stable and smooth yet superbly detailed and musically engaging, this is class of the £3,000 CD player field.

CHORD QBD64 2008 £3,000
Bespoke architecture gives a uniquely musical sound that's beguiling yet proffers dizzying incision and grip.

ELECTROCOMPANET EMC-1UP 2009 £3,450
Quirky yet extremely capable high end upsampling CD spinner, with a musical fluency that beguiles more than it impresses.



ACCUSTIC ARTS CDP1MK2 2007 £3,985
Styling not to everyone's taste but build quality is impeccable and the performance is stunningly musical.

ESOTERIC X-05 2010 £4,495
Superlative 'affordable high end' CD/SACD spinner with excellent build, massive detail and great poise.

WEISS DAC202 2010 £4,600
Brilliantly open and insightful sounding DAC with a range of useful features.

ELECTROCOMPANET EMP-1/S 2011 £4,650
Epic in scale, lavish in tone and exuberant in its musicality, this is a memorable SACD spinner. Quirky in operation and modest in finish, though.

NAIM CDX2-XPS2 2003 £4,950
A fine high end machine, but add an XPS2 and it becomes one of the most charismatically engaging 16bit machines we've ever heard. Plays music with such passion!

NAIM CDS3 2003 £7,050
The most polished Naim CD to date; tremendously capable and musical, but lacks the Rottweiler quality of the cheaper CDX2-XPS2.

dCS DEBUSSY 2011 £7,500
Compact, stylish DAC bringing the gloriously smooth, svelte, spacious sound of dCS to a wider audience.

ACCUSTIC ARTS DRIVE I MK2/TUBE DAC 2 2007 £7,980
Superbly built high end CD transport and DAC combo that shows just what the format can be capable of. Very tangible, musical sound with wonderful dynamics and glistening harmonics. Only curious styling and clunky build detract from its brilliance!

DCS PAGANINI DAC £9,599
Digital rarely sounds better; dCS's bespoke Ring DAC makes for power, punch and insight on an epic scale. Add clock and upsampler for an even more profound experience.



NAIM CD555/555PS 2006 £14,000
Very probably the best CD player yet made - certainly the most expensive; a digital tour de force.

**NETWORK**

NAIM HDX 2009 £4,405
Interesting one-box network enabled hard disk music system gives superb sonics together with impressive ease of use.

LINN KLIMAX DS 2007 £9,600
Landmark network music player, offering brilliant sonics at up to 24/96 resolution from hard disk/NAS. Expensive, but you can hear why...

PHONO STAGES

CAMBRIDGE AUDIO 640P 2009 £99
Excellent entry level design that raises the bar for budget phono stages. Crisp, smooth yet brightly lit sound on both MM and MC that's a vast improvement on most budget inboard designs.

GRAHAM SLEE ERA GOLD V 2004 £370
Warm, open and musical nature makes this a great budget phono stage.

ICON AUDIO PSI.2 2007 £599
Excellent valve phono stage with good range of facilities and fine imaging abilities.



CHORD CHORDETTE DUAL 2010 £799

Well presented mid price designed with detailed sound and USB input for archiving.

ASTIN TREW AT8000 2010 £880

Expansive, detailed, powerful sound makes this a leading sub-£1,000 contender.

A.N.T. AUDIO KORA 3T LTD 2010 £995

Exceptionally musical and natural sounding all discrete transistor phono stage, with highly lucid, valve-like presentation.

AVID PULSUS 2010 £1,100

Powerful, propulsive, expansive sound puts this right at the top of the £1,000 phono stage tree.

QUAD QC24P 2007 £1,200

Dynamic performer that can be used on its own as a complete phono-level preamp.

ICON AUDIO PS3 2008 £1,500

Super sounding valve phono preamplifier, with an expansive, engaging and organic nature that makes vinyl sheer joy!

SUTHERLAND 20/20 2010 £1,999

Well engineered, smooth sounding solid-state phono stage with a charm of its own.

EMILLE ALLURE 2010 £2,495

Just as the name suggests, this is a lovely way to play LP with an exceptionally open and lucid sound.

**AVID PULSARE** 2010 £3,800

This superbly built, well specified phono stage has a powerful and authoritative sound that bristles with detail and energy.

WHEST PS.30 RDT SE2011 £4,500

The least solid-state sounding Whest we've heard, this builds on the family strengths of precision and grip but adds a welcome poise and fluidity.

NAT AUDIO SIGNATURE 2011 £5,633

Sophisticated sounding, unusually engineered MM and MC phono stage, but faces stiff competition at this lofty price.

AMPLIFIERS**ICON AUDIO STEREO 40/III** 2010 £1,200

Excellent starter tube integrated, with plenty of detail and an expansively musical sound.

**AUDIOLAB 8000S** 2006 £400

In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound but not the world's most beguiling.

NAIM NAIT 5i 2007 £725

The italic 'i' version remains one of the most musically competent and dynamically engaging integrateds at the price.

CAMBRIDGE 840A V2 2007 £750

Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

SUGDEN MYSTRO 2010 £1,225

Sugden's first Class AB integrated in a long time surprises; rollickingly good fun, it loses surprisingly little in smoothness to its Class AB siblings.

NAIM NAIT XS 2009 £1,250

With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth beyond class expectations.

CREEK DESTINY 2 2010 £1,445

Beautifully voiced integrated amplifier with a distinctly seductive, tube like sound. A solid-state superstar!

SUGDEN A21A S2 2008 £1,469

Crystalline clarity, dizzying speed and forensic detailing makes this seminal design the most musical at the price, but power limited so needs sensitive speakers.

**CYRUS 8XPd** 2010 £1,500

A quality integrated that suits all genres of music providing insight and clarity in a compact but flexible package.

ANATEK A50R 2007 £1,600

Simple integrated amplifier with super bass grip and effortless dynamics.

VINCENT SA-236MK 2010 £1,749

Big, powerful and expansive sounding hybrid transistor amplifier, with a lively, musical nature.

NAIM SUPERNAIT 2007 £2,475

Integrated *tour de force* from Naim that combines impressive functionality and connectivity with super sound.

AUDIO RESEARCH VS160 2009 £3,298

Load of tube power allied to a strong bass and smooth open midband makes this a grin-inducing listen.

LEEMA TUCANA II 2010 £3,495

Polished high end integrated amp that combines power, detail and genuine musicality with a good range of facilities.

**SUGDEN IA4** 2007 £3,650

Goodly amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrateds.

QUAD II CLASSIC 2010 £4,500

Beautiful retro styled integrated amplifier with a subtle, supple sound - although needs matching to speakers that are easy loads.

QUAD II CLASSIC INTEGRATED 2010 £4,500

Thoroughly modern music maker with classic style and great pedigree, this amp sings with gentle music but is no headbanger!

SIM AUDIO**MOON 600i** 2010 £5,750

Sturdy build, useful facilities and a wonderfully relaxed, seamless and even-handed sound will win this many friends.

MUSICAL FIDELITY**AMS35i** 2010 £6,000

One of the best high end integrateds we've come across, this combines hear-through transparency with musical get-up-and-go.

DARTZEEL**CTH-8550** 2010 £16,500

Charismatic and quirky high end solid-state integrated amplifier with superb sound and a charming visage.

HEADPHONE AMPLIFIERS**FIDELITY AUDIO HPA 100** 2011 £350

Great little headphone amplifier with a lively yet refined and open sound.

MUSICAL FIDELITY**X-CAN V8** 2008 £350

Open and explicitly detailed sound plus serious bass wallop and the ability to drive anything to very high levels makes this a great partner for most mid-to-high end headphones.

PREAMPLIFIERS**CREEK OBH-22** 2008 £350

Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral sound.

ICON AUDIO LA-4 2011 £800

Uses early 6SN7 triodes for liquid sound, has plenty of gain and remote control.

NUFORCE P-9 2007 £2,200

Impressive two box preamp with superb resolution and an engaging sound.

**DPA CA-1** 2010 £2,650

Excellent solid-state preamp with a meticulously detailed and propulsive sound, but a deep velvety tonality.

MELODY PURE**BLACK 101D** 2007 £3,295

The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.

MF AUDIO CLASSIC**CII SILVER** 2010 £4,500

One of the best preamplifiers we've heard at any price, this transformer coupled marvel does very little wrong; its powerful, clean, open yet delicate sound is unmatched at or near the price.



MODWRIGHT 36.5 PRE/PSU
2010 £5,995

Exceptionally open and expansive, yet musically expressive sounding high end preamplifier.

MUSICAL FIDELITY PRIMO
2009 £7,900

Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

POWER AMPLIFIERS
XTZ AP-100 2010 £520

Decently smooth yet usefully muscular, this power amp punches way beyond its price point in sonic and value terms.

QUAD 909 2001 £900

The latest current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but superb value all the same. Lovely build, finish and Quad's legendary service are nice.

NUFORCE REFERENCE 9SE V2
2006 £1,750

Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.

**DPA SA-1** 2010 £2,850

Pacey, engaging and rhythmic almost to a fault, this solid-state power amplifier isn't the world's most powerful but is none the worse for it.

QUAD II-40 2005 £3,230

Modern tube monoblock power amplifiers with plenty of power, liquid and open mid-band and spacious, airy treble. Explicit, engaging sound, but not as euphonic as some.

ELECTROCOMPANET NEMO
2009 £4,450 (EACH)

The Norwegian power station is as cool as a glacier tonally, yet impresses with its sheer physicality and fleetness of foot. 600W per channel makes for a massive bang per buck.

ICON AUDIO MB845 MkII 2010
£5,500

With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.

**QUAD II-80** 2005 £6,000

Quad's best ever power amplifier, this is a dramatic performer with a silky but dark tonality, blistering dynamics, serious power and a compellingly musical sound. They don't come much better.

MUSICAL FIDELITY AMS50
2010 £7,000

Mighty, assured high end full Class A integrated proffering icy clarity allied to real musicality. Lacks the lucidity of the best tube amps but redeems with power and punch.

LOUDSPEAKERS
Q ACOUSTICS 2020 2010 £140

Great little standmounters with a friendly, fun yet surprisingly refined gait. Excellent value starter speakers.

ACOUSTIC ENERGY NEO I
2007 £199

Tidy and well balanced standmounters with pleasing clarity and detail.

MISSION MX2 2011 £200

Sophisticated sound alloyed with real musical insight makes these small standmounters super value for money.

ACOUSTIC ENERGY NEO I v2
2010 £225

Civilised sounding speaker with fast and tuneful bass.

B&W 686 2007 £279

B&W's new baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

WHARFEDALE DIAMOND 10.3
2010 £290

Great small standmounters for audiophiles on a budget; dry punchy sound with impressive soundstaging at the price.

MORDAUNT SHORT AVIANO 2 2010 £300

Classy sounding standmounter at a still affordable price.

KEF IQ30 2009 £330

Beautifully built, classily styled standmounters with exceptional image projection and a very clean, detailed sound.

**USHER S-520** 2006 £350

Astonishingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.

XTZ 99.25 2010 £640

Disarmingly open and refined at the price, these standmounters bring unexpected civility, refinement and insight to the price point. Exceptional value for money.

**ACOUSTIC ENERGY AE1 CLASSIC**
2006 £845

Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.

SPENDOR S3/5E 2004 £950

A natural successor to the BBC LS3/5a, whose impressive neutrality, imaging and evenhandedness makes this a superior, if less charismatic, loudspeaker.

MY AUDIO DESIGN MY1920 2011 £995

Exceptionally smooth, spacious and refined mini monitors that beguile and excite in equal measure.

ELAC BS243 2010 £1,000

More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.

RRR FS100 2007 £1,055

Mind-boggling amount of loudspeaker for the money. Big and sturdily built with serious bass and awesome soundstage scale. A real bargain.

**ONE THING AUDIO ESL57**
2007 £1,450

One Thing Audio's modifications keep the good old ESL57 at the very top of the game.

GURU QM-10P 2007 £1,595

Quirky but adorable standmounters that are way off the pace in respect of detail and power, but well capable at playing a tune and pulling you in to the music.

USHER BE-718 2007 £1,600

Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

MARTIN LOGAN SOURCE
2008 £1,600

Brilliant entry level electrostatics, giving a taste of loudspeaker esoterica for the price of most moving coil boxes. Tremendous clarity, evenness and delicacy, although not the world's most powerful sound.

SPENDOR S8E 2008 £1,895

Generously large, silky smooth delivery, this dynamic sounding floorstander is an excellent all rounder.

**ISOPHON GALILEO** 2007 £2,100

Big standmounters that really grip the music and offer quite startling dynamics and grip.

MONITOR AUDIO PL100 2008 £2,300

The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble.

EMMINENT TECHNOLOGY LFT8B 2010 £2,300

Brilliant ribbon/moving coil hybrid with seamless, delicate and expansive yet tremendously musical nature.

PMC OB11 2008 £2,950

Cleverly updated floorstanders give scale and solidity in slim and well finished package.

MY AUDIO DESIGN MYCLAPTON
2010 £2,990

Powerful, dynamic, musical yet refined, this unconventional point-source design yields dramatic sonic benefits.

MAD MY CLAPTON GRAND MM
2010 £3,400

Distinctive coaxial standmounters with wonderful soundstaging, bright lucid midband and true musical insight.

YAMAHA SOAVO I.1 2009 £3,000
Musical, transparent large floorstanders with impressive dynamics and cohesion. Excellent build and finish.

**MOWGAN AUDIO MABON**
2007 £3,995

Massively capable loudspeakers that offer dynamics, scale and clarity in an elegantly simple package. Wide range of finishes, too.

B&O BEOLAB 9 2007 £5,000
Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.

TANNOY DEFINITION DC10T
2010 £5,000

Wonderfully wide and open, super fast and amazingly engaging to listen to.

ECLIPSE
TD712z/2 2011 £5,100

Flawed genius, and wilfully so. These loudspeakers don't do everything well, but what they can do is profound and enthralling; rhythms, dynamics and soundstaging.

ARS AURES MI 2006 £5,995

Sublime build and finish allied to an insightful, assured and even-handed musical performance makes these an essential high end audition.

**QUAD ESL-2905** 2006 £5,995

The old 989 with all the bugs taken out, this gives a brilliantly neutral and open sound like only a top electrostatic can; still not a natural rock loudspeaker, though.

SPENDOR ST 2010 £5,995

This classy sounding, superbly presented big floorstander will appeal to those seeking high end sonics with subtle looks.

REVOLVER CYGNIS 2006 £5,999

Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

VIVID VI.5 2010 £6,000

Breathtaking transparency, superlative coherence and dizzying speed make these one of the best standmounters ever made - providing you like their 'studio sound'.

**GERMAN PHYSIKS LIMITED II**
2011 £7,800

Don't be fooled by the austere looks; this is a superbly enjoyable omnidirectional speaker with a wonderfully fast, expansive sound.

USHER BE-10 2009 £10,500

Clever high end moving coil design with immense speed and dizzying clarity allied to epic punch. Needs the best ancillaries to fly, though...

B&W 801D 2006 £10,500

In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.

**ISOPHON CASSIANO** 2007 £12,900

Drive units featuring exotic materials allied to superlative build quality result in an immensely capable loudspeaker. Not an easy load to drive, however.

REVOLVER CYGNIS GOLD
2010 £15,000

Vast in scale with effortless dynamics and an easy, barrel chested bass, these big bangers are great for lowish power tube amps. Large room needed!

MARTIN LOGAN CLX LINEAR
2010 £15,990

Meticulously crafted electrostatic that's free from traditional limitations, this is one of the very best loudspeakers money can buy.

ACCESSORIES
WADIA I701 2010 £349

The first iPod dock to extract the music digitally, letting you hook your little Apple direct to a DAC for superior sound.

ISOTEK AQUARIUS 2010 £795

Highly accomplished premium priced mains conditioner that delivers the sonic goods, unlike so many others.

TOWNSHEND MAXIMUM
2003 £800

Classy ribbon supertweeter with flexible level settings and cool styling - you'll be amazed at the difference it makes, especially with Quad electrostatics.

HEADPHONES
JAYS V-JAYS 2010 £49

Wonderful little budget over-ear portable phones with a clean, smooth sound to beat the best of the rest at the price.

**SENNHEISER MX-550** 2005 £19

Our unqualified recommendation for those seeking a serious sounding pair of in-ear phones. Smooth, detailed and musical.

SENNHEISER PX-100 2002 £29

Cracking pair of lightweight open back cans ideal for personals, but good enough for real hi-fi use. Superb build allied to a smooth and engaging performance make them the spiritual successor to the HD400s.

**GOLDRING DR150** 2006 £70

Excellent build and fine sound makes these budget cans superlative value for money.

SENNHEISER HD-590 1998 £199

The company's best real-world cans to date. Open and smooth with plenty of detail. Brightly lit midband makes them an ideal partner for a valve headphone amp.

SENNHEISER HD-650 2004 £250

A super all round reference design with crisp, detailed and even sound allied to superlative build and comfort. Cable upgrade yields great results.

SENNHEISER HD800 2010 £1,000

The ultimate expression of the Sennheiser philosophy offers massive speed, clarity and insight, although lacks some of the charm of the softer, more beguiling rival Staxes.

**STAX SR-007T OMEGA**
II/SRM-007T 2006 £2,890

Simply the best headphones we've ever heard at any price, these sweetly translucent electrostatic ear-speakers are like no other headphone, or loudspeaker for that matter...



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NEW MB845 i mono blocks

Fabulous huge 845 triode mono block amplifiers. NEW improved version of the original. Now with "Low Distortion Tertiary" transformers 90+90w. **5 Globes Hi Fi world**
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Low Distortion
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NEW Stereo 60 MK III 85+85w

Total redesign with new KT120s New Tertiary transformers New power supply, very low distortion. Huge power in 1 box!
"High power. good timing" Hi Fi Choice RECOMMENDED

Low Distortion
Tertiary Transformers



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New Electrostatics KingSound



Outstanding Value!
Compact, Efficient & Beautiful The Queen II is a compact efficient 3 way design, less conspicuous 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)
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Awarded 5 Globes

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INTERCONNECTS

TELLURIUM Q

BLACK 2010 £276/3m

A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.



TECHLINK WIRES

XS 2007 £20

Highly accomplished interconnects at an absurdly low price. Stunning value for money.

WIREWORLD

OASIS 5 2003 £99/M

Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

CHORD COMPANY

CHAMELEON 2 £90/M

One of our favourites, these are musical performers with a smooth yet open sound.



DNM RESON 2002 £40/M

Neutral and transparent - a steal!

VDH ULTIMATE

THE FIRST 2004 £260/0.6M

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space results in a cracking cable for the money.



TCI CONSTRICTOR

13A-6 BLOCK 2003 £120

Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

MISSING LINK CRYO REFERENCE

2008 £375

Currently our favourite 'affordable high end' interconnects, with a deliciously smooth, open and subtle sound without a hint of edge or grain. Superb value, inasuch as it's as good as some designs at three times the price.

TUNERS

DENON TU-1500AE 2006 £120

Excellent entry level analogue tuner; slick sonics and fine feature count make it a bargain.



CAMBRIDGE

AUDIO 640T 2005 £250

Sweet sounding digital/analogue hybrid with fine build and finish at the price.

ARCAM FMJ T32 2009 £550

Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.

CREEK CLASSIC

TUNER 2006 £550

No tuner offers better sound per pound; wonderfully three dimensional and smooth from bottom to top.

MICROMEGA FM-10 2010 £750

Don't let the modest proportions fool you, this is a state-of-the-art modern analogue tuner with bespoke internals giving a warm, expansive sound.

MYRYAD MXT-2000 2005 £800

Sumptuous sound and excellent build is all most will ever need in a tuner; superb.

MAGNUM DYNALAB MD-90T

2010 £1,295

Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.

MAGNUM DYNALAB

MD-100T 2006 £1,895

One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.



SYSTEMS

YAMAHA CRX-M170 2007 £200

One heck of a lot of quality performance on DAB, CD and FM for £200! Optional matching £120 NX-E300 loudspeakers aren't too shabby either.

TEAC DR-H300DAB 2008 £329

Nicely built and styled mini with fine performance on all sources that even plays DVDs!



NAD C-715DAB 2008 £429

Small, neat looks cover a truly capable system that shows just what a compact design can achieve.

ARCAM SOLO MINI 2008 £650

Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to its bigger brother.

SHANLING MC-30 2007 £650

Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.



PEACHTREE AUDIO

IDECCO £1,000

Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.

ARCAM SOLO 2005 £1,249

Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

LINN CLASSIK MUSIC 2008 £1,250

Neat update of the original and best one-box stereo system; superbly musical sound beats equivalently priced separates.

NAIM UNITIQUE 2010 £1,350

Great little half width one-box system with truly impressive sound allied to a wealth of source options.



MERIDIAN F80 2007 £1,500

Fantastically built and versatile DVD/CD/DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn't a 'proper' hi-fi product; most see sense when they listen to it...



AURA NOTE MUSIC CENTRE

2007 £1,500

Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.

NAIM UNITI 2009 £1,995

Uniquely versatile one box music system with excellent ergonomics and sonics to match. A landmark product for Naim.

LINN CLASSIK

MOVIE 2007 £2,250

Superbly built all-in-one that offers excellent sound across all formats and is surprisingly easy to use.



MERIDIAN SOOLOOS 2.1

2010 £6,990

Thanks to its crisp styling and bright, colourful touchscreen, plus excellent search facilities this is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.

MARANTZ 'LEGEND' 2007 £22,000

The combination of SA-7S1 disc player, SC-7S2 preamp and MA-9S2 monoblocks delivers jaw-dropping performance.



New world

Hi-Fi World has a new website. It now carries many of our classic reviews, making them permanently available – and we will be steadily adding more.

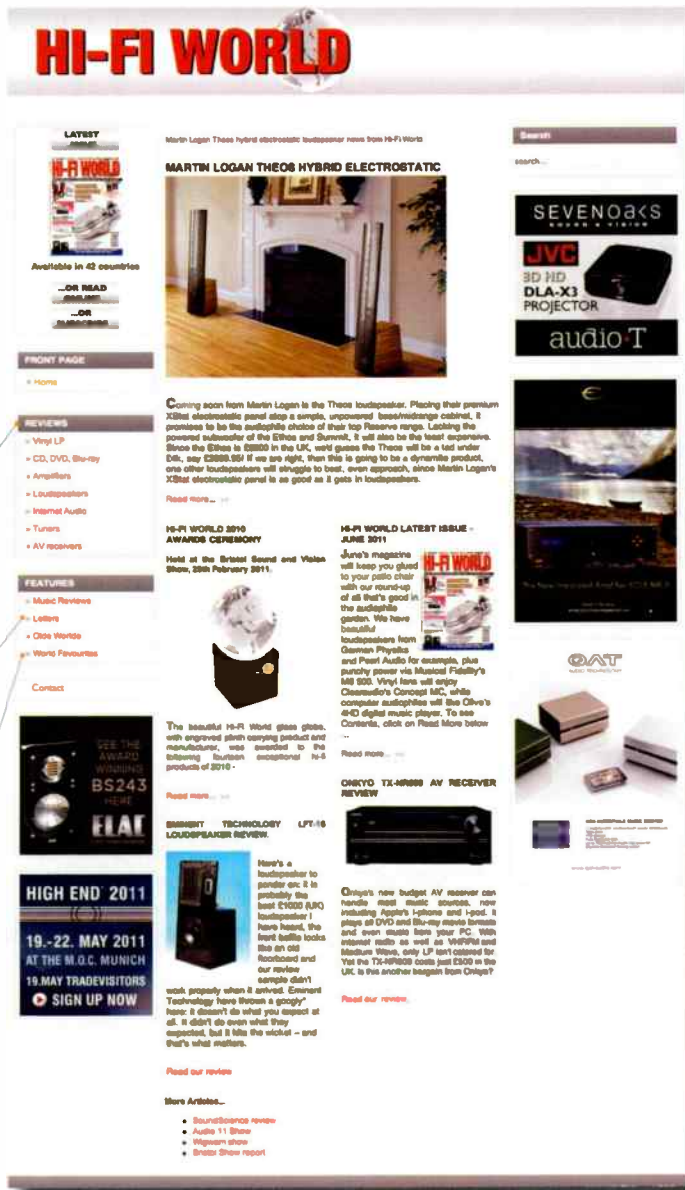
- Our comprehensive and advanced test procedures are explained in detail, aided by pictures, graphs and illustrations. See the Test sections.
- Test data referred to but not published in the magazine, such as loudspeaker distortion plots, accompany our on-line reviews.

Take a Look at our new website
www.hi-fiworld.co.uk

Reviews unsuited to the magazine now go on-line. See our recent review of Eminent Technology's new LFT-16 loudspeaker for example. It didn't work properly but it was still worth an in-depth review. You'll find it interesting.

See Letters published in past issues, along with our replies - they're a valuable and entertaining read, now available on-line. More are coming. You can e-mail us from there too.

World Favourites are listed, as are 2010 World Awards. We will be adding an Olde Worlde listing soon. There is so much to come from our vast archives, including our definitive picture library.





STAX SRS 2170 £745

Japanese manufacturer Stax have been making headphones (or earspeakers, as they refer to them) since 1950 and have developed a great name for themselves, becoming synonymous with electrostatic transducers in the same way that Nakamichi did with cassette, for example. The SRS 2170 system is the latest incarnation of the breed. Priced at £745 they are the new entry level model, replacing the SRS 2050.

The supplied SRS-252S energiser has a completely revised circuit topology incorporating an all-stage balanced circuit DC amplifier, housed in an extruded aluminium case measuring 132x38x132mm and weighing 540g. The claimed frequency response is from DC to 35kHz and the amplification provides 58dB of gain (x800). All of this is powered by a plug mounted transformer providing 12V DC, 4W.

Although visually similar to their predecessors, the SR-207 electrostatic earspeakers come with a new diaphragm, new stators and a high rigidity resin case. The diaphragm is the same as used in the more expensive models in the Stax range, as is the 2.5m long cable, which is a 6 strand parallel structure type with a low capacitance, made using LC-OFC. This is thoughtfully marked for ease of orientation of the earspeakers with a solid line on the left channel and a dotted one for the right (white against the black background). The resin case is also black, as

are the synthetic leather ear pads. Total weight including cable is 490g. Claimed frequency range of these is 7Hz to 41kHz, and are capable of a sound pressure level of 101dB at 100mV R.M.S.

I have used Stax earspeakers before, and was impressed with their level of comfort over extended periods of use. I am not normally a headphone fan, finding most designs feel too clamped to my head. These I found quite effortless to wear (even with my glasses on), with fit being adjusted by a synthetic leather strap that goes over the head beneath the resin head spring arc which connects the two ear units. It would have been nice to have leather covered earpads though, instead of Stax's favoured nineteen seventies car seat vinyl – I wouldn't think it would add much to the overall price, and would make long listening sessions less sweaty.

As well as being generally very comfortable I was extremely impressed with the sound which I found to have a spatiality that I have rarely found with other units. Playing a 1962 Editions L'Oiseau Lyre recording of The Academy of St. Martins-In-The Fields performing a selection of baroque concertos, the stereo spread was quite wide, with enough space between the instruments for me to focus on a particular strand of the music and follow it easily. The tonality, especially in the bass regions, surprised me. Bass seemed solid and deep, with enough body to be believable, but free of overhang.

The midrange was well described in a very lucid manner that drew me into the music, displaying little nuances of the players' technique which, when heard through loudspeakers were there, but not as accessible. The higher notes were firmly placed, both in space and in shape, with violins having an almost military precision to their attack. They were not sharp sounding but had a strong presence and bite to them, rather than the sometimes cloying sound that I have heard through other headphones.

When faced with more beat-driven sounds the Stax rose to the occasion superbly, rhythms stopping and starting precisely in a way that few speakers that I have heard can match.

Although these are the entry level unit in the Stax range I found they offered a sophisticated and detailed sound that I found musically enjoyable and seemed tonally authentic. I have heard these earspeakers described as the Rolls Royce of headphones, and now having lived with a pair for a while, I can understand why. Although apparently very expensive, if you consider that a top notch pair of dynamic headphones plus a decent headphone amplifier would hardly be any less, suddenly they seem better value. Stax is very much a cult headphone brand, and long may it run.

TB

[Contact: +44 (0)1727 865488,
www.symmetric-systems.co.uk]

soundbites

THE CHINESE WAY

Given that a great deal of modern hi-fi equipment is now made in and around China, Noel Keywood went on a voyage of discovery to the Far East to see how it's done...

木活喜
笑活祝能吉安喜
月福恩

If Wikipedia is correct, China is now the world's largest exporter (see 'List of countries by exports'). A lot of British audio is now built there, plus of course notoriously cheap and little known Chinese brands that you keep asking us about and, some readers insist, are good value.

to see what is happening there and give you some idea of the nature of Chinese manufacturing.

The manufacturers I visited were, in visit order, Mei Xing (Ming Da), International Audio Group (IAG), Icon Audio and Usher. All are quite different from each other and this in itself points to one major difference

China has more variety; its manufacturers range from small to huge.

Mei Xing, who sell products under their brand name Ming Da, are a Chinese equivalent to a typical UK audio company, comprising around thirty people and run by the founder. To reach them we bounced across the South China Sea in a hydrofoil ferry from Hong Kong. At the Chinese customs post I noticed four little faces, from happy to angry, that lit to show whether I was deemed co-operative or uncooperative to the customs official! The communist state expects cooperation from its citizens it seems. As I was gestured to move back and forth in front of the camera many times my rating was likely off the bad end of the scale. I would have noticed were it not for the oppressive summer heat, 36 degrees Celsius and very humid too.

Mei Xing was just a one hour ride away, outside Zhuhai City, most of which appeared to have been built in the last ten years. A classic Chinese audio manufacturer, the company was established twenty years ago, and they sell mostly into China, they told us. Ming Da products have a good reputation outside China but are not widely known, something the company would like to change. Although it might appear that Chinese goods find their way easily to the West, in practice Chinese manufacturers have just the same problems selling outside China as British manufacturers do outside the UK, with the added difficulty of understanding English and coping



Usher's Taiwanese factory.

Perhaps, but China is a long way if something goes wrong. I know because I have just returned from a whistle-stop tour of (southern) China and Taiwan (which was a part of China until Chiang Kai-shek turned up), visiting four audio manufacturers

between China's audio manufacturers and Britain's. UK manufacturers tend to be small, local self-starts that grow, such as KEF, B&W and Meridian. We call this 'cottage industry' although all three are now internationally recognised brand names of course.



Hong Kong, from the ferry



Suena Lai (left) speaks English at Mei Xing and handles overseas calls and business. Right is owner Xiao Ji Gui, and centre is Anna Chang of Hi-Fi World, fluent in Mandarin, Cantonese and English.

with Western safety and certification requirements. Few Chinese speak English (English is taught only in Hong Kong) but this is essential when dealing with the outside world.

Suena Lai handles external communication for Mei Xing. Suena taught herself English, spoke it fast and well to us, but has never been out of China - not even to Hong Kong a few hours away! Mei Xing build everything themselves, common in China. This includes the chassis and the transformers, which amazed me.

Staying at the Chinese 'Dragon Unity' hotel that night had its interests. China is prescriptive and they still promote one child per family so condoms are supplied free in the rooms! So are various lotions to improve male and female cleanliness (I didn't look), as well as clean underpants for him and her. Breakfast was - er - 'interesting'. Noodles, pork sausages, vegetables and broths, plus eggs boiled in tea (tasty). I survived...

Next stop was International Audio Group (IAG) in Shenzhen, a two hour drive along a huge new motorway used mostly by ducks, or so it seemed to me. Old rural lorries, painted dark green, plodded slowly along with thousands of them in open cages, going to market. China is no place to be a duck. Cars darted to the left and right of them; any lane is usable, at any speed! I cowered in our taxi's back seat...

IAG was much bigger than I'd imagined. We walked through numerous huge factory buildings,



Previously of World Designs, Peter Comeau now heads up acoustic design at International Audio Group...



Valve amplifier production at Mei Xing is manual - all components are placed at right angles, with bare earth bus bars and neat wiring looms...



Ducks on trucks were common on the motorways.



Lux valve amps soak test in one of IAG's many test rooms where products are run and tested. Mr Ali (left) explains the procedure to Anna Chang of Hi-Fi World, whilst Peter Comeau looks on...



A production line at IAG plant, patrolled by Mubashar Ali who is responsible for quality control.



No fewer than five men hand finish a huge Wharfedale loudspeaker cabinet. It is for the China market only...

including machine shops, vast hydraulic presses, paint shops, a wire making plant (yes, they even make their own wire), and the inevitable transformer winding area, as well as Surface Mount machines, loudspeaker cabinet shops and much else. It was as big as the British Aircraft Corporation factory in Bristol where Concorde was built, and seemed almost unfeasibly large for audio

manufacturing. But China has scale; the cities were huge, the motorway bridges of heroic dimensions and IAG told me they were constructing an even bigger plant in northern China! That partially explains why they like buying brand names; their portfolio includes Quad, Mission, Castle, Audiolab, Leak, Wharfedale and, most recently, Japanese Lux. They are names that sell well into China, as



Surface Mount component placement machines at IAG carry out fully automated board assembly using miniature components.

well as elsewhere, allowing this huge manufacturing capacity to be used. IAG also provide OEM manufacture for others and I saw many well known names passing along their lines.

This is no cost-cut operation though. Some of the production and test equipment I saw was very advanced, run by 'our own' Peter Comeau and other Brits who have been lured to China to work for IAG. Quality control was overseen by an ex-McLaren F1 engineer Mubashar Ali - rigorously too.

Our next stop may surprise you. It was to the only UK company I know to actually start its own factory in China. Icon Audio rapidly went through the options of UK manufacture and China OEM manufacture before deciding they would be best off setting up as a UK manufacturer in China, allowing them unrestricted access to the huge Chinese market, as well as guaranteeing prices no rival could ever match elsewhere in the world. Based in Zhuhai City not too far from Mei Xing we had to race back down the motorway, listening to the cab driver cursing other drivers in Chinese (he was in a hurry to pick up another fare). It was an entertaining experience...

Icon Audio are small, like Mei Xing, with around thirty people. The factory was basic but very clean - and again they wind their own transformers, in order to control quality.

In China accommodation must be provided for workers; they travel far to work and live next to the factory in relatively basic conditions. This is normal I was told by our Far East representative Anna Chang and people are perfectly happy to do so. David Shaw, founder of Icon Audio told me he had a "social conscience" and liked to ensure living conditions were good. My only regret of this trip



An Englishman in, ermm, Zhuhai! Icon Audio is a British company that manufactures in China, and here's its founder David Shaw pictured outside his factory lobby...

equipment available. One test lab was a museum of the best Bruel & Kjaer and Hewlett Packard test equipment, but now they use modern computer based software like everyone else. The next stop for cheap manufacturing, I learned here, was Vietnam. Usher develop their own technologies and work on a big scale, carrying out OEM work for others.

Also in Taiwan is one of the world's most astonishing hotels, one I had to stay at, the Grand Hotel. It was dictator Chiang Kai-shek's palace and, surprisingly, is no more expensive than a standard UK hotel. It's one of the Wonders of the East.

Audio manufacture, I found, comes in all varieties in China, from



Transformer designer and production engineer Jimmy holds an Icon Audio amplifier.



One of Usher's two demo studios, one for AV the other Stereo. At left is Lien-Shiu Tsai, President.

small scale to huge scale, the latter being beyond that of any Western company I know of. Only Wharfedale ever turned out loudspeakers - Lintons and Dentons - by the tens of thousands, I think I am right in saying, using huge machines. China looks set to eclipse this scale of production. Yet at the same time I was intrigued by the fact that Mei Xing, IAG and Icon Audio all carefully loomed their amplifiers internally to make them look smart inside, a practice that harks back to Leak and valve amplifier manufacture in the late 1930s. That this should now be considered important in modern Audiolab amplifiers, alongside Ming Das and Icon Audios informed me that pursuing quality to the point of artistry goes down well in China, as it once did in the UK.

British audio brands and quality are held in very high regard in China, a situation that never existed in Japan, for example. It is strangely ironic that China should now be perpetuating the brand values of those companies and raising their competitiveness in world markets!

was not seeing this accommodation, which David was happy to show me but we were in too much of a hurry to see as there was a ferry back to Hong Kong to catch.

And finally to Usher in Taiwan, just one hour's flight away from Hong Kong. Usher are another manufacturer on a big scale, their

new factory built to accommodate long loudspeaker assembly lines, and fork lift trucks on all three floors, with lifts to cope. Run by a loudspeaker engineer obsessed by technical and subjective performance, Mr Lien-Shiu Tsai, President, Usher also luxuriate in having the best development and production test

If you're a dictator, this is where you live – Chiang Kai-shek's old palace, now the Grand Hotel in Taipei. Noel Keywood had to try it, purely for research purposes!



Pro-Ject

A U D I O S Y S T E M S

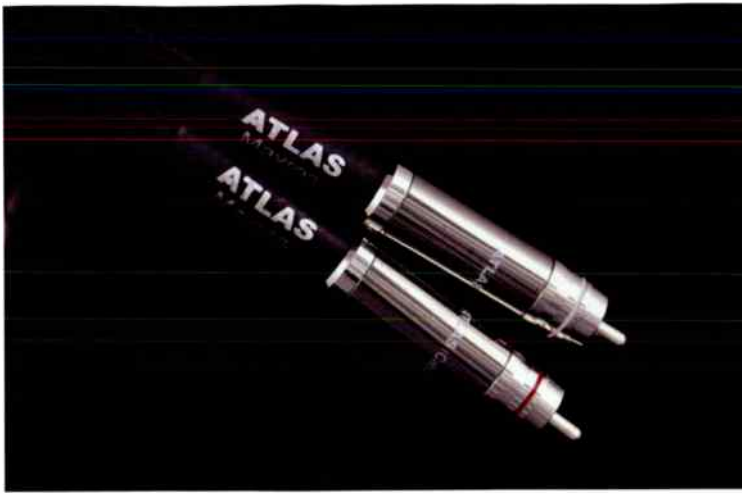
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ATLAS MAVROS RCA £650

Price's *First Law of Cable Dynamics* holds that the sound quality of an interconnect is generally in inverse proportion to its physical quality – which should mean the Mavros as likely to sound dreadful, as it's absolutely beautifully built and finished. Indeed, the solder-free Ohno Continuous Cast RCA phono plugs frankly should be worn by beautiful actresses at gala dinners or awards ceremonies, rather than sit stuck into

the back of an amp. The cable itself uses a bespoke microporous PTFE dielectric together with OCC copper conductors, (7N) 99.999997% pure. The dielectric is said to give up to 85% greater velocity of propagation, the maker claiming this makes the cable sound 'faster', especially in the area of high frequencies.

Yet the Mavros sticks two fingers up at my rule about superbly finished cables sounding poor, turning in a brilliant performance. It's quite

distinctive, being tonally dry and neutral; it doesn't rose-tint the signal passing through it, yet it's transparent enough to give great insight into the sonic flavour of a recording. You can certainly hear the difference between 1970s Stax and 1980s ZTT recordings, for example! But what struck me most was indeed its speed – the Mavros is a remarkably pacy performer. It positively rockets along, conveying the biting attack transients of strummed steel string guitars in Tears For Fears' 'Pale Shelter' with dazzling impact. Yet it doesn't achieve such incision through an artificial edge to the upper midband – it's very smooth and couth. Ultra grippy yet unerringly neutral, it's got to be one of the very best cables I've heard at the price, and indeed it reminds me of the far more expensive Furutech Lineflux RCA in many ways. The cable equivalent of an adrenaline rush, this is ideal to pep up pedestrian sounding high end systems, yet will never add brashness. Highly recommended. **DP**

[Contact: 0800 731 1140,
www.atlascables.com]

soundbites

TRACK AUDIO SPIKES £45 (PACK OF 8)

As any serious audiophile knows, the devil's in the detail. Take a high end hi-fi system and plonk it down on the floor and a well fettled £500 system will outperform it by a country mile. And so the process begins – the right supports, the right cables, the right accessories. In the third category resides this package of spikes from Track Audio; quite possibly the best quality I have ever seen. It's true that 'spikes are spikes are spikes', and that the standard set supplied with your equipment rack or speaker stands will do the job well enough. But if you're a perfectionist, and want absolutely every part of your system and its set-up to be right, then you might want to consider these. Put simply, they fit very tightly into the threads, giving a secure, resonance-free link between the speaker stands

and the ground – never a bad thing!

Track Audio have used "high end" computer modelling and ultra-high precision machining from "the highest grade" stainless steel ensuring super-fine tolerances. They're an ISO9001 registered company, with careful attention paid to the sourcing of materials, precision of manufacture and traceability of all parts and processes. Prices start at £45 per 8 (M6, 1/4" UNC & 1/4" UNF), £50 for M8 and £60 for 3/8" UNC. The quality is superlative, and they locked tight into my Custom Design speaker stands, offering a very subtle improvement in sound. I could just about discern an improvement in focus, and fractionally tighter bass - definitely worthwhile, if not

profound. Still, the beautiful jewellery-like quality of these spikes is what will appeal to many; they're little pieces of perfection and that can't be bad. **DP**

[Contact: +44 (0)1494 723755,
www.trackaudio.co.uk]



WORLD CLASSICS

Here is our list of the great and good from audio's glorious past, products that have earned their place in hi-fi history. You'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price.

We do not sell these products. It is for your information only.

DIGITAL

CAMBRIDGE AUDIO CDI 1986 £1500
Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.

CAMBRIDGE AUDIO CD4SE 1998 £200
A touch soft in the treble and tonally light, but outstanding in every other respect.

LINN KARIK III 1995 £1775
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

MARANTZ CD73 1983 £700
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC -super musical



MARANTZ SA-1 2000 £5,000
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



MERIDIAN 207 1988 £995
Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

MUSICAL FIDELITY TRIVISTA 2002 £4000
When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

MERIDIAN MCD 1984 £600
The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.



NAIM CDS 1990 £ N/A
Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.



SONY CDP-101 1982 £800
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!

SONY CDP-R1/DAS-R1 1987 £3,000
Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.



SONY CDP-701ES 1984 £890
Sony's first ever bespoke high end audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperback-sized remote control.

TECHNICS SL-PI200 1987 £800
CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pro' use and laden with facilities - a great eighties icon. Sonically, it's pure fun, with hefty bass that can still show weedy modern players a thing or two!

YAMAHA CD-X1 1983 £340
Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

COMPACT DISC TRANSPORTS
TEAC VRDS-T1 1994 £600
Warm and expansive sound made this a mid price hit. Well built, with a slick mech.



ESOTERIC P0 1997 £8,000
The best CD drive bar none; TEAC's Tokyo boys pushed the boat out in style. Brilliantly incisive, ridiculously over engineered.

KENWOOD 9010 1986 £600
The first discrete Jap transport was beautifully done and responds well to re-clocking even today.

DACs
CAMBRIDGE AUDIO DACMAGIC 1995 £99
Good value upgrade for budget CD players with extensive facilities and detailed sonics.



DCS ELGAR 1997 £8500
Extremely open and natural performer, albeit extremely pricey - superb.



DPA LITTLE BIT 3 1996 £299
Rich, clean, rhythmic and punchy sound transforms budget CD players.



PINK TRIANGLE DACAPO 1993 £ N/A
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard. Clever plug-in digital filter modules really worked!



QED DIGIT 1991 £90
Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

TURNTABLES

ARISTON RD11S 1972 £94

Modern evolution of Thorens' original belt drive paradigm, Scotland's original super-deck was warm and musical, albeit soft. Still capable of fine results today.

ADC ACCUTRAC 4000 1976 £300

Bankers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

PIONEER PL12D 1973 £36

The beginning of the end for the British turntable industry. When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL112D was off the pace compared to rivals



PIONEER PLC-590 1976 £600

Sturdy and competent motor unit that performs well with a wide range of tonearms. Check very thoroughly before buying due to electronic complexity and use of some now-obsolete ICs.

DUAL CS505 1982 £75

Simple high quality engineering and a respectable low mass tonearm made for a brilliant budget buy. Polished, smooth and slightly bland sound.

GOLDRING Lenco GL75 1970 £15.65

Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today from specialists. Eminently tweakable. Similar 88 and 99 motor units are budget 301/TD124 rivals.

LINN AXIS 1987 £253

Simplified cut-price version of the Sondek complete with LVX arm. Elegant and decently performing mid-price package. Later version with Akito tonearm better.

LINN SONDEK LP12 1973 £86

For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Recent 'SE' mods have brought it into the 21st century, albeit at a price..



MARANTZ TT1000 1978 £ N/A

Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.



MICHELL GYRODEC 1981 £599

Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved until recently. Early examples sound cold and mechanical, but now right on the pace. Clean, solid and architectural sound.

TECHNICS SP10 1973 £400

Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

REGA PLANAR 3 1978 £79

Brilliantly simple but clean and musical performer, complete with Acos-derived S-shaped tonearm. 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb budget buy.

GARRARD 301/401 1953 £19

Heavy metal - tremendously strong and articulate with only a veiled treble to let it down. In many respects, better than the seventies 'superdecks' that succeeded it.



ROKSAN XERXES 1984 £550

Supposedly the first to 'better' the LP12. Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

SONY PS-B80 1978 £800

First outing for Sony's impressive 'Biotracer' electronic tonearm. Built like a tank with a clean and tidy sound, albeit lacking involvement. Scarily complicated and with no spares support - buy with caution!

THORENS TD124 1959 £ N/A

The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.



TOWNSHEND ROCK 1979 £ N/A

The product of academic research by the Cranfield Institute, this novel machine has an extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

TRIO LO-7D 1978 £600

The best 'all-in-one' turntable package ever made, Trio/Kenwood threw their 'engineering best practice' book at this one with startling results. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

TO NEARMS

ACOS LUSTRE GST-1 1975 £46

The archetypal S-shaped seventies arm; good, propulsive and involving sound in its day, but ragged and undynamic now.

AUDIO TECHNICA AT 1120 1978 £75

Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few quid to spend.

ALPHASON HR100S 1981 £150

First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.



SME 3009 1959 £18

Once state of the art, but long since bettered. Musical enough, but weak at frequency extremes and veiled in the midband. Legendary serviceability and stunning build has made it a cult, used prices unjustifiably high.

GRACE G707 1974 £58

This early Japanese example of the tonearm art has a smooth, lyrical sound. Imported by Linn, fitted to early LP12s. Sonically way off the pace now, though.

REGA RB300 1983 £88

Inspired budget esoterica. Detailed, tight, neutral sound but tonally grey sounding in absolute terms. Responds well to tweaking, and its cheaper RB250 brother better still.



SME SERIES III 1979 £113

Clever variable mass design complete with Titanium Nitride tube tried to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

HADCOCK GH228 1976 £46

Evergreen unipivot with lovely sweet, fluid sound. Excellent service backup.



LINN ITTOK LVII 1978 £253

Arguably the first 'superarm'; Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. Now off the pace, but the final LVIII version worth seeking out.

NAIM ARO 1986 £875

Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes.



TECHNICS EPA-501 1979 £ N/A
Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

INTEGRATED AMPLIFIERS/COMBOS

DELTEC 1987 £1900
Fast, dry and with excellent transients, this first DPA integrated is the real deal for eighties obsessives. Ridiculously punchy 80W per channel from a tiny, half-size box. Radical, cool and more than a little strange.

ROGERS A75 1978 £220
The prototypical Audiolab 8000a – lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet and open to listen to.

EXPOSURE VII/VIII 1985 £625
Seminal mid-eighties Exposure pre-power, offering most of what rival Naim amps did with just that little bit extra smoothness and sweetness. Still, it's by no means 'sweet' by today's standards, being lean, punchy, musical. It's also possessed of that quintessentially eighties look – frumpy black steel boxes with rough silk screened logos!



SUGDEN CS1/PS1 1976 £130
Soft sounding early Sugden combo with a plethora of facilities and filters, complete with seventies-tastic DIN socketry. A sweet and endearing performer as you'd expect, but lacking in power and poor load driving ability, so partner carefully.

VTL MINIMAL/50W MONOBLOCK 1985 £1,300
Vacuum Tube Logic was one of the Europe's biggest tube names in the eighties, and it shows. Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

A&R A60 1977 £115
Sweet and musical feature-packed integrated; the Audiolab 8000A used its blueprint to great effect.



CREEK CAS4040 1983 £150
More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

AUDIOLAB 8000A 1985 £495
Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.



MCINTOSH MA6800 1995 £3735
Effortlessly sweet, strong and powerful with seminal styling to match.

SUGDEN A21 1969 £ N/A
Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

MISSION CYRUS 2 1984 £299
Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



MUSICAL FIDELITY A1 1985 £350
Beguiling Class A integrated with exquisite styling. Questionable reliability.



NAIM NAIT 1984 £350
Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

NAD 3020 1979 £69
Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.



MYST TMA3 1983 £300
Madcap eighties minimalism, but a strong and tight performer all the same.

ROGERS CADET III 1965 £34
Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves



ROTEL RA-820BX 1983 £139
Lively and clean budget integrated that arguably started the move to minimalism.

CHAPMAN 305 1960 £40
Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper second-hand.

PREAMPLIFIERS

AUDIOLAB 8000C 1991 £499
Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.

CROFT MICRO 1986 £150
Budget valve pre-amp with exceptionally transparent performance.

AUDIO RESEARCH SP-8 1982 £1,400
Beautifully designed and built high end tube preamplifier with deliciously sweet and smooth sound. Not the last word in incision or grip, but that didn't matter to those who aspired to it.

CONRAD JOHNSON MOTIV MC-8 1986 £2,500
Minimalist FET-based preamplifier from the Yank valve specialists is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden high end stuff. Something of a curio, but worthwhile nonetheless.

LEAK POINT ONE STEREO 1958 £ N/A
Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

LINN LK-1 1986 £499
A brave attempt by the Glasgow boys to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not half bad for under £100.

LECSON AC-1 1973 £ N/A
Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.



QUAD 22 1958 £25
The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it's for anacrophiles only.

QUAD 33 1968 £43
Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...

NAIM NAC32.5 1978 £ N/A
The Salisbury company came of age with this, their classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

POWER AMPLIFIERS

HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

LEAK STEREO 20 1958 £31
Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



LEAK STEREO 60 1958 £N/A
Leak's biggest valve amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability their rarity means high prices are the order of the day.

LECSON API 1973 £ N/A
Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

MARANTZ MODEL 9 1997 £8000
Authentic reproduction monoblocks still more than cut the sonic mustard. Highly expensive and highly sought after.

MICHELL ALECTO 1997 £1989
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!

LEAK POINT ONE, TL10, TL12.1 1949 £28
Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical sound, that's far more modern than Quad IIs. Deeply impressive when in fine fettle.



MUSICAL FIDELITY XA200 1996 £1000PR
200WV of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.



QUAD II 1952 £22
The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly



QUAD 405 1978 £115
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound. 606 and 707 continue the theme with greater detail and incision.

QUAD 303 1968 £55
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

KRELL KMA100 II 1987 £5,750
Ludicrous monoblock version of the giant KSA-100 is one of the seminal eighties transistor power amplifiers. Massive wallop allied to a very clean and open Class A sound makes this one of the best amplifiers of its type, ever.

RADFORD STA25 RENAISSANCE 1986 £977
At the time, very possibly the least cool amplifier on the planet – and we're not talking heat dissipation here. This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.



PIONEER M-73 1988 £1,200
Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the eighties-tastic experience.



PHONO STAGES CREEK OBH-8 SE 1996 £180
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.



LINN LINNK 1984 £149
Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

MICHELL ISO 1988 £ N/A
This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse.

TUNERS MARANTZ ST-8 1978 £353
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.



CREEK CAS3140 1985 £199
Excellent detail, separation and dynamics - brilliantly musical at the price. T40 continued the theme...

NAD 4040 1979 £79
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica. Needs a good antenna to work properly, however.

NAIM NAT03 1993 £595
The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

PIONEER TX-9500 1976 £295
Another of the serious classic solid-staters. Boasts the usual high end Jap package of fine sound, brilliant sensitivity and superb build.

LEAK TROUGHLINE 1956 £25
Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Fed by a modern outboard decoder they're deliciously lucid with true dimensionality.



YAMAHA CT7000 1977 £444
Reputedly the best of the classic Jap analogues, this combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

QUAD FM4 1983 £240
Supreme ergonomics and styling allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



REVOX B760 1975 £520
More of a semi-pro machine than a domestic bit of kit, the Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?

NAD 4140 1995 £199
Brilliant affordable digital tuner has a smooth, detailed musical sound plus sensible real-world facilities.

ROGERS T75 1977 £125
Superb mid-price British audiophile design, complete with understated black fascia. Fine sound in the true Rogers mould – smooth and sweet with fine dimensionality.

SANSUI TU-9900 1976 £300
A flagship Japanese tuner designed to steal sales from the likes of Accuphase and Revox, it boasts superlative RF performance and an extremely smooth and lucid sound, along with very fine build and finish.

SONY ST-5950 1977 £222
One of the first Dolby FM-equipped tuners, a format that came to nought. Still, it was Sony's most expensive tuner to date, and boasted a very good sound quality allied to brilliant ergonomics.

SEQUERRA MODEL I 1973 £1300
Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.



TECHNICS ST-8080 1976 £180
National Panasonic's specialist hi-fi brand was a big hitter back then, and this is no exception. Superb FM stage makes for a very clean and smooth listen with lots of detail and depth.



ANALOGUE RECORDERS

YAMAHA TC-800GL 1977 £179
Early classic with ski-slope styling courtesy of Mario Bellini. Middling sonics by modern standards, but cool nonetheless!



AIWA XD-009 1989 £600
Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

NAKAMICHI CR-7E 1987 £800
The very best sounding Nakamichi ever - lacks the visual drama of a Dragon.



PIONEER CTF-950 1978 £400
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.



REVOX A77 1968 £145
The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days. B77 better, but couldn't match the Japanese.



SONY WM-D6C 1985 £290
Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.



SONY TC-377 1972 £N/A
A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

DIGITAL RECORDERS

SONY MDS-JE555ES 2000 £900
The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.



PIONEER PDR-555RW 1999 £480
For a moment, this was the CD recorder to have. Clean and detailed.

MARANTZ DR-17 1999 £1100
Probably the best sounding CD recorder made; built like a brick outhouse with a true audiophile sound and HDCD compatibility.



KENWOOD DM-9090 1997 £500
Serious and sophisticated sound thanks to well implemented ATRAC 4.5; surprisingly musical MD recorder.

SONY TCD-8 DATMAN 1996 £599
Super clean sound makes this an amazing portable, but fragile.

LOUDSPEAKERS ACOUSTIC RESEARCH

ARI8S 1978 £125
Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, although finesse was most definitely not their forte...

BBC LS3/5A 1972 £88
Extremely low colouration design is amazing in some respects - articulation, stage depth, clarity - and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence. Partner with Rogers AB1 subwoofers for an extra two octaves of bass!

LOWTHER PM6A 1957 £18 EACH
This seminal full-range driver is still manufactured. High sensitivity, as fitted to many classic horn designs.

HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

TANNOY WESTMINSTER 1985 £4500
Folded horn monsters which certainly sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others.

JR 149 1977 £120
Infamous cylindrical speaker that was ignored for decades but now back in fashion! Based on classic KEF T27 / B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but rewards with fine clarity and imaging.



SPENDOR BCI 1976 £240
Celestion HF1300 tweeter meets bespoke Spendor Bextrene mid-bass unit - and the result is a beautifully warm yet well focussed sound. A little bass bloom necessitates careful low-stand mounting, but these prove that the seventies did have some fine designs after all!

QUAD ESL57 1956 £45 EACH

Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.



KEF R105 1977 £785
Three way Bextrene-based floorstander (complete with castors!) gave a truly wide-band listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace. The quintessential nineteen seventies loudspeaker.

IMF TLS80 1976 £550
Warm and powerful nineteen seventies behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms aren't its forte.

MAGNEPLANAR SMGA 198X £800
Technological loudspeaker with genuinely musical abilities; fast, smooth, open, dry.



MISSION 770 1980 £375

Back in its day, it was an innovative product and one of the first of the polypropylene designs, warm, smooth, clean and powerful sound.



MISSION 7S2 1995 £495

Cracking Henry Azima-designed floorstanders combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

HEYBROOK HBI 1982 £130

Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic.

CELESTION SL6 1984 £350

Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...

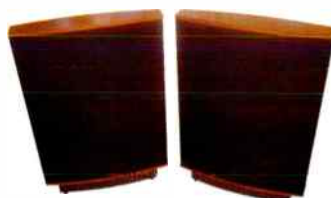
LEAK SANDWICH 1961 £39 EACH

Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.



QUAD ESL63 1980 £1200

An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics



YAMAHA NS1000 1977 £532

High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



MISSION X-SPACE 1999 £499

The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!



CLASSIC CONTACTS

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all these companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

GT AUDIO

(Graham Tricker, Bucks)
Leak Troughline specialists. Also Quad and most classic tuners, radios and amplifiers restored, repaired.
Tel: 01895 833099
Mob: 07960 962579
www.gtaudio.com

TECHNICAL AND GENERAL

(East Sussex)
Turntable parts - wide range of spares and accessories, plus arms and cartridges.
Tel: 01892 654534

CARTRIDGE MAN

(Len Gregory, London)
Specialist cartridge re-tipping service and repairs. High quality special cartridges.
Tel: 020 8688 6565
Email: thecartridgeman@talktalk.net
www.thecartridgeman.com

QUAD ELECTROACOUSTICS

(Cams) Quad's service department, able to repair almost all Quad products, from the very first. (Also Audiolab, Mission & Wharfedale).
Tel: 0845 4580011
www.quad-hifi.co.uk

Dr MARTIN BASTIN

(Shropshire) Garrard 301/401 restoration, renovation and service. Special plinths; rumble cures, etc.
Tel: 01584 823446

ARKLESS ELECTRONICS

(Northumberland)
Specialist in repairs, restoration and modifications to all amplifiers, valve or solid state, ancient and modern.
Tel.: 01670 530674
Email: info@arklesselectronics.com
www.arklesselectronics.com

SOWTER TRANSFORMERS

(Brian Sowter, Ipswich)
Large range of audio transformers for valve amps, cartridges, line drive, interstage plus all associated services.
Tel: 01473 252794
www.sowter.co.uk

WEMBLEY LOUDSPEAKER

(Paul MacCallam, London)
Comprehensive loudspeaker servicing.
Tel: 020 8 743 4567
Email: paul@wembleyloudspeaker.co.uk
www.wembleyloudspeaker.com

EXPERT STYLUS COMPANY

(Wyndham Hodgson, Surrey) Stylus replacement service for all types of cartridge. Including precise profiling for 78s. Tel: 01372 276604
Email: w.hodgson@btclick.com

ONE THING

(Coventry) Specialist in electrostatic panel manufacture and repair. Can refurbish ESL 57s and 63s as well as Leak Troughlines and Quad IIs.
Email: one.thing@ntlworld.com
www.onethingaudio.com

LORICRAFT AUDIO

(Terry O'Sullivan, Bucks)
Garrard 301/401 and their own 501 repair, spares and service.:
Tel: 01488 72267
www.garrard501.com

LOCKWOOD AUDIO

(London)
Tannoy loudspeaker parts, restoration and repair. Also Epos and TDL loudspeakers.
Tel: 020 8 864 8008
www.lockwoodaudio.co.uk

CLASSIC NAKAMICHI

(Paul Wilkins, Worthing, West Sussex). Restore, Repair & Service Nakamichi Cassette Decks.
Tel: 01903 695695
Email: paul@bowersandwilkins.co.uk
www.bowersandwilkins.co.uk

OCTAVE AUDIO WOODWORKING

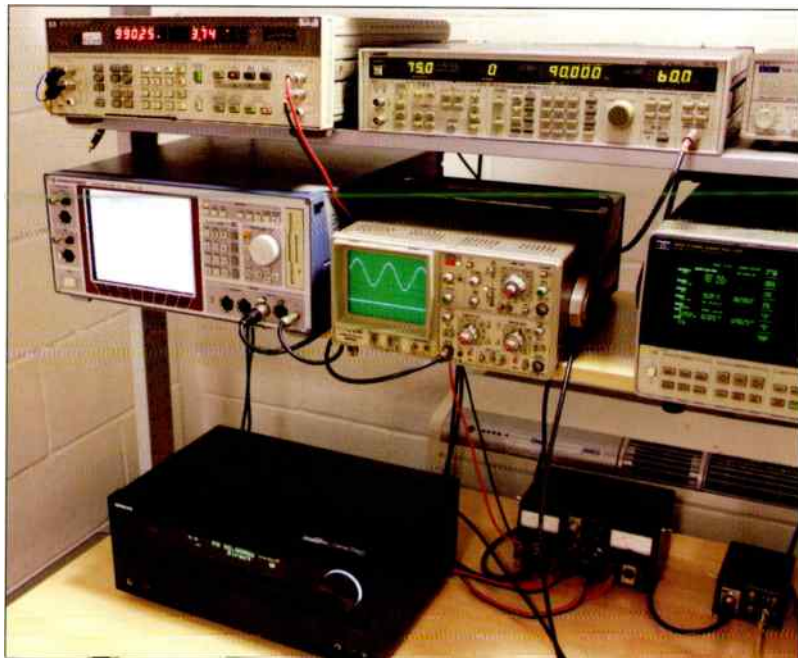
(Bristol)
Unit 2, 16 Midland Street, St Phillips, Bristol.
Tel: 0117 925 6015
www.octave-aw.co.uk

REVOX

(Brian Reeves, Cheshire)
Revox tape recorder spares, service and repair. Accessories also available.
Tel: 0161 499 2349
Email: brian@revoxservice.co.uk
www.revov.freeuk.com

CLASSIQUE SOUNDS

(Paul Greenfield, Leicester)
ESL-57s restored, rebuilt, fully renovated or improved. Leak, Quad valves amps etc.
Tel: 0845 123 5137/
Mob: 0116 2835821
Email: classique_sounds@yahoo.co.uk
www.flashbacksales.co.uk/classique



WORLD STANDARD TESTS

How we perform all the tests, and what they mean, is detailed on our website: www.hi-fiworld.co.uk. Go to the [product category](#) (e.g. Loudspeakers), then [Tests](#).

Hi-Fi World tests all products before they are reviewed. Many fail this first hurdle, rejected for a variety of faults. Pre-testing is crucial but only Hi-Fi World does it. For those products that pass, our measurements give our reviewers invaluable information about behaviour. Hi-Fi World is the only magazine, worldwide, sufficiently well equipped to be able to apply comprehensive tests in all product categories. Here's how we do it...

LOUDSPEAKERS

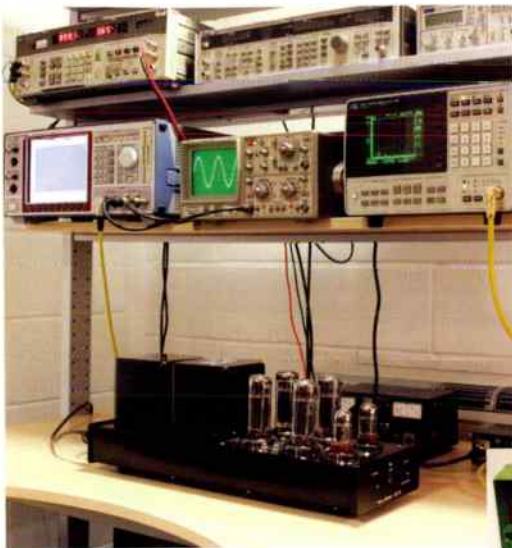
Loudspeakers are tested with the industry standard Clio measurement system from Audiomatica of Italy, giving results understood and accepted by manufacturers worldwide. Measuring microphones are a Bruel & Kjaer mic. capsule on a B&K SPL meter and an Audiomatica microphone. Our tests include decay plots and coloured contour maps, as well as unique distortion measurement that provides valuable insight into bass behaviour. See our website www.hi-fiworld/loudspeakers/tests for more detail.



PICKUP ARMS

Our unique arm vibration tests are made using a special miniature Bruel & Kjaer accelerometer attached to the arm's headshell, at the cartridge mounting position, as our picture shows. This reveals arm tube bending modes and high frequency vibrations in the headshell, that degrade sound.





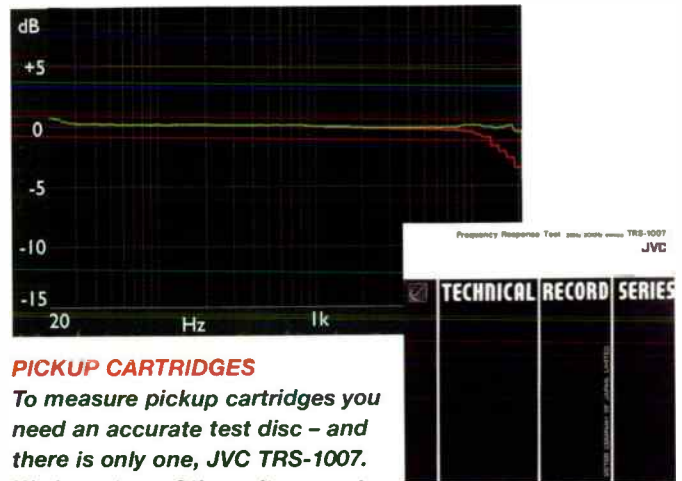
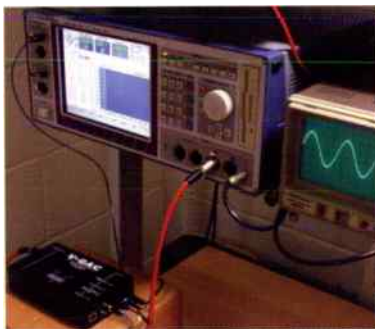
AMPLIFIERS

Amplifiers are connected to large resistive loads, 8 ohms and 4 ohms, and all parameters including power and distortion are measured by a Rohde & Schwarz UPL, the world's most advanced audio analyser. The loads are custom built to our specification, able to absorb 200 Watts without generating high frequency distortion due to magnetic hysteresis caused by iron content in the wire. This allows us to measure crossover distortion at 10kHz accurately and understand its influence upon sound.



DIGITAL CONVERTORS

DACs are connected to the digital signal generator of our Rohde & Schwarz UPL analyser and their analogue output sent to the analyser for analysis. We can measure all parameters and even pre-jitter the signal to test effectiveness of reclocking, allowing us to uniquely determine impact on sound quality.



PICKUP CARTRIDGES

To measure pickup cartridges you need an accurate test disc – and there is only one, JVC TRS-1007. We have two of them. It was cut at half speed and needs special equalisation, but is super accurate. That is why our cartridge measurements are of unparalleled accuracy, matching those of Ortofon for example, who also use TRS-1007.



VHF/FM TUNERS

Top quality VHF/FM tuners demand the use of a reference standard RF signal generator and for this we use a Leader 3412 Standard Signal Generator. An external MPX filter and post-equalisation network complete the picture, giving super accurate data for analysis in our Rohde & Schwarz UPL analyser.



TURNTABLES

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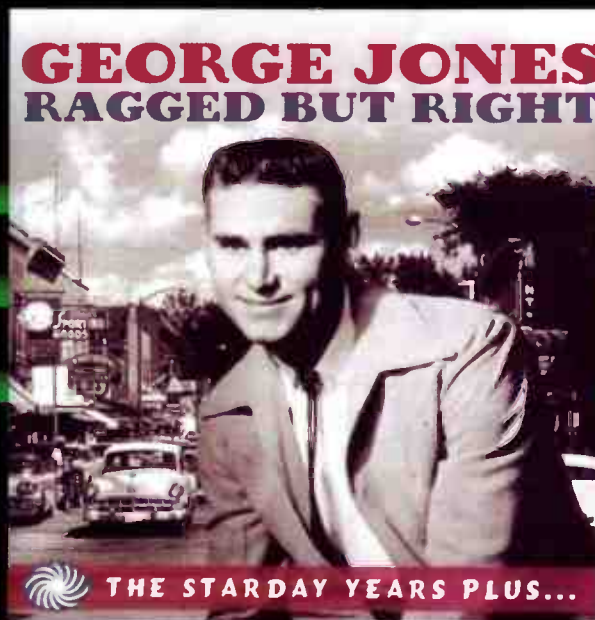
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MARGARET WHITING

COLLECTORS EDITION 1942-60



MARGARET WHITING

Collector's Edition 1942-60
Acrobat

Whiting died on 10 January 2011, aged 86, making her reputation as a pop singer in the forties after being one of the first artists to be signed by Johnny Mercer's Capitol record label. Known for the clarity of her delivery, Whiting was also an excellent interpreter of a song. Spanning three CDs, this collection provides you with most of the hits she forged on the Capitol label (disc one and two) but also includes her albums on the Dot label during the fifties such as 'Goin' Places' from 1957.

On the third CD, Whiting updates the arrangements and reinterprets her vocal delivery to provide a more modern approach to some of her revisited hits on the 1959 Dot LP, 'Great Hits', that retains the classic original flavour. 'Moonlight In Vermont' is sung with an easy clarity while 'My Ideal' utilises an effortless cool. Other tracks are taken from the 1960 album, 'Just A Dream' with a smattering of songs that derive from her other album produced in that same year, 'Margaret Whiting Sings The Jerome Kern Songbook'. The latter features some

of her most jazz-oriented performances, stretching her and opening up her style on the likes of 'Long Ago (And Far Away)', 'Dearly Beloved' and 'Smoke Gets In Your Eyes'.

This is a sparkling compilation that is packed with interest, acting as a worthy introduction to new listeners while offering plenty of gems for dedicated fans. Also look out for other Acrobat issues this month, such as post-war British jazz outfit, 'The Tommy Whittle Quintet's Complete Recordings 1958-59'; 'Dance Time with Peppey Prince' a 1945-57 anthology for the US, R&B/jazz man; Jonathan & Darlene Edwards' 'The Complete Original Albums', the piano/vocal, lounge act who were, in fact, stars Jo Stafford and Paul Weston, incognito.

GEORGE JONES

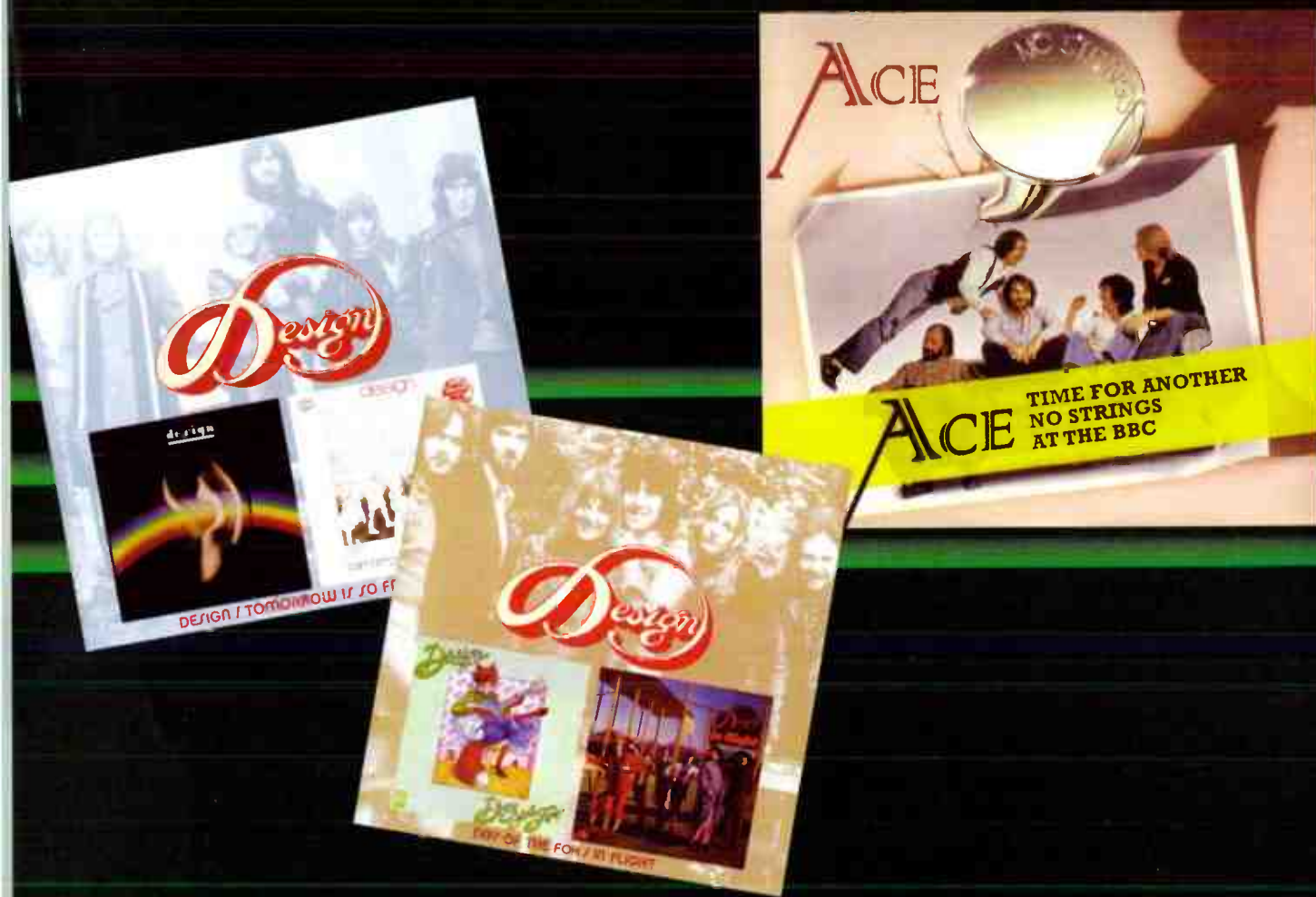
*Ragged But Right:
The Starday Years Plus...*
Fantastic Voyage

George Jones is a true legend. Arguably the best country vocalist and the biggest country star that there has ever been, he has been active since the fifties, has had many Top 10 hits, was married to Tammy Wynette, was addicted to drink and drugs and loved to tote a

shotgun while intoxicated with both – the man has lived a full life. His discography is packed too. To such an extent that this three CD collection scratches the surface of an amazing career. It takes us back to the beginning when Jones was signed to Starday, released three singles, which flopped until, after single number four, he found his hit.

This exhaustive collection features all of the A- and B-sides of the man's early Starday singles such as 'Why Baby Why', 'Gonna Come Get You' and 'Don't Stop The Music'. But that's not all, fans will love the addition of a series of songs sung by Jones under a variety of pseudonyms. Tracks that were created for a selection of mail-order companies using tags such as Hank Smith and Thumper Jones. An excellent collection and great value for money.

Look-out for other Fantastic Voyage releases: 'Jumping The Shuffle Bus – Jamaican Sound System Classics 1946-1960', a three-disc set including the likes of U Roy and Ken Boothe plus 'Girls Gone Rockin – Let's Have A Party', a seventy-five track compilation of rock'n'roll/R&B girl singers along with 'The Grill Can't Help It', a foodie themed compilation of fifties rock'n'roll songs.



DESIGN

Design/Tomorrow Is So Far Away/Day Of The Fox/In Flight

RPM

Sometimes called the UK version of the US sunshine pop outfit Fifth Dimension, this harmony vocal outfit consisted of Gabrielle Field, Kathy Manuell, Jeff Matthews, John Mulcahy-Morgan, Geoff Ramseyer and Barry Alexander. Alexander was an intriguing band member. Eldest son of the late cricket commentator, Brian Johnston, Alexander became an award-winning producer of audiobooks. Back in the early seventies however, he was part of a group who espoused the flower power vibe in a very approachable fashion. Many readers will be familiar with them but might not realise it. If you spent your childhood watching Morecambe & Wise, Tommy Cooper and Val Doonican on TV then Design would regularly be seen singing their happy little hearts out. They released thirteen singles and five albums before the group's demise in 1976.

UK-based record label RPM has released two value-for-money CDs which pack two albums onto each disc. 'Design'/'Tomorrow Is So Far Away', the band's first two albums are

perfect lounge-core material while the harmonies often remind me of The Mamas & the Papas. Within the second CD, 'Day Of The Fox'/'In Flight', there are many surprises that will make fans of folk-rock and psychedelia sit-up and take note. The first track on '...Fox', 'Nature's Children' is a perfect piece of English psychedelia. Multi-layered and quirky, it's a superb introduction that leads into the traditional sounding title track which is no less effective and affecting. And so it goes, constantly surprising, as does the second album in the collection. Similarly quirky with eccentrically styled nostalgic pieces like 'Archie Franks' or the almost pagan-fuelled 'I Am The Greene Manne'. I expected kitsch but found quality.

ACE

Time For Another/No Strings/At The BBC

Cherry Red

You may know Ace because of their famous band member Paul Carrack, of Squeeze and Mike & The Mechanics vocalist fame, and he even played keyboards on Roxy Music's 'Manifesto' album. But back to Ace where Carrack found his first big break and the hit song, 'How Long?'. In fact, it was Carrack's appealing

vocal style which lifted this pub rock/pop band to into another dimension and a hint of soul, which set the group apart from its competition.

Cherry Red has released three albums on the band's career including a 'best of' collection, 'How Long?' plus the band's excellent debut album, 'Five-A-Side'. I looked at a three CD pack featuring the band's second album, 'Time For Another'. This is a pleasant album that never had a chance of hitting the heights of the debut, partly because Carrack relinquished songwriting control – the other band members couldn't quite hack it. There are some treasured moments on the LP, though. The third and last commercial release is 'No Strings', in which the band sounded like they were coming to a natural end – with a good handful of quality highlights, plus a collection of songs they performed for the BBC.

Presented in a double gatefold package, this (along with the first album) is a perfectly presented history of a band that might be a historical footnote within the music industry, but is still worthy of attention.

PR

Home Run

Strange that the company that invented the Compact Cassette was never synonymous with high quality cassette decks, says Tim Jarman, but Philips did make one – the long, lost N2521...

Although Philips invented the Compact Cassette, they seemed not to appreciate its potential as a hi-fi medium for the first ten years of its life.

For the quality-conscious they continued to market magnificent open reel machines, and even though their first stereo cassette recorders had appeared in the range some time around 1970, none could be seriously considered as a real hi-fi proposition. Improvements in cassette technology (such as chrome tape and Dolby NR) lead to a rethink across the industry, and in response to the new high quality recorders that were now being produced in Japan Philips produced the N2520, their first attempt at a hi-fi cassette deck, in 1974.

The N2520 included everything one could ask for, Dolby B with user adjustable calibration, manual recording level controls with two decent-sized VU meters and an electronically regulated servo motor. The machine received a cool reception however, there was no doubt that the electronics were first rate but some reviewers observed that the mechanical performance could not yet match the best from Japan. The N2520 was augmented in 1976 by the N2511, a small top-loading model in a smart plastic cabinet. The N2520 remained at the top of the range, but the N2511 showed very clearly what the next year would bring.

There could be no doubt that the N2521 of 1977 was radical. Philips went for a distinctively European looking moulded plastic cabinet that stood upright, just like an open reel machine. The cassette door was hinged at the top rather than at the bottom and glided open on hydraulically damped hinges while the cassette keys had a light and fast action made possible by the use of electromagnetic latches. Novel features included a head cleaning indicator (which simply measured the number of times that the cassette door had been opened) and a handy 'post fading' facility, which allowed

the erase circuit to be progressively engaged during playback so as to cut out unwanted applause or DJ chatter from off-air recordings.

Two noise reduction systems were included, conventional Dolby B and Philips Dynamic Noise Limiter (DNL), a playback-only scheme that was effective with certain types of music but which never won the approval of some technically minded critics. The arrangement of the circuitry allowed both systems to be used at the same time if desired.

The new mechanism, however, was the big news. On first inspection it looked basic, with a single motor (a DC servo type) driving a single capstan. Large plastic gears had largely replaced belts and rubber wheels but it was the use of magnetic slipping clutches that made the deck both versatile and reliable. The magnetic clutches could be left to 'slip' under load almost indefinitely without damage or wear, so it was possible to keep the tape under permanent tension from the moment it was inserted. The take-up drive was also smooth and consistent, so reducing speed variations to a level that was appropriate for hi-fi performance. The single record/replay head was of the new Sendust type, and one of the few parts of the machine that came from Japan; a wise move by Philips as their own heads, often made from resin, were not particularly durable.

Despite the massive technical effort that was obviously expended, the basic technical specifications of the N2521 aren't particularly impressive. Even with Ferrichrome tape (which Philips also made themselves) the frequency response only reaches 15kHz and wow and flutter is unexceptional at 0.15%. A basic signal to noise ratio of 48 dB (chrome tape) is nothing to get excited about either, and yet when carefully set up the N2521 sounds surprisingly good.

SOUND QUALITY

Reproduction of CD recordings is transparent like few other cassette



decks of the period. That glassy and gritty glare, so often a feature of many Japanese designs, is totally absent, as is the usual phasey muddle that normally gives cassette recordings their distinctive character. Sustained notes remain sharp and steady in testament to how well the mechanism works, and this helps to retain a sense of pace and timing, again not a traditional cassette strongpoint. Noise is well suppressed,

I suspect by the careful design of the playback amplifier which seems extremely quiet. Even when listening at high volume levels there is no unpleasant blast of tape hiss between the tracks, it's still there obviously but not at a level that really causes problems. BASF CR EII tape, to which this recorder matches well, is obviously a help here as it is famously quiet, but even so the performance of the Philips stands out in this area. The combination of all these virtues makes for fatigue-free listening and one soon forgets that the source

But it's difficult to get encode-decode systems to work perfectly under all conditions too. DNL does indeed blur the fine treble detail of quiet musical passages but works well with high level, high energy rock, for example. It doesn't rob such music of some of its sparkle like Dolby can, yet effectively scrubs the hiss away from between the tracks.

RESTORING

Philips sold their products all over Europe so finding an N2521 shouldn't be particularly difficult, but after thirty five years there are bound to be a few things that need sorting out!

mechanism (which is at the top) can leak its sticky fluid over the rest of the mechanism and gum up the controls; ordinary WD40 applied sparingly dissolves it away. A row of switches above the cassette door are used to start the motor, enable the recording circuits and sense the tape type, make sure that these are clean and correctly adjusted if the recorder seems to behave oddly. Finally, the detent mechanisms of the lever switches are not particularly strong but the switches will work without them if necessary.

Electronically there isn't much to worry about, the circuits are largely reliable and the majority of the devices used are standard European types, currently still in production. For best results full calibration is essential but this is fairly straightforward apart from setting up the bias current. This is done by tuning two tiny transformers for which a special tool may have to be made, perhaps by filing down a cocktail stick. The transformer cores are fragile and very easy to break; applying a drop of penetrating oil an hour or so before trying to turn them is a very good idea. When connecting the recorder to the rest of your system remember that the input sensitivity is to the DIN standard so modern amplifiers with line level outputs will overload it. A period amp with a DIN connector for the tape deck is one answer but the time-honoured method of adding a 470k resistor in series with input line also works surprisingly well. The headphone amplifier can sound a bit weak with the current crop of low impedance cans but once you've made an adaptor for the unusual 'domino' 5-pin DIN socket you can perk up the sound by changing the coupling capacitors from 4.7uF to 47uF.

CONCLUSION

The oddball Philips N2521 really is a hidden gem, and a good example can perform in a way that few other cassette decks of its day can. Yet few realised at the time – even Philips themselves perhaps! – so the result is that they're a country mile away from being cult decks in the way that Nakamichis are, for example. If you're lucky enough to bump into one, then you're talking pennies to buy if it needs work, and £50-£75 for a well preserved specimen tops. If only Philips had realised what they had and marketed it with more conviction, the fact that the inventor of the format had once produced a hi-fi deck worthy of their name would not now be such a great surprise.

is a cassette at all. Of course the treble isn't quite as bright as sources like CD can provide, but it's never obvious that the sound is dull, just a little smoothed off around the edges.

The Dolby B NR works very well once the machine is matched to the tape but it was the DNL that I was particularly keen to sample. To the purist, DNL is not an attractive proposition because it processes the signal during playback only, therefore inevitably changing it in some way.

Tired belts are going to be high on the list of likely problems but fear not, there are not that many, they are easy to change once the deck is out (three screws, four plugs, try that with a Japanese machine!) and likely to be found in one of those assortments of standard cassette belts that are still easy to come by on eBay.

The motor speed is easily weakened if necessary and the motor itself appears to be durable, as do the heads. The door damping



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david price

Hi-fi magazines are often guilty of sensationalising new technologies, trying to get themselves associated with vibrant new trends in audio, just as politicians love being seen in the company of best selling rock bands or 'box office' movie stars. This is now happening with computer audio of course, as we wake up to the possibilities.

Personally speaking, I have used computer audio on a daily basis for many years – much of my hard disk music collection is date-stamped 2005 or 2006, when I really began to get into iPods and Squeezeboxes. The experience of using this has been mixed however, and I've always consoled myself that when we start getting really decent hardware, it's going to transform things; suddenly, I always thought, my CD player would lie abandoned like a beached whale on a desert island...

Well, I'm sensing that the time is now – or at least very near to now. With products like the Logitech Squeezebox Touch at one end of the market and the Naim NDX at the other, we're finally getting to the crunch point where the positives outweigh the negatives. This past month I've spent a good deal of time with the NDX (and matching UnitiServe NAS drive) network music system, living the computer audio dream. And I have to say it's one of the most evolved products of its type. The fact that Naim offer a RipNAS-type product in a matching Naim box, with all the associated Naim niceties (bespoke optical transport and HDD, top ripping engine and internet metadata lookup), makes it all the more plausible. Only the cost of the UnitiServe, which is steep in my view, detracts from the 'new gold dream' of us all being computer audiophiles before the year is out!

So it's finally 'game on' for computer audio done properly – no holds barred, no excuses made! Well yes, but do you know what, I've had the funniest feeling about it in the past few weeks? Despite the Naim combo being a faultless ripping and playback solution – something inside me personally is nagging away saying it's just *not* natural...

Despite having enjoyed lovely hi res playback, instant access to loads of CD-quality music, and easy internet radio too, I am still struggling to see myself using a network music player as my main source. And if I was going to spend the £5,000 or so the Naim combo costs, I'd be expecting it to be my main source.

There's nothing wrong with the Naim – indeed it's the fact that there's nothing wrong with it that has finally let me rationalise this feeling inside. Because with all other computer audio systems I've tried there's been something amiss – the sound's not right, there's no disc ripping drive, the software's flaky, the set-up is wrong, etc. But because there's nothing to fault with the Naim, I can now see that – *for me* – the whole process doesn't feel right. In short, I am missing my physical media!

Deep down in my subconscious programming, there must be a line or two of code that says my music needs to be linked to a *thing*. Whether it's a 30cm black vinyl thing, or a 12cm lacquer coated aluminium thing, or a little plastic cassette of iron oxide coated mylar type-thing, it's got to be a tangible, physical object. It was hard enough teaching my ears to listen to digital music (a process that still isn't complete, and only partial at best), but teaching my heart to listen to music without the associated physical paraphernalia is a *real* challenge!

I still rather like the process of picking something up, slotting it in the

machine, then looking at the printed artwork as the music plays. So whilst the NDX has a neat iPhone app and there's always the screen to look at, there's still relatively little 'sense of occasion' to computer audio in this respect. That's why – although the NDX beats a CD player on so many levels – I still find myself oddly attracted to the process of using a CD player...

This is surely an age-related thing. I've noticed my parents' generation seemed to get particularly flabby as they got older, I suspect because they grew up in wartime with a food shortage. They often wear coats in cars in the winter because they're not quite used to the idea of dialling in the climate control and heated seats to sub-tropical settings. There's a certain rigour that they have when filing things; their CDs are often neatly labelled or racked for example. And in the same way, in thirty years' time, my generation's children will surely be wryly observing how we all cling to redundant physical objects despite our chronic lack of living space!

We're getting to the stage where most folk under thirty haven't ever experienced physical music media, so they simply won't miss it when it's gone. But my forty-something generation is still used to the concept of music coming on something, even if it's a memory stick for heaven's sake!

The young will instinctively 'get' the NDX. There won't be a deep-down feeling of emptiness when they play their tunes via disembodied, ghostly formats – digital facsimiles of things that never had a form – whizzing around wireless networks at ultra high frequencies. Meanwhile myself and my friends will continue to dust down our old vinyl covers and CD jewelcases for decades to come. Why? Because they're 'real', aren't they? ●

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paul rigby

Big Break Records has a very definite philosophy. Unlike other labels which often feature eclectic content, BBR has a laser-like determination. This is a 'good thing'. Why? Because if you are interested in their roster of artists, then you will appreciate the passion and the depth that the team go to find not only popular albums but long lost and rare LP releases. So what music does BBR cover?

Soul or, more specifically, soul/pop was what attracted BBR's attention. According to the Label Manager, Wayne Dickson (ex-DJ, journalist and compilation creator for BMG and Universal). "At the time BBR was created in 2009, I saw lots of soul and dance reissues sourced from the seventies and eighties but they tended to be from the more obscure corners of the genre. The record labels were convinced that the albums that produced the well known hits were unsellable.

The reason for the preconception was this; the majors had been selling budget compilations of the same hit tracks, over and over, year on, year out. Then they wondered why they stopped selling. If you actually managed to give the public the original album that spawned the hit in the first place, livened up and given a gloss, then the music would be given new life and sales would follow. I was convinced."

Up until BBR sprang into life, Dickson saw a swathe of music that was being ignored by the record companies. Consequently, when he initially approached them, Dickson was pleasantly surprised by their interest. Maybe they just needed to hear an enthusiastic advocate with a good

business plan?

But let's talk a few specifics, to give you a better idea of the sort of artists we're talking about here. "The first album we released was Gloria Gaynor's 'Never Can Say Goodbye' from 1975. Despite that being such a famous record and the fact the entire side of the LP was segued by Tom Moulton, who essentially invented the remix, it had never been on CD before – and that includes in Japan. That was a bit of a gift. No-one had noticed that this had never been done. It gave us a really exciting launch pad. That came out in March of last year."

Other artists on the BBR roster include The Three Degrees, Tavares, Deniece Williams, Heatwave, Billy Ocean, Pointer Sisters, Melba Moore, A Taste Of Honey, John Lucien, Linda Lewis, Ashford & Simpson, Johnny Nash, The Gap Band and many more.

And since March? The label is about to release its eightieth – yes, eight-zero – album. Part of the reason for the great response by the major labels (and that's the reason for BBR's success, great major label support) was how BBR measured up to other, third party, album releases of many of the same albums, in the past. These early releases suffered from poor artwork, no liner notes and so on.

"It seemed to me," said Dickson, "that the smaller third party labels were using the justification that they only had a low budget to offer. That was a poor excuse to release standard product. It's all about how much you want to put into a reissue, so I decided that I was going to re-release these albums to the best possible quality that I could, to major label standards, in fact. So we began by using a Super Jewel case – those rounded CD cases you sometimes see

– which add an extra edge of quality, especially when you look at the back of the package.

Inside the accompanying booklet are lots of pictures from the original cover sessions, label scans from the original 7" singles, in-depth liner notes, original artist interviews with producers, songwriters, musicians and more, plus the story of the album. You'll also get extra music such as the occasional unreleased track but mainly original 12" mixes and 7" edits plus B-sides that were not on the album." Dickson is also very particular about the mastering of these CDs, which are often derived from the original master tapes.

This selection of artists appeal to those of us in our mid- to late-forties and fifties. This was the soundtrack to our disco-fied youth. "Although we were surprised to hear that our listenership starts around age thirty onwards. I thought it would be a lot older than that." Could the 'youngsters' have been educated by those budget CD compilations?

BBR might have hit the eighty LP release mark, with Sony being the most responsive source, but other labels are coming onboard – Warners being a recent example. The big news for BBR is the special edition of the album that Dickson has had his eye on since the label began, the Pointer Sisters' 'Break Out' with special digipak packaging and an additional disc of extras, plus remastering for the very first time. This special edition has just been released.

For fans of this sweeping genre of pop music, BBR is a real goldmine for the digital audiophile. Offering rarities, attention to detail and great mastering it is a label with much to offer – what could you need? ●

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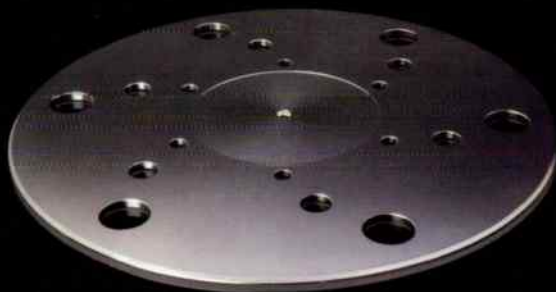
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tony bolton

Regular readers may have noticed that I often refer to playing only cleaned records on my system. For some this might mean a quick sweep over with a carbon fibre brush, which may be satisfactory for new records, but if like me you also buy second hand discs, then something more thorough is required...

Even supposedly clean looking records can suffer from surface noise when played. I am sure that I am not the only one to have bought a seemingly mint condition second-hand or even new disc, and on playing it, been disappointed at the surprising amount of pops and crackles that it displays. Very often those nasty bundled paper sleeves are to blame. Over years of storage, and pulling records in and out of hard paper sleeves deposits a fine layer of microscopic dust into the grooves, which we hear as crackle when playing the disc.

I have found the only answer is some form of liquid cleaning process. I use two systems. The cheapest that I know to be effective is the Disco-Antistat, currently available on Amazon for £29.95. It consists of a plastic trough with two goats hair brushes mounted vertically inside. The trough is filled with fluid, the record placed between two knurled discs which screw down onto each other with an axle running between them through the spindle hole on the record. This axle is placed in the recesses in the top of the trough and the disc rotated past the brushes through the cleaning fluid. I use two, one is filled with Russ Andrews Revive Record Cleaning Fluid, which I find very effective and is also safe on 78s (£16.00. www.russandrews.com).

The other I fill with distilled or purified water to rinse the disc (available from your local chemist). The other non-alcohol based fluid that I know to be effective in all machines is L'Art du Son which comes in a small bottle and is mixed with five litres of distilled water for use (it's £32.88 from <http://loricraftinternetshop.co.uk>).

You can also create your own fluid by mixing photographic wetting agent with distilled or purified water. Avoid deionised water, as used for car batteries, for all cleaning activities, since this is not sufficiently filtered for our purposes. In the base of the troughs are removable drying racks. I find the drying process takes about half an hour in a normally centrally heated house, so I can clean about thirty records an hour! [Crikey! Ed.]

I do all my 78s and singles this way, since I don't like the idea of clamping brittle shellac to the platter of a vacuum machine. The results are very good. Most dirt, including mildew and all the other contaminants that can be found on old records disappear and you are rewarded with a generally quiet surface. (Incidentally this method seems to give the quietest background to 78s of all that I have tried). The truly disgusting shade of brown that the fluid and water turns to is testament to the amount of gunge this system removes...

My LPs generally get treated in a vacuum machine. I have both a Moth (from £449 www.britishaudioproducts.co.uk) and a Clearaudio Smart Matrix (since replaced with the Smart Matrix Professional £995 - www.audioreference.co.uk, which DP will be testing next month).

Both of these machines, along with the VPI designs and the Nitty

Gritty amongst others, involve clamping the record to a platter. This rotates as fluid is applied either manually or automatically, depending upon design. An arm with felt pads either side of a slot then rests over the record as it rotates. A powerful vacuum pump sucks the fluid and dirt out of the grooves. I find this very effective, even with brand new discs, where the mould release agent from the pressing process is rarely properly removed from the disc prior to being sold. Unless there is actual damage to the groove wall the results should be a near or total silent background to your music.

I must also mention the Loricraft machines which have an arm which tracks across the record, again sucking the dirt and liquid away and do not require clamping the record to the platter. Although expensive, they are the most effective machines that I have tried. Whichever vacuum machine is used I find that I average about fifteen discs an hour...

After all of this I always use a Nagaoka style poly liner inside the original sleeve. I buy mine from www.britishaudioproducts.co.uk, finding they have the keenest prices, especially for bulk buys. This is a small but essential detail; polythene lined inner sleeves are essential to ensure the continued health of your LP surfaces.

All this can be a bit of a chore but, apart from the crackle-free sound, I find that playing cleaned discs reduces stylus and record wear to virtually nil, and the sound from the record opens right up, since the minute deflections of the groove wall are no longer obscured from interacting with the stylus. So as far as vinyl is concerned, cleanliness is next to audiophile godliness! ●

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"now it is China's turn and what is happening there is extraordinary..."



noel keyword

Having been brought up in the Far East, in a scuzzy corner of Singapore known as Sembawang, I'm a happy bunny wherever I find myself over there. My travels in the region have taken me around China's periphery, to Hong Kong and Taiwan to be precise, but I have never entered the communist People's Republic itself. Finally entering the Dragon was exciting, or the thought of it was beforehand. The practicality was much less so. Border guards don't dramatically lean over you with a sub-machine gun, as they once did when entering East Germany, and I simply flowed in with the stream of Chinese commuters that make the journey every day on the ferries. It was uneventful.

As I boarded the plane, talk of America's debt was invariably accompanied by China's corresponding surplus, now it has become a manufacturing super power. Being an engineer well acquainted with manufacturing, starting at the Filton airplane works in Bristol, what China was really about, seen first hand, fascinated me. I'm the sort of person who finds factories and mass production interesting. I find industrialisation and the provision of jobs interesting too, and the hi-fi business manages to encompass all of this, even having its own modest history.

You'll see the history in my China report in this issue, encapsulated in a picture of five Chinese men rubbing down the huge cabinet of a traditional Wharfedale loudspeaker, the new Airedale Classic Heritage I think I am right in saying. The picture tells other stories too...

Sadly, one is where UK jobs went; I saw Wharfedale workers making and testing loudspeakers in vast quantities at the huge Bradford Works, way back in the seventies.

Massive German rotary saws cut and grooved vast sheets of chipboard in a continuous process, cabinets were folded and glued in their thousands, fitted with drive units and finished, then sweep tested, packed and shipped.

It wasn't pleasant work: the factory was noisy and dusty and stank of industrial glue and fork lift truck fumes. But it was work – and that factory is no more: the jobs have moved to China.

Cabinet building remains dirty, low skilled and labour intensive and, for the time being at least, that suits industrialising China. It is where much British manufacturing went, as well as U.S. manufacturing of course, and I was both amazed and bemused by what the Chinese are doing with it all.

One big realisation hit me fairly early on. China is far, far removed from that other manufacturing power house, Japan, in the way it has interacted with the outside world. Japanese brands were/are made in Japanese controlled satellite factories around the world, using Japanese management techniques and Japanese machine tools, etc. Japan would never see value in a 'foreign' brand; that it was foreign would mean it had no value. China is different.

China has the world's largest diaspora and is strongly linked to the outside world through it. That is one big difference. It also has historical links with Britain (and the West) through trade via Shanghai and Hong Kong. British products have a good reputation there and the Chinese will buy British hi-fi in preference to local brands. Unfortunately, Brits are not going to stream into China to meet the demand from a market of nearly two billion people (thirty times bigger than the UK)! Why? Ducks, and pork, and noodles for breakfast, and living in the factory, and the heat,

and... I'm sure you get my drift.

Then there's the small issue of learning Chinese, of the spoken and written variety. It really is a must over there, and it isn't something you can get by in with a phrase book!

So it is the Chinese who have grabbed UK hi-fi brands (when they went out of business I should add) and taken to manufacturing them in China, mainly for the vast local market. Quality standards at IAG were at or above those in the UK, because all senior engineers there are Brits and because the company is willing and able to invest in expensive machine tools, production and test equipment. The will is there to improve upon the past; even Japanese Lux products have been tidied up, much to the surprise of the Japanese arm.

Seeing all this in the flesh was intriguing. That China has gobbled up the world's jobs using low cost labour may be a fact, but I do not see how in the modern world this cannot happen, except by resorting to trade barriers. Wealth has moved from West to East in this process. Only Germany has successfully resisted the flow; even Japan is suffering.

If you believe the *Herald Tribune*, and I like to, then the modern solution is to learn Chinese and get on your bike. Peter Comeau did this but groaned when I asked him about learning Chinese. "Well I've learnt a few words," he told me in a resigned fashion. Learning Chinese is almost as difficult as eating noodles for breakfast.

China is a long way from Singapore, if not in my mind. The tiny island state modernised rapidly under Lee Kwan Yew. Now it is China's turn and what is happening there is extraordinary. How extraordinary in hi-fi terms I intend to see shortly at the Guangzhou Show, providing the border guards let me in! ●

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World Radio History

"there's one branch of technology which seems to be universally unloved – the radiogram, of course..."



adam smith

Over the years, many fashions have come and gone in audio and hi-fi. Some were great ideas that simply outlived their usefulness, others were good ideas at the wrong time, and some were just plain bad ideas. But there is a good chance that, no matter what the item in question, someone somewhere is a fan!

Look around the internet and you'll find enthusiasts extolling the sometimes dubious virtues of the likes of DAT, Betamax video, eight track tapes and even CLD discs, the analogue forerunner to Laserdisc. However there is one branch of technology that I'll wager has sneaked in to the life of most of us at one time or another, and yet which seems to be universally unloved. I'm talking about the radiogram, of course.

Rewind back to the 1940s, 50s and 60s and the radiogram was the staple of household entertainment for the discerning listener. You upgraded to one from your Dansette and it became not only a major source of entertainment, but a furnishing fixture in your lounge, because the things were pretty big. My grandparents had one and so did either the grandparents or parents of most of my friends when I was at school. Names like HMV, Murphy, Cossor, Ultra, Dynatron and Regentone adorned the things, or you might even have been lucky enough to own a Decca Decola if you were really well off. Even when you upgraded further, a whole generation of Leak, Quad, Garrard, Thorens, Goldring Lenco and Rogers equipment found itself mounted in purpose-built walnut enclosures in the radiogram style. The quality may have improved, but the ethos was still the same...

Funnily enough, I have recently found myself in possession of not just one of these, but two? Well,

actually, it's all the Russians' fault, or the Latvians to be more precise, with my ever-lurking Rigonda obsession rearing its ugly head again. As I have mentioned on these pages before, I first met a Rigonda item at university when a friend cleared out two unwanted loudspeakers on me. They turned out to be from a Rigonda Symphony radiogram, sounded superb and had an almost mirror-like gloss rosewood finish. I was hooked, even more so when I found the matching radiogram one day at my local car boot sale. I duly persuaded it to make noise, although I could never get the auto-tuner to work, and it sat happily in my grandparents' lounge for several years, their own model having been despatched to the tip many years before. Unfortunately, when they passed away, my parents accepted my turntable collection (which nan and grandad also housed) with good grace, but the Rigonda received a point-blank refusal, so off with the house clearance man it went.

However, like my original Leak 2075s, which left a hole in my heart when I parted with them, the Rigonda itch never really went away. Models cropped up on eBay from time to time but all seemed to be away in the north – sale prices were generally low but a 400 mile round trip for collection at 18mpg was an expense I really couldn't justify. However, things recently looked up. Not only did another Rigonda Symphony in need of some TLC turn up around ten miles from me a month or two back, but only last week, two Rigonda Bolshoi units appeared barely any further away in Portsmouth. I was elated, a deal was struck and I sneaked them into the garage, inasmuch as one can 'sneak' anything the size of a sideboard and weighing a good 30kg.

The Bolshoi was the top of

the range for many years and one of mine has been restored. Consequently it works a treat, even the auto tuning which features a motor attached to the tuning wheel that locks onto the station using AFC works effectively. Attempt to pull it off-tune manually and it smartly whips the knob from under your fingers to correct things – and all valve-powered as well! With FM, MVV, LW and no less than 4 SWV bands, I am looking forward to scanning the wavebands when I have a spare five minutes. The woodwork is lovely and the Bolshoi's loudspeakers are even bigger and fancier than those of the Symphony, so I'm a happy chappy.

In fact the only slightly discordant note is the turntable, which rather than the inevitable BSR or Garrard autochanger, is actually a single play unit of Rigonda's own design. Whilst well made in its own right, it sports a ceramic cartridge which limits its abilities somewhat. Bolshoi number two is missing its record player so there is scope for fettling here, but I recently discovered what I really need, namely the later top of the range unit, the Victoria, sporting a Rigonda-made 'transcription' turntable with magnetic cartridge, no less! I have never even seen one of these beasts other than in the pages of a catalogue, so I suspect not many made it out from behind the Iron Curtain, however if you happen to have one in your potting shed, please drop me a line...

In the meantime, I am very happy with my acquisitions, even if no-one in their right mind needs three radiograms. Oops, sorry, four – I forgot that Garrard/Quad cabinet again. Of course, my cunning has been so masterful and the back of the garage is so dark that you and I are the only ones who know about them. Mum's the word! [No, 'mad' is the word! Ed.] ●

vinyl section

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OCTOBER 2011

www.hi-fiworld.co.uk

CARTRIDGEMAN CONDUCTOR 100

Rafael Todes appraises the newest version of this superb parallel tracking tonearm.

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David Price tries a superb high end step transformer.

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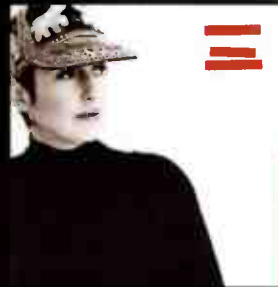
David Price samples a flexible new phono stage.

SOUNDBITES 119

Tony Bolton tests Furutech's Destat, then Paul Rigby auditions the Agora Acoustics MagicHexa isolation pods.

JOAN BAEZ

A great release for fans, 'Play Me Backwards' (1992) might not be innovative or pioneering but what Baez offers here is a triumph in interpretation. She takes a selection of superb songs and wrings every emotion out of them. Always enjoyable, this Collector's Edition, via Diverse Records (www.diversevinyl.com), includes a suite of previously unreleased demos.



CATHERINE'S HORSE



CATHERINE'S HORSE

...were a US band who produced their only album in 1969; inner sleeve only, no cover! This is it, a blues rock creation. 'Garage Blues From Connecticut' (Break-A-Way; www.break-a-way.de) is packed with covers such as John Lee Hooker's 'Think Twice, with just one original, 'Sun Going Down'. A rediscovered gem for blues rock fans.

news



LETSSSSS ROCK!!

Yes, chaps and why don't we start with Nuclear Assault? A jaunty and jolly dashing combo who were one of the best thrash metal bands not to hit superstardom. 'Live At Hammersmith Odeon' (Back On Black; www.backonblack.com) is a storming live album full of fury and rage. Nice. A side-project for Type O Negative and Life Of Agony man Sal Abruscato, A Pale Horse Named Death's 'And Hell Will Follow Me' (SPV; www.spv.de) is a new release mixing sub-genres of metal; alt. metal if you like. Dark and meditative. Also look out for another thrash outfit, this time from Germany, SPV has released Assassin's two commercial albums: 'The Upcoming Terror' (1987) and 'Interstellar Experience' (1988) plus Pagan's Mind's new LP, 'Heavenly Ecstasy', a course in progressive power metal and a glorious LP full of big melodies, huge riffs and enormous production values.

LES RALLIZES DENUDÉS

●
BLIND
BABY
HAS IT'S
MOTHERS
EYES



PHOENIX RISING

Two more from the esoteric Phoenix Records (www.theraremusicshop.com). 'Blind Baby Has Its Mother's Eyes' was the only album release by Japanese outfit Les Rallizes Denuvés, a radicalised band with strong political opinions and impressive, feedback-laden guitar noises. Also look out for Speed, Glue & Shinki and their self-titled album (1972), a magnificent psychedelic rock creation featuring Japan's own heavy, acid-drenched Hendrix-a-like, Shinki Chen.

DAVY GRAHAM



Nilsson
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MUSIC ON VINYL

Known increasingly for the sheer variety and quality of its regular releases, this month's gamut includes: the classic Davy Graham LP 'Folk, Blues & Beyond...' (1964) in which he offers a masterclass of guitar work; Patti Smith Group's 'Easter' (1978) showed this, her third album, how she could combine both art and commerciality and do it successfully; Harry Nilsson's 'Nilsson Schmilsson' mixed hit songs like 'Without You' along with his own brand of quirky, melodic humorous ditties to make this 1971 release a cracker and Mark Lanegan Band's 'Bubblegum' (2004) (ex-Screaming Trees and Queens Of The Stone Age), with this indie rock and examinations of the dark places in his mind.

Also look out for Groove Armada's 'White Light' a 2010 reworking of that year's 'Black Light'; Social Distortion's 'Somewhere Between Heaven And Hell' (1992) mixing country and punk rock (!) and Five Horse Johnson and their root-based US rock'n'roll via 'Fat Black Pussy Cat' (2000). Contact: www.musiconvinyl.com.

PUNK N'STUFF

The New Original Sonic Sound's self-titled LP (Jackpot; www.jackpotrecords.com) offers a high voltage, high energy delivery that merges hard rocking, punk spurting, garage into one energetic lump of rock. This Sonics' tribute band includes members of the band Mudhoney.

Formed in 1977 in Belfast, Victim stuttered and stumbled through a hectic music career – punk fans should check them out. This LP ('All Our Dreams Are Gone': Rave Up; www.raveuprecords.com) features their rare singles and EP tracks.

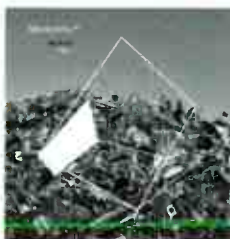
Direct from Damaged Goods (www.damagedgoods.co.uk) is The Cute Lepers' new album, 'Adventure Time', a paean to the punk era, a celebration of the punk ethos and an almost nostalgic nod to those times.

The post-punk guitar heroes The Wipers, return via two albums on Jackpot: 'Silver Sail' and 'The Herd'. The former, a more considered piece with an inherent, sometimes melodic beauty complements the latter, a picture of raw energetic vigour with an almost brutal array of guitar playing. Also look out for 'Kicks In Style: 1976-1979' from The Users (Rave Up), a selection of rare and live material from this punk outfit.



...AND FINALLY

Spirits Of The Dead have a new record out, a six-track, 12" LP called 'The Great God Pan' (Big Dipper); it takes the band's usual stoner rock sound and adds a bit of an acid-folk tinge. Sohrab's A Hidden Place (Touch Tone) is a drifting, ambient piece that is both relaxing and slightly haunting, even a little claustrophobic – in a subterranean sort of way. Rick Reed and his minimalistic 'The Wavy Things Go' (Elevator Bath; www.elevatorboth.com) appears as a 180gm double LP complete with gatefold sleeve and MP3 download option. Featuring tonal shifts, noise, loops and other sonic devilry. Mark Fell's 'Manitutshu' (Mego; editionsmegeo.com) is a lively, rhythmic, bouncing, intriguing electronica piece that digs deep into the guts of the synth to find undiscovered sounds. Anyone into prog should take note of Larbrinto's 'Anatema'. Offering heavy sounds, it also has plenty of intriguing light and shade to keep you on your toes. A trio from Liverpool, The Loud's new album 'Harris Shutter' (Paper Tiger Records) is in fact, just that... loud. They adopt the garage band ethos by singing an entire attitude, with musical accompaniment.



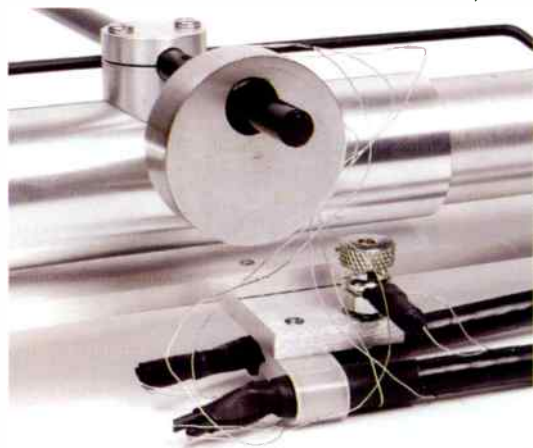
Parallel Universe

The Cartridgeman's Conductor tonearm has been a favourite of this magazine since we first reviewed it in 2006, and now it's received its first major revamp. Rafael Todes tries this intriguing parallel tracking tonearm...

Len Gregory (a.k.a. the Cartridge man) designed the Conductor Tonearm (Mk1) a few years ago to universal critical acclaim – indeed it was awarded 'Tonearm of the Year' in 2006 by this very magazine. It is a both an effective and brilliant solution to the tantalising conundrum of removing the tracking error that occurs in a pivoted arm.

The arm itself is a narrow-bore carbon fibre tube, which is attached to a radial strip of metal that circumnavigates the air-bearing – a cylindrical tube made (now in this Mk2 guise) of aircraft grade aluminium, with small countersunk holes, to let the air pass, in order for the radial band to float.

The old cylinder was made from chromed brass and occasionally the arm would stick so there are more holes in this newer version than previously. I have to say, that having lived with the Mk1 for a few years,



Handle with care! Arm lead-out wires snapped easily in the original Conductor; they're still delicate in the revised version, but they have to be, otherwise they'll create drag...

it didn't often stick provided the cylinder was perfectly horizontal. Moving the arm along the cylinder just above the record, sees the arm glide even more effortlessly than before: there isn't the sense of going from one air jet to another, and the journey from the first to the last jet is well-nigh linear.

Four small screws holding the arm beam to the armboard pivot can be used to adjust the plane in which the arm sits, and normally a couple of turns of the front or back pair of screws is all that is required to achieve horizontallity. Another new innovation is the inclusion of VTA on-the-fly, by means of a disc that you turn to raise the height of the column on which the arm is attached.

As before, the air is provided by a fish-tank pump feeding a plastic cylinder, which acts like an aerocapacitor to smooth the airflow. The air enters the bearing by means of two holes at either side of the air-bearing cylinder, and provides the air for the countersunk holes on which the metallic band floats. Whilst the noise of air passing through the holes was barely audible on the Mk1, the Mk2 version is definitely quieter.

Len Gregory has two different types of cable available, the standard one terminating in two phono sockets at the base of the beam, or for an additional £250, a straight-through solution, which goes by silver litz wire from the cartridge tags, straight through to the phono plugs, feeding the phono stage. These wires are *hellishly* delicate, as they have to be light so as not to create any significant force on the floating arm. At this point, I should say that people of a clumsy disposition, or all but the most diligent of serial tweakers should stop reading this now! It

simply does *not* have the robustness of an SMEV, which along with cockroaches is the only thing ever built to withstand nuclear war. For that reason alone I shy away from using the Conductor as a reference when reviewing other turntables. Whilst it is easier to set up a parallel tracker arm on a perfectly tangential path than it is to position a pivoted arm at the two null points to minimise tracking error, learning how to get the best out of the arm takes a fair bit of work.

I chose to locate the pump at some distance from the deck, in fact in a cupboard in the hallway. I got a friendly builder to drill through the wall with one of those horror-movie-type twelve inch drills, and use a remote control plug socket to switch off the pump when not in use. The pump, whilst not being particularly noisy, could interfere with one's enjoyment of music, or critical listening, and needs to be isolated for best results. A friend of mine commented, on seeing the arm setup with the transparent tube carrying the air from the next room, that it all looked a bit like an emergency room!

SOUND QUALITY

First onto the platter was the Philips recording of the Bach 'Brandenburg Concertos No 5', conducted by Raymond Leppard. The arm immediately announces its sonic presence; an airy, expansive soundstage, the strings with a beautiful, crystalline tone. The violin soloist has the most sweet and vivid sound. There is air to the sustained notes, and real character to his violin, bursting with cremonese sweetness in a way that I don't get on an SME V. There are of course things that an SMEV can do so well, which the



"it works effectively, reliably and produces a truly ambrosian sound that makes the challenge of setting it up a pale into insignificance..."

Conductor does more modestly; in the lower frequency department, the Conductor's bass is quite tight and accurate but it doesn't have the grip and control of the SMEV, or even the Townshend Rock 7/Excalibur, which is monolithic by comparison to both. The midrange of the Conductor's output has that spacious, unforced naturalness that I would expect to hear from the real thing – and often don't! The oboe sounds truly smooth and beautiful, and the overall impression is of a great deal of detail working towards the conviction of a live performance.

Although I dislike the word intensely when applied to metal,

electronics, and plastics, it is 'musical'. It is like an arresting sonic oil painting, which above all, manages to capture the texture of the instruments, in a way the SMEV doesn't. There is something of a fine electrostatic speaker in this tonearm; the astonishing transparency to the sound, the beauty which comes with the ability to reproduce complex tone, the

sense that the music is not 'bottom up', but 'top down' as it hangs and floats in mid air.

Turning to the Tchaikovsky Piano Concerto, a

Decca recording with

Ashkenazi as soloist,

I am struck by the differences of how I last heard this played by a Timestep Technics with the SMEV. The performance now



this new version of the Conductor is better made in some respects than before, but still fiddly!

“The Truth, nothing more, nothing less...”



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- September 2010 John Bamford, *HiFi News*

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Pulsare Phono Stage



The Conductor in all its architectural glory; it's a sophisticated tool compared to your average pivoted arm alright, and requires a decently sized turntable to fit on to...

seems lyrical, relaxed and mellifluous, the Technics/ SMEV by contrast played up the drama and blood and guts of the performance in an edgy but compelling way. This says more about the difference between my Fletcher Audio Omega Point Five (a belt drive) and the direct-drive Technics, but I can't help thinking that the Conductor is partially responsible for the more subdued approach dynamically. I somehow couldn't quite imagine using the Conductor with the Technics, although Len Gregory said he had a customer who requested it, and that it sounded 'interesting'. I did try a Hadcock on the Technics, and it didn't really feel comfortable. There are sonic commonalities between the Conductor and the Hadcock, they share the similar strengths and weaknesses. They both have an airy spacious presence to the sound; bass is good, better with the Conductor than the Hadcock, but not seismic, and they err on the side of caution

dynamically, but make the most sublime sounds when it comes to the midrange of acoustic instruments. The Conductor displays a cleaner sound due to its lower tracking distortion, and a wider tonal palette.

Listening to 'Jazz Standards' recorded in 1958 – Coleman Hawkins and Red Allen – the Conductor demonstrates that it does this type of music beautifully. The trumpet has real subtlety to it, not just a crude brassy tone, but a mellow, husky, more lifelike version than I remember with the previous incarnation of the Conductor. The bass pizzicati are clean, not as visceral as some I've heard but nicely present. The music has a foot-tapping flow to it and feels very alive. It's amazing to hear this event happen so realistically in my listening room, fifty three years after it was recorded!

Dvorak's 'New World Symphony' contains many musical gems, and the 3rd movement Scherzo on my recording by Bernstein on CBS is

taken at a blistering pace, throbbing with manic energy.

Contrasting the SMEV and the Conductor on the same deck, the SME's sound seems to be underpinned with a metallic structure. There is a real strength and power to the orchestra – from the superb bass upwards. It captures the excitement of the melodrama brilliantly. The Conductor is somewhat different. There is a wider soundstage, a smoother, more refined tone which is without the metallic edge of the V. There is also a tad less excitement, as the different sections of the orchestra pass around the same theme; with the V, there is shock and awe, such is its bass grip and wallop. The conductor is just a bit more gentlemanly about the proceedings. They are both special arms, they are just approaching the music in different ways.

The Rondo from Mahler's 9th Symphony is the composer at his most grotesque. In the Philips recording, conducted by Haitink, a full-blooded orchestra is conveyed with startling clarity, and despite the size of the orchestra, you can hear the gaps in the soundstage where the instruments sit – a rare treat and the sign of an arm which is portraying space superbly. The dialogues between instrumental groups are as exciting as I've heard. It really sounds like a master tape and I'd defy anyone to find an arm that can do this for £1,700.

CONCLUSION

There have been numerous attempts to design tangential tracking arms, with varying degrees of success, and for a wide range of price points. The reason this arm is such a triumph is that it works effectively, reliably and produces a truly ambrosian sound that makes the challenge of setting it up a pale into insignificance. For the modest outlay of £1,700, it catapults the owner way above the crowded territory inhabited by Rega-based clones in terms of sophistication and class, and has many aspects of what really excites me, both as a musician and an audiophile.

The kit in all its glory; the pump needs to be sited remotely due to noise, and the large 'aero capacitor' is intrusive too. Once set up however, this arm rewards with a truly special sound...

REFERENCE SYSTEM:

Townshend Rock 7/Excalibur turntable
Fletcher Audio Omega Point Five turntable
Ortofon Cadenza Bronze cartridge
Icon Audio PS3 phono stage
VAC Auricle Musicbloks power amps
B&W 802d loudspeakers



VERDICT ●●●●●

Eccentric but daring design offering superlative sound at the price.

**CARTRIDGEMAN
CONDUCTOR** £1,700
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FOR

- wonderfully musical sound
- rock-like soundstaging
- improved build

AGAINST

- noisy pump needs remote location
- complex setup



David Price
tries out
Music First
Audio's Moving
Coil Step Up
transformer...

Step Change

This little box is designed to step up the signal from moving coil cartridge output levels (very low) to moving magnet levels (low) – unlike a normal phono stage, which amplifies either MM or MC levels up to standard line levels and applies RIAA equalisation. It effectively lets you use an MC cartridge into your MM phono input. Its 'cost-no-object' Stevens & Billington Limited TX103 MC Step up transformers should give a better sound than the additional active electronic of an MC gain stage, improving sound quality. It also matches an MC cartridge into an MM only input.

A choice of gain and loading are offered, selectable from its twin front panel knobs; its split, four section primary winding allows gain ratios of 1:5 (14dB gain), 1:10 (20dB gain) and 1:20 (26dB gain) and 10K, 20K, 30K, 40K, 80K or O/C (custom value) loading. It's housed in the standard 'half sized' MF Audio case, which measures 88x216x200mm, with all aluminium casework. All internal connections use 0.6mm silver coated solid core copper wire with PTFE insulation, point to point hand wired. Gold plated RCA connectors and Swiss made ELMA silver contact rotary switches are used.

SOUND QUALITY

I connected the MC Step Up to the MM input of a variety of phono stages, from the solid-state Musical Fidelity M1 ViNL to a tube Icon Audio PS3, and in every case it sounded surprisingly better when driving their MM inputs, than when I used the MC inputs direct. Indeed, in the case of the modest Musical Fidelity, it turbocharged it to the extent that I'd actually recommend the combination for £2,300 in place

of many conventional phono stages of that price! The MF Audio MC Step Up proved my suspicions that the MC input of many phono stages is far worse than their MM inputs, and it's this extra gain stage that damages their overall performance on MC.

In every instance, compared to the stock MC input I found a wonderfully big and bold sound, almost as if it's an analogue signal processor that makes things appear larger than life. Soundstages got wider, bass stronger, treble crisper and the recording developed an extra layer of detail, with lots of little low level effects becoming audible on Yellow Magic Orchestra's 'Citizens of Science'. Dynamics grew in stature; the quiet passages on the record seemed quieter and the highly modulated peaks got louder – a benefit I suppose of not having an extra layer of active electronics in the way. The sound also gained a rhythmic swagger than it hadn't previously possessed, as if it had just downed an espresso coffee!

There was just a tiny loss of finesse, a fractional coarsening of the sound, but it was barely audible and the dramatic improvement found elsewhere more than compensated for it – as did an obvious drop in surface noise. I

also found with the Musical Fidelity, a slight smoothing and darkening of the upper midband, with a lot of its (what I'd call) 'transistor characteristics' gone. This is no criticism of the modestly priced M1 ViNL, but the improvement this transformer wrought was fascinating. A great product then, worthy of serious investigation.

VERDICT

Brilliant step up transformer that's both ideal for MM only phono stages, and also for improving phono stages with a middling MC input.

MF AUDIO MC

STEP UP £1,600

MF Audio

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www.mfaudio.co.uk

FOR

- great dynamics
- stereo width and depth
- musical fluency
- bass power

AGAINST

- marginal loss of polish

MEASURED PERFORMANCE

Providing the Music First Audio step-up transformer is fed from a low impedance source of 10 Ohms or less it has flat frequency response from around 2Hz to 100kHz at all step up ratios. As most moving coil (MC) cartridges are 1 Ohm or less this is usually the case in practice. Fed from our test generator set to 10 Ohms we saw a worst case frequency response of 5Hz-48kHz (-1dB) at the maximum step-up ratio and output load set to OC (open circuit) where impedance transformations are greatest. At lower step-ups of 1:10 and 1:5 the transformer was just perfectly flat up to our measuring limit of 100kHz, with no signs of peaking or roll off, an impressive result for an audio transformer as they can do funny things outside the audio band, and even inside it if poor due to large values of distributed capacitance and/or leakage inductance.

With 1mV input the 1:20 setting gave 19.3mV output, the 1:10 setting 9.9mV out and the 1:5 setting 4.97mV out so the quoted gain values are correct, small errors being due to our generator source impedance of 10 Ohms.

Channel separation measured - 91dB at 1kHz with 5mV input so there are no problems here. Distortion was negligible across the audio band, at low and high frequencies, measuring 0.008% at 1kHz and 6kHz, and 0.018% at 40Hz, all at 0.4mV input and 1:20

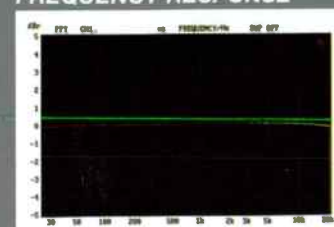
step-up, other ratios and loads making little difference.

Coils of wire produce noise (Johnson noise) and here the transformer produced a normal 1µV IEC A weighted, with short circuited input. Around 0.08µV is usual for MC input transformers our measurements show, but low turns can reduce this considerably, as demonstrated by Lux. The MFA will be silent with all except a few rare ultra-low output MCs, then a faint hiss may be audible close to the loudspeakers.

This is a very carefully designed and wound transformer that is perfectly balanced for real life conditions. It gives a superb measured performance and shows how transformers can, with sufficient skill, be made to work wonderfully well. NK

Frequency response	5Hz-100kHz
Separation	93dB
Noise (e.i.n. A wtd)	1µV
Distortion	0.008%
Gain	x20 (26dB)

FREQUENCY RESPONSE



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SPEAKERS

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Mobile Fidelity LP Cleaning Products

MOBILE FIDELITY SUPER DEEP CLEAN/ SUPER WASH £21.99/ £21.99

Super Deep Clean is designed for a record cleaning machine (RCM) as a cleaner for lightly soiled LPs or as a pre-wash cleaner for heavily soiled vinyl, while Super Record Wash is a degreasing, dirt solvent, quadrupled distilled liquid. The Super Deep Clean was applied to a test LP on my Loricraft RCM and treated like any other cleaning fluid. Once hoovered up, I then proceeded to apply the recommended two applications of the Super Record Wash to the same LP, brushing and hoovering up the liquid in between applications. Sonic results, post-clean, included an opening up of the overall soundstage plus an added clarity revealing new detail that was probably due to the effective removal of the vinyl's mould release agent, left over from the original pressing of the record.



MOBILE FIDELITY RECORD BRUSH/ ONE SOLUTION £15.99/ £19.99

This features a hard, rubberised handle offering a bit of 'give' in use that holds and controls a replaceable pad. I had problems with the brush when used with RCMs because the record slips on the machine's platter during cleaning, due to the high downward pad force. The brush is perfect for manual cleaning however, especially with the alcohol-based One cleaning solution. Presented in a 473ml squeeze bottle, you load the surface of your horizontally-positioned LP with enough solution to cover the vinyl, while carefully avoiding the label. Spread evenly, you then move the brush in a circular motion around your LP. In use, I rotated the brush a dozen times clockwise and then anti-clockwise to further dislodge muck and grime. The disc was then left to dry. The results, for a non-RCM clean, were impressive, with an appreciable reduction in both crackles and pops.



MOBILE FIDELITY PLUS ENZYME CLEANER £24.99

This was the most startling and effective cleaning liquid of the group. Also used with a record cleaning machine, this fluid managed to dig deep into the grooves, remove mould release agent, basic dust, muck and grime and helped to extract previously hidden detail. Playing the track, 'She Said', from the Barclay James Harvest LP, 'Once Again' (Harvest), the Enzyme liquid enhanced previously subdued acoustic guitar detail, for example.



MOBILE FIDELITY PURE RECORD RINSE £21.99

When the Plus Enzyme Cleaner was used with the Pure Record Rinse, it added a certain shine to the overall musical presentation, although its effect as a rinse was probably slightly less effective than the excellent Super Record Wash. That's because the primary role of the Pure Record Rinse is as a liquid base to dilute concentrated cleaning liquids (like L'Art Du Son).



MOBILE FIDELITY LP#9 STYLUS CLEANER £22.99

This liquid arrives in a small glass bottle with a soft brush applicator attached to the lid. You are also provided with a small, short bristled brush to attack more stubborn grime and sticky residue. As with any liquid-based stylus cleaner, there is always the risk of overloading the brush to encourage capillary action to soak and potentially rust the upper areas of the cartridge but, with care, you will find the LP#9 an effective accessory. After cleaning my stylus, I certainly heard a greater overall focus and tonal balance.



[Contact: +44 (0)1733 350878,
www.analogueseducation.net]

WHICH TO BUY?

My preference for regular Mo-Fi-based vinyl cleaning? Start with the Super Deep Clean to dislodge baked-on grime, follow that up with the Pure Enzyme Cleaner and end with the Super Record Wash for a perfect LP wash-and-brush up. All of the products covered here are worthy, thoughtful, well designed and should satisfy the needs of any audiophile vinyl fan. PR

SOUNDBITES



Two's Company

Adam Smith spends some quality time with Audio Note's new Arm Two/II tonearm...

Personally speaking, I find Audio Note UK one of the most fascinating manufacturers around today. Quietly beavering away in their Sussex headquarters, they manufacture everything from turntables, arms and cartridges, through amplifiers and CD players right down to loudspeakers, with a whole plethora of wires, accessories and components on the side. Prices range from eminently affordable to "I'm sorry; how much?" and they crop up regularly at UK hi-fi shows with systems that never fail to entertain and delight. So much so that they are rapidly becoming my retreat when other rooms fail to satisfy!

Equally though, regular readers may have noticed a lack of Audio Note equipment in the pages of *Hi-Fi World* of late and the reasons for this are twofold. Firstly, the company does not introduce new models every ten minutes, and also resists the temptation to go down the Mk2/SE/GTi route with their present models. Secondly, whenever we have made contact about a review sample, the

response has always been to say that they would love to supply one but the item in question is selling as fast as they can make it – fine for Audio Note, frustrating for us! However, when I saw the latest new product from the company this year, I was determined not to fail in my quest to grab one, and the result is the Arm Two/II that is presently residing on my Garrard 301...

The Arm One, Two and Three models have been mainstays of Audio Note's starter turntable range for a number of years and all are based upon the tried and tested, but somewhat ubiquitous Rega RB250. The differences between the models were the wiring used, namely Copper, AN-V Silver and AN-Vx silver in the One, Two and Three respectively. These wiring differences are carried over to the new models, designated One/II, Two/II and Three/II but, apart from that, everything else is very different, with absolutely no Rega involvement any longer.

Available in both black and silver finishes, the whole main arm, including the headshell, armtube and

rear stub, is machined from a single block of aluminium. The armtube tapers from a diameter of 11mm at the rear down to 10mm at the front, which Audio Note claim 'minimises critical midband bending modes'. The bearing housing is machined from a second block of aluminium and the lateral bearing is an inverted unipivot type, with a spindle located in a bush that then runs in a bearing house, sitting on a ball bearing at the base. The two vertical motion bearings are made from conical points resting in a triangle of three ball bearings in a cup. The arms are said to be made in a machine shop in Austria that fits them onto the lathes between high precision firearm component manufacture!



Tracking force is applied by the stainless steel counterweight, which is uncalibrated and requires the use of a stylus balance, and bias applied by a falling weight attached to the bearing housing by a short length of nylon. Again, there are no markings on this and my review arm came with no instructions at all, just a stylus protractor. Whilst this held no fears for a seasoned fiddler like myself, anyone who is less than confident with their screwdriver wielding, or lacking the necessary vinyl setup paraphernalia, might be best recommended to seek assistance from a friendly dealer. The arm design itself conforms to the Rega standard with an effective length of 237mm and a pivot to spindle distance of 222mm. With the use of an SME to Rega adaptor I soon had the Arm Two/II installed on my Garrard 301 with Ortofon Kontrapunkt b fitted and was ready to commence listening after a thorough warm-up period.

SOUND QUALITY

Cueing up a new arm design like the Arm Two/II is always a very interesting experience. With a hot-rodged Rega design there is always a *reasonable* idea of what the underlying sound will be like but with the question raised as to how much of the innate Rega-ness remains. As I have said before, Rega arms and their derivatives have an underlying sonic signature, which is no bad thing in many ways, especially as it happens to be a very good signature. However, variety is the spice of life and, although in many ways, the Arm Two/II brought to mind the best strengths of its Rega cousins, I was encouraged to note that, in others, it stepped neatly but very noticeably ahead of them.

The first aspect of the Audio Note's performance that captured my attention was its treble, which is magnificently smooth and silky, yet with a deliciously tantalising underlying sense of insight and detail. My Ortofon Kontrapunkt b is a smooth cartridge generally, although occasionally I find it a little too laid back and often swap over to an Audio Technica ATOC9MLII when I feel the need for an extra little bit of pizzazz. On the end of the Arm Two/II however, the Ortofon seemed

to perk up that little bit extra and come out of its shell by just the right amount to add a *finè frisson* of top end impact just where it was needed. The overall result was a tantalising zinginess to the top end that drew me in to every performance and held my attention well.

Lower down, the sound vibrational behaviour exhibited by the arm under measurement [see MEASURED PERFORMANCE] makes itself felt in terms of the warmth and feeling injected into the midband. There is no grey tonality here, instead the Arm Two/II injected the music with the full palette of tonal colours, gripping the performance and making sure everything that needs to be heard is. With Dylan Leblanc's 'If Time was for Wasting' from his 'Pauper's Field' LP, the vocals were truly exceptional, the arm capturing every tremor in Dylan's vocals and pulling his performance right out into the room. Equally, the soulful pedal steel guitar backing him seemed to have a superbly solid foundation within the soundstage, whereas it can sometimes drift off into the background to be left as something of an

this also, but with an underlying and slightly strained sense of "look at how far I'm spreading out your instruments" – the Audio Note achieved the same ends but with an overall sense of unruffled ease.

Of course, one thing that Regas are rightly well known for is their magnificently taut and detailed bass and for a new arm to come along and challenge the establishment, any failures here would be very serious. Fortunately the Audio Note scores another goal here with a low end that is fast, deep and expressive. A new vinyl copy of one of my bass torture tracks in the form of Jazzanova's 'Takes You Back' gave my Ferrograph loudspeakers' KEF B139s a hefty workout but with an abundance of tightness and musicality. The synthesiser bass was well-rounded and punchy with no sense of discomfort. Equally, a wander through bass guitars, double basses and some hefty tympani courtesy of 'Also Sprach Zarathustra' left me highly satisfied, particularly in the case of the latter track which came close to rattling ornaments from my shelves.

CONCLUSION

A brand new arm design is a risky thing in the current hi-fi world,

especially at a price point where many fellow contenders reside, albeit many with strong Rega heritage. However, Audio Note have done a superb job with the new Arm Two/II and it slots neatly into the market as if it has always belonged there. Its well thought-out design and superb build quality mate expertly with sonic cleanliness, dynamics and over-riding sense of clear musical intent. It offers performance that is difficult to fault at the price.

afterthought. Cueing up a favourite test track in the form of the Eagles' 'Long Road Out of Eden', the Arm Two/II showed that depth of soundstaging and the ability to spread images widely held no fears for it. I am so used to hearing this track on the reference system in my listening room that I know exactly where the backing piano should be in space terms – the very best setups I have used put it out along the corridor and almost outside my bathroom and the Audio Note had it firmly just before that where the cat's basket used to be, so I declare this a positive result indeed. The Arm Two/II offers a beautifully ordered soundstage that seems to place things effortlessly on a large scale. One or two arms I have heard achieve

VERDICT

Well designed and beautifully made, the new Audio Note Arm Two/II has a crisp, detailed and delightfully focused sound.

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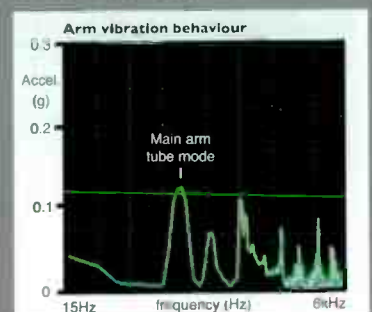
MEASURED PERFORMANCE

The Audionote arm appears to be very stiff, likely because it has a support collar forward of the hub. The main arm tube resonance, or first bending mode, lies at a high 300Hz as a result, and is accompanied by second and third order bending modes. All are well damped though so the arm is not especially lively and should give firm bass dynamics and wide stereo staging at lower frequencies. The headshell is much less lively than most and this suggests smooth, clean treble with no sign of 'character'.

All-in-all the Audionote arm measures well in terms of structural vibration. It isn't up with the best,

being a little less 'quiet' than a Rega, except at high frequencies where it is superior. MK

ARM VIBRATION





BREN 1 RECORD CLAMP £37 (+£7.82 P&P)

Last summer I reviewed one of the nicest record clamps I've come across of late, in the chunky shape of the Bren 1. Beautifully made on a CNC machine, it was just the right profile and weight for most applications, and worked very well. Well, it's now been slightly redesigned for 2011, with a fractionally wider 79mm base, and it's now not as high as before at

38mm. Weight changes from 414g to 391g. The result is that it's slightly easier to use, and not quite as tricky for some turntables with lower torque motors which laboured under the weight of the original. Cut from polished solid USA certified 6061-T6 aluminium as before, it's superbly finished and sports a slight 100 degree recess inside to aid centring on spindles; previously it was 50. The lower height, says maker Scott Dupree, means it will allow

clearance for all headshells. There's a gold edition at a price premium of a few pounds.

On my Sony PS-8750 and Marantz TT-1000 decks it fitted very well, and conferred a sense of quality. As before, it brought about a small but noticeable upgrade, giving a greater sense of ease and grip to the proceedings, snapping instruments into better focus on the soundstage and making things generally sound smoother and more relaxed, yet more musical. Its lighter weight means it now works better with suspended subchassis models such as an STD3055 I had to hand, no longer labouring its suspension springs and allowing me to hear the full benefits of superior record clamping. As with the last incarnation of the Bren 1, this is an excellent affordable vinyl accessory and comes heartily recommended. **DP**

[Contact: www.bren1recordclamp.com]

soundbites

COPULARE CORAL LIFTER £300 (SET OF 3)

File under luxury audiophile tweaks! These isolation feet are incredibly expensive compared to your average FoculPods or suchlike (which incidentally do a very good job), but are made in Germany from a rather exotic material, said to be a type of porous ceramic aluminium composite and extensively tested by engineers. The company claims its density to be 0.35kg/dm³ – in practice it's supposed to be just right to dissipate energy and thus minimise vibration transfer. Copulare makes this in a number of applications, such as subtables and equipment racks, but the 'Lifter' is purposed for sitting under the feet of turntables, CD players and amplifiers. Although I don't have any figures on the amount of weight they're designed to support, they were perfectly happy under my heavy (25kg) Sony PS-8750 direct drive turntable. And the feeling was

reciprocated, it seems, as the Sony was very happy with the Lifters under it!

There was quite an improvement to the sound; without them, at really high levels, I could detect the Sony actually feeding back into the system, making the bass overblown and bloated. This of course is the classic problem of a non-suspended subchassis turntable, but the Copulares very much alleviated this; the sound clicked into focus, the bass tightened up and lost its gloopy quality and the feedback problem was cured. At less ambitious volume levels the benefits were still apparent, making for a deeper soundstage, superior rhythmic flow and a sense of polish to

the treble – all in addition to the aforementioned bass benefits. A worthy upgrade then if you've got the money, but I do think it would have been nice to have got them as a pack of four as not all source components have three feet. **DP**

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The ViNL Cut

Musical Fidelity's M1 series continues to grow with the versatile new M1 ViNL. David Price tries out this new mid-price phono stage for size...

In a world that's been ruled by Compact Disc for the past twenty years, there's understandably been a lot less talk about the vagaries of vinyl.

The sense has spread – to the uninitiated at least – that source components are things you pull out of a box, plug in to your amplifier, whatever that may be, and they duly work perfectly – and that's your lot.

Well, of course if you're plugging in a modern CD player to a modern integrated amplifier, you'd have a right to expect the two to have the correct line level outputs and inputs. Indeed the worst thing you could expect is a subtle lack of 'synergy' between the two in their subjective performances, despite being the correct electrical match of course.

Vinyl though, just isn't like that – there's so much more to consider. Back in the days before CD, much was made in hi-fi magazines about tracking force, vertical tracking angle, bias compensation settings and cartridge compliance, for example, but another constant factor the intrepid turntable user needed to keep in mind was cartridge matching. Only on high end preamplifiers and integrated amplifiers was there the facility to dial in exactly the right load characteristics for your cartridge, and

don't forget there were no external phono stages back then!

Amazingly, when the phono stage did migrate off the preamplifier circuit board and into a box all of its own, relatively few phono stages had this facility; a large number ended up basically 'preset' for typical cartridge characteristics. Of course, this worked okay for typical cartridges, but not all. When electrically mismatched, thousands of pounds worth of moving coil can sound really rather average, if not downright bad.

Well, with Musical Fidelity's new £695 M1 ViNL, this isn't going to happen. The company have paid slavish attention to the issue of matching, with separate discrete MM and MC inputs, with independently adjustable input capacitance, input resistance and even a switchable RIAA/IEC equalisation curve. So whether you've got a 1977 Supex SD900 Super moving coil or a 2011 Ortofon 2M Bronze moving magnet, you'll be able to match it correctly. At the other side of the circuit, so to speak, lies a choice of single ended (RCA) and balanced (XLR) outputs.

Musical Fidelity describe the M1 ViNL as having "extraordinary input flexibility" and for once this isn't mere manufacturer hyperbole. The unit has 47k or (more unusual) 68k

input impedance, plus seven different input capacitance settings – 50pF, 100pF, 150pF, 200pF, 250pF, 300pF, 350pF and 400pF. This should load almost any moving magnet cartridge correctly. The moving coil stage has input resistance switching spanning 10, 18, 25, 50, 100, 200, 400, 800, 1,600 and 47k Ohms. These can all be switched while the record is playing, and because the unit has separate MM and MC RCA phono inputs on the back, you can of course connect two turntables (providing one is running MM and the other MC) or indeed two arms on one turntable (if you're lucky enough to have such an arrangement).

The manufacturer says the circuitry is "based around" Musical Fidelity's high end kW phono stage but with modern technology. It's an op-amp based design employing what are said to be "the highest quality available" ultra low noise instrumentation amplifiers. Unlike many rival designs at the price, the M1 ViNL has an onboard switched mode transformer rather than a 'wall wart'.

The case is as per all other M1 series components, which means a high standard of finish on its 220x100x300mm aluminium casework, and a choice of black or silver finishes. A wide backlit LC

display shows the input selected and the appropriate loading characteristics, while the row of buttons beneath toggle between the respective inputs, settings and IEC/RIAA curves.

SOUND QUALITY

Having spent more time with Audio Research's £3,300 PH6 tube/transistor phono stage than is probably good for me of late, I'll be honest and admit that I wasn't relishing moving to the rather modestly priced chip based Musical Fidelity. I'm not against op-amp phono stages *per se*, but a higher percentage of them than you'd want to tend to sound rather mechanical and matter of fact. The M1 ViNL wasn't quite as I'd expected, however – firstly it sounded more 'expensive' than its price suggests, and secondly it sounded less 'chippy' than anticipated. In short, here's a very couth, refined design that's also enjoyably musical.

For example, I've been obsessed with the sound of Daryl Hall and John Oates' 'I Can't Go For That' for the past couple of weeks; I can't get the tune out of my head. Via the Audio Research PH6 my scratchy old pressing of 'Private Eyes' was the hi-fi equivalent of sipping champagne in silk pyjamas – all embracing, cossetting luxury. What horrors would this little solid-stater hold, I wondered? Well, none actually. On the 'RIAA' setting with no warp filter switched in and via XLR outputs, the Musical Fidelity gave surprisingly little away to the Audio Research, aside from a slight lack of depth perspective, a fraction more surface noise and a slightly less beguiling rhythmic flow.

If there's a phono stage family sound it's closest to sonically, it's probably the Whest range, although the M1 ViNL is a little richer and more opulent tonally, lacking their rigorously clinical midband, and adding just a fraction more charm in the way it deals with gentle rhythms and subtle accents. Thomas Dolby's 'Flying North' was a delight, the M1 capturing the chiming lead synth lines and that wonderful arpeggiated bass sequence, powering the song along. At the same time, the soundstage was commendably wide, full of carefully etched detail and a good deal of atmosphere; indeed it proved spookily similar in its overall personality to the M1 DAC in this respect.

Bass was robust in body and rhythmic, but not overpowering; indeed it was just right as it didn't overpower proceedings. That midband was clean and very detailed,

yet musically communicative where many mid price designs aren't. It only really gave its modest price point away in the treble, which was perfectly nice but had the slightest touch of solid-stage 'edge' to it. Ditto Thomas's voice which was smooth and intricate, but his higher registers had that 'well lit' quality about them that characterises integrated solid-state.

Moving to some classic rock in the shape of Genesis's epic 'The Lamb Lies Down on Broadway', and the Musical Fidelity proved its ability to excavate large tracts of low level instrumental detail with calmness and composure. Phil Collins' superb drum kit work came to fore, counterpointing Peter Gabriel's laconic vocals; the little phono stage tracked the song's dynamic changes faithfully, hung on in there brilliantly during the complex passages and never forgot how to carry those wonderful feathery ride cymbals. Tonally it remained very true, choosing not to embellish the rather thin, anaemic recording which – for some odd reason – seemed the very epitome of audiophile recording when I was

don't think it's possible to express reservations at its price. It's just a little two dimensional, with the sound tending to cluster around the plane of the speakers more than with, say ANT Audio's slightly more expensive Kora 3T.

It's also just a little more rhythmically 'rigid' than the latter, lacking its sheer musical exuberance, and its silken high treble. Finally, I did find its case just a tiny bit too resonant; I realise it's built for a certain price point but its sound can be further improved slightly by a little strategically placed Sorbothane damping to the side panels if you're that way inclined!

CONCLUSION

As an all round, do-everything design with fine sound and great flexibility, Musical Fidelity's M1 ViNL makes a strong case for itself. I can think of few that offer so many matching options, allied to such accessibility (no DIP switches or circuitboard jumpers here!), and such an all round mature sound at the price. As such, it's well worth an audition.

REFERENCE SYSTEM
 Sony PS-8750 turntable
 Ortofon Winfeld MC cartridge
 Lyra Dorian MC cartridge
 Rega R100 MM cartridge
 Audio Research PH6 phono stage
 Musical Fidelity AMS35i amplifier
 Yamaha NS1000M loudspeakers



fifteen years old and listening to it on my dad's Garrard SP25!

Not having a wealth of cartridges to play with, I can merely confirm that I was able to dial in the right matching for my Lyra and Ortofon MCs, and Rega (nee Supex) MM. The M1 ViNL very accurately signposted the respective differences between them, just as it did the wildly differing sound from various LPs. Whether people will find its matching options useful or not depends, I suspect on their habits, but certainly those with a range of pickups will find it a real boon.

My only criticisms of the M1 ViNL come in absolute terms; I

VERDICT ●●●●●
 Exceptionally flexible, well engineered mid-price phono stage with fine sound.

MUSICAL FIDELITY
M1 VINL £695
 Musical Fidelity
 +44 (0)20 8900 2866
 www.musicalfidelity.com

- FOR**
- spacious, airy treble
 - midband insight
 - overall flexibility
 - build, finish

- AGAINST**
- nothing at the price

MEASURED PERFORMANCE

Our response analysis shows the M1 ViNL phono stage is accurate across the audio band. It has a smidgen of treble lift but not as much as many stages and should as a result sound tonally balanced. There's full gain down to 3Hz without 'IEC' selected; selecting the latter brings in a warp filter that rolls off gain below 33Hz, useful to stop cone flap when tracking warped LPs.

Gain values are low using the phono socket (unbalanced) outputs, measuring x94 (40dB) with Moving Magnet cartridges and just x500 (54dB) with Moving Coils. The latter is only useful with high-ish output MCs; most MC preamps have at least x1000 gain and some x3000. However, output from the balanced XLR sockets was double that from the phono sockets, and output overload ceiling double too, measuring a high 20V. So the M1 ViNL needs to be used with XLR connection, not phono, and this limits its usefulness as XLR line inputs are still uncommon.

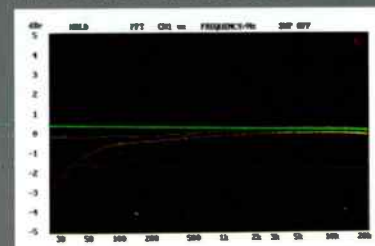
Noise levels were low, if not super low, MC measuring 0.1µV equivalent

input noise (e.i.n.) IEC A Weighted. Input transformers give around 0.08µV, or -2dB less, so the M1 ViNL is up with the best.

The M1 ViNL measured well in all areas but gain values are low unless the XLR outputs are used. NK

Disc	
Frequency response	3Hz-56kHz
Separation	68dB
Noise (e.i.n. MC, MM)	0.1/ 1.2µV
Distortion	0.002%
Gain	x94(40dB) – x 510(54dB)
Overload	10V out (20V XLR)

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Linn Majik Isobarik - Naim Ovator S400

The new Linn Majik Isobarik and Naim Ovator S400 are both unique designs that deliver a very different yet thrilling performance. Both are available for audition in our listening rooms or your own home (call for details). Part exchange and Interest Free finance options available.





FURUTECH DESTAT II £400

Most of us will be familiar with the slight crackle of static electricity as they remove a vinyl record from the plastic inner sleeve, and many will have reached for the Zerostat pistol to cure it. Whilst it goes some way to solving the problem it does not solve it entirely, so I was curious to see what the DeStat II from

Japanese company Furutech could do that was better. It's a teardrop shaped device that has a fan inside which blows a balanced flow of ions across the item being treated. The combination of both negative and positive ions is claimed to completely remove any static charge from LPs, digital media, as well as cables, sockets and equipment. It is powered by rechargeable batteries and a wall wart type charger is supplied.

Operation is simple. A sliding switch underneath is set for either ten or twenty seconds of treatment, the green button on the top is pressed and the unit is held about 10cm from the item being treated. Having used a Zerostat for years, mostly to keep dust away, but with little noticeable sonic benefit, I was

amazed at the difference in sound from a record after treatment by the DeStat II. The background was obviously quieter and darker, and a lot of what I thought was surface noise *completely* disappeared along with distortions that I had always assumed were due to wear and tear. The music felt more alive and in the room, bass seeming to have more body and depth, better midrange separation, and a smoother extended treble. I liken it to cleaning a particularly grubby pair of glasses and then being able to see textures and detail that was previously obscured. The effect was similar, although less pronounced on CDs, and DVDs acquired better resolution too. At £400 this product is not cheap but it is very effective and a ten second blast of ions has now become a standard part of my music playing routine. Definitely recommended. **TB**

[Contact: www.soundfoundations.co.uk]

soundbites



AGORA ACOUSTICS MAGICHEXA £60/4

These isolation supports look like hockey pucks but are described as a viscoelastic polymer that not only isolate the units sitting on them but also act as shock absorbers and damping modules. Featuring, it says here 'aerodynamic honeycomb

configuration', I have yet to throw one through a window to find out. Trying the MagicHexas placed under each and every component in my hi-fi chain sparked an improvement, cleaning up the sound over all frequencies, even though they were already sitting upon the excellent Atacama Equinox isolation shelving. The sonic improvement was not startling in these circumstances but was certainly noticeable.

I then placed two sets of the MagicHexas underneath my Icon 845 monoblock power amplifiers. Far too large to fit on my current isolation shelving, both of the Icon units have been slumped on my suspended wooden flooring for some time. Putting all eight MagicHexas under both of the amps proved a dramatic move because I suddenly realised that I have been living a lie all of this time. Microphony had been muddying the bass, squelching it, turning it a fuzzy colour and generally making the aural output from these amplifiers indistinct. With the MagicHexas in place, the bass emerged as if from the gym: lean, strong, vibrant, with a cleaner punch and sweaty armpits

(not too sure about the latter, however). Upper mids where also startling because, even with a lot of musical activity occurring, you could easily recognise more individual elements while each of those elements displayed greater dynamic impact.

It was the sheer quantity of new information that was now reaching my ears, for the very first time, that was so impressive, lifting the MagicHexas into the category of a major sonic upgrade. **PR**

[Contact: +44 (0)1923 352479, www.angelsoundaudio.co.uk]



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Belbroughton
Worcestershire
DY9 9TD

t. 01562 731100
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living Control Music Box 3 BNIB	2887	1499
living Control Room Box4 BNIB	1712	999
Mark Levinson No39 CD/Processor S/H	4999	1699
Mark Levinson No37 Transport S/H	N/A	1499
Mark Levinson No 360s DAC S/H	N/A	1999
Primare CD30.2 CD player S/H	1500	699
Quad CD67 RARE S/H	N/A	549
Wadia 170i Transport BNIB iPod dock	499	349
Analogue		
Bel canto Phono VB S/H	1299	995
Heed Audio Quasar MM/MC 2 box Phono stage x-demo	740	499
Heed Audio Questar MM Phono stage BNIB	300	219
Kuzma Stabi S/ Stogi S double arm version Xdemo	2795	1499
Kuzma Stogi Tonearm x-demo	1390	699
Mark Levinson No320s Phono Module x-demo	995	499
Notts Analogue ACE spacedeck/SME IV 6 months old S/H	3600	2450
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Roksan TMS/Atremiz/DS5 Turntable S/H	N/A	2250
Well Tempered lab Amadeus BNIB	2195	1899
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Krell KAV250p preamplifier S/H	2398	995
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Audio Note Soro Line SE S/H	3850	2199
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Bel canto S300 S/H	2000	995
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Graaf GM100 Power amplifier re-valved S/H	5999	2299
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Spectral DMA150 amplifier S/H	10999	6500
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Avi Neutron Cherry S/H	N/A	325
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Leider Silver Speaker cable 11m bi wired S/H	N/A	999
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Nordost Heimdall 2x3.5m Speaker cable S/H	1500	699
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Spectral Mi-330 UL2 1m BNIB	800	399
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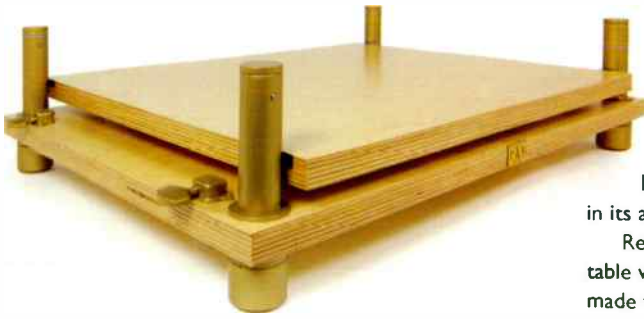
Magnum Dynalab FTR remote/Preset Tuner for Etude S/H	395	179
Naim Audio NAT O1 Silver bumper FM Tuner S/H	N/A	950
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PAB ANTI-VIBRATION PLATFORM £265 UPWARDS

This isolation platform consists of a base shelf which holds four posts that serves to suspend a second shelf above it, held in place by nylon cord and 'tensioners': four screw knobs that preserve the gap between the two shelves. I reviewed the standard version but a larger, heavier Special Edition (SE) version can also be purchased. For comparative purposes, I began the tests by playing a compressed chart CD via my Icon Audio X-1 CD player on a basic, light table, sitting on a suspended wooden floor. Bass was plump, producing a rhythm like a sinking soufflé, while

upper mids were sharp and forward, treble was rasping and the soundstage lazy and flabby in its arrangement.

Replacing the table with the PAB made vocals clearer, more precise and emotional with a

dramatic reduction in brightness. Bass was appreciably tighter while offering more personality. Soundstaging was also tidier which allowed subtle harmonic vocals to emerge while layered synths now had greater presence. In fact, after a few minutes, the X-1 settled into the platform and each of these facets further improved. Comparing the PAB with my reference Atacama Equinox isolation shelving, the PAB had the edge in terms of clarity and transparency. Replay was a touch smoother while compression frequencies were reduced. This meant that bass exhibited slightly more

control and heft via the PAB while vocals appeared calmer and richer in tone.

Changing tack, I moved to vinyl but not in the way you might expect. Instead of shifting to the turntable, I decided to see how effective the PAB could be, so I sat my two-box, Icon Audio PS2 phono amp on top of the PAB which, in turn, sat on top of an Equinox shelf. The combination improved matters further than the PS2 sitting directly on the Equinox, enhancing the stereo image and further focusing the soundstage, giving it more structure and balance. In addition, extra distortion was taken out of the hi-fi chain so that greater degrees of instrumental nuance could be heard over all frequencies while vocals and organic instruments were tonally more believable. It's a lot of cash for one isolation shelf but the performance response is unquestionable; this shows the importance of fighting distortion and microphony in the hi-fi chain. **PR**

[Contact: +44 (0)114284 8219, www.fidelityart.co.uk]

soundbites

RUSS ANDREWS CLARITY -4 (£450), -8 (£800), -16 (£1,500)

First used in the military, the Clarity system is not, despite appearances, a mains conditioner or a shunt filter. It actually produces a field of its own which is designed to neutralise and cancel out the 50Hz field produced by your mains supply, effectively reducing a layer of distortion. Arriving as a switchless box with a cable, you plug it in and that's it. Where you plug each Clarity in matters, which demands a measure of experimentation. As does the orientation of the box itself...

Testing the Clarity-4, the most obvious improvement was not the sound quality *per se* but the organisational aspect of the output. The stereo image, for example, was rock solid. I played a couple of vinyl albums with a mushy central image. The Clarity-4 fixed them both dead centre which was both startling and welcome. The soundstage also enjoyed clarification on who stood where and why. It was as if the Clarity-4 was saying, "You stand there.

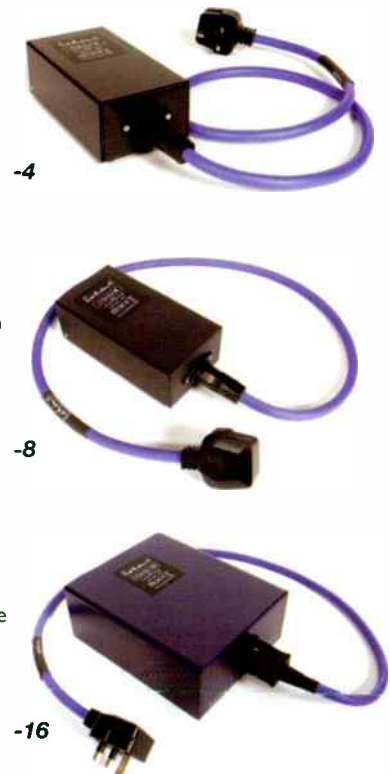
No, no... there!" Actual improvements in sound were subtle but those improvements did exist. Hence, vocals held a touch more confidence, were smoother while bass featured more structure.

The Clarity-8 trod the same pathway as the Clarity-4 but went that bit further. Bass provided more depth and heft, drums had more 'thwack' while upper midrange and treble appeared more spacious with more room for stringed instruments to manoeuvre. The Clarity-16 didn't follow the same slope of improvement pursued by the Clarity-4 and -8, but focused more on the musicality of the performance with a lighter, breezier playback. Bass was not necessarily any lower or stronger than the -8 but it did provide more personality. The best sound of all actually arose when all three units where plugged in simultaneously. One each were plugged into two different power blocks while a third was inserted directly into the wall, next to the main hi-fi chain plug. Here, the music sounded darker, as if it was surrounded by silence. Bass was

confident while upper midrange frequencies upped their game.

Adding the Russ Andrews Clarity boxes to your system will help the removal of distortion that will not necessarily improve the basic sound of your hi-fi but will allow your current system to run to its true potential, stripping away the clinging, extraneous rubbish and allowing you to hear the true voice of your hi-fi. They're expensive though so those with cheaper systems should look elsewhere for more cost-effective upgrades first. **PR**

[Contact: 0845 345 1550, www.russandrews.com]



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WANTED: SONY ST-SDB 900 QS FM/DAB tuner. Must be little used, boxed, perfect condition. Please call Peter on 0794 184 2605

GOLDRING G1042 cartridge, boxed, light use only, see World Standards. £105. Includes post & packaging. Optimum speaker stands, wood, glass, 430mm high, spikes, cost £170, £40, vgc. Tel: 01455 220 214 (Coventry)

SANSUI SP-10001, 3 way speakers, walnut cabinets. Vgc. Height: 620mm. Width: 360mm. Depth: 300mm. 8 ohm woofer 250mm, squawker 165mm, tweeter 25mm. £150. Post & packaging extra - heavy. Tel: 01455 220 214

IMMACULATE GRAAF WFB2 valve line pre, 3 phono sensitivities, 3 phono input impedances, 7 stereo inputs, 3 stereo output pairs, toroidal regulated, boxed and in beautiful condition. £500. Drives Melody valve monoblocks, 90w RMS, also mint, boxed, £2750 and indistinguishable from new. Wanted: Graaf GM20 OTL. Dunlavy or Coincidence floorstanders 15 ohm. W.H.Y.? Tel: Shalom 07951 553 091 (London)

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WANTED: ARCAM Solo Neo. Will buy outright or part exchange for my original Arcam Solo. Tel: 023 8073 8935

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ASSEMBLAGE (SONIC Frontiers) ST40 valve power amplifier. This is the Signature version with upgraded components/parts. 40w.p.c. from EL34 valves. Good condition. Full working order. £105 ono. Buyer collects. Tel: 01759 373 133 (East Yorks)

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ROKSAN ATTESSA CD player, Roksan service June £238 (receipt) £575 ono. Marantz CD60 CD, £60. Pioneer PL12D turntable £40. Akai CD93 CD, £300. Denon 2801 A/V amp, £175. Tel: 01708 457 691

MOTH 30 Monoblocks, mint condition, serviced, very low use, £295 ovno. Leak Stereofetic tuner, excellent condition, £60 ono. Denon DCD 920 CD player, excellent condition, superb sounding device, £55. Tel: 0161 865 9607

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PRO-AC FUTURE One, mint condition, £1500. Krell Kav 250, £500. Meridian 505 mono power amps, £600. Meridian 501 control unit with table top controller. All excellent condition. Buyer collects. Tel: 07795 066 226

MUSICAL FIDELITY LPS phono-stage, £50. Sony tuner E-S top of the range, £50. Denon 50w amp, remote, £50. 2x 8.3m lengths Van Hul MC 102 Mk3 interconnect cables. Tel: 01268 732 934 (Essex)

MARANTZ CD6002 CD player, mint condition, perfect working order. Three years old with remote control. Excellent sound quality. For sale at £150. Tel: 02476 467 679 or Email: johnclements45@sky.com

BRILLIANCE HI-FI interconnects. 'Agility' 1m pure silver. New generation WBT plugs. Unwanted prize. Will require burning in. Would cost new £700. Accept £280. Tel: 07854 266 620

AUDIO SYNTHESIS Passion passive preamp. Four inputs. Total Vishay silver WBT. Feb 1997 Serial Number 33717X. £295. Also Sony PCM F1 digital audio processor, £395. Both items boxed. Tel: 02392 453 382

WANTED: GOOD price paid. 1960 Tripletone stereo amplifier and matching separate pre-amp 8+8 Series 3. Tel: Brian 01955 604 827

MARANTZ PM 6003 integrated amplifier and Marantz CD 6003 CD player. Both in excellent condition. £300 the pair. Tel: 01865 862 500 (Oxford)

MERIDIAN ACTIVE loudspeakers with stands. Rosewood finish in pristine condition. £300 pair. Buyer collects. Tel: 01733 571 139 (Peterborough)

ROKSAN RADIUS 5 turntable for sale with Origin Live RB600 arm and Goldring 1022 cartridge. Clear acrylic version. £800. Exposure 2010s CD player for sale. £230. Tel: Andy 01484 427 426

WANTED: S.M.E. 3009 Series III, with or without detachable arm. Tel: 01706 641 998

DENON 2800 black DVD + remote £100 (£750). Denon TU260LII '5 stars' £40. Behringer A500 power amp + volume controls £120. Sony Super Audio CD DVPNS705V + remote £100. Linn Basik turntable, black, complete £299. Yamaha A200 dark cherry floorstanders £160. Mana isolation platform £160. Tel: 07765 264 381 (Essex)

NAIM NAP 200 mint condition boxed bought X dem this year. 995.00 Origin Live Aura upgraded power supply New platter belt Origin Live arm incognito arm cable Ortofon MC 30 Mint 795.00 0772 962 0621

FOCAL MEZZO Utopia Loudspeakers. Cherry and black piano finish. As new, boxed, manuals. Light use, (£8700), accept £3500. Currently in Naim system, can demonstrate - see review <http://www.stereophile.com/floorloudspeakers/953/index.html> Tel: 07747620856 (London)

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CYRUS 8-POWER £400, PSX-R £280. Bought new Feb 2010. 1 Owner. Brushed black. Mint condition. Upgrade forces sale. Collect from Hertfordshire, or UK postage at extra cost. Contact grant-h74@hotmail.co.uk

TANNOY DIMENSION 12 loudspeakers in Cherry excellent condition fantastic sound quality many rave reviews demo a must original packaging available contact Alan 01603403162 alan.howard7@gmail.com

SUMO ATHENA pre-amp for sale .mm/mc 2 tape dubbing switch 2xoutput for bi amp. amp is mint/boxed with instructions .an 80's yank classic for £250.00 ono buyer to collect please tel dave on 01204 887195 (lancs)

ADVANCE ACOUSTIC - two MAA1000 monoblock and one MPP1000 preamp, immaculate condition cost £7000 new, will split amps £995 each, pre £695. Top end equipment, beautiful sound, great design looks. 07776 258242.

THIEL SCS4 LOUDSPEAKERS year old still 9 years guarantee left dark cherry 2 way system stand mount. £1800 New. Imp 4ohms. Only £750ono Shipping at cost. Call 07881813118.

WANTED: TOP quality Hi Fi separates and complete systems, Naim, Linn, Cyrus, Meridian, Arcam etc, fast, friendly response and willing to travel/pay cash Please call me on 0781 5892458

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B+W ASW4000 THX Subwoofer finished in satin black with 15" Rohacell driver and 450 watt amp. This sub is not for the faint hearted, big at 80 kg with an even bigger sound. Very rare chance, steal at £600. 07847501865

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LOWTHER PAIR of Acoustas 115, new ex3 drivers, £650. Tagmclaren 60watt amp, £250. Sugden A28 mk11 amp £100. Marantz CD63 Ki Sig cd player £100. 07799637007 West Sussex.

JUNGSON MOON Harbour 2. Valve output CD player. Balanced and RCA connections. Luxury edition, black with mirror polished stainless front panel and wood alloy remote. Excellent - £200 Tel: 0116 2849087

TWO NAIM Hi-Caps, new style and mint condition. Offers over £400 each. Buyer collects in Dundee. Ph.07584661965 or email kevinkelly58@yahoo.co.uk

SUGDEN MASTERCLASS fully balanced remote control pre-amp for sale. Pristine condition, boxed, with manuals etc. £950. Phone 07795981500. London.

MARANTZ KI Pearl. Mint / Light use £2000 or very nearest offer. Contact details: Mobile 0787 571 9136 Email: Lesliegriffiths@fastmail.fm

PIONEER CD recorder PDR609 good condition with some blank disks and QED digital coax lead. Denon DRS-810 3 head cassette deck with remote good condition £75. 01702 420693 or john_thresher@yahoo.co.uk

CYRUS 8XPQX amplifier, black, light use after service, £1100. PSX-R power supply, black, £275. Cyrus 8SE CD player (2009 model), barely used, black, £700. 07884 002911 (Halifax). ishmael386-inet@yahoo.co.uk

HNE SYSTEMS High-end monitor-speaker Stands (pair, 60cms tall, 18x18cms top-plates). Black granite/ piano-lacquer finish. Immaculate photos available. (£700 new) £250 obo. Must collect (Heathrow area) Tel: 07789-877677 - Email: barig@pt.lu

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ROUGE AUDIO ST90 Amplifier RPP £2650, Sale £1095. New out box, a few hours use. High quality transparent power, includes upgrade Svetlana KT88's. Family require sale. 0208 653 0778 (London). johnkalli01@googlemail.com

SME 20/2 Precision Turntable with Series V tonearm. Immaculate condition. Can Email or text pictures. £3,775.00. ono .07827962740. Spalding, Lincolnshire.

STEEN DORSING SDI loudspeakers for sale late mk1 with upgraded crossover. 10" bass 4" midrange ribbon tweeter . 4foot tall with spikes black ash finish. immaculate condition lack of space forces sale . open to offers but buyer must collect due to size & lack of boxes tel phil on 01942 213155 (wigan) or e-mail p.dennis911@btinternet.com

TECHNICS SL1210 (Mk5) Turntable (Black) + SME M2-9 Arm + Shelter 501 (Mk2) Cartridge All as New /hardly used (original cost circa £2k) £1350 - Definitely No split. Tel 01892 530830 (Kent).

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WANTED: AIWA XKS-9000 cassette deck. Must be little used, boxed, perfect condition. Please call Peter on 0794 184 2605

WANTED: ARCAM Solo Neo. Will buy outright or part exchange for my original Arcam Solo. Tel: 023 8073 8935

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NATIONAL Audio Show 11



THE NATIONAL AUDIO SHOW is an event of International appeal, attracting manufacturers from across Europe and afar. It has put new life into the UK's Audio scene, which is still one of the most important consumer electronics markets in Europe. Support for the National Audio Show in 2010 was magnificent, growing significantly on 2009, and for 2011 the show will grow again because of the range of positive additions and attractions the organisers are making.

It can hardly be said that our economy is enjoying the best of times, but when the going gets tough, the tough get going and it's remarkable just how much support and encouragement the organisers have received despite these conditions. All shows go through highs and lows and the good ones survive mainly due to the support and forward vision of the trade they represent – and of course, you the visitor. With its superb location, unlimited free parking, courtesy buses if you don't want to use the car – with a saving of 20% if you apply for an e-ticket – this show promises to be on the calendar for a long time to come.

Audio, particularly high quality audio, will always be around, although its functionality may go through changes particularly with regards to storage and advancing technology. Audio in all its various forms has to be one of the most enduring Subjects for shows and events, not only here in the UK but worldwide. The organisers will continue in their campaign to enlighten all those that have yet to experience just how amazing high quality audio can be, extracting as it does every last breath from the original recording.

The National Audio Show is a unique annual event held at the same time in the UK each year. Occupying the whole of the prestigious Whittlebury Hall Complex

near Silverstone in Northants it attracts over 70 high quality exhibitors each year, together with thousands of visitors. You can both see and hear all the very latest in high quality audio technology, much of which can't be seen on the average high street. Demonstrations are held in individual high quality Suites plus the show has a huge trade hall.

The show is open to the public over the weekend of the 24/25 September, commencing at 10.00am both days, closing at 6.00pm on the Saturday and 5.00pm on the Sunday. Car parking is free and all on-site. A subsidised Courtesy Coach service runs regularly from Milton Keynes Mainline station direct to the venue on both days.

Admission costs remain virtually the same as 2010 and by downloading a ticket via the website there is a 20% saving. In partnership with a number of leading UK Media the show is in its 3rd year and continues to expand into developing audio technology, musical instruments, plus Vinyl and Digital recordings and of course all the latest accessories.

For further details and to download a money saving e-ticket go to www.chestergroup.org Uniquely all e-tickets are redeemed and paid for on the day, and there are no passwords required. For further information - contact Chester Group (Exhibitions) Limited. 01244 559033 or email Justin@chestergroup.org

This article was supplied by the show organisers.



Here's what we are planning to add and improve upon for 2011:

- Extended Free Parking and Opening Hours
- Golf Course, Leisure Club, Award Winning Spa on hand
- Over 60 Exhibitors already confirmed, many new to show
- More Clinics, Special Events and Product Launches, Competitions and Unique Day offers
- More Sponsored Rooms by the Organisers – including a unique Before and After Acoustic Treatment Dual Suite Demo
- Courtesy Bus service retained and improved from Milton Keynes with a later return journey

Many more things to do in the locality thus making this a unique weekend experience.

The move from Heathrow three years ago was not without its concerns but the organisers were adamant that a new, more exciting and accessible venue was absolutely vital in order that the show not only appealed to a wider range of visitors but was also held in a location and at a venue better suited to the status and quality of exhibits. Whittlebury Hall has achieved that and unless demand outstrips its ability to cope, that's where the show will continue.



NEXT MONTH



November's Hi-Fi World kicks off the season with a veritable harvest of hi-fi goodies, spanning a wide range of types and prices. From TEAC's affordable new direct digital iPod dock and Rega's RP3 turntable, to Deltec's new premium priced PDM-3 DAC and Conrad Johnson's high end CT3 preamplifier, there's something for everyone. Here's just some of what we hope to bring you:

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SONY BDP-S480 BLU-RAY PLAYER
TEAC DS-H01 IPOD TRANSPORT
BEL CANTO CD-2 CD PLAYER
REGA RP3 TURNTABLE
B&W C5 EARPHONES

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UFO LIGHTS OUT BACK ON BLACK

"this excellent reissue shows enthusiasm, fervour and basic passion for music..."

The difference between journeymen footballers and the stars that earn the top dollar transfer fees and wages, tends to be centred upon the specific tenets of hard work, luck, talent and a creative expression sometimes termed as bravery. Where a player shows that he can do something unique, some aspect of footballing skill that his compatriot finds tough to perform...

Musicians are exactly the same. There are those that can fill the Albert Hall and others that struggle to fill the local pub. There are the one hit wonders, the two album 'here today, gone tomorrows' and the three album 'we split because of musical differences'.

And then there are the bands who are so good, they actually forge careers out of their craft. UFO is one such band, and 'Lights Out' is the statement of that fact. It is one of their few studio albums that successfully portrayed the band's magic. Its core, blues-based approach hit all the right notes and is awash with sensitive, power ballads plus dynamic rockers.

For 'Lights Out', all the principal heavy rock ingredients are included, but here they are done so with the skill of a Michelin-starred chef. The track, 'Love To Love' is a perfect example of this, with its almost over-the-top introduction, which then blends into an almost elegiac song that works in actuality, even if it shouldn't in theory.

The material is strong and so are the individual performances with Phil

Mogg's lead vocals being particularly muscular while Michael Schenker's guitar abilities are both animated and emotional. More than this however, is the fact that 'Lights Out' is *not* a broad rock classic. It's a lost gem, a treasure that all rock fans should get to know. This is the sound of a band who are tight, cohesive and who play with a carefree freedom to allow their talents to flow in a relaxing, untroubled manner.

Back On Black (www.backonblack.com) has done justice to this album by releasing it on limited edition coloured vinyl with sturdy packaging, brilliant cover art and a standard of mastering that will warm the heart of the audiophile. In fact, to be fair, the label is going through a busy UFO period because it is releasing an array of LPs by the band, all on coloured vinyl. So far they include 'Phenomenon', 'Force It', 'No Heavy Petting', 'Obsession', 'No Place To Run', 'The Wild, The Willing and the Innocent', 'Mechanix', 'Making Contact' and 'Misdemeanour'...

According to label boss Steve Beatty, UFO was brought to his attention when, "...I bought a copy of 'Strangers In The Night' and I thought that, well, it's covered in cracks and pops and sounds bad, I think I need a better copy of this. That's when I had the idea for the reissue series. It's also because I personally would like to have a set of UFO on proper vinyl. You see, not everyone wants to buy second-hand. Not everyone

wants to buy a torn and battered copy of a record which sounds like sandpaper or buy a second-hand copy of 'Strangers In the Night' for fifty quid. Why should you? You can pay twenty quid and get mine! The whole concept of this label is not to be an 'up your own arse' outfit. The idea is to just produce records which are upgraded and updated versions of the originals. If you also get some extra tracks that you didn't get on the original album, then all the better."

And that holds true for every release in this series. For 'Lights Out' that means receiving an extra LP with four extended live versions of the original tracks 'Lights Out', 'Gettin' Ready', 'Love To Love' and 'Try Me'.

Beatty is a lucky man. He treats his label like a boy's toy, a tool for his hobby – music. So does he just sit there, on his sofa and think, 'Hmmm, I'd love a vinyl version of whatever record' and then pick up the phone? "Hell yes! That's the great thing about doing this thing. If you're a record fan, what's nicer than to think, 'I'd really like a good copy of that' and then think, 'let's make this funky funky brilliant.' Can you think of a better job?"

I can't – and this excellent reissue shows that enthusiasm, the fervour and basic passion for music that he loves. It's as if Beatty has produced his own music collection which he's decided to share with the world. **PR**

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