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12 PAGES OF LETTERS - THE BEST WINS A PAIR OF KEF iQ30 LOUDSPEAKERS! (UK ONLY)

EXCEPTIONAL SOUND SHOULD BE PART OF THE FURNITURE

"Wonderfully articulate speakers"

Sonus Faber Liuto Monitor – *BBC Music* (September 2009),

"There is a graceful musicality about this speaker that marks it out as special"

Sonus Faber Liuto Monitor – *Hi-Fi Choice* (August 2009)

For such bijou speakers, the Toy's audio performance is immense"

Sonus Faber Toy – *BBC Music, Best Loudspeaker of 2008*

Sonus Faber has always believed that owning a pair of speakers should be a total aesthetic experience. Technology honed over decades to turn every piece of music into a special auditory occasion is part of the story. But equally important is the meticulous styling and natural materials chosen for the cabinets which house the drivers. Inspired by the craftsmanship of the original makers of classical instruments such as the lute and the violin, Sonus Faber's blend of fine woods and leather adds up to the last word in aspirational Italian elegance.

And yet, thanks to Sonus Faber's latest creations, such luxury costs less than you might think. The new Liuto loudspeaker collection reflects the smooth contours and classic joinery of the lute, delivering a sprightly musicality, as sensitive, rich and graceful to listen to as it is to look at. The lute shape is not just visually pleasing; its curves serve to stiffen the cabinet and dampen unwanted resonance, whilst the leather cladding stretched across the front baffle enhances dispersion. The result is a soaring, soulful sound.

Sitting alongside the Liuto range, Sonus Faber's Toy series sets out to destroy the notion that small speakers can't deliver wonderfully engaging sound. The warmth and responsiveness of their performance would challenge speakers three times their size, whilst never losing the sense of the fun and joy that the name evokes. Clad from head to toe in barred leather these lovingly designed speakers are set to become style icons for the musical fashionista whilst simultaneously satisfying the audiophile.

Both collections have been specially selected for you by Absolute Sounds, the UK's leading importer and distributor of the finest, most desirable audio equipment the world has to offer.



The Liuto collection



The Toy collection

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welcome

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It's funny how your ears get attuned to things. My formative hi-fi years were spent listening to conventional box loudspeakers. Very good ones, as it happens, but even they didn't prepare me for when I heard my first pair of 'panels'.

After years of living with moving coil woofers and tweeters, in wooden cabinets full of woolly wadding, the sheer *oddness* of auditioning Quad ESL-57 electrostatics was (and still is) hard to put in to words. It was music jim,

but not as I knew it!

In some ways, it was better. Everything came from a single 'point source' and had a lovely cohesion and delicate detail. Still, there was a downside; I wasn't overly impressed with that mild mannered and meek bass, even if it did go lower than it seemed, and the treble wasn't the world's most finely etched either...

Then I went back to my standard speakers, and *all* I could hear was 'boof-boof-boof!' Bass that I'd thought to be tight seemed as wobbly as a waterbed and, although powerful, was only apparently coming out at one frequency. I had been 'panelled'!

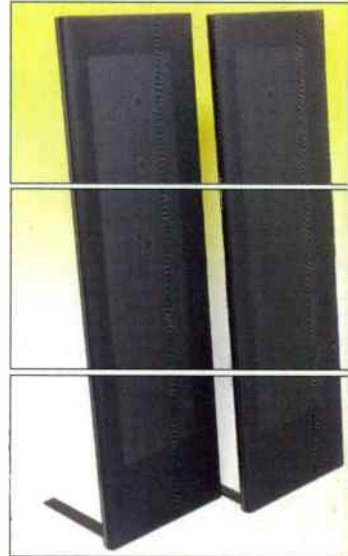
So it's true that once you've taken a walk on the loudspeaker wild side, it's hard to go back. Rather like Earl Grey compared to builder's tea, or fine Japanese sashimi against canned tuna chunks, one instinctively knows when something is right, and when the other is wrong...

Hearing the Magneplanar MGI2s [p12] reminded me of this; here's a £1,900 pair of panel speakers that - whilst obviously not brilliant all round - do the basics better than almost any box. They're fast, delicate, expansive, natural and engaging - although you'll yearn for more physicality and heft.

The art of hi-fi is to find out what floats your boat. Expose yourself to as much variety as you can; in the long run, just settling with one type of speaker or amp or source won't take you where you want to go. The Maggies throw this into sharp relief; even if you don't buy them you'll learn more about your existing system.

Then again, they might just satiate a desire in you to be different, ushering in the wonderful world of Quads, Martin Logans, Eminent, Apogees, Kingsounds and of course bigger and better Magneplanars for the rest of your life. You'll kick yourself if you don't at least hear for yourself the difference a panel speaker makes!

David Price, editor



testing

To ensure the utmost 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.



hi-fi world

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verdicts

- OUTSTANDING
- EXCELLENT
- GOOD
- MIEDIOCRE
- POOR
- £ VALUE

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

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news



Mission MX range

THE M-X FACTOR

Mission is back with a brand new range of budget loudspeakers. The MX Series is described as "an all-new range of speakers that exemplifies the company's longstanding reputation for delivering excellent sound at affordable price points". The range consists of five stereo models: the MX-1 (£149.95 per pair) and MX-2 (£199.95) are standmount speakers, while the MX-3 (£349.95), MX-4 (£499.95) and MX-5 (£599.95) are floorstanders. In addition, there are two dedicated centre channel speakers for home cinema use, the MX-C1 (£129.95) and MX-C2 (£179.95), plus a compact multipurpose model called the MX-S (£119.95 per pair), which can be wall, shelf or standmounted and also is ideal for surround-sound duties. New Mission active subwoofers will join the line-up soon, the company says.

Every model is designed to work well when positioned close to a wall, and engineered to deliver a balanced sound both on and off-axis, aided by an integrated treble waveguide that optimises dispersion. Bass and midrange drive units use cones made from "an advanced fibre formulation", for strength and rigidity. These drivers hand over to Mission's classic 25mm silk dome tweeter via a "sophisticated" crossover network. In traditional Mission style, the standmount models have the tweeter positioned below the mid/bass drive unit, in order to aid time alignment. Similarly, the two-way MX-3 and MX-4 floorstanders position the tweeter between twin mid/bass units in a D'Appolito configuration, while the MX-5 is a true three-way design, with the tweeter sited between a single midrange unit and two bass drivers.

The MX Series is the first Mission range to be designed from the ground up by Peter Comeau and his team since Peter was appointed as Director of Acoustic Design for IAG, Mission's parent company, in 2009. Peter previously designed speakers for the Mission brand between 1999 and 2005, his work encompassing award-winning designs such as the Mission 780 and 782. He explains that, "Mission's ethos has always focused upon bringing audiophile performance down to an affordable level, and the MX Series exemplifies this." For more details, call +44 (0)1480 447700 or click on www.mission.co.uk.



Mission MX-2



Mission MX-5



HISTORIC RESEARCH

US tube technologists Audio Research have just announced their vast new Reference Anniversary Preamplifier, described as "an extraordinary two-box preamp – the best Audio Research has ever made", developed to celebrate the company's fortieth anniversary. It will come in a limited production run that will "cease forever" on 31st December 2010. "Those lucky souls who invest in the piece will own a rare, bone fide high-end audio classic", the company says. They'll have to fork out £23,000 for the privilege, and this is only for a limited period before it rises to £24,000. As with all Audio Research products, the Reference Anniversary Preamplifier is distributed in the UK by Absolute Sounds (www.absolutesounds.com, +44 (0)20 8971 3909).

THREE'S COMPANY

Onkyo has three new multichannel receivers sporting FLAC-compatible audio streaming and iPod/iPhone album art display, the TX-NR1008 (£1,300), TX-NR808 (£1,000), and TX-NR708 (£800). Each is THX Select2 Plus-certified and offers the latest processing and features to support network audio streaming, with playback of FLAC music, iPhone/iPod-compatible USB input, multi-room set-ups and "fully immersive 3D-capable home cinema with multi-dimensional surround sound to match".

Each comes with seven of the latest HDMI 1.4a connections, guaranteeing compatibility with the new 3D video formats. HDMI is also the conduit for full 1080p video upscaling of all video inputs, regardless of native resolution, via Faroudja's acclaimed DCDi Cinema technology. Each of these network receivers includes a rear-panel Ethernet port that links it directly to the internet or to a home PC. Users can then play a wide range of audio file types including, for the first time, FLAC. Other supported formats include MP3, WMA, WMA Lossless, WAV, Ogg Vorbis, AAC, and LPCM. They can also access a range of different streaming Internet radio services provided by LastFM, vTuner, and Napster, the latter's music-on-demand subscription service offering UK owners a choice of more than 10 million tracks from 790,000 artists.

Audio processing on all three models includes the 'studio master-quality' of the industry's two leading lossless High Definition codecs, Dolby TrueHD and DTS-HD Master Audio. Complementing these are the expanded surround dimensions of Dolby Pro Logic IIz and Audyssey DSX. With the 7.2-channel TX-NR808 and TX-NR708, these extra channels replace the surround rear channels. With the 9.2-channel TX-NR1008, meanwhile, users have a host of different speaker configurations to choose from. Along with the two extra amplifier channels and one extra HDMI output, the TX-NR1008 offers an extra 192 kHz/24bit Burr Brown DAC to handle the heavy demands of multi-channel audio processing. Each of the three Onkyo models includes a full suite of Audyssey equalization and room-correction technologies. Other features include an iPhone/iPod-compatible front-side USB port that allows direct digital playback as well as on-screen display of album art. All three receivers carry the latest 'Made For iPod and iPhone' certification, and a PLL audio jitter-cleaning circuit technology, for cleaner sounding audio. The optional UP-DT1 DAB+ radio tuner module costs £130 and the UP-A1 iPhone/iPod dock £60. For more information, call +44 (0)1628 473350 or click on www.onkyo.co.uk.



GOOD KARMA

Chord Company's new ChameleonPlus contains four identical sets of silver-plated, multi-stranded, oxygen-free copper conductors, each insulated with Teflon. These are surrounded with a natural fibre wrap that minimises mechanically induced noise. A heavy-gauge foil shield then wraps around the conductors, and a further high-density shield is then applied, then a soft PVC jacket, before a final hard PVC outer jacket is fitted for protection. A single set of silver-plated, multi-stranded, oxygen free copper conductors insulated with Teflon carry the signal, and two sets of identical conductors make the signal return. Terminations are phono RCA and balanced XLR. For more details, call +44 (0)1980 625700 or click on www.chord.co.uk.



AN AUDIENCE WITH KEN

Marantz's Ken Ishiwata is demonstrating his company's high end Pearl, brand new Pearl Lite and 15 ranges at Zouch Audio, in Ashby de la Zouch, Leicestershire, over Friday 27th and Saturday 28th of August. There will be a chance to hear excellent hi-fi, meet staff from Marantz, Zouch and *Hi-Fi World*, and enjoy champagne and nibbles! This exclusive event is open to a total of 30 people each day, on an invitation-only basis. If you'd like to attend you should contact Mike Statham at Zouch Audio (email: mike@zouchaudio.co.uk or call +44 (0)1530 414128); invitations will be issued on a first come, first served basis!

However, if you find the event is all booked up, then *Hi-Fi World* can offer five lucky readers per day the chance to attend, and one out of each five will be given the chance to join Ken Ishiwata and others for an evening meal after the proceedings! If you'd like the chance to win, simply send your name, phone number and/or email address on a postcard to *Hi-Fi World*, marked 'An Audience with Ken', to our usual address. Also write clearly the day you'd like to attend (i.e. Friday or Saturday). Winners will be drawn out of a hat and notified by August 20th, and there will be another draw for the evening meal. Zouch Audio's full address is: Zouch Audio Ltd., The Old Coach House, Off South Street, Ashby de la Zouch, Leicestershire LE65 1BQ. It should be blast; see you there!



HIGH PRAISE

Fans of button-festooned fascias will be taken with Anthem's new Audio/Video Master 50v (AVM 50v) preamplifier/home cinema processor. The £5,999 Canadian behemoth sports a fully featured 7.1-channel audio and video processor with eight HDMI inputs, 'broadcast-quality' digital video processing, Dolby TrueHD and DTS-HD Master Audio, XLRs, highest quality 1080p upscaling, Anthem Room Correction, and two stereo zones. Two new dual-core audio Digital Signal Processing (DSP) engines, designed in-house by Anthem, offer a total of 800 million instructions per second (MIPS) of processing power to allow decoding of the new Dolby, DTS and other HD audio standards. In seeking to accommodate the most advanced input formats available, Anthem has upgraded its pulse-code modulation (PCM) input to support 7.1 channels at 24bits or 192kHz. Additional HDMI inputs have been added, bringing that total to eight, along with two parallel HDMI outputs, enabling the AVM 50v to be the true high-performance hub of any A/V set-up. For more details, contact Anthem AV Solutions at www.anthemavs.co.uk.

THE WOOD STRIPES

Albedo has just introduced its lavish new HL 3.4 loudspeaker. A vast high end three way transmission line design measuring 1,150x620x250mm and weighing in at 66kg, it uses a Helmholtz system for "managing high volume levels and keeping the detailed bass texture which transmission lines are properly renowned for". The elliptically shaped cabinet is made in a special high density damped sandwich that allows the system to neutralise vibrations. The large lateral panels are mould pressed and can be chosen in two wooden veneers, striped ebony and striped walnut. The two 6.5" ceramic woofers, single 5" ceramic midrange driver and 1.2" ceramic tweeter are by Accuton of Germany, and are linked to a "sophisticated crossover section that ensure the best linearity in amplitude and phase, for time-coherent reproduction". The crossover network has been developed with tube amplifiers in mind, so the impedance curve is really smooth and never goes under the real 4 ohm value. Sensitivity is claimed as 89dB and frequency response 35-20,000Hz. Price is 17,500 Euros. For details, click on www.albedoaudio.com.



MUSIC ON THE MOVE

Ideal for summer, the £49.99 Eton FR360 Solarlink by Nevada is described as a "state-of-the-art Multi-tasking Solar-Powered & Wind-up AM/FM/Shortwave Radio with Torch, Siren and Mobile Phone Charger", no less! It has four choices of power, and the splash-proof casing means its great for outdoor use and if you're cut off from mains power you can even charge your mobile. As well as local radio stations on AM/FM, the FR360 will pick up worldwide services via the shortwave bands. Power can come from the radio's hand-crank generator, using the sun's light and the solar panel, the internal rechargeable Ni-MH battery pack or with its AC Adapter.

The FR360 features AM/FM and Short-wave bands, a built-in flashlight, flashing red LED emergency light and siren as well as built-in USB mobile phone charging capabilities. The £59.99 Nevada Sinfonie II DAB, DMB-A, DAB+ & FM radio is said to be "a future-proof radio with the latest DAB, DAB+ and DMB-A system that works in the majority of countries offering Digital Radio and VHF FM radio". The Sinfonie II has been made especially easy to use with a clear illuminated display, an alarm clock and automatic time settings. It comes with an international UK/European mains adaptor, so it's perfect if you're travelling or want to take it abroad. For more details, click on www.nevadaradio.co.uk or call +44(0) 23 92 313090.



Nevada FR360BK



Nevada Sinfonie 11

BACK IN BLACK

Sonos has a new ZonePlayer in black; it's equipped with the same functionality as its white counterpart, including stereo pairing, multi-room music streaming, access to music



services including Last.fm, Deezer and Napster, as well as the ability to be controlled by the free controller for the iPhone and iPod Touch. The Black S5 gives users the ultimate choice in design for the multi-room music streaming system, the company says. Both the black and white Sonos ZonePlayer S5s will fit into any styled room in the house. For details click on www.sonos.co.uk.



DARK SIDE OF THE TUNE

The new Eclipse TD508II-UD (currently £679.99) is described as "a reference-class desktop speaker system" that uses technology taken from Eclipse TD's £5,000 TD712zMK2 studio monitors "to improve on the winning formula with refined acoustics at higher volumes, even better bass and greater dynamic range". The system comprises a quality stereo amplifier and two satellite speakers, which sport a highly engineered single driver with no crossover to smear the sound, no digital signal processing to destroy phase and timing, a non-resonant composite 'egg' cabinet with zinc alloy internal structure and stand. The amp is fitted with phono inputs and large gold-plated speaker terminals, while all audio inputs and outputs are gold plated. The driver is decoupled from the enclosure, mounted on a heavy internal stand to avoid transmission of energy to the cabinet. An anchor weight at the back of the driver further improves transient response and a rear exhaust port dissipates energy. For details call +44(0) 20 7328 4499 or click on www.eclipse-td.net.

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Bidirectional USB



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Meridian Sooloos iPad

iPADDING

Meridian has announced the new Meridian Sooloos iPad App, which is now available to download from the Apple App Store free of charge. It enables full control of a Meridian Sooloos Digital Media System, providing an enhanced user interface and new features when using an iPhone, iPod Touch or iPad as a wireless controller. The app also allows the user to take full advantage of Meridian's Sooloos Digital Media System to store, manage, browse and play the highest quality audio in multiple zones around the home. The Meridian Sooloos iPad App finds the Wi-Fi network, locates the Sooloos Digital Media System, and connects to it automatically with no configuration necessary. Once connected, the user can browse their music and control all aspects of playback in all system zones via their iPad. Features

include transport control, volume and mute controls, fullscreen cover art viewing for the current track, multiple zone playback control, browsing by artist, genre, release date, import date and tags, shuffle, loop and seek and more. Download the free Meridian Sooloos iPad App from: <http://itunes.apple.com/gb/app/sooloos/id348003289?mt=8>.

Naim Audio also has a new, fully customisable iPad application available for free

download via their NaimNet site. The NaimNet iPad app offers extensive control of the system via an attractive graphical interface. It is said to be very flexible and customisable; dealers or customers will be able to create graphical plans of their homes and/or listening rooms, for example, for more intuitive control of multi-room set-ups. The app will also originate and manage timed events across the whole home from something as simple as an alarm clock function to full control of lighting and heating at specific times. For more details, click on www.naimnet.com.



NaimNet iPad



ROK ON

The new Roksan Caspian M2 Series develops on the Caspian M-Series, whilst its DNA lies closer to the ultra-high-end Roksan Platinum Series, the company says. The new range sits above Caspian M-Series, more in line with the Platinum Series. There's a new fascia and stainless steel chassis, plus the multi-function Roksan LCD System Remote Control, first introduced with the K2 Series. The M2 integrated amplifier boasts 85/125 Watts per channel (into 8 or 4 Ohms respectively) via two "ultra low noise, low leakage" toroidal transformers; one for the master power supply, and a second for the independent, dual-output phono preamplifier. There are five line inputs and one tape in-out, one input is switchable to balanced XLR, and all connectors are gold plated. In addition, the M2 Integrated Amplifier boasts a number of useful security features; including LED position indicator on the volume control, a -20dB mute function, short circuit protection and power supply failure detection system. The M2 CD player boasts modern internal components, and a one-piece optimised motherboard, decoupled mechanism and dedicated transformer/power supplies for the analogue filters and the outputs. There's a 24bit, 192 kHz DAC, "individually selected" laser mechanism, gold-plated output ports, and a dedicated transformer and power supply for the analogue filters and output stage. The new range is available from September 2010. For more information call +44 (0)20 8900 6801 or click on www.roksan.co.uk.

Pioneer SE-CL23-DR



LEATHER ON WOOD

Pioneer GB have announced two new high quality earphones - the cherry wood SE-CL23 and the leather look SE-CL24. The former are available in dark red or white, and the latter in stylish brown or black leather. Both headphone designs are lightweight and feature an innovative slant nozzle with soft silicone padding to ensure excellent noise-isolation. Each design also comes with three sizes of soft, ergonomic tips which means you can choose the perfect size for your ears, guaranteeing a comfortable and secure fit. These headphones have been designed to offer high clarity and powerful bass, via their 9mm drivers with a claimed frequency response of 20Hz to 20kHz, with an impedance of 16Ω. They also have a gold-plated 3.5 mm stereo mini-plug and a silver-plated OFC wire inside a 1.2 m long Y-type cord. The leather headphones (SE-CL24) also come complete with a cord adjuster for additional convenience and comfort. For more information on the complete headphone range visit www.pioneer.co.uk.



Pioneer SE-CL24T

Magnetic Fields

Noel Keywood feels the pull from Magneplanar's Magneplanar MG12 panel loudspeakers...

A popular panel loudspeaker in America, Magneplanars – or Maggies as they're known affectionately – are rare in the UK. Yet the pernickety Quad ESL-57 lives on valiantly, so there is a place for a panel, as it were. Likely it just comes down to exposure, otherwise known as marketing, and Magneplanars are low on the UK horizon in this respect. But perhaps a budget entry model like the MG12, price £1,900, can change that?

We all know ribbon treble units sound good and are appearing on a wide variety of loudspeakers, like the Monitor Audio Platinum series for example. Well, the MG12 is a giant, full-range ribbon loudspeaker, so it should sound good – and it does. But with hi-fi loudspeakers you rarely get something for nothing and full range ribbons are not a picture of perfection. Although funnily, the MG12 turned out more perfect than it appeared, as I'll explain...

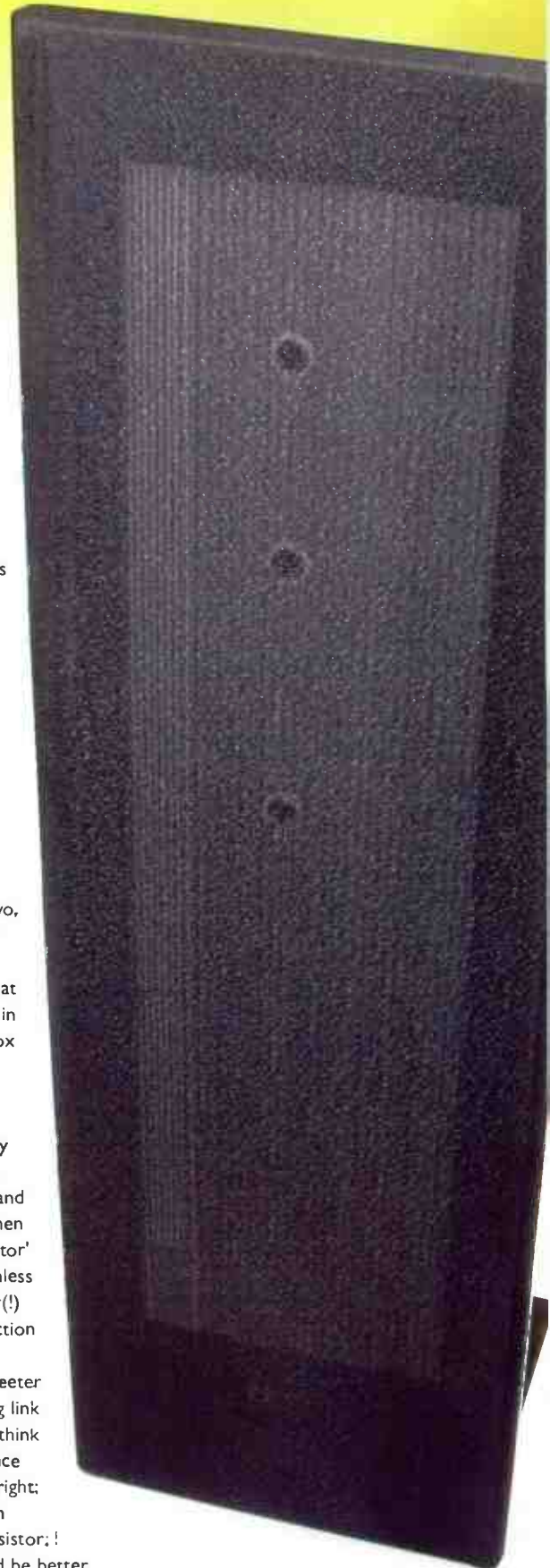
My first impression of the MG12 wasn't so good. It's a medium sized panel standing 133cms (52.5in) tall, 43cms (17in) wide and just 4cms (1.5in) deep, of lacklustre appearance with its grey cloth cover. There is no adornment, trims being in black, which makes for a sombre whole. Each panel is relatively light, weighing around 14kgs (30lbs), so they are easy to move, and it stands on the simplest of screw-on angled feet that flex wildly. There are no spikes and the panels bend back and forth on their feet if pushed, meaning stability of the sort pursued on other loudspeakers, including modern Quads and Martin Logans for

example, is non-existent. Magneplanar have paid absolutely no attention to this on the MG12, something we have to attribute to price.

Each MG12 comprises a large area bass panel and a vertical ribbon tweeter. However, bass unit output rolls down fast above 500Hz and the tweeter is making a big contribution from 400Hz upward. Crossover is at long wavelengths, making it smooth and free of phase interference. This also means that a violin comes in one part, not two, something that is obvious when listening to the MG12s, and a property that marks it out quite clearly in sonic terms from most box loudspeakers.

A small connection panel carries natty little 4mm sockets with hex key screw grips. These accept 4mm plugs or bare wire, and are able to clamp both. Then there's a tweeter 'attenuator' that isn't an attenuator unless you make it an attenuator(!) and a fast-blow 4A protection fuse.

The presence of a tweeter attenuator with a shorting link fitted suggests Magneplanar think owners may want to reduce treble level, and they are right; it is a little high. Magneplanar suggest using a 1 Ohm resistor; I suggest an inductor would be better,



"Quite unlike box loudspeakers, these open panels offer a large, cleanly wrought soundstage..."

loudspeakers in for 48 hours using pink noise and then a Monitor Audio De-Tox disc, and finished off with music.

SOUND QUALITY

As a long term user and fan of electrostatics I recognised the big, open panel sound of the MG12s straightaway. Measurement had shown a well worked out balance and that is what I heard immediately, a big expansive sound stage with height and depth, on which the plaintive solo violin in Korsakov's Scheherazade sat large and clear in front of me, nailed into position as it were, a free of phasiness. This strength of the MG12 gave images a sense of unequivocal physical structure that paints them with great clarity and precision; it also stimulated a lovely musical flow that was easier to appreciate than usual. As massed violins entered from across the loudspeaker's wide sound stage they too were solid, clear and forceful; it was as if a veil of confusion had lifted in contrast to what I am used to, making for a simpler sense of presentation.

A horn called out in 'The Story of the Kalander Prince', sounding richly brassy and strong; here's real timbral resolution, I thought. Another horn called back and the violins joined in, in a delightfully clear episode full of dynamic life, with the intent of the piece conveyed with an easy and direct manner that needed no mental interpretation.

Across the midband in particular, the MG12s have lush, dark clarity that cone loudspeakers lack, and a directness of delivery that allows every fine nuance of orchestral interpretation and of performance to become starkly clear. It was lovely stuff, quite amazing in truth, after what I am used to on an everyday basis. Any half decent panel seems to perform feats of musical magic out of reach of the box and no matter how good a box sounds, coming back to a loudspeaker as good as this is a rude shock. There's no doubt that the MG12 is quite a sonic proposition, one that makes its case clearly. It is not subtly different; it offers a night and day difference from the everyday.

Not bad for a £2k loudspeaker,

but there are issues, as always with panels. One is partially self-inflicted with the MG12. Measurement had shown clearly the tweeter works best on-axis or off-axis toward the inside of the loudspeaker, with tweeter on the inside, not the outside as recommended. I changed over to the recommended set up, tweeter on outside, and was greeted by altogether more diffuse imaging as well as a slightly warmer presentation, much as expected although to a surprisingly obvious degree. Raising the question: why do Magnepan recommend this non-standard placement? I can only assume they worry about treble energy balance and quality with tweeters on the inside and feel putting them on the outside offers a 'safer' sound balance. Allusion is made to treble balance in their literature and there is the unusual ability to pull down treble with a series resistor, suggesting this is a concern. If anything, phase coherence is better with tweeters on the inside. Our measurements show, and listening tests confirm.

With tweeters on the inside the MG12s fly in terms of image sharpness and sound stage precision, as I'd expect (I have spent plenty of time validating this idea when prototyping World Audio Design loudspeakers and I know that 'inside tweeters', that avoid surface wave reflection and destructive influence, as well as asymmetry and rounded corners, all usefully add to stereo image precision). The problem is that upper treble of the MG12 is a little ragged and fierce. Normally, I would criticise this, but looking at it in the overall context of the MG12s otherwise excellent sound stage presentation, I would say it was something I would be prepared to bear. The gains in image precision, detailing and general sharpness of image outline with tweeters on inside, as well as the feeling of firmness, are worth having, because they set the MG12s well above the herd in this area.

In my experiments with all this it was inevitable our Icon Audio MB845 valve amplifiers would be wheeled in as an alternative to Musical Fidelity's Class A AMS50. I was expecting little difference, because the MG12's

values around 0.025mH being about right. An inductor will reduce the loudspeaker's treble peak, leaving midband output unaffected. IPL Loudspeakers in the UK can supply such inductors.

Which brings me to another peculiarity of this loudspeaker: its positioning. Magnepan say the tweeters go on the outside, but for good reason it is common to put tweeters on the inside. Magnepan say phase matching is best with them on the outside, but this is theoretically unlikely and clearly not the case in practice, our measurements showed; they should go on the inside for best phase matching, although drive unit phasing is hardly an issue due to the low crossover frequency. I tried them in both positions.

As always we ran the

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flat impedance curve levels the playing field between transistor and valve. I was surprised to hear an altogether milder sound, with less high frequency detailing from the MB845s. In this case, the 845s were a little too dark and the AMS50 too stark! Hmm... KT88s might be just the right choice then, and a Quad II-eighty would offer a nice balance methinks. I eventually settled on our AMS50 however which is as clean as a whistle and injected drama into the MG12s; they need a good strong push and plenty of grip to give of their best.

Certainly, the 845s made Nigel Kennedy's violin sound easy and fulsome and I had no qualms about the MG12's handling of this difficult

them. As 'Monster' rolled out of the panels, the MG12s showed they could deliver deep bass, but it was their resolution of the beat, Gaga's voice and the complexities of the production where they excelled.

As Angelique Kidjo's 'Agolo' began, the MG12s captured individual drum strikes with resonant power. They sounded full bodied in the bass and muscular. Bass guitar had plenty of weight too, but I wasn't quite sure what it was doing; my brain filled in from experience. There's no boxiness and notes come and go cleanly, but where they lie on the musical scale is less than certain. As I said earlier even our AMS50 couldn't force the issue here, as it usually does, bringing the sloppiest of loudspeakers to heel.

The MG12s just are what they are, which apart from all else is a pair of open bass dipoles. And I've had experience of steering bass dipoles before too!

A pair of Celestion SL6000 subwoofers underpinning my stripped down Quad ESL63 electrostatics, no less, and getting the lobes into the right parts of the room was a complicated and uncertain business. Usually, open dipoles are best pointed outward, the 'dead' edge of the loudspeaker where cancellation occurs pointing into the room's corner; doing this immediately quietened and tightened bass from the MG12s. Showing that as usual you can't get away from room interaction no matter what loudspeaker is used. However, surprisingly, the MG12s survived being pointed heavily outward and although sound staging became diffuse, bass was considerably improved in our 28ft square listening room. Oh what fun!

Finally, I should mention that the MG12s are very insensitive and need power. I got plenty of volume from our 50 Watt Musical Fidelity AMS50 amplifier, but many listeners might want

more. Bass doubling then becomes an issue too.

CONCLUSION

In their own way, Magneplan's Magneplanar MG12s are very impressive. Quite unlike box loudspeakers these open panels offer a large, cleanly wrought soundstage with real scale. Instruments and singers hang in the room with stark clarity. In this they are a wonderful experience and easily better than most, perhaps all, of their similarly priced box rivals. A bargain at £1,900 then, but with provisos. Whilst they have bass weight, they're not especially tuneful at the bottom end. And at the top end they could be smoother and less aggressive. Everything in-between however was a delight, and well worth hearing. Magneplan's MG12 is a loudspeaker I recommend you hear; you'll surely feel its magnetic pull!

VERDICT ●●●●●

A fascinating full range ribbon loudspeaker that offers astonishing midband clarity and imaging. Not perfect, but a great audio experience all the same.

MAGNEPLANAR MG12 £1900

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FOR

- clear, natural and clean
- pin-sharp imaging
- no phasiness

AGAINST

- low sensitivity
- mediocre finish
- soft bass



The small rear connection plate carries an unusual tweeter attenuator option.

instrument. With no crossover at 3kHz, like any good panel they gave violin a feeling of wholesome solidity, removing the slightly vapid quality box loudspeakers impose. The AMS50 arguably was less easy on the ear, but it sure as hell pushed Renee Fleming's soaring voice out into our listening room in wonderful fashion, painting a large stable image laced with detail and life.

Moving from the sublime to the ridiculous, I moved from Renee Fleming to Lady Gaga and 'Bad Romance', and had to laugh! The MG12s pounded through this piece of Dance with a gusto that I wasn't expecting. They are not exemplars of bass resolution but the pounding synths in 'Bad Romance' don't demand this, just a solid beat and here the MG12s pounded it out with an eagerness that surprised me. Ms. Gaga's vocal antics were thrown out at me and the way she uses her voice, lyrics embellished with twisting inflections, was forcefully projected by the MG12s. Okay, bass did start to get a bit boofy after a while; even our big AMS50, heat streaming from its fins, couldn't quite force the MG12s to do what is beyond

MEASURED PERFORMANCE

Frequency response varied across the front panel according to height, lateral position and angle, as always with panel loudspeakers. On-axis, at centre, gave the result shown at top. As panels go, this is a smooth and flat frequency response, showing the MG12 is a well developed product.

Our Off-Axis Response shows 'tweeter side' off-axis frequency response, the orange trace, and bass panel side off-axis response (around 25 degrees), the blue trace (green is on-axis reference). This analysis clearly shows the MG12 gives the smoothest result with its tweeters on the inside, and the panel pointing down the room, not directly at the listener: then it is flat and accurate.

The flatness of the MG12's frequency response trace below 1.5kHz suggests very low colouration. Bass extension is good too, measuring -6dB down at 40Hz, better than most box loudspeakers, ignoring their port contribution.

The decay spectrum looked very clean, except below 100Hz where there do appear to be some strong panel resonance modes that may well affect bass quality.

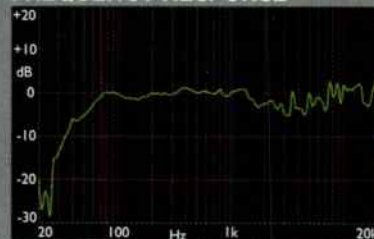
Bass distortion was severe around 40Hz (50% off bass doubling) but fell rapidly to 5% at 50Hz, declining down to a very low level of 0.1% above 200Hz. Bass distortion is high, for 90dB SPL at 1m, but midband distortion very low, an unusual result.

Although impedance was low at 5.25 Ohms and the panel draws power, sensitivity was very low at 81dB. Consequently, the MG12 needs lots of power to go loud and there may well be a maximum loudness issue here, determined by how much power the panel can absorb and by bass doubling. A minimum of 50 Watts will be needed

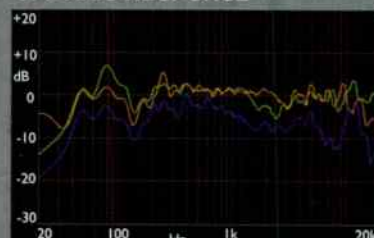
and 100 Watts is probably more suitable to play loud. Our impedance graph shows the MG12 is an almost perfect load, since it is a flat line with a low hump having slow rates of change, meaning there's little reactance in the load.

The MG12 is exemplary as a load, has low colouration and midband distortion and a relatively even frequency response, so it is fundamentally a high quality loudspeaker. Low sensitivity and high bass distortion are drawbacks. NK

FREQUENCY RESPONSE



OFF AXIS RESPONSE



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KLIPSCH IGROOVE SXT WWI £130

Could this have existed without the Bose Sounddock? There's no denying that the iGroove has some, shall we say, 'key similarities' to the aforementioned iPod style icon. But look closer and the Klipsch is obviously cut from different cloth. Whilst lacking the Bose's beautiful lines, the iGroove answers a lot of questions the Bose left up in the air, such as 'what happens when you turn the

volume up?' On the Bose, ramping up the loud pedal results in a slight flattening of dynamics, and a general softening of transients. This is in part down to the latter's slightly less rigid cabinetry, whereas the Klipsch has an admirably solid rear panel. Onto this the iGroove adds twin 64mm woofers working in conjunction with a 19mm tweeter per side, which are as per the Klipsch tradition, horn loaded of course. All of this is carefully contained in a neat 305x121x117mm moulded

plastic case, which is more solid than you'd expect at its price. No fripperies on this iPod speaker dock; the top of the iGroove has but three buttons for operation: power and volume up or down. The supplied card remote control has play/pause, track selection and mute in addition. Round the back there's a DC power in, a 3.5mm auxiliary input and an S-video output jack. This is a very fine sounding compact speaker system; it won't out-punch the likes of the (far more expensive) B&W Zeppelin Mini, but gives a real taste of top iPod speaker systems without going anywhere near their lofty price tags. The sound is clean, crisp, smooth and svelte - even when you push it close to its (not inconsiderable) maximum volume. An excellent little black box for iPod users everywhere, even if this latest model's price has crept up just a touch too much. **DP**

[Contact: www.klipsch.co.uk,
0845 0822454]

soundbites

VITA R1 MK2 £160

For this writer, the original Vita Audio R1 was the first complete budget digital table radio. Whereas the early part of the last decade saw the glory days of Tivoli (making beautifully easy to use, fine sounding and elegant little analogue AM/FM radios), it wasn't until the arrival of the Vita in 2004 that the genre moved on a proper. Here we had a small footprint DAB/FM design with a modicum of useful facilities, excellent sound (given it's just a mono radio), fine design and excellent build. The R1 proved justifiably popular, the main problem for its manufacturers being how to replace it; it would be easy to lose its satisfying simplicity of use and delightful packaging.

Unsurprisingly perhaps, the new mk2 variant of the R1 changes very little; only a few rough edges are smoothed over, and a few facilities added or optioned. The new model is a DAB, DAB+ and FM tuner with RDS, ten presets, a switchable auxiliary input for MP3 and other audio devices, and 9W output power via a 3.5" custom driver unit. The sound can now be tailored by separate bass and treble controls (and there's a loudness facility too),

accessible via the setup menu. Useful enough, but the headline change is the improved display, which is a bit more informative than of yore, although more cluttered too, sadly. The unique 'RotoDial' control with soft illumination is retained, but again gets a tad more complex; it's still very easy to use by the standards of rivals, however. There's a 3.5mm line in (for playing back iPods, etc., through its speaker), and a stereo line output. An improved clock gives sleep and alarm functions.

The Vita R1 mk2 is a lovely thing to use, and to listen to, with excellent sound quality considering its compact 170x130x135mm dimensions. There's now the option of making it portable, via the £39.99 CarryPack (hand-stitched leather case and carrying handle, available in black or brown) and a £49.99 Backpack rechargeable battery. This ups the stock 1.5kg weight a little but makes the Vita truly transportable; it's ideal for garden or garage use in this guise, but of course it's not waterproof. The new radio comes in a choice of 'Rich Walnut' veneer, 'Dream White' and 'Midnight Black' high gloss lacquers; our black gloss sample looked superb, although the gloss finishes command

a £20 price premium. Overall, a lovely thing that's a good deal more usable than the original. Even though it's one of the most expensive of the breed, it still deserves to succeed like its predecessor. **DP**

[Contact: +44 (0)1702 601 410,
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Tubular Belle

A sister company to Vincent, Tube Audio Company (T.A.C.) has just gained UK distribution. This gave David Price the chance to audition its new hybrid CD player, the shapely C-60...

It's like *deja vu* all over again. That Yogi Berra phrase perfectly encapsulates the way how, just as it had been officially declared 'dead' (or at least fit for the knacker's yard), vinyl suddenly got brilliant - and now Compact Disc is doing the same thing!

I honestly can't remember a time when so many really good mid to high end silver disc spinners were coming out, ten years after they were supposed to have been rendered rubbish overnight thanks to DVD-Audio and SACD.

The T.A.C. C-60 is a perfect exemplar of this. It's a positively postmodern CD player, with mega high upsampling and a switchable tube output stage, to go with its 'old skool' top loading transport. Just for good measure it has a display that looks suspiciously like it has come from a mid nineties Sony - complete with what that company used to call a 'music calendar'. Then there's the battleship build, and the obligatory hewn-from-solid aluminium remote control, to expunge the memory of all those horrid plasticky things we had to live with for twenty five years...

The machine is big at 450x390x100mm, and weighs a not inconsiderable 12kg, pretty much on a par with those 'battleship' Japanese late eighties monsters. This is down in no small part to its casing, which seems to be a steel frame onto which an inch-thick aluminium top plate is bolted. Presumably this is to add mass to damp vibration, which it does reasonably well, but I'm sorry to say that it's still more prone to ring than some machines.

Set into the top plate is the Philips VAM 1202 mechanism, accessible by a little sliding door, akin to the Accoustic Arts CD1 I reviewed a couple of years ago. This runs Philips control electronics, and feeds an eight times oversampling Burr

Brown PCM1792 DAC, upsampled to 24bit/352.8kHz no less. The output stage uses low noise, low distortion Burr Brown 2804 operational amplifiers, with a switchable cathode follower line 6922EH tube output stage. These tubes are visible through cooling vents in the top plate; it's nice to see them glowing away quietly inside! There's also a 6Z4 valve rectifier for the output stage supply voltage, and the company talks of high quality passive componentry throughout, with the coupling capacitors isolated from the signal stages. The power supply, drive stage, and output stage are isolated from one another in physically separated housings, and there's balanced circuitry from top to bottom.

Round the back there are RCA phono outputs, in addition to male XLRs. Digital outs comprise TOSLINK optical and coaxial. The front panel sports a power switch, the display (dimnable and defeatable) and a 'tube/FET' switch. I tried both analogue output stage options in my system and found, with my 'well lit' NS1000Ms, that the tube stage was preferable. This is in no way a prescription; others may find precisely the opposite; for me the tubes simply took a fraction of what little 'edge' there was off the sound, but made relatively little difference.

Up top, in front of the disc drawer recess, are the transport controls. The whole machine felt well made and sturdy, although it's still not up to high end Japanese standards in this respect:

then again, what is? Via the digital out - which is used to feed a dCS Paganini DAC for reference purposes, I was intrigued to find the dCS reporting it was receiving a '17/44.1kHz' (i.e. 17bit!) signal; if

anyone has an explanation forthcoming I'd like to hear it! But without further ado, the important bit...

SOUND QUALITY

Here's an archetypal example of a thoroughly modern digital music player, able to elevate CD sound up to the level where it's very hard to fault, and extremely easy to live with. Running out via its balanced XLRs, 4thero's 'Third Stream' came over with a wonderful openness and ease, matched by near absolute lack of grain. Low frequencies were strong and seemingly unconstrained by the limits of the 16bit format; the double bass that underpins the track was taut and tuneful, clean and unsullied. At the same time, the T.A.C. presented a delightfully clean and finely etched midband, the player giving a wonderful rendition of the descending piano cadences, the beautiful cor anglais work, the tight, staccato snare drumming and the gentle violins. Saxophones, so often the bane of Red Book, seemed almost creamy. Instruments were





located with great precision, sitting clearly distinct from one another, while hi hats and cymbals had a faithful metallic sheen, yet a great measure of delicacy. There was no splash, no clang and no ringing; 16bit digital without tears.

Moving to the more compressed, early nineties digital strains of Annie Lennox's 'Medusa' album, and the densely layered grandeur of 'Don't Let it Bring You Down' showed the C-60 again as a smooth but tremendously incisive performer. Here's a song that can strip paint on my system when fed with a poor source; Annie's voice is icily cold and hard at all times, tempered of course by her wonderfully heart-felt delivery. This CD player carried it as precisely as this, resolutely failing to let her voice grate. Rather, it towered above my loudspeakers, pushing relentlessly out into the room and hitting me upon the brow, but never hurting or searing. The (now very dated) electronic backing track fizzed behind, but whereas so many lesser machines turn it into a hazy, bright mush, the C-60 picked out all the strands of the mix, flashing up its little intricacies (that gentle piano accompaniment,

that soft guitar part) with relish. Drum machine (Roland TR909?) hi hats sparkled softly, keyboard pads glided dolefully, and Annie's voices cut through with wonderful poignancy, occasionally augmented with overdubbed backing vocals. The result was a truly affecting rendition of what's surely one of the greatest covers of this majestic Neil Young song.

Gregory Isaacs' 'Night Nurse',

"it's very straight down the line in its nature, doing no embellishing, and steadfastly refusing to editorialise..."

a magnificent analogue recording from the very early eighties with the great Sly and Robbie doing rhythm section duties, showed that all that openness and clarity hadn't robbed the C-60 of a keen sense of rhythm. Whilst it's true to say it's not the

most emotionally charged and exuberant performer, the T.A.C. machine supplied an easy musicality which made listening a pleasure at all levels. It caught that amazing syncopation between snare, hi hat and bass guitar brilliantly, punching out a big, fat bass guitar sound which was framed so deftly by the drum kit, guitar and piano. Again, the CD player was sublime with vocals, sounding so natural and direct, communicating Isaacs' vocal timbre in all its rich, smoky glory.

Another track which relies heavily for its percussive groove is Simple Minds' 'Someone, Somewhere, In Summertime'. The opening track to the band's 'New Gold Dream' album, it's a long, languid slowburn of a song, bristling with filigree detail and



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atmospheric, reverb infused vocals. Again, I loved the way the C-60 delved deep into what's something of a murky mix and got to the heart of the action. The drum work was carried with unexpected energy, with some striking dynamic contrasts; it really flagged up the differences between a softly brushed snare and a rim shot, for example. The four-on-the-floor bass drum and cymbal interplay was a joy, and I loved the clarity and bite of the cymbals. Those classic early eighties analogue synths sounded positively majestic, and Jim Kerr's voice - not the standout feature of the band - was beautifully rendered. Again, this CD player caught his vocal timbre superbly, but also his phrasing too. The result was a haunting but impassioned delivery of a somewhat meandering song; on lesser silver disc spinners it sounds precisely thus.

Frankie Goes to Hollywood's 'The Power of Love' was another delight. All it took was to hear the opening piano chords, shimmering with rich harmonics, and I knew the C-60 was genius at work. It's fair to say I've rarely heard this mid-eighties epic smoocher in such high fidelity; again this CD dazzled with its beautifully spacious, finely wrought midband. Soaring strings set within a vast soundstage, underpinned by a seat-shakingly powerful bass guitar and crashing piano work together had me locked to my seat, in awe at this classic Trevor Horn production.

Despite the fact it was all recorded on a 44.056kHz sampling frequency 16bit Sony PCM-FI (the staple of Horn's Sarm West studios at the time), it sounded massive.

Even with the relatively crudely recorded 'Sex and Drugs and Rock'n'Roll' by Ian Dury, the genius of the sadly now deceased singer and the skill of his backing band. The Blockheads, was clear to hear. The C-60 left you in no doubt you were in a 'spit and sawdust' late seventies recording studio, but it didn't obsess on the rough edges. It locked on the lead guitar and cymbal work, giving the song real rhythmic drive, and let



the brilliance of Dury's vocals shine out. Despite the somewhat curtailed stereo width of this track, the centre stage was so solid it might as well have been nailed to my front room's chimney breast. Nor was there much stage depth (on this track), yet somehow the song still came over as multilayered, sounding as if it had great scale nevertheless!

So, the T.A.C. liked svelte soul-jazz fusion, fine female vocals, classic reggae, cowering stadium rock, polished eighties power pop and scratchy new wave; what then of classical? Unsurprisingly the C-60 was just at home here as anywhere else. An Esoteric release of Mozart's 'Piano Concerto No. 20 in D minor' (English Chamber Orchestra/Clifford Curzon, Britten) was breathtaking. Once again that deft midband had me swimming in a vast soundstage. In absolute terms, compared to my reference (and vastly more expensive) dCS Paganini DAC, there was a fraction less stage depth and a scintilla less low level detailing, but the C-60 was far closer than I'd expected. It is marginally brighter than the dCS too, but then again so is every other CD player I've heard, which shows that the C-60 is very, very close to the right side of neutral. Its rendition of the music's massed strings was wonderfully natural, as was its delicious piano sound.

CONCLUSION

Well yes, I loved it. The T.A.C. C-60 is a prime example of twenty first century Compact Disc best practice. It's very straight down the line in its nature, doing no embellishing or denuding, and steadfastly refusing to editorialise. It just says, "there's the music, go have fun with it". There are a number of rivals at this price that have

more character; one example that springs to mind is the Naim CD-X2 which gives a more pronounced presentation, pushing rhythms right to the fore at the expense of a deep, tangible soundstage and rich instrumental timbre. However, the T.A.C. instead chooses to give the bigger picture, offering a remarkably even and open sound that's fractionally less enthralling than the Naim but just as enjoyable - and if the truth be told, a bit more accurate. I've heard better, but it's not until I start thinking of £5,000-plus designs that I think the C-60 would in any way be shamed. Think of it this way; it has most of the power, punch and poise of Oracle's £8,500 CD1500/II, but comes in at a good deal less than half the price. As such, it's a super 'mid-to-high end' buy, and one to shortlist if you're looking for your 'last' CD player.



VERDICT ●●●●●
Open and expansive yet subtle and svelte this is a brilliant modern silver disc spinner that deserves to succeed.

TUBE AUDIO COMPANY C-60 £3,599
MV Audio
+44 (0)1495 791220
www.mvaudio.co.uk

- FOR**
- powerful dynamics
 - expansive soundstage
 - instrumental & vocal timbre
 - silky, delicate treble
 - decent remote control
- AGAINST**
- nothing at the price

MEASURED PERFORMANCE

Frequency response exhibits a small lift at high frequencies, measuring +0.1dB at 10kHz. This is a minuscule amount but it does mean that the C60 will not be a warm sounding player; whether it sounds overtly bright can only be decided by listening. Frequency response was identical through both phono and XLR outputs.

There was an unexpected difference between phono and XLR in distortion, phono suffering distortion (0.7%) at high levels whilst XLR did not, a healthy 5V, so it is the output to use. There was little difference between TUBE and FET in distortion characteristics.

Channel separation was high and noise low at -107dB, with TUBE actually being fractionally quieter than FET.

Jitter on the S/PDIF output was well suppressed, a 1kHz tone at -60dB inducing just 30pS of signal related jitter, whilst random jitter hovered around 10pS.

The TAC C60 measured well in all areas, except for non-linearity at high levels via the unbalanced phono socket outputs. As the distortion was mainly second and third order it will not be easily audible though. NK

Frequency response (-1dB)
CD 2Hz - 21.4kHz

Distortion % (Phono/XLR)	
0dB	0.7 / 0.05
-6dB	0.32 / 0.02
-60dB	0.22 / 0.22
-80dB	4.4 / 4.4

Separation (1kHz)	121dB
Noise (IEC A)	-108dB
Dynamic range	99dB
Output (phono / XLR)	2.7 / 5V

FREQUENCY RESPONSE



DISTORTION



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AMPLIFICATION

Manley Labs Shrimp Pre with Snapper 100w valve monos (EL34). Mint condition, original boxes & packing, 5yr warranty. The monos alone cost new £4250, £1850 for the pre. Amazing value at £2795.

Creek EVO2 Integrated Amp. Black, boxed, new with 5yr warranty. Last few remaining. (£680) only £499

Quad 99 Power Amp. Finished in black, mint, boxed, one owner. (£600) £349

Ayre AX-7E Integrated Amp. Boxed, excellent condition, one owner, stunning reviews. (£2450) £1295

Cyrus 8 XP Integrated Amp. Few weeks old, Quartz finish, mint, boxed. Stunning performance. New £1300, bargain at £845. Also, matching **Cyrus Smart Power Plus** (£349, mint) & **Cyrus Hark 7 Tier stand** (£265).

Icon Audio Stereo 40 mk III. Only a few months old (Upgrade valve model) with a spare set of valves. Remote control, mint, boxed. (£1295) only £795

Quad II Eighty Valve mono blocks. One owner from new, unmarked, stunning performance, great reviews. Original box/packing, 5yr warranty. (£6000) £3795

Chapter Audio Preface & Couplet pre/power combo. Boxed with original flight cases, excellent condition. Cost new over £9k, less than half price they are amazing value for money. £4295

Myrrad Mi Multi-Source System. Ex-demo with optional 'Blue Play' module, 6 mths old, immaculate, original box, packing, manual & remote. Outstanding performance, 'all in one' solution. (£1295) only £959

Art Audio Diavolo (inc Volume Control). Stunning in polished chrome (chassis & control knobs). Original box & packing, 18mths old, immaculate. Includes Shuguang Black Treasure Valves (plus spare pair of Golden Dragon 274b's) (£7240) be very quick at £3295

Art Audio VPI Pre Amp (with MM Phono Stage). In highly desirable chrome, spectacular condition, original boxes & packing. (New £2600) only £1295

Quad II Forty Mono Blocks. One owner, original box/packing, excellent condition, 5yr warranty. (£3800) £1895

Bel Canto EVO2 Gen II Amp. Great condition (one small mark on front lhs), boxed, manual, RCA & XLR inputs. New £2600 a bargain at £795

MBL 9008A Reference Mono Blocks (x2). In black/gold, original flight cases, one owner, excellent condition, 5yr warranty. New £41,000. Amazing value at only £16,995

Deltech DPA50S Power Amp. With Deltech 500S Slink speaker cable. Boxed, manual etc. (£990) £495

Eastern Electric MiniMax Pre/power Combo. One owner, unmarked, as new, only 2mths old, 5yr warranty. Stunning performance, amazing reviews. (£2195) £1295

Counterpoint SA-12 Hybrid Stereo Power Amp. One of these amps that you forget how good it is until you hear it again! (£1250) Only £495

DIGITAL

Chord Chordette DAC. Mint, boxed, only 2wks old. In silver, with Sennheiser BTD 300 (new APTX hi-res bluetooth) adapter. New £450 - bargain at only £289

Teac VRDS-10 CD Transport/Player. Immaculate, original box, packing and remote. (£1700) Only £495

Marantz Ki Pearl SACD. Mint, as new, boxed, only a few months old. Great reviews on this special edition. Special Edition plaque (£2500) £1695

Vincent CD-S6MK CD Player. New model, only a few months old. Balanced & single ended outputs. Ex-demo, silver, immaculate, full warranty. (£1750) £1349

LOUDSPEAKERS

ATC SCM 150 ASL Classic Active Speakers. Ex-demo, dark walnut, stunning actives, 2010 spec. Cost new £14676, £POA

Dynaudio Focus 110 Speakers. Boxed, mint condition, in cherry. One owner, only a few months old. Cost new £1295 a bargain at only £625

JAS Audio Orsa Speakers. Finished in High Gloss Cherry. These were voted HiFi+ Product of the year and are sensational. Some minor marks (not visible from the front) cost new £2000 and a bargain at £695

Dynaudio Contour 1.3SE Speakers. With Dynaudio Stands. These are very rare and highly sought after. Private sales/fetch around £1000 with no stands. Yours with the stands (including 5yr warranty) for only £1095

ATC SCM19 Speakers. In cherry. One owner from new, 6 months old, excellent condition (few marks). New cost (£1700) be very quick at only £995

Hyperion HPS 938 UK Speakers. Finished in high gloss black. Stunning condition, one owner from new, original boxes and packing (even the boxes are mint). Cost new £4750 and a bargain at only £2595.

Dynaudio Focus 110 Speakers. Finished in cherry. One owner from new in as new condition. Original boxes/packing. These cost new £1200, so with a 5-year warranty £649 is a bargain

Monitor Audio Platinum Series PL100 Speakers. Finished in piano black, months old, in immaculate condition. Original boxes, packing and manual. (£2500) Only £1649

Celestion 'ASeries' A Compact Speakers. Finished in Cherry, and in Immaculate condition, with original packing and boxes. (£695) only £295

Amphion Argon 3L Speakers. In Scandinavian Birch with original boxes, packing and accessory pack. Only 8 months old. Hi-Fi Choice Best Buy and Group test Winner (Issue 322) (£2600) only £1695

Audio Physic Scorpio II. Latest model, finished in cherry, ex-dem, unmarked condition. (£3773) £2750

Quad ESL 2905 Speakers. One owner, mint and boxed with very low hours. Amazing reviews (£7000) only £4990 with a 5-year warranty

Audio Physic Tempo VI Speakers. Finished in the Maple. These are a one owner pair, 6 months old, completely unmarked with original packing, boxes and literature. (£2612) Bargain at £1995

Ruark Prelude Speakers. In Yew, virtually as new condition. One local owner, fantastic sound and a bargain at only £299! No boxes, so collection only.

Audio Physic Sitara Loudspeakers. Finished in Rosenut. These are unmarked with original Packing, Boxes and Literature. Recently 'Highly Commended' by Hi-Fi News, these loudspeakers feature the new Hyper Holographic Drivers. (£2000) £1395

Audio Physic Scorpio. In Cherry, one owner, good condition, some very minor marks. (£3800) £2195

ANALOGUE

Avid Acutus SP turntable. One owner from new. Excellent condition, boxed, manual etc. 5-year warranty for the new owner. (£8000) only £4495

Whest PS20 complete with MSU20. One owner from new, stunning 2-box phono stage in black, original box and packing. Incredible reviews. (£1299) £595

Ayre P-5XE Phono Stage. Balanced and single ended outputs and regarded as probably one of the best currently available. Boxed in MINT condition. One owner, current spec. Cost new £1895. 5yr warranty and a bargain at £995

Magnum Dynalab MD108T Tuner. (complete with 24/192 internal dac which was a £800 upgrade). One owner from new and a very unique opportunity.

This amp is approx 2 1/2 years old and has the gold upgrade finish. The control knobs are 24 carat gold plated. Tuner is in excellent condition and comes with the original Magnum Dynalab flight case that is also excellent. Cost new around £9000 so at £3495 you will need to be very quick indeed.

Linn Lingo PSU. For the Linn Sondek LP-12 and in wonderful condition, and complete with LP12 Switch, Circuit Board and Interconnecting Power Lead. £495.

ROTEL RQ-970BX Phono Stage. Finished in black, with all original box and packing. (£195) only £95

Tom Evans Micro Groove Phono Stage. Stunning performance, excellent condition. Cost new £469, our price only £249 with a 5yr warranty.

Eastern Electric Minimax Phono Stage. This probably holds a record (no pun intended) for the most outstanding reviews of any product currently available. Boxed in unmarked condition. One owner from new, only months old. Simply sensational (£1495) £920

Quad QC 24P Phono Stage. This is a mint one owner example and is as new. Great reviews. (£1200) £795

MAINS CONDITIONING

PurePower 700. Finished in black. Ex-demo. The ultimate mains regeneration. (£1595) £POA

Vertex Silver Plus Jaya. One owner from new (raised badge current spec model) in excellent condition. The reviews speak for themselves. Grab yourself a bargain. (£572) £365

ISOL8 Substation Vogue. One owner, originally supplied by us, mint condition, stunning performance flagship mains conditioning. (£2595) £1495

Vertex AQ Taga - 6-way distribution mains filter. Great reviews. One owner from new, unmarked. (£868) £595

CABLES

Vertex AQ Mini Moncayo Speaker Links. Set of 4 Links with the 80x65x30mm acoustic absorption module - simply sensational. (£540) £395

Chord Signature speaker cable. One owner, boxed, as new. 2.5m, amazing reviews. (£750) £425

Transparent MusicLink Super RCA. 1m, cost new £429, a snip at only £195

ACCESSORIES

Finite Element Segment X Rack. (£400) finished in black and silver. A few minor marks (very, very minor). Comes complete with the five piece dedicated spike set (£200). One owner, assembled once (only a few months old) £275.



WIN CAMBRIDGE AUDIO'S SUPERB 650BD BLU-RAY PLAYER IN THIS MONTH'S GREAT GIVEAWAY!

Hi-Fi World gives you the chance to win our favourite affordable Blu-ray player, in the sleek shape of Cambridge Audio's 650BD! Here's what Noel Keywood said about it in the June 2010 issue...

"This is a sophisticated player, purposed to do a good job with every silver audio disc ever conceived as a commercial format. It also plays Blu-ray movies of course, and DVD movies, upscaling them to Blu-ray resolution, to improve picture quality. You can use it as a decent CD transport, connected via S/PDIF to a DAC, or HDMI to an AV receiver, because our measurements show it has very low jitter. The 650BD converted SACD, DTS HD Master

Audio and Dolby TrueHD to PCM without difficulty. Set it to work as a transport, the Cambridge played a wide variety of CDs, HDCDs, DVD-As and SACDs without a glitch, and also played all varieties of Blu-ray movie soundtrack, from Dolby and DTS, as well as straight PCM, making it a great universal player. This is one of the UK's first players to do it all – and not at a daft price!

Picture quality passed all Silicon Optix, High Quality Video tests with ease, using both Blu-ray and DVD tests, but most quality Blu-ray players manage this nowadays. There were no jaggies at all, no motion trailing or feathering, nor strobing. My first impression of this player's sound was that it was lush and smooth, and produced unusually well defined, firm

images. The strenuous but masterful playing by Percy Grainger of Grieg's Piano Concerto was delivered with eye popping closeness and clarity, from another 2L disc carrying DTS HD Master Audio in 24/192 resolution over 5.1 channels. The bottom line is, a good Blu-ray player like the Cambridge is able to handle all these format variations and discs, and deliver great sound quality. The Cambridge Audio 650BD player does it all I found, and very well too. Offering superb sound quality from all silver discs, plus very good picture quality, and with no major weaknesses, Cambridge Audio have pulled a rabbit out of the hat here. It's a must buy, being the first audiophile Blu-ray player in the UK in effect, one that is supremely capable, priced competitively and, for the time being, has no peer."

If you'd like to win this superb bit of kit then all you have to do is answer the following four easy questions. Send your entries on a postcard only by 31st August 2010 to: **September 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] The Cambridge audio 650BD is a what?

- [a] Blu-ray player
- [b] CD player
- [c] turntable
- [d] MiniDisc player

[2] According to NK, it is purposed to play what?

- [a] "every silver disc ever conceived"
- [b] vinyl LPs
- [c] Elcassets
- [d] 8-track cartridges

[3] According to NK, jitter is...?

- [a] "very low"
- [b] "about average"
- [c] "invisible"
- [d] "huge"

[4] The review concludes by saying the 650BD...?

- [a] "has no peer"
- [b] "is not bad"
- [c] "is wicked"
- [d] "is quite good"

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Hi-Fi World Magazine
Unit G4 Argo House
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entries will be accepted on a postcard only

**JUNE 2010 WINNER: AUDIO ANALOGUE CRESCENDO CD PLAYER & AMPLIFIER
Mrs. D. Shemilt of Gwynedd, Wales**



Back in Black

Sony's high end ES series has returned to these shores, and the new BDP-5000ES is the Blu-ray range topper; Noel Keywood tuned in...

Priced in the Sony Store at £1,199.01, the BDP-5000ES is Sony's latest high end Blu-ray player. And quite a beast too, at a sturdy 10kgs, so getting it out of the box and into position can be a taxing experience. With a simple, hewn-from-solid frontal appearance almost devoid of controls, it's imposing visually as well.

Sony say this new player is a great cinematic experience – and they should know how to produce one as they make professional and consumer video cameras, as well as televisions, a situation that gives their Blu-ray design team access to a lot of proprietary technologies. One light on the front panel is labelled SBM, short for Super Bit Mapping, a Sony method of linearising the quantisation of a signal at low levels when resolution becomes inadequate due to a lack of bits. On the BDP-5000ES however, SBM is applied to video to improve low level resolution. It's a Sony technology, incorporated into this player.

Within minutes of unpacking this player my eye scoured its front

panel for another Sony technology and its associated logo – SACD – and there was none! I was disappointed, because this high resolution disc was popular in its day, people have large collections they want to play and it sounds superb. Neither Sony nor Philips seem at all interested in maintaining support for SACD, even though it was introduced not so long ago, in 1999. Instead, companies like Swedish Oppo have found fame and fortune (well, so it seems) with unique players that spin SACD and, now, Cambridge Audio have followed them with the 650BD I reviewed in our July 2010 issue and which I used as a comparative benchmark in this review.

So with no SACD logo and no mention of it in the handbook – available for download online at the Sony Store - it doesn't play SACD properly. Being a Blu-ray player the list of discs the player will spin is a long one, and seemingly includes Blu-rays with DTS and Dolby sound tracks of all varieties, AVCHD - a high resolution camcorder format - DVDs of course, and CDs. However, I soon found Sony have their own

way of doing things and a lot of what this player does is not what I expect from experience of reviewing Blu-ray players...

Hook up was easy enough, as usual, with HDMI, S/PDIF digital outputs in optical and electrical form, and 7.1 ch analogue outputs. I used all of them.

SET UP

The BDP-5000ES has an ethernet connection so it can get BD Live and the player saw my Netgear router straight away with the HDCP protocol and declared its need to download updated software, to version 7.4.020 (from 7.1.019 as delivered). This took a time even though I am on a fast fibre cable network in Westminster, London, most time being taken up by installation rather than download. Job done, the player turns off.

I found the BDP-5000ES unusual in behaviour under test and that's how it looked during set up at home too. Sony's menus are long and extensive on this player, but also opaque in meaning and a little off-beat. I struggled to make sense of



some of it.

Running through Blu-ray disc options I found the player would output Dolby TrueHD and DTS HD Master Audio in native form (bitstream) via HDMI to my Marantz SR8002 receiver, effectively acting as a transport and passing all signal decode responsibilities to the Marantz. It has no PCM output option though, unlike all its rivals, so it cannot convert 24/192 Dolby TrueHD and DTS HD Master Audio to 24/192 PCM, for output to older receivers lacking these technologies. It does, however, convert to PCM surround-sound using a Mix mode, but at 48kHz data rate, little better than CD. So onboard conversion of Dolby and DTS compression schemes does not retain full quality. On a £1k player this is a big surprise, as all (less expensive) rivals I have reviewed retain full quality of both Dolby TrueHD and DTS HD Master Audio after conversion to PCM. I presume Sony expect it to be used as a transport, in effect, the receiver doing the processing.

Dolby TrueHD at 24/192 on the Divertimenti music Blu-ray from 2L did not play properly, being flagged and played as stereo by the receiver, but a few players have had trouble with this track (including the Cambridge 650BD). The Sony sent 24/192 PCM surround-sound to the receiver properly, and 24/192 DTS HD Master Audio, so all seemed well with this material. It did play lower quality 24/96 TrueHD from a Dolby test disc, as well as all other Dolby codings, so in use it will play most current commercial material.

With SACDs only the CD layer

was played via HDMI. The Sony played DVD-As, even though there is no mention of them in the disc list, but it did not reproduce the high definition 24/96 PCM surround audio track, only the DTS or Dolby compressed version provided on these discs for compatibility with DVD Video players.

So far not so good then, because the BDP-5000ES is left in the dust by a Cambridge 650BD that plays all audio discs without limitation.

Sony incorporate loudspeaker tuning within the player's software, with adjustment for level and position of seven loudspeakers. The rear panel carries a full 7.1 phono socket output set, all sockets looking sturdy and gold plated. This whole arrangement looked fairly serious and I wondered whether the analogue sockets might just carry SACD surround sound, knowing that Sony were always fearful of digital copying via HDMI, but they did not; the output was stereo again.

Measurement had shown frequency response reached 48kHz via these outputs with 96kHz sample rate PCM, and distortion from 24bit code was very low too, so they offer full analogue audio quality from Blu-ray discs carrying 24/96 music, for those who use analogue connection.

Peculiar and disappointing was the absence of CD track number entry from the remote control's numeric keypad. There is only an onscreen track list from which selection can be made. I can't remember ever reviewing a player lacking direct input of track number; this had me scouring the fine print of the handbook to see what I was doing wrong, but it does not exist.

Pressing 'Play' with the draw open does not start play either; the remote does have a draw open / close function though.

Whilst the audio menu was long I could not see the purpose of much of it. The audio output must be selected for example: analogue, digital (S/PDIF) or HDMI. Er, why? With most players all outputs are on and selection between them unnecessary.

Pressing 'Display' on the remote brings up track coding and sample rate, as well as video data rate, but not audio data rate like the Cambridge. Pressing 'Options' whilst a video disc is playing brings up running picture adjustments and a rather peculiar sharp/slow audio filter that affects the analogue outputs only.

VIDEO

The player has BD Live in its latest version, Profile 2, not something that I was concerned with. The memory for this is external only and 1GB comes supplied. Any USB flash memory is compatible Sony say.

DVDs are upscaled and BD-R (recordable) and RE (erasable) Blu-ray discs are compatible, Sony say. Our test Verbatim BD-Rs and Panasonic BD-REs were spun without a hiccup. Sony are a bit geeky in identifying a Blu-ray disc as a BD-ROM in the Home menu, but it does allow the player to distinguish between BDAV and BDMV formats (we use the latter).

Composite, S-Video and Component analogue outputs are fitted, together with HDMI of course. The video setup menu has a wide range of options including deep colour, different colour spaces, 24

Switching over to HDMI after analogue introduces a crystalline clarity and a slight sharpness at times;

detailing in the picture improved on Pause in fact, on a handheld



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programme material, namely twelve hours of Angélique Kidjo's 'Fifa' album with its

own small enclosures to improve sound quality.

REVIEW

centre stage, just above the 'speakers at the top of an arc of a soundstage. Her dusky voice was delivered with more force and clarity than I am used to, every little intake of breath seemingly amplified and made very obvious. And this was achieved without the usual brightness and raised treble that blights so many modern loudspeakers. That's not to say that the Victorias are lacking treble; it's there all right but not at any level that becomes irritating or overbearing. Their patina of lightness comes from the glass I suspect and at times I was aware of a slight tail of glassy colour following Gabrielle's voice. That may sound bad, but some of the glassy echo that I suspect was lifting the sound and making it different from anything I am used to, was attributable to this effect.

I was reminded also that a bass reflex cabinet must not be too heavily stuffed if it is to work. Thinking that doesn't make much sense, long ago, I once built a big reflex, lined it with thick natural carpet felt then stuffed it with teased out long haired wool suspended in high velocity areas with an open fabric mesh. Listening to this revision of the rules made me realise I had built a fine moth sanctuary, but not much else. Reflex loudspeakers, and perhaps most other boxes, must not be over stuffed or they simply sound dead.

In the Victoria the cabinet is totally undamped and unstuffed,

and the result is a very lively sound with a glass 'zing' quality that gives a surprisingly euphonic result. What I have long accepted, since putting my head into a cabinet, is that the sound of a box loudspeaker is shaped by



At the centre of the ABR in the base is a weight attached by a central screw. Two weights are supplied, to tune the bass.

soundstage was always captivating.

So the Victorias worked well enough with violin, if not up to electrostatic standards. I wondered what they would make of Duffy's rather tough 'Rock Ferry' mix, with its added graunch of digital distortion. Impressive was the way they pulled Duffy's expressive voice out of the somewhat dodgy background instrumentation and positioned her clearly centre stage. It was a nice result, better than expected. There was a slight aura of extra space and depth around the lady on 'Warwick Avenue' and here the Victorias again showed they are a cut above other loudspeakers. Perhaps it was just down to rear reflection from the glass back panel coming out through the cone - my suspicion - but it gave the Victorias an attractive and unique quality that I can't help feel will appeal to a lot of listeners.

Spinning Angelique Kidjo's 'Fifa' to take a hard look at bass reproduction, I was first struck by the strength of Angelique Kidjo's vocals at centre stage and the way they forcefully punched out at me; the Victorias have Technicolour dynamics.

"the high standard of clarity and imaging, plus deep resolution of fine detail, was always captivating..."



Drive unit wiring passes through central vertical rods.

box resonances and it is why open panels are, ultimately, more truthful. So the Victoria does what all boxes do, but differently and in its very own way.

This is not all. There's no doubt that Waterfall have used good drive units and engineering in the Victoria rather than let it exist just as a gimmicky design, and this is primarily responsible for their high standard of sound quality. It helped ensure that when reproducing Nigel Kennedy's violin the Victorias were smooth and easy on my ear, if again with a light, high timbre on more energetic pieces like Vivaldi's 'Spring'. When the tempo slackened on Massenet's Meditation so did the sense of unique colour, although the Victorias were always clean and clear in presentation. But as Nigel became more energetic so I felt the unique colour of the Victorias became more obvious. Yet their high standard of clarity and imaging, plus deep resolution of fine detail and ability to thread this information into the

Cymbals rang strongly with the same lovely long reverb I heard with other material, although there was a little hiss to them at times; the tweeter has a little spikiness so it's no ribbon. Bass guitar meanwhile was strong and had plenty of bounce, short excursions over the fret board being clearly expressed. As measurement suggested, with the intermediate 7gm ABR weight, bass was a little on the heavy and obvious side even with Musical Fidelity's tight, dry AMS50 amplifier. At times the Victorias sounded a trifle hard of tonality with this album, not something I have heard with other loudspeakers. The extra zing added by glass teetered on being just a bit overly obvious at times, yet I found it hard not to be impressed by the loudspeaker's vivid clarity too.

With the 27gm ABR weight bass settled down to what I felt was easily the best result. The bounciness departed, level came down and now bass lines played evenly and with a convincing sense of balance. There

was also a perceptible increase in downward bass extension; notes seemingly went downward further and with a little more ease. Strummed guitar reverberated with vivid clarity in Nils Lofgren's 'Keith



Neat styling and attention to detail and quality of finish produce a good looking loudspeaker.

Don't Go', the twang of strings and their individual tonalities tilted beautifully in a lovely display of high detail retrieval coupled with sharp time domain resolution, yet again I found there was a timbral lightness and sheen to the sound that wasn't quite truthful and there was a little added light from the tweeter.

With Safri Duo's 'Samb Alegro' I turned volume up so high I thought the glass would shatter! You would not believe how loud Musical Fidelity's 50 Watt AMS50 amplifier can go with a sensitive loudspeaker and transients from the Victorias were explosive from this track. I

was trying to push the Victorias to meltdown but they held up to this assault with insouciance. Nothing melted and the glass didn't crack, and I couldn't detect anything untoward induced by the heavy percussion. The bass content from this piece of Trance Techno was solid and powerful; no one could accuse the Victorias of sounding weedy. They have powerful bass, but do not expect subsonic rumbles.

Uncoupling our Musical Fidelity AMS50 transistor amplifier and hooking up our Icon Audio MB845 valve power amps instead brought a few changes. Bass softened up with the 7gm ABR weight, but this was less obvious with the 27gm weight, probably because of improved acoustic damping with the latter. As the MB845s came on song, short bass synth stabs from Alison Goldfrapp's 'You Never Know' rumbled through our listening room like an express train and the soundstaging of the Victorias was nothing other than superb. The sound gained airiness, with a freer feel to it from this amplifier, but then the MB845s use little feedback as well as transmitter triodes so this is to be expected. Spinning a bit of classic Rock from Steve Earle, 'Esmerelda's Hollywood' from 'The Hard Way', again showed me that in comparison to all the other loudspeakers I have played this track through, the Victorias have a glassy patina. Treble was quite sharp (but it is in the recording) and there was an ocean of detail; the constant jangle of maracas from stage right was made explicit for example and yet again I was struck by soundstaging. Steve Earle sounded full bodied and dynamic centre stage and bass underpinned the performance firmly. The explosive start to 'Hopeless Romantics' shook me, the drum roll exiting these loudspeakers with speed and power; it was a visceral hit of the sort that will have

lovers of heavy Rock drooling; the Victorias have life and speed that's for sure. They are nothing other than an exciting listen and this brings an abundance of Brownie points.

CONCLUSION

I just couldn't help but like the Victoria EVOs. They are very strong in many areas, with quality bass, a lovely way of untangling complex mixes and swathes of real detail. They are also dynamic and exciting in their presentation. Being critical seems churlish in light of these strengths. Yes, there are limitations: they are not perfect and anyone looking for real purity may well find their sound a little too contrived to be convincingly accurate and truthful. But as domestically attractive high fidelity loudspeakers go, the Victorias have little equal. They offer an exciting sound from a lovely cabinet and seen like this have little competition.

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MEASURED PERFORMANCE

Our frequency response analysis was taken off-axis by around 30 degrees as this gave the best result. On axis the Victoria is fairly flat and even, but as it was smoother off-axis this is the best way to position them, meaning facing straight down a room, not at listeners. Positioned like this the Victoria is flat and accurate, which says much about the designer, as most loudspeakers have conspicuous treble lift. This loudspeaker has some bass lift with the 7gm ABR weight, enough to ensure the sound has body and solid lows. Vertical integration was good as well, so the Victorias are even above and below, and to left and right; dispersion was impressively consistent off the driver axes.

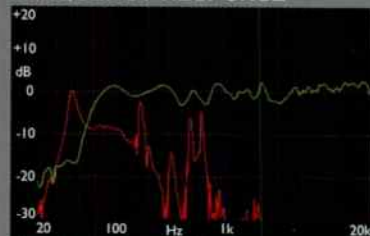
Does glass make a difference? Unfortunately, the answer is yes. Although a super cooled fluid, it still rings strongly when tapped, giving a glassy sound, naturally! So the Victoria glass cabinet is far from acoustically inert. Worse, there is a big cabinet 'whoomph' that was clearly audible during testing, as there is no internal damping or bracing which might ruin the aesthetic. Our spectral decay analysis clearly picks out these problems and shows that they affect frequency response. What this means is that the colouration is coming out through the cone and cabinet walls to the listener and will be audible; it was clearly audible during tests. The passive radiator (ABR) output clearly shows narrow resonances around 500Hz and 180Hz, also visible in the decay graph (not shown). Output from the passive radiator dropped 5dB in level, between no weight and the 27gm weight; the lower frequency limit dropped from 45Hz to 38Hz.

The Victorias were sensitive,

producing 89dB sound pressure level from one nominal Watt of input (2.8V), so they need little power. With a d.c.r. and minimum impedance of 4 Ohms and overall impedance of 5.6 Ohms the Victorias draw current and up to 200Hz really are a 4 Ohm loudspeaker. The passive radiator is a little under tuned, at around 60Hz, leading to a residual 'spike' in the Z curve; the weights barely affected this. Our pink noise analysis clearly shows the ABR cuts off below 55Hz, but has strong bass above this frequency, meaning strong lows but no subsonics.

The Victorias are knowledgeably engineered; their drive unit integration and flat high frequency response show this. They have undamped glass cabinet resonance that will be audible, but are likely good enough to survive this effect. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



"Hipness is not a state of mind, its a fact of life"
Cannonball Adderley



Fidelity

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Chord Indigo Plus Digital

Whilst most hi-fi and home cinema enthusiasts are happy to accept the influence that interconnects and speaker cable can have on the performance of a system, many people struggle to accept that a digital cable can be equally influential.

The common reaction is that since the cable is only carrying a digital signal, the design and quality of materials used in the cable will have far less influence. Listening tests however, show this is not necessarily the case. Repeated listening tests using high quality digital to analogue converters and home cinema receivers have shown that digital cables can and do have an effect on the sound quality of the system in which they are used. Digital cables are capable of affecting levels of detail, dynamics, sound staging and the rhythmic and tonal characteristics of a system.

The improvements that the Indigo Plus Digital can bring to a system should not be dismissed lightly.



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volume. Instead of fiddly up/down buttons a proper rotary knob is used, the knob itself being the type usually found on mixing desks with a clear pointer and a soft rubber finish.

The action of the volume control suggests that it is a proper potenti-

Olufsen Form 1s. I was instantly struck by the amount of level available; if you find that your computer never seems to go quite loud enough then this is certainly the cure. N.W.A's 'Straight Outta Compton' album pounded out of the MDR-D55s with real enthusiasm and a surprising amount of detail, it was unusually easy to unpick the clever and quick-fire rhymes in the lyrics.

Weight has clearly been added in the lower midrange at a cost of some top end extension, which is just the thing for long term, fatigue-free listening.

The muscular bass did however make some tracks sound a little claustrophobic with close fitting 'phones like the MDRs, listening to 'A Sorta Fairytale' from Tori Amos's 'Scarlet's Walk' album was only really comfortable at low settings of the volume control. This is where the lighter, airier open-backed B&Os came in, suggesting that the Centrance is happiest with the sort of headphone that majors on fine upper midrange detail. The familiar background digital sizzle that computers tend to add in their own audio circuits was pleasingly absent, but still the DACport never quite gave the impression that the headphones were plugged into a potent hi-fi amplifier. I feel that this is partly due to the quality of the computer audio files themselves, with the DACport delivering a very clear and unromantic rendition of what it is asked to play. It doesn't flatter poor sources.

As computer-based audio

ometer rather than a rotary encoder, its action is certainly instant, smooth and stepless.

Just below the USB socket are the words 'Class A', and the warmth that the unit generates after half an hour's listening would seem to suggest that this is indeed the amplifier topology used. Most computers, and personal audio players for that matter, use basic Class D circuitry whose main benefit is compactness and low power consumption, not sound quality. The downside to using Class A is that the power consumption will be high, not something to use with a computer that runs from batteries, then! Getting up and running couldn't be easier, I used the DACport with a Sony Vaio laptop machine running Windows XP and it was quickly recognised and registered. The computer's own headphone socket and volume control are rendered inactive while the DACport is connected so no confusion arises; so far so good.

For the listening tests I used two pairs of headphones; Sony MDR-D55s and Bang &

goes, the Centrance DACport can be considered a fine package, especially when its build quality, ease of setup and use is considered. It's a little pricey, but there's no denying that it's an interesting concept that is very well executed. **TJ**

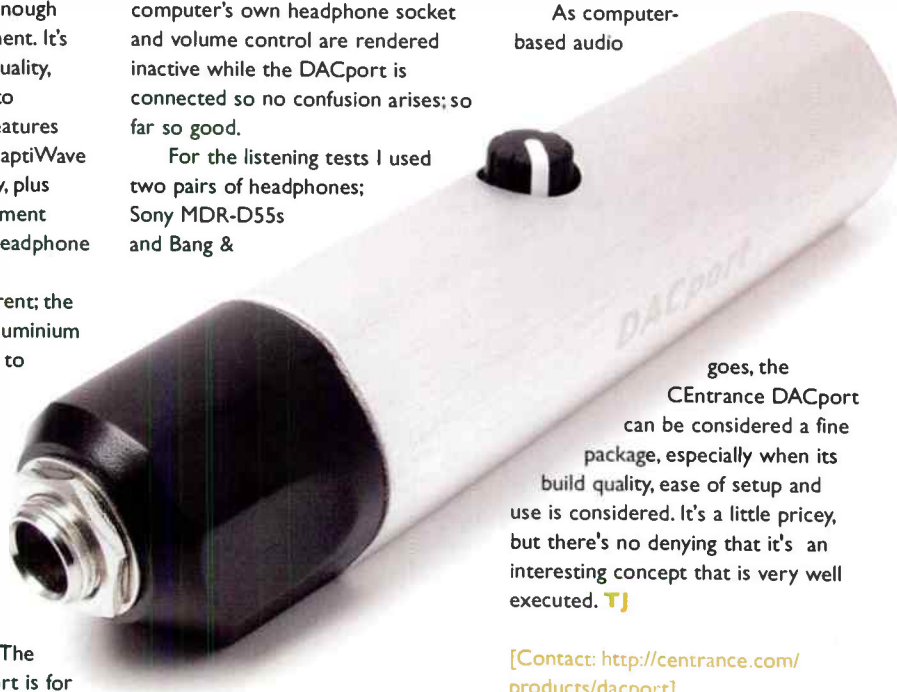
[Contact: <http://centrance.com/products/dacport>]

CENTRANCE DACPORT £260 (APPROX.)

While it's fairly easy to get decent quality music into a computer by loading it in directly from CDs, getting it *out* again at a reasonable standard of audio performance is not always so simple. The problem is that the audio stages in a typical home computer are very much an afterthought, begrudgingly added because they need to be there, and not usually done with any real care. Lack of level, stodgy sonics and background noise are the usual complaints, all things which even the most basic of CD players normally manage to avoid...

The CEntrance DACport offers a way to listen to the music on your computer in a way that avoids having to use any of the internal audio circuitry. It plugs into the USB port and provides a headphone level output through a quarter inch jack socket. This alone is an advantage if you want to use the sort of full-sized headphones that usually come with this sort of connector; computers typically have a flimsy 3.5mm sockets and even though you can buy an adaptor the bulk and length of the resulting assembly can be enough to damage the host equipment. It's described as "a reference-quality, stereo 24bit/96kHz digital to analogue converter" that features CEntrance's proprietary AdaptiWave 24bit USB audio technology, plus a JitterGuard clock management system, and an audiophile headphone amplifier, no less.

Styling is certainly different; the main body is of extruded aluminium and is of a similar diameter to a Smartie tube. At one end are a mini-USB socket and a tiny white LED and at the other is the 6.3mm headphone socket, whose presentation brings to mind the business end of a small handgun! Like I said, odd, but the standard of fit and finish is excellent. The only control on the DACport is for



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LETTER OF THE MONTH PRIZE



KEF iQ30 LOUDSPEAKERS

A pair of KEF iQ30 loudspeakers is on their way to **BRIAN JOYCE**, Letter of the Month winner in our August 2010 issue.

Letter of the Month

MEDIA MEDLEY

Have I been suffering alone? Computers and software aren't half pernicky aren't they? Am I the only one who likes to organise his music the way he wants without all the flashing paraphernalia that comes with it and without subscribing to i-tunes, only to be told I am not entitled to play my own home recordings?

I tried Windows Media Centre but we just ended up arguing about how things should be done and there was no way we were going to get on. I have been using Winamp, Media Monkey, Media Player Classic with more success but there were always problems. Those downloading Winamp these days will find it won't play WAV files at all. It does one of those freeze-ups with certain more unusual high resolution formats then Windows jumps in to 'solve the problem', with the usual result.

Why so many different packages? Well some files would play on one but not the other. My Reference Recordings 192/24 WAV files would not play on Winamp so I used the RR recommended Media Monkey and tried to circumvent the view that the media world consists of albums and artists. One 2L recording that played only on Media Monkey refused to play on anything after a while, thanks no doubt to automatic updating.

You see, my collection is classical, built up over many years, filed in separate 'composer' folders and 'works' subfolders containing different files for different movements, and I keep encountering presentations like the song 'adagio' from the '5th symphony' album sung by 'Mahler'. Computers are very clever, but they are not that good.

So along comes 'Foobar' <http://www.foobar2000.org> that works

foobar2000



[Overview](#) [Download](#) [Components](#) [Screenshots](#)

foobar2000 is an advanced freeware audio player for the Windows platform. Some of the basic features include full unicode support, ReplayGain support and native support for several popular audio formats.

Latest news

2010-07-17
 foobar2000 v1.1 beta 1 has been released.
 New features include a new component installation scheme as well as automatic updating of components published on the [official components site](http://www.foobar2000.org).

Foobar plays music on computer property, says Paul Williamson. Editor David Price agrees. And it's free!

properly from the start. It is sober and professional and while it does organise your files if you want it to, it also lets you alone if you don't. It plays long movements that have been separated into different tracks without exposing the join, it places all the movements in the correct order when I drag them in as a folder and it plays everything, regardless, without having to spend hours trying to configure obtuse plugins. I had digitised some LPs at 96k 32bit but no software would replay them apart from Cool Edit. Now I can play them along with everything else using this wonderful Foobar player.

Defenders of the 'others' will no doubt point out that all the problems can be solved and could explain various fixes but life's too short.

As for sound quality, the Foobar web site states that it isn't really doing anything to contribute to sound quality. All it does is manage the stream. What a refreshing change from others who claim credit where it's not due.

Thumbs up for Foobar then.

with best regards
Paul Williamson
Ratcliffe on Soar
Nottingham

Hi Paul - yes, it's shocking how primitive some of these music players/media managers still are. Long term readers of this magazine will remember us doing a mini-magazine, ten and a half years ago, called 'Computer Audio World'; at that time I tried just about every music player application and I am shocked to see that few have really progressed much from where they were back then! The standout package is of course iTunes, but that has severe 'issues' which prevent it from being used by a number of people, not least its complete lack of flexibility for anything outside the Apple platform (and the company's very rigid licensing parameters); why no FLAC, for example? I personally use iTunes, but I have multiple libraries (AAC, WAV, ALAC, etc.) and these days I actually run a Sony NWZ-A818 portable in preference to an iPod (the latter is a triumph of packaging and ease of use and flexibility, the former just plays music better is a more nicely made.) I do hope that a music manager app. comes along that's truly scalable; you can get it to be a simple tool

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CABLES: ARGENTO, CHORD Co., DNM, KUBALA SOSNA, NORDOST, SILTECH, VERTEX AQ **MAINS** Vertex AQ. **SUPPORTS:** ARCICI, STANDS UNIQUE, VERTEX AQ

to play music or feed your portable player, or it can be repurposed as a multi-format player (and transcoder) of great complexity; but all with the ease of use of iTunes. Foobar isn't quite this, but it's a fine package all the same; just a shame it's only on Windows currently! **DP**

ON AN EDIROL

Many thanks for your reply to my plea for assistance with my troubled Lumley amplifier. The news was not good and I think Noel summed it up correctly when he said that I had got a duffer.

Fortunately, I have a second system based around a Leben amplifier which is very sweet and a great listen and allows me to get my fix on valves.

Another reader, Norman Undercroft, wrote to you and his letter appeared in the same issue seeking advice on a recorder with an inbuilt timer control.

The timer is a difficult one but as for recording, he could check out



Roland Edirol R9 digital recorder will record VHF/FM radio, says Paul Geoghegan.

the Roland Edirol R 09. This is a small device that works off mains or batteries. It can be interconnected [analogue] into a standard amp both for recording and playback. It can also be used for recording via its own inbuilt microphones. It can record in MP3 up to 24196 including CD quality 16/44. If a larger sound card was used, say a 16GB, and 16/44 standard was used, it would have a long recording time which may be enough for Norman to switch on before he departs his home. Okay, it would mean he would have to edit the recording but it is one way of achieving the purpose. The quality is not bad either.

The Edirol can be connected into a computer through its USB connection and this would allow a CD to be burnt off. A disc is supplied with the Edirol which gives a download which aids editing.

I've had great fun with mine, both recording off FM and also at the occasional concert. An open topped handbag is handy here along with the connivance of the significant other half. Kind regards to all,

**Paul Geoghegan,
Kilkenny,
Ireland**



Leema Tucana II "give a massive stomping presence to the music" and is the one to go for, says Editor David Price.

AMPLIFIER UPGRADE

After around 15 years with a system consisting of an Arcam Alpha 5 CD player, Alpha 5+ integrated amplifier with pre-amp out and Alpha 9 power amplifier bi-amping Castle Severn Speakers I decided last year that I really wanted more bass for my organ music. I listen exclusively to classical music, especially organ and choral music and like a very transparent and accurate sound. I auditioned most of the series of PMC floorstanders, and perhaps predictably opted for the OBI which were at the very top of my budget. I have been very pleased the upgrade from the Severns, not surprisingly as the OBI is cost around six times as much!

Whilst listening to the PMCs I was introduced to the Linn DS and liked it very much, and opted for the Akurate – which is considerably better than the Majik to my ears. The Majik was probably poorer than my previous Squeezebox receiver/DACmagic setup (added only in the last 2 years or so). My Arcam amps seem to be holding their own in this lofty company, and I have been surprised at how good they are, but I suspect I really ought to upgrade them too now, to get the best out of the new speakers and the DS. My budget is around £3500 and I have some questions about this.

Do you think it better to spend the budget on cheaper hardware that would allow me to bi-amp the speakers (the OBI is can actually be tri-amped

but that is perhaps going a bit too far and I don't have space in my rack! I currently have tweeter and midrange from the integrated and the low range driver from the power amp) or should I go for a more expensive integrated? I am quite keen on the Leema Tucana II I think, not that I have heard it yet. It has had excellent reviews and Leema is based in Wales, which is a bonus as I am Welsh! They also make a power amp which I could add later to bi-amp the speakers if it would be a lot better, but that takes me way over my budget. My dealer will suggest other options

to match my budget from Linn, Naim, Briston, perhaps Arcam and I think he had heard a Rega amp that he thought was very good. Obviously with the organ side of things I'm looking for strong but well controlled bass. Any advice or suggestions you might have would be very welcome!

yours sincerely,

**Dr Jeremy J Honeybun
Parc Glan Aber
Abergele.**

Well, I think you've answered your own question! Given that you're running fairly power-hungry loudspeakers, it would be hard to recommend another great amplifier favourite (the valve aspirated Ikon Audio MB845s, plus LA1 preamplifier, which are lovely but lack the physical heft needed to tickle your PMCs properly), while your budget isn't high enough for Hi-Fi World's current fave big solid-stater (the Musical Fidelity AMS50). What the Leema Tucana II does is give a massive stomping presence to the music, with real brawn where needed, allied to a lovely, delicate, musically articulate midband. As you say, you can also later upgrade your system by bi-amping with a Leema power amp. I think bi-amping is a great thing to do, but your bi-amped combo is only as good as the amps themselves, which is why you should aim as high as your budget affords. So go for the big



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Leema and hope your boat comes in at a later date, when you can then bi-amp it! **DP**

POWER LEADS

Ancillaries, such as power leads, mains cleaners etc. have been mentioned quite a lot recently and I thought I would share my own experience. Over a short period I bought a Lindy 6 gang mains cleaner and a Clear Audio Copperline Alpha mains lead for my hi-fi system. At the time I had a new Project Debut 3, Quad pre/power amp, and Wharfedale 9.1 Anniversary 'speakers on Atacama sand filled 24" stands. The upshot was that there was less noise, a bigger sound stage and a noticeable increase in the quality of the treble.

I am quite happy with these improvements, but it did occur to me that these upgrades should ideally be matched with other ones, say a new or improved cartridge, a complete upgrade of all cabling and interconnects, better stands etc., but, as all people who have realistic budget restraints, you have to start somewhere. A complete set of entry level ancillary upgrades can easily cost more than one piece of equipment upgrade if you aren't careful. I like my current set up (I have now got a Rega P3) and it will be a long time before I could buy meaningful upgrades to any part of the system now. I decided to start with taming the mains electricity first and the rest will come as and when.

On another tack, the articles on CD and tape Walkmans interested me, as I stopped using an MP3 player a couple of years ago and swap between a Sony CD Walkman D-NE900 and a Sony tape Walkman WM-EX182. I love the increase in quality from the CD player (I don't use the ATRAC programme) over MP3 and find the tape Walkman has the nicest sound for playing when out and about. I get a perverse pleasure from knowing that some of my tapes and CDs are older than most of the kids who get on the bus. There certainly seems to be a generation missing out on really good quality music and I think that's a little sad.

As usual, keep up the good work and I look forward to each issue.
yours,

Paul Clewlow.

The art of great hi-fi sound is balance. People often ask me if I think cables and interconnects are hyped up snake oil, and I reply that 'yes, of course, some are, but some aren't'. The trick isn't to lavish vast sums on cables (which is of course what cable manufacturers would love you to do), but neither to ignore them. A so-so system can be made good with judicious spending on cables, and the mains is where the story

starts. So I can see that your approach is a sensible one. As you say though, you can easily spend more on cables than on system components themselves, so we're back to finding the right balance.

Another point is that, even if you've only got stock mains leads and interconnects, you can improve the sound noticeably by keeping all the contacts clean. Clean all the plugs and pins with isopropyl alcohol; you'll be amazed how much black scunge comes off, and how much better the system sounds as a result. If you're feeling flush, spending £15 on some Kontak [www.kontakaudio.com] is better even than isopropyl.

Finally, we all like cassette here at Hi-Fi World. As Noel and I were saying only the other day, whilst it's become a forgotten format in terms of the media, it's not as far as people's daily lives are concerned; there were literally billions of the things sold since 1963, and many are still around nows. The surprising thing is that, given a decent eighties or nineties deck, the format is capable of very nice sound; it's also distinctively analogue, being warm and gently musical where MP3, AAC et al. are icy cold and hard. **DP**

EXPENSIVE SMILE

Having just read and enjoyed your review of the XTZ 99.25 'speakers you made reference to the AudioSmile Kensai as being one of your "fave rave standmounters under £2,000".

Er, wrong. You're going to have to take them off that list as they now sell for the princely sum of £2,300. The price hike hit at last Christmas or thereabouts, before which they sold for a more reasonable £1,500. The reason given was something to do with bringing us into line with overseas buyers or distributors. Correct me if I'm wrong please.

Whatever the reason is, that's over 50%. I'm not going to sink so low as to suggest a myriad of ploys that so readily spring to mind, a few of which are quite reasonable and acceptable, but 50%, come on. Now don't get me wrong, I'm not blaming AudioSmile in particular; in fact the Kensai is a very pleasant sounding 'speaker, but hi-fi in Great Britain is gradually being pushed

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out of the financial reach of Joe Public, who as things stand are being taxed till the pips squeak, into the arms of the rich with money to burn. In the end it will be a very small niche market selling overpriced equipment to super rich people who are more likely to boast about the cost of it and have it standing in a corner as the latest "must have" playing the latest "must have" down load off their ipod. We all accept there must be price rises for whatever reason, but for crying out loud chaps, have none of you heard of the old adage "slowly, slowly catchy monkey", little and more often, if you really have to.

I leave you with this thought: would you buy a car that went from £20,000 to £30,000 almost overnight even if you could comfortably afford the £20,000 in the first place?

p.s. I had looked on the AudioSmile web site just before Christmas when the price was £1,500 I believe, and remember reading the warning that the price was about to rise to £2,300, and checked again before writing this plea.

Ray Fordham



AudioSmile Kensai now costs £2300.

Hi Ray. As we've said many times manufacturers can charge what they like; there is no 'right and fair' price. The market decides whether it thinks the product is worth that amount, and buys or doesn't buy. Competition usually keeps prices down. Raise price and you lose sales, it's as simple as that. Normally if you raise price past a certain threshold, which in this case I would have put at £1995, meaning below the £2000 threshold, losses may be disproportionate and you lose more than you gain.

The export pricing problem is one I have faced. The dilemma is that when you use an overseas distributor he wants a large markup, in addition to the regional dealer's markup. The overseas price then becomes much greater than the local price in the country of manufacture, so people in the overseas territory promptly buy mail order from the country of manufacture and there is no easy way to prevent this. That obviously makes your overseas distributor and retailers very unhappy. Things get messy when they are asked, as local representatives of the product, to provide service and support.

One solution, one that AudioSmile seem to have taken, is to raise the local price to equal that overseas, but this means imposing a steep price hike in what is usually your largest market, often producing a big drop in sales. The solution I used was to produce an Export Version with added 'bits' that justified the higher price overseas. A higher standard of finish plus a bit of tuning was enough. **NK**

BUDGET MC

I read your article on budget MC cartridges in the May issue with great interest as I've been considering dipping a toe into MCs for a while now and can't afford the £3,000+ for a Koetsu! As I find it difficult to get to a dealer who stocks a range of cartridges these days, I'd more or less determined that I'd take a risk and go with your recommendation from these reviews.

The Ortofon Rondo Bronze looked like a good fit for the rest of my vinyl front end, a Michell GyroDec (1995 model with a DC motor upgrade), Rega RB300 arm and Goldring 1042 cartridge, but I'm struggling to find it anywhere at the price of £500 that you quoted. In all the retailers I've found on line it's between £595 and £650, which is a big hike from your quoted price. This of course may be down to my inability with a search engine but I'd appreciate your letting me know – if possible – where this particular cartridge can be found for £500. Failing that, is the Audio Technica AT-OC9/III a good alternative?



Michell Tecnoarm works well on an Orbe.

I'm also considering getting a spare RB300 I have modified, either by Michell to TecnoArm standard or by Origin Live to OL Silver standard. I guess my questions are now this:

Which would be the more effective upgrade – the arm or the cartridge, as I can't afford both at the moment?

Which of the two arm upgrades would you recommend?

Finally, can you recommend a good cartridge alignment protractor? I used to have one published by yourselves but it appears to have gone the way of all flesh!

Thanks for an always interesting and informative magazine and I look forward to your reply.

p.s. since I wrote the above I've been in contact with Michell who advise me that upgrading an RB300 isn't really a proposition for them as they do the TecnoArm work when the arm is still in its component parts. That may or may not rule that route out. My further question is now – what would spending the £475 that is the price of a TecnoArm buy me from OL, and what would be the better choice?

kind regards
Gordon Robinson

Because of the delay between writing a review and it appearing on the bookstand prices can change, and often if a product gets a great review, as in this case, then

that sets the ball rolling (upward!). Whilst the AT OC9 MLIII is a very good cartridge it is still on the bright side I am told (we have not reviewed it yet). It is not best to use a cartridge like this with silver wiring I feel, which often exacerbates the effect.

Ortofon's Rondo Bronze has a much smoother balance and may well sit more happily with silver wiring. I'd worry more about the quality than the price hike.

NK

If your existing cartridge is still in good condition, with a nice supple cantilever and a good diamond tip, then all things being equal the best upgrade will be the arm. You should always look to the source first; so



The new Triangle Antal EX offers a big, bold sound with great bass and is one possible Linn Keilidh replacement.

it's best to think in terms of the turntable having the biggest effect on the sound, then the arm, then the cartridge, and so on. Of course, this is the theoretically correct approach; in practice things are often different, especially if as I wondered, your cartridge isn't in AI condition. So... I'd get the arm upgraded.

Either buy a new Michell Tecnoarm and sell your Rega (you'll get a good price for it secondhand), or get your existing Rega upgraded. I'd recommend Audio Origami as a great place to start; they do a wide range of upgrades and superb work. They can make your Rega arm sound as good as the Tecnoarm, or even better, depending on how much you want to spend. Another possibility is the new Origin Live Silver 3c, which we're just about to review, and it should be a formidable performer, but is a bit pricey for you at £600. Overall, the simplest option is the Tecnoarm, after which you can look to the likes of an AT-OC9/III. Ortofon do a good little alignment protractor for under a tenner; see www.henley-designs.co.uk.

Finally, we're getting a lot of readers writing in to tell us our prices are wrong. All I can say is at the time of publication they are correct; but manufacturers have been doing a lot of 'readjustment' of late to take account of the falling value of the Pound. Whilst the last government didn't like to mention it, anyone who's travelled abroad will know that one Pound is about 20% down on a year ago. This is a substantial amount, and duly makes all imports (and indeed imported components which go into British made hi-fi) more expensive. That's why prices have risen, and inflation too. Here's hoping the Pound will stabilise, and consumer prices with it! **DP**

HYBRID AMPLIFIERS

Hi. I've enjoyed reading your magazine for the past year or so and finally decided to ask for advice. I have an entirely Linn based system built up over the last 15 years. I run active Keilidh speakers from LK140 and LK100 power amplifiers and a Kairn pre-amp with an LP12 (Ittok VIII arm, Klyde cartridge, Valhalla power supply and Keel) and Akurate DS player. I am certain that I can improve upon the Keilidhs which I feel are the weak point in the system and are now starting to show their age; their bass is slightly 'woolly' and the soundstage is poor.

I do feel somewhat trapped within the Linn system as I cannot simply change the ageing speakers but would also need to change the power amps

which if I replaced with new Linn equivalents would be a considerable cost.

Recently I listened to tube/solid state hybrid from Pathos with Kudos speakers (manufactured locally) and I was very impressed. I am struggling, however, to find any reviews of this type of hybrid amplifier that uses tubes for the pre amplifier stage and would great value your opinion as to their merits and suitable speaker pairing. My budget is up to £6000 for new speakers and integrated amp and I feel it's now time to break out of an all Linn system.

many thanks,
Paul Moran
Durham
UK

Hybrids like those from Vincent can work very well, we find. It does depend upon the topology and implementation though; both need to be of good quality. A graunchy solid-state power stage suffering crossover distortion isn't redeemed by a tube preamp. Curiously, a nice combo was a Naim NAP250 power amplifier driven by an Icon Audio LA4 preamp., and even one of their phono stages would do the job, as they have plenty of gain and a volume control.

A good replacement for a Keilidh would be a Triangle Antal EX. It has a big, bold sound with excellent bass and is worth auditioning. **NK**

Breaking up is never easy, Paul, especially if it's with a pair of speakers you've had for a long time. Given that you don't seem to want to stay with Linn, then what you're going to have to do is to go around auditioning a range of other loudspeakers. The trick then is to find an amplifier that complements them. The choice is enormous; you have Eminent Technology LFT-8b panel speakers, One Thing modified Quad ESL-57 electrostatics, classy conventional floorstanders like Yamaha Soavo 1.1s, brilliant eccentric standmounters like My Audio Design My Clapton Grand MMs, and the list goes on and on. It's simply impossible for me to recommend something to you unless you tell me what sort of music you like, how big your listening room is and what you want from

your new system.

Of course, my personal preference would be close to what Paul Rigby is running right now; a pair of One Thing modded Quads and a pair of Icon Audio MB845 tube monoblocks; I'd control them via an MF Audio Passive preamplifier. This is a wonderfully expansive, musical and fast sounding system with oodles of sweetness too. But that's just me, and I can't legislate for your tastes. Perhaps you'd prefer a grippy, punchy solid-state system via a Leema Tucana II amplifier pushing loads of wallop into a pair of Yamaha Soavo 1.1s? Another fast punchy system, but tonally more spry, crisp and dry. It does go louder and harder though, in a way you wouldn't get from valves. See what I mean? It's difficult to spend your money for you until I know more. Please write back! **DP**

BUDS OF MAY

I have just finished reading the May issue and really appreciated the article on "oldie" turntables. What with the LP12 being out of trim (a regular three year thing) and the Denon DL103 on the 12" Ittok + Sony TTS3000 having lost its cantilever (a cleaning lady first!), that article prompted me to swap turntables around a bit.

Since the two disasters to my favorites, I had been using my trusty JBE Slate s3 with Technoarm a and Grado Sonata but tonight I decided to check out my Technics SL110+3009/Shure V15 III - glad I did! It is not perfect but it is a very coherent whole - a real fun experience with Rock and albums from Madonna, Yes, Siouxsie...

I now have two major problems to sort out. Which one of the DDs do I keep? JBE, SL110 or that Denon DP2000 which never got its Hadcock installed? No way I can house six TTs in the sitting room and I see no point in storing them in the attic. Whichever DD I keep will end up with that Technoarm or the 9" Ittok from the LP12 when I can afford an Ekos or a more modern SME.

The other problem to sort is what to put on the SME 2012 when it arrives next week (my piggy bank got mugged). For the next few months it will have to be either the 3009+V15 or the

Get an SME V tonearm for your Denon DP2000 Direct Drive turntable.





Keep the Denon DP2000 turntable says David.

Technoarm a+Grado Sonata (on Bastin adaptor) but which? Mid Autumn I should be able to find £2.5k for an arm and cart.

The context: Chord DAC64 MkII+CEC TL51 (really nice), Linto, Naim Stageline or EAR 834P phono stages (medium term goal an Aesthetix Rhea or an EAR pre with double phono inputs), Avondale amps (long term goal Class A integrated or Airtight ATM1S) and Proac Future .5 speakers.

Suggestions concerning what to listen to would be appreciated, as the phrase goes.

Nigel

It is difficult to answer a question like that. It's like what classic car do I keep, the Sunbeam Alpine, the MGB GTV8 or the Healey 3000?

If it was me I'd keep the Denon, simply because it's rarer than the Technics, whereas the JBE is a lovely deck in its way but not earth-shatteringly reliable, so I am told. As for your turntable, I'd look towards an SMEV tonearm (in black finish) with the likes of an Audio Technica OC9/III cartridge; or if you have enough dosh then an Ortofon Cadenza Blue MC. **DP**

A HOMAGE

If you recall you posted a letter of mine in the April 2010 edition, and asked me to return with my thoughts about what I wished to do. I stated that I was looking to upgrade my speakers and had my mind set on a pair of Sonus Faber Cremona Auditors to replace my Ruark Equinoxes. I wanted to pair these with my Musical Fidelity Nu Vista m3 amp and Nu Vista 3d CD player.

Well, I took a blind leap and the advice of a chap on a hi-fi forum and bought a pair of Sonus Faber Guarneri Homage that were in as mint a condition as you could ever expect. Also, I shopped around and found a pair of Missing Link Cryo Ref Interconnects and a pair of Cryo Ref speaker cables for a very good price.

Without getting into any technical jargon and fancy wording about sound I would just like to say that never in my wildest dreams did I ever expect to have such a beautifully presented sound stage; this was just the sound I

have been searching for. Honestly, when I put on the David Gilmour CD 'On An Island' I was completely astounded at what I was hearing, it was like Liquid Gold being poured through Silk, with the tightest bass and open detailed midrange I have ever heard (the Townshend Supertweeters may have added to this also), just very fatigue free.

I have been playing guitar for some years now and have seen and heard a lot of live performances from talented and not so talented people, well when I put a CD into this system it just works like a perfect ensemble of professional heads. The music just sounds very professional.

I still plan on having the amplifier upgraded in the future (CD player has already been upgraded) and I will replace the cables on the back as well as the jumper cables on the inside with more Missing Link Silver. I am even considering in the future buying the Isotek Aquarius mains conditioner.

The only thing I would say is that vinyl has a fatter sound with my Vpi Aries Scout with JMW-9 tonearm and Goldring 1042 cartridge. Any ideas on thinning the sound from the vinyl?

Or any ideas on what I have just written would be great. If I can improve on this sound I will be very,



Sonus Faber Guarneri Homage loudspeaker

very happy but as this system stands at the moment I will be keeping this combination for life and looking forward to adding whatever I can to try and improve on it. I did read in an earlier edition where you stated that a CD demagnetiser would maybe help.

I have really begun to listen to classical music as I have never heard it played properly like this before and all my other CDs have been transformed into just something very different, even the rock and heavy CDs sound fantastic. Any advice would be appreciated. Cheers and thanks for a wonderful magazine.

**Alan,
N Ireland**

Hi Alan - good to know things have worked out for you! The vinyl sound can be 'thinned' with a £300 Audio Technica AT-F7 moving coil cartridge, which is a good bit crisper and leaner (and faster and more detailed) than your Goldring. Going for the £100 cheaper AT-F3/III would also be an improvement, but I think the F7 would be a much larger one, for just a few shillings more, as it were... **DP**

OPTICAL MAC?

Since the age of 15 (I'm only 25 now) I've read hi-fi mags and have come to favor your magazine over the others, based on auditioning a large variety of equipment over the years and tending to agree with a lot of your reviews. So I thought this to be a great opportunity to write in for your opinion on my current dilemma.

Since my CD player died, I've been seriously researching the best way to incorporate a music server into my hi-fi system. Even though I build PCs and use Microsoft Windows on a daily basis, I've decided against this route in favour for an Apple Mac Mini. The problem is that I can't decide whether to go Optical or USB.

My current system consists of: Dynaudio Audience 82 speakers (real wood version), Audio Note L3 pre-amp (that I built and upgraded with a remote controlled Dact stepped attenuator) and the original Quad IIs (that I've sympathetically modified). I know the Quads aren't ideal to drive the Dynaudios but I love the sound they produce and I live in a flat, so the low power probably keeps my neighbours happy.

Ideally, I'd like to build an Audio Note DAC to connect the Mac Mini to my system, but it doesn't have an optical input. In my mind I'd prefer to use an optical connection to isolate noise from the Mac. I have also read that the Mac doesn't automatically switch between sample rates when outputting to a USB DAC. So I have to change settings in OS X to the correct sample rate of each track to ensure bit perfect output. But I can't find information on whether this is an issue when using the optical output. Most of my music will be ripped from CD to WAV or AIFF format using error correction. But I will want to download higher sample rates in the future when they become more available and I know manually changing the sample rates on the Mac will become tedious.

So the questions are: do I use Optical or USB? And if I were to use Optical, what DAC would you recommend for around £1000-£1300? Any help/advice would be much appreciated.

kind regards,
Mr. Leigh Penny



PICTURE COURTESY OF APPLE

New Mac Mini outputs digital audio from USB, and analogue audio from a jack. S/PDIF is rare on computers.

Hi Leigh. I am not aware Mac Minis have an optical audio output. Mine don't and the new ones don't either. You must use USB.

The Mac will not alter sample rate unless it runs a programme that down samples (or even up samples), such as an editor of some sort, like the free Audacity programme. Ripping from CD will give you 16bit code at 44.1kHz sample rate and this is what the computer will store as a WAV file. On playback the DAC will detect and play the PCM digital stream automatically and 96kHz sample rate at 24bit resolution is not uncommon. A Musical Fidelity V-DAC has a USB input and does what you want. In my experience 24/48 is nice and smooth, 24/96 faster sharper and cleaner and 24/192 like 24/96 but more densely detailed. Have fun! NK

RECORD CARE

Many thanks indeed to Paul Rigby for his excellent article on record care ("Wash and Go" – June '10 issue). I have been using a (Moth) RCM for many years but I still learnt from the article - e.g. why the 1:4 mix of alcohol I use is probably the optimum.

I've not bought isopropyl alcohol for some years and I am now needing new stock, so the supplier info is timely. I checked out both recommendations and found that Biostain (£5.20 for 1 litre, with free carriage) is the less expensive of the two. I also bought a small supply of 150 ml plastic bottles with atomiser tops for less than £1 a bottle from www.naturalthinking.com. Very useful for applying different solutions (I now intend to use the 1:4 alcohol/water mix, followed by Russ Andrews' detergent based solution and a water rinse). Incidentally, Russ supplies the Keith Monks RCM, as well as a much cheaper one, and www.britishaudio.co.uk also supply a range of anti-static inner sleeves.

Just one thing to add to Paul's tips and that is to add wetting agent to the alcohol/water and/or water rinse. This can be obtained from good photographic suppliers (or Google 'wetting agent'). The primary function is to break down surface tension but, very usefully, it is also an anti-static agent. Caution with this because only very tiny amounts are

required so it is best to add the wetting agent to the water before mixing with the alcohol.

keep up the good work!

Bob Parsons

TRANSMISSION

Many years ago I thought some of the best sounds at the annual Audio Show came from Transmission Line speakers from the likes of I.M.F. and Cambridge Audio, but they also tended to be somewhat on the large size. Then in 1994 in your D.I.Y. Supplement No7 Dominic Baker described the building of a pair of I.P.L. Compact transmission-line loaded speakers which he said were fun to build, well designed and sounded superb.

Shortly after this they were on demonstration at the Audio Show at the Ramada Hotel and having heard them I decided to build a pair.

They were easy to build [but I had built several others in the past] and I must correct the impression Dominic Baker gave that the crossovers must be fitted before the last side panel is in place. This is not so as the crossovers can be fitted through the cutout for the bass unit.

These speakers have given me much pleasure and I have recently improved them with an upgrade kit from I.P.L. consisting of ribbon tweeters, improved bass units and crossover components all for £215 including delivery and it certainly is an upgrade as I listen mainly to classical music and the sound of soprano voices and the instruments of the orchestra are superb.

On another subject, in this month's H.F.W. a reader asks if you can recommend a phono pre-amp circuit and I note that in the same D.I.Y. Supplement No7 your own Andy Grove has a D.I.Y. Phono Amp circuit. Do you have any experience of this design as I had considered building it. with best wishes to you all from

**Bob Angus,
Brentwood,
Essex.**

Thanks for the reminder about IPL, who are still selling an attractive range of DIY loudspeakers. We do not have any info now on Andy's

phono preamp from our April 1994 issue, nor much memory, so much water has passed under the bridge. Andy Grove is now with Audionote. **NK**

CLEAN SLATE

Could I suggest that you do an article on a company called Slateage near Burnley. See <http://www.slateage.com/stone-products/hi-fi-furniture>. I have just had my slate plinths for my Garrard 401/SME IV combination, and they are every bit as good as the ones in the photograph, at a very reasonable cost. With the demise of Slatedeck this company offers a very viable alternative for Garrard 301/401 enthusiasts.

The company is great to deal with, comprising of John, Lynne and Katherine and possibly a few more!

regards
Mike Bickley

Hi Mike - we shall investigate; thanks for the tip! **DP**



IPL Compact transmission line loaded loudspeakers were great to build, says Bob Angus.

DENON DELIGHT

In last month's Hi-Fi World you mentioned that you might like to investigate souped-up Denon DL103s some time. Having spent a lot of time playing with the standard model, at Christmas I fitted mine with an Isokinetic metal body, ran it for a while like that and then sent it off to Expert Stylus Co. to be fitted with their sapphire cantilever and Paratrace line-contact stylus. It is bedding in nicely now and I am finalising setup, electrical loading etc. but I can report that it is starting to sound very good.

Here are some notes on results so far.

1. There is no need to rush out a review - Wyndham and Paul Hodgson at Expert Stylus Company are absolutely swamped with work at the moment.

2. Fitting the metal body is tricky (the fitting instructions are a bit lacking) and not for the faint-hearted but it does

make the standard DL103 sound subtly but significantly better (more air and definition on cymbals and plucked guitar strings, less colouration).

3. The ESCo sapphire cantilever and Paratrace stylus reduces tracking weight to 1.8-2.0g, adds treble detail, kills end of side distortion and clearly improves sound further.

4. Value for money? If the standard DL103 is good value for £110 or so, then the sound of the metal bodied version for an extra £80 is definitely better, so it must also be good value. (I suspect that the Isokinetik mass plate fitting which glues to the standard DL103 body may give most of the sonic benefit of the metal body for less money and trouble but it isn't as pretty.)

Adding the Paratrace stylus definitely makes it better still but I'm not sure what the value for money rating would be if it was all fitted to a new cartridge (total £370). However common sense says you might as well use the standard DL103 stylus first until it wears and then replace it with a Paratrace, in which case the latter is equivalent to getting an upgraded new cartridge for only £180 and at that the sound quality I'm getting would definitely rate as 'a bargain'.

5. The Mayware MkV unipivot arm has a rider weight on the arm tube which allows its effective mass to be varied from about 7g to 14g, so I have been able to experiment with the effects of this on the DL103. In standard arrangement (2.5g playing weight) the Mayware effective mass is about 9g and everything works fine. However moving the arm rider weight right up to the headshell to increase effective mass to about 14g brings a major sound improvement, tidying up the bass and moving everything else towards a very clean 'master-tape' sound.

Electrical loading is also critical: I have fitted a double-gang potentiometer wired across the transformer input so that electrical loading can be finely adjusted when it is playing. Too high makes the treble brash and edgy, too low makes it a bit muted and I find the DL103 sounds best if it sees about 150-200 ohms.

6. The Isokinetik metal body is about 4g heavier than the standard one, so I tried it with the Mayware first set to 9g effective mass (similar total mass to standard DL103 with arm set to 14g) and then set to 14g (similar total effective mass to a standard DL103 mounted in an 18g effective mass arm). I found that the higher effective mass was still better but the difference was much less than the difference between 9g and 14g effective mass with the standard DL103.

This confirms that the DL103 does like arm effective mass to be higher

than the standard 10.5g or so Rega.

The extra mass of an Isokinetik plate or metal body is a handy way of doing this but best results come from even higher effective mass: either the standard body DL103 in an 18g effective mass arm, or a metal-bodied DL103 in a 14g arm. (A simple calculation shows that these figures aren't too surprising: the DL103 is reputed to have an effective dynamic compliance of about 11 μ cu, which is a little over half that of a Goldring G1042 - so it should be at home with towards double the effective mass (arm plus cartridge weight). I calculate that with a 14g arm and the cartridge mass increased by the extra 4g weight of the metal body, the DL103/ Mayware resonant frequency should be about 9Hz, which is fine.)

7. Initially, I found that with the Paratrace stylus fitted and cartridge fixing bolts screwed up tight the sound had masses of detail but also a bit of treble glare. Putting nylon washers under the bolt heads and nipping them up 'just nicely' rather than 'as tight as they go' sorted this out and the sound is now very detailed, clean and balanced. This method of fixing is what Mayware used to recommend and goes along with the



TJ Full Music 12AX7s bring more life and vigour to the music, says Paul Derlacki.

common view that the Denon likes to dissipate energy into a slightly 'lossy' arm. (Don't scoff - this isn't half as wacky an idea as the Cartridge Man Isolator!)

I hope you find these notes helpful if you decide to try a souped up DL103 yourself. Please get in touch if you fancy a listen to mine.

yours sincerely,
Alasdair Beal

Thanks for your notes and sound quality impressions Alasdair. I am sure many DL103 fans will appreciate them and will be fascinated by what is possible, as I was. **NK**

UPGRADE

My interest in hi-fi started with the purchase of an Armstrong 625 tuner amp driving a pair of KEF Kit 3 speakers. My turntable was a Thorens 12, SME Mark II and Shure V15 Mark III cartridge. As a starter system, it did the job and got me hooked in the

search for a better sound. I moved on to a Lecson pre power combination and upgraded to an AP3 - which gave up the ghost when it caught fire! Selling the KEF Kits, I built a pair of transmission line speakers published in Hi-Fi News, I think. They produced a dynamic sound. Eventually, I got the bug again and bought a pair of IMFTLS80s. Monsters.

Anyway, times changed, I got married, kids came along and the hi-fi went to pay bills. The last speakers I had were a pair of Harbeth monitors.

It was some years later, at one of the Heathrow shows that I heard a valve amp driving a pair of IMF professional monitors from a reel-to-reel tape. The sound was so superior to my transistor amps. At the same time, only by chance, I wandered into the Quad room and heard the ESL-57. Awesome. After a listen to these, moving coil loudspeakers sound so closed in and restricted in their presentation of music. The only thing that came close to my ears was a Focal Utopia - which at the time was retailing for £60,00, way out of my budget. That said, I have heard better loudspeakers than the '57 - but it was a pair of stacked '57s at Audio T - they blew the TLS 80 away, making them

sound bass heavy and rather ponderous. Perhaps the ultimate single pair of '57s I ever heard were directly coupled to an EAR amp. What a sound stage they produced!

My current system, in a dedicated listening room 20 by 12 by 8 feet, is an EAR 859 - 13 watts and the EAR 834 phono box. Turntable is a Garrard 301, fitted with an Origin Live Illustrious arm and Dynavector Karat 17D2 cartridge. The latter replaced an SME 10rtophon VMS E cartridge on the Garrard - although the latter combination certainly produced a much more discernible soundstage. I miss this. Speakers are - yes - the Quad ESL57.

Recently I have replaced the tubes in the phono box with TJ Full Music 12AX7 - after a review in Hi-Fi World. What an upgrade - much more life and vigour to the music. Loudspeaker cable is by Cable Talk, interconnects are Dragon from Silverman, and power leads Yellow O from Russ Andrews. All this is

supported on a shelf attached to an outside wall and is supported on 30mm granite slabs - courtesy of a stone mason I know well. Bass is augmented by a REL Strata 5. Despite it being moving coil, it goes well with the '57s.

This brings me to my main point; I will retire in the near future and will be able to invest a sum of around £10,000 - £12,000 in good quality components. I am clear in the type of sound I want. The sound now is organic with a

I was going to get the EAR 890 - but this has had a considerable price hike to £5,000. Should I consider something like the 845 from Icon Audio or their 150 monoblocks - both are much cheaper. At the March hi-fi show I heard a NAT Se1 amp - this sounded superb and produced solid, three dimensional images. The amp goes for around £6,000. Mind you, I notice it was using a Lyra Titan - probably beyond my budget.

What about the phono stage? You

shortly.

Icon Audio also have some excellent phono stages, the PS3 being one of the best. I think you are a candidate!

It seems now you are cool using anything made either by Apple Computer, or made so long ago it has an olde worlde elegance, like Jaguar E Type, Triumph Bonneville, Garrard 301/401. Uncool and being freely discarded are all those clunky C.E. gadgets and geeky software, so the Herald Tribune says. The LP is set to soldier on I believe, but compressed audio formats are just a child of their data rate challenged time and are nothing in themselves. **NK**

TOP TUNER

I used to be the proud owner of a Technics ST9600, covered in the May 2010 issue, from 1979 - 2008. Stupidly, I sold it for the paltry sum of £50, about 2 years ago. It was in 'as new' condition, despite having been bought in Germany (in the forces), and used in the UK, Germany and Spain flawlessly. The comment about using a piece of wet string as an aerial is true and all my attempts to improve on an indoor item was usually money wasted. The reason for selling was being advised by an "expert" (yeah, right) that FM would soon be defunct and replaced by DAB/ internet. I listen now on old style FM using a Shanling MC30.

The reason for writing is an article by Haden Boardman, referring to the switches on the Technics ST9600. It just so happens that I have an original matching switch. Three of mine broke or wore out over the years and were replaced by some more robust ones. I have one original and four replacement silver ones that are a good match for the dials. If Mr Boardman would like them could you ask him to contact me.

**Mike Harris,
Burnham-on-Sea,
Somerset**

Thanks for your observations Mike - and sorry to hear about the 'expert' who thinks that because something is new it must automatically be better. I will pass your kind offer on to Haden. **NK**

NOT SO NEW

In November 2009 you printed my letter asking advice on changing the arm on my Goldring Lenco GL75. I followed Adam's advice and bought a Jelco SA-250ST. While the deck was in bits I resprayed the plinth in satin black and filled any holes that were not needed in the top plate. I then resprayed the top plate. Once the arm was fitted and an Ortofon VMS 20 E installed I then connected up to my Pioneer A400



Quad II-eighty power amplifiers will drive any loudspeaker well, including ESL-57s.

propulsive bass. So any upgrade should produce bass that is clean and tuneful, as it is in my current system. I would like to improve treble - especially at the high end and would like more dynamics from the system. Now, bear in mind much of this is relative - I do not care for the horn type of dynamics, just a greater contrast between low level detail and those of say percussion. I would like better imaging too.

Music played is mainly LPs recorded live, middle of the road rock typically The Who, Dire Straits, Genesis, Van Morrison et al. Increasingly, I have been collecting classical records, Beethoven, Strauss, Mahler. More recently I have acquired a collection of jazz LPs - Coltrane. Headphones are Micro Seiki - MS2 electrostatic. Any replacement amp must be able to drive these to reasonable volumes - the 13 watts of the EAR is just not enough.

As part of the upgrade, I propose to have the ESL57s renovated by One Thing. The turntable needs a service - either by Martin Bastin or Loricraft. Speaker cable/power cords will be replaced in due course, but only after I make the equipment changes and are not included in the budget.

I am minded to retain the Illustrious tone arm but upgrade the cartridge, amplifier and possibly the phono stage. I noticed in a past issue, David mentioned a Koetsu making an Ortofon sound mechanical. Is this the way to go? It is here that things get confusing. Initially,

have been critical of the 834. Should I be considering World Design kits - they seem to offer high quality at good prices. Whatever upgrades I make, I would like it to be a step change - as opposed to something that merely gives a different presentation.

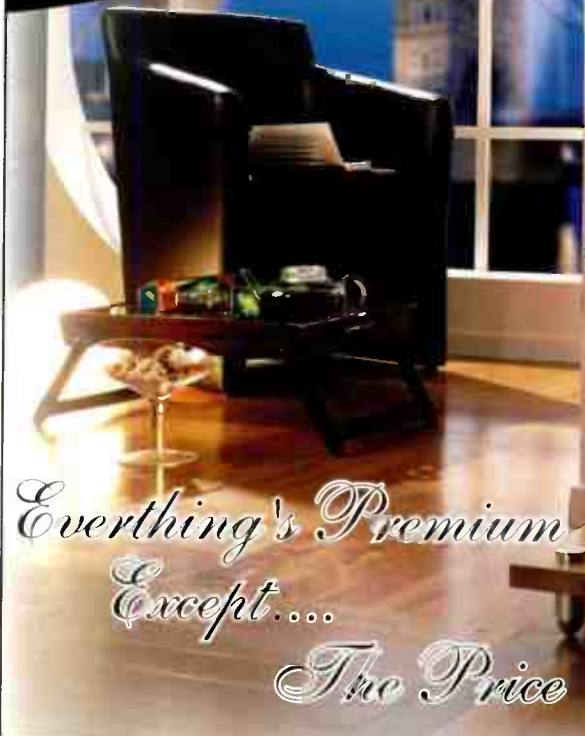
On a final note, the commercial hi-fi industry needs to look to its laurels. MP3 downloads are really only for music on the move. I suspect few users listen actively to what is happening when they play a track. It will not replace a room based system that enables the listener to follow and engage emotionally with the music. Retailers should make more of this. Internet streaming via Linn et al is another matter and may be the way in the future. But you lose the tactile feel of an LP and its cover, some of which are works of art.

Keep up the good work.

Paul Derlacki

Hi Paul. A pair of One Thing upgraded Quad ESL57 electrostatic loudspeakers are hard to beat, so you will be keeping them I imagine, as your letter suggests. Drive options are Quad II-eightys (II-fortys are designed for ESL-57s, having the correct amount of puff, but II-eightys have better subjective dynamics) or Icon Audio MB845s. The latter have a darker sound of the two, due to the graphite anodes of the big 845 valve I suspect. We are told a new upgraded version, presumably MB845 II, is due

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through Castle Richmond speakers. The sound was amazing, clear midrange and good bass.

In a couple of months time I would like to change the cartridge and have £250 to spend. Any suggestions?

I also changed the arm on my Technics SL-f200 to a Linn Basik Plus with Grado Prestige Gold cartridge, again a great improvement, but I prefer the Goldring Lenco.

As I sit listening to my Leak Troughline 3 through a NAD 3020 and KEF 104ABs I think there is life in some of the old gear and new is not always better.

Thank you to Adam and long may Hi-Fi World continue to promote vintage equipment.

Regards

David Oxtoby.

Hi David - thanks for that. The best moving magnet at your budget is surely the Ortofon 2M Bronze at £280. **DP**

LOSS LESS

I wonder if you can help me with a couple of queries. The first concerns transformers - I know that at your magazine you admire the 'Music First' pre-amp - a transformer design. Can you explain how such a device achieves gain without 'active' circuitry? As I understand it, in physics there is no gain in one area without loss in another - so where is the 'loss' in a transformer?

Also, if it works so well for the small voltages in a pre-amp could a much larger version be used to drive a loudspeaker?

My second question is about noise in active electronics. I have two mono-bloc amps with toroidal coils around 5" wide and caps around 2" wide which run completely silently, yet some other, much smaller equipment buzzes as if an insect were loose in the casework. I understand that DC on the mains is a major culprit, but why does only some equipment suffer and would a large capacitance filter help things? many thanks in advance

Cris

Transformers step voltage up, but (max) current down as their impedance goes up. You can only

exploit their step up where the source impedance is lower than the load impedance, say from a moving coil cartridge of around 1 Ohm source Z to the input of a small signal valve which will be 1M Ohm or so, or even the Gate of an FET. Loudspeakers are very low impedance so you cannot drive them with a step up transformer. Valve amps instead use a step-down to drive them.

Power supply buzz is related both to supply cleanliness and the sturdiness of transformers and coils to resist buzzing caused by mains harmonics. I am uncertain that d.c. induces buzz, but it certainly causes other problems and is best eliminated. **NK**

RESIST TEMPTATION

Having managed to resist the temptation (just) to dispose of my vinyl replay system during the years after CD's introduction, I would now like to ask your advice about the best way to upgrade my turntable.

My primary system is as follows: Gyrodec (second generation) Export with deep lid. This has the original a.c. motor and supply, original bearing but latest suspension.



To a Goldring Lenco GL75 David Oxtoby fitted a Jelco SA-250ST arm.

The arm is an Eminent Technology 2 with Audionote silver litz cable and Tiffany RCA sockets. Air is supplied by a small air compressor.

Cartridge is an Audio Technica Art 1 moving coil. When originally set up the deck was also equipped with a Rega RB300 and Technics MC305 mc cartridge (regrettably disposed of) which were used for "casual" listening. The current mc stage is a Pro-ject phono box limited edition. Other sources are

a Shanling CD2000 SACD with valve output, Nakamichi BX125 cassette deck, DAB from a Magic Box phone and an Onkyo NDS1 i-pod dock feeding a Theta Cobalt DAC.

Amplifiers are either a Chinese EL34 or KT88 with a Mod Squad passive when needed. Speakers are either Lake Audio ribbon hybrid stand mounts, or Acoustic Solutions tablelamp omnis. The "either" is a result of an imminent house move and once this has taken place the system will hopefully have a pair of Audiostatic speakers possibly driven by Alesis studio amps.

I recently obtained a Panasonic SL-18 belt drive turntable equipped with a Sumiko Bluepoint feeding a Yaqin valve mm pre-amp. This has "replaced" the RB300 and Technics mc for casual listening (it's surprisingly good in terms of sound quality) and will be used in the second system once we've moved. All cabling is high quality pure silver including the speaker cables.

Now for the big question! What is the best upgrade path to follow? I could upgrade the bearing to the latest inverted type, I could upgrade the motor and/or the power supply. I don't like the Orbe platter, so that isn't an option, the basic question being: which will give me the biggest improvement-to-cost ratio.

Second part of my question: I want to replace the RB300 arm and know that since I purchased the (early) one previously fitted to the deck, arms in general have improved. I would like an arm with fixed headshell but with cabling I can change. I have an Ortofon MC20 with VdH re-tip that is waiting to be installed, the big caveat to my choice of arm being that it will always be the second rate "casual" one (end of side distortion, like speaker box distortion is

something you don't notice until it isn't there), so I don't want to spend vast amounts of money. I was thinking along the lines of a Jelco or similar, or is the Rega route the best way to go? After all, I do know how good the arm and deck work together, if so, which version? There seem to be so many now. For obvious reasons there isn't any chance of auditioning a similar system.

Thanks for your help.

Richard Painting



Naim Supernait is a top quality solid-state amplifier well worth considering.

What a fascinating front end that is! I'm almost loathe to recommend you do anything to your GyroDec, because it's almost 'historically significant' due to its antique specification; think how few 'pure' mid-nineteen seventies Linn LP12s there are these days, and how interesting they are when you see one...

Anyway, assuming that you do want to upgrade it and not just buy a new one; they're not that expensive, you know. I'd start with the main bearing then go to the DC motor, in that order. Also, order some damping compound for the subchassis from Michell; this black sticky gunge is standard with Orbes, and cuts down some of the zing of that big alloy ring.

Last but certainly not least is your phono stage; you should be looking at the likes of a ANT Audio Kora 3T LTD (£1,000) eventually, because your Pro-ject simply isn't good enough for the rest of your system. You'd get a massive improvement in air, space, depth, detail and musicality. My thoughts on your Rega would be to simply get it rewired and/or souped up by Audio Origami; there's little that can touch the RB300 under around £700 if it's had the full treatment. **DP**

AMPLIFIER CHOICE

Over the past 5 years or so I've been probably spending too much time reading, hopefully absorbing much of the information put in front of me by publications like yours. Now I'm the sort of person that may never jump on the wrong train, but being so concerned about that wrong train, I may miss the right one! If something is worth doing, then it's probably worth over doing! Now thoughts like this have stopped me buying on a whim, but with so many possible choices, reading can cloud the mind, although some progress has been made.

I've come to the conclusion convenience and quality is my way forward, which is why I have decided not to go back down the vinyl route. Yes shock, horror! Sorry to all you vinyl buffs who consider there is no other way and that I should be taken away and locked up, but development in electronics of late, plus busy lifestyle means that's the

way forward for me. Monitor Audio's PL200 loudspeakers were, after many auditions, purchased not so long ago (great) as an upgrade, with the idea of going for a Naim HDX or something similar.

Now let's assume at this point I went with an HDX, with the above speakers, can you suggest an amp that may complement the above.

I would like to go with a one box unit, but if preamp and power amp are the way forward, then so be it.

Budget? I would rather try to get things right, or at least not be left thinking if I only spent a little more.

As far as musical taste goes, well most really. Any help would be greatly appreciated.

regards

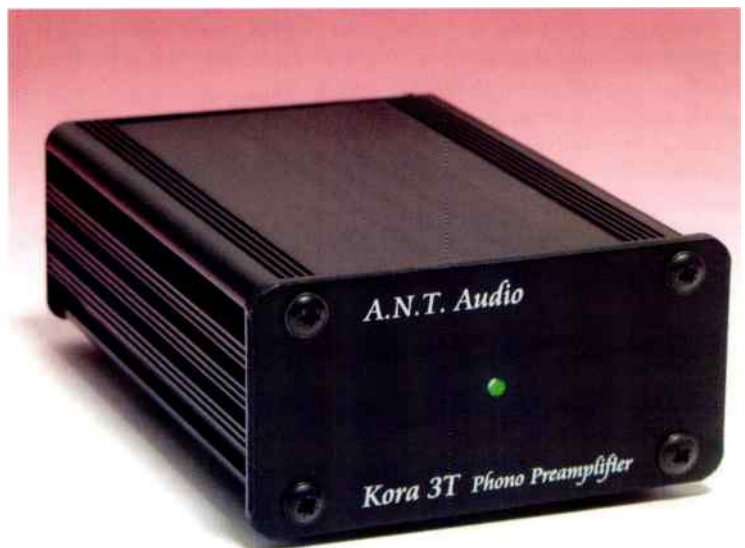
Kevin Forsey

Hi Kevin - well if you're going for convenience, then why spoil the ship for a ha'peth of tar, so to speak? If you're set on an HDX, which is certainly no bad thing, then it makes sense to match it with the Naim SuperNait (£2,600). It's a visual and a sonic match, and will drive your

SuperNait is a big, punchy and fun sounding device, whereas the twice-the-price Musical Fidelity has more depth, space, detail, insight and grip. Both are brilliant at their respective price points; it's simply a matter of choosing the one that suits your wallet. **DP**

TRANSITIONS

That was an interesting leader in the June edition noting the transition in the market place and the current position. As someone who has lived through it all and listened to all manner of equipment over the past 40 years it occurs that, while one fondly remembers certain specific items such as Lowther horns, the big IMF transmission line speakers, the original Bose 901s, various amplifier combinations, Garrard 401 chassis (which you used to be able to buy in Tottenham Court Road for £50) and much more, it is never-the-less certain combinations of components which stick in the memory as being special. Often such combinations seem rather unlikely - a favourite was a Radford transistor pre-power



Ant Audio Kora 3T phono stage, simple but with a great sound.

Monitor Audio PL200s with skill; Hi-Fi World's very own Adam Smith uses it as a reference amplifier. Alternatively, if it's a no holds bar top end integrated you want, I must suggest the Musical Fidelity AMS35i, which is a barnstorming full Class A integrated for £6,000. The

amplifier driving a pair of B&W DM7s (I think they were called DM7s - with a dome tweeter housing on the top surface) fed by a Thorens / SME 3009 and Shure V15 cartridge, which provided a sound so smooth, completely unforced and natural in character as to make the system



B&W DM7, with tweeter on top and ABR beneath bass unit (picture courtesy of B&W).

almost disappear sonically.

We had for a time one of the big and ugly Goodmans receivers (called the 130, I think) which, while a little plasticky in appearance had an FM section which seemed to be of a high quality and perfectly matched to the amplifier, providing a quality of sound well beyond what was expected, driving some medium sized Tannoys - again a fairly natural sound which didn't scream "hi-fi" at you.

More recently, I have had some surprises when listening to relatively modest components well matched into holistic sounding systems.

The opposite can also be true of course - great individual components badly matched and not delivering their promise.

It all serves to remind me that one of the pleasures of this hobby of ours is tweaking and matching sometimes seemingly unlikely combinations of components, and being surprised and delighted by unexpected sonic results. Different combinations providing significant alterations of character - one of the components of course

being the listening room itself. However, such experimentation may become more difficult if the market polarises to be 'high end' and little else as far as two channel audio is concerned. Cambridge Audio have shown that there is still a viable market at the affordable end of the scale and it will be interesting to see how things pan out in the next few years in this context. Perhaps, as your welcome comment suggested, we might look forward to greater diversity in the future, supporting further experimentation by a wider range of enthusiasts. I hope so.

Douglas Marc Berkhamsted

K5881

A long time ago, I constructed one of your World Audio Design amplifiers, the K5881. If I remember correctly, it cost me about £350. It has given me excellent service and still sounds as musical as ever!

However, in one of your rival magazines, I have just read a favourable review of a 5881-based amplifier, the Synthesis Shine. True, it has remote control but that appears to be the only visible difference between it and the K5881 except that it retails at £2449! Is this some kind of clone or merely testament to the quality of your original model?

One other difference is that Synthesis has managed to squeeze 40 watts RMS out of the same configuration, so my guess is that must be at the expense of some sweetness.

Well done Hi-Fi World!

**Roger Bick
Bristol**

I think it was Andy Grove who suggested we use the sturdy Russian 5881 valve in our Mullard 5-20 update and the result was a lovely amplifier, one that in tuned form (i.e. Black Gate bypass electrolytics, Jensen paper-in-oil coupling caps.) David Price uses today as an example of easy euphony.

Running a valve hard for maximum power output shortens its life. The 5881 valve is inexpensive so this is not such a big deal perhaps. But we designed for long life and reliability, and used the very best Andy Grove designed output transformers, a real distinguishing feature. I'm glad you are still providing much pleasure. **NK**

IT WAS YOGI

I picked up the May issue of Hi-Fi World this past Saturday and read your review of the Denon DCD-2010AE SACD player. As you have probably been made aware, "its deja vu all over again" was not said by George Bush. He would need a super computer welded to his head to say something half that clever. The quote is attributable to Yogi Berra, the longtime New York Yankees catcher. He is famous for his many "Yogi-isms." One of my favorites was his comment about a restaurant. He said, "No one goes there anymore; it's too crowded."

Have a good week!

**Kent Johnson
St. Louis,
Missouri
USA**

Hi Kent. Thanks for that interesting correction. Yogi Berra and Maggie Thatcher seem to something in common with their loaded aphorisms.

A few good jokes at his expense were, sadly, the only funny thing about George Bush. **NK**



Our World Audio Design K5881 amplifier, still going strong for Roger Bick.



Natural High

It's not easy getting a decent sound out of a budget AV receiver, but Yamaha has made a serious attempt with its new RX-V567 budget AV receiver, says Noel Keywood...

The AV market is driven by bells and whistles; the more you have the better your product must be, manufacturers seem to think. It's not a market that understands minimalism, Naim-style, let's say. That's a pity, because surround-sound done well can be impressive; there's no shortage of high quality music on DVD and Blu-ray. And all the bells and whistles do little of use. Yamaha have taken a deep breath, and stepped in with this interesting receiver, the new RX-V567. It's remarkably simple in layout and operation, offers seven channels able to punch out 100W yet can be had for a low £380 or so. Is it good enough to deliver enjoyable surround-sound, I wondered?

Lifting the RX-V567 from its carton told me immediately that it isn't endowed with the biggest power supply ever; seven channel AV

receivers are usually a weighty 15kgs or so; this one comes in at 8.5kgs. Measuring 435mm (17in) wide it isn't overpoweringly large either so should fit into the home easily. Yet the rear panel carries no less than seven pairs of loudspeaker output terminals, for this is a 7.1 receiver able to drive three front loudspeakers and four rears (Surrounds and Backs). I get the feeling these days everyone realises that 7.1 might look good on a spec sheet, but less so in the home; speakers and wires everywhere don't fit well in the average lounge. Consequently, using two channels to bi-amp Left and Right front loudspeakers is now a common option and the RX-V567 has it. To bi-amp you need bi-wire loudspeakers with shorting links removed; it tidies the sound a little and is a useful gain.

Low price means mediocre build quality and finish; this receiver has little of Yamaha's chiselled house style

and the simple sheet metal cover is basic. Put simply, it is unlovely. But Yamaha usually build a product of at least good basic quality, and with a larger budget one of very high quality, but the RX-V567 is quite obviously struggling to cope with models from Onkyo in particular that dominate the AV market, at least in the UK. Their TX-SR607 I reviewed in Oct 2009 cost £500 and was better built and specified in most areas, if not all. But simplicity can have its own elegance

Front inputs accept Composite video only; HDMI for camcorders is missing.





and I did not set out to judge the Yamaha on its appearance, standard of finish or gadget count, because those are obvious to a buyer and acceptability or otherwise is a personal decision. The receiver's underlying performance is what concerned me in this review.

As well as HDMI Version 1.4a ready for 3D and all the usual audio suspects, like DTS HD Master Audio and Dolby TrueHD, Yamaha include hall modes from a long programme they carried out in the 1980s (if I remember correctly) when a distinguished Yamaha gentleman visited concert halls around the world recording their unique acoustic signatures. So press the right buttons and you get 'Hall In Vienna' and 'Hall in Munich', and Roxy Theatre in Los Angeles (you can tell where Yamaha's biggest markets are!). There's Cellar Club and Chamber too. Surround-sound can be synthesised from stereo with Dolby ProLogic IIx and DTS Neo6.

Fitted with 24/192 digital-to-analogue converters on all channels the RX-V567 can reproduce top quality PCM digital audio from Blu-ray. It has four HDMI inputs and S/PDIF able to accept both optical (TOSLINK) and electrical (RCA phono socket) connectors. There are stereo analogue inputs, but no multi-channel analogue inputs, able to accept surround-sound from older players. The solution is to use a Cambridge 650BD Blu-ray player that can play all

discs in full surround-sound at high resolution, as I did for this review, or an ordinary Blu-ray player that will play lower quality compressed (e.g. Dolby, DTS) tracks. There are no multi-channel preamp outputs either, to feed external power amps, and the stereo outputs don't output all inputs I found.

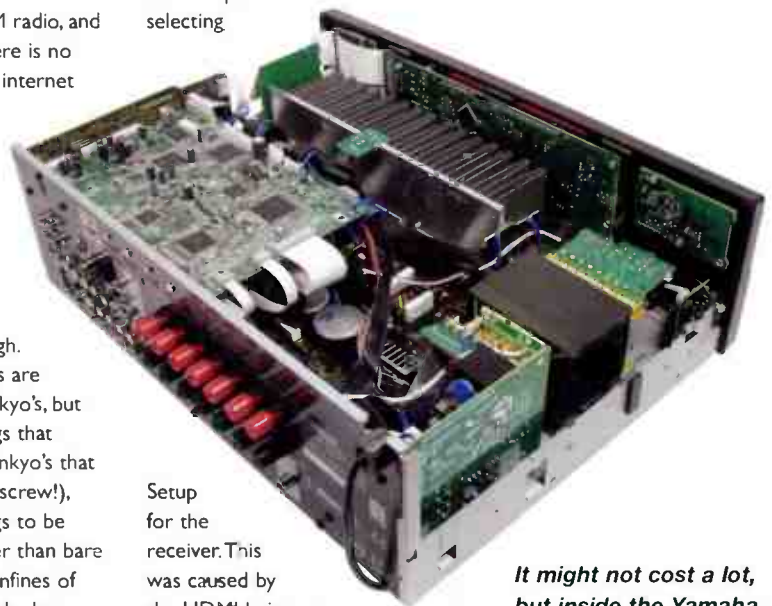
The tuner has VHF/FM radio, and AM medium wave, but there is no DAB option. Nor is there internet radio. There is an optional iPod and iPhone dock however, and an optional Bluetooth receiver.

SET UP

Installing the RX-V567 was straightforward enough. The loudspeaker terminals are not colour coded, like Onkyo's, but they do have pop out plugs that come out easily (unlike Onkyo's that must be extracted with a screw!), allowing 4mm banana plugs to be used. This is so much easier than bare wire connection in the confines of a receiver rear panel. Yamaha have provided 'one of everything' as it were, but no more, keeping the rear free of clutter. I found the receiver's input provision perfectly adequate, using both S/PDIF and HDMI for digital connection (and switching between them to check differences). Otherwise, a Cambridge 650BD did disc spinning duties and a large external aerial pointed at Wrotham,

London's BBC transmitter, input a strong signal (around 3mV on Radio 2) for VHF/FM use. I used stereo front loudspeakers (World Audio Design KLS9s) and in this case Usher S-520 Surround loudspeakers (but no Backs).

I was greeted by a blank screen and 'mode not supported' notice from the TV upon selecting



Setup for the receiver. This was caused by the HDMI being set to Through, so bypassing the internally generated menu.

I had perused the handbook first - but not closely enough! With this difficulty sorted the set up menu appeared and it was the not uncommon, inelegant clunky white text and crude graphics that I suspect is drawn up in China somewhere, likely where the tea is suspiciously strong. What I got initially

It might not cost a lot, but inside the Yamaha is packed with technology...

was unlike what I got after a processor reset to factory defaults, suggesting the settings had been played with beforehand. I mention this because a processor reset is occasionally necessary on all receivers and usually clears strange behaviour.

The RX-V567 has layers of settings, in the Setup menu, an 'advanced menu' and an 'option menu', all accessed differently. The manual needs close study, as they usually do, to find all that is available. Although Dolby Digital Plus gets no mention that I could see, it worked well from a Dolby test disc and the receiver correctly recognised it in my routine checks. The same checks showed 24/192 PCM was identified from 2L Blu-rays and handled properly, as well as Dolby TrueHD and DTS HD Master Audio. My only disappointment was that an otherwise informative Info display was unable to reveal data rate with any of them; it remained stubbornly blank. It did show sample rate though, and coding scheme, as well as the channel format. The main display shows this data only when Option is chosen, not by default, slightly disappointing.

The biggest surprise came when, with the Cambridge 650BD set to output DSD, the Yamaha recognised it as such and played it, to provide high resolution surround-sound from SACD discs. Measurement showed DSD decode was very linear too, distortion from SACD being lower than from 24bit PCM - impressive for an unpretentious budget receiver.

Video wise the Yamaha accepted Composite, Component and S-Video inputs, and outputs them all to drive a TV or monitor as well. It does not however, format convert between them. If Composite out is used, then all video inputs must be Composite. It does however convert all analogue

Not pretty by Yamaha standards, but neat all the same...



Not a confusing number of inputs, but still plenty enough. The loudspeaker terminals accept 4mm banana plugs, making connection easier.

inputs to digital for transmission via HDMI to a TV.

The VHF tuner uses a normal male 75 Ohm coaxial panel plug and the AM aerial is the usual piece of wire. Radio Data system is fitted and tuning steps can be altered. There is no signal strength meter but auto and manual tune are available and frequencies can be entered directly from the keypad, a useful feature. It is better to do this rather than auto-tune, as the latter often locks onto distant transmitters, raising hiss and interference. Mono mode can be selected to reduce noise with weak

loudspeakers so the band encircles the listener, albeit with vocals and major instruments up front. This is a well recorded album that's a strenuous test of any receiver, with firm bass and strong percussion.

The Yamaha lacked force at low frequencies; bass lines strode along in a gentle amble rather than a firm stride and there wasn't a lot of shape to the musical envelope it seemed, yet there was enough energy to convey the feeling of weight at low frequencies. 'Maria Maria' opened with heavy, short stabs from the bass guitar; again there was weight,

"the Yamaha provided glorious results, succinctly conveying the airy venue, the power of the orchestra and the majesty of the piano..."

stations; forty presets are available.

The remote control benefits from having legible white type on black buttons and a reasonably straightforward layout logic. It can also be reset to avoid interfering with other remotes and items.

SOUND QUALITY

Used to Carlos Santana's strummed guitar cutting out into my room at the start of 'Put Your Lights On', from his 'Supernatural' DVD-A recorded in sparkingly clear 24/96 PCM surround-sound, I was bemused to hear a fairly gentle delivery from this receiver. Accustomed to the strenuous dynamics of my Marantz SR8002 benchmark, the Yamaha sounded smooth, mild mannered and easy on the ear, rather than dynamically engaging. It hovered on being a little soft in fact, but it was nicely insightful all the same. I enjoyed maracas being gently shaken in the left Surround as a muted background effect, when they are usually more obvious, since the whole album has been mixed to put instruments into the Surround (rear

if not the clearer note shapes of the bigger receivers with their weightier power supplies. But the deep rumble at the start of 'South Side of the Sky' on 'Fragile' from Yes (DVD-A, 24/96 surround sound) shook my floorboards with alacrity. So the Yamaha has bass power and weight; it just doesn't start and stop quite as sharply as the more expensive ones. That's fine when listening to Rick Wakeman playing a bit of Brahms, but not so engaging with the complex Latin American instrumentation behind Carlos Santana.

At the other end of the spectrum treble was similarly mild, yet the Yamaha was clean enough. With the Eagles 'Last Good Time in Town' CD (i.e. 16bit/44.1kHz PCM) the sparse instrumentation at the start hung against a clear background with a good sense of depth. I used Direct and both HDMI and S/PDIF inputs, but switching between them showed differences were small. The RX-V567 lacks the resolution to really peer into minute differences.

Issues of bass definition and timing

don't much apply to Classical music and this is where the Yamaha started to score nicely. Spinning Lang Lang playing 'Rhapsody on a Theme of Paganini' made me smile as DSD lit on the front panel display: not bad for a £380 receiver, I thought. The sound was equally good. The Mariinsky Theatre orchestra had scale and weight, and Lang Lang's piano sounded silky smooth yet full bodied. With this Deutsche Grammophon SACD the Yamaha provided glorious results, succinctly conveying the big, airy venue, the power of the orchestra and majesty of piano. I found it thoroughly enjoyable, as I did many other SACDs. Nice that a receiver this price can keep legacy disc collections alive.



Fascinating in a different way is 2L's recording on Blu-ray of Percy Grainger, or should I say an old,

restored punch paper tape of his playing of Grieg's Piano Concerto, from 1921, made well before modern tape recorders (post 1945). This 24/192 DTS HD Master Audio recording played perfectly and it was a delight to hear this man's masterful piano playing; he has the energy and effusive skill of Nigel Kennedy, brought to piano, delivering a breathtaking performance that came across beautifully through the RX-V567, in full surround-sound (they didn't produce surround sound paper rolls; the orchestra was dubbed on later!).

Spinning Dolby TrueHD and DTS HD Master Audio versions of 'Divertimenti' from the Trondheim Soloists showed little difference to the basic PCM version; the Yamaha played them all without hiccup.

VHF/FM radio was quite obviously silky-warm and smooth. This is to be expected, as the tuner overlays its own gently falling upper treble on top of the amplifier's intrinsically easy delivery. The result was a full bodied delivery with plenty of rumbling

bass from Radio 2, presenter Dale Winton having convincing body to his voice against a studio background completely free of hiss. The Yamaha's tuner was warm and easy, relaxing and smooth. With funny low level parping sounds coming from Radio 3, as they do, I turned volume right up – and hiss there was none. Then someone hit something and nearly blew me across the room; but I did manage to confirm what measurement had shown: this is a very quiet tuner!

CONCLUSION

It isn't a slick looker and it isn't finely finished either. The menus are visually crude. Yet Yamaha manage to tread carefully along a narrow tightrope through the technological minefield of AV with this product, getting nothing seriously wrong. Even the tuner is carefully engineered; every little corner has been carefully attended to. It is smooth sounding, has plenty of bass weight and a wide variety of interesting options, not the least being its ability to play SACD properly. So if you want a hi-fi package on a tight budget, this receiver is a great choice.

VERDICT ●●●●●£
 Impressive feature count and a surprisingly easy, warm sound makes this receiver great value for money.

YAMAHA RX-V567 £380
YAMAHA UK
 ☎ +44 (0)844 811 1116
 www.uk.yamaha.com

FOR

- all the digital formats
- decent VHF/FM tuner
- easy, amenable sound
- SACD replay

AGAINST

- unlovely build
- no internet radio

MEASURED PERFORMANCE

Power measured 84 Watts into 8 Ohms with one channel driven, and 121 Watts into 4 Ohms. Power supply voltage droop will reduce simultaneous output from seven channels but Yamaha's quoted 105 Watts into 4 Ohms would be close enough. That the RX-V567 can muster 700 Watts is good going at the price and it will go very loud. With a damping factor 48 loudspeaker cone control is adequate too.

Distortion was low at all power levels, even when driving current into a 4 Ohm load. A worst case result of 0.11% at 10kHz, 1W into 4 Ohms, seen in our analysis, shows that crossover products are low and the sound should be relatively smooth and free from grittiness. The amplifiers held this performance at low and high output levels.

Input sensitivity of Audio 1 was a high 220mV and bandwidth fine at 60kHz, providing Direct is selected. Otherwise, this input is routed into an input ADC that adds noise and limits bandwidth to 21kHz.

The S/PDIF digital input performed well. Fed a digital signal from our Rohde & Schwarz UPL, distortion was reasonably low at 0.38% from 16bit and 0.22% from 24bit resolution digital (1kHz). This was via the loudspeaker outputs; the audio line outputs do not work from S/PDIF and rarely gave a signal on our test bench - a bit strange. Their internal routing seems odd. EIAJ Dynamic Range was a good 102dB from CD.

Via HDMI frequency response reached 30kHz (-1dB) from a 192kHz sample rate digital signal. This is on the low side but as output rolled down slowly, -3dB at 45kHz our analysis shows, it still has an analogue-like characteristic. So whilst the RX-V567 does not have the wider bandwidth of expensive models, it still offers a decent result, enough to show the benefit of 24/96 and 24/192 digital from Blu-ray

music concerts, for example.

SACD (DSD code) reached 28kHz and distortion very low, 0.16% at -60dB. As this was better than 24bit PCM it looks as if this receiver has proper DSD converters and does not transcode to PCM.

The VHF/FM tuner was a very neat performer, quieter than most with a -70dB noise figure. It achieved this with an aerial input (p.d.) of 1mV or more, again a good figure. Sensitivity wasn't high at 75uV for -50dB hiss on stereo, so this is no long distance design; it needs a decent aerial. Even though a 19kHz pilot tone filter is fitted frequency response was well behaved (i.e. termination was accurate), treble rolling down smoothly above 8.5kHz, so the sound will be a little warm and easy, but not much.

Yamaha's RX-V567 has no real weak areas. It offers plenty of power at low distortion across the audio band, its digital conversion is of good quality and even the VHF tuner is better than most, accurate in itself and able to show how good VHF/FM can sound. NK

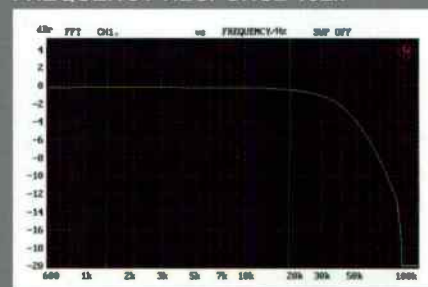
Power	84 Watts
Frequency response (Direct)	8Hz-60kHz
Separation	78dB
Noise (A/D, Direct)	-81/-102dB
Distortion	0.08%
Damping factor	48

CD/DVD/SACD	
Frequency response (-1dB)	5Hz-21, 35, 38kHz
Separation	82dB
Noise	-105/107/108dB
Distortion (-60dB, 16/24bit/DSD)	0.28, 0.22%, 0.16%

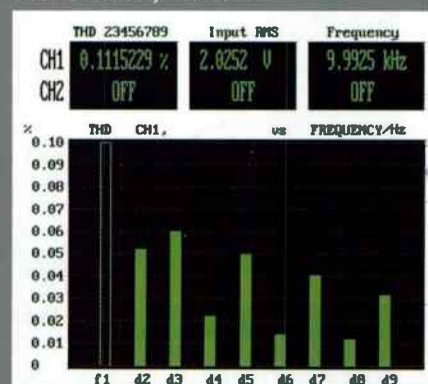
VHF TUNER

Frequency response	10Hz-8.5kHz
Stereo separation	38dB
Distortion (50% mod.)	0.08%
Hiss (CCIR)	-70dB
Signal for minimum hiss	1mV
Sensitivity (stereo)	75µV

FREQUENCY RESPONSE 192k



DISTORTION, 1W 10kHz



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www.emillelabs.com info@emillelabs.com

Hi Life

Tim Jarman lives it up with HisoundAudio's RoCoo-a personal digital music player...

HisoundAudio of China are a new name on the UK MP3 player scene. One of their new models, the RoCoo, seems like it has a lot to offer, not least because on the back it says 'Class A Amp inside', a tempting prospect to the knowledgeable audiophile who may well be frustrated with the crude and basic sounding Class D output stages of the typical digital pocket personal...

Yet, as it happened, the amplifier wasn't the aspect of the RoCoo that I enjoyed the most. That honour must go to the instruction manual (Apple please take note!); the staff at HisoundAudio are clearly very enthusiastic about their product and this comes out in the text, some of which I've included in this review for your enjoyment.

"Because the RoCoo is a hi-fi player the true reality of the sound quality of your music will distract you from your work." Priceless!

Before you can enjoy this quality you'll need to get the player charged up and some music uploaded. Both of these operations are easy, any USB charger can be used and transferring music files is a simple drag and drop affair. Supported file formats are MP3, WMA, WAV, FLAC, AAC and APE, so there's something for everyone.

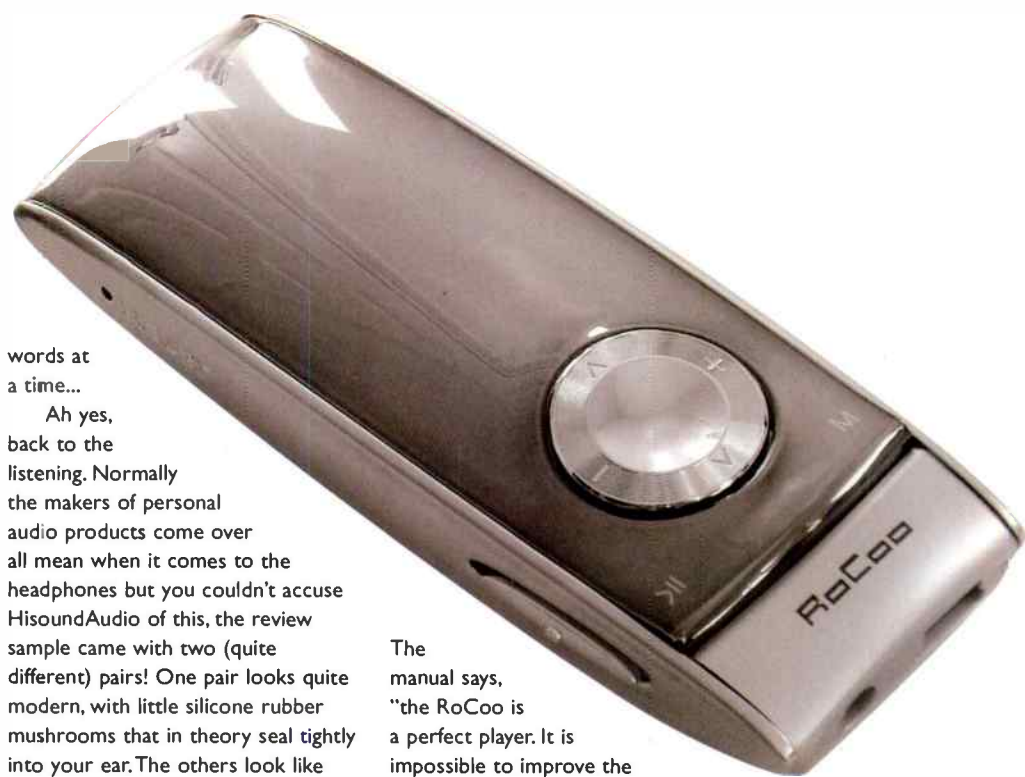
As well as direct transfers into the 4MB flash memory via the USB port, the RoCoo can also take a Micro SD card loaded with either music or text (.TXT format), but how readable you will find this on the tiny OLED screen is questionable. The screen is undoubtedly bright and sharp, it's just a shame that even during regular music playback mode just about every pixel is used, filled with tiny numbers and confusing graphics. As an e-Book reader (actually suggested in the manual) it is hopeless! Yes, you could load up all of 'War And Peace', but you won't have much fun reading it eight tiny

words at a time...

Ah yes, back to the listening. Normally the makers of personal audio products come over all mean when it comes to the headphones but you couldn't accuse HisoundAudio of this, the review sample came with two (quite different) pairs! One pair looks quite modern, with little silicone rubber mushrooms that in theory seal tightly into your ear. The others look like a copy of the sort that came with a mid nineties Sony cassette Walkman, with long ducts (which I'm sure do something) coming out of the back.

The manual read, "the stock earphones are excellent quality and have been specifically auditioned for perfect synergy with the RoCoo." No, sadly they were both rubbish. Go for something like Sennheiser PX100s instead, you'll be glad you did. With better headphones the RoCoo actually isn't bad, there is certainly more than enough volume (not something you can say about every MP3 player, Apple take note) and the sound is pretty fluid if you use a decent bit rate. You could almost call it refined; the Class A amp perhaps? I'm not sure about that.

The RoCoo is tiny (about the size of a USB pen drive) and depending on the version has a claimed battery life of either eight or fourteen hours, providing you keep the volume on setting 3. Two problems here, the first being that to get this endurance from a small battery the standing bias in a Class A output stage would have to be so small as to be irrelevant. Secondly, with true Class A operation the overall current consumption isn't greatly affected by the output level. You can't hear much at setting 3 either. I could believe that the output stage is linear, but Class A as an audiophile would understand it...?



The manual says, "the RoCoo is a perfect player. It is impossible to improve the sound quality any more." Well, even if that were true, the interface could certainly use some work. As an example, you'd think that the button marked 'A-B' would activate a repeat function, actually it does nothing. Next to this, the button marked 'REC' you'd think would start the machine recording but it doesn't, it takes you list of available tracks. The nearby hole marked 'MIC' isn't a microphone either, it's a hole through which the power light can be seen! There are two models of RoCoo and this one (the 'A' model) should have had a recording facility, so clearly something had gone wrong somewhere. The 'B' model has a sound effects processor and longer battery life instead. Most annoyingly, pressing the 'previous' key takes you to the start of the previous track, it doesn't, as you'd expect, repeat the current one.

CONCLUSION

Well, as a basic utility player, the HisoundAudio RoCoo isn't a bad effort at all. Once the music is playing it has a lot to recommend it and it works easily with the host computer but the buttons are fiddly, the display is difficult to read, the finish is tacky and it's hardly a fashion icon. I'll leave the last word on this to the manufacturers on this one: "If possible, look for a case of bag to protect the player".

VERDICT

Decent sound and solid value but a touch too quirky for the ultra-competitive market it inhabits.

HISOUNDAUDIO

ROC00-A

£69

HiSound UK

www.hisound-uk.com

FOR

- clean, detailed sound
- good value for money
- compact size

AGAINST

- fiddly user interface
- pidgin English manual
- poor headphones

ACOUSTIC PREFERENCE

to see is to want - to hear is to believe



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www.mayflowersounds.co.uk
01302 711 528



Sussex
www.musicarch.co.uk
01273 607 983



Northern Ireland
www.kronosav.com
02887 753 606

World Radio History

freedom that gave the Neo Ones a skip and a jump as it played this song.

The eureka moment occurred when I turned to rock and the Earmark edition of Colosseum's classic 'Valentyne Suite'. Playing the title track and 'The Kettle', the bass 'issue' all of a sudden receded. The chaos of the rock environment allowed the bass to effectively merge into the background and maintain a beat without seeming out of place. Vocals dazzled via the sensitive tweeter unit, applying a shine to the voices that almost demanded a zinging Colgate toothpaste ring around them. Upper mids and treble dominated the performance in fact, masking the loose bass which now turned as provider instead of the black sheep of the family, by serving up a solid foundation for the riveting upper frequency performance; it lifted the spirits and moved the body. Hence, electric guitar was dynamic and immediate, upper organ tones were expressive, effusive yet subtle and acoustic guitars spilled detail all over the place. Rock, and rock on vinyl in particular, seems to be the natural home for the Neo One loudspeakers.

The combination of a bass line that doesn't have to be precisely timed but a genre that also offers plenty of scope for detail, suits the Neo Ones down to the ground. These speakers have a fast, energetic, party atmosphere of a presentation that keeps the music bouncing along, and involves you in the performance while throwing out little highlights to keep your interest peaked.

It's interesting to compare both of these LPs whilst running the Neo One's more expensive brother, the eloquent Radiance Ones (£600). You would expect the Radiance Ones to sound better than the Neo Ones, and they do. In fact, they're one of the best sub-£1,000 speakers you can buy on the market. Nevertheless, comparing the two puts the Neo Ones into context. You can see that Acoustic Energy's designers have realised that they cannot please everyone all of the time, so they've prioritised. Designing stand-mounted units and realising that they will, more than likely, be utilised in relatively small rooms, detail has been lifted to the top of the list and bass has been asked to fend

for itself, in a manner of speaking. The Neo Ones give you as much information as possible. Why, indeed, try to be all things to all men and run the risk of complete failure? Hence, the Neo Ones focus on the top end.

CONCLUSION

Overall, what the new version 2 incarnation of Acoustic Energy's

Aegis Neo Ones do best is to sound exciting. Response is fast; they serve up a real rip-roaring, helter skelter ride never dropping below one hundred miles per hour. This is a speaker that's out for a laugh, not too fussed on discipline (well, it stops the fun doesn't it?) and a design that prefers to sit on the back seat in order to cause as much mischief without getting into trouble. They lack guile; in fact, they are as honest about their failings as they are about their strengths, and for that you can't but like them. They replace the astute handling of music that other speakers promise with a gurning face and a swagger. The Neo One demands that you don't listen too closely to its output, because with these speakers you'll be singing along too.



REFERENCE SYSTEM
 Avid Acutus turntable
 SME IV tonearm
 Benz Glider cartridge
 Icon PS3 phono stage
 Cyrus CD8SE CD player
 Aesthetix Calypso preamplifier
 Icon MB845 monoblock power amps
 Acoustic Energy Radiance One speakers

MEASURED PERFORMANCE

The Aegis Neo 2 has a flat frequency response free from major disturbances up to 4kHz, our analysis shows (green trace). Above this tweeter output starts to rise, reaching +5dB at 20kHz and this means the Neo 2s will sound obviously bright in their balance. It's a common enough result, and put there to ensure obvious apparent clarity in a showroom demo. The saving grace here is the tweeter, it is a Vifa ring dome design with a nice, smooth output and this may well ameliorate the lift. At least treble quality should be good.

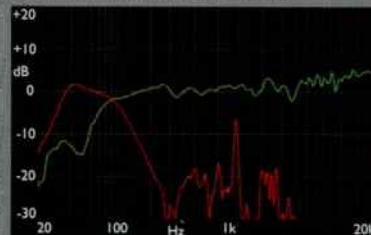
Low frequency output is maintained down to 70Hz, but rolls down fast below this frequency. The port takes over and, with output +7dB above the bass driver at 80Hz it makes quite a substantial contribution. Our red trace shows a broad peak, indicating good damping of the bass unit and the impedance trace confirms this, showing broad influence around 55Hz. This does result in a pair of steep residual peaks though, indicating high load reactance and amplifiers are not all happy about this. This apart, the impedance curve is relatively flat and smooth, making it a good amplifier load in other areas.

Sensitivity was good at 87.4dB, so the Neo 2 will go quite loud with modest power input, around 40 Watts giving high volume. A bass unit d.c.

resistance of 5.3 Ohms is a little higher than usual and this keeps minima high in our impedance graph, the overall value measuring out at 7 Ohms.

The Aegis Neo 2 is well engineered and should give good results, with a smooth even midband but rather obvious treble. NK

FREQUENCY RESPONSE



Green - driver output
 Red - port output

IMPEDANCE



VERDICT ●●●●●
 A bouncy budget box packed with joie de vivre, you can't help forgive these affordable standmounters their sins!

ACOUSTIC ENERGY AEGIS
NEO ONE V2 £200
 Acoustic Energy
 ☎ +44(0)1285 646 580
 www.acoustic-energy.co.uk

FOR
 - precise upper frequencies
 - bouncy musicality
 - energy

AGAINST
 - careful system matching
 - woolly bass

WORLD STANDARDS

These are the best products we've heard that are currently on sale in the UK, complete with the date they were originally launched and their current retail prices.

TURNTABLES

PROJECT GENIE 2 2008 £175

A masterpiece of minimalism, this is well made for the money and includes a decent Ortofon OM3 moving magnet cartridge. Great sound per pound.

REGA P2 2008 £220

Some say the cheapest real hi-fi turntable money can buy - excellent value for money engineering, easy set up and fine sound.

TECHNICS SL1200/II 1973 £395

Slick build makes it a respectable performer, although the cheapo arm limits it - fit a Rega RB250 and it's suddenly a brilliant mid-price machine.

REGA P3-24 2008 £400

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 make it the class of the mid-price field.



ROKSAN RADIUS 5.2 2010 £1,399

Effective, if expensive, update on the original formula. Highly musical, yet detailed and dimensional mid price turntable with a naturally open and easy sound.

FUNK FIRM VECTOR II 2009 £860

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



MARANTZ TT-ISSI 2005 £999

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

MICHELL GYRODEC SE2005 £1,005

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.

ACOUSTIC SOLID CLASSIC WOOD 2008 £1,350

Majoring on impact, punch and drive, this is an impactful mid-price turntable in sonic terms as well as physical size.

REVOLVER REPLAY 2007 £1,500

Revolver spring back into the vinyl market like they've never been away, with a stylish and solidly built LP spinner. Welcome back!

AVID DIVA II SP 2010 £2,000

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

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.



LINN LP12SE 1973 £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.

SME MODEL 10A 1995 £4,556

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

ACOUSTIC SOLID ONE 2007 £4,000

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...

BRINKMANN BARDO 2010 £4,495

Quartz locked Direct Drive makes for mastertape-like speed stability, plus wonderful clarity and pace. Upgradeability and excellent build complete a formidable package.

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.

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 very well to rewiring and counterweight modification.

MICHELL TECNOARM A2003 £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 2006 £599

Expertly fettled Rega is still the 'affordable audiophile' choice, with an even, transparent and tuneful sound.

SME 309 1989 £767

Mid-range 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.

SME SERIES IV 1988 £1,127

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.

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 V 1987 £1,614

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

LINN EKOS 1987 £1,700
Subtle mods over the years, including revised bearings and the recent new wiring has kept it a serious contender in the superarm stakes. Lacks the SME's slam, the OL's clarity or the ARO's emotion, but has a feisty musicality all of its own.

SME 312S 2010 £1,750
Twelve inch magnesium alloy armtube plus SMEV bearings makes an impressive transcription tool with a highly insightful yet composed sound. Superlative build completes the package.

GRAHAM PHANTOM 2006 £2,495
Sonically stunning arm with magnificent bass dexterity and soundstaging. Build quality up to SME standards, which is saying something...

TRI-PLANAR PRECISION 2006 £3,600
Stunning build, exquisite design and surely the most naturally musical and lucid sound around makes this a remarkable pickup arm.

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.

ORTOFON 2M RED/BLUE 2007 £60/£120
Modern, high resolution budget moving magnets that are always an engaging listen.



GOLDRING G1042 1994 £135
One of the best MMs going, with sweet and extended treble and punchy, muscular bass.

DENON DL103R 2006 £200
Awkward to get working properly with a poor mounting arrangement, yet it rewards with a musical performance that makes similar priced cartridges sound cold.

DYNAVECTOR DVI0X52003 £250
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.

LYRA DORIAN 2007 £595
Incisive and musical, this baby Lyra is one of the most powerful and revealing MCs at its price point. Beware the sharp treble, though!

ORTOFON RONDO BRONZE 2005 £500
Excellent mid-price moving coil with real rhythmic alacrity and a decent deal of finesse.

ZYX R-100H 2005 £625
Exceptionally tight sounding and detailed cartridge with the musical skills to match, this is up with the very best at the price, with a presentation all of its own.

BENZ MICRO GLIDER L2 2008 £650
Crisp, clean and detailed MC; particularly impressive at both ends of the frequency spectrum

TRANSFIGURATION AXIA 2007 £890
Musically adept and highly resolute cartridge with impressive tracking abilities. Top end lift means careful matching required, however..

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 MC WINDFELD 2008 £1,799
Ortofon's new flagship MC is a sophisticated and alluring performer that takes the vinyl experience to a new level.

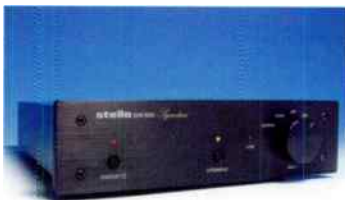
KOETSU RED K SIGNATURE 2007 £2,399
The new K Signature adds a hefty dose of insight and finesse to the already impressive Red and the results are fabulous.

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

CAMBRIDGE AUDIO DACMAGIC £229
An innovative and flexible new DAC, this is a svelte, rhythmic and impressive performer.



STELLO DA100 SIGNATURE £675
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.

CYRUS CD8 SE 2008 £1,200
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.

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



NAIM DAC £1,995
Painstaking design has yielded a brilliant 'affordable high end' performer that throws bright sunlight on the recording, yet remains unremittingly smooth and musically engaging.

CHORD QBD64 2008 £3,000
Bespoke architecture gives a truly uniquely musical sound that's beguilingly musical in nature, with dizzying incision and grip.

ELECTROCOMPANIE EMC-1UP 2003 £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.

NAIM CDX2-XPS2 2003 £4,950
A fine high end machine, but add an XPS2 and it becomes one of the most characteristically 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.

ACCUSTIC ARTS DRIVE 1 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. Justifiably expensive.

**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...

NAIM CD555/555PS 2006 £14,000

Very probably the best CD player yet made - certainly the most expensive; a digital *tour de force*.

**RECORDERS****NAIM HDX** 2009 £4,405

Interesting one-box network enabled hard disk music system gives superb sonics together with impressive ease of use.

SONY TC-WE475 2010 £130

Essential tackle for committed cassette users, this well calibrated double deck sounds way better than expected!

SONY RCD-W3 2002 £250

Usual superb Sony ergonomics make for nonsense budget buy. Fine direct digital copies, but analogue input poor. Middling sonics, but there's a digital output!

PHONO STAGES**CAMBRIDGE AUDIO 640P** £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 £460

Wonderfully warm, open and musical nature makes this an essential audition for those wanting a top value mid-price phono stage.

ICON AUDIO PSI.2 2007 £599

Excellent value valve phono stage with good range of facilities and fine imaging abilities.

**ASTIN TREW AT8000** £880

Expansive, detailed, powerful and musical sound makes this a surprise entrant to the first class sub-£1,000 phono stage club.

ANATEK MCI 2007 £850

Excellent MC phono stage that offers serious insight underpinned by powerful and tuneful bass.

QUAD QC24P 2007 £995

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

TRICHORD DIABLO + NCPSU 2006 £1,198

Highly musical performer, this is one of the best phono stages at or near the price, but lacks the polish of the rival Whest.

ICON AUDIO PS3 2008 £1,500

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

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.

**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.

AMPLIFIERS**SUGDEN MYSTRO** 2010 £1,225

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

**ICON AUDIO STEREO 25** 2008 £500

Cracking entry-level valve integrated, with a warm and engaging sound. Limited power so needs careful partnering, though.

ROTEL RA-06 2008 £550

Vivacious sounding device that, whilst lacking the finer musical points, wears its heart on its sleeve and has plenty of power to match.

NAIM NAIT 5i 2007 £725

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

JUNGSON JA-88D 2006 £899

Stunning value for money Class A monster integrated; extreme power and clarity at a puzzlingly low price.

**AUDIOLAB 8000S** 2006 £400

In other 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.

SUGDEN A21A S2 2007 £1,299

More power and greater transparency improve even further on the already impressive A21a to give truly impressive results

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.

ELECTROCOMPANET PI-2 2008 £1,430

Powerful integrated with seriously solid bass and impressive dynamic abilities. Superbly musical.

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.

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 bright, spry and musical nature.

MOON I-3RS 2008 £1,890

Grippy and clean performer with fine soundstaging and build quality.

COPLAND CSA29 2006 £1,998

Unfailingly svelte, sophisticated and smooth - both to listen to and look at - this is a truly desirable high end integrated.

NAIM SUPERNAIT 2007 £2,475

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

LUXMAN L-550A 2007 £2,800

Monster Class A integrated with powerful and revealing sound and a whole host of useful features, including a highly competent MM/MC phono stage

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-integrations.

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.

MUSICAL FIDELITY AMS351 2010 £6,000

Gorgeous, liquid sounding solid-state full Class A integrated with a supernaturally sumptuous bass; surely one of the very best integrations ever made?

AV AMPLIFIERS**ARCAM AVR350** 2006 £1,500

Superbly accomplished do-it-all AV receiver package, with an uncommonly, warm, natural and musical sound. A winner goes from strength to strength.

HEADPHONE AMPLIFIERS**CHANNEL ISLANDS VHP-1 / VAC-1**

£390

A truly exceptional headphone output stage; the best at the price and an essential audition.

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.

SUGDEN HEADMASTER

2003 £600

Unusual combined preamplifier and headphone amplifier, this boasts a surprisingly smooth and open sound.

PREAMPLIFIERS**CREEK OBH-12** 2000 £220

Brilliant value budget passive, giving little away in sonics to far more expensive designs. Connectivity and build aren't great, but what do you expect at this price?

**MF AUDIO PASSIVE PRE2003** £1,500

Effective pre with switchable gain via a transformer, and balanced operation. Open and incisive sound, yet makes most active rivals sound edgy by comparison. Silver version at the twice the price adds transparency.

**MODWRIGHT SWL9.0SE** £2,000

Captivating sound quality that will transform your system. Build quality is equally impressive and value top-notch. Highly recommended

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

One of the best preamplifiers we have ever heard. Takes the clarity and openness we expect from valves and adds a staggering level of grip and detail.

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

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

POWER AMPLIFIERS**ROKSAN KANDY LIII** 2008 £600

Fine budget power amp that punches well above its weight.

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 super value all the same. Lovely build, finish and Quad's legendary service are nice.

NAIM NAPI50

2002 £795

Driven by a decent source and a NAC112, this gives highly enjoyable results - providing you like the Naim sound! Taut, fast and feisty despite its relative lack of power.

SUGDEN MUSIC MASTER

2003 £1,300

Quintessential Class A Sugden sound is not warm as many expect, but extremely neutral and open with real tonal colour. Superb when partnered with efficient loudspeakers like Revolver R45s, but many will find it underpowered.

**NUFORCE REFERENCE 9SE V2**

2006 £1,750

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

**ROTEL RB1092** 2007 £1,595

Hugely powerful digital amp with neutral midrange and a wonderfully spacious treble

CHANNEL ISLANDS**AUDIO D100** 2005 £1,595

Clean and musical Class D monoblock power amplifiers in a neat, small package.

ICON AUDIO MB845 2009 £2,499

Creamy and seductive yet blisteringly fast and musically lucid, this pair of 845 tube monoblocks is staggering value for money.

GRAAF GM20 OTL 2003 £3,300

Awesome output transformer-less valve power amp gives dazzling speed and incision, with an ethereal soundstaging and delicious filigree detail. Tremendous punch belies its humble 20W power rating. Factor in one of the most exquisite finishes this side of an Aston Martin and it's very hard to say no...

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.

**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.

SILK GLOWMASTER KT88

2007 £1,699

KT88 based power amplifier offers dramatic clarity and excellent bass heft.

**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.

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 than these...

MUSICAL FIDELITY AMS50

2010 £7,000

Wonderfully 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.

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.

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

WHARFEDALE DIAMOND 10.3 2010 £299
Great small standmounters for audiophiles on a budget; dry punchy sound with impressive soundstaging at the price.

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 £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.

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.

MAD MY CLAPTON GRAND MM 2010 £3,400
Distinctive coaxial standmounters with wonderful soundstaging, bright lucid midband excellent musical insight.



REVOLVER RW451 2006 £1,199
Very musical floorstander that's clear, concise and truthful, whilst being exceptionally amplifier friendly - a dreamboat for valves.

ONE THING AUDIO ESL57 2007 £1,450
One Thing Audio's modifications keep the good old ESL57 at the very top of the game.

KIBRI NAIMA 2007 £1,550
Unusual-looking omnidirectional loudspeakers with an absolutely captivating performance. Huge soundstage and bags of clarity - brilliant!

GURU QM-10P 2007 £1,595
Quirky but adorable standmounters that are way off the pace in respect of detail and power, but amazingly 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 £1,599
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.

MONITOR AUDIO GS60 2008 £2,000
Still a great rock loudspeaker after all these years, with a vivid, lithe and engaging sound.

SPENDOR S8E £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.

YAMAHA SOAVO 1.1 2009 £3,000
Musical, transparent large floorstanders with impressive dynamics and cohesion. Excellent build and finish.



MONITOR AUDIO PL100 2008 £2,300
The MA boys pull out all the stops for their flagship 'Platinum' series standmounter with stunning results.

PMC OB11 2008 £2,950
Cleverly updated floorstanders give scale and solidity in slim and well finished package.

EMMINENT TECHNOLOGY LFT8B 2010 £3,000
Brilliant ribbon/moving coil hybrid with seamless, delicate and expansive yet tremendously musical nature.

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 £5000
Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.

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.

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 £10,500
Big banger with enormous scale and vast power, although requires the right room and doesn't cohere as well as a panel.

ACCESSORIES
MONITOR AUDIO IDECK 2006 £200
Fine design, impressive flexibility and a lucidly musical sound make the iDeck the current iPod dock champion.

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
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 earspeakers are like no other headphone, or loudspeaker for that matter...

INTERCONNECTS**TECHLINK WIRES XS 2007 £20**

Highly accomplished interconnects at an absurdly low price. Stunning value for money.

WIREWORLD OASIS 52003 £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 makes it a bargain.

**CAMBRIDGE AUDIO 640T2005 £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 TUNER2006 £550

No tuner offers better sound per pound; wonderfully three dimensional and smooth from bottom to top.

MYRYAD MXT-2000 2005 £800

Truly sumptuous sound and excellent build is all most will ever need in a tuner; superb.

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.

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.

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.

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.

**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 a truly jaw-dropping performance. Start saving now....





Nifty Fifty

Adam Smith spends some time with Cambridge Audio's new Azur 350A amplifier...

Despite the ever-increasing popularity of microscopic portable speakers for MP3 players and the truly bewildering range of iPod docks on the market, it seems that the budget end of the hi-fi spectrum is still holding its own. Indeed, if any evidence of this is needed, just look at the way some big Japanese brands have re-entered this market sector. I suspect that some of this might have to do with the fact that some of those aforementioned docks are fairly unpleasant to listen to, and some of the tiny speakers are downright nasty, meaning that it does not take too long before aural fatigue sets in and even a half-keen music listener understandably wants something better...

I've had conversations with three people recently who all changed to AV surround setups a few years back that they enjoy, but are tired of the mess that their £20 DVD player is making of reproducing their CDs. In each case, the person in

question wanted to be able to set up a separate two-channel system either at the other end of the lounge or in another room and wanted an affordable but good quality amplifier and CD player to do the job. Was there anything like this still available, each one asked me? Fortunately I was able to say "yes", and give them a shortlist of models to audition. However, when compiling that list, it didn't take very long at all before the name of Cambridge Audio cropped up...

Of course there haven't been that many companies like Cambridge Audio able to make a success of good quality, affordable audio designs. It's true to say that there are other worthy contenders around, including the likes of NAD and the most affordable offerings from the likes of Marantz, Denon and Yamaha but, particularly since the introduction of the Azur range, no-one quite seems to have hit the level of sheer sophistication and affordable quality that marks out Audio Partnership's main

electronics range. This is largely due to their team of boffins beavering away in the top secret headquarters in London, including amplifier design guru Douglas Self and Technical Director, Matthew Bramble; a man who, rumour has it, recently designed and built himself an all-valve DAC "just for the hell of it"!

As the update of the Azur range continues apace however, the latest model to land on my doorstep is the 350A amplifier, spiritual successor to the 340A and tweaked 340A SE. I was very keen to try this beast because the 340A SE was a favourite of mine, being a big-hearted performer that never once made any noises that would give away its humble price tag.

Immediately noticeable on unpacking the 350A is the new casework, which is impressively solid and boasts a nice chunky brushed aluminium front panel and a set of the new Azur range knobs, which feel delightfully sensuous in operation.

Under the bonnet, Cambridge



"most noticeable is the Cambridge's sheer sense of smooth assuredness and almost velvety composure..."

use high quality integrated circuit modules for each channel, all linked up by pukka passive componentry, including an ALPS volume pot which, last time I went to buy one was nearly a quarter of the cost of the whole amplifier, so this is an impressive fitment. Power comes from an oversized toroidal transformer and the whole shebang is enclosed in a new and more solid wrap-around case. Again, like the XTZ CD player I reviewed last month, the 350A's construction quality belies its modest price tag.

At the business end of things, the 350A offers five line level inputs plus a tape loop with proper tape monitoring facilities at the rear, plus front-panel mounted sockets for headphones and MP3 player connection. The latter duplicates the MP3 phono sockets at the rear but overrides them once anything is plugged in. Naturally the 350A comes with one of Cambridge Audio's scrumptious remote control handsets which has also been pre-programmed

with the control codes to various iPods, meaning it can control them as well when used in conjunction with Cambridge's iD50 iPod dock. Finally, two pairs of loudspeakers may be connected to the 350A; it measures 86x430x340mm and tips the scales at 6kg.

SOUND QUALITY

Connecting the Cambridge up to an XTZ CD100 silver disc player and a pair of Mordaunt Short Avant 902i loudspeakers sat on Atacama SL600 stands, I was quite taken by the way in which the Azur 350A sounds in no way like a budget amplifier. The sound that greeted me was poised, confident and filled the area between the loudspeakers with style and scale. As one might expect from a more affordable item, the Cambridge did not push the action past the physical limits of the loudspeakers by a great deal, but equally everything tailed off smoothly to the left and right so that there was never any sense of an abrupt cessation to the musical

action at either side.

In the middle of things, the Azur 350A does not quite have the sense of depth and scale that vanishes off into the far distance, but neither did it compress everything into a flattened two-dimensional lump in between the loudspeakers. Once the amplifier had been warmed up for a few days it began to give an effortless sense of atmosphere and authority to recordings, dealing with aspects like central image solidity and the arrangements of performers on a live stage in a very capable manner. The location of each individual Eagles member from their 'Hell Freezes Over' CD was easy to place and as the vocal and instrumental action passed between them, the Cambridge made sure it was easy to follow and very well highlighted.

Most noticeable about the Cambridge's overall presentation is its sheer sense of smooth assuredness and its velvety composure. I strongly suspect that the benign and unchanging

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HI-FI World
VERDICT ●●●●●

BEST BUY
HI-FI CHOICE
magazine

If you want the best from your system, this is the affordable Room Analyzer that you should not be without... and it seems the reviewers agree too!

"Highly effective acoustic analysis tool that's simple to use and understand."

- Hi-Fi World

"For a lot less money than most loudspeaker upgrades, this brilliantly conceived product fills a real niche and is highly recommended."

- Hi-Fi Choice



HI-FI World
VERDICT ●●●●●

"The player itself tips the scales at a healthy 9kg and some of the features found on it are, again, astonishing considering the price."

"Superbly built and with an impressive sense of pace and weight, the CD100's performance belies its affordable price tag."

- Hi-Fi World



Jimmy Hughes uncovered one of hi-fi's best kept secrets - XTZ. Here are just some of the comments from the exceptional Hi-Fi Choice (Issue 333) system review:

"An amplifier and CD player with this sort of finish and build quality for just £600 and £365 respectively? Unbelievable!"

- Hi-Fi Choice

"Musically, the presentation is clear and unpretentious - a very nice system that's a pleasure to listen to."

- Hi-Fi Choice

HiFi just doesn't get any better than this for the price!



A well equipped back panel isn't what you'd expect on an amplifier of this price...

distortion patterns that it produces are at work here [see MEASURED PERFORMANCE] and the result is an amplifier than never seems flustered or on the edge of falling apart. At the top end, the treble is a liquid delight; although lacking the sheer icy clarity that more expensive discrete designs can muster, the 350A was never less than neatly and cleanly detailed, whilst simultaneously retaining a sense of liquid ease. It may be heresy to say such a thing but there was even a *hint* of valve in its easy-going but transparent nature; a complete anathema to some of the hard and lacerative budget designs that have graced the market over the years!

Across the midband, the Cambridge continued to perform in a way that belied its simple heritage. Vocals were beautifully rendered, the 350A imbuing Norah Jones with just the right sense of huskiness at the back of her throat but equally having no problem when it came to the hard-rocking grunge offered by the likes of Pendulum.

Instrumentally the Azur continued to perform with confidence and bravado, but its simpler innards did start to become more obvious at times when it came to midrange detailing and really getting to the heart of an acoustic instrument's nature. The 350A will never disguise what type of instrument is playing, but it lacks the ability to really capture the innate nature of, say, a grand piano. In this case things were just a little recessed, the amplifier missing out on that last hint of air around the notes, and slightly veiling the actual strike of hammer upon string. Equally, however, violins and the like actually benefitted from the Cambridge's smooth and ever so slightly opaque nature, ensuring that they never became harsh or screechy.

At the low end, the Azur regained its ground, turning in a punchy and well ordered performance. The Avant 902is are snappy and tight at the low

"I have heard far more expensive amplifiers do a worse job..."

end, and the Cambridge matched them very well indeed, resulting in a bass performance that was well weighted, eminently tuneful and nicely detailed. I even took time to plug the Azur into my reference Ferrograph S1s to see if it would run into a corner and hide, but it came out fighting!

The Ferrographs are not a difficult load but they are insensitive at 84dB and respond best to an amplifier that can grip them by the scruff of the neck and slap them into line a bit. Paired with the 350A, they responded well, and their deep and solid bass was still very much in evidence. However, the 350A lacked the grip to keep them in line, meaning that the very bottom end became just a little too fruity and overblown. Still, I have heard far more

expensive amplifiers do a worse job, so the Cambridge actually came out of this little experiment very well indeed.

CONCLUSION

It may seem a forgone and even slightly dull conclusion, but Cambridge Audio can notch up another success on their corporate bedpost as far as I am concerned. The Azur 350A is a worthy successor to the 340A and builds on the latter's strengths to move its whole sonic game up a notch or two. Anyone who thinks affordable amplifiers are splashy and messy owes it to themselves to hear the Azur 350A; it really is a composed, smooth and inviting delight to listen to, and will be a strong beat at the heart of a budget separates system.

MEASURED PERFORMANCE

The 350A produced a modest 48 Watts into 8 Ohms and 56 Watts into 4 Ohms, enough power to go very loud in conjunction with sensitive floorstanding loudspeakers of 87-90dB sensitivity. The maximum output voltage swung a large 5V from 8 to 4 Ohms so the 350A is unlikely to have a lot of grunt, but it will exercise reasonable control over bass cones, with a useful damping factor of 40.

An interesting feature of the 350A is a consistently benign distortion characteristic, where innocuous second harmonic distortion dominates at all power output levels, with a 10kHz signal. The distortion characteristic stayed remarkably stable under all conditions and this usually results in an easy presentation free from colour and a patina of coarseness.

Input sensitivity was low at 400mV and external phono stages will need plenty of gain. Frequency response was wide and remained so as volume was wound down. It was also flat with Direct selected or not, the tone controls being set to their detents. Both tone controls worked well, offering trim at

spectrum extremes, below 300Hz for the bass control and above 5kHz for the treble control.

The 350A amplifier turned in a neat set of measurements in every area. It should give a nice sound. NK

Power	48 Watts
CD/tuner/aux.	
Frequency response	6Hz- 72kHz
Separation	73dB
Noise	-103dB
Distortion	0.03%
Sensitivity	400mV

DISTORTION

VERDICT ●●●●●
A smooth, composed and highly musical performer, the 350A is another budget stunner from Cambridge Audio.

CAMBRIDGE AUDIO
AZUR 350A £230
Audio Partnership
☎ +44 (0)207 940 2200
www.cambridgeaudio.com

FOR
- fine low end weight
- smooth, velvety nature
- build quality

AGAINST
- midrange insight



Divine Intervention

Tony Bolton interrupts his high end hi-fi lifestyle to listen to XTZ's exceptionally affordable A100D3 integrated amplifier...

Every reviewer has their own way of working. When I get new equipment in I like to have a listen and try to guess its price and country of origin, before doing any research, working on the basis that I want my first impressions to be unclouded by any other thoughts. So, I unboxed the XTZ Class-A100D3 amplifier; no easy task given its 22kg weight; and plugged it in. Bear in mind that this amp arrived before the August edition of the magazine, so I had not read Adam Smith's review of the partnering XTZ CD100 CD player. My first assumption was that this was an American unit, probably costing at

least a couple of thousand pounds. *How* wrong can you be? Five minutes of research showed the XTZ hails from Sweden, although I understand that some of the manufacture takes place in China, and costs just £600. Having recovered from the shock of this news, I settled down to do some serious listening, still half convinced that there should be another digit in front of the price tag...

The XTZ A100D3 is big. Not only does it weigh a lot, it is also very deep (468mm) and filled the shelf of my equipment rack. The 158mm height and 445mm width were normal enough, but purchasers should allow space for ventilation (because it gets very hot) and for the

cables at the back.

Aesthetically, I found it quite pleasing. There is a choice of finish of silver, black or the combination of the two used on this review sample. The front panel contained a large vacuum fluorescent display above a large centrally mounted volume control. Either side of this were two groups of three buttons, selecting (from left to right) Standby, CD, DVD Aux, Phono and Digital. Gold plated sockets for all of these inputs were at the back, with a choice of one Toslink (Optical) and four coaxial digital connections to the onboard DAC, and a switch to choose between moving magnet or moving coil in the built in phono stage. To the



left of these were a set of sockets for stereo subwoofers, record out, another pair for connecting a tape deck, and 'pre-out' and 'amp in' to allow for additional power amps, or feeding the internal power amp from an outside source. These last two are normally linked by the supplied jumpers. Two pairs of substantial speaker binding posts were mounted on the left and right, with the mains IEC socket, and accompanying power switch below the latter.

The casework is made of solid aluminium, as is the substantial remote control. This contains duplicates of the front panel controls as well as display dimming, mute and selection of either Class A or AB operation.

This is the bit that makes this amp really stand out from the crowd. I do not know of any other amplifier with a three figure price tag that can boast Class A operation. In this mode the bias current through the two sets of four output transistors is increased, giving, it is claimed, a clearer sound. Power is supplied through a large toroidal transformer which feeds separately shielded boards for power supply, output stages and the digital and analogue sections. All switches have gilded contacts.

SOUND QUALITY

I initially set the XTZ up in the front room, powering the Chario Ursa Major loudspeakers, and being fed by the resident Leema Acoustics Antilla CD player and Clearaudio Master

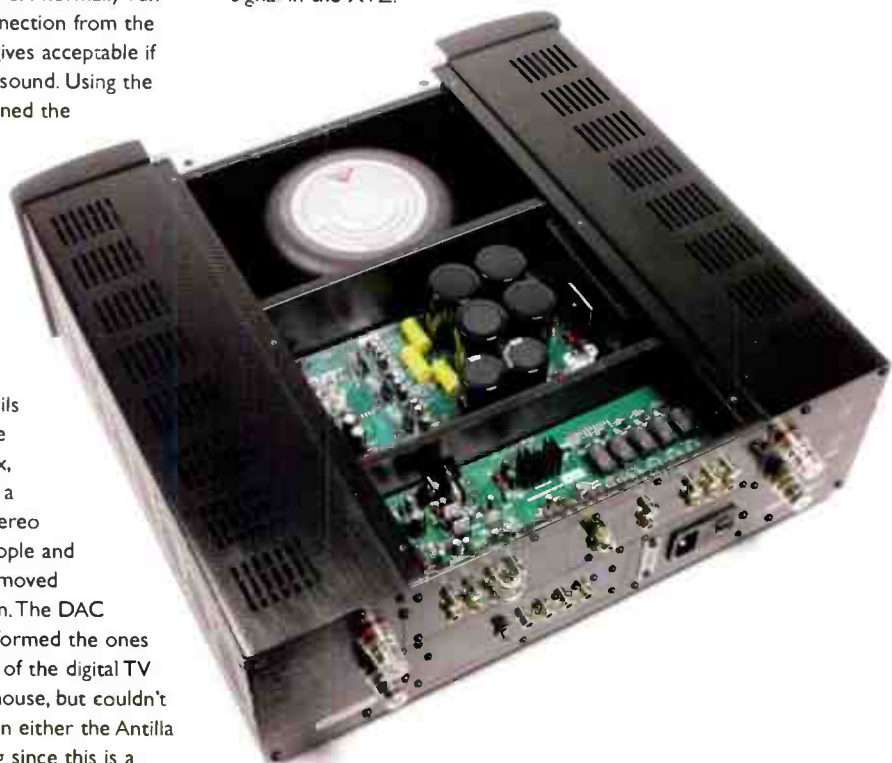
"the soundstage seemed to flow out into the room, giving the impression that I was only a few feet away from a soloist standing in front of a band..."

Solution turntable, fitted with an Ortofon Kontrapunkt a cartridge. Taking advantage of the onboard DAC I also connected the Digibox and DVD player to the coaxial inputs.

I was immediately impressed with the increased levels of definition and space from the TV sound that made this possible. I normally run an analogue connection from the Digibox, which gives acceptable if not exceptional sound. Using the XTZ's DAC opened the sound right up, producing a soundstage whose size and detailing I would normally expect from a CD player.

I was aware of background details that normally are buried in the mix, as well as having a more realistic stereo placement of people and vehicles as they moved across the screen. The DAC certainly outperformed the ones contained in any of the digital TV sources on the house, but couldn't match the ones in either the Antilla (hardly surprising since this is a well specced £3,500 player), or my

Njoe Tjoeb 4000. However, digging a twelve year old £500 Sony CD player out of the loft showed that the XTZ DAC was quite a way ahead of the Sony's unit, so purchasers with older CD players may well benefit from using the player as a transport and doing the decoding of the digital signal in the XTZ.



Definition

Stereo Sound
Grand Prix
Award 2009

Definiton DC10T

HI-FI SOURCE
magazine
★

Definiton DC10T

Image Hi-Fi
Award 2010
Best Loudspeaker

Definiton DC8

MEDIA
TOTAAL
AWARD
2009
BESTE VAN

Definiton DC8T



Definition is an outstanding new range of audiophile loudspeakers from Tannoy. Designed to get the very best from stereo music in the home, Definition distils and refines Tannoy's eight decades of loudspeaker expertise into a design of unrivalled performance value and stunning aesthetics.

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tannoy.com

TANNOY

Moving over to the analogue CD input fed from the Antilla produced a very detailed and well described sound. It was not a match for the smooth sophistication of the Leema Tucana II, but held its own against the Denon PMA 2010 AE amp which I reviewed a couple of months ago. Both produced sound from a deep dark well of music, with a focus on a tuneful bassline and a well described midrange. However I felt that the Denon had a smoother presentation of the higher frequencies.

Switching the XTZ to Class A mode brought the competition a bit closer. The higher notes had more shape and texture than before, although not matching the silkiness of the Denon sound, which could be a bit laid back and dainty on occasion. The XTZ, on the other hand, brought the same level of descriptiveness to the treble as both amps did to the midband and bass. There was more ring to hit cymbals, and a greater insight into the detailing of a vocalist's technique and presentation. This was accompanied by a soundstage that seemed to flow out into the room more, giving the impression that I was only a few feet away from a soloist standing in front of a band. Moving back to Class AB felt as if the performers had stepped back from the stage edge and were neatly lined up along the line of the speakers, still with space behind them, but not so much air and movement around them.

Changing to vinyl as a source and the Kontrapunkt a gave an enjoyable if

somewhat unexciting performance, the reserved nature of the cartridge not seeming to stimulate the XTZ's phono stage. So I moved the amp to the upstairs system where it was fed signals from the Sondex equipped with the Audio Technica AT-F7 reviewed in last month's magazine.

This proved a far happier marriage, although the

relatively low output of the Audio Technica and the low sensitivity of the phono stage meant that the volume control had to be turned up a bit. However, the rather forward



nature of the cartridge, and the laid back sound of the phono stage proved a good match for each other, producing the most enjoyable results that I've yet had with the AT-F7.

Imaging was pin-point accurate with the performers well spaced and well described. Timing was good and quite vibrant with pop, dance and rock music. Classical fared a little less well. The F7 wasn't at its best with this genre, so I swapped to the moving magnet input and tried out the MusicMaker III moving iron cartridge. Here classical fared a little better, but still wasn't up to the standards that I know this cartridge is capable of. The sound was detailed but missing a few of the subtleties that can make classical music so inviting. Quieter pieces such as Debussy's 'La Mer' were lovely, the sound flowing and ebbing as its composer intended, but Mahler's Second Symphony, 'The Resurrection' proved a little too complex for the phono stage to really cope with. The full orchestra seemed a little crowded at times, and the soloists

got lost in the chorus on a couple of occasions. To be fair though, for a built in phono stage the results were very good and quite credible, especially when you remember that this is a £600 amplifier.

CONCLUSION

This is the point I keep coming back to; I compared the XTZ A100D3 with the £1,700 Denon simply because it bears such a comparison. It could retail, if going through the normal chain of distributors, for three times its price and still be regarded as good. At £600 (with a decent quality DAC and phono stage built in, along with the Class A option) it offers superlative performance at the price. In absolute terms the phono stage is good, but bettered by freestanding units costing £250 or more, and the DAC won't match the Cambridge Audio Dacmagic 3 (£229), but the cost of these two nearly equals the price of the amp, so the Class-A100D3 represents huge value for money. Try it, I think you will be very impressed.

MEASURED PERFORMANCE

Power output of the XTZ 100D3 measured 112 Watts into 8 Ohms and 196 Watts into 4 Ohms, in Class AB or A, so it has plenty of power. At idle it got warm, but not hot in AB mode, heating up in Class A, where full power is dissipated at idle. However, Class A does eliminate the spiky crossover distortion seen in amplifiers and the XTZ 100D3 achieved this aim well, producing mainly second harmonic distortion at all frequencies and output powers, an impressive result. However, Class AB mode was also quite benign, producing higher levels of second harmonic at 10kHz, 0.07%, where Class A reduced this to 0.02%. Second harmonic only does not guarantee a good sound, but it does ensure an amenable delivery at least. In conjunction with good loudspeaker damping, damping factor measuring 42, which will keep bass well controlled, the XTZ 100D3 will behave well.

Frequency response was satisfactorily wide, running from 6Hz up to 55kHz. The phono stage was accurately equalised so this measured flat too. There's little benefit in going higher and doing so can even encourage intermodulation problems.

Sensitivity was reasonably high at 260mV for full output, good considering the voltage gain available. Most phono stages should match.

The XTZ 100D3 measured well all round. It is very powerful, has minimal distortion and is nicely tailored. NK

Power	112watts
CD/tuner/aux.	
Frequency response	6Hz-55kHz
Separation	90dB
Noise	-97dB
Distortion (Class A, 10kHz)	0.015%
Sensitivity	260mV
Damping factor	42

DISTORTION, 10K, CLASS A, 1W



VERDICT ●●●●● This very well specified, fine sounding integrated amplifier represents excellent value for money.

XTZ A100D3 £600
Audio Sanctum
☎ +44 (0)7517 889738
www.audiosanctum.co.uk

- FOR**
- fulsome and detailed sound
 - switchable Class A
 - onboard DAC
 - phono stage
 - value

AGAINST

- slightly 'transistory' top end

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.

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 paperbook-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-TI 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
Bonkers 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 LPI2. 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.

TONEARMS

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 HRI00S 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 LPI2s. 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 C51/P51 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.

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.

CROFT MICRO 1986 £150
Budget valve pre-amp with exceptionally transparent performance.

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.

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.

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...

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 60 1958 £ N/A
Leak's biggest valve power 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.

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.



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

200W 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!

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.



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.

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 - but 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!

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.



LOWTHER PM6A 1957 £18 EACH

This seminal full-range driver is still manufactured. High sensitivity, as fitted to many classic horn designs.

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 752 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 HB1 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 electro-statics



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!



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Little Wonder



Tim Jarman remembers that most unlikely of desirable audio objects, Sony's beautifully built nineteen eighties FH-7 mini system...

digital tuner, sold together as the 'Precise Compo', showed how far technology had advanced; both units were of the highest quality and lacked nothing. The amplifier even had a 'pulse power supply', a forerunner of the modern

switch mode units that have been popularised by some recent, successful designs. What both these systems had in common is that it was the tuner and amplifier that had been miniaturised, other sources such as turntables and tape recorders were still made in the normal size, lessening the impact and defeating the point somewhat.

supplied with matching loudspeakers and could if the owner desired be bolted together to form a portable unit. Sony claimed that "the matched components are the equal of fine separate components", and they weren't joking... The tuner was again a digital type and used a similar chipset to the full-sized units of the day. Only the lack of a built-in mains unit and conventional signal connections and the presence of a built-in rod antenna marked it out as unusual. The tape deck too was conventional for a well specified unit of the day, featuring a fully logic controlled mechanism with AMS, auto reverse, automatic selection of ferric, chrome or metal tapes and Dolby B NR. Sony clearly realised that the tape deck may well have been the main source and so spent some time getting it right; the Dolby circuit, for example, was very similar to that of the TC-D5 professional portable and the transport had commendable mechanical characteristics.

A glance at the remaining two components would lead one to think that they were a pre and power amplifier respectively. This was not the case. The amplifier was in fact an integrated design, using two hybrid chips to produce a substantial 38 Watts (RMS) per channel. That eighties essential, the graphic equaliser, was also present, along with a well designed phono stage based around a quality bipolar operational amplifier chip. Producing a total of nearly 80W from an amplifier the

When you think of Sony, the chances are that you will be thinking about small things; perfection in miniature if you may. Their engineers seem to have an almost unique ability to take familiar objects and miniaturise them without sacrificing performance or functionality. This is surely the essence of the Japanese electronics industry, distilled into one iconic brand.

It didn't take them long to home in on the proper hi-fi system as something that could be usefully miniaturised. Such a product would not only be a desirable and profitable export, it would also be an asset on the home market; space in Japanese houses is always at a premium. The nineteen seventies ST-88/TA-88 tuner and amplifier combination was an early attempt that proved very popular, even in the conservative UK market. Later on in the early eighties the TA-P7F amplifier and ST-P7J

switch mode units that have been popularised by some recent, successful designs. What both these systems had in common is that it was the tuner and amplifier that had been miniaturised, other sources such as turntables and tape recorders were still made in the normal size, lessening the impact and defeating the point somewhat.

Technology was advancing at such a rate during this period however that it was inevitable that at some point a complete system would become a practical possibility. Sony's offering was the FH series, a range of models that blurred the distinction between the most expensive portable radio recorder and proper hi-fi systems. Throughout the nineteen eighties various models were produced in this line but the most famous and perhaps the best was the FH-7. The FH-7 in its basic form was a four-part system that included a radio tuner, a cassette deck and an amplifier. It came



HEADPHONES

FH-7 MK III
COMPACT HI-DENSITY COMPONENT SYSTEM



size of a small stack of 7" singles is quite a task, especially given that there are no external heatsinks. This was where the second unit came in, which was a very clever form of power supply. Most of the inside of the power unit was filled by a specially designed transformer whose form factor had to be distorted considerably to fit it into the tiny space. Alongside this was a circuit that could alter the supply to the amplifier depending on how much work it was required to do, later came to be known as 'Class G' working conditions.

To understand Class G consider the case of a large-engined car. Normally cars like this use a lot of fuel, not only when driving fast but also around town when very little power is needed. To improve the efficiency one could shut some of the cylinders down when driving slowly and only cut them back in when a burst of speed was needed. In simple terms this is what Class G does, limiting the power to the amplifier circuits when the system is playing softly and only letting the full amount through when you really turn the taps on. This would of course give rise to horrendous distortion if done badly but of course that's not the Sony way. Unless you were told about the Class G amplifier in the FH-7 system, you'd never know it was there.

Clever amplifiers are one thing but remember that the FH-7 was a complete hi-fi system and in the early eighties no system was complete without a turntable. Turntables for mini and micro systems had in the past been full-sized affairs but this time that was not to be, the matching PS-Q3 and PS-Q7 models had the same footprint as the other units, yet could still play full-sized LPs. This was done by making the platter very small (less than the size of a record label) and placing it right in the corner of the plinth. A heavy weight in the lid clamped and damped the disc, the remainder of which was left floating in free space.

The arm was made of square section aluminium tube and 'L-shaped' with the pivot in the centre at the back. This arrangement minimised the tracking error as far as was possible in such a compact unit, the only drawback was that cueing was made slightly difficult as the arm tended to come down at a slight angle. A quality MM cartridge was provided which clearly had to track at very moderate levels of downforce and although isolation from external effects was obviously limited the whole thing worked much better than it had any

right to.

The basic PS-Q3 model used belt drive, a combination of two belts compounded together was required to give the necessary reduction as the platter diameter was so small. The PS-Q7 on the other hand used Sony's BSL (Brushless and Slotless) direct drive motor, the same technology that the Biotracer decks used. The PS-Q7 also included a headphone amplifier and could therefore be used on its own as a compact tabletop player for personal listening. Both models were fully automatic in operation, a second tiny motor was used to move the arm and operate the cueing.

Finally the loudspeakers, which you may be forgiven for dismissing as junk if you'd had any other experience with this class of equipment. Once again clever technology came to the rescue in the shape of the APM woofer. APM stands for Accurate Pistonic Movement and was a technique used in larger Sony loudspeakers too. An APM woofer has a flat, square radiating surface instead of a cone, in this case made from aluminium honeycomb sandwiched between two layers of carefully shaped and very thin aluminium sheet. This makes a



the matching Sony PS-Q7 turntable is a marvel of miniature vinyl design!

SOUND QUALITY

So how does it sound? Probably not as you'd imagine. The first impression is one of smoothness, even using the supplied loudspeakers (correctly placed of course). Bass is surprisingly full-toned and the treble is clean and lively. The muscular nature of the sophisticated amplifier makes its presence felt as the volume rises, giving a seeming inexhaustible reserve of power that is best exploited using larger loudspeakers. This really is a system that if you suddenly found yourself living in a broom cupboard would be no hardship to use, especially not if the alternative was not being able to listen to LPs.

The turntable is by far the biggest surprise, at first it looks like a joke but it really does work very well, although it is quite intolerant of worn or (obviously) warped records. The BSL motor in the PS-Q7 is not as torquey as it can be in other incarnations but all the same

"as a retro alternative in a small room to the ubiquitous iPod and dock, it has much to recommend it..."

very light and rigid structure which is at the same time well damped, an ideal thing in fact for moving air and making sound. Motive force was provided by a moving coil assembly similar to that of a conventional loudspeaker driver, coupled in by a lightweight aluminium cone at the rear. After all this it would have been nice to see a matching high-tech tweeter but alas the money was clearly spent by this stage and a rather ordinary cone unit was fitted instead.

These systems were very popular but that didn't mean that they were cheap. Even Boots (the chemist) sold them but in 1985 they charged a cool £419, and that was with the basic PS-Q3 turntable! This was serious money for something that looked like an overgrown ghetto blaster but one listen was enough to convince most people that it was money well spent.

the speed stability is impressive for something with such a small rotating mass. Seriously, I've heard full size turntables that are not a patch on Sony's miniature.

CONCLUSION

Should you seek one out? Being sensible this is not a substitute for a full-house audiophile system but as a cool alternative in a small room to the ubiquitous iPod and dock it has much to recommend it. Finding an example in good working condition is the key, repairing and overhauling Sony's tiny mechanisms and baffling circuits is like brain surgery and is really best left to those with time on their (steady) hands. Well-used examples may have worn tape heads, blown amplifier chips, rotten woofer roll-edges and seized turntable mechanicals, find one free of all these afflictions and you'll have a tiny treasure.

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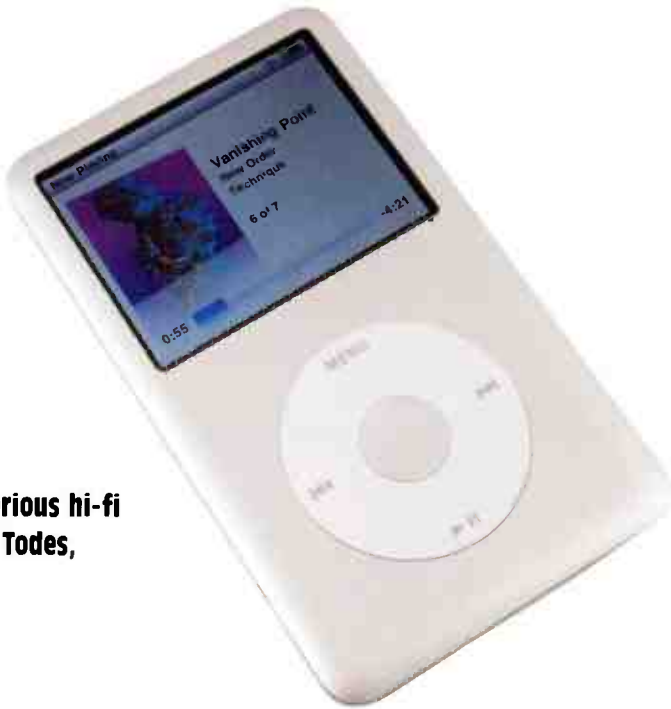


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Sound Byte

Do iPods, PCs and Macs have any place in a serious hi-fi system? Yes, argues classical musician Rafael Todes, as he examines some of the myriad options available to the computer audiophile...



Time was when computer audio was ridiculed by the serious hi-fi press, and that was even if they so much as gave it the time of the day. But things have moved on, and it's now not so much 'computer audio' but audio *per se*; it's becoming the norm. So instead of spurning it, I thought I'd consider some great options available to serious hi-fi folk, to get music from their megabytes!

A solid start point is of course Apple's iPod. It's not the only digital portable on the market of course, and there are actually better sounding solutions, but rather like Compact Cassette in its heyday, it's so ubiquitous that you just can't ignore it...

APPLE SOURCE

Happily, nowadays there are a number of excellent dedicated iPod dock/speaker systems around. B&W of course have the Zeppelin which *Hi-Fi World* has praised greatly, and now there's the Zeppelin Mini just released at around £299. It plays music impressively through inbuilt speakers to provide a convenient and enjoyable way of listening to the iPod. It not only avoids the weedy headphone preamplifier stage, but also has its own digital to analogue converter - a major weakness of the iPod up to now.

The result is a very detailed sound which can fill a room, and is pleasant to listen to. The bass



B&W Zeppelin Mini - clever iPod dock speaker system that extracts the audio digitally, bypassing the iPod's DAC.

produced is impressive given the unit's size, and the midrange has a mellifluous quality not normally found in this price bracket. It's not a replacement for a serious system, but used creatively, it opens some interesting doors! It's a good beginning...

With an iPhone, there are a couple of 'apps' (applications) that really make the Zeppelin Mini come to life. For example, www.tvcatchup.com

is a free way to watch the major stations on an iPhone using Wi-Fi. Coupled with this dock producing high quality sound, you have an ideal way to watch telly in the kitchen in a compact and

easily mobile way. Using the TuneIn Radio app, you can listen to radio stations from around the world, quickly and in reasonable quality. It is a simple but high quality way to have far greater choice on casual listening material. I noticed that Linn Records has its own station, playing its own extensive catalogue without any chat at 320kbps. (The default iTunes rip is at only 128kbps; you can of course change this in 'settings' to 320kbps for better sound when ripping). It goes without saying that the BBC stations including local radio are all available with this app.

Using a USB cable (the type used to connect printers) the Zeppelin Mini will digitally extract the sound from a PC, laptop or Mac providing a huge upgrade to most PC speakers, and even sync with iTunes.

There are cheaper docks without speakers available which fulfil the brief of giving improved sound from a 'pod. Cambridge Audio produce a basic dock (the ID10, for £15)



Wadia i170 - the first iPod dock to extract the audio digitally; a superb hi-fi tool.



Naim HDX - an excellent, albeit expensive one-box solution for hard disk music fans...

which will charge the iPod and send out the audio via its preamplifier stage. This however will require a cable to plug into an amplifier starting at around £110 for a decent version. While it doesn't really alter the sound hugely it is a good starting point for those on a tight budget; every little helps!

Another dedicated dock which has shaken up the industry is the Wadia 170i which retails for around £400. Wadia are famous for their high-end CD players, and the dock's technology is certainly the crumbs from this table. The sound it produces is amazingly detailed; it was the first to extract the bytes digitally, bypassing the iPod's DAC and analogue output stage, effectively turning the iPod into a digital transport. Use it with Apple Lossless (ALAC) or WAV files (i.e. uncompressed, native CD quality) and it makes series in-roads into



Naim DAC - superb high end convertor that extracts iPod music digitally; a bright, spry sound and loads of detail.

producing a sound with air and space to it. There is suddenly separation to instruments - gone is the Apple strudel! It needs a DAC; the quality of the sound it yields will obviously be largely dependent on which one is chosen. It doesn't quite sound as good as a proper CD transport, and there are many who feel the solid-state memory-based iPods (i.e. iPod Touch) sound better than the ones with hard drives (i.e. iPod Classic), but it's still a milestone. The Wadia is an important product, in my view, in iPod's evolution into a hi-fi device.

For those after a high-end audio solution, Naim Audio make a (sort of) giant sized iPod in the shape of the HDX, which takes CDs and rips them to the hard disk, where they are then accessible to any room in the house wirelessly. The CDs are not compressed (it rips in .WAV

format) and the sound quality is comparable to the better mid-price CD players around.

The HDX certainly isn't cheap at around £4,590, but it is an elegant way of eliminating the ugly plastic boxes that contain CDs, and sounds remarkably good to boot.

It will also play high resolution files which are starting to pop up these days. Linn Products, as well as Naim Label and B&W's Society of Sound have a growing catalogue of recordings available as a digital download at 24/96 resolution, which can sound terrific when played on the Naim HDX. Typically, where an iPod/MP3 player compresses the sound, you lose the spatial quality of the recordings as well as tonal subtleties; a high resolution recording does the opposite, you can see the instruments in the room more clearly and hear the space between them. It is simply much more life-like.

CASH CONVERTERS

Naim have also just produced a digital to analogue converter priced at £2,000 which has caused a stir. It can connect to an HDX, or indeed a PC or Mac (more of this later) and will play files at up to 32bit and

resolutions up to 32bit and 768k. It also has a connection for an iPod and will extract the maximum out of compressed or high resolution digital files, like the Wadia. It can also bolt on to the digital output of a CD or DVD player, and can significantly upgrade these. To connect it to a PC, you will need a bit of kit such as one made by M2Tech HiFace (available from www.puriteaudio.co.uk) which plugs into the USB socket of the computer, and converts the output to an RCA S/PDIF, which then goes into the Naim.

Running a laptop via its USB out into a DAC such as this is surely one of the most high quality and effective ways to



Cambridge Audio DACmagic - skilfull budget upsampling DAC that is brilliant value for money...

turn it into a high-end audio source, and the results are nothing short of inspiring. With high resolution files going into the Naim DAC, for example, suddenly the brittleness of digital sound disappears, and instruments and voices take on a space of their own. The three dimensional map of the orchestra created is quite holographic. Listening to Linn Records' recording of 'Acis and Galatea', the treble has sparkle, the midrange has a force and presence to it, and the walking bass line positively dances! It oozes blood and guts.

The Naim DAC has the option to listen to music files on a memory stick, directly inserted into the DAC's USB socket (the Naim DAC's USB sockets only play out music on memory sticks, hence the need for the M2 HiFace adaptor if you want to plug it direct into a laptop). This comes close to or even exceeds the quality of the DAC in conjunction with the HDX. I noticed a cleaner sound than via a laptop with the M2 HiFace. Listening to a live recording I made of my string quartet from the Salisbury Festival recently using the USB stick, the realism of the concert experience was far greater, it was quieter and more lifelike. The sound seemed to emerge from a completely



NuForce Icon HDP - a surprisingly analogue sound from this affordable, do-it-all box of tricks!



Don't be fooled by the plain styling; the Musical Fidelity V-DAC packs a superb digital to analogue convertor that plays hi res via USB.

black background. It is, however, probably too much hassle to load files onto a memory stick every time you want to play a piece of music, but does show what this DAC is capable of.

For those whose wallets don't reach to a Naim DAC, there is a cheaper model made by Cambridge Audio for a fraction of the cost, £230. While it is an audiophile bargain, it cannot dock the iPod like a Naim, but will play from the backup PC or laptop in standard CD resolution or less. For greater resolutions a dongle such as the M2Tech HighFace would be needed to act as an interface to feed the DacMagic with S/PDIF. Like the Naim, it will improve many CD players with a digital output. Sound wise, the Cambridge DacMagic has an open and airy top end, which is certainly attractive to listen to. Its midrange and lower end are considerably more lightweight, and lack presence. Listening to the Linn recording of 'Acis and Galatea' with the Dunedin Consort, in the overture, the walking bass line tended to plod and not dance, but remember it's a very inexpensive product.

Another slightly different, but perhaps even more inspiring solution, is the NuForce Icon HDP DAC (£335) which is also an excellent quality headphone amplifier, roughly of the order of quality of the £225 Graham Slee Novo but also with a high quality DAC thrown in. It is an extremely elegant and compact product and works very well, playing high resolution files from a laptop. This is a lot of kit for the money. The sound of the DAC auditioned alone using the coaxial connection is slightly on the veiled side, but has great solidity to the image. Listening to Wagner's Tannhäuser Overture, while I missed some treble sparkle, there was a more pro-audio feel to the sound with lots of analytical

detail. Listening to the opening of Mozart's Eb Symphony No 39, the Linn Mackerras version, it occurred to me that I liked the sound because it had a vinyl feel to it, the upper strings were warm and realistic, and it wasn't at all fatiguing to listen to.

Musical Fidelity also have their very keenly priced V-DAC at around £180, which gives the DacMagic a real run for its money.

It, unlike the Cambridge DAC, can play high res files from USB, thus it is not only £50 cheaper, but it also doesn't require a dongle such as the M2Tech to play high res files. That knocks a further £120 off the difference between the two products. The Musical Fidelity has an expansive soundstage, a clean sound, slightly less airy treble than the DacMagic, but a fuller midrange and punches way above its weight.

Moving up in price, the £650 Stello DA100 Signature is a Hi-Fi

STREAM MACHINE

If you have an old laptop or PC lying around the house, you could very inexpensively create your own music server for a modest outlay of one of the DACs above, and an hard disk (1TB will store around 1,300 CDs at full quality and cost £65 from Maplin). This could quite easily be streamed to other rooms in the house and avoids the problems of compression.

Logitech make the Squeezebox Touch (£239) which is excellent value, and will stream audio into any room in the house wirelessly over your network. The interface is a little clunky, the quality of sound is reasonable although it can be improved significantly with the addition of a dedicated DAC, and could be used to access the server of the main system conveniently. It will also play any of the Internet radio stations from around the world at the touch of a button.

So there's a plethora of options available to suit every budget and to cater to different requirements, from the basic Apple iPod tweak to the modular Naim system. The



Stello DA100 Signature; mid-price USB-capable upsampling DAC with a lovely silky sound and big bass!

World favourite, and another very impressive machine; listening to the opening of the Mozart 39th Symphony, I almost jumped out of my skin hearing the hard sticks of the drum in the slow introduction. This DAC has bass with real force, an open midband and silky treble. In absolute terms though, the violins however lacked the complexity, detail and sophistication that the Naim brought to the party, although don't forget its just a third of the price! For many, this will be a great do-it-all design.

development of the high quality USB DAC means that high-end computer audio has rapidly become a reality. If you've been interested in the possibilities of serious computer audio, but have never felt it's quite there yet, then think again.



Logitech Squeezebox Touch - an impressive way to play out your digital music over your home wireless network.

"the computer industry now has its scooters on our lawn
- UK Hi-fi PLC needs to strike back!"



David Price

My only experience of selling anything in life, is limited to a procession of ageing Rover V8s and Jaguar saloons, in varying stages of degeneration. This simply involves a quick call to the Autotrader or a few words posted on a classic car website, then I sit back and wait for the prospective buyer to turn up. When he does (for these are invariably not women's cars; they're far too sensible to want one), I embark on a long story about all the bits that fell off that I had to, errr, put back on, and show the gent a service history the width of Thackeray's 'Vanity Fair'. I then embark upon a soliloquy worthy of 'The Canterbury Tales', lavishing purple praise on the design of the car; to which the buyer invariably replies, "so why are you selling it then...?"

So, as you may have gathered, dear reader, I am not one of life's salesmen. But that's not to say I don't have a view on selling. Unlike many hi-fi scribes, I was never 'in retail', seeing only the process of selling from a buyer's point of view. Staying with cars for a moment, I have to say most salesmen in this industry aren't bad. Most seem grittily competent and well versed in communication skills, certainly if the parts department of my local Jag dealer is anything to go by...

I am not so sure about hi-fi retail. I've seen wild extremes; some of the most erudite, personable and charming people I've ever met, and on the other hand I've come across a number who'd be better purposed working somewhere that doesn't require interaction with other living creatures. Of course, the more specialist end of the hi-fi market generally brings much better staff, but I do worry that as an industry, our 'frontline troops' (so to speak) are facing a greater challenge now than

ever - and it's not as if they've had an easy time of it in recent years.

There are several things worthy of attention. A recent KYP (www.kyp.com) market research document shows that over half (54.8%) of British consumer electronics shoppers say price is the major factor governing their purchase. Contrast this with just one third (32.1%) who are 'strongly motivated' to purchase by advice or a product demonstration. This tallies with my own experience. Readers often phone me up for buying advice - a service I am afraid I can only provide when I'm not working on urgent business (most of the time, sadly!) - and they've invariably done their homework on prices, but show real reluctance to bother to go to a dealer for that aforementioned dem. The usual reason is the dealer is "too far away", but often the cost to travel is a fraction of what they'd lose if they bought something new 'blind' (by mail order) and then didn't like it, so had to sell it...

The study also says that online product reviews are the most (32.2%) popular way to research purchases, ahead of in-store advice or demonstrations (18.1%), friend or family recommendations (11.1%) or otherwise. Whilst this particular survey is more applicable to general consumer electronics and not specialist hi-fi (where there's a much better level of magazines available, if I do say so myself), it's a puzzler...

I do like to read the comments on Amazon about films (I buy most of my DVDs online), but always smile when one correspondent says one movie is "an essential - don't live without it", and the next says it's a load of old rollocks. I tend to look at the film's particular creative team (directors, producers and actors) to inform my odyssey of cinematic discovery, plus some trusted critics (I'm a fully fledged Mark

Kermode disciple), plus 'demming it' by watching the trailers. I am less inclined to pay heed to what someone else I've never met thinks of it. Ditto hi-fi; reading reviewers you know to have similar proclivities to yourself is a great start point, and helps draw up a dem shortlist, but there's nothing like your own ears to make the buying decision for you...

All of which means, I think, that hi-fi retailers have got to find more interesting and innovative ways to get people through their doors, and keep them there. This is essential if they're going to survive the online onslaught, as more people put (apparent) convenience and price before actually ending up buying the bit of kit they really need. Doors need to be open (literally and metaphorically), staff need to hone their people skills and up their product knowledge. Specialist hi-fi dealers need to present themselves as centres of excellence, packed with technical expertise and experience which can remove all the hassle from the hi-fi and AV purchasing experience. Also, they need to come over as nice people to spend time with; if the auditioning experience doesn't feel (from the buyer's perspective) like a special occasion then they'll simply click the 'add to basket' button on their browsers at home. Of course, many dealers already do precisely this, but we as an industry have to try harder across the board as times get tougher.

The heartening thing is that demand for music is pretty much at an all time high, so we've not lost our potential customers (music is of course what it's all about, lest we forget), but sadly the computer industry now has its scooters on our lawn, so to speak. If an industry with no real knowledge of serious audio (it's all about volume sales and price) can just walk in and take large chunks of people's hi-fi budget, then UK Hi-fi PLC needs to strike back! ●

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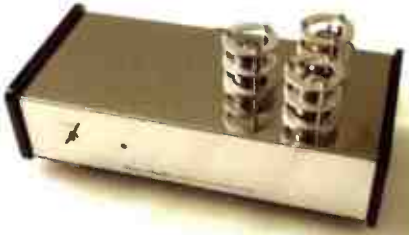
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"check out the Angel Air catalogue and look behind the obscure names you find there; you will find genius..."



paul rigby

We're suckers for a brand. Shop for a tube of toothpaste, a new car, a TV or a tin of beans and we pick up a brand that we know. If, on the other hand, I offered you a special price on a tube of White-O-Shine (pat pending, so back off toothpaste magnates) then you might hesitate... and pick up your usual Colgate. Unless you try White-O-Shine (and I really think you should) then you won't know how good it is – it might even be better. It is, believe me! Familiarity, however, sometimes produces a comfortable, but hardly progressive, rut. Sometimes brand names and associated advertising, can actually hold us back...

The same thing happens in music and it sometimes prevents us from taking a chance on new or different names. If I chose a top brand name, let's say Thin Lizzy, then you'll know what you're going to get, especially if it's the Phil Lynott era. Cracking, hard Irish rock that's beautifully melodic fare with top quality lyrics. If I then shoved a CD under your nose by, say, Eric Bell, then you may yawn and rest your coffee cup upon it...

And this is where you may miss out because Eric Bell, dear friends, is not some busker you trip over at the entrance to the local subway. Actually, as it happens, he was a founder member of that very same Thin Lizzy, during their early period with Decca, writing classics such as 'The Rocker' and is famed for his 'Whisky In the Jar' arrangement. Because his new CD, 'Lonely Nights In London' (Angel Air) doesn't have Thin Lizzy emblazoned all over the cover, you're going to miss out on some excellent music.

So let me give you a piece of advice: check out the Angel Air catalogue (www.angelair.co.uk) and look behind the obscure names that you find there. You will find genius. I'm not kidding, either. The heart and soul of some of rock's best times are sitting behind a whole host of obscure names. Names that are only familiar to dedicated fans – and lost to thousands of general music fans who, if they give these CDs half a chance, would be in for a real musical treat.

Let me throw a few more examples at you. John Fiddler is in there with his CD 'Big Buffalo'. Fiddler was the voice of Medicine Head, a significant blues-rock band from the early seventies; there's Al Atkins and his album 'Demon Deceiver... Plus'. Atkins happens to be one of the founders of the classic heavy metal band Judas Priest, and was the band's first vocalist; there's Deke Leonard and his solo work 'Freedom and Chains'. Leonard was a songwriter, guitarist and vocalist for the legendary space rockers from Wales, Man; next is Dicken, who Angel Air has supported with the release of his solo CD. His rock band link says it all in the album title, 'From Mr Big to Broken Home and Back Again 1977-2007'. Dicken was the front man for Mr Big during the mid-seventies, releasing a hit single, 'Romeo', at this time.

Another giveaway CD title is present on Steve Ellis's CD/DVD package called 'The Love Affair Is Over'. Ellis was the voice of Love Affair and the voice of the hit 'Everlasting Love' (remember that one?).

Maggie Bell's name may be more familiar to many of you but, just in case she's slipped your mind, you

may remember her original band – Stone The Crows, a rocking blues outfit from the late-sixties and early seventies. Bell's 'Sound & Vision' CD is a 'best of' CD/DVD double disc package.

And that lot is just a smattering of what Angel Air offer. We tend to forget that musicians have lives of their own and that, when their original band takes a left turn and they leave or the band itself fizzles away, the musicians themselves still continue to work, evolve and progress. Talent never dies, it only matures, and often the later published work of these guys not only matches but often exceeds their original output in terms of imagination and quality. Trouble is, because they don't now have a major record label marketing machine behind them, it's up to us to take a little bit of extra time to search them out. Well, at least with Angel Air, we have a focus for our search and a well to draw upon.

Angel Air's CDs are often reviewed in the glossy magazines, but not all of them are. Other independent and smaller record labels find themselves in the same situation. Some label output is hardly ever reviewed at all. And don't believe that, just because something's not reviewed, that's it's no good. Page space is a major problem in magazines. Ideally, most magazines would like their monthly editions to run at five times their normal size to squeeze everything in. Which means that, if possible, you need to use the Internet to find the music you (might) like and keep a close eye on this magazine where we always try to alert you to those releases commonly ignored and review them sensitively. ●

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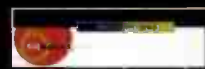
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"the new Government has sought to distance itself from Labour's 2015 DAB switchover date..."



steven green

As many of you will already know, the new Government chose not to set 2015 as a date for digital radio switchover. Ed Vaizey, the Minister responsible for broadcasting, made the announcement on the Today programme on Radio 4, where he said that, "the last Government was committed to a digital radio switchover. What we're announcing today is a Digital Radio Action Plan." And that, "[switchover] will be driven by the listener. There is no compulsion here, there is no date set when we will switch off FM, and nor is there indeed a necessity [to switch off FM]; if it comes to the point [in] 2015 where people are still listening to, particularly the BBC on FM, then that will continue."

The radio industry had been lobbying politicians very hard for 2015 to be set in stone as the switchover date, and I think they were thoroughly expecting that the new Government would commit to what the previous administration had planned to do. So it was a very pleasant surprise to hear that the Government had chosen not to do that, especially since the previous Government always did whatever the radio industry asked it to do on the subject of DAB.

The new Government says that it still "aspires" to switchover taking place in 2015, but in reality it's now effectively been postponed indefinitely – I certainly can't see it happening before 2020. I think the reason why the new Government sought to distance itself from Labour's 2015 switchover date was because they (rightly) realised that setting a switchover date would end up being a PR disaster. The vast majority of people don't see any reason to replace their FM

equipment, so forcing the public to replace so many FM devices in such a short period of time would have been incredibly unpopular.

However, the reality has always been that switchover was never actually remotely possible in 2015 anyway. Less than 10% of all FM devices have been replaced by DAB sets so far, and less than 1% of cars have DAB. DAB was relaunched in 2002, so it's taken nine years to get to where we are now, so the idea of replacing 90% of all FM devices and installing DAB in 99% of cars in the next five years was ludicrous, and in my opinion it was dishonest to suggest to the public that it was possible.

Tim Davie, the BBC's Director of Audio & Music, seemed to agree, because in April last year he said that switchover "may not happen in our lifetime" due to DAB's poor sales. However, after the Digital Britain report set 2015 as a switchover date, and he was asked by a Guardian journalist whether he was happy that a switchover date had been set, Tim Davie replied, "I'm pleased, because it gives a degree of certainty that was lacking in the industry," and, "I really think it's helpful to have a date that we can all aim for." Fast forward to July 2010, and Tim Davie has reverted to his original view that, "we've got a long way to go and we're not on a track that is sustainable to get to a switchover". How can Tim Davie possibly justify saying that he's pleased that a switchover date had been set whilst never actually believing that date was remotely achievable, whilst knowing all along that the publicity surrounding the date being set would encourage the public to replace their FM equipment?

As Tim Davie was so keen on a switchover date being set, I would

also suspect that he was the person who managed to get the switchover date set in the first place. The 2015 switchover date originated in the Digital Britain final report published last year. However, the Digital Britain interim report, which was a public consultation paper, suggested that radio switchover was a very distant prospect. "The rationale for "switchover" from analogue to digital cannot simply be transferred from television to radio... The replacement cycle for cars, and the costs and difficulties associated with retrofitting existing vehicles with digital radio equipment also points to a more gradual transition process for digital radio." Someone therefore managed to persuade Stephen Carter, the author of the Digital Britain report, to include the 2015 digital radio switchover date in the final report – even though that meant that the public hadn't been consulted on this issue! I would say that the only people with sufficient clout to be able to persuade Stephen Carter would be someone at the top of either the BBC or Global Radio, the UK's largest commercial radio group. Considering what Tim Davie has said on the subject, though, I would suggest he is the most likely candidate.

Personally, I think it's sad that Tim Davie, someone who's paid £450,000 a year of licence-fee payers' money, apparently made the public think that digital radio switchover was due to take place in 2015, if he knew all along that it was unlikely. And if he was also the person who persuaded Stephen Carter to set the 2015 switchover date in the first place, then I think he should resign, frankly. The whole switchover issue hasn't exactly been handled well, and the public deserves an apology from the powers that be. ●

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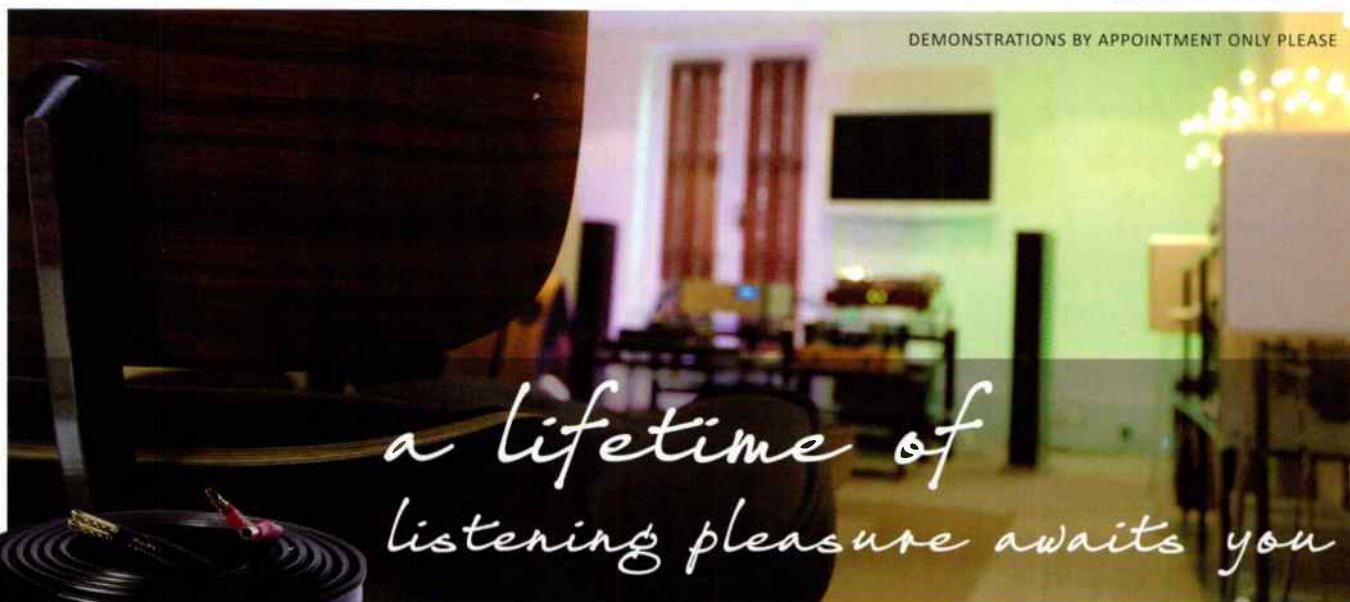
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"Apple have shown us how it should be done, and where tomorrow lies..."



noel keywood

When I read the other day that Sony are pinning their hopes on the future popularity of 3D TV in the home I winced. The days of big C.E. (Consumer Electronics) are over and an idea as daft as this isn't going to get anywhere in the home. As yet another awkward and intrusive AV technology rolls out, I'm being bombarded – as we all are – by non stop Apple iPad adverts coming at me from every screen in the land. Having put iTunes then the iPhone into the bag, as it were, and won over the world, Apple have shown us how it should be done and where tomorrow lies.

Yes, they're computers, but not the clunky, geeked out ones that Microsoft wanted us all to own. Computers done properly don't look like computers as we have known them and Apple's genius has been to cut through the crap to give us a device anyone can use, one that "just works". Sony, I regret to say, are locked in an old mindset conditioned by their glorious past, where they collaborated with Philips to bring us the Compact Disc. I won't mention Betamax and SACD, both miserable failures, nor Elcaset. But the world of conspicuous and hideously complicated home technology is fading away under Apple's advance; the hordes have seen the light, worldwide, and are stampeding to a new, easy way of doing things, using devices that will seemingly mimic those wristwatches that will beam you up to a waiting spacecraft – providing you can get a Wi-Fi connection!

Is this a sad day for audio, in some ways? Blu-ray is likely to be the last disc system we ever use in the home. In multilayer form it has plenty enough storage capacity, and HDMI linking can support vast data rates;

even higher definition video is within its specification and capabilities (and is coming). LP and CD will become historical artefacts, and objects like Betamax and VHS tape, SACD and Elcaset will end up in London's Science Museum as exhibits alongside a vast platter that was one of the first computer hard drives...

People 'get' LP and find it easy to use, and it simply does its job well. CD was also easy enough to use but every last ounce of technological glamour was squeezed out of it by Sony and Philips, followed by the rest of the CE crew. Shanling turned the light on to show us how it could be done, and perhaps should be done, but CD had been 'commoditised' and it was too late. And CD was never truly portable in any case; the 8cm disc should have been pushed harder.

Disc systems are over and done with. The ones we have we appreciate, and LP is the daddy of them all, one that hopefully will live on in the way it does today. Designing and especially building things like cartridges and arms are craft skills and result in crafted products. You can't say this of an iPod. Crafted items that work well will continue to have a place in the home, but it's simply the case that a rack of LPs is a vast and very heavy piece of furniture that an iTunes collection does away with. The contrast couldn't be greater and it clearly points the way ahead.

This isn't a sad day for audio though. Rafael Todes has a special ear for audio; he plays violin in the Allegri String Quartet and has played with the LSO. In this issue Rafael leads us through the expanding number of ways we can get our audio off the internet and into the computer and, as he succinctly notes, at a quality level that is true high fidelity. Even Apple have a losslessly packed digital format so iPods can stream unadul-

terated digital audio.

Both Linn and Naim have been in this field for some time now and have studiously avoided AV – and quite right too! With Sony stating their future lies with 3D TV they are aligning themselves ever more with the interests of Sony Pictures of course, trying to prepare us all for their next new 'must have' in entertainment. But because a bemused public went to see the rather pointless showcase film 'Avatar', I still don't see any likelihood of 3D becoming popular in the home.

And although I find home AV technologically interesting, it is completely barmy in terms of usability, as reviewing Sony's BDP-5000ES Blu-ray player reminded me this month. The technology is heavyweight and you get great pictures and wonderful sound, but the menus – oh dear! Playing LP and using an iPod doesn't require close scrutiny of an eighty page manual beforehand – and anything that does is yesterday. Apple are showing us. There's a limited future for a home technology that requires so much specialist technical knowledge, especially when that knowledge is of commercial signal processing schemes such as Audyssey MultiEQ XT that our measurements show has little merit. Where does big CE think it is going with all this stuff? It isn't selling in big quantity and is being elbowed aside by a worldwide rush for anything with an 'i' in front of it.

None of this is bad news when it comes to enjoying music played at a decent quality standard, unmangled by compression schemes. But we will pay for it. Just check out the price of a new Mac Mini. Entry into Apple's orchard will become increasingly expensive for us all as competitors like Sony charge off into irrelevant 3D TV. ●



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I really enjoy your website and find it very informative (and read it every day).

— Richard Holbrook

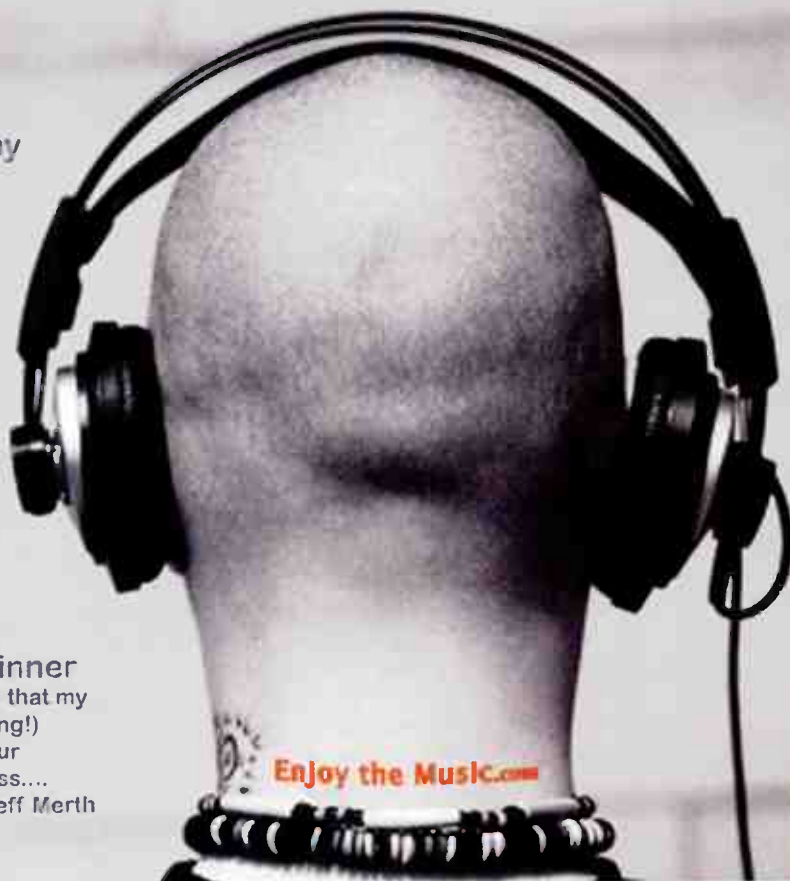
I have never replied to online audio reviews but wanted you to know that I have enjoyed several articles.

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Enjoy the Music.com Contest Winner

In fact, the Axiom Audio EP500 works so well that my wife and I both stood mouths open (not kidding!) as it shook the rafters and window glass in our house. Amazing! Love that palpable, tight bass.... Thank you again for the awesome prize! — Jeff Merth



"the problem is that very few people seem to know how to pack a turntable properly..."



adam smith

I'm sure that regular readers of the magazine will be utterly unfazed when I announce that I recently purchased a couple of turntables. However, whilst this is not noteworthy in itself, I subsequently fell victim to the dreaded eBay packaging fiasco, which does deserve a few words. The decks themselves are very nice, although not exactly the stuff of audiophile dreams, being a pair of Vestax PVT-E2 DJ units [yikes! Ed.]. Whilst their high torque direct drive motors and solid wooden bases may be of interest, on learning that they have Vestax's short, straight, geometrically disastrous 'ASTS' tonearm for DJ scratch use I am sure a querulous eyebrow or two may be raised, but I give not one jot, so there! I've wanted some for years purely because they have dynamic arm balancing and an adjustable plinth featuring a big cradle that allows them to play at up to 60 degrees from horizontal – visually impressive, technically accomplished and pointless for hi-fi, I am sure you will agree [agreed! Ed.], but I digress...

The box arrived on my doorstep and I duly gathered it up to unveil my new toys. *En route* I was a little perturbed to find that one end of the box was heavier than the other, and the reason for this became apparent when I opened up. Basically, both decks had been dumped into the box with platters, headshells and counterweights still in place and then surrounded by a few bags full of shredded paper. The result was far from pretty as one deck had slid into the other, smashing off the counterweight stub and dislodging the platter. Lifting the decks out, things went from bad to worse as both metal baseplates had been jarred loose and were hanging off and one of the support struts on the base of the deck that took the most impact had snapped in half. I was not amused.

The problem is that very few people seem to know how to pack a turntable properly for shipping and I suppose I should consider myself lucky that this is only the second time in my long history of turntable purchasing that such damage has occurred. The last time was a Bang & Olufsen Beogram 1800 a few years ago which the seller actually wrapped quite well. The trouble is he did not screw down the suspension springs, did not support the arm and did not remove the platter. As a result the platter flipped off and went on a wrecking spree under the lid, destroying the arm bearing housing, snapping off the counterweight and breaking off both cartridge and cartridge mounting socket. I still think that he really couldn't see what he'd done wrong, even after I explained it thoroughly and patiently. In retrospect, perhaps a lump of four by two would have focused the message better than a series of polite emails...

Consequently, whether you are a seller planning to sell a turntable or a buyer hoping to grab a bargain, may I offer a few pointers to either packing your own unit, or asking a seller how you would like your new purchase packed for you? Firstly, and most importantly, remove the platter, counterweight and headshell, assuming the latter is removable. This is so important that I'm going to say it again – remove the platter, counterweight and headshell! Unless the platter is secured it will be highly likely to come off in transit, as I found, and even if it manages to stay put, the stresses it will put on the bearing as it is bounced around the back of the courier's van will do it no favours at all. Equally, the counterweight will put stress on the bearing stub and the headshell will be precariously vulnerable as well. They are far better off removed and packed separately.

The next step is to protect the arm. This is best achieved by securing it to its rest using tape or tie of some sort (do not rely on the clip) and then surrounding this with plenty of bubble wrap, after removing the lid. Whilst you have the bubble wrap, surround the spindle as well, if this is not integral with the platter (which of course, you have removed!). At this point, the whole deck should be wrapped in a swathe of bubble wrap. Incidentally, keep the bubbles themselves on the outside – they can make a pattern on metal or plastic parts which is fiddly to remove. Treat the lid to the same thick wrapping, preferably filling the entire empty space inside as well. Do not place the lid back onto the deck, as it can cause damage if knocked and it slides.

Finally, pack everything into the sturdiest box you can lay your hands on. Cover the base of the box with a good thick layer of bubble wrap, polystyrene chips or even a few dozen McDonald's Happy meal soft toys (don't laugh; I bought a cassette deck once that was entirely surrounded by about a hundred of these, and they did the trick!). Place the turntable itself in, followed by more packaging, then the lid, more packaging again and then the platter and any accessories. Place a final layer on top and surround all the sides with more padding to finish with. Ensure that everything is tight and cannot move, close the box and secure it with plenty of parcel tape. If you want to be really sure, put this box into a second box that is slightly larger and fill the gap with more bubble wrap. This way, your precious cargo should arrive in one piece.

As to my Vestax purchases, the seller agreed a partial refund, which I shall put towards glue, screws, nails, Blu-tack, Duck tape and a big hammer. They'll be back in one piece before you know it! ●

vinyl section

contents

SEPTEMBER 2010

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EAT FORTE S 100

David Price is most impressed with this new high end turntable.

AVID PULSUS 106

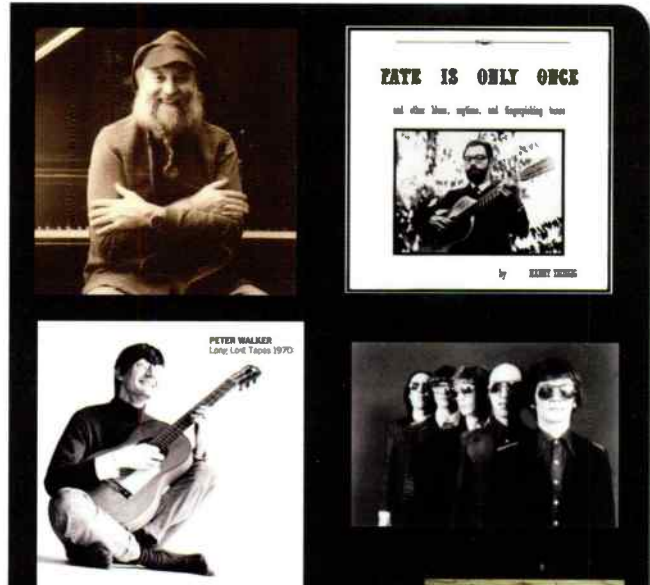
A seriously capable new phono stage gets the David Price ear...

AUDIO TECHNICA AT-F3/III 109

David Price is most impressed with this new MC cartridge.

CHORD CHORDETTE DUAL 112

Tony Bolton tries a new phono stage with a difference...

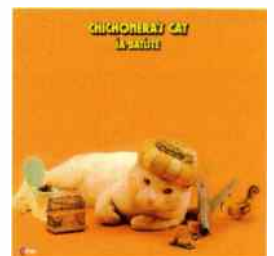


news

WE'RE IN LUURVE



Vinyl Lovers has released an eclectic batch of LPs for your delectation. Punk outfit The Only Ones, underrated and leaning towards a New York Dolls sound, feature here in 'Live In Europe 1980' along with handpicked tracks from the tour. Also in concert is Terry Riley. This famed minimalist composer, pioneer of repetitive tape looping, appears in 'Lisbon Concert' from the Festival Dos Capuchos on 16 July 1995. Next? Two folkies. Peter Walker was a Ravi Shankar student who developed a mixture of folk, raga and flamenco guitar styles. 'Lost Tapes 1970' is a jam session that was recorded at Levon Helm's house in 1970. Harry Taussig's 'Fate Is Only Once' shows his 'primitive guitar' techniques to the full. Released as a limited pressing in 1965, proving highly collectable ever since, this is the first ever re-release for the folk maestro's only full length recording. Also look out for the Flamin' Groovies' 'Grease', the complete Skydog singles collection in which the band offers cool guitar-based rock and Kim Fowley's 'Animal God Of The Streets', a reissue of the 1975 Capitol LP: an eccentric mix of psychedelic and rock'n'roll.



CATALAN CORKERS

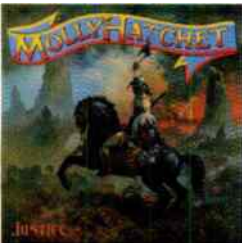
A real treasure trove of startling music, Spain's Catalan region was the inspiration to much unknown – at least in the UK – music during the early seventies. Between's 'Gruppe' (1971) investigated the ambient field years before Brian Eno trademarked the genre but also added Eastern themes and krautrock flavours. Om took a more *avant-garde* route (early band incarnations even featured founder members of the legendary Henry Cow), this self-titled album (1971) is the first vinyl reissue of this psychedelic jazz-rock LP and arrives with a 7" single plus poster. Finally, an ia-Batiste duo 'Un Gran Dia' and 'Chichonera's Cat' (1975) offers slices of prog rock along with harmonic elements. The former comes with a five-track EP featuring unreleased demos. Contact: www.wah-wahsupersonic.com

ROCKSTRAVAGANZA!

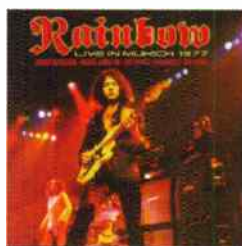
Those of you into rock will be tickled pink by the array of quality releases that have recently appeared on the market. First up, from SPV (www.spv.de), are two releases for Molly Hatchet fans spanning two different decades. 'Devil's Canyon' (1996) was important, the band's comeback album, even though they sounded a little rusty. By 2010's 'Justice', however, they had all guns blazing with a hard, rocking, arrogant, aggressive work out that showed the band at its very best. It offers a surprisingly broad song-type resulting in a mature sound.



Next is SPV's The Other, horror rock with The Misfits as inspiration and tracks from this double-album, 'New Blood', like 'Ghost Ride To Hell' and 'The Burial' as notable themes. The band's fourth album, offers a typically epic sound but with much improved production values.



Back on Black (www.backonblack.com) has sent us two Judas Priest releases: 'British Steel' (1980) is arguably the band's best album, drawing a line in the rock sand. It was blatantly commercial, packed with hooks and hits and was the most successful LP of its type, stating that metal would rule the rock world. 'Point Of Entry' (1981) continued the theme and, although the songwriting was not up to the same quality, you still enjoy the ride.

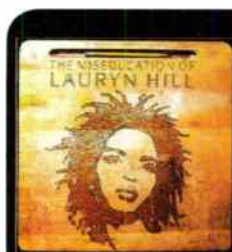


Two now from the Sireena (www.sireena.de) label in Germany, and Rainbow's 'Live Munich 1977' (2006) featuring Ritchie Blackmore, Ronnie James Dio, Cozy Powell, Bob Daisley and Dave Stone. There's no comparison with the only other official live document, 'On Stage' (1977); 'Munich' is the real deal with the band on top form. It's not only the best Rainbow live album out there but (quite possibly) the best rock-based live album ever [not 'aft! Ed.].

Next from Sireena is former Deep Purple man, Ian Gillan's 'Gillan - On The Rocks', taken from the Angel Air CD (see this month's Opinion column) of the same name. Another live release, it was recorded whilst on tour in 1981 and, apart from the first track of the gig, features the show in full.

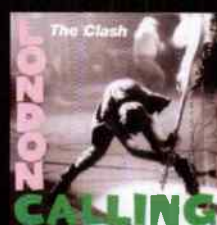
As a contrast, Eluveitie features death metal roots with folk metal overtones on 'Everything Remains As It Never Was' (Nuclear Blast, www.nuclearblast.de). This newly released album is the Swiss outfit's best yet as it achieves the metal/folk blend with a greater sense of balance. Over to Sweden and, also on Nuclear Blast, is death metal favourites, Unleashed's 'As Yggdrasil Trembles'. Known since 1990 for their Viking themes, this new release maintains the riff-based rock the band are famed for; this is an album that upholds the outfit's high quality.

Finally Rykodisc (www.rykodisc.com) has re-released the brilliant 'Meat Puppets II' (1980), a hardcore outing and the Meat Puppets second LP release that amazed everyone, at the time, for daring to feature varying musical styles. Featuring high quality songwriting, this is a classic rock album.



MOV-VER BOWVER

Music On Vinyl continues to release classic LPs as high quality pressings and packaging. 'The Miseducation Of Lauryn Hill', a superb melange debut of accrued styles, political statements and one-time biting hip-hop, another gentle R&B is accompanied by the classic 'London Calling' via The Clash, sporting its iconic cover. Kings Of Leon's 'Aha Shake Heartbreak', on the other hand, successfully combines southern rock sensibilities with a knowing lyrical style. Contact: www.musiconvinyl.com



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Stronghold

David Price finds that Euro Audio Team's brand new Forte S turntable retains much of the magic of its bigger, older brother...



For most of its early life, the microgroove LP was a workaday format designed to do a simple, practical job; carry music to the masses. Thousands of millions of discs were pressed, in its heyday from the late nineteen fifties to the early nineteen seventies, and vinyl did a sterling job in bringing some of the modern history's greatest popular, jazz and classical music to an adoring audience. The transformative power it had was amazing; no longer was it necessary to attend live concerts to hear great musical works, because they could be faithfully recorded and distributed to millions of music lovers around the world. Also, some amazing new strands of popular music were created in the studio, especially for the Long Playing record format - from The Beatles' 'Sgt. Pepper' to 'Pet Sounds' from The

Beach Boys. There's no denying the impact this small slice of black plastic had...

Nowadays of course, vinyl is a niche format, selling just a *fraction* of what it used to do. But these days it's all about quality; countless specialist labels have re-released seminal LPs of yesterday at premium prices with enormous attention given (in some cases, at least) to the mastering, pressing and packaging. One aspect of vinyl that was previously taken for granted and/or under exploited - the immense fidelity the format is capable of - has now come to the fore. The result is that more and more high end turntables are being made, and sold...

One embodiment of all this surely has to be EAT's Forte. Launched in May 2009 for the princely sum of £12,400, I can think of few turntables more expensive and

opulent. Kind of like the way the Rolls Royce Camargue personified the excesses of nineteen seventies luxury cars, so the Forte captured the late naughties high end vinyl zeitgeist. It was unfathomably (and unendearingly) big, equipment rack-breakingly heavily and as lavish in appearance as it was in sound. Even though many would aspire to it, few could own it, on the grounds of size let alone price. Wouldn't it be nice, thought yours truly, if EAT could make a smaller version using the same key elements...?

The Forte S is precisely this, the 'S' apparently standing for 'small', no less. If it was me, I'd have suffixed it, 'ABS' ('a bit smaller') because it's not exactly a P-mount cartridge toting midi-sized parallel tracker. It's still 55cm wide, which is Michell Orbe territory - itself not a compact disc spinner. The other 'small' thing about



it is the platter; on the 'big' Forté this approaches the diameter of some tractor wheels; the vital statistic for the 'S' is 36cm (down from 40cm), while it's 5kg lighter and a piffling 15kg. The aforementioned two aspects of the deck are key; this is not some Avid-style confection of clever suspension systems and sub-systems, rather the philosophy follows the old Japanese high end direct approach of simply making a very heavy, unresonant structure. This means, errm, a big plinth and a big platter. The latter is damped with sorbothane on the inside, whilst the vinyl record mat is said to make the

record support system 'completely quiet'.

A record clamp is supplied, which feels nice to use but isn't as heavy as that of the original deck, if I remember rightly.

The original Forté's clever magnetic inverted bearing system is retained. The main bearing employs a ceramic ball mating to a Teflon cup for super-low friction, and this gets a helping hand by magnetism; the bottom half of the platter sports neodymium magnets to lower the pressure on the bearing. Unlike its

bigger brother, the Forté S doesn't have an offboard motor housing, its two AC motors are built in to the main plinth, positioned symmetrically on the left side beside the platter, so two diamond cut string belts of the same length are used. These are low torque designs for lower noise, and are aspirated by an electronic speed control circuit inside the plinth. This has two speeds, switchable in this case by three push-buttons (33, 45 and off); unlike the big Forté there's no snazzy digital speed display. A small outboard power supply is included, which can sit a good distance away from the main deck thanks to a generously long captive power lead. Pressing the '33' button causes a slow, gentle augmentation in platter revolutions; it takes about ten seconds, during which time the blue speed LED flashes until it's up to



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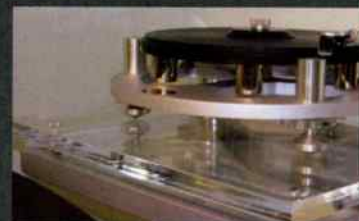


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speed.

The turntable plinth comes finished in an excellent piano black lacquer, and sports huge magnetic feet, "which act as the subchassis", according to EAT.

The price for this is £3,850 supplied with no arm, or £4,650 complete with a Project Evo 12"

tonearm (which is the one you see here). There's also a premium version of the Forte S in Makassar finish, retailing at £4,390 without tonearm and £5,200 with Project Evo 12"

tonearm. I'd say the deck certainly feels worth the money, with an elegant finish, although it's important to remember

that it's up against some pretty exotic opposition even at this price: the Michell Orbe feels just as well presented for far less money, whilst the Brinkmann Bardo (admittedly a bit pricier) is on an altogether higher level. Compared to the latter, for example, the Forte S's control buttons do feel a little cheap. Still, ultimately the sound is the primary consideration, and this certainly proved impressive...

SOUND QUALITY

If you've ever heard the original EAT Forte, you might be surprised to find that its little brother shows a closer family resemblance than you'd expect, given their dramatically different prices. It simply sounds like a lower fat, reduced sugar Forte, rather than something completely different.

That is no bad thing, as I loved the original EAT turntable's relaxed assuredness, smoothness and ease - coupled to massive visceral power. That's pretty much what you get with the Forte S too, just in slightly smaller measures.

The standard arm mounting arrangement is SME style...

The Rolling Stones' 'Emotional Rescue' showed this turntable in its element. Issuing forth from the loudspeakers came a big, powerful, confident bass line that underpinned the track beautifully, giving it a wonderful swagger that was totally in keeping with the proceedings. At the opposite end of the spectrum

on 'Every Little Thing She Does is Magic' was another ear opener; the Forte-S simply scythed through the dense mix to capture Andy Summers' string picking with great aplomb; fast, accurate and beautifully carried. Likewise Sting's backing vocals, often buried right of the back of the soundstage with so many other

"the Forte S is fast and lucid, but focuses on stringing everything together rather than excelling in one particular respect. A brilliantly listenable bit of kit..."

came a deliciously crisp and smooth treble, the humble Ortofon Cadenza Bronze sounding like a million dollars. Charlie Watts' percussion was a singular delight, the deck revelling in the taut, bouncy snare sound whilst highlighting an almost eerie silence between the notes. It's fair to say that the S version of the Forte has a good degree of its bigger brother's power, poise and stability, offering an easy musicality that just lets the music spool off the disc with no sense of stress, and yet a large degree of urgency. Also impressive were Mick Jagger's falsetto vocals; the EAT showed its fabulous command of timbre, giving an 'in the room' immediacy to the proceedings. It's rare that you hear such a natural, open and fluid midband, even from a high end turntable.

Its clean, smooth, open midband came in very handy at unpicking the dense layering of The Police's 'Spirits in The Material World'. Suddenly it all seemed so simple, the EAT letting each strand of the mix play along with another, in complete harmony but very much unsullied by what was going on 'next door', so to speak. Again, the turntable showed

its trademark big, fulsome bass which stamped its authority on the system; although it's not quite as fast at starting and stopping as a high end direct drive such as Sony's TT-S8000, it's very tuneful and highly articulate, and certainly not just a big, imprecise thump coming through the bass drivers! The guitar work

on turntables, it was so clear that his vocal booth might as well have been right in front of my nose.

Again, despite these vast tracts of detail being dug up from the bowels of the song, the EAT strung everything together in such an enjoyable and naturally musical way. Some high end decks simply lose the big picture in their desire to carry every little forensic fact about what's going on at the back of the mix, whereas this turntable sounded calm, relaxed and effortless.

Yellow Magic Orchestra's 'Technopolis' is a vast, towering slice of early electronica, epitomising (the then young) Ryuichi Sakamoto's embryonic love of expansive soundscapes - no wonder he went on to compose film soundtracks. The EAT lapped this up, again showing its exceptionally capacious soundstage: it's as if someone had pressed a 'stereo wide' button. The classic analogue synthesisers shimmered with harmonics, above a massive Moog bassline that was about as rich and fruity as electronic instruments can ever get. Behind this, layers of keyboards noodled along in the background, the Forte S picking them out like a sharpshooter and locking them into the song's four-on-the-floor beat. Yukihiro Takahashi's electronic drum work pounded out of it all, the EAT showing how beautifully syncopated the track can sound. I've heard some direct drives snapping this material into even sharper focus, but perhaps without the same natural musicality.

This Forte S distinguished itself on dynamic crescendoes too, reminding me of its bigger brother in the way it holds on tight even when things get very loud and compacted; there's real grip here that you just don't hear on many of the other high end turntables. It's so utterly calm and unflustered; a sort of vinyl



RETRO

REPRODUCTION

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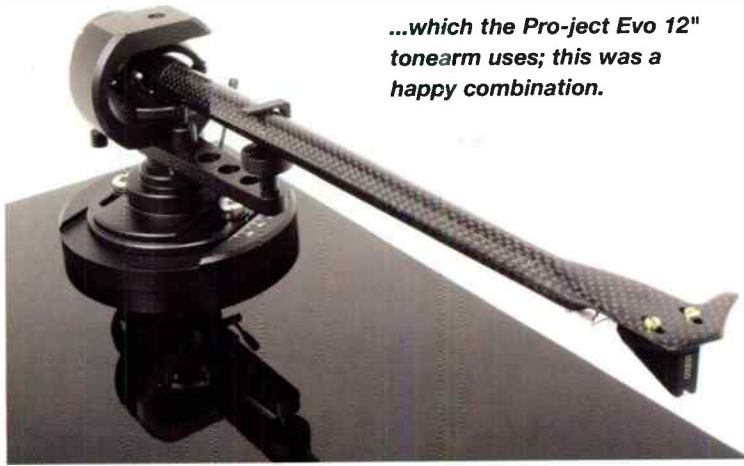
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...which the Pro-ject Evo 12" tonearm uses; this was a happy combination.

equivalent of a turbocharged eighties Bentley.

Cannonball Adderley's 'Autumn Leaves', on an immaculate Classic Records pressing was pure pleasure. 'Somethin' Else', the 1958 Blue Note album from which the track is from, is regarded as something of a classic as 'cool jazz' goes, and the EAT shows why. These early Blue Note recordings were brilliantly simple and yet musically captivating, with a wonderfully open soundstage inside which instrumentals hang in an ethereal way. The Forte captured it with immense skill; simply dissolving itself out of the picture, letting the flavour flood out like tea in a pot. It's not an easy trick this, and is born from superlative pitch stability (as an amazingly stable and solid rendition of Hank Jones's piano work showed) and a lack of coloration. Even with the modest (in the great scheme of things) Pro-ject Evo 12" tonearm, there was simply no sense of listening to a turntable; 30ips reel to reel tape would have been more like it.

Excellent though this deck was with rock and electronic music, it seemed to love jazz all the more. At times like this, you really struggle to understand how anyone could enjoy jazz via a digital source, however good, such was the utter ease, smoothness and sweet, seductive sophistication of the music. Moreover, the sound was so good that I was struggling to think why I'd want a more expensive arm/cartridge combination; how possibly could the likes of an SME 312S and/or Lyra Titan i improve on this, I pondered, brilliant as they are?

The excellent speed stability of the Forte S, allied to that secure twin motor drive system and vast platter, make it a great tool for replaying classical music too. I found my aged Philips

pressing of Debussy's 'Preludes' to be a joy; the piano work on 'The Submerged Cathedral' was a sight for sore ears, sparkling as it was with harmonics, and showcasing the rich harmonics of the instrument. As with all other types of music, this deck is a superb classical music tool.

Where does the Forte S fall down? Well, it's impossible to argue it has any flaws as such - even at this price - but you could certainly say it lacks the forensic, back-of-the-concert hall detailing of designs such as the Avid Volvere Sequel. It has oodles of detail, but it's delivered in a more relaxed way than the Avid, which scoops it all up and seemingly fires it at you like a guided missile. The obverse of this is that it's more

lackadaisical, relaxed, laid back and generally amenable in nature; the Forte S is less of an edge of the seat performer and more of a late night listening treat, record sleeve in one hand, glass of scotch in the other. The bass, it's fair to say, doesn't have the LED-like on-off abilities of the (admittedly pricier) Brinkmann Bardo, either. The Forte S's drive system is excellent - arguably one of its key strengths - but in my book you can't beat direct drive for sheer speed. Once again, the Forte S makes a virtue of this; it's certainly fast and lucid, but focuses on stringing everything together very well rather than excelling in one particular respect. The result is a brilliantly listenable bit of kit.

CONCLUSION

Quite a surprise this. I'd expected the EAT Forte S to be a pale shadow of its original self, so to speak, but it wasn't. It has much of its £12,000 big brother's charm - a powerful, weighty, authoritative sound allied to an easy calm and confidence - but without that hefty price tag. Importantly for me, it also lacks the former's girth; the Forte S is big alright, but no so big that you'd need to rearrange your listening room. It's simple to set up, fuss-free in operation and feels very nice to use. I'm very impressed; sometimes less is more!

MEASURED PERFORMANCE

The Project Evolution is a 12in (30cm) arm, longer than the usual 9in. Long arms have more mass and a commensurately lower main arm tube resonance, around 22CHz. The Evolution, with its lightweight carbon fibre build is quite different. It is both stiff and light our accelerometer vibration measurement shows, with a pronounced main tube mode at a high 500Hz. However, the structure isn't so well damped, and the peak is both sharp and high, making the arm lively in an unusual manner further up the band. There was also a lot of high frequency ringing above 3kHz, with a strong 6kHz cluster in the headshell. The Evolution may not be the most neutral sounding of arms, possibly having a just-discernible colour, or even a 'zingy' quality, but it is likely to sound smooth and relaxed due to its 12in geometry, and also have clean, tight bass and a wide stereo image at low frequencies.

The Forte S turntable span with remarkable speed accuracy and stability. There was effectively no speed error (-0.1%) and basic unweighted wow and flutter was just 0.091% our analysis shows. The absence of flutter and higher rate wow produced a very low 0.037% IEC weighted figure. The Forte S has superb

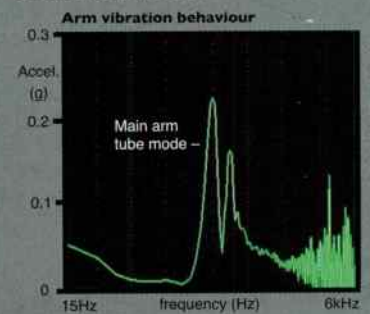
speed stability and should time very well with music.

This is an interesting combination. The arm is good - interesting if not perfect, but the turntable is superb. Overall sound quality is likely to be excellent. NK

WOW & FLUTTER



ARM VIBRATION



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Formula 3

David Price listens to the new, third incarnation of Audio Technica's popular budget moving coil cartridge, the AT-F3/III...

Once upon a time, when men wore red braces, toted Filofaxes and drove to work in VW Golf GTIs listening to Five Star's 'Silk and Steel' or Dire Straits' 'Love Over Gold', Audio Technica launched a brand new range of moving coil cartridges, their first for nearly a decade...

The least expensive was the AT-F3; retailing for a modest £69 in 1987, it looked for a while like an emblem of the brave thrusting new world of nineteen eighties phono cartridges. Gone (from the UK at least) was their venerable range of seventies designs, which hadn't long since stopped sporting the 'Signet' moniker. In its place was a line of high tech, state of the art pick ups with an altogether more modern and punchy sound. Just right for the thrusting, 'go for it' nineteen eighties!

In the UK, the £399 OC9 was the star of the show, embodying everything good in modern vinyl reproduction. It was powerful, ballsy and had achingly high levels of detail retrieval. In a world more used to the opaque, romantic Supexes of the day, it was like lifting a veil from the music. Of course, not everyone approved; for some this was a vinyl 'future shock' too far. But it's fair to say that in the choice disc spinner of the day, the somewhat (back then, at least) loose and ponderous sounding Linn LP12, the new ATs really put a tiger in their tanks!

Audio Technica, as a cartridge maker, has always made spry, crisp and detailed sounding pickups with an obvious 'house sound'. In the UK, they've been shunned by some for simply being too brightly lit and forensic in nature, and I have to say that I was once one of these objectors. However, when I first moved to Japan in 1990 I was bowled over when I heard an AT-F5 (a close relation to what you see here) in a high end deck playing Japanese pressed vinyl. Suddenly, it all made

sense. Japanese vinyl, you see, almost exclusively used a different vinyl formulation to that in the rest of the world, reputedly the very same developed for analogue video disc in the early seventies. It's light (usually about 75g), semi-translucent (shine a light on it and you can see right through) and not recycled but pure and new.

It sounds different; softer, silkier, and smoother with vanishingly low noise and - if anything - a slightly recessed upper midband and treble. Compare this to a UK or US pressed album of the same artist (Steely Dan's 'Aja', say) and the non-Jap discs sound hard, zingy, chrome plated and more dynamic. So when you put a notionally forward Audio Technica cartridge in a smooth sounding Japanese vinyl groove, things suddenly gel, and the vinyl suits the voicing of the cartridge far better. It was

"here's an inexpensive way into the wonderful world of moving coil cartridges..."

at this point in my personal vinyl odyssey that I began to think that AT cartridges were really something, albeit tailored for their own home market more than most.

All of which brings us to this latest incarnation of the AT-F3, the mark III. It is, unsurprisingly, very similar to its forebears, both sonically and in engineering terms. It sports that age-old (well, twenty five years old) Audio Technica dual coil motor and biradial elliptical stylus, in a silver and blue aluminium housing. Audio Technica says the nude elliptical stylus has two radii, the front radius being wider than the side radius, which allows the stylus to ride in the centre of the groove, while the smaller side

radius can more accurately track higher frequencies.

Its output voltage is a claimed 0.35mV [see MEASURED PERFORMANCE], which by the standards of the nineteen eighties was a genuinely healthy figure (Supexes could barely muster 0.2mV, as a rule), although today that's far from high. Tracking force is specified as being between 1.8 and 2.2 (the company recommends 2.0g; I always track ATs on the higher side, to keep the treble as tame as possible). The company quotes the static

compliance as 35 x 10⁻⁶ cm/dyne, and the dynamic compliance as 9 x 10⁻⁶ cm/dyne (100 Hz). In my experience, ATs work well in the ubiquitous Rega RB250 tonearm (and its numerous variants), so the review sample went into a Michell Tecnoarm a on my reference Michell GyroDec turntable. VTA is quoted at 23 degrees and the cartridge's vital statistics are 17.3x16.8x25.4mm and its weight a modest 5g. Recommended load impedance is a pretty standard 100 Ohms, making it fine for most phono stages.

SOUND QUALITY

Having owned almost every single modern Audio Technica moving coil,



CARTRIDGE SELECTION		STYLUS	HEADPHONE SELECTION	
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Audio Technica				Shure SFG2 Stylus Force Gauge £28
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AT OC9/III	£425	£400 EX		ADC XLM Mk III £18
Denon				Akai AN 5, AN 60 £14
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DL 103R	£261	N/A		Aiwa AN11 £14
DL 110	£135	N/A		Dual DN 145 E, DN 165 E £18
DL 160	£153	N/A		JVC DT 55, DT 60 £14
DL 304	£342	N/A		National EPS 24 CS, P 30 D, P 33 D £14
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the sound was hardly unfamiliar. In essence, the original AT-F3 was a bright and punchy sounding budget design with surprising detail and treble delicacy, despite its topky tonal balance. The new mark III is precisely the same, offering perhaps a fraction more smoothness and subtlety, plus a marginal improvement in tracking.

Ensnared in my warmish sounding Michell GyroDec, the AT-F3 III worked a treat, delivering a vivid and engaging sound (for the money) allied to unexpected levels of insight and detail. Cueing up Isaac Hayes's 'Cafe Regios' showed how the little AT could shuffle along, happily getting into the groove of the song and providing a pacey, energetic rendition. Considering its low price, there was little to criticise here, not least because its closest moving magnet rival, the Goldring G1042 (which is has risen in price to nearly £200 over the years) is a good deal less subtle than the AT-F3, even if it does have a more amenably smooth tonal balance.

Abba's 'Eagle' showed just how talented the F3/III is; here is a somewhat cloudy sounding mid-seventies pop song (glorious, admittedly!) that might as well have been recorded in a shed. The Audio Technica simply scythed straight through much of the cotton wool that seems to surround the soundstage on lesser cartridges, and got straight to the heart of the track. I was struck by the clarity of vocals, and of the drum and percussion, and of the timbre of the synthesisers, and of the taut, firm bass guitar work. True, female vocals did sound a tad brightly lit, and it's fair to say that the track didn't exactly come over as the sumptuous nineteen seventies recording that it's supposed to be. But the experience was exuberant, propulsive and purposeful - and despite that topky balance, there was a degree of refinement to the treble that I've not heard elsewhere at the price.

Moving to the relaxed rare groove strains of Donald Byrd's 'Street Lady', and this early seventies slice of soul/funk on Bluenote was a joy. I was always aware, listening to that lovely flute work, that I was hearing a budget Audio Technica, such was its 'well lit' nature, as there was definitely a noticeable flourish to the upper midband and treble. But

there was a still a lack of grain and a sure-footedness in the groove that you simply don't get from the likes of a (similarly priced) Denon DL103 MC, for example - or even from the fancy Gyger stylused Goldring 1042 MM. This is an important distinction; it's bright but it's *not* coarse. In the warm GyroDec, and the fairly neutral Tecnoarm, the overall effect was most pleasing, giving hi hats a little extra bit to push the song along. This 'explicit' upper mid, allied to

excellent bass grip, made for great pace; the AT-F3 III is a veritable sprinter.

It's also truly capable dynamically; YMO's 'UT' is a powerful piece of early electronica (appropriately enough on Japanese vinyl), and the Audio Technica showed a skilful mix of forensic low level detailing - the

mix just bristling with subtle nuances - and firecracker dynamics. This cartridge truly outpaces favourites such as the Goldring G1042 in this respect; the dynamic light and shade it conveys is impressive. It can go very loud seemingly on a whim, making the G1042 sound positively compressed. Another key character trait of this particular range of Audio Technica MCs is the stereo imaging; it is very 'architectural' and precise. There's a very strong centre image, seemingly made of stone, around which the left and right placed instruments assemble. This is an interesting contrast to the older AT-33 series of MCs (which I personally love), which sound more expansive, stretching out way further stage left and stage right, but are a little less solid across the centre of the speakers.

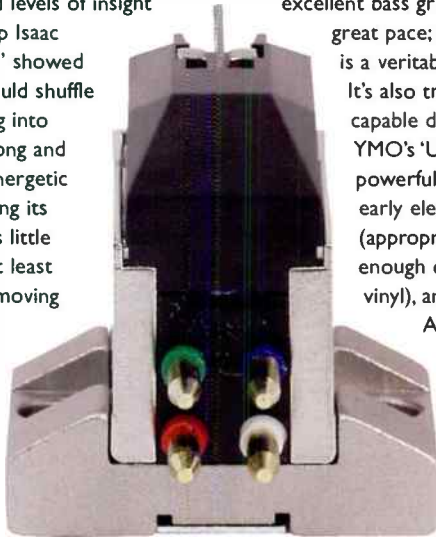
Overall then, a punchy, pacey performer that's dynamically expressive

and rhythmically articulate. It's tonally quite bright, so works well with smooth sounding Brit belt drives (Linn, Michell, Rega, etc.) but isn't coarse and tracks very assuredly. My only complaints would be that [a] tonal balance isn't what the budget end of the market needs and [b] that it's just a touch too mechanical for some tastes. Either the Goldring G1042 moving magnet or the Denon DL103 moving coil, whilst sounding noticeably less subtle and sophisticated, have a more natural musical flow; they're just a tad more fluid and organic.

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CONCLUSION

A true slice of budget esoterica, Audio Technica's latest AT-F3/III is an inexpensive way into the wonderful world of moving coil cartridges; it has a delicate, polished treble performance, a grippy and articulate bass and a midband swimming with detail. It's a big hearted performer with rock, funky with jazz, and intricate with electronica. I'm less convinced about its classical prowess though; some might find it just a touch too unromantic. So whilst it's not for everyone, many will love it. If you've already got a decent MC phono stage (either in your integrated amplifier or stand-alone) then it's hard to see why you wouldn't want to use it with a bargain budget MC such as this.



VERDICT

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

AUDIO TECHNICA

AT-F3/III £189

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FOR

- pacy, punchy sound
- midband detail
- secure imaging
- delicate, polished treble

AGAINST

- bright upper mid & treble
- unromantic nature
- low output level

MEASURED PERFORMANCE

Our frequency response graph shows the AT-F3 measures much like the more expensive F7. It is flat within 1dB limits from 24Hz to 9kHz, making it basically accurate in its tonal balance. There is the usual rise in output at high frequencies due to tip mass resonance, resulting in +1.5dB plateau lift from 10kHz to 18kHz, which will add a little brightness. As budget MCs go though, this is a relatively refined performance, many having strong treble lift. On inner grooves, losses (red trace) were acceptably low at -1dB at 10kHz, resulting in a net flat response to 16kHz, a good result.

Tracking ability was very good, the cartridge staying in the groove right up to 22cms/sec at 1kHz, mistracking marginally at the 25cms/sec maximum level. At lower frequencies the cartridge managed 80µm peak amplitude - very good. It mistracked marginally at 90µm. The AT-F3 tracks very well and matches or betters most rivals. Again, like the F7 output was low, measuring just 0.38mV at 5cms/sec rms, meaning a quiet preamp with plenty of gain is needed.

Distortion was reasonably low laterally and vertically, the latter due to correct measured vertical tracking

angle of 23degrees, just as Audio Technica claim.

The AT-F3 measures very well for an inexpensive design. It will have a smooth, natural tonal balance and sound confident in its delivery. Low output is a mark against it. NK

Tracking force	1.8-2.2gms
Weight	5gms
Vertical tracking angle	23degrees
Frequency response	20Hz - 20kHz
Channel separation	34dB
Tracking ability (300Hz)	
lateral	80µm
vertical	45µm
lateral (1kHz)	22cms/sec.
Distortion (45µm)	
lateral	0.7%
vertical	2.4%
Output (5cms/sec rms)	0.38mV

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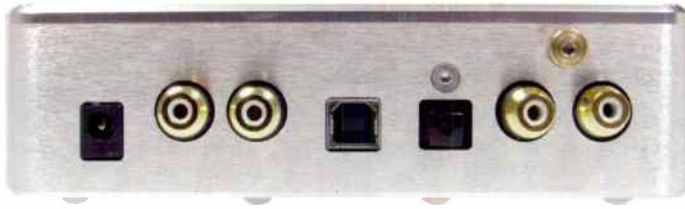
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Next up was a recent charity shop find of Roy Orbison's 1964 LP 'Oh Pretty Woman'. Whilst not in the first flush of youth, after a trip through my record cleaning machine it seemed to be in quite reasonable condition, and again gave a good insight into the subtle complexities of some of Orbison's musical arrangements. Odd pops and bangs framed the sound at a couple of points, but were not too intrusive. However, I would have liked to have had a mono/stereo switch to tidy the sound up a little when playing such venerable pressings.

Coming more up to date with Primal Scream's 1991 LP 'Screamadelica' (yes, it is that old!) and I was presented with relentlessly driving rhythms underlying what I had come to recognise as the Chordette's inherent attention to the detail of sounds. I felt that I had a private window looking into the studio. The combination of real instruments and sampled sounds was laid out for cerebral analysis and then delivered to the ears as a comprehensive package. The punch of the lower bass was satisfying, although not the deepest that I've heard, but solid enough to be convincing. More to the point, it seemed to stop and start very quickly, giving the music steady propulsion forwards.

Throughout this, I had the USB output connected to my MacBook, recording proceedings. Unfortunately the only DAC that I have is a Cambridge Audio DACMagic 3 which automatically upsamples its output to 24bit/192kHz, so I couldn't give an opinion of the non-upsampled output of the Chordette. Suffice to say that when replayed from the hard drive, the sound was very good and detailed, and a fair facsimile of what went in. The only caveat that I would have, seemed to be digital recording's relentless ability to put surface noise ahead of the music even though the reverse seemed to be the case when listening directly to the phonostage. But given a decent condition record then the quality of copies was

certainly of an acceptable standard.

Given this unit's price point it was inevitable that I would compare it with some of the equipment left from the recent phono stage group test. Closest in musical delivery was the Roksan Caspian DX2 (£869) which gave a somewhat richer and fuller bodied rendition, but without quite so much of the minutiae of detail that came from the Chord. I could use a wine analogy and say that the Roksan was more of a full bodied heavy claret, versus the slightly lighter, and spicier Merlot flavour of the Chordette. This could well make the Chordette less fussy about the partnering system since it seemed to possess enough weight to beef up a thin sounding setup, but not be so fulsome as to leave the listener with audio indigestion in a richer sounding environment.

Overall I found it a very convincing reproducer of music

across a wide range of genres; it seemed to show little or no favouritism to a particular type of music. The detailing of sound suited quiet pieces but large orchestral and dance music sounds were handled well and would satisfy most listeners needs for musical information. Good recordings sang, whilst poorer ones were shown in the best available light, but with a seemingly honest description of where the sound was lacking. Poor condition records were replayed satisfactorily, but again, there was honesty about the condition of the groove walls, although more as a passing comment than the focus of the listener's attention.

CONCLUSION

In all a very creditable performance and one which will, I am sure, win the Chordette Dual many friends. The connectivity to computers, which allows for both archiving, and copying of favourite records to be played in the car or loaded onto your iPod, gives the Chordette that little extra that makes it stand out from the crowd. It seemed well made, and bristled with Chord DNA. An essential audition if you're in the market for a well specified sub £1,000 phono stage, and have archiving tendencies!

MEASURED PERFORMANCE

Frequency response of the Chordette Dual measured 12Hz-20kHz (-1dB). Our response analysis shows a small treble lift and plateau low frequency roll down, so on balance the sound will have a lighter balance than some. Output is within 1dB limits from 12Hz all the way up to 20kHz however, so the Chordette Dual is fundamentally accurate.

Switching in the Rumble filter attenuates low frequencies below 250Hz; it provides phase cancellation of out-of-phase low frequency signals (i.e. rumble), an idea of little application now because turntables do not rumble any more, except Garrard 401s, and then the best solution is a new bearing + idler wheel, not a filter!

Maximum gain was a useful x3830 (72dB), against a claimed 75dB. This is just enough for normal moving coil cartridges with high-ish output, like Ortofons. It can be attenuated down to x1100 (61dB). With an output overload of 10V, at full gain input overload occurred at 2.6mV and Chord have aligned this with the digital overload ceiling via USB (0dB). Using less gain increases the overload ceiling to a maximum of 9mV (60dB gain setting), and this is too low for most MM cartridges, hence Chord's stipulation that the Dual is for MCs only. With an

easy to provide low gain option it could have suited MMs too.

Our digital analyser, working from the optical output, showed a clean result all round, frequency response being identical to the analogue output and low distortion all the way down to -50dB, below which the signal disappeared into noise that set the lower resolution limit.

The Chordette Dual is purposed for moving coil cartridges Chord told us and offers an interesting way of getting high quality analogue into a computer from an external source. NK

Frequency response	12Hz-20kHz
Separation	68dB
Noise (e.i.n. A wtd)	0.1µV
Distortion	0.001%
Gain	61, 67, 69, 72dB
Overload	10V out
Overload (digital)	2.5mV in

FREQUENCY RESPONSE



VERDICT ●●●●£

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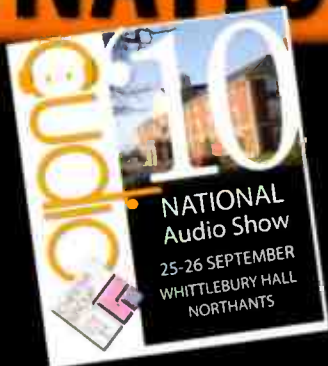
FOR

- detailed sound.
- variable gain settings.
- USB input & A-D converter.

AGAINST

- no mono/stereo switch
- MC only

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