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FEBRUARY 2012

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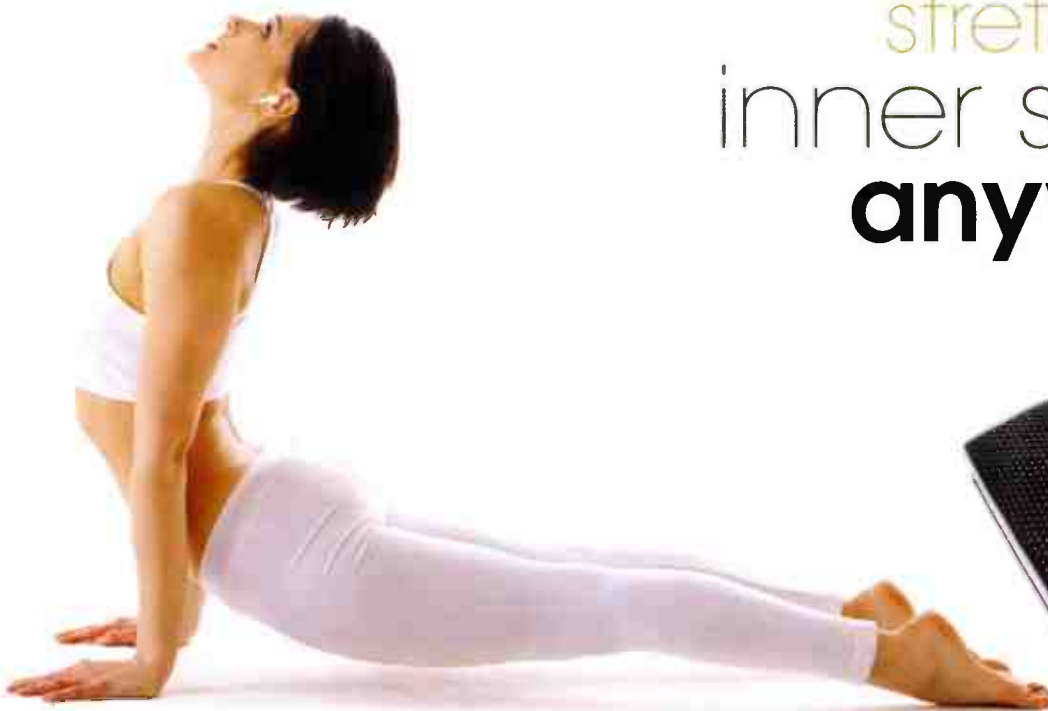
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World Radio History

welcome

EDITOR

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As computer sales stagnate, their use as music sources seems suddenly to be taking off. Shorn of their ability to baffle users with facile failure messages and tasked to cope with one role only, computer based servers like this month's Aurender S10 show they can deliver amazing results.

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Just a few years ago Mac Minis were spewing out masses of jitter, likely caused by poor clock multipliers working in conjunction with an on-board CD based 44.1kHz

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master clock. Now the CD has gone, the little Mini's clock source has changed – and improved no end in the process. Here's another step forward.

ADVERTISING EXECUTIVE

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All of a sudden computer audio seems to be getting into its stride and in the process a strange new alliance is forming where absolutist audio ideas are being imposed on number crunchers to extract a devastating audio performance. How the world is changing!

ACCOUNTS

e-mail: accounts@hi-fiworld.co.uk

Once we would have recommended students and the impecunious grab a turntable, budget amp and an inexpensive floor standing loudspeaker to make music. The turntable became a CD player and now it is likely to be a laptop running iTunes and feeding an external DAC. In this new world floor standing loudspeakers remain little changed we find in this month's Group Test. But that's no disgrace as they deliver fine results for little outlay; just £300 gives you a great taste of real audio quality. Just don't forget decent cables and stands, because accessories make all the difference – as readers testify in our Letters pages.

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What would hi-fi be without the need to tweak! Computers are now benefitting from it, but turntables were the original hotbed that nursed this hobby, demonstrating just what could be achieved. Little changes – this month we review a Garrard 301/401 bearing no less! Don't you just love it. Well, Adam did, as you can read in this issue too. Enjoy!

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

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

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

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

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

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**WIN A PAIR OF
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LOUDSPEAKERS
WORTH £799
IN THIS MONTH'S
GREAT GIVEAWAY!**

Here's your chance to win this fabulous pair of small loudspeakers, as reviewed by David Price in November 2011's *Hi-Fi World*! Here's what he said...

"Loudspeaker designer extraordinaire Karl Heinz Fink designs a wide range of loudspeakers for a number of manufacturers across Europe, and all have his DNA visible (or audible) in the finished product, and it's a very palatable sonic footprint. Think 'clean', 'warm', 'sweet', 'expansive' and 'musical' as your starter for ten; you'll never hear an ear-splitting, cranial laser etching Karl Heinz Fink speaker, not even in a lifetime. And it is he who's been involved with ALR Jordan – the Classic 2s tested here have

his dabs all over them! A two way bass reflex design, high frequencies are courtesy of a 25mm textile dome tweeter, married via a phase optimised Linkwitz Riley crossover network to a 140mm Ted Jordan metal coned mid/bass driver. They're nicely built and finished small speakers, available in a choice of three real wood veneers. They feel solid at 5.3kg apiece and measure 170x300x260mm, making them an excellent size for small rooms. The rear panel sports a bass and two pairs of loudspeakers sockets for biwiring.

The ALR Jordan Classic 2s are clean, open, delicate, subtle and smooth from top to bottom, it proved hard to fault them at their price, no matter how hard I tried. Propaganda's 'P Machinery' on

SACD was testament to their superlative balance. Most arresting is their midband, which handled Claudia Brucken's voice brilliantly, making her icy, teutonic tones come across surprisingly smoothly and with great depth. Bass wasn't in any way overwhelming, but had just enough body to give weight to proceedings, and sounded decently snappy without perhaps being the tightest or tautest around. Treble was smooth and nicely detailed. There are precious few loudspeakers at this price that present such an open and musical sound without getting anywhere near harshness. They come in, do the job brilliantly and yet leave no blood on the carpet. Exceptionally couth, balanced, even-handed and well behaved standmounting loudspeaker, yet unerringly musical too."

For a chance to win this great prize, just answer the following four easy questions. Send your entries on a postcard only by 31st January 2012 to: **February 2012 Competition, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.**

RULES AND CONDITIONS OF ENTRY

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- MULTIPLE ENTRIES WILL BE AUTOMATICALLY DISQUALIFIED
- PURCHASE OF THE MAGAZINE IS NOT A PRE-CONDITION OF ENTRY
- NO CORRESPONDENCE WILL BE ENTERED INTO
- THE EDITOR'S DECISION IS FINAL
- NO EMPLOYEES OF AUDIO PUBLISHING LIMITED, OR OF ANY COMPANIES ASSOCIATED WITH THE PRODUCTION OR DISTRIBUTION OF THE PRIZES, MAY ENTER

QUESTIONS

- [1] Who designed the classic 2?**
 [a] Karl Heinz Fink
 [b] Heinz Wolf
 [c] Heinz-Harald Frenzen
 [d] Danny Finkelstein
- [2] What type of crossover network is used?**
 [a] Linkwitz Riley
 [b] Riley Pathfinder
 [c] Wartburg-Knight
 [d] Gislaved Nordfrost
- [3] They are an excellent size for what, said dp?**
 [a] small rooms
 [b] little boys
 [c] large animals
 [d] big wheels
- [4] They are exceptionally what, said DP?**
 [a] couth
 [b] civil
 [c] meek
 [d] mild

February Competition
Hi-Fi World Magazine
 Unit G4 Argo House
 The Park Business Centre
 Kilburn Park Rd.
 London NW6 5LF

entries will be accepted on a postcard only

**NOVEMBER 2011 AUDIOLAB 8200CDQ CD PLAYER/PRE AMP WINNER:
 Mr Stuart Dunlop of Cuffern, Pembrokeshire**

news



VULKAN VIII FLIES

Ribbon tweeters give deliciously treble known for sounding fast yet clean – and Germans love them it seems. Quadral of Germany, whose loudspeakers impress us, recently released this monster, the nearly 1.3m high Vulkan VIII from their Aurum series. It's a big floor stander, with a ribbon tweeter that promises excellent treble. Covering the midrange is their 170 mm Altima midrange unit and mounted on a side panel to keep the front narrow, is a 320mm bass unit. The latter is housed in a 'pressure chamber' to deliver "deep, clear and punchy bass" Quadral say. Price is from £6000 per pair. Call +44 (0)1785 748 446 or click on www.quadralgb-ic.co.uk

HIGH END SHOW 2012

Germany's popular High-End Show, a magnet for manufacturers all over Europe, and outside it as well, has just released details of its 2012 event. To be held between Thursday 3rd (trade day) to Sunday 6th May 2012 in Munich, this massive show is well worth a visit. Entrance fee is 12 Euros.

As Munich is about one hour fifteen minutes flying time from Stansted and air tickets can be had for £60 or so, for some it is easier to get to than a UK show! A list of hotels running shuttle buses is available on the show's website, or you can reach the exhibition halls, which lie on the outskirts of Munich, by train.

New for 2012 is an area offering free stand space for start-up companies unable to afford the usual cost of a stand.

Exhibitors and Press should contact Renate Paxa at +49 (0)202 70 20 22.

See <http://www.highendsociety.de/english/home/index.php> for more details.



ANNA SINGS

Named after opera singer Anna Netrebko, Ortofon's new high end moving coil cartridge uses all technologies in their arsenal to extract superb results from vinyl. The Anna is based upon a titanium body built by Selective Laser Melting, to provide rigidity, light weight and good internal damping. A boron cantilever carries Ortofon's own nude Replicant diamond geometry at one end and signal coils at the other, wound from ultra pure oxygen free copper wire. Ortofon say the Neodymium magnet system is so powerful an armature to guide the magnetic flux is not needed, improving magnetic linearity. Output is unaffected by this. With an output impedance of 7 ohm and a low-to-medium output voltage of 0.2mV, Ortofon's new flagship cartridge will perfectly partner most premium phono pre-amps and step-up transformers, Ortofon say. A wide range damping system keeps treble response smooth and peak free, also improving transient delineation (i.e. time domain definition).

The Anna is Ortofon's new range topper, priced at £6000, it lies above even the extravagant skeletal A90. Contact Henley Designs Ltd at 01235 511 166 or click on www.henleydesigns.co.uk



FOCAL

Based on their professional CMS40 near-field monitor, Focal explain, their new XS book powered desktop monitor come as a stereo pair and have "a bass response and impact quite staggering for its size" Focal say, so a subwoofer is not needed. Equipped with an aluminium dome tweeter and a 4" (10cm) Polyglass cone woofer, XS Book has a wide bandwidth of 50Hz to 22kHz. It can produce a loud maximum sound pressure level of 96dB SPL at 1m for nearfield computer audio and it can also be used as a speaker system to match a flat panel TV to improve TV or movie sound quality. Inside each one is a 20 Watt amplifier. Focal XS Book is supplied with necessary cables: 3.5mm jack from computer to XS Book and a 1.5m RCA cable (and a 1.5m extension cable) to connect one speaker to the other. Input sensitivity is 700mV (RCA) 250mV (3.5mm jack). Dimensions (H x L x D) 11 x 4 1/2 x 7 7/8" (281 x 114 x 200mm). Weight 11lb (5kg). The XS Book will be available in November at a price of £299 per pair. Call Focal Direct on 01425 478 395 or click on www.focaldirect.co.uk



NEW ROTHWELL PHONO STAGE

Artisan Silver Cables tell us they are now selling the new Rothwell Rialto Moving Magnet (MM) phono stage, price £379. For those with a Moving Coil cartridge a step-up transformer is available, price £485, taking the total to £864. Go to their website to order online at www.artisansilvercables.com/rothwell.htm.

PRETTY RIBBONS

We first encountered Swiss loudspeaker manufacturer Piega recently when we reviewed their classy aluminium cased two-way Premium I loudspeaker fitted with their own ribbon tweeter – not a cheapie bought in from China (see December 2011 issue). Piega recently announced a new range of three floorstanders, comprising Premium 50.2, Coax 70.2 and Coax 90.2

The Premium 50.2 uses their LDR 2642 ribbon tweeter in MkII form. It has magnetic lenses which focus the force field of the magnets onto the plane of the ultra-thin membrane, increasing drive force.

Another benefit of the improved compact design is better damping. The new foil material enables Piega to optimize the layout even more and improve the transfer properties, they say. Distortions have been reduced, which also ensures considerably greater efficiency. With its improved resolution and a fine, silky sound, the new tweeter will delight all audiophiles, Piega say.

The Premium 50.2 is a two-and-half way comprising 18cm bass unit, 18cm bass/mid unit and ribbon tweeter. Recommended are 20-250 Watt amplifiers, as claimed sensitivity is high at 92 db/W/m. Connections allow bi-wiring via WBT connectors. Dimensions (HxWxD) 102 x 26 x 33 cm. Weight 37 kg. Finish is black Aluminium or anodized White varnish.

The Coax 70.2 uses a C2 coaxial midrange tweeter ribbon, making it a virtually ideal single point sound source Piega claim.

Its cabinet housing is manufactured from a three ton aluminum block on one of the largest aluminum presses in Europe. The result is a high-density loudspeaker housing with exceptional rigidity. This rigid design is improved even further through the use of specially integrated stiffening bars that optimize the acoustic qualities of the C form housing.

The top of this trio is taken up by the new Coax 90.2 that has their larger large C1 coaxial ribbon system, plus the same twin 18cm bass drivers as the C70.2. This speaker and the 70.2 are three-way units with twin bass drivers, midrange ribbon and coaxial tweeter. Dimensions (HxWxD) are 102 x 26 x 33 cm for the 70.2 and 112 x 26 x 33 cm for the 90.2. Weight 41 kg 46 kg respectively. Finish is Piega's rather smart anodized aluminium.

In the UK, phone Hi-Fi Brokers at 01422 372110; or click on www.hifibrokers.co.uk. See Piega at www.piega.ch



Coax 90.2



Coax 70.2



Premium 50.2

PAB RACKS

Polish company Pro Audio Bono, or PAB, has announced a new range of racks that isolate equipment from external vibrations. They tell us each shelf is suspended on strings which can be adjusted by using tension screws, a patented idea.



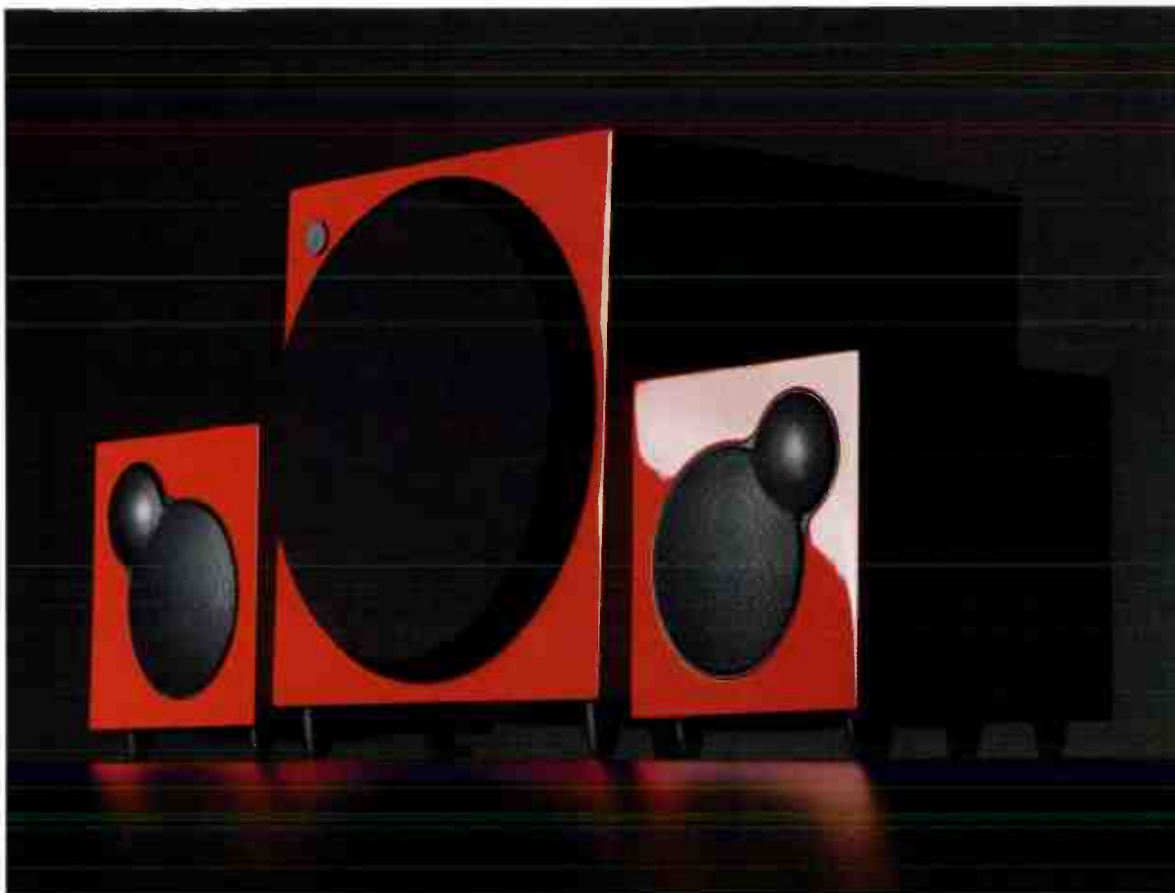
In order to provide optimum support for all audio equipment, PAB also offers ball-bearing anti-vibration feet. With bearings placed precisely between two brass bushes, contact between surfaces is significantly reduced. This, again,

provides excellent anti-resonance properties, extending the benefits of the PAB product range to a wider variety of hi-fi equipment, PAB say.

The company has also introduced PAB anti-vibration racks. The standard anti-vibration rack consists of a massive top plate and base (double plywood) with two anti-vibration shelves placed in-between. Suspension mechanisms for the shelves are hidden in the legs of the rack, and are covered with varnished aluminium plates. Similar to PAB Anti-Vibration Platforms, the mechanisms are made from non-magnetic materials. However, the design was thoroughly re-engineered to make it more sturdy, especially with respect to the bottom shelf intended for an amplifier. PAB products are imported into the UK by Fidelity Arts. Call Fidelity Art in the UK on 07840 183485, or click

www.proaudiobono.com.pl and www.fidelityart.co.uk.





COUNTING ON COLOUR

Triangle loudspeakers of France announce a natty new Colour 1.2.3 computer audio sound system, available in gloss red, black or white. It comprises powered 24cm cube subwoofer and two small 14cm cube satellites connected to it in a distinctly more stylish Gallic combo than you'll see from the Far East in your local computer emporium.

Put the subwoofer on the floor, Triangle suggest, and the satellites either side of your monitor screen to get a great sound from your Mac or PC.

The subwoofer carries three Class D 'digital' amplifiers, one delivering 100W to the subwoofer and one feeding 50W to each satellite, so this combo will play loud. The subwoofer needs mains power, but the satellites do not. Connect to the computer, an MP3 player, iPod, iPad or iPhone through either a 3.5mm analogue input jack or RCA phono sockets. A remote control switches between these inputs so two items can be run at the same time. Price is £625.

Find UK dealers at <http://www.triangle-fr.com/en/revendeurs> or contact Triangle (France) at +33 323 753 820.



BRISTOL SHOW 2012

There are just two chilly months to go before the UK's most popular hi-fi show is upon us once again in sunny Bristol, from Friday 24th February through to Sunday 26th February 2012, from 10am to 5pm. This long running show has become a firm favourite with UK manufacturers, most of whom attend. That means you get to see all the latest and greatest from UK brands, both large and small. Increasingly, overseas manufacturers are arriving too, extending the Show's scope and character. So far 131 exhibitors are booked to appear. For more details including ticket prices, click on www.bristolshow.co.uk.

It is held at the Marriott City Centre hotel, 2 Lower Castle Street, Old Market, Bristol, England BS1 3AD. Call +44 (0)117.929 4281, or 927 5609.



Silver Service

Aurender's swish new S10 is a network-equipped digital music server that claims super sound allied to real convenience. Rafael Todes tries it for size...

How to get the best out of high resolution digital audio? This is a question that has bothered me, and many others I suspect, for some time.

Well the obvious course is the laptop solution, where your computer's motherboard is performing many calculations superfluous to your musical needs, throwing out large swathes of electrical mush (likely into your hi-fi system) as it does so. Indeed we recently reviewed a worthy attempt to make a computer as music-friendly as possible – the Item Audio DAT 1 USB. I have experimented with different music players on the laptop, such as J-Play, which has different modes, including a rather extreme one which puts the laptop into hibernation and plays from the RAM. I have obtained pretty good results from ten seconds of music, before the laptop crashes

and I have to reboot. Plenty of potential, but still in its infancy, I fear...

In an ideal world then, you'd have a computer that does only what's absolutely necessary, on a purpose-designed motherboard. This is precisely the goal that Aurender has set for itself. Aurender is a division of Widealab, whose parent company Wvonik is listed on the Korean stock exchange. It has wide-ranging electronic expertise as well as interests in materials, construction, leisure and finance. Korean-based, it is unheard of in the UK (until now), and is distributed here by the aforementioned Item Audio...

The server uses a Linux operating system, with what's claimed to be high quality power supply regulation, and a 2TB hard drive. The clever bit is the use of a 64G solid state drive, which actually plays the music. The buffering is automatic, and

the hard drive doesn't move when the music is playing, hence no moving parts, and much less noise being thrown about internally. Everything is built from the ground upwards, multiple power supplies using dedicated linear rail, separate switch-mode power supplies for digital and storage components. Yes, it uses PC componentry, but not in a PC kind of way – the S10 is purposed for audio first and foremost.

The unit has a simple but elegant display, which states what's playing, and the resolution. There are five buttons on the front panel which select play/pause from the selected playlist. It can store only one playlist manually, if you want anything else, you will need to use the IPad App which gives access to the other files stored. On the rear panel, there are Optical, AES and S/PDIF connections, a network connection



"partnered with a fine DAC, the Aurender is capable of providing true audiophile results. It is beautifully engineered in a ground-up, wheel-reinventing way..."

which is necessary for the iPad to communicate with the server, and two USB inputs. If you attach a hard drive to the USB port, the unit will search through the disk and rip the contents to its 2TB hard disk. To rip a CD would require the purchase of an external USB connected drive, around £20 from Maplin, for example...

The iPad interface is adequate, but errs on the basic side. You can create a playlist, start and stop, but precious little else. If you want to delete a file from the hard disk, you would have to go into the network via a computer, as this is not currently available from the App.

The other main issue I had with this was the inability to change the tags of the songs. If they are insufficiently listed, or even incorrectly listed, there is no easy way to alter this. I found that playing Linn Records' high resolution files, the sample rate didn't appear on the

screen; I had to look this up on a website to play it correctly through the Weiss DAC202. This however may be more a fault of the Linn tagging system than the Aurender, as I've seen this problem with other systems. Unexpectedly perhaps, the S10 doesn't stream internet radio stations like some other servers do, it has been built to do a limited range of dedicated operations, with the idea of putting sound quality above facilities. There are no fans inside, with cooling duties instead being handled by substantial heatsink fins which run along the side of the unit.

SOUND QUALITY

Listening to Linn Records' hires material, Mozart's 'Jupiter Symphony' conducted by Sir Charles Mackerras, the sound that emanated from my system was exceptionally fine. Using

the Weiss DAC202, the orchestra had a naturalness about it; it was not steely, wiry, or glassy – just smooth and detailed. There is a solidity that my laptop doesn't come near, and this



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combination of razor-sharp timing, bell-like clarity without being shrill is as good as I've heard. Where the Meridian Sooloos had a slightly sleepy, rounded sound, this has edge and bite, whilst maintaining composure. There's good space to the recording, and a great clarity of the different musical lines.

It is always useful to see how a music server performs with a ripped CD against a transport. For this I purchased a USB CD player from Maplin and attempted to rip a CD. This was a somewhat frustrating experience, as there is no indication as to how the operation was progressing, or indeed if I'd been successful.

Then there is the issue of where the file is to be found in the maze of the iPad app. Having spoken with the UK distributor, Item Audio, it was explained to me that this was not the Aurender's strongest suite, and it was far better to rip a disk from a PC onto an external drive, and connect this to the server.

Ripping a wonderful recording of Solti conducting Wagner Overtures from the PC, and transferring them across to the server, I was pleasantly surprised to see the rewards for the fruits of my labour. Far from the dull mush that a PC would have produced, it was bubbling with life, a real dynamic force, in fact it was all there and good enough to give my Bel Canto CD2 transport a run for its money. Listening to the 'Flying Dutchman Overture', the weighty orchestral crescendi were sincerely reproduced. The Bel Canto had slightly better stage presence and a bit more air between the performers, but then the ripping had converted the .wav file into FLAC, perhaps being responsible for some of the perceived differences? Some of the best servings up of ripped CD fodder that I've encountered...

Despite all the talk of hi res in the press and beyond, plus a welter of products appearing with 24bit DACs (and indeed some now with 32bit), there are still precious few places to find good hi-res recordings. B&W has created Society of Sound, a hi-res label under the aegis of Peter Gabriel, and with strong links to the LSO. Listening to Haitink's recording of Beethoven's Pastoral Symphony No 6, which is 24/48, there is a sense that this level of detail approaches vinyl in intent. The sound is quite mellow and smooth, the recording isn't over-miked, a bit like the early days of stereo, yet the Aurender captures the solidity and weight of the LSO machine! There is nothing digital about the sound, it is fast

without being virtuoso and brilliant – just quite natural.

I often record Allegri Quartet Concerts, and one of the best recordings I have made is the Scherzo of Beethoven's Op 18 No 6 Quartet, live from the Holywell Music Room in Oxford. Beethoven takes a traditional dance form, and wrecks it with outrageous rhythmic invention. It can sound anything from rhythmically lax to taut, depending on the equipment playing it. The Aurender produces the most solid version I have yet heard, it's positively bustling with detail, it gets the space of the quartet brilliantly, and does it with a wide range of tonal palette. If you were to draw a line of a laptop and DAC version, with J-Play being a substantial improvement on this, albeit for around ten seconds of pleasure, the Aurender sounds comfortably better than this; smoother, better spaciality, tauter sound, more lifelike. It captures the energy and excitement of this live concert. Where the Naim HDX had a tendency to scream at the top end on the higher violin notes and 'rubberised' the bass of the Cello, the Aurender/Weiss does this all seemingly without any affectation.

Listening to the brilliantly remastered version of the 1969 Stones' album, 'Let it Bleed' and 'You Can't Always Get What You Want', and you get a flavour of shining a bright light on a bygone era. The textures of percussion, choir, voice are so vivid, you can see deep into the mix, warts and all. Jagger's voice has a naturalness about it, albeit an unrefined, untrained voice, but his presence is created magically by the Aurender.

CONCLUSION

Partnered with a fine DAC, the Aurender

S10 music server is capable of providing true audiophile results. It is beautifully engineered in a ground-up, wheel-reinventing way. It has prioritised sound quality above features, in that it cannot provide Internet radio, or stream to different rooms in the house, its user interface is currently on the basic side, and has less functionality than I think it needs, but these are all issues that can be addressed with improved firmware and updated apps – in the fullness of time. What can't be easily changed is the architecture of the motherboard, and the electronics in the box, which have been built to the highest standards. It represents a significant advancement of the server cause at this price, and is an exciting product that has enormous potential and deserves every success.



REFERENCE SYSTEM
 Bel Canto CD2 CD player
 Weiss DAC202 digital to analogue convertor
 B&W802D loudspeakers
 VAC Auricle Musicbloc power amps

VERDICT ●●●●●
 Intelligently designed bespoke audio computer that follows best practice for excellent sound. Highly customisable and upgradeable, but cumbersome compared to a domestic hi-fi separate.

AURENDER S10 £4,995
 Item Audio
 +44 (0) 1782 621225
 www.itemaudio.co.uk

FOR
 - superb digital source
 - excellent build throughout
 - flexibility

AGAINST
 - user interface needs polishing

MEASURED PERFORMANCE

As this is an all-digital device the only parameters measurable are jitter and noise/interference products, the latter being that over and above that set by quantisation, nominally -96dB with 16bit and -144dB with 24bit.

A 1kHz test tone at -60dB was recorded onto the player and under replay the jitter performance was better than that of CD players, our 'signal related' analysis shows.

Aurender effectively re-clock against a very stable reference, bringing low rate clock drift right down to 20pS or so.

Random jitter was minimal at around 5pS and high frequency components above 10kHz virtually absent, a rare result.

Signal related jitter measured a very low 15pS, making the S10 one of the cleanest digital environments we have ever tested. So their claims in this respect are justified.

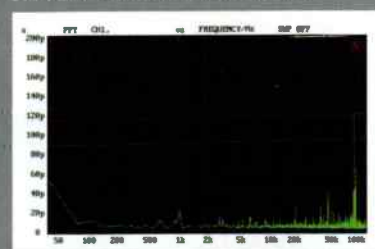
CD players commonly produce jitter components at idle too and here the Aurender was quieter also, our high resolution Rohde & Schwarz analysis shows.

There was no extra noise around either 16bit or 24bit test tones

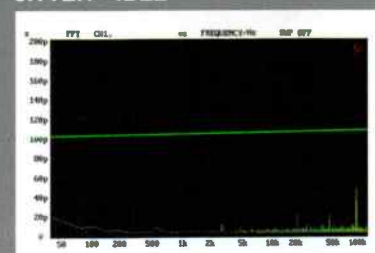
(1kHz, -60dB) either, giving the player a very low noise floor too.

The Aurender S10 is, exactly as claimed, a very clean digital environment for the storage and replay of music. It is ahead of current silver disc players, so it well complements 24bit resolution. NK

JITTER - SIGNAL RELATED



JITTER - IDLE



CYRUS

Be sure you hear all
of your CD collection



This is a new affordable model from Cyrus R&D called **CD Transport**. It incorporates the latest version of our high-resolution SE2 CD servo "engine". This multi-award winning CD technology is able to read more data "right first time" from a CD than any other system, delivering clearly better resolution. Although similar to the £1550 X series **CD XT**, the new upgradeable **CD Transport** is priced at only £750.

The matching **Cyrus XpD** range of DAC-enabled amplifiers allow you to connect up to five digital and six analogue devices to your system for total flexibility. Partnering the new **CD Transport** with our award winning 6XPd amplifier will create a truly special hi-fi system with many upgrade options for the future.

Tempting winter offer
Treat yourself to the new **CD Transport + Cyrus 6 amp** for just **£1,699** and get the DAC free (worth £300!)
Visit our website for participating appointed retailers.



SE technology award

SE CD player of the year

CD 8 SE CD player of the year

Cyrus 8 XP, November '09



PRODUCT OF THE YEAR

PRODUCT OF THE YEAR

CD PLAYERS

CD PLAYERS

STEREO AMPLIFIERS

Designed manufactured and supported in England by Cyrus.
Cyrus sales 01480 435577 www.cyrusaudio.com

World Radio History

Stand Tall

Budget stand mounting loudspeakers can give great sound quality at a low, low price. Noel Keywood reviews seven that set standards.



hope
for though

lies at the other end of the frequency spectrums: firm, tuneful bass. It adds weight and authority to the sound, bringing thunderous lows from synths, viscerally driving bass lines and even full size orchestral kettle drums. Without lows we get a seemingly shrunken performance that isn't convincing, even if for the most part we do fill in the missing info from memory of what it should sound like. In this area stand mount loudspeakers straddle a divide between challenged and capable. Small ones really cannot provide deep bass and the Acoustic Energy Compact 1 illustrates this point within the group. As cabinet volume grows through the modest Usher S-520 up to the relatively large Monitor Audio Silver RX2 so bass output grows too. So a big one always gives more bass than a small one and – interestingly – big stand mounters can just about cover the entire range of a bass guitar or string bass, from 40Hz upward. So with big standmounters you get it all, as it were. What you do not get, however, is subsonics – the room shaking bits – or very high sensitivity. Small loudspeakers need more power to go loud than big ones, believe it or not. Those in this group need a good

Here's a group of compact loudspeakers that offer smooth, accurate sound at an affordable price. It seems their manufacturers have decided to move firmly away from a market tainted by 'enhanced' reproduction, back to a more accurate take on things. Over the years since our last Group Test of stand mounters in the January 2009 issue, loudspeakers have become progressively brighter in sound balance. Taken too far this tips from the highlighting of detail to fierce treble that lacerates the ears.

Surprisingly, the stand mounted loudspeakers in this group were for the most part unusually well balanced and nicely honed to deliver very even sound quality free from this common woe. In this area, they are actually more accurate than the norm., which is tad contradictory.

What a lot of users want and

40 Watts minimum, but floorstanders can get by with half as much and still go loud.

Putting a loudspeaker on a stand implies using it a little away from a rear wall and all those here are balanced for such positioning. Keeping them ahead of a rear wall improves imaging and sound staging, bringing the performance out into the open, making it more ethereal – another area where standmounters score over shelf mounters.

Stands for standmounters play an important role. The idea is to hold the loudspeaker rock steady, to improve imaging, and not to add colouration from – say – a resonant tubular structure. Spikes are used to pierce carpet and sit firmly on floorboards. Those with exposed floorboards will need to use cups under the spikes to prevent damage.

So on to our review. Here are some finely engineered loudspeakers, that's for sure. None too expensive all of fine quality, yet each with its own character.

THE CONTENDERS

Acoustic Energy	£150
Mordaunt Short Aviano 1 XR	£330
Elac BS 53.2	£300
Usher S-520	£375
KEF Q300	£450
Monitor Audio Silver RX2	£550
Castle Knight 2	£600

REFERENCE SYSTEM

CD – Stello CDT100 and Electrocompaniet ECD1 DAC.
LP – Pioneer PLC-590 turntable, SME309 arm, Ortofon 2M Black cartridge and Icon Audio PS1.2 phono stage.
Amplifiers – Creek QBH-22 and Musical Fidelity AMS50 Class A power amplifier; Icon Audio MB845 MkII valve amps.
Stands from Sound Organisation. Cables Van den Hul Royal Jades.



ACOUSTIC ENERGY COMPACT 1 £150

AE's Compact 1s are designed to be used as a stand-alone stereo pair of speakers or partnered with a subwoofer.

They are built with a 100mm bass/mid paper cone, a 28mm fabric dome tweeter and supplied with rear port bungs plus wall-mounting brackets for easy positioning.

Acoustic Energy claim that the Compact 1s will retain their composure when placed on a shelf or wall-mounted, unlike other speakers.

The Compact 1s have small dimensions: 220mm high, 150mm wide, 200mm deep and weigh 3.5kg each. Their rear ports need some breathing room. The Compact 1's cabinets are multiple braced and built from pressure loaded 18mm MDF available in both gloss black or Vermont walnut finishes.

SOUND QUALITY

Acoustic Energy often use Ring Dome tweeters for their silky smooth yet well differentiated treble. The Compact 1 costs too little for such luxuries, but it does still have its own attractive treble quality: full in nature, prominent yet gripping for the broad light it shines on higher frequencies, with an elegant air that avoids the screech of so many budget tweeters. This handled Nigel Kennedy's violin

with aplomb, making it sound rich yet vivid.

Whilst the Compact 1s threw out Adele with vigour, both kick drum and bass in Rolling in the Deep and following tracks had no low end power and there was a boxy quality to what remained of these instruments.

The sound stage stretched linearly between the 'speakers, both left and right images having plenty of presence. This made for a subjectively wide sound stage. High frequencies were

a little brittle at times but the little AEs always sounded lively, fast and forward. Pushed hard with Safri Duo's 'Samb Adagio' the boxiness was again obvious but otherwise the Compact 1s played their heart out with this track.

The Compact 1s are budget bookshelf loudspeakers that offer an exciting sound for the price, but they lack bass and this robs them of the low end power most people expect from hi-fi.

MEASURED PERFORMANCE

The small Acoustic Energy AE1 demonstrates how a small cabinet rolls off bass, output plunging down below 120Hz; the others go much lower, down to 55Hz. The small rear port has quite high output sound pressure but it is small so there's limited power. Tuned to 70Hz it adds in upper bass but goes no lower than 60Hz, so even placed against a wall to emphasise low frequencies the small Compact 1 will lack low bass. Our response analysis also shows raised treble, so there will be a bright balance.

Sensitivity was reasonable at 86dB, quite high as small loudspeakers go, so 60W or so will make the Compact 1 run fairly loud. It is more sensitive than many small speakers. With a high overall impedance of 9 Ohms the Compact 1 is easy enough to drive.

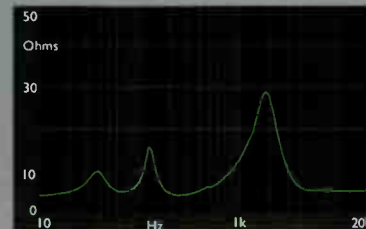
The Compact 1 is small and inexpensive, but it demonstrates clearly how a loudspeaker this size suffers against slightly larger cabinets. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●●£

An excitingly fast and forward small loudspeaker, but it lacks bass and scale as a result, and it is a little boxy.

ACOUSTIC ENERGY

COMPACT 1 £150

+44 (0)1285 654432

www.acoustic-energy.co.uk

FOR

- small and unintrusive
- projective vocals
- well separated treble

AGAINST

- little real bass
- some boxiness
- more vivid than couth



MORDAUNT SHORT AVIANO 1 XR £230

Mordaunt Short's Aviano 1 XR is a two way loudspeaker that uses a reflex port to load the bass unit, as is common in this group.

Mordaunt Short say that the crossover rolls off the driver units faster, providing less overlap between the midrange and tweeter, improving off-axis response. The Aviano's are better able to limit lower frequencies that interfere with the tweeter, giving them a greater power handling and lower distortion, and this allows the Aviano 1 XRs to play louder with great accuracy.

The Aviano 1 XRs are a fairly modest size: 275mm high, 179mm wide, 267mm deep and weigh 5kg. They are small stand mounters in effect. They possess a 25mm aluminium tweeter and a 130mm aluminium woofer. The Aviano 1 XR's drive unit uses Mordaunt Short's unique CPC (Continuous Profile Cone) technology, they say.

SOUND QUALITY

The Aviano 1 XRs for their size pack surprisingly deep bass but at the same time it isn't over-loaded by excess weight. Bass guitar on Sade's 'Your Love Is King' is clean and clear but doesn't offer as much upper-bass delivery when compared with the Q300s or the S-520s.

Their midrange projected

outward with great detail, so vocals sat nicely in the centre of the soundstage, giving both Adele and Sade a clear and solid presence. Levels of colouration were impressively low: this is a smooth yet clear sounding loudspeaker in the midrange.

Treble representation was both even and silky smooth. Grace Jones' 'Slave to the Rhythm' delivered hi hats with smoothness that literally shone from these speakers.

The Aviano 1 XR's soundstage

lacks space, but this adds to their overall control and centered sound, which is no way lacked clarity.

The Avianos generate a confident sound that really stands out from the crowd. Despite their modest size, they have even delivery across all parts of the audio spectrum, bass having a balanced sense of power kept under great control. This loudspeaker's sound stood out more than its conservative appearance would suggest.

MEASURED PERFORMANCE

The Aviano measures flat in the high frequency region where perturbations are common. Importantly, treble does not rise at all and phase matching between drivers was very good, so the Aviano 1 XR should have silky smooth treble, likely with little coloration. The balance suggests this will be an easy and clean sounding loudspeaker.

Bass output extends down to 70Hz, below which the port takes over. It works down to 30Hz only though, so bass will be clean and fast, without subsonics. Port output was high, +13dB at 80Hz, so bass should be quite obvious and have some heft.

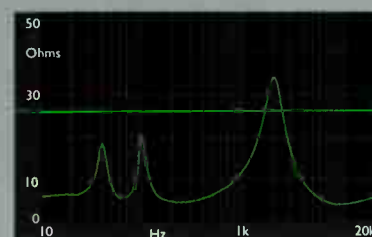
Sensitivity was on the low side at 85dB from 1 Watt, so reasonable power is needed to go loud, at least 60 Watts. The decay spectrum was extremely clean.

The Aviano 1 XR is very tightly engineered to give smooth, natural sound, free of colour. It measures impressively well. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output
IMPEDANCE



VERDICT

Concise and clear imaging, allied to a gloriously even handed balance make for remarkable sophistication at the price.

MORDAUNT SHORT £230

Mordaunt Short

+44 (0)207 940 2200

www.mordauntshort.com

FOR

- silky smooth treble
- even tonal balance
- good imaging

AGAINST

- warm sound
- slightly soft bass
- not crisp



ELAC BS 53.2 £300

The Elac BS 53.2 is a two-way loudspeaker with 145mm diameter bass-midrange unit and 25mm silk dome tweeter, with an attractive silver finish and black mesh metal grille that is removable. Measuring 285mm high, 170mm wide and 270mm deep the BS 53.2 is a compact standmounter best positioned close to a rear wall, our measurements show. It could be put on a shelf, but its rear port needs breathing room behind, demanding at minimum a deep 10in shelf – this is not ideal. Weight is a modest 5.5kgs.

Unlike many models here the Elac cannot be bi-wired, but its single terminal pair is sturdy, accepting 4mm plugs, bare wires or spade connectors. Black and Cherry finish artificial veneers are available. Our samples were well built and finished, very much in German style.

SOUND QUALITY

This is a crisp and concise sounding loudspeaker that comes over as squeaky clean and yet even handed. Boosted upper frequencies are rarely heard as obvious brightness. The effect strengthened left and right stereo images that subjectively made for a wide sound stage with strong extremes, plus quite intense detailing. Just occasionally sibilance made itself known.

There was no sign of boxiness or colour to Adele's vocals; she sang from a background that was almost clinically clean. In this sense the Elacs have a cool character. They are concise, rather than emotional.

Drums were dynamically strong and fast as well, whilst bass lines strode along cleanly, tight as a nut. Lower bass is muted; these speakers do not go deep.

Strings were brightly lit in Nigel Kennedy's rendition of Vivaldi's 'Spring' but the effect was tolerable.

The tweeter sounded detailed and kept highs well sorted out, making violin a rich and engaging listen. Again, imaging across the sound stage was superb, individual instruments being cast in stone it seemed.

In all and across a wide variety of CDs the little Elacs distinguished themselves. They are cool of demeanour, yet very capable in all areas, with tight but well controlled bass. This made them engaging on both Rock and Classical music.

MEASURED PERFORMANCE

The BS 53.2 measures flat and even from 70Hz to 2kHz. There is a small crossover dip that will have a slight softening effect, but a treble peak from the tweeter will emphasise highs. As the peak is above 10kHz this may not be too intrusive subjectively.

The port works in a broad band around 55Hz, applying well controlled damping to the bass cone, both our red port trace and impedance curve show. Bass extends down to 40Hz so the Elac covers the entire audio range easily.

Sensitivity was good for a small loudspeaker, measuring 87dB, so 40 Watts or more will go loud. The speaker is a normal enough load. Our decay spectrum analysis over 200mS shows little coloration exists.

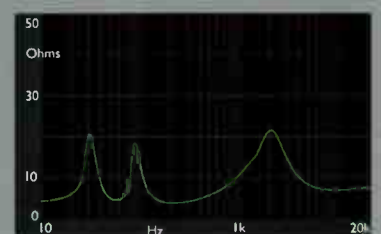
The BS 53.2 is well designed all round, a product of classic engineering. It will have a little sheen in its sound and needs to be positioned close to a rear wall. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

A clean, tidy sound from a great all rounder, but it is cold in tone and low bass is weak.

ELAC BS 53.2 £300

Atacama Audio

+44 (0)1455283251

www.elac-audio.co.uk

FOR

- nice sense of balance
- fast, pacey bass
- detailed treble

AGAINST

- little low bass
- cold and a tad clinical
- some treble sheen



USHER S520 £375

Back in 2009 we tested and compared nine budget bookshelf speakers and with due cause the Usher S-520 was crowned winner.

This time around the S-520 returns in improved form; treble behaviour has been refined a little our measurements show, in line with its importers comments.

The magnetically-shielded two-way monitor has a 25mm dome tweeter and 127mm polypropylene mid/bass drive unit that is unusual in this group for its clear polymer cone. Polypropylene was popular as a well damped, low colouration cone material before metal cones arrived. The S-520s use Dr. Joseph D'Appolito's approved audio crossovers Usher say.

The 'speakers weigh 6.8kg, 300mm high, 180mm wide, 265mm deep and are available in rich-finished colors including Ferrari Red, gloss yellow, and Piano as well as traditional finishes. Matching subwoofers are available at £999.

SOUND QUALITY

The high-end of Adele's 'Rumour Has It' was represented with great detail; the S-520s treble response is clean and bright. The cymbals and high-hat's brightness is apparent due to the fact they

sit slightly forward in the S-520's soundstage. Vocal representation was captivating and really places you into the S-520's huge soundstage, giving the vocals a sense of space and depth.

The S-520's soundstage complements the orchestral dynamics found in such works as Nigel Kennedy's performance of Vivaldi's 'Spring'. The midrange is nicely positioned and really shows the S-520's ability with acoustic guitar and Nigel Kennedy's deep bow-work

displaying strong dynamics and great stage depth.

Bass is nicely portrayed; it has strength, balance and a strong grip of low-end, especially when compared to the low-end response of the Silver RXs.

The S-520's build shows that these loudspeakers are top quality and their sound seems near perfect; there is very little sign of weakness. A reasonable price and strong all round capability make these strong contenders.

MEASURED PERFORMANCE

Frequency response of the updated Usher S520 has been smoothed out a little at high frequencies, but shows the same trends as before: the 'speaker measures flat and even and its tweeter is well integrated. There is still a small plateau lift in output above 700Hz that will make for a slightly lighter balance, but output around 8kHz is down a little so some brightness has been removed.

Bass reaches down to 60Hz, the port filling in strongly at 52Hz; it measures +4dB at 80Hz, so bass output is strong.

Sensitivity remains low at 84dB so the S520 needs a fairly powerful amplifier to go loud, around 60 Watts. It has a high impedance though, measuring out at 9 Ohms, so it is an easy load.

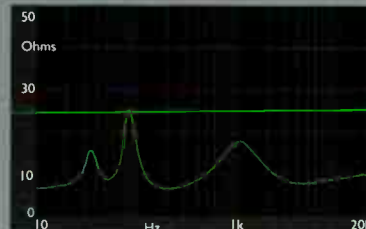
The S520 measures flat and even, so will have an accurate sound balance and low colouration, plus dry deep bass. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Fast tuneful bass and clear midrange, plus improved treble make this a fine loudspeaker by the latest standards.

USHER S 520 £375

Hi Audio Distribution

+44 01382 540402

www.hi-fidelityuk.co.uk

FOR

- smooth clear midband
- clean tight bass
- concise imaging

AGAINST

- light balance
- limited low bass
- occasional sibilance



KEF Q300 £450

KEF say their Q series offers three-dimensional sound imaging, a quality that comes from their unique 'Uni-Q' technology, which places a 25mm domed aluminium tweeter in the middle of the 165mm aluminium bass speaker cone with its unusual pleated cone surround. This improves imaging, creating a more accurate and even sound image free from phase anomalies, aided by a unique 'tangerine' waveguide.

The Q300's size is a fair 355mm high, 210mm wide and 302mm deep, weighing 7.7kg each piece. They are fitted with gold plated bi-wire terminals at the rear that accept 4mm plugs, as well as bare wires.

The Q300 loudspeakers are available in glossed real wood veneers, available in Black Oak, English Cherry and European Walnut.

SOUND QUALITY

Nigel Kennedy's rendition of Vivaldi's 'Spring' played through the KEF Q300s was brilliantly detailed and displayed a beautiful midrange, which was a delight. 'Spring' hosts acoustic guitar and violin; both sounded sparkly and pleasant, creating a very satisfying presence from the Q300s.

The vocal in Adele's 'Rolling in The Deep' confirmed a

great midrange with strong vocal projection, as well as accurate tones displayed by soft piano keys. Adele's vocal was detailed, and also convincingly human in its timbral properties.

The Q300s produce a large soundstage, accommodating the full orchestral ensemble in 'Spring' with depth and atmosphere, giving treble space to shine. Cymbals in 'Rolling in The Deep' sounded brassy, and detail was carried clearly by the Q300's

aluminium tweeter cone; it creates crisp treble.

The low-end displays power and shows good control. The bass is conveyed with weight and warmth, below the Usher S520s, but better than the Avianos for bass power.

The Q300s have an open and controlled sound projection and great sound and balance over all frequencies. They do however have slight bass dominance but this is handled nicely.

MEASURED PERFORMANCE

Frequency response shows the Q300 is fundamentally flat, with a small amount of lift below 450Hz, enough to add some weight to the sound. Bass extends down smoothly to 55Hz, below which the port takes over. Our red port and impedance traces show the Q300 goes low, peaking around 40Hz and is well damped acoustically.

Tweeter output is kept in perfect balance with the midrange. The Tangerine wave guide works well. The Q300 will sound quite mild against many 'bright' loudspeakers, but it is accurate.

Sensitivity was good at 87.5dB SPL from one nominal watt so the Q300 needs modest amounts of power; 40W will go very loud. Impedance measures 6 Ohms.

The Q300 is basically well balanced, very smooth in its output and will have good bass extension. It is well engineered all round. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Smooth, nicely balanced quality makes the Q300s very couch, but they lack tightness and precision. An easy sound.

KEF Q300 £450

KEF

+44 (0)1622 672261

www.kef.com

FOR

- sweet, smooth treble
- strong midrange
- plentiful bass

AGAINST

- bass quality
- occasional box woof
- a little relaxed



MONITOR AUDIO SILVER RX2 £550

Monitor Audio's Silver RX2 is a two-way loudspeaker fitted with attractive metal coned drive units. They've been designed with rear positioned HiVe II port technology that gives a better transient response, tightening bass Monitor Audio say.

The gold dome C-CAM (ceramic coated aluminium magnesium) 25mm tweeter provides improved clarity. The Silver RX2's C-CAM 8in bass/mid driver cone is bigger than most in our group. The RST cone consists of radial surface dimples, which MA's tests prove significantly increased cone rigidity, resisting mechanical bending for less distortion.

The Silver RX2s are the largest standmounting loudspeaker in this comparative review, measuring 375mm high, 230mm wide, 300mm deep and weighing 9.5kgs. They are fitted with gold plated bi-wire terminals that accept 4mm plugs. The speakers are finished in wooden veneer available in three different woods.

SOUND QUALITY

When listening to Sade's 'Your Love is King' the upper bass and midrange was handled with enthusiasm by the Silver RX2s. With plucked bass guitar they produced satisfyingly punchy results. A clean, proud sax leapt forward, emphasising great midrange presence.

The low bass is strong and expressive, but a slight box colouration resulted in a 'boofy' sound, suggesting less lower-end control than KEF's Q300s.

Sade's vocals sit forward, illuminating her voice perfectly. A good amount of detail proved the midrange a little strident, higher treble seemingly sat behind the vocals, weakening some of the high-end representation – unlike the Knight 2's forward highs.

The Silver RX2 constructs a shallow soundstage, which didn't really

represent the array of dynamics that could be heard in Vivaldi's 'Spring'. Compared to the sound of the unique 'Uni-Q' drive unit found in the Q300s, the Silver RX2's sound confined and less evenly dispersed.

The Silver RX2s provide a clean sound with great midrange representation both in projection and clarity. Regrettably the Silver RX2s bass control is overweight at times creating a boomy low-end. Overall they show strengths moderated by some weakness.

MEASURED PERFORMANCE

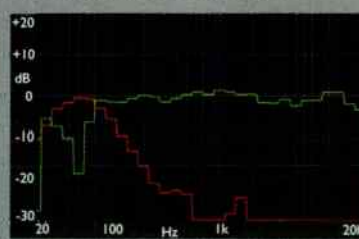
The Silver RX2 is unusual in its frequency response, treble energy being a little lower than the midrange. This will make for a mild sounding balance but push vocalists out well.

Lower midrange and bass output are very smooth, a good sign suggesting a nice even subjective balance. The port is +8dB up at 80Hz and tuned to 45Hz, so will add a useful amount of bass weight. It damps the bass unit well so bass quality should be good.

Sensitivity was very high at 88dB SPL from 1 Watt, so little power is needed to go loud, 40 Watts being fine; this 'speaker will match valve amps well. Our impedance curve shows an easy enough load, with an overall value of 8 Ohms. Decay analysis suggests a little boxiness.

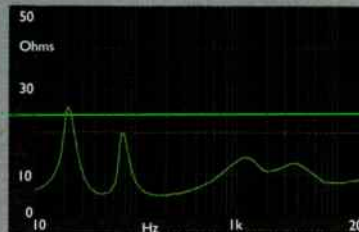
The Silver RX2 is a strong all-rounder with plentiful bass, a mild treble balance and high sensitivity. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●●

Enthusiastic midrange makes these speakers sound excitingly projective with vocals. Big bass but a tad 'boofy' in quality.

MONITOR AUDIO RX2 £550

Monitor Audio

+44 (0)1268 740580

www.monitoraudio.co.uk

FOR

- detailed midrange
- clean sound
- strong bass

AGAINST

- box colouration
- shy treble
- thin soundstage



CASTLE KNIGHT 2 £600

The Castle Knight 2s are the most expensive loudspeaker in this review, costing £600. Castle claim they achieve superb high-frequency performance with the Knight 2s due to a 25mm 'soft-dome' tweeter creating a controlled and accurate sound when compared to the use of metal domes.

They also use a 150mm bass mid-unit driver made from a light yet stiff woven carbon fibre coned diaphragm providing good internal damping and low colouration.

This is the tallest loudspeaker of the group, standing 380mm high and measuring 200mm wide and 335mm deep, weighing at 7.85kg.

The Knight 2s are fitted gold plated bi-wire terminals accepting both 4mm plugs and bare wire.

The cabinets are constructed from hand-finished rich, real-wood veneers available in eight finishes. The Knight 2s were both trad. but slick in finish and looked classy.

SOUND QUALITY

Castle aren't wrong when saying they achieve superb high-frequency performance. The treble is definitely fronted with a obvious brightness. When listening to Sade's 'Smooth Operator' the treble sits in front of the soundstage, delivering tight and strong high hats. In

quantity treble detail is similar to the Q300s but the Knight 2s push the high-end further forward, creating a strong high-end atmosphere.

Kickdrum and bass guitar in 'Rumor Has It' by Adele appeared to lack warmth and punch., when set away from a wall. However the low and upper bass still proves even and clean, adding a sense of depth to their soundstage. However, near-wall placement lifted low bass, making them both tight and punchy.

The Knight 2s deliver vocals with

detail and clarity, clearly heard in both Sade's and Adele's performances.

When listening to Santana's 'Africa Bamba', the vibrant electric guitar confirms detailed midrange and glistening treble.

The Knight 2s have an easy restraint, yet are also detailed without treble being too dominant. The lower end slips out of focus unless these loudspeakers are placed close to a rear wall, their bass damping is so high. But then at low frequencies they perform like no other.

VERDICT ●●●●●

A little emphasised up top makes for an obvious sheen, and must be used close to a wall for bass to be strong.

CASTLE KNIGHT 2 £600

IAG

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www.castle.uk.com

FOR

- punchy bass
- clean midrange
- overall clarity

AGAINST

- forward treble
- cost
- muted style

MEASURED PERFORMANCE

The Knight 2 measures impressively flat up to 4kHz our analysis shows, and its tweeter is well integrated. However, tweeter output is +2dB higher than that of the bass/midrange driver so the Knight 2 will have quite a bright balance to its sound, more so than the others of this group. The bass/mid looks accurate, and a decay analysis shows little energy below 300Hz so little colour.

The port provides a broad spread of bass output below 70Hz and it damps the bass cone broadly, our impedance analysis shows, suggesting good bass quality free of waffle. Although the port goes low, this is not a bass heavy loudspeaker. Impedance was high at 9 Ohms and sensitivity low at 85.6dB so the Knight 2 needs 60 Watts or so to go loud.

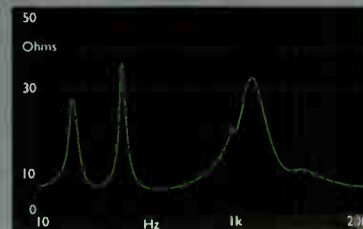
The Knight 2 will have a bright balance, but it is even and accurate across bass and midrange and should sound tight and controlled. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



It is easiest to consider this group from bottom to top, as usual. Acoustic Energy's Compact 1 is out priced by the other 'speakers so it isn't really fair to make direct comparisons. We include it here to illustrate the differences between a really small speaker and a slightly larger one like the Usher S520 or Mordaunt Short Aviano 1 XR. The diminutive dimensions of the Compact 1 act against it in a disproportionately large way. The Compact 1 is, all the same, an inexpensive miniature that does a good job at a peanuts price. It is fast and exciting, delivering a performance with pace and vigour.

Elac's BS 53.2 is a little larger than the Compact 1 but quite a lot more capable as small loudspeakers go. Very well engineered, as we can expect from this German manufacturer with a long history in the business, the BS 53.2 ticks all boxes in an engineering sense and it sounds like it too. With punchy bass, albeit of no great weight, great detail in the treble and an excellent midband that does a great job with vocals, plus fine sound staging the BS 53.2 gets it all right – and for just £300. Its main drawback is a cold and somewhat mechanical character. It is possible to be a bit more neutral at the price.

Monitor Audio's MA Silver RX2 delivers real bass and is enormously sensitive too, so it needs little power to go rockingly loud. It is another loudspeaker with a great midband and along with strong bass and smooth, almost reticent treble, offers a big, bold yet easy-on-the-ear sound. The cabinet can be heard though and this is a small trade off made in return for strong low frequencies.

Mordaunt Short's Aviano 1 XR is one of the most arresting loudspeakers of the group, having quite a different demeanour to

the others. It sounds deeply sophisticated on first listen, silky smooth, cohesive and evenly balanced right across the audio band. With a convincing tonality and good insight the Aviano 1 XR is an easy listen yet a revealing loudspeaker at the same time. Its stereo imaging was one of the best of the group too. Treble quality was a delight, sparkingly bright yet with a sweet tonality – there was an almost diamond like sparkle. Combine all these strengths with a super low price and the Aviano 1 XR starts to look like the best of the group. It only falls back on a slightly warm, boxy bass quality that, with a lot of Rock, slowly becomes apparent. It seems almost churlish to mention this as a limitation in an otherwise great package, but others were better in this area and also had bass that went lower.

Coming in an honourable third is arguably the best all-rounder in the group, the Usher S-520. Priced at just £375 in the gloss finish, this was liked in our 2009 group test and remains a great loudspeaker. Our comments then apply equally now, in spite of improvement. The Ushers have a beautifully clear midband that adds no colour at all and sounds natural with both vocals and classical instruments. Bass was tight and there was no sign of boxiness or any other colour. But these lovely loudspeakers don't have the deep bass power of the KEFs, Monitor Audios or Castles, and treble could at times be a little tizzy and obvious, if not to any great degree. They're a lovely loudspeaker at the price though, beautifully finished, handed for good imaging, with tight pacy bass and one of the loveliest midlands going. And all for £375.

The top two loudspeakers are



Castle Knight 2 was well veneered, giving a classy finish. Bass quality was best of the group.

also the biggest and this allows them to develop real bass. KEF's Q300 is the best balanced subjectively, as measurement says it will be. With bass that is reasonably weighty and goes deep it has bottom end clout, but there was some pitch vagueness compared to the Castle; bass lines were not so well differentiated note-to-note. Measurement suggests the Q300 needs fine tuning to improve bass damping and this may be the reason for its small sense of temporal diffuseness. Where it shines is in combining a well balanced midband with smooth and even sounding treble, to come up with a well developed whole that handled both Rock and Classical well. The sound was a little earth bound, anchored down I suspect by a little bit of colour coming out of the box. KEF's veneer was lacklustre too.

Castle's Knight 2 makes the number one position because it plays bass lines like no other. It must be placed close to a rear wall and driven by a powerful amplifier, then it comes alive. Bass lines were powerful and each note very well defined. Kick drum had real force. The only stain was some boxiness. The tweeter is a tad prominent and classical music enthusiasts may well prefer the KEFs, Ushers or Mordaunt Shorts, but the £600 price tag does bring exceptional low end qualities, grip and great pace, plus a classy finish.

This group was a good one. Down at the budget end the Mordaunt Shorts and Ushers offer superb results at an almost insanely low price. They are real hi-fi, if not quite perfect for reasons we clearly identify through measurement and listening tests. Larger cabinets bring bigger bass as well as a bigger price and for those wanting the ultimate in slam and control the Castle Knight 2s win out, closely followed by the more evenly balanced if less dramatic sounding KEF Q300s.



For £375 the Piano Black lacquer Usher S-520 looks good as well as sounding it.

Luna Love

If you want a valve amplifier that embodies all the classic qualities associated with valves then you may well love the Prima Luna Prologue Premium, thinks Tony Bolton.

Dutch based amplifier manufacturers, Prima Luna have been busy of late, developing a new range to fit in between the well known ProLogue series and the more upmarket DiaLogue models. This has been called the ProLogue Premium and consists of a CD player, integrated amp and a pre-amp, to go with either mono-blocks or the stereo power amp, under review here.

It takes its styling cues from the Dialogue range, having the same curved (removable) valve cover, and internally, new output and power transformers, residing behind the big covers at the back. It is not a small unit, occupying a space some 370 x 200 x 400mm (w x h x d) and needing a strong shelf to support its 21kg weight.

It is available with either a silver or black facia, in the centre of which sits a small green LED to signify power is on. This is activated by a switch on the left hand side near the front of the chassis, which is gloss black on all models. The fit and finish of the exterior was excellent.

At the back are two pairs of three speaker terminals. Alongside the negative posts are options of either 4 or 8 Ohm positive binding posts for the speaker cable. Beside these are the two RCA input sockets and the mains IEC inlet.

Internally the circuit borrows from both its cousins, with the ProLogue's zero negative feedback topology, and comes fitted with Solon and Nichicon capacitors. From the DiaLogue comes Adaptive AutoBias circuitry that allows recalibration of the circuit for either EL34s or KT88 valves at the flick of a switch. (The latter were fitted to this

example, costing £13 more than the EL34 version). The circuit is also self biasing, so there is no periodic fiddling around with meters and screwdrivers.

The front end design is new, based around two pairs of 12AU7 valves, and features four protection circuits most of which are self explanatory; 'Bad Tube Indicator', 'Power Transformer Protection', 'Output Transformer Protection' and a '+B relay' which works in conjunction with the latter.

Given a claimed power output of 35 Watts, I plugged the ProLogue Premium Stereo into the upstairs system where it had a pretty amp friendly load from the 6 Ohm/ 95dB efficiency, Kelly KT3s. I put it through a couple of days running in and sat down to get properly acquainted.

Being in a jazzy mood I put on a 1960s stereo pressing of Ellington live in Juan-les-Pins, performing at the Antibes Jazz Festival on 29th July 1966. This stereo Verve recording is in good condition and, being recorded outside, has a different ambience to the more normal studio sound. The Prima Luna got into the spirit of the event enough to transport me to sunnier climes, even while one of the recent storms battered at my windows. The essence of life, and the more freewheeling attitude of the performers when taken out of a studio, came through, along with the Duke's frequent asides to the band, and to the audience on occasion. The last track, 'Diminuendo In Blue and Blow By Blow' a merging of two pieces, provided a show-stopping finish with Ellington in the centre of the soundstage and Paul Gonsalves on lead tenor sax, swinging away over on the right.

The beat drove the music



along as Gonsalves stretched the capabilities of his instrument to the limits, although I do have to say that the bass, while romping along merrily, did not have the cleanest definition that I have encountered. Rather than a sharply defined leading edge to the notes, they tended to have a softer, slightly more rounded shape. Don't get me wrong, they weren't blurring into each other, the music was too snappily paced for that, but there was a little something missing from the attack, that I have heard done better elsewhere.

Seeking something a little calmer after such lurid sounds, I settled on Saint-Saens 'Carnival of the Animals'. This recording features the lines written by Ogden Nash in 1949 to accompany the piece, which are exquisitely read by the inimitable Noel Coward. Originally released in the USA on Columbia Masterworks, this is the 1958 UK release on the Philips label.

The Prima Luna seemed unfazed by a mono recording, and again got thoroughly into the spirit of the piece, placing the orchestra firmly



"it transmits atmosphere aplenty and, most importantly, plays enjoyable music"

between the speakers, occupying an area a little in front of the cabinets, and reaching a fair way back. Coward seemed to step forward in front of the musicians to disclaim his lines, before thoughtfully standing back, allowing the music to speak for itself.

Tonally, I thought the sound was pretty accurate. There was a pleasing delicacy to the treble where required,

and the sawing, deep strings during 'Elephants', plumbed the depths in a satisfying way. The xylophone in 'Fossils' plinked away merrily, before being joined by the rest of the orchestra, creating a pleasant flow of sound. Again, not as defined as I have heard, but still friendly to the ear.

Having discovered the easy-going side to this amp's nature I wondered



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if more strident sounds would fare as well, and dug out REM's first Warner Brothers LP, 'Green'. This guitar driven rock, although melodious, still has some edgy sounds in it, and here I felt, the amp played it a little safe. The music was enjoyable, but there was a definite softness to the shape of some of the sounds that should, I felt, have been a bit more sharp and pointed. I also felt that the bass, certainly at the reasonably loud volume that I was playing at, lacked the floor moving intensity that I would have expected. It sounded as though it went quite deep, but I wasn't aware of it tickling the soles of my feet through the floorboards, as it would have been with the resident pair of Quad 303s on the job.

At the other extreme, the treble retained its light but quite detailed touch, letting me hear the click of plectrum on guitar string. Imaging was good, with a strong central placement for Michael Stipe's vocals. The band were grouped around him, each occupying a firm point in space, although I wasn't aware of much air in between them – something that I am used to with this system in its normal configuration.

Determined to see if I could get a little rawness from the Prima Luna, I treated it to some psychedelic trance from Rastaliens and the CD 'Xplore the Wild Side'. Track one, '2 Da Max', starts with a cymbal rushing towards you with increasing intensity, then the bass arrives, followed by synths making some quite twisted noises. Some rush out of nowhere, others perform a melodic little jig in the middle of the mix, before dashing off somewhere else. It is quite

intense music, with a driving, energetic beat, and while that intensity was there, I still felt it was a little too safe in a certain subtle way, that took away some of the point of the music. This is fairly hardcore dance music, and should lift you up

and make you want to move to it. Instead I felt stirred by it, but not enough to do more than tap my feet to the beat, rather than feel compelled to get up and bob around the room a bit (and no I don't play air-guitar!). I still enjoyed the sounds, but they did feel a bit softened, and almost gentrified in a way.

That sums things up quite nicely I think. This amp is gentle and polite in the way it produces music. It is unlikely to cause sonic offense, but fans of bangin' toons, and driving rock might be left feeling a little as though their gran has just turned up at the party. Even though she's a game old girl and up for a bit of fun, everyone is minding their manners a little more than they normally would.

With jazz this was a little less obvious. Only really raucous noises made by saxophones and the like, seemed fractionally held back, but otherwise the music seemed far more suited to this amp's sensibilities. Classical material fared well, flowing with a naturalness that drew me into the music. And it is a very tuneful machine when all is said and done. A few experiments with firmer sounding

MUSIC USED:

Andre Kostelanetz and his Orchestra 'Carnival of the Animals' Saint-Saens Philips Records, GBL 5554, 1958

Duke Ellington and his Orchestra, 'Duke Ellington at the Cote d'Azur', Verve Records, SVLP 9170, 1967

REM 'Green' Warner Brothers Records, 925 795, 1988

Rastaliens 'Xplore the Wild Side' BooM! Records, BOOMCD018, 2003

valves may pay dividends here, but in standard form it transmits atmosphere aplenty and, most importantly, plays enjoyable music.

Personally I would have preferred a little less diplomacy in the sound, but these things are always a matter of taste and room/system matching. If you are in the market for a solidly built valve amplifier then I would certainly recommend an audition of the ProLogue Premium Stereo. It is a friendly and easy to live with example of the breed.

SYSTEM USED:

Linn Sondek/ Hadcock 242 Cryo/ MusicMaker III
Luxman E200 phonostage.
Bent Audio TAP-X passive pre-amp.
Kelly KT3 loudspeakers.

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- FOR**
- friendly, warm sound.
 - solid build.
 - tuneful.
 - creates atmosphere

- AGAINST**
- bass a little wooly
 - a little reserved with some types of music

MEASURED PERFORMANCE

The Prima Luna Prologue Premium produces 32 Watts into 8 Ohms and 4 Ohms, so coupling efficiency of the 4 Ohm tap is good. This amount of power is about right for KT88s run conservatively; they will produce up to 40 Watts as a push-pull pair but higher powers mean shorter valve life, so the Prologue treats its output valves kindly, but it does not reach the 40 Watt threshold as a result.

Because feedback is absent damping factor was very low at 0.44. In line with this distortion was on the high side and rose steadily as output increased, reaching 1% in the midband and 2% at high frequencies (10kHz) at -1dB below full output. With third harmonic in addition to second, the distortion pattern was rather more complex than is common, especially at higher power levels, so some muddle may well be evident.

Bass distortion wasn't higher than that in the midband though, so the output transformer cores are able to withstand strong low frequency magnetisation and bass quality will be OK, although perceptions will be swung by weak grip due to low damping factor. The solution is to use acoustically well damped loudspeakers, from Triangle or Wharfedale for example.

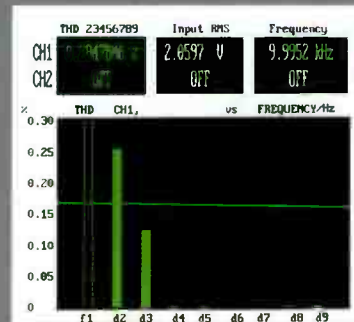
For a low feedback amplifier, however, bandwidth was unusually

wide, reaching right up to 103kHz (-1dB). Hum was minimal too, suggesting d.c. preamp heaters and good layout.

The Prologue Premium is strong in many areas, but also has limitations. Bass will sound soft unless well acoustically damped loudspeakers are used, because electrical damping is minimal. Modern valve amplifiers often produce less distortion at higher levels too. Measurement suggests a very typical valve sound. NK

Power	32watts
CD/tuner/aux.	
Frequency response	12Hz-103kHz
Separation	68dB
Noise	-113dB
Distortion	0.3%
Sensitivity	700mV

DISTORTION



mail



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LETTER OF THE MONTH PRIZE



KEF Q100 LOUDSPEAKERS

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

A pair of KEF Q100 loudspeakers are on their way to **MARK KNIGHT**, Letter of the Month winner in our JANUARY 2012 issue.

Letter of the Month

THE BEST DEFENCE

Have you ever had to defend your interest in hi-fi? What did you say? I had often noticed that a friend of mine seemed to 'switch off' when I mentioned hi-fi. Yes, I know that doesn't sound too unusual – we're all into different things – but this friend was a professional musician and it seemed odd. I suppose I had assumed that a musician would be all for anything that made the listening experience more transparent, but during a recent conversation I detected not just indifference but an edge of scorn, even hostility.

Rather than let it pass, I threw tact to the wind and dug deeper. He's very polite and nothing definite was said but, reading between the lines, he seemed to think that hi-fi experts were tone deaf gadget freaks who cared more for ear candy and tinkering with equipment than with the artistry of the music itself. I'm polite too, so we moved on to other things but later I felt that I should have put up some kind of defence. You know how it is when you think things through after the fact and kick yourself...

First I wondered if I should have suggested that perhaps there are reasons why some musicians might not want their performances recorded in revealing detail. No, that would be childish and I don't believe it anyway! Then, for a terrible moment I wondered if he could be right, at least in part. I come from a technical background, as I'm sure do many hi-fi enthusiasts, and it's true that I do appreciate the equipment for its own sake, but no, that doesn't take anything away from my appreciation of the music – the music



The Allegri String Quartet prove that not all musicians are bored by hi-fi. One of them – the handsome one at right! – gives his views below.

is most definitely the driving force. Perhaps it's just that hi-fi enthusiasts are perfectionists, people who cannot relax and enjoy anything unless they know that they have done everything in their power to do it right. That's no bad thing. Perhaps experimenting with the equipment is not just geekery but an excuse to rediscover our favourite tracks over and over, the subtle differences in presentation tricking our brains into the magical excitement of new discovery time and again. How many other interests allow people to do that? Any thoughts?

Dr Robert M. Carter

Rafael Todes, Allegri String Quartet says –

I sometimes wonder why musicians don't have more curiosity for matters audio. I think if you do the real thing, then any form of reproduction is just that. Whether accurate or inaccurate – it doesn't make that much difference. For a musician who knows a piece of music well, it is a bit like talking to someone in a noisy, crowded bar, your brain seems to compensate for what's missing. I personally get a great deal of pleasure from music that is beautifully played and reproduced. It is an aesthetic thing, and I partially enjoy the ability to deconstruct a piece and hear all the lines in great detail. That is after all what I spend most of my time in the

Allegrì Quartet doing, deconstructing phrases and putting tonal subtleties under a microscope to achieve the desired blend.

The other miraculous thing for me, is that a good recording can be the nearest thing you get to communing with late, great artists. There is certainly a lot that may be learned from hearing great artists with the greatest transparency possible. This is where my non-believing colleagues may be missing out most! A former colleague of mine used to edit Quartet recordings on a Dixon's Saisho system, where a third of the Cello's register was not being reproduced. He should have been had up for crimes against audio! **RT**

You don't need to have the beautiful brush strokes or sublime pencil technique of Leonardo Da Vinci to appreciate his amazing artistry. Likewise, musical illiterates such as myself (well, I did get Music 'O' Level' and Grade 5 theory, but that hardly makes me Karajan!) are still able to appreciate fine music, despite not being able to make it. Indeed, I'd suggest that precisely because I can't hear orchestras in my head when I look at a series of notes on a musical staff, I need a good hi-fi to make it come to life – and thus let me appreciate its beauty fully. A great system gets me closer to that musical event; I can get all the emotion and power out of music, just as a concert pianist can, but I need a little extra help connecting to it. That's why – I would guess – many musicians don't need decent systems like us mere mortals do. **DP**

Hi Robert. Musicians vary in their approach to hi-fi, as much as anyone else I find. I once knew a pianist who strained every part of herself over interpretation and the sheer physical side of playing a piano, yet could not begin to hear sound quality differences in hi-fi; they just did not seem to be within her perceptions. But equally there are musicians who are perfectly happy with the notion of getting the best from reproducing equipment and Rafael Todes, who plays violin in the Allegrì String Quartet and reviews for us, is one of them, as you have just read.

Even from my position immersed in the subject I can see how 'accurate' reproduction isn't necessarily as viscerally exciting, at least with Rock music, than 'enhanced' reproduction and indeed one magazine recently declared

accurate equipment "boring". For them ringing treble and thunderous bass is the quintessence of high fidelity, whilst for me and so many others it is not. Faced with this dichotomy I can sympathise with any musician who finds some of the not-so-uncommon views within high fidelity facile.

All the same, there are plenty of products that work gloriously well, are not always expensive and give a great deal of pleasure – and it's useful to know what they are and how to get the most from them. That's why we are all immersed in the madness! **NK**

MATERIAL WORLD

In recent months I have been considering whether to go for an Isokinetic or Inspire acrylic platter upgrade for my Rega P25. Comments within Hi-Fi World concerning the "unsuitability" of glass platters, with

In addition, while within the reviews of the platter upgrades, glass is derided as a platter material, there is no comment regarding its suitability in the review of the Rega P3 in the November issue. So is it really something I consider?

Regarding resonance, I recently purchased and am very happy with a Naim Uniti. However, contrary to the "World Awards" review in the January 2010 edition, the "compact non-resonant" case rings like a bell when lightly tapped! I queried this with Naim and they replied that they hadn't had any complaints regarding sound degradation and that, though counter intuitive, they believed that adding damping material may lead to slight sound degradation. I found that simply laying the weighty Uniti remote on top of the case damped it quite effectively, but I can't say it made any significant improvement in the sound.

Finally, buying the Uniti meant that



Waterfall glass loudspeakers look lovely and sound it too, but their glass cabinets ring, adding 'nice' colouration.

their potential to ring, got me thinking in this direction, especially when I tapped the platter and heard the ring for myself. However, with the Origin Live platter matt fitted, a record placed and my Michell record clamp firmly in place, the whole assembly seems to be "dead"!

I also needed to get a phono preamp. I had a good look around and before the Uniti arrived decided to kick off on a low budget and bought the Genera kit from Graham Slee. Having built it I initially tried it out with my amp at the time, a Unison Unico with its inbuilt pre amp. From the outset the improvement

was amazing. The Genera was quieter, had a more controlled bass, and made a much better job of staging with instruments and singers easily picked out. The kit is well presented with clear instructions and there are about 24 pages of design notes and comments on the Graham Slee web site.

Denis Holliday

Reviewing the Waterfall Evo glass loudspeakers demonstrated yet again that coloration isn't always 'bad'. They were coloured alright – our decay spectrum measurements clearly showed this – but they had a lovely airy, clear and bright demeanour and great stereo imaging. In this case I could clearly understand why any listener would prefer them over something more 'dead' – but uncoloured of course. But it is artifice and truly uncoloured reproduction, as delivered by open panel loudspeakers for example, is the way to go.

I am not a fan of the clanky nature of Naim casework, but it has the merit of being non-magnetic aluminium, which affects the sound less than steel. The best chassis are

dissipating them slowly, smearing the sound criminally. Naim's philosophy is that its casing is light and doesn't store energy, even if it does vibrate ever so slightly. This should give a tighter, faster sound – and so it goes.

Cabinet damping is a fascinating topic – line your hi-fi with Sorbothane and often the tonal balance is changed, being deeper, darker and smoother, but sometimes it can slow the attack transients, making for a more leaden sound. This can actually improve some systems, but deaden others – it's a case of sucking it and seeing. What we can be sure about is that isolating your hi-fi from ground-borne vibrations is always a good thing – some Sorbothane under your hi-fi's feet works every time for me. Glass is not ideal as a platter material, but the combination of glass and another damping material can work better than you'd think – hence the improvement in sound with your OL mat. Basically you want to get your platter into a state where it doesn't go "daaaankkkk" when you flick it with your forefinger. It needs to give a dull "dump"-type sound. **DP**



What amplifier should I use to drive my new Martin Logan Electromotion loudspeakers, asks Owen Arndt

made of copper, but it is a very soft metal that deforms easily. **NK**

Hi Dennis – believe me, the Uniti's casing is "non resonant" compared to many pressed steel cases that I encounter on a monthly basis, which act like a sort of mechanical capacitor, storing vibrations and

SMOOTH MOTION

I bought a set of Martin Logan Electromotion speakers about one month ago and I was glad to see that your review of them in the October edition of Hi-Fi World aligned with what I thought of the speakers.

In your review you state the Electromotion can sound bright and

grubby if given half a chance with an unsympathetic choice of amplifier or source component. I am soon to purchase an amplifier and would appreciate any advice on what to buy to avoid building a bright and grubby system. My system so far is as follows: PC, M2 Tech Young DAC, Van Den Hul The First Ultimate Interconnects, Electromotion speakers.

I would like an amplifier that does not roll off the top end, has taut bass, yet is sweet, smooth and not bright. I was considering one of the following integrateds: the Pathos Classic One, Creek Destiny II, Electrocompaniet PI-2, Aaron XX. Please advise whether you consider any of the above amplifiers to be a sympathetic choice for the Electromotions. If not, please advise me of amplifiers that you would consider suitable for this purpose.

I also need to buy speaker cables. I would appreciate any advice you have on speaker cables that deliver a similar sound signature (sweet, smooth and not bright). Thank you for your consideration of my request.

**Owen Arndt
Australia**

Hi Owen. The 'grubby' bit was Alvin's description of bass / lower midrange quality from its dynamic bass unit, using an amplifier unable to keep a grip. Of the amplifiers you list the Electrocompaniet PI-2 best suits your needs and tastes as it is crisp, clean and able to maintain good bass control.

I suggest you listen to Van Den Hul cables since you have their interconnects and I assume you are happy with them. You do not mention price but their Magnum Hybrid is a suggestion as a starting point. **NK**

BLU-RAY BLUES

I bought the Cambridge 650BD Blu-ray multiformat player due to your recommendation. I like it very much, but still my combo of Pioneer PD-S06 and a 'lampzised' DAC plays CDs way better (with tube output). I discovered that I could connect the 650BD to the DAC with a coax cable with very good sound if I play Blu-ray audio only discs. Due to copyright protection, playing SACD discs with this combo is impossible, which is very unfortunate. However, switching between tracks on the Blu-ray discs resulted in some nasty and loud cracks. Could you suggest a possible solution to this problem? Thanks beforehand!

best regards
**Jan Ove Tangen
Norway**

Hi Jan. You cannot output DSD code from the digital audio SPDIF output

but you can play the stereo layer of an SACD by selecting it in the player's menu. You get standard CD digital, or 16bit PCM at 44.1kHz sampling rate. The 650BD has a very low jitter output so quality should be every bit as good as your Pioneer, but make sure you use a decent digital interlink cable. I use a 650BD and do not suffer 'cracks' when changing tracks. **NK**

Cambridge Audio say -

We have never experienced 'cracks' or other noises when changing tracks using the 650BD's digital output. Nor have we had any similar experiences reported to us.

Without carrying out some tests, it is difficult to say whether this issue is caused by the 650BD or by the DAC itself unlocking/re-locking when a track is changed. If possible, it would be worth checking whether this happens on any Blu-ray audio disc, on both (optical and coaxial) digital outputs and also if this happens with a different DAC. Your dealer may be best placed to assist you with this as they will have different equipment in store to test this with.

CABLE CRITIC

I notice that the editor, and the various contributors, are careful to say cables can make a difference rather than an improvement. Of course they make a difference, I have heard it myself, even though I was a strong non-believer. The reason is simple – a cable is a passive device, it cannot amplify anything. But it can attenuate an audio-frequency signal. Thus a cable may, for example, remove the excessive brightness from a system, as some of your reviews have stated. That does not make the cable in any way good, it is simply offsetting one fault with a second fault. The best cable is the cable with the minimum attenuation at all points of the audio spectrum, and the minimum phase change.

A good starting point is to keep the cables as short as possible, obviously. Do not use a one metre cable if a 20 centimetre one will join the items together. Do not use elaborate cables they are likely to cause phase shifts. Do not use any cable where the return path is of a different construction than the live path, such cables are a logical nonsense. Thus avoid all cables that have any kind of coaxial construction.

One of your contributors, about a year ago, wrote an interesting and thought provoking article that attempted to clarify this minefield. However, he rather spoilt it with graphs showing the high impedance of 75 ohm coax cables at audio frequencies. Of course they are optimised for use at much higher frequencies. That is why they are called



Cambridge Audio 650BD gives "very good sound if I play Blu-ray audio only discs." says Jan Ove Tangen.

75 ohm cables!

Getting to the practicalities. My tests have, very much to my surprise, led me to settle on using flat telephone extension cable for all interconnects other than the very low level moving coil to phono amp cable. It gives by far the clearest and most detailed sound I have ever heard, without attenuating the bass. As I have said, as a passive device, it cannot exaggerate anything either. What's more, it costs 99 pence for 12 metres from my local 99P store! Please do not say Ah, but your system may not be good enough to take advantage of more expensive cables. I am in the happy position of having some very expensive and well regarded equipment in one room and some much cheaper, but still generally highly thought of components in another. The clarity, detail, and good bass of this very cheap cable is blindingly and instantly obvious on both.

Then we have the even more controversial subject of mains supply and mains cables. I have replaced the ring circuit to both systems with direct spurs from the consumer unit to the systems, using heavy duty cooker cable. This has resulted in a noticeable, but not large, improvement. One of my sources is a laptop. To reduce the possibility of losing data due to mains spikes I have used a Masterplug surge protecting extension lead for this, connected to the ring circuit, not the dedicated spur, as my (generally respected) amplifier manufacturer says Voltage dependent resistors and noise suppressors degrade the mains supply and the sound in their instruction books. I am more inclined to believe them, right or wrong, than the snake oil manufacturers. For reasons I do not fully understand,

the background noise level, heard as uneven hiss and rumbling noise between tracks, is reduced to inaudibility if the DACs, which are dCS Debussy in one system and Cambridge Dacmagic in the other, are connected to the Masterplug extensions powering the laptop rather than the dedicated spurs. Perhaps because the laptop and DAC becomes a unit?

However, I do have a problem with some of your cable reviews. A recent review of an 875 pound mains cable says that replacing his previous 400 pound mains cable (from the same manufacturer) with this resulted in a major reduction of hardness and mush and removal of the excessive distortion resulted in...etc. Doesn't say much for the previous 400 pound cable, or his system, does it?

Finally, a question. I have read tests, in your magazine and others, of dedicated network players, music servers and so on, ranging in price from 400 pounds to 12000. What do they actually give me, other than looking nice, that a laptop, a DAC, and a cheap NAS for backup does not?

**Mark Powell,
Southampton**

Mark. We get a stream of letters, many in print every month, from readers who change cables and find they do make an appreciable difference and for most it is an improvement. Trying to suggest they are all deluded is difficult to justify. We also hear clear cable differences and better cables do invariably give better results.

Die hard cable sceptics often use your reductionist logic based on the usual simple lumped parameter



The advanced dCS Debussy with its unique Ring Dac benefits from a clean digital source, provided by a good server.

electrical model for cables, but as I point out repeatedly, this fails to include influences not in the simple model, such as external interference, possible rectification at diodic junctions and what have you. And the fact that we barely understand how power can be transmitted in a field that lies outside the conductor suggests there is perhaps more to cables than the simple passive model you quote. Look at the references quoted by Matt Rowland in our March 2011 issue, p36, which you can also find in the Letters section of our website. They illustrate that this subject has some depth.

I have heard endless demos of cable differences, Chord running an interesting and convincing demo at shows using headphones. A short time ago at one of these demos I listened to three cables, budget, mid-priced and expensive and heard three different presentations, the mid-priced cable being my favourite for specific reasons. Another listener who had just done the same thing agreed with my views when I discussed them with Chord, suggesting there are differences and they are tangible, not illusory.

As an engineer I understand where you are coming from with your view that construction should be physically symmetric, but then you have not taken into account any need for screening so your logic is



The Chord Co set up an interesting demo at shows, using headphones to hear cable differences.

neither comprehensive nor infallible I'd suggest. Perhaps there are other variables at work too, that none of us understand. As Donald Rumsfeld famously noted: "there are known unknowns and unknown unknowns". Mechanisms that influence cable sound quality I believe fall into the latter category.

What expensive, custom server systems give you is a cleaner digital environment, suffering less noise



Music servers like the Aurender S10 reviewed in this issue provide cleaner digital than CD players, our tests show.

and interference, with improved clocking to reduce jitter. And you get dedicated audio functionality as well. Item Audio expand on this for you below. **NK**

On digital servers, **Item Audio** say – CD transports perform variably according to the quality and implementation of their clock, calibre of power supply, vibration control and handling of EM/RF 'contaminants'. The net effect manifests in various forms of jitter and rail noise injected into the mains and conductively carried from the transport to the susceptible DAC and amplifier. Swapping a PC for a CD spinner doesn't change anything at all about the design goals of the transport.

In some ways, a computer

its own sophistication: a computer operating system inevitably squanders a percentage of its processor resource in activity unrelated to audio. It's smart enough to know many excellent ways to screw things up (hidden filtering, driver interference, volume dithering, etc).

It's complexity counts against it when we examine the board design: extremely low-rent, mass produced, densely multi-layer components with Byzantine grounding schemes and high-interference switching creating complex noise harmonics right on the board. Furthermore, the primary power supply is usually (by audio standards) a shoddy piece of work that wouldn't be given house room by an amplifier designer. Much of this noise will inevitably end up where you least want it because of necessarily imperfect isolation.

Although the disc spinner is a headache, electrically-speaking, the 3.5" hard drive is no angel, creating powerful EM fields and sucking up to two amps during playback. In many ways, the simplicity and purpose-designed nature of the CD transport is superior to a standard PC, as many have learned in audition.

It's easy to see by examining the innards of a Naim, Linn, Yamaha, Bryston or Aurender 'server' that it's not at all straightforward to deliver a truly clean digital signal to a DAC: it requires costly and very well behaved power supplies and extremely tight regulation of the clock's environment. Taming rail noise and resultant, or independently generated, timing errors and jitter is a non-trivial matter, and is clearly audible and measurable.

It's interesting to note from the consensus of professional reviews that no matter how expensive or sophisticated the DAC, and how voluble and persuasive are the theoretical promises of the manufacturer, the transport almost always makes its presence felt in audition. Although 'bits are bits', everything about the local playback

transport is inherently better suited to this task: it has a greater processing resource to dedicate to handling the PCM stream. It sidesteps all the difficulties inherent in clanky optical media mechanisms. It offers clock slaving asynchronous transfer options that, at first glance, appear to make the transport irrelevant. It's file format, sample-rate and bit-depth are agnostic by design. ✓

However, it's also handicapped by

letters On-Line!

You can now read our Letters on-line, from the last issue back to March 2010. That's a treasure trove of information and advice to our readers, as well as a fascinating catalogue of reader's systems and views. There's mountains of buying information, all just a click away on your computer or i-Pad. Have fun!



Just go to www.hi-fiworld.co.uk and click on Letters in the left hand menu list, under the FEATURES category. This will take you to the individual months of issue. To see the full list set the 'Display' drop-down list to 'All'.

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Your experts are -
 OP David Price, editor; NIK Noel Keywood, publisher; PR Paul Rigby, reviewer; TB Tony Bolton, reviewer; RT Rafael Todes, reviewer (Allegri String Quartet); AS Adam Smith, reviewer; DC Dave Cawley, Sound HI-FI, World Design, etc.

...or the reply pane at the bottom of the page. Replies will go on-line and in the magazine if suitable.

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environment will impact on the DAC. Despite buffering and relocking, in practice, we never entirely escape the maxim 'Garbage In, Garbage Out'.

Mark Welsh, Item Audio

CIF

I was reading a recent copy of Hi-Fi World and one of your contributors was bemoaning the loss of CIF Bathroom with Bleach.

Obviously this has had an adverse impact on his skip diving escapades. I'm cut from similar cloth, having furnished myself with a range items from the civic amenities site behind Battersea power station, a Thorens TD150 turntable and a BBC model B, both strong products in their field when I was a lad. I have a tip to allow him to continue his restorative practices; it may even take his mind off the CIF loss.

Many '70s '80s and early '90s electrical items included buttons, switches and areas of casework made from cream plastic which after many years yellows.

Now this chemical isn't the magic bullet called CIF for full case cleaning when it comes to hi and medium fi, however it can be put to good use on his previously cleaned finds that are now let down by discoloured knobs and trim.

<http://retrObright.wikispaces.com/>

It's a bit dangerous, but that just adds to the joy when the item looks new and



CIF with bleach was Adam Smith's favourite cleaning agent. David Grey removes discolouration with Retrobright.

nobody you know keeled over due to the noxious fumes.

I can assure you it works on all manner of items made from ABS plastic of the whitey, creamy variety that, due to middle age, now have the appearance of an item once owned by a lover of Capstan Full Strength. This find may help to improve his general malaise

The plastic in general was used on some of the more medium fi, multi purpose Music Centre, or indeed High Street tape-based items rather than hi or indeed high end. RetroBright is at least something to cling to until inspiration strikes in regards to wood and aluminium fascias.

Kind Regards

**David Gray
Twickenham, UK**

Hmmm... CIF with Bleach is basically a mild abrasive scouring agent. Jewellers Rouge is another abrasive, as is Brasso and products like it.

Hydrogen Peroxide, the basis of Retrobright it seems, is an oxidant and so different in its effect. Looks interesting but is, as you say, dangerous – so readers beware. Wasn't hydrogen peroxide used as an oxidant in early rocket motors? I suspect it is a fire / explosion hazard, rather than just noxious. Definitely one for the garden shed! **NK**

A PHYSICAL EXPERIENCE

I am broadly in sympathy with David's views on the attachment to physical software. The download generation may well not miss something they never experienced, but this points to a significant aspect of music consumption today.

Loosely put, quantity rather than quality characterizes the music collections of younger listeners. Limitless choice, but lightweight involvement. I realize that I am generalising, but the experience of wanting and waiting for the latest single, or album, or fresh interpretation of a classical masterpiece, or browsing in a record store, or waiting for a mail order to arrive means that you are investing a deeper level of interest and commitment in the music. The new disc will probably be played exhaustively for many weeks, then be rested and brought out later for re-assessment, or just for old time's sake. The album notes and artwork will have been absorbed, and the whole experience becomes a part of your make up. Taking time to appreciate performances one at a time produces a deeper level of satisfaction. While skating around iTunes or Spotify has its charms (I use Spotify to identify outstanding albums, which I then buy and enjoy



"Many iPods are crammed with tracks that are never listened to" says Dave Clewlow.

at higher quality) and today's listeners do have access to the widest range of music, many iPods are crammed with tracks that are never listened to, or given 10 seconds before being discarded. Who has time for "10,000 songs"? Recorded music today is all pervasive and is more heard than listened to, which devalues it, which has resulted in a flood of free and cheap music.

The food world has championed slow food - we should be calling for slow music!

Dave Clewlow

PULSE PROBLEMS

I have been helping out a vinyl lover with cables etc, and have come up with a little snag. He bought and fitted a Jelco arm. The arm was secondhand and came with a different arm cable, rather cheap by the look of it and not the pink original as supplied by Jelco. With the Grado Prestige Gold there was a slight pulse type interference, but only after a high setting on the Primare A30 amplifier he's using, together with the Lehmann cube RIAA stage.

However, he's just fitted a moving coil cartridge and with the extra gain, at about two thirds setting on the volume control this pulsing is more prominent. I have established that the problem is not mains borne, but suspect that as he lives up near Muswell Hill and on the top floor of a flat, he is getting radio type interference because moving the arm cable nearer to other cables increases or lessens the pulse intensity; of course all the various earthing options have been tried without success, so suspicion is on the cheapo arm cable.

Can you suggest a good quality cable that is reasonably inexpensive, as cost does not always mean good sound.? The Jelco original is around £85 but can be gotten cheaper probably, but

I'm thinking someone is probably selling an excellent cable with good reports somewhat cheaper.

The cable has the 5pin mini-DIN fitting into the arm and moulded phono on other end. I have already hunted through the forums but there is not much info there, so we must come to the experts in the field of BVD and associated hardware. If you could advise we would be grateful. Also, if the matter is of interest it could go in the letters page of mag.

Update on this interference problem. Got the chap to wrap aluminium foil around arm cabling and earth it to earth stud on RIAA stage: problem almost eliminated. Seems the arm cable needs better screening and is also sensitive to re-radiation from other nearby audio cables, so placing the newly screened arm cable as far away from other cables clears the problem up. So a new arm cable is going to be required.

Have spoken to the BBC and it seems the Alexandra Palace transmitter nearby is still transmitting and is the likely cause of the interference. I have asked the BBC to confirm the half second pulses are to do with the 60kHz clock update signals, but they need to get back to me on this one as too late for engineering staff to comment. The guy in question is looking to possibly buy the Jelco cable, but I have asked him to hold fire pending any advice from your good selves as to possibly better cable for arms....

Many thanks

Vince Hawtin

If it is radio pickup, as seems likely, then there are some standard fixes that people in the Crystal Palace area are well be aware of, as that is a real hot spot for radio breakthrough.

The problem always occurs within phono stages, but not for the reason one might imagine. Firstly, radio pickup usually takes place in the loudspeaker leads. You can check this by disconnecting them. The path through to the phono input is thought to be the amplifier's feedback loop, but it may be through other paths because even earths have impedance at radio and TV frequencies.

As your phono stage is external, radio or TV pickup may be direct into it, with rectification taking place in the first transistor junction. A common fix is to solder a small value capacitor of 100pF or so (the lowest value that works is best) across the base-emitter junction to cure this. This is a cure you will be forced to consider if a better screened lead does not help.

I suggest you contact an arm

specialist like Dave Cawley at Sound Hi-Fi about suitable cabling. See his view below. **NK**

The red Jelco lead is in fact wired using Mogami Neglex cable and I often use it on my SMEV because of its excellent screening. If you look hard you can find them for as little as £65 which is quite a bargain!

You will have an enormous amount of RFI where you live and properly shielded cable is going to be a must. In quiet Devon with a metre of cable plugged into my RF spectrum analyser, you can see at least a dozen signals over 10mV. With a poorly shielded cable these will both mix and demodulate in your phono stage producing the effect that you noticed, and often worse.

Wrapping the cable in tin foil is a part way measure and shows the problem to be RFI ingress into the cable you are using. Most moving coil phono stages are in fact loaded with 1,000pF and you might assume this would remove the interference, but with varying levels of earth tracks and the RFI generally getting inside the amplifier and hence being sprayed around, the only certain option is to stop the interference getting inside in the first place.

As an aside, I have tested very expensive arm cables that are not properly screened; maybe the designers thought the almost inaudible intermodulation added to the sound? Your solution is to buy a proper cable and then some more vinyl.

Dave Cawley



Alexandra Palace transmitter in North London is producing pulse interference in a sensitive phono stage, says Vince Hawtin.

laptop a revelation. When I picked up my October copy of Hi Fi World must admit to feeling a bit disappointed to see the Dacmagic was not included in your DAC Supertest. The Dacmagic appears in your standards section so I presumed it would be a great budget Dac to start the Supertest with. I would of really liked to read the opinion of the Hi-Fi World experts on the super little

MOGAMI The Cable of the PROS™

INSTRUMENT MICROPHONE ACCESSORY PATCH RECORDING INTER

Neglex Quad Microphone Cables

Mogami Neglex quad cable is perfect cable for home studios suffering from wiring and grounding problems. Mogami 2534 should also be used where intense RFI interference is a problem. Mogami 2534 provides an improvement in signal to noise of 10-20db over equivalent twisted pair cables. Double conductors quad cables are more effective in canceling noise that can get past even the best of shields and is critical in an environment of high RF and EMI interference.

- Conductor insulation is XLPE (Cross-Linked Polyethylene) which has excellent electrical characteristics and prevents shrink-back during soldering.
- Served (spiral) Bare Copper Shield is superior to foil or braided shields for sound quality and simplifies termination.

MOGAMI JAPAN

Dave Cawley of Sound Hi-Fi recommends Mogami Neglex arm cable for its effective screening.

ITS MAGIC

My system consists of an original Rega Planar 3, a Marantz PM6003 amp and matching CD6003 CD player completed with a pair of Wharfedale 10.1 speakers. I have also purchased a Cambridge Audio Dacmagic which makes the sound coming from my old

Dac, why was it left out ?

To finish my letter off I would like your opinion on using the Dacmagic as the digital source for my CD6003. Would this be a good idea and would it show an improvement to the current sound quality I get from the CD6003 at the moment. I would be looking to

upgrade my CD player in the future but if the Dacmagic would do the job I could use my budget on something else. Once again thanks for the great read every month.

Pete Wood

Hi Pete. Can you not just connect up the Dacmagic to your CD6003 CD player and listen to see whether it is an improvement? My guess is that you will not find it so. Although the Dacmagic measures very well and is a typically tightly engineered and a squeaky clean digital device, you will find it has a lighter balance than the Marantz convertor. You may or may not like the difference; I would hesitate to declare it "better".

There was no hidden reason for not including it in the Supertest. We had already reviewed this little device, favourably, and wanted to give space to other products clamouring to get into the magazine. **NK**

BOXED IN

I suspect I am one of the "silent majority" who struggle on with their systems in splendid isolation trying to achieve some kind of audio nirvana but never quite getting there. I think I now need help as blundering on is no longer an option!

Over the past twenty years or so I have slowly moved up the hi-fi ladder by improving my system in fits and starts until it has now reached the position where I am reasonably happy with it. On the good days it really sings and takes me to places where my spirit and soul are healed. On the bad days it merely sounds good. I am now stuck as to which direction to go next in terms of improving it.

My system currently consists of a Squeezebox Touch connected to a NAS storage device which holds my music as uncompressed FLAC files. All network connections are wired ethernet. To this is connected a Musical Fidelity Tri-Vista DAC receiving the coaxial SPDIF output from the Squeezebox Touch. This feeds a Music First Passive pre-amp (copper version) and a Musical Fidelity A308CR power amplifier, driving KEF Reference 205 speakers. A PS Audio Power Plant Premier re-generates the AC power for the Squeezebox Touch and DAC (but not the power amp) I use various modest starter level cables and inter-connects. Listening sessions are controlled by the iPeng controller running on an iPhone (genius!).

I am now stuck as to how significant improvements can be achieved without spending a king's ransom.

My initial thoughts were that may be the DAC was the weakest link. I duly borrowed a NAIM DAC for a 3 day



Cambridge Audio Dacmagic is a "super little DAC". Why was it left out?

trial as it has had some rave reviews and I hoped it would make a major improvement. However, this ended in disappointment as I thought it did not really provide a convincing upgrade from the Tri-Vista and in some areas I reckoned the Tri-Vista was actually better.

Has the art of the DAC really not progressed in almost 10 years? Or was (is) the Tri-Vista just an extremely good DAC and there aren't major improvements to be had just variations on presentation? I am now considering DACs such as the Antelope Gold, Weiss DAC2, Wyred4Sound DAC2 etc but as it is extremely hard and time-consuming to arrange home demos of this kind of gear, some pointers would be gratefully appreciated. Would any of these be significantly better than the Tri-Vista? Would I get better value if I got the Tri-Vista fine tuned by Musical Fidelity themselves?



Audition the Weiss DAC2 or dCS Debussy as alternatives to your Trivista DAC – but they need high quality digital sources.

Or, should I be looking at other areas of the system cables I supports and isolation, perhaps? So many options and possibilities no wonder I am confused! Perhaps I've reached the point of extreme diminishing returns and would be better off spending my money on other things?

My budget is not fixed and depends mainly on whether I consider something to represent good value for money. I find it extremely difficult to free up the time for demonstrations and often buy items un-auditioned but informed by reviews. Like most people, I am a little shy of hi-fi dealers as they will direct me towards what they stock and not necessarily what is right for me. I am looking for significant improvements not just differences in presentation. Any help and advice would be gratefully received.

Shahzad Ahmed

Hi Shahzad and thanks for your e-mail. Your Musical Fidelity Tri-Vista DAC with its miniature NuVistor output tubes is well regarded for good reason and you will not easily improve on it unless you move up to the dCS Debussy DAC operating asynchronously from a USB connected source, a considerably more expensive option costing £7500 and a slightly different arrangement that would need top quality digital sources. Do try and audition the Weiss DAC2 as well as this is another strong performer.

However, your sources really need to be looked at first I feel. Your Squeezebox and NAS drive are fine starter items and the Squeezebox is tweakable up to a point, but neither are within the realms of upcoming audio server products that, for example, rely not on spinning mechanical hard drives which are electrically noisy, but upon solid-state drives (SSD) which are quieter and have a higher read rate. We will be reviewing such products in forthcoming issues, including a Mac Mini fitted with an SSD drive and

purposed for audio.

You have to remember that everyday computer sources can use crude clock multiplier circuits that add jitter, a blight proper audio sources avoid through better clock generation and/or re-clocking. Who knows what your NAS drive is doing? It may well be the weakest link in

toning down, so decided not to purchase it. So, maybe an Audio Technica AT33EV may give me more detail and incision, but without grating teeth.

Option 2 would be an Inspire Vivid upgrade. I know how you rate this highly, but would it give me the treble lift I need as well as all the other benefits it has?

upgrading the Dynavector 20XL MC to either an Audio Technica AT33EV or a Benz Micro Wood. I have a suspicion that some muddle may be attributable to the stylus of your cartridge and that a factory fresh, quality modern MC design will eliminate this. **NK**

THRILLER KILLER

Regarding my letter in August about 'MP3 players' and the iPod, I was a wee bit surprised to see DP's reaction to my statement that a WAV file in an iPod could give 'thrilling reproduction'. Especially given that some other high end mags have raved over the possibilities of the iPod.

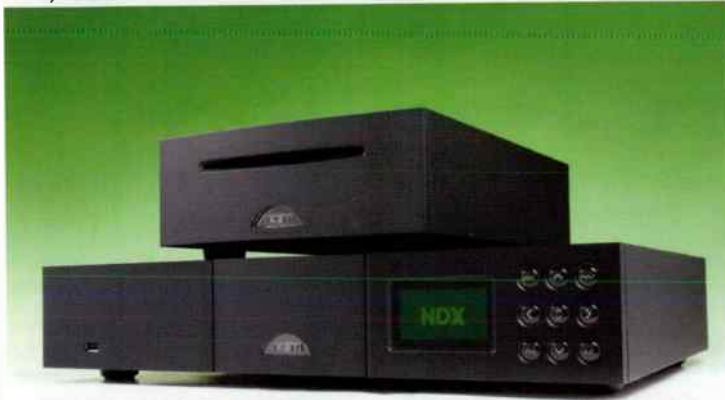
Let us put this in perspective. There are many friends who listen in passing to horrid MP3 files on their players, and for me, moving between two places, as we are not always living at home for work reasons, it is a wonderful thing to be able to carry a good number of my favourite recordings in an iPod as WAV files. It's all relative in a way.

Another perspective is simply historic. I began enjoying music at age 11 on a windup gramophone with 78s. Since then I have had a Trio/Pioneer PL12/Wharfedale system, an all Acoustic Research (with AR7s then the fabulous Gale 401s), then early Linn systems, and now have a Rotel CD and amp and Rega 3 speakers in our working home, and in Switzerland the 'full' Brinkmann Bardo turntable, Naim 102/180 amps and CD5X CD deck with Sonus Faber Cremonas with 'Signal' cables from America. Some CDs tend to travel between systems, but by and large the travelling music is on an iPod.

So I have listened to music on many different systems in my time, as well as at friends' houses. I also enjoy listening to music in our 11 year old Passat on what is by now a fairly beaten up system. So to say that I greatly enjoy listening on flights or in bed at night to my iPod and Sennheisers is not really a stretch. In fact I find that different aspects of any recording will be presented by different systems, and, as I will never be able to afford a Continuum Audio Labs turntable or top end equipment in general, there are no 'absolutes' involved here. I love going to concerts of the Beirut Philharmonic where we work, though, and live music is another thing again.

My hobby is listening to music, not collecting equipment, however much I enjoy reading about new and old gear in your excellent pages.

Following DP's remarks I did dig out my old faithful Sony DC6 Walkman, and it's true that the reproduction from that through the Sennheisers was amazing, especially given that my tapes were recorded many years ago from a Linn



Naim NDX network player and Unitiserve NAS drive deliver high quality digital from a variety of sources.

your set up.

An obvious choice to replace both Squeezebox and NAS drive would be Naim's NDX network player and Unitiserve NAS drive with CD ripping mechanism, reviewed in our October 2011 edition.

Your system is fine and is, I suspect, held back more by source limitations than anything else. **NK**

CUT THE MUDDLE

I am trying to sort out the vinyl side of my system. I am happy with the CD replay but am stuck as to which move would benefit me, and I only have the finances for one major improvement. The system is: Linn LP12, Heed Orbit 2 P/S, Origin Live OLI arm, Dynavector 20 XL MC, Noteworthy Audio MC Step-up (their entry model), an older style Croft valve preamp (cannot see any indication of model) using MM Input. Most of my listening is through a Musical Fidelity X-Can 3 head amp, and Sennheiser HD 545 Reference headphones. Powercables are all Supra Lo-rad, Supra mains conditioner, and Linn silver interconnects.

I've tried various cables to alter the sound and although all sounding different, there is not really an improvement. As you've probably guessed the sound, whilst warm, is lacking in treble detail and mostly sounds flat and muddled. I've borrowed various solid state phono stages, inc Naim, Dynavector, Whest but they harden the sound, and I return to my warm valve muddled set up again.

I was thinking maybe a cartridge change would help; last year I tried a Benz Micro Glider hi output. Whilst it transformed detail, the treble lift was too much, and I didn't want to chance it not

Option 3 is to possibly try an ANT Audio Kora 3T LTD stage. As you know, trying different cartridges isn't easy nowadays, especially as they need running in-time, so your advice would be very much appreciated.

Yours faithfully

Mick Hender.

If the solid-state phono stages you tried eliminated the muddle then it's most likely coming from the Croft MM phono stage.

The hardening of the sound is to be expected with transistor phono stages and once attuned to tubes changing back to transistors isn't so easy, as you find. This being the case I suggest you consider bypassing the Croft MM phono stage with an Icon Audio PS1 or PS3, according to your budget. This will give you a one-box solution that is new, tried and tested as it were, so you know what you are working with.

After that you should think about



Use a carefully engineered and acclaimed valve phono stage like the Icon Audio PS1 to eliminate muddle.

Sondek Valhalla with Akito and an AT OC9 that was already worn.

But for travelling folks an iPod 'collection' of discs is very useful and frankly the sound is not that bad at all. I do agree that the later iPods do not sound as good as my earlier 2006 one, though.

And so to asking for advice. Given my current system, I would like, in the next few years, with retirement, to upgrade to a 'final' system, and have been considering the Brinkmann amplifiers also Burmester top line amps and CD decks, as I like the German engineering of the Brinkmann turntable. The only problem with the Burmester CD decks is the top loading, which I think does not have enough space in my racking.

What advice would you give? I think a very 'truthful' amp and CD deck are called for as the Cremonas are quite 'romantic' in nature and I will never change them, as I love the sound they make. Budget would be generous but not 'ultra top end'. Any suggestions?

Thanks for your help and an excellent magazine,
Kingsley Flint
Switzerland

David just does not like the output stages of the iPod and feels WAV files cannot rescue a poor player, at least fidelity wise. As he is an analogue Walkman fan, as I once was, I



For a big, grippy sound that suits Sonus Faber Cremonas, audition one of Electrocompaniet's Nemo amplifiers.

understand where he is coming from here. It is a bit like hearing DAB and deciding no, this is just a step too far backwards.

As good as the iPod and its associated Apple food chain is, it was never meant to be real hi-fi.

Since you are already using a very good Naim front end to drive your Cremonas, and since you want to keep the latter, there isn't so much wiggle room here! An obvious candidate for amplification



Sony DC6 Walkman had better sound than an iPod.

is one of Musical Fidelity's AMS Class A series of amplifiers, since they offer the sort of presentation you are after. These will grip and slightly de-romanticise the Cremonas, whilst also delivering intense detailing without an overly bright sheen spoiling things. You do not mention budget but the AMS-50 we choose to use costs £9000. Alternatively, consider Electrocompaniet's Nemo power amplifiers that also have the sort of measured air you are after. **NK**

BOOM

I'm generally very happy with my present system and – like owning a house – I could never begin to afford it again in one go. The occasional problem is one of the

dedicated stands firing the length of the room.

The Rega sits on a Mana Acoustics sound frame on top of the rack, as room layout prohibits the use of a wall shelf. I've obviously experimented with speaker positions (as you do) and the compromise between good sound and domestic acceptability of a largish speaker is about 35cm from the wall. I love the Crofts, the best amplification I've owned and the dealer allowed a lengthy home audition and great support before purchase.

Other sources are Quad FM4, Orelle CD 480 and Nakamichi DR8. All sound pretty good, though good vinyl is still best and the Quad needs a quite a bit of gain to go loud.

I'm aware that the room size may not exploit the full potential of the sensitive and musical Audionotes and suspect that the isolation and position of the Rega P7 could be a contributing factor and a suspended deck such as a Gyrodec SE may have the edge in this department?

Is it also acceptable to use foam bungs on occasions in the speaker bass ports for the more bass heavy material? Musical tastes are pop, rock, folk jazz, and classical but techno and thrash metal generally absent.

Your advice and expertise would be greatly valued.

Regards

Mark Armitage
Exeter,
Devon

bass sometimes overpowering the music slightly on certain material, mainly rock, particularly with vinyl replay. I do like deep bass when it's there in a recording but not a boom which can mask detail and musicality.

My system is Rega P7 turntable, with Dynavector DV 20X high output version cartridge, Croft Micro 25 Pre and Series 7 power amp and Audionote AN-Es. Room is about 19 by 14 feet max, with the system on a Atacama Rack in a small bay widow and the Audionotes on sand filled

Your room's largest dimension of 19ft puts its main mode at around 30Hz, which is low and not responsible for bass boom. I suspect your AN-Es are a bit lively and this is the source of the boom. I suggest you use foam bungs, as this is what they combat.

Also, place your Rega on a stable platform close to the floor so it cannot rock, as this may well help. If it does, then you know turntable location is also a contributing factor and needs improvement. I hope this helps. **NK**



OYAIDE AZ-910 INTERCONNECT £857.87/1M

Little known by many enthusiasts, Japanese outfit Oyaide is a long-established company that opened its doors back in 1952. Specialising in cables, power plugs and connectors, this expensive new interconnect is based on a silver core while the connector also has a pure silver centre pin plus a triple layered hybrid shielding which prevents external, wide-band distortion getting in to the cable, it is claimed. It is immaculately

finished, as befits its hefty price.

I was expecting a rather bright sounding cable, given its use of a silver core, but in fact it surprised me with a generally smooth sound, yet with dizzying amounts of detail and insight. Strident female vocals could occasionally be infused with a touch of hardness, but this was as much about the recording itself as the cabling. What really struck me was the tremendous amount of air and space; there's a lightness and delicacy that surprises and impresses. Upper

mid frequencies benefitted from a extra sense of focus which enhanced detail. For example, a strummed acoustic guitar sounded more like a collection of individual strings than a wash of sound.

Playing some Blue Note jazz in the shape of Tina Brooks and compared to my Avid SCT reference cables, the Oyaide had a more clinical approach. It was by no means brightly lit, but it did give a 'cut glass' presentation of the track. Brass sounded more cutting and precise, cymbals had more bounce while bass played a more significant part in proceedings. The Oyaide AZ-910 certainly lifted detail up to eye level for examination, and as such, shouldn't be used within a chain that is anything less than neutral. In such a context though, it's nothing less than superb. **PR**

[Contact: +44 (0) 1332 342233,
www.blackrhodium.co.uk]

soundbites

BLACK RHODIUM CANTATA ULTRA INTERCONNECT £3,800/1M

Very probably the most expensive interconnect we have ever reviewed in *Hi-Fi World*, this is real lottery winner territory. That esoteric price tag is largely down to the material used, which is palladium wire. Sitting within the platinum group of metals, it offers superb electrical contact and can be found inside expensive watches. The jewellery industry also uses palladium to decolourise gold, to produce 'white gold'. Despite its exotic materials inside however, the Cantata looks rather unassuming on the outside – it's not as exotic an aesthetic experience as the Oyaide AZ-910 reviewed above, for example.

Because of its sky-high price tag, the most expensive interconnect I had to compare it with was Avid's superb SCT – which is a third of the price at a paltry £1,200 per metre! I expected an improvement from the pricier Black Rhodium and was not disappointed – I heard significant extra focus on the upper mid region, with more texture and emotion. Bass was bolstered; instead of a low frequency, there was better

structure and form. Treble was both airy and crisp. Playing Skunk Anansie's 'Hedonism', Skin's vocals exhibited a richer, more sumptuous presence while guitar offered more air and a greater degree of reverb. Bass guitar had superior attack and aggression, with less 'bloom'.

Playing the rather blandly mastered 'Memories' from Barbara Streisand, and new instruments swam into view. There was an acoustic guitar here, a synthesiser there, and the Streisand voice now had greater depth and emotion. The soundstage expanded and bass

made a showstopping appearance, where before had seemingly slept throughout the entire song.

An open ended cable, the Cantata has no apparent boundaries – or certainly none that my system could signpost. Give it higher and higher resolution sound and it will exceed anyone's expectations. The only downside is that most people will simply never be able to afford it, and this is all the more apposite in days like these. **PR**

[Contact: +44 (0) 1332 342233,
www.blackrhodium.co.uk]



Dirac Ditty



XTZ of Sweden use Dirac computer based audio processing to equalise their natty new computer monitor loudspeakers. Tony Bolton likes the result.

Over the last year or so I have reviewed a couple of Swedish company, XTZ's, full sized Class A amplifiers and found them to be rather good, combining solid build with good sound, especially for the price. So I was rather interested to be asked to examine their newest product, the MH-800 DSP.

This is a compact system, based around a digital amplifier and Digital Signal Processor which feeds a pair of two-way loudspeakers. It is intended to accept signals from a computer or laptop and comes fitted with both a USB input and conventional stereo analogue sockets.

These sockets are mounted at the back of the aluminium amplifier unit, which I measured as being 168 x 153 x 50mm (w x d x h), and weighing in at a mere 750g (according to my kitchen scales). At the back are also a pair of speaker binding posts, and a pair of analogue output sockets, alongside the mains IEC input and the power switch.

The front is relatively plain, sporting just a large centrally placed volume control, headphone socket and a chromed source selector

switch. It is available in either white or black, as are the loudspeakers.

The loudspeakers are quite substantial units, made of painted MDF, with dimensions of 185 x 251 x 165mm and tipping the scales at 3.63kg. They are a two way design with a 130mm polypropylene cone bass unit mounted in an aluminium basket and firing downwards. Sound comes out of the port at the front. Behind a simple, but substantial, wire grille is a 76mm aluminium full range driver made by American based

The heart of the unit is the Class D amplifier, which produces a claimed 40 Watts, and the DSP (Dirac HD Sound) is made by a Swedish company called Dirac Research. They were founded in 2001 and have made a name for themselves supplying room correction technology and digital processing equipment to the likes of Naim, Rolls Royce, Bentley and BMW amongst others.

In this instance, although the XTZ system will work without the Dirac technology operating, the

"the whole system is sonically well enough balanced to sound credible to a critical listener such as me"

company, Tymphony, under the brand name Peerless.

The system comes with all accessories required to get it up and running, including two 1m lengths of speaker cable, mains lead and a usefully long, 3m USB lead with gold plated connectors.

sound is relatively bass light, but with quite good mid and high frequency detailing producing a strong and quite focussed central image from the speakers with a reasonable spread across the rest of the soundstage, left to right.

The Dirac programming must be

installed on your computer. This is a simple process (even for someone as computer unfriendly as myself). There are detailed instructions provided by XTZ for both Windows users (Windows XP, Vista and 7 are supported) and Mac (Intel Macs only, running OSX 10.4 or newer).

After navigating to the appropriate page on the XTZ website, an on-screen account is created using the password and user name supplied in the instruction manual, and the software is downloaded. Having installed this on my MacBook, I then accessed the Dirac Audio Processor from the Applications folder. A screen comes up with four blank boxes into which you select your choice of filters from the 10 options provided. These include settings for 'Desk', 'Punch', 'Wall', 'Flat to 40Hz', and 'Bright' amongst others, and are designed to cope with a wide variety of environments. Should you wish to change from the four selected, it is easy to delete them from the Dirac Audio Processor screen and install others, so you can experiment to obtain the sound most suited to your needs.

Having got all of this up and running I started playing my way through my iTunes library. This consists of mostly modern electronica with a few other genres thrown in for good measure, and I found the 'Punch' setting seemed to give the best results when playing the Ace Ventura album 'Rebirth'. This is psychedelic trance with the usual four beat drum backing dominating the lower frequencies and a bass line grumbling away. High hats were displayed in a fairly tightly controlled manner, avoiding splashiness. The mid-range, full of keyboard generated sounds and effects, occupied the space in front of me, having been propelled some way in front of the loudspeakers. There was a slight glossiness to the sound that did not seem inappropriate to the music.

Changing over to the BBC iPlayer I found a performance of Beethoven's Piano Sonata No. 5 in C Minor taking place on Radio 3. Again I felt that there was a bit of a sheen to the sound of the piano which was not tonally accurate. So I fiddled around with the filter settings and settled on the 'Flat to 40Hz' option. On the right of each filter box is a little arrow pointing right. Pressing this accesses controls for Gain and Delay. These can be disabled should you wish, or adjusted via a couple of mouse controlled sliders to provide subtle but noticeable changes to the sound.



Despite all of these controls I felt that there was a certain indistinct quality to the sound and suspected the supplied speaker cable of being the culprit. Since I had recently taken delivery of some Atlas Equator Mk II speaker cable (£6 per m.) I installed this and was rewarded with a vast improvement in every aspect of the sound. It was clearer, with deeper bass, a better projected mid band, and smoother and higher treble. The greater cable length also allowed me to put the speakers on stands in a bigger room and further apart.

Again, this little machine from XTZ pleasantly surprised me by rising to the occasion and providing a performance that belied both the MH-800's size and price point. If you require more bass output, then XTZ market a range of nine subwoofers starting at £160 for the XTZ 99 W 8.16 model, any of which can be plugged into the analogue output sockets.



CONCLUSION

I wish this product every success. It provides a flexible and well thought out solution to the problem of reproducing music on a budget from a computer. It will satisfy the needs of someone who wants a desk-top unit as a secondary music source, and will, I think, prove popular in the student market, where a laptop often provides the main source of

entertainment, both musical and visual.

The analogue inputs allow for any line level source to be connected. So with, perhaps, a turntable such as Pro-Ject's Debut III Phono USB (£315) or even the cheaper Essential Phono USB (£230) attached, and your computer, you would have a compact system covering most types of sound source (including CD and DVD) with TV and other entertainment coming off the internet. I would, however, budget for suitable lengths of decent quality speaker cable. The improvement in sound quality is well worth a few pounds extra investment.

Purists may object to the concept of digitally processing a signal (and I must admit that I have reservations about this) but in practice, in this instance, it is done well through the Dirac programme, and the whole system is sonically well enough balanced to sound

credible to a critical listener such as me.

Ultimately, it has performance limitations (as does everything) and I cannot see it stealing sales from the conventional hi-fi market. But what it offers, it does very well, and most importantly of all, it carries a tune, and can get the feet tapping. And at £399 in today's market, what more could you wish for?

VERDICT

Electronically equalised amp. and speakers for multimedia use that give fine results at a low price. Clever stuff.

XTZ MH-800 DSP £399.00

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In Tune

Make the most of the hi-fi you currently own. Instead of replacing it why not give it a technology boost with Fidelity Audio's specialist upgrade service, suggests Paul Rigby?

Times are tough. There is less cash floating around the economy and people are tightening their belts, debts are being paid off, holidays delayed or even cancelled while the purchase of many luxury goods is being deferred or ignored altogether. Hi-fi is suffering too with many audiophiles deciding to stick with what they've got, for the moment, until the economy picks up. This doesn't stop the search for the perfect sound, however, it just means that you may have to go about it in a different way, thinking laterally and taking a more value for money approach.

This is where the skill pool of Fidelity Audio can be an ideal solution. In fact, hard times or not, Fidelity Audio's intriguing facilities

make you think about upgrading hi-fi in a way that makes you see a hi-fi separate as not the end, but rather a new start point. DIY and hi-fi tweekers are very familiar with this philosophy of course, but mere mortals such as myself aren't up to this sort of thing. Whether it's an amplifier you want upgraded, or a phono stage, DAC, network box, tuner or cassette deck, they can oblige. "No manufacturer releases a product and then pushes it, technically, to the boundary," said Fidelity Audio boss, Brent Rowe. "It's mainly to do with price points, of course. Even a dCS DAC, which is pretty well sorted, can be improved upon."

Don't kid yourself with the belief that this sort of thing is exclusively the preserve of hobbyists and

specialist companies like Fidelity Audio though, as the manufacturers themselves have been doing it for years and charging money for the privilege, "Marantz's Ken Ishiwata is the doyen of the upgrade," confirmed Rowe. "You remember the Marantz CD63 CD player? They did a basic version, a SE and then a KI Signature – they all used the same circuitboard and mechanism. The basic 63 used cheap parts, the SE used a slightly better transformer and a few improved capacitors while the KI had an enhanced transformer and a bit of copper in the chassis. But they all sounded different. This is part of the reason that audiophiles like modifying Marantz hi-fi, because the company designs its gear really well and in such a way that later upgrades can be retrofitted, getting a bunch of models



"Fidelity Audio takes the Ishiwata philosophy and applies turbochargers to the technique..."

out of one circuit, basically."

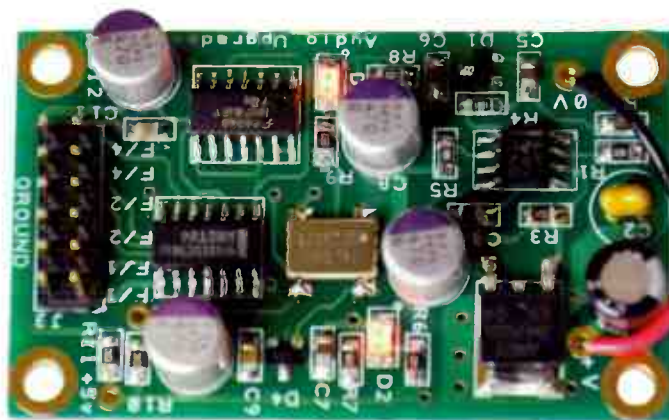
Fidelity Audio takes the Ishiwata philosophy and applies turbochargers to the technique. Check out the website and you will see options to upgrade everything from Naim and Nakamichi, Sugden to Squeezebox and Denon to dCS. How and what they upgrade is down to you, your needs, the rest of your hi-fi and how much cash you're willing to spend. The website provides neat and tidy 'levels' of increasing sophistication and prices for each product but the sky is the limit. Also, personalisation is paramount. The upgrade has to blend with your own requirements. In theory, you can upgrade your Creek Destiny CD player, say, to such an extent that it stops becoming a Creek and becomes a unique, personalised, great sounding beast. Rowe himself has proven the point with his own, personal, Marantz CD63 K1. "It was only £400 when it was new. I've spent around £2,000 on it and, similarly, have included around two thousand parts within. Now, it sonically compares to £10,000-£12,000 CD players. Although, saying that, the only original part of it is the mechanism, which I've improved with extra damping. The machine has also leapt from having three to twenty-six

power supplies."

So we decided to put the upgrade theory to the test, handing over an old Cambridge 650C Azur CD player (around £300, new) for a £410, Level 2, upgrade. An intriguing choice because, according to Rowe, "half of the player contains the same components as a Cambridge DacMagic." He adds that, "for that upgrade, we put large smoothing capacitors inside for the benefit of the main power supply to give

more balls and flow to the bass.

Cambridge has their own name on the capacitors but they're rebadged cheap versions. You can tell by the cheap metal on the top, which looks like lead. Quality 'caps' tend to be polished and shiny because they use better materials. We then change all the capacitors around the DAC chip. This allows the DAC to work more efficiently, giving you a cleaner punchy sound and more detail while the treble reflects real instruments rather



Fidelity Audio's C2 Premium low jitter clock. The clock feeds a reference signal to the DAC/Servo IC. It replaces the standard, 'jittery' crystal oscillator, allowing the IC to perform more efficiently and the audio to sound more accurate.

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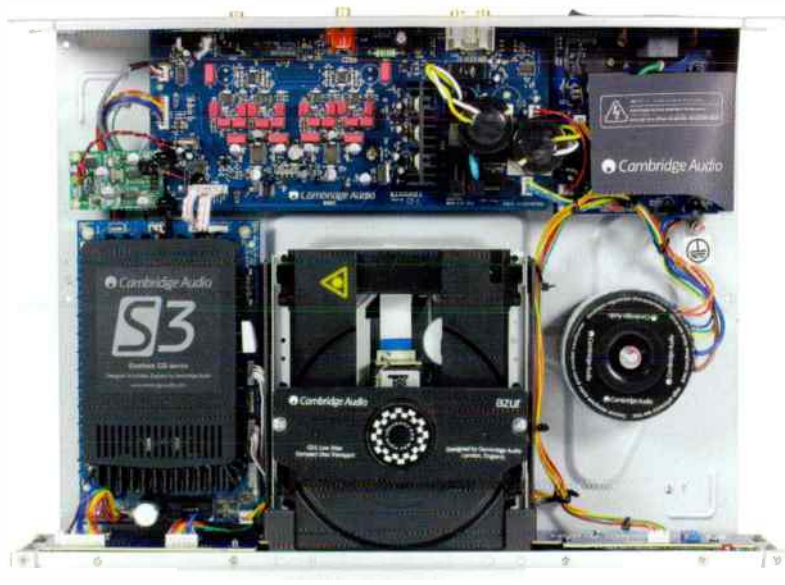
than a distorted 'tizz'. The op-amps – which the signal goes through and there are six in this machine – we change to make the machine sound more natural and linear.”

SOUND QUALITY

All well and good then, but the question is, was it worth the effort? Well, I decided to compare the Fidelity Audio-upgraded (FA) Cambridge (now, with the cost of the upgrade factored in, totalling £710) with my reference mid-price reference, the Naim CD5 (originally retailing around £1,400), in purely 'stock' factory form of course. Spinning the compressed 2002 hit single, 'Freak Like Me' by The Sugababes, and whereas the original Cambridge 650C machine was clean and crisp, albeit a touch mechanical and digital sounding, the newly fettled machine sounded more natural by comparison. Greater light and shade was revealed while upper mids offered greater tonal delicacy. For example, vocal harmonies sounded, for the first time, like a group of individual voices singing together rather than a melded lump. Against my Naim reference, the FA Cambridge 650 produced a far tighter bass, packing a punch but not overwhelming the listener. Whereas the Naim offered a bottom-heavy presentation that produced a mighty, low frequency bass fest that shook



The SPower Low-Noise Voltage Regulator replaces standard, noisy voltage regulators that transfer their noise to the circuits they are powering, affecting sound quality. Fidelity-sourced SPower units are quieter and have less influence, they say.



Cambridge put their name on major internal parts within the 650C CD player but the capacitors are rebadged cheap versions. You can tell by the cheap metal on the top, which looks like lead, say Fidelity Audio.

the room, it could sound a tad bloated – and there was no sense of this with the tweaked 650C.

Switching to jazz vocalist, Helen Merrill's 'Yesterdays' ('Jazz 'Round Midnight'; Verve), and the stock Cambridge is a clean, matter of fact machine that paints a well resolved picture of the proceedings, whereas the stock Naim seemed to bathe in a sea of bass. The FA 650C however refocused and rebalanced the track, creating spaces in-between the notes – real, tangible gaps instead of the blurs provided by the CD5. It recreated the delicate reverb surrounding the lead vocal, and the breathy pauses within the trumpet playing. That extra focus gave the track more precision and more edge, imbuing a heightened sense of rhythm.

Playing 'Song For The Generals' from the new post rock/indie EP by Monsters Build Mean Robots, and this track was much loved by the Naim CD5, with its creamy vocal and building, symphonic outro which extended for half of the track. The FA modded Cambridge however, decided to approach the music from a different direction by opening up the track for the first time in a dynamic sense. The mandolin-inflected guitar now danced onto the track

instead of plodding, those creamy vocals now held more texture and emotion while the extended outro sounded crisp, deliberate and considered. With it came a grandeur that was previously missing and a magnificence that held you fixed in your seat.

CONCLUSION

The improvement from the stock Cambridge 650C was dramatic then, the Fidelity Audio mods package taking the player not just up to the very respectable standards of the Naim CD5 but considerably beyond. I have to admit no small degree of surprise in this respect, not least considering the fairly modest outlay. Of course, approaching your hi-fi upgrade path from this direction rather than buying a completely new piece of kit does take a slight shift in one's mindset (a bit like a Roman Catholic converting to Buddhism, perhaps?), but I found that adopting this internal upgrade philosophy really is a life-changing experience, in a hi-fi context.

FIDELITY AUDIO LEVEL TWO

Upgrade Component List

- 1 x C2 Premium low jitter clock
- 2 x Fidelity Audio S1 low esr capacitors (main PSU)
- 1 x SPower +5V Low noise Regulator (DAC PSU)
- 1 x ZA / ZLG decoupling capacitor (pre 5v reg)
- 6 x LM4562NA Audiophile opamps
- 6 x Oscon SEPC decoupling capacitors (DAC digital)
- 2 x ZA / ZLG decoupling capacitors (DAC analogue)
- 1 x ZA / ZLG decoupling capacitor (DAC PSU)
- 1 x Oscon SEPC decoupling capacitor (3.3v rail)
- DC blocking bypassed

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Power Play

Old fashioned analogue or new swanky digital? Tony Bolton listens to two 60 W amplifiers that look alike but do it all very differently.

Here we have two amplifiers from respected and established manufacturers that, on paper at least, seem quite similar. Both claim 60 Watts per channel into an 8 Ohm load, and come in similarly sized boxes available in either silver, or the black of these examples. However a closer look reveals that is where any similarity ends. This is not a comparative review, price differences meaning the amps are not in direct competition with each other. What we're looking at here is how two units with similar claimed power outputs, but at different price points, do their respective jobs – that of reproducing music.

First up is the Audiolab 8200A, priced at £729.95. This is the latest incarnation of the well known 8000 model which dates back to 1983. This new model certainly has a family resemblance to its predecessor but comes with a variety of features that bring it into the 21st century.

The internals have been reworked somewhat and now include a DC Servo and hand matched J-FETS on the output stage, which are also isolated from the main power supply. The pre-amp section is totally discrete, and the input and mode

switches are operated via gold plated and bi-furcated contacts of high quality relays.

It offers good connectivity with six line level inputs and three record level outputs from the two tape and the video connections (although these are not full tape loops, so monitoring of an actual recording is not possible) and the ability to listen to one source while recording another via the separate Record and Listen controls on the front. A rotary

"I should be curled up on a rug in front of an open fire with a glass of wine and someone cute beside me to listen with"

switch on the front allows the unit to operate as either a pre-amp or a power amp, or it can be incorporated into a multi-channel A/V system. It can also be run as a conventional integrated amp as was done here. The instructions covering this are clearly laid out in the enclosed handbook. Two pairs of pre-out sockets and a power-in pair are located at the back. Headphone users will appreciate the

socket located on the front panel.

The remote control is a multifunction unit which will also control any other Audiolab equipment. It proved responsive, allowing small changes in volume (controlled by an Alps motorised volume control) to be made accurately.

Moving a bit further up the price scale to £1350, we come to the Densen B110 Plus. This Class D amplifier hails from Denmark

and is the entry level model in the company's range. The B110 has been in production for nine years, but was upgraded to Plus format only a year ago. This model features an attenuator for the volume control, made from 0.1% Vishay metal film resistors, which operates over 200 (0.5dB) steps allowing for extremely precise setting of the level.

Again, flexibility is the order of

the day with the options of either MM (£150) or MM and MC (£225) phono stages being built in. Other options include extra circuit boards which allow for up to 7.1 surround sound usage, should you so require.

This example came in standard form, with the only extra being the 'Gizmo' remote control which costs an extra £150. Again this proved a practical device to use, with good response to the volume buttons, and also having the advantage of not needing to be aimed at the amplifier to make it work. It comes with rechargeable batteries, and like the amplifier carries Densen's 'Lifetime Guarantee' which is valid to the initial purchaser, but not transferable to second hand buys.

The fascia controls are minimalist, being a series of silver buttons to select source, volume and various options including equalising the relative volume levels from different components.



Both Audiolab (top) and Densen have plenty of inputs, but the Audiolab has provision for bi-wire loudspeaker connection.

I was surprised at the size of the sound. It seemed big and quite bold, with a very deep and floor shaking bass performance. Playing the Stravinsky piece, I found the rhythmically bowed strings near the start had a satisfying degree of attack, and the whole performance had a certain intensity which suited the music.

Moving onto Sinatra's 'Songs

and big open soundstage more suited to this style of music. The same also applied when I played a CD of Danish progressive trance group Antix and their 2003 album 'Null'. With the bass cones of my Chario loudspeakers merrily bouncing, it took very little increase in volume to provide that big, all enveloping "club" sound that suits this sort of music.

Moving over to the Densen provided a totally different take on these tracks. The Stravinsky was reproduced on a somewhat smaller scale, which did not detract from the music but caused me to listen into it rather more. This time there was less emphasis upon the lower notes and rather more focus on the midrange and higher frequencies.

Violins had a slight edge to them, which could provoke slightly uncouth sounds if this amp was used with more forward sounding speakers, such as the Piega Premium 1s which I reviewed a couple of months ago.

Again 'Le Sacre du Printemps' proved an intense ride, conjuring up images of pagan rites in a foreign and intriguing world. The soundstage was a bit more compact than the open cavern provided by the Audiolab, but I felt that there was greater stage depth in this sound, that displayed the orchestra as a combined unit, rather than distinctive groups of musicians.

This perceived sense of intimacy worked well with the Sinatra LP, leaving me with the feeling that I should be curled up on a rug in front of an open fire with a glass of wine and someone cute beside me to listen with. The timing had an easy, relaxed flow that was both subtle and beguiling, and the increased high frequency detailing provided by this amp allowed little details in Nelson Riddle's orchestral accompaniment to be examined more clearly. The downside of this being the inevitable intrusion of some surface noise from a moderately worn disc.

The Hendrix LP and Antix CD sounded detailed and quite intense in their presentation, although the latter



Audiolab 8200A boasts Alps Blue motorised volume control (right).

Although the two boxes are similarly sized, measuring 445 x 335 x 74mm (Audiolab) and 444 x 310 x 64mm (Densen), the former is made of steel whilst the latter's casework is aluminium.

Inside the BI 10, the circuit boards are made of Teflon with surface mounted components. Alongside are custom wound transformers and a power supply with 60,000µF of capacitance. There is also the option of the DNRG external power supply (£550) which takes over powering the pre-amp section, leaving the onboard PSU to deal with the power-amp section alone.

Following my usual running-in process I settled down to some comparative listening to see where spending £730 and £1500 (including remote) took me musically.

Listening to the Audiolab first,

For Swingin' Lovers' I again found the bass propelling the music along, but was slightly surprised by the lack of perceived warmth to the rendition. It sounded as though Frank couldn't really be bothered and was just going through the motions a bit. It was a somewhat subliminal feeling, but it seemed to lack the emotional intimacy that I would normally expect to hear with this LP. Interestingly, although I had felt that there was plenty of detail in the higher frequencies, I found very little surface noise being reproduced. This is a 1956 original pressing (it is easy to identify - the drawing of Frank looks away from the couple on the original cover, but was redrawn in '57 to show him looking towards them) and is in good but played condition, and usually displays a few crackles.

After this I tried a little Hendrix and found the prodigious bass output



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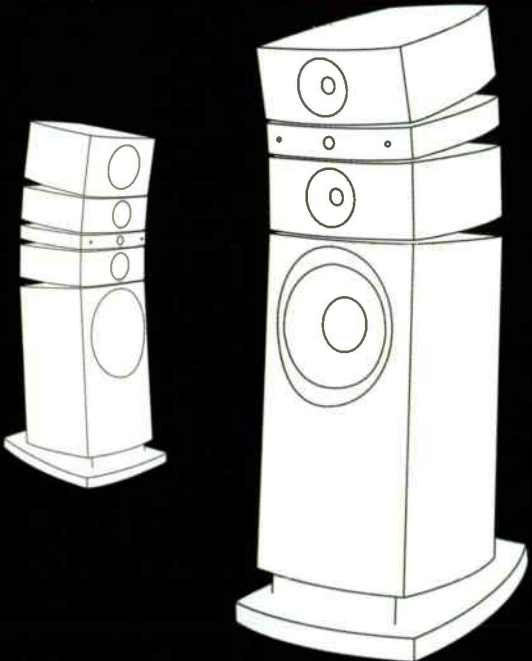
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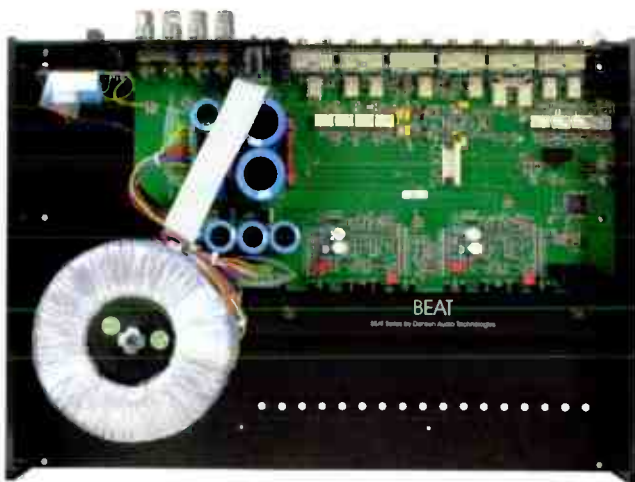
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Denon B110 Plus uses efficient Class D, so lacks large heat sinks.

certainly seemed a little constrained by the smaller soundstage and less bass driven presentation. Both were enjoyable though, and the greater intimacy of the sound again made me more aware of smaller details in the mix that the Audiolab occasionally glossed over.

CONCLUSION

Each amplifier will win friends in the marketplace. I felt that the Audiolab would suit slightly bass light systems, and could add a sensation of power and energy to rock and dance music that will please fans of these genres. It felt a little bold in its presentation of smoother, less punchy music, and would not

be my first choice for something gentle such as chamber music or folk. But then Audiolabs were always known for their big, bold sound and the 8200A continues the tradition...

With chamber music and suchlike the Denon came into its own. It proved adept and detailed with classical and displayed an excellent ability to get into the swing of rhythms, but when called upon to deal with the driving excesses of modern dance music or large

scale classical pieces seemed a little too concerned with the minutiae of detail to really provide the scale and impact needed for such music. Unlike a number of Class D amplifiers it was eminently 'listenable' and enjoyable, with little sign of digital 'screech' or hardness common with such amplifiers, although its textural richness could possibly be a Class D quality.

So here we have two radically different ways of presenting sound from two 60 Watt amplifiers. Each will have their own fans, based upon musical preference. As always, time spent auditioning will pay dividends in the final choice.

MUSIC USED:

- Columbia Symphony Orch. Condt. Igor Stravinsky 'Le Sacre du Printemps' Stravinsky
CBS Records 72054 1960
- Frank Sinatra 'Songs for Swingin' Lovers' Capitol Records LCT 6106 1956
- The Jimi Hendrix Experience 'Electric Ladyland' Polydor Records SPDLP 3 1968
- Antix 'Lull' Iboga Records IBOGA CD15 2003

VERDICT ●●●●● £

Big, powerful sound great for Rock music, but less so classical.

AUDIOLAB 8200A AMPLIFIER £729.95
www.audiolab.co.uk

- FOR**
- clean and defined sound.
 - expansive soundstage.
 - ample bass output

- AGAINST**
- can be a bit lacking in emotion.

VERDICT ●●●●●

Rhythmic and focussed, but lacking in low end drive and boogie factor.

DENSON B110 PLUS AMPLIFIER £1350.00
 Kog Audio
 ☎ +44 (0) 24 7722 0650
www.kogaudio.com

- FOR**
- good sense of rhythm
 - focussed soundstage
 - friendly musicality

- AGAINST**
- remote control costs extra

MEASURED PERFORMANCE

AUDIOLAB 8200A

The Audiolab 8200A produces 72 Watts into 8 Ohms and 121 Watts into 4 Ohms – a relatively large increase due to a beefy power supply. As loudspeakers nowadays hover around 4-6 Ohms that means a true 100 Watts is available. With good current delivery and a damping factor of 54 the 8200A is likely to have the strong bass of its predecessors.

Again like previous Audiolabs this one goes down low, frequency response reaching down to 1Hz. A sensible upper limit is 43kHz is used.

Input sensitivity was a useful 310mV, enough to accommodate most external phono stages. Distortion was also low at all frequencies and power levels, measuring just 0.013% at the critical 1Watt, 10kHz output level where crossover distortion will make itself known, but the Audiolab is linear here and relatively distortion free.

The 8200A measured well in all areas. It is very well developed and should give a smooth punchy sound like previous Audiolabs. NK

Power	72watts
Frequency response	1Hz-43kHz
Separation	89dB
Noise	-88dB
Distortion	0.013%
Sensitivity	310mV
Damping factor	54

DISTORTION



DENSON B-110

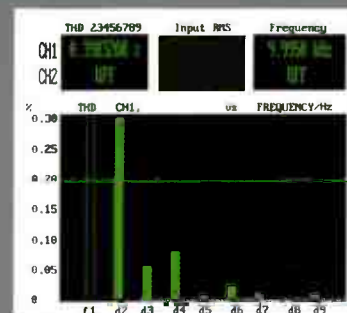
The Denon B-110 produces 78 Watts into 8 Ohms and 144 Watts into 4 Ohms - and runs cool whilst doing so, like most Class D amplifiers. A strongly varying distortion pattern with level and frequency existed and some of the values were far outside that expected from a conventional hi-fi amplifier, such as 0.4% when delivering 1 Watt into 4 Ohm load at 10kHz. Although the midband distortion figures were acceptably low the distortion pattern and the way its extended harmonic structure constantly changed did not look promising. Class D amplifiers rarely have a mild or neutral sound; brightness or hardness are qualities that can prevail. Unlike some Class Ds its frequency response is not limited, extending up to 74kHz. Damping factor measured a low 16, much

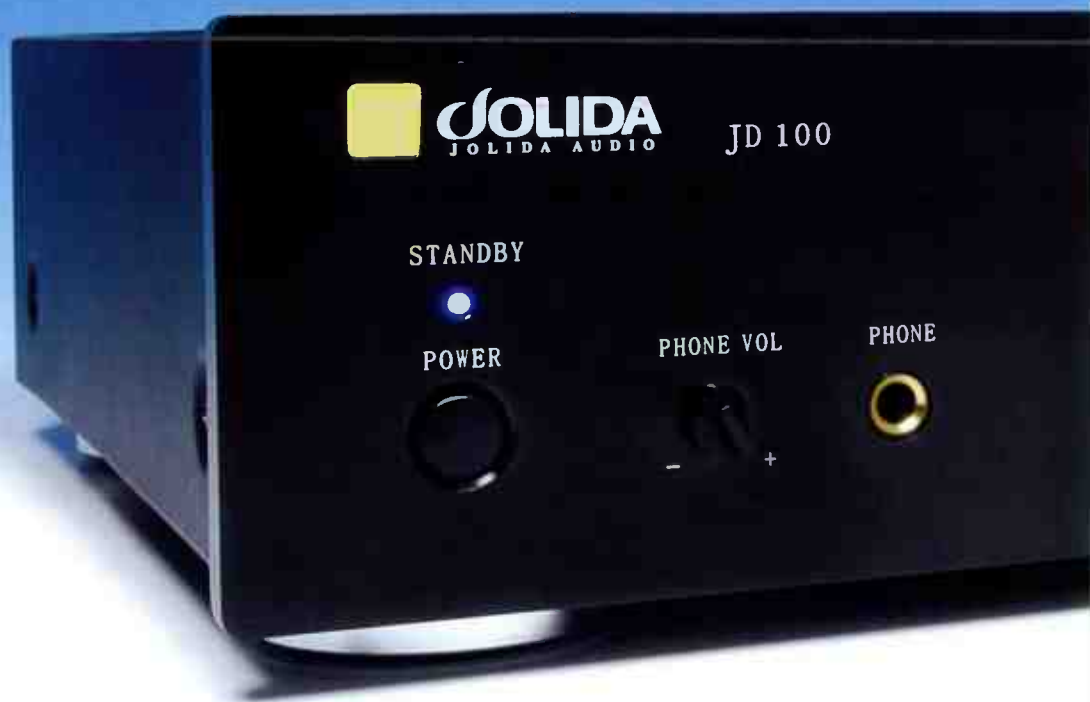
like that of Naim amplifiers, and bass may be a bit more fulsome than usual, but with plenty of slam because current delivery from the power supply is good. Sensitivity was good at 270mV but separation on the low side at 60dB.

The B-110 is a compact high power amplifier that runs cool. The poor distortion performance of Class D will likely give it a distinctive sound though. NK

Power	78watts
Frequency response	4Hz-74kHz
Separation	61dB
Noise	-94dB
Distortion	0.4%
Sensitivity	270mV
Damping factor	16

DISTORTION





Spin USA

Jolida's valve equipped U.S. CD player gets Tony Bolton involved in the music...

Based in the state of Maryland in the USA, Jolida was first incorporated in 1983 as a manufacturer of valves and other electronic components (manufacture actually taking place in China). In 1995 their first amplifier was launched at the CES in Las Vegas. In recent years the company has expanded its products to include a phonostage and the CD player under review here.

This is a well presented unit that is housed in a very solid (10kg) aluminum case which measures 425 x 300 x 87mm, and is available in the usual options of black or silver. The brushed finish carries a headphone socket and volume control alongside the power switch to the left, with the function buttons on the right of the drawer and gently lit green display. Other functions, such

as track selection, are catered for by the truly weighty remote control.

This is a 500g slab of alloy, with 24 chromed ball bearings mounted in the top panel serving as buttons. (a cross-head screwdriver is required to remove the back to insert the batteries). Despite its weight, it sits quite well in the hand, and seemed to have a reasonably wide angle of operation.

The back is unusual in having two sets of analogue outputs, both RCA phono sockets. I found an acknowledgement of this in the manual, but could find no explanation for this fitment. Otherwise the layout is conventional with a co-ax digital out and a mains IEC socket.

The inside is well laid out with shielding dividing the case into three compartments. These house, respectively, from left to right, the MOSFET headphone amp, and transport

electronics, complete with their own transformer. Another transformer and the Phillips CDM 12.1 transport itself, and finally the valve powered output stage which consists of two 12AX7 dual triodes (see box out). Their signal comes from a Burr Brown 24/96 device.

After a couple of days of burbling away to itself playing burn-in disc and classical compilations, I did most of my listening on the upstairs system, for the simple reason that I have been using a Njoe Tjoeb 4000 Reference CD player for the last eight years up there, which also boasts a valve output stage.

I started off with Ivo Janssen playing Bach. This Dutch pianist started the Void label in 1998 to release his recordings of the complete Bach piano works, a project that started in 1994. The opening piece, a Vivaldi concerto, was quite



"detailing of the performance were handled well, and I found it easy to sit back and get involved in the music."

well rendered, although I felt that the higher notes on the piano, and the harmonics surrounding, them were not totally accurate. There seemed to be a little bit of a sheen to the sound. It was not intrusive, but added a little brightness to the instrument which in some systems could be a little obvious. Apart from that I was quite impressed with the presentation. The character of the instrument, and the detailing of the performance were handled well, and I found it easy to sit back and get involved in the music.

Later on I changed musical gear somewhat and played a budget compilation of tracks by 1940s jazz great Louis Jordan. The JDI100 made it clear that this CD was not of the highest quality regarding the transfers of the music from original 78s, but it didn't make too much of a fuss about it and settled down to some swinging tunes, opening with 'Five Guys Named Mo'. The beat had a lyrical swing to it that soon had my feet tapping, something that few digital players usually manage quite as effortlessly. The bass romped along with a bit of a wiggle in its hips, and the rasp of the saxophone contrasted nicely with the clarinet and trumpet.

Again, I felt that the top edges of these instruments were well lit, and again, it did not detract from

my enjoyment of the music, and in a way, with these elderly recordings, it was sometimes a blessing, adding a little more shape and definition to the sound in areas that are often deficient in older material.

Obviously these tracks were in mono, but the sound seemed to occupy most of the space between the speakers, although there didn't seem to be much depth to the soundstage. I felt the Njoe Tjoeb had the edge here, with a stage area that had a noticeable rearward extension, although nothing like as deep as I get playing the same tracks from '50s compilations on LP.

At this point an old friend visited armed with a rough mix of his latest recordings. There were a couple that were solo voice with a guitar, so he sat down at my request and played them in front of me so we could compare the sound with that from his CD.

I was quite impressed. The Jolida did a good job in showing the colours and textures in his voice, and intonations in the guitar playing, that were, I felt very close to the live original that I was hearing. If I was being hyper critical I would say that there

was a slight tubbiness in the lower registers of his voice that was not quite representative, but this was the only point throughout my listening that I noticed this. Strangely enough, the higher frequencies seemed to be better represented in this case, although we both agreed that the guitar had a slightly livelier sound than either of us expected, with the decay of notes being clearly displayed.

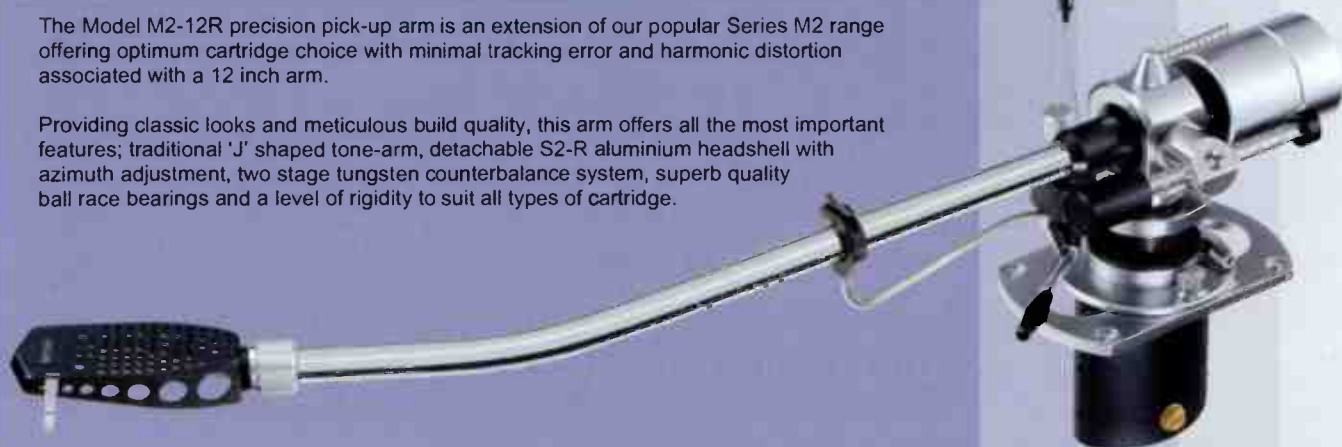
My last disc before writing this was a compilation of laid back electronica, skillfully blended with Middle Eastern instruments and beats. Again the soundstage



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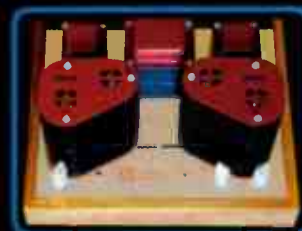
The HVA1 hybrid amplifier was created featuring an unprejudiced choice of technology; the latest semiconductor devices combined with thermionic valves. The intention was to innovate, to maintain the musicality of valves, but at the same time improve power bandwidth, hum, noise and distortion. The Amplifier is heavily engineered using hand crafted hardwood and high tech laser cut parts and finishes.

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PDF Fact Sheet Available for HVA1

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The 12AX7 was first produced by RCA engineers in Harrison, New Jersey, as a replacement for the 6SL7 dual triode for audio applications, and released on September 15th, 1947. It is essentially, two 6AV6 triodes packaged together.

The 12 in the American designation indicates it operates with a 12.6 Volt heater, however, the E in the European classification of ECC83 designates it as a 6.3 Volt heater. It will actually function on either voltage since it has a centre tapped filament.

It is popular not only in audio equipment but is used in guitar amplifiers, and is unusual in having been in constant production since its introduction.

It is made in two factories in Russia; Winged C (formerly Svetlana) and New Sensor (produced under the names of Sovtek, Electro-Harmonix, Svetlana and Tung-sol amongst others). Chinese made offerings come under the name of Shuguang, and Slovakian ones under the name JJ. Total production is estimated to be around two million units annually.

The instruction manual discusses the concept of trying alternative valves and their effect on the sound, and suggests experiments are made to fine tune the sound to your taste. A quick search of Ebay's completed listings produced a good selection of NOS Mullards, Brimars and Mazdas for between £10 and £25 each, with Telefunken making considerably more. RCAs seemed to be around £25 per pair so this need not be an expensive exercise.

SYSTEMS USED:

Leema Acoustics Tucana II amplifier/ Chario Ursa Major loudspeakers

Bent Audio TAP-X passive pre-amp/ 2 x Quad 303 amps/ Kelly KT3 loudspeakers.

MUSIC USED:

Ivo Janssen, J.S. Bach 'Transcriptions of Concertos after Vivaldi and others' Void records, 9813, 2005

Louis Jordan 'Saxa Woogie' MCPS Recordings, JAZZ CD, 009, 1995

Various artists 'Chill Arabia' El Diablo Records, EDD081CD, 2004

minor criticisms that I have of certain aspects of the tonal balance, but in truth, these are pretty minor. It has proved to be an enjoyable machine that I am pleased to have got to know.

VERDICT ●●●●

Solidly made and well presented CD player with a valve output stage.

JOLIDA JD 100A
CD PLAYER £1120.00
Aired Audio Ltd.
C +44 (0)1452 385573
www.airedaudio.com

- FOR**
- musically foot-tapping
 - wide soundstage
 - detailed imaging

- AGAINST**
- slight high frequency boost



was wide, rather than deep, but spacious enough that each sound had room to be defined in relation to its neighbour, but still remaining a cohesive part of the whole performance. Alongside the electronic effects were lutes, a guitar, sitar and flute, as well as vocals. Each was well positioned although I felt that there was less attention paid to stereo imagery than the rhythm and energy of the music.

Overall, I felt that there was a good performance from this CD player. It carried a tune well, and made it pleasant and involving to listen to.

I have found CD players seem to fall into two camps. There are those that give lots of detail, but seem to have a rather stilted approach to rhythms, being a little metronomic in

their presentation, and those, such as Naim machines, that have an incorrigible 'boogie' factor to them. The Jolida seemed to edge towards the latter camp. Fed with anything with a danceable beat and it got on with the job with a smile on its face, seeming to pump out beats with a little more joie de vivre than a lot of similarly priced models. My Njoe Tjoeb 4000 has stronger and more precise imaging, but with a little more focus on detailing of the shape of sounds. I also felt that it was a little more even over the frequency range, but seemed to be a bit less energetic, whilst still diving into the beat.

If you are in the market for a solidly built player that seems to capture the energy of music and display it in a friendly manner then give this an audition. Experimenting with different brands of valves may well ameliorate the

MEASURED PERFORMANCE

The JD100 has a valve output stage and in line with this noise, hum and distortion at peak level of 0dB were all a little up on the norm, but by little in this player. Jolida have managed to contain all these potential drawbacks so that they impact measured performance little, so although the JD100 figures are a few dB down here and there they differ less than those of many CD players with valve output stages. EIAJ Dynamic Range for example usually measures 98dB but on this player it was 96dB because of a little extra noise. As noise was still -98dB it will not be audible however.

Frequency response was unusual in exhibiting treble lift of +0.5dB above 10kHz and this will likely be noticeable as a sting to upper treble, but it will also enhance the sense of detail and speed to a degree above that of rivals because few players boost treble so much. How this will play out with valves is best assessed subjectively.

Signal related jitter was a little high at 200pS on a 1kHz, -60dB signal but random jitter low at around 8pS.

The JD100 measured well as CD players with a valve output stage gn, but it will have a bright balance. NK

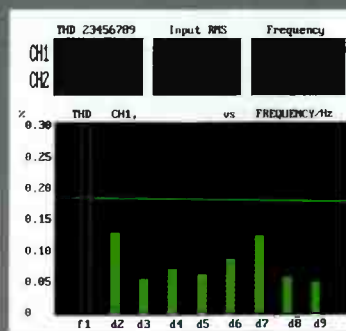
Frequency response (-1dB) 4Hz-21.3kHz
CD Distortion %

0dB	0.016
-6dB	0.008
-60dB	0.24
-80dB	2.8
Separation (1kHz)	82dB
Noise (IEC A)	-98dB
Dynamic range	96dB
Output	2.7V

FREQUENCY RESPONSE



DISTORTION





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

REGA P3-24 2008 £405
Seminal affordable audiophile deck with fine bundled tonearm. Tweakable, and really sings with optional £150 outboard power supply.

MICHELL TECNODEC 2003 £579
Superb introduction to Michell turntables - on a budget. Top quality build and elegant design mean it's still the class of the mid-price field.

FUNK FIRM VECTOR II 2009 £860
Innovative engineering gives a nimble, pacey and musical sound that's one of the best at the price.



MICHELL GYRODEC SE 2005 £1,138
Design icon with superlative build and finish. Sound is beautifully smooth, effortless and exceptionally expansive. No longer peerless at the price, but still a brilliant platform.

MARANTZ TT-15S1 2005 £1,299
Cracking all in one deck/arm/cartridge combination, this must surely be the best sounding 'plug and play' package at this price point.

ROKSAN RADIUS 5.2 2011 £1,450
Although getting expensive, the latest Radius is a highly grown up package with a flowing yet engaging nature; a fine package.



AVID DIVA II SP 2010 £2,000
New twin belt drive and power supply make this a more commanding performer, although there's a substantial price hike. Speed, dynamics and detail are hard to beat anywhere near the price.

INSPIRE ECLIPSE SEV2 I2 2010 £2,349
Finely engineered, smooth and detailed sounding deck offering valuable twelve inch tonearm compatibility.

NOTTINGHAM ANALOGUE HYPERSPACE 2010 £2,390
Deliciously spacious, lyrical and beguiling sounding turntable, but lacks ultimate grip.

MICHELL ORBE 1995 £2,500
The top Michell disc spinner remains a superbly capable all rounder with powerful, spacious sound that's delicate and beguiling.

DR FEICKERT WOODPECKER 2010 £3,445
Elegant deck with great low frequency solidity, coherent soundstaging and a precise midband.



LINN LP12SE 2010 £3,510
Surely hi-fi's most iconic turntable, the legendary Sondek goes from strength to strength. New Keel subchassis and Radikal DC motor add precision and grip to one of the world's most musical disc spinners. Expensive, though.

ACOUSTIC SIGNATURE STORM 2011 £3,612
An excellent high end design with a smooth, solid, open and lyrical sound and razor sharp styling and build.

FLETCHER AUDIO OMEGA .5 2010 £3,699
Charming high end turntable that's a fitting testament to the late Tom Fletcher.

PALMER 3 2010 £3,750
Eccentric hand built high end turntable with a pleasingly smooth, sweet and lucid sound.



E.A.T. FORTE S EVO I2 2010 £4,750
Excellent premium price turntable with power, precision and passion aplenty, but relaxed and easy going by nature too. Great value package with the Pro-ject Evo 12" arm option.

ACOUSTIC SOLID ONE 2007 £4,050
Huge turntable, both in terms of sheer mass and sonic dynamics. Fit up to three arms and enjoy, just don't damage your back moving it...

SME MODEL 10A 1995 £4,556
Exquisitely engineered deck and SMEV tonearm combo that's an extremely accomplished performer with classical music.

AVID VOLVERE SEQUEL 2007 £4,600
Stylish high end vinyl spinner with industrial strength build quality and a sound to match. Exceedingly neutral yet powerful sound is edge-of-the-seat stuff.

BRINKMANN BARDO 2010 £5,845
Unique high end direct drive turntable with amazing grip and focus, albeit not the most romantic of natures.



McINTOSH MT10 2008 £8,995
Big, expensive, controversially styled and glows more than some might consider necessary, but an astonishingly good performer.

EAT FORTE 2009 £12,500
Lavishly finished two box, two motor turntable with gorgeous Ikeda 407 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.

TONEARMS REGA RB251 2009 £136
Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counterweight modification.

MICHELL TECNOARM A 2003 £442
The late John Michell's clever reworking of the Rega theme, using blasting, drilling and rewiring! Surely the best overall performer under £500.

ORIGIN LIVE SILVER 3C 2010 £599
Excellent mid-price tonearm with a clean and open yet lyrical sound.



HADCOCK GH-242 EXPORT 2010 £770
Consummately musical, lyrical sounding tonearm, but needs the right turntable. Excellent value.

SME 309 1989 £767
Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

FUNK FIRM FXR II 2010 £1,175
Clever reworking of the ubiquitous Rega platform, the FXR II gives a wonderfully musical, almost unipivot like performance.



AUDIO ORIGAMI PU7 2007 £1,300
The classic Syrinx PU3 updated to spectacular effect. Hand made to order, with any mass, length and colour you care for. Fit, finish and sound truly impressive.

NAIM ARO 1987 £1,425
Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

HELIUS OMEGA 2008 £1,595
Stylish and solid lump of arm with fabulous build quality, that turns in a dynamic and weighty performance.

SME SERIES IV 1988 £1,620
Offers nine tenths of the SME V's magic at just over half price. Exquisitely built and finished, and a design classic. Faces stiff competition these days, but lovely nevertheless.

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



GRAHAM PHANTOM 2006 £3,160
Sonically stunning arm with magnificent bass dexterity and soundstaging. Build quality up to SME standards, which is really saying something!

TRI-PLANAR PRECISION 2006 £3,600
Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

SME SERIES V 1987 £2,389
Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

LINN EKOS SE 2010 £3,700
Subtle mods over the years, including revised bearings and the recent new wiring has kept it a serious contender in the superarm stakes. Has a commanding musicality all of its own.

OL ENTERPRISE 3C 2010 £4,500
Few if any pivoted arms come close to this arm's combination of liquid musicality and forensic grip.

CARTRIDGES
AUDIO TECHNICA AT-95E 1984 £25

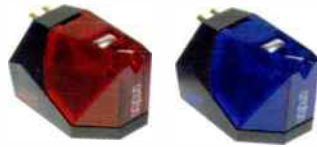
Great starter cartridge that's detailed and musical beyond its price. Superglue the stylus in for better sound!

AUDIO TECHNICA AT-F3/III 2010 £189

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

ORTOFON 2M RED/BLUE 2007 £60/£120

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



GOLDRING G1042 1994 £239
One of the best MMs going, with sweet and extended treble and punchy, muscular bass.

ORTOFON VIVO BLUE 2011 £275
Super new budget moving coil cartridge from respected Danish manufacturer; a real step up from previous efforts.

DENON DL103R 2006 £295
Awkward to get working properly with a poor mounting arrangement, yet it rewards with a musical performance that makes similar priced cartridges sound cold.

DYNAVECTOR DV10X52003 £295
Distant descendent of the classic Ultimo 10X, this has warmth and sweetness in spades, allied to a punchy bass. Beats G1042 comfortably.

ORTOFON 2M BLACK 2007 £350
Staggeringly good high-end MM that uses a stylus from the MC Jubilee and easily rivals similarly-priced MCs

DYNAVECTOR DV20X-H2003 £395
Deliciously sweet sound with fantastic get-up-and-go makes this a great value budget MC. High output version works a treat with valve phono stages too.



AUDIO TECHNICA AT-OC9MLIII 2010 £399
New stylus and cantilever breathe life into this feisty, punchy and detailed performer.

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

LYRA DORIAN 2007 £649
Incisive and musical, this baby Lyra is one of the most powerful and revealing MCs at its price point. Beware the sharp treble, though!



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

ZYX R-100H 2005 £799
Exceptionally tight sounding and detailed cartridge with the musical skills to match, this is up with the best at the price, with a presentation all of its own.

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

BENZ MICRO WOOD SL 2010 £945
Highly finessed Swiss moving coil that plays music with riflebolt precision.



ORTOFON CADENZA BLUE 2009 £1,000
Musical, out of the box sound, allied to real finesse, makes this a great do-it-all high end moving coil.

ORTOFON CADENZA BRONZE 2010 £1,350
Smooth and engaging high end MC with a slightly warmer and more relaxed presentation than its superb bigger brother.

ORTOFON CADENZA BLACK 2010 £1,650
Ultra incisive, transparent and dimensional moving coil with grip and punch aplenty.

ORTOFON MC WINDFELD 2008 £2,250
Ortofon's new flagship MC is a sophisticated and alluring performer that takes the vinyl experience to a new level.

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



DIGITAL SOURCES

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

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

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

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

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



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

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

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

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

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

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

SIMAUDIO MOON 3000 2010 £1,290
Lovely fluid sounding DAC with a deep, dark, velvety tonality.



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

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

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

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

MARANTZ SA-K1 PEARL CD 2010 £2,500
Finely honed affordable high end silver disc spinner, this has a musical lucidity that's unexpected at this price.



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

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

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



ACCUSTIC ARTS CDP1 MK2 2007 £3,985
Styling not to everyone's taste but build quality is impeccable and the performance is stunningly musical.

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

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

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

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

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

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

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

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



NAIM CDS55/SSSPS 2006 £14,000
Very probably the best CD player yet made - certainly the most expensive; a digital *tour de force*.



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

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

PHONO STAGES CAMBRIDGE AUDIO 640P 2009 £99

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

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

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



CHORD CHORDETTE DUAL 2010 £799

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

ASTIN TREW AT8000 2010 £880

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

A.N.T. AUDIO KORA 3T LTD 2010 £995

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

AVID PULSUS 2010 £1,100

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

QUAD QC24P 2007 £1,200

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

ICON AUDIO P53 2008 £1,500

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

SUTHERLAND 20/20 2010 £1,999

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

EMILLE ALLURE 2010 £2,495

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

**AVID PULSARE** 2010 £3,800

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

WHEST PS.30 RDT SE2011 £4,500

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

NAT AUDIO SIGNATURE 2011 £5,633

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

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

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

**AUDIOLAB 8000S** 2006 £400

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

NAIM NAIT 5i 2007 £725

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

SUGDEN MYSTRO 2010 £1,225

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

NAIM NAIT XS 2009 £1,250

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

CREEK DESTINY 2 2010 £1,445

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

SUGDEN A21A S2 2008 £1,469

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

**CYRUS 8XPD** 2010 £1,500

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

ANATEK A50R 2007 £1,600

Simple integrated amplifier with super bass grip and effortless dynamics.

VINCENT SA-236MK 2010 £1,749

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

NAIM SUPERNAIT 2007 £2,475

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

AUDIO RESEARCH VS160 2009 £3,298

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

LEEMA TUCANA II 2010 £3,495

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

**SUGDEN IA4** 2007 £3,650

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

QUAD II CLASSIC INTEGRATED 2010 £4,500

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

SIM AUDIO MOON 6001 2010 £5,750

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

MUSICAL FIDELITY AMS351 2010 £6,000

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

DARTZEEL CTH-8550 2010 £16,500

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

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

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

MUSICAL FIDELITY X-CAN V8 2008 £350

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

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

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

ICON AUDIO LA-4 2011 £800

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

NUFORCE P-9 2007 £2,200

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

**DPA CA-1** 2010 £2,650

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

MELODY PURE BLACK 101D 2007 £3,295

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

MF AUDIO CLASSIC CII SILVER 2010 £4,500

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



MODWRIGHT 36.5 PRE/PSU

2010 £5,995

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

MUSICAL FIDELITY PRIMO

2009 £7,900

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

POWER AMPLIFIERS

XTZ AP-100 2010 £520

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

QUAD 909 2001 £900

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

NUFORCE REFERENCE 9SE V2

2006 £1,750

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



DPA SA-1 2010 £2,850

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

QUAD II-40 2005 £3,230

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

ELECTROCOMPANET NEMO

2009 £4,450 (EACH)

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

ICON AUDIO MB845 MkII 2010

£5,500

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



QUAD II-80 2005 £6,000

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

MUSICAL FIDELITY AMS50

2010 £7,000

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

LOUDSPEAKERS

Q ACOUSTICS 2020 2010 £140

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

ACOUSTIC ENERGY NEO I

2007 £199

Tidy and well balanced standmounters with pleasing clarity and detail.

MISSION MX2 2011 £200

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

ACOUSTIC ENERGY NEO I v2

2010 £225

Civilised sounding speaker with fast and tuneful bass.

B&W 686 2007 £279

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

WHARFEDALE DIAMOND 10.3

2010 £290

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

MORDAUNT SHORT AVIANO 2

2010 £300

Classy sounding standmounter at a still affordable price.

KEF IQ30 2009 £330

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



USHER S-520 2006 £350

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

XTZ 99.25 2010 £640

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



ACOUSTIC ENERGY AE1 CLASSIC

2006 £845

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

SPENDOR S3/5E 2004 £950

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

MY AUDIO DESIGN

MY1920 2011 £1350

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

ELAC BS243 2010 £1,000

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

RRR FS100 2007 £1,055

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



ONE THING AUDIO ESL57

2007 £1,450

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

GURU QM-10P 2007 £1,595

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

USHER BE-718 2007 £1,600

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

MARTIN LOGAN SOURCE

2008 £1,600

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

SPENDOR S8E 2008 £1,895

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



ISOPHON GALILEO 2007 £2,100

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

MONITOR AUDIO PL100 2008 £2,300

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

EMMINENT TECHNOLOGY LFT8B

2010 £2,300

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

PMC OB11 2008 £2,950

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

MY AUDIO DESIGN**MYCLAPTON SE 2010 £3,299**

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

MAD MY CLAPTON GRAND MM**2010 £3,599**

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

YAMAHA SOAVO 1.1 2009 £3,000

Musical, transparent large floorstanders with impressive dynamics and cohesion. Excellent build and finish.

**MOWGAN AUDIO MABON****2007 £3,995**

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

B&O BEOLAB 9 2007 £5,000

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

TANNOY DEFINITION DC10T**2010 £5,000**

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

ECLIPSE**TD712z/2 2011 2011 £5,100**

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

ARS AURES MI 2006 £5,995

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

**QUAD ESL-2905 2006 £5,995**

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

SPENDOR ST 2010 £5,995

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

REVOLVER CYGNIS 2006 £5,999

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

VIVID VI.5 2010 £6,000

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

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

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

USHER BE-10 2009 £10,500

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

B&W 801D 2006 £10,500

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

**ISOPHON****CASSIANO 2007 £12,900**

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

REVOLVER CYGNIS GOLD**2010 £15,000**

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

MARTIN LOGAN CLX LINEAR**2010 £15,990**

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

ACCESSORIES**WADIA I701 2010 £349**

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

ISOTEK AQUARIUS 2010 £795

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

TOWNSHEND MAXIMUM**2003 £800**

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

HEADPHONES**JAYS V-JAYS 2010 £49**

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

**SENNHEISER MX-550 2005 £19**

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

SENNHEISER PX-100 2002 £29

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

**GOLDRING DR150 2006 £70**

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

SENNHEISER HD-590 1998 £199

The company's best real-world cans to date. Open and smooth with plenty of detail. Brightly lit midband makes them an ideal partner for a valve headphone amp.

SENNHEISER HD-650 2004 £250

A super all round reference design with crisp, detailed and even sound allied to superlative build and comfort. Cable upgrade yields great results.

SENNHEISER HD800 2010 £1,000

The ultimate expression of the Sennheiser philosophy offers massive speed, clarity and insight, although lacks some of the charm of the softer, more beguiling rival Staxes.

**STAX SR-007T OMEGA****II/SRM-007T 2006 £2,890**

Simply the best headphones we've ever heard at any price, these sweetly translucent electrostatic earspeakers are like no other headphone, or loudspeaker for that matter...



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INTERCONNECTS**TELLURIUM Q BLACK** 2010 £276/3m

A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.

**TECHLINK WIRES XS** 2007 £20

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

WIREWORLD OASIS 5 2003 £99/M

Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

CHORD COMPANY CHAMELEON 2 £90/M

One of our favourites, these are musical performers with a smooth yet open sound.

**DNM RESON** 2002 £40/M

Neutral and transparent - a steal!

VDH ULTIMATE THE FIRST 2004 £260/0.6M

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space results in a cracking cable for the money.

**TCI CONSTRICTOR 13A-6 BLOCK** 2003 £120

Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

MISSING LINK CRYO REFERENCE 2008 £375

Currently our favourite 'affordable high end' interconnects, with a deliciously smooth, open and subtle sound without a hint of edge or grain. Superb value, inasuch as it's as good as some designs at three times the price.

TUNERS**DENON TU-1500AE** 2006 £120

Excellent entry level analogue tuner; slick sonics and fine feature count make it a bargain.

**CAMBRIDGE AUDIO 640T** 2005 £250

Sweet sounding digital/analogue hybrid with fine build and finish at the price.

ARCAM FMJ T32 2009 £550

Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.

CREEK CLASSIC TUNER 2006 £550

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

MICROMEGA FM-10 2010 £750

Don't let the modest proportions fool you, this is a state-of-the-art modern analogue tuner with bespoke internals giving a warm, expansive sound.

MYRYAD MXT-2000 2005 £800

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

MAGNUM DYNALAB MD-90T 2010 £1,295

Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.

MAGNUM DYNALAB MD-100T 2006 £1,895

One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.

**SYSTEMS****YAMAHA CRX-M170** 2007 £200

One heck of a lot of quality performance on DAB, CD and FM for £200! Optional matching £120 NX-E300 loudspeakers aren't too shabby either.

TEAC DR-H300DAB 2008 £329

Nicely built and styled mini with fine performance on all sources that even plays DVDs!

**NAD C-715DAB** 2008 £429

Small, neat looks cover a truly capable system that shows just what a compact design can achieve.

ARCAM SOLO MINI 2008 £650

Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to its bigger brother.

SHANLING MC-30 2007 £650

Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.

**PEACHTREE AUDIO IDECCO** £1,000

Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.

ARCAM SOLO 2005 £1,249

Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

LINN CLASSIK MUSIC 2008 £1,250

Neat update of the original and best one-box stereo system; superbly musical sound beats equivalently priced separates.

NAIM UNITIQUITE 2010 £1,350

Great little half width one-box system with truly impressive sound allied to a wealth of source options.

**MERIDIAN F80** 2007 £1,500

Fantastically built and versatile DVD/CD/DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn't a 'proper' hi-fi product; most see sense when they listen to it...

**AURA NOTE MUSIC CENTRE** 2007 £1,500

Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.

NAIM UNITI 2009 £1,995

Uniquely versatile one box music system with excellent ergonomics and sonics to match. A landmark product for Naim.

LINN CLASSIK MOVIE 2007 £2,250

Superbly built all-in-one that offers excellent sound across all formats and is surprisingly easy to use.

**MERIDIAN SOOLOOS 2.1** 2010 £6,990

Thanks to its crisp styling and bright, colourful touchscreen, plus excellent search facilities this is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.

MARANTZ 'LEGEND' 2007 £22,000

The combination of SA-7S1 disc player, SC-7S2 preamp and MA-9S2 monoblocks delivers jaw-dropping performance.





Boxing Clever

Offering an all-in-one box solution, T+A's E-Series Music Receiver attempts, says Paul Rigby, to please all of the people all of the time.

T+A (pronounced 'T Plus A') has a long history of building powerful but compact one-box systems. Starting in 1995, its designs have proven very popular in Germany and its surrounding territories of Austria, Switzerland and Holland. Now the UK is in its sights. Its all-in-one Music Receiver design sets out to give audiophile quality sound in a family friendly small footprint package. But hang on – if you're going to release a lifestyle product into the market that bundles plenty

of sources and lots of power from one box, then why not supply the speakers too? Won't not bundling speakers surely confuse the target market?

Well, I sought out T+A's principal designer, Lothar Weimann, for an answer. "That's because we don't see it as a lifestyle product. It's a real, high-end system aimed at audiophile users. It's not lifestyle at all." Which put me firmly in my place.

"What we have tried to do is combine a very good hi-fi system that really satisfies the demands of

an audiophile but also present a neat box so that it is compatible with a modern living room but also for the lady of the family." In fact, a lot of the technology that you will find in this Music Receiver is present in some of T+A's higher-end separate components, he told me.

As for the Music Receiver itself, it's heavy at 10kg and arrives in a solid casing spanning 120x440x390mm with plenty of extruded aluminium. Sources are plentiful including a CD player, Internet and FM radio and streaming

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.

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 £1899

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 rigeur 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!

KRELL KMA100 ii 1987 £5,750

Ludicrous monoblock version of the giant KSA-100 is one of the seminal eighties transistor power amplifiers. Massive wallop allied to a very clean and open Class A sound makes this one of the best amplifiers of its type, ever.

RADFORD STA25 RENAISSANCE 1986 £977

At the time, very possibly the least cool amplifier on the planet – and we're not talking heat dissipation here. This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.

**PIONEER M-73 1988 £1,200**

Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the eighties-tastic experience.

**PHONO STAGES****CREEK OBH-8 SE 1996 £180**

Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.

**LINN LINNK 1984 £149**

Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

MICHELL ISO 1988 £ N/A

This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse.

TUNERS**MARANTZ 5T-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 ARI85 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 ABI subwoofers for an extra two octaves of bass!

LOWTHER PM6A 1957 £18 EACH

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

HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110

Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

TANNOY WESTMINSTER 1985 £4500

Folded horn monsters which certainly sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others.

JR 149 1977 £120

Infamous cylindrical speaker that was ignored for decades but now back in fashion! Based on classic KEF 127 / 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 HBI 1982 £130

Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic.

CELESTION SL6 1984 £350

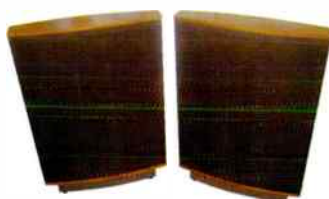
Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...

LEAK SANDWICH 1961 £39**EACH**

Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.

**QUAD ESL63 1980 £1200**

An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics

**YAMAHA NS1000 1977 £532**

High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!

**MISSION X-SPACE 1999 £499**

The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!



CLASSIC CONTACTS

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all these companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

GT AUDIO

(Graham Tricker, Bucks)
Leak Troughline specialists. Also Quad and most classic tuners, radios and amplifiers restored, repaired.
Tel: 01895 833099
Mob: 07960 962579
www.gtaudio.com

TECHNICAL AND GENERAL

(East Sussex)
Turntable parts - wide range of spares and accessories, plus arms and cartridges.
Tel: 01892 654534

CARTRIDGE MAN

(Len Gregory, London)
Specialist cartridge re-tipping service and repairs. High quality special cartridges.
Tel: 020 8688 6565
Email: thecartridgeman@talktalk.net
www.thecartridgeman.com

QUAD ELECTROACOUSTICS

(Cambs) Quad's service department, able to repair almost all Quad products, from the very first. (Also Audiolab, Mission & Wharfedale).
Tel: 0845 458001 | www.quad-hifi.co.uk

Dr MARTIN BASTIN

(Shropshire) Garrard 301/401 restoration, renovation and service. Special plinths; rumble cures, etc.
Tel: 01584 823446

ARKLESS ELECTRONICS

(Northumberland)
Specialist in repairs, restoration and modifications to all amplifiers, valve or solid state, ancient and modern.
Tel.: 01670 530674
Email: info@arklesselectronics.com
www.arklesselectronics.com

CLASSIQUE SOUNDS

(Paul Greenfield, Leicester)
ESL-57s restored, rebuilt, fully renovated or improved. Leak, Quad valves amps etc.
Tel: 0845 123 5137
Mob: 0116 2835821
Email: classique_sounds@yahoo.co.uk
www.flashbacksales.co.uk/classique

WEMBLEY LOUDSPEAKER

(Paul MacCallam, London)
Comprehensive loudspeaker servicing.
Tel: 020 8 743 4567
Email: paul@wembleyloudspeaker.co.uk
www.wembleyloudspeaker.com

CLASSIC NAKAMICHI

(Paul Wilkins, Worthing, West Sussex).
Restore, Repair & Service Nakamichi Cassette Decks.
Tel: 01903 695695
Email: paul@bowersandwilkins.co.uk
www.bowersandwilkins.co.uk

ONE THING

(Coventry) Specialist in electrostatic panel manufacture and repair. Can refurbish ESL 57s and 63s as well as Leak Troughlines and Quad IIs.
Email: one.thing@ntlworld.com
www.onethingaudio.com

LORICRAFT AUDIO

(Terry O'Sullivan, Bucks)
Garrard 301/401 and their own 501 repair, spares and service.:
Tel: 01488 72267
www.garrard501.com

EXPERT STYLUS COMPANY

(Wyndham Hodgson, Surrey) Stylus replacement service for all types of cartridge. Including precise profiling for 78s. Tel: 01372 276604
Email: w.hodgson@btclick.com

OCTAVE AUDIO WOODWORKING

(Bristol) Unit 2, 16 Midland Street, St Phillips, Bristol. Tel: 0117 925 6015
www.octave-aw.co.uk

REVOX

(Brian Reeves, Cheshire)
Revox tape recorder spares, service and repair. Accessories also available.
Tel: 0161 499 2349
Email: brian@revoxservice.co.uk
www.revov.freeuk.com

SOWTER TRANSFORMERS

(Brian Sowter, Ipswich)
Large range of audio transformers for valve amps, cartridges, line drive, interstage plus all associated services.
Tel: 01473 252794
www.sowter.co.uk

LOCKWOOD AUDIO

(London)
Tannoy loudspeaker parts, restoration and repair. Also Epos and TDL loudspeakers.
Tel: 020 8 864 8008
www.lockwoodaudio.co.uk

ATV AUDIO

(Henry Dulat, Surrey)
Repairs, restorations and upgrades to valve and transistor amps and all analogue audio including Revox.
Tel: 01372 456921 Mobile: 07730 134973

Lab Tech

With their emphasis on aesthetic and ergonomic purity, Bang & Olufsen was never the traditional province of mainstream hi-fi magazines. But the company did produce some sonic gems, says Tim Jarman, such as the Beolab 5000 amplifier...



Here's something which – despite its obvious quality – has remained curiously obscure over the years. Bang & Olufsen's Beolab 5000 amplifier is living proof that all nineteen sixties transistor amplifiers were not gutless and nasty sounding – indeed it's the precise opposite, in fact.

The Beolab 5000 amplifier, and the larger system of which it was part, came about for an unusual reason: television. Up until the middle of the decade in which it appeared B&O had been doing good business equipping cinemas with professional amplifiers and loudspeakers but the rising popularity of TV in Denmark (in part as a result of the sets that B&O themselves were making), meant that audiences were dwindling and the call for equipment collapsed. With time on their hands, the designers of these mighty systems instead turned their hands to domestic hi-fi and created the Beolab, their 1967 vision of the perfect hi-fi system.

At its heart was the Beolab 5000 amplifier, a compact integrated design that produced 60 Watts per channel from the latest silicon transistors, many of which were supplied by

"awarded a prestigious industrial design award and featured prominently in the cult film 'A Clockwork Orange', the Beolab 5000 was undoubtedly cool, as well as cool-running!"

the Radio Corporation of America (RCA). 60W was a massive figure for domestic equipment in the sixties – indeed the previous stereo amplifier offering in the B&O range could only just about wring a quarter of that out of its two pairs of push-pull ECL85s (an unusual valve, really intended for TV use) but that was still a lot more than much of what else was in common use at the time.

As well as high power, the Beolab was amongst the first hi-fi units to use sliding controls, giving a sleek, modern appearance. It was also generously endowed with input and output connections, all of which were properly engineered and adjustable in gain so that all the signal levels

could be matched. Even now it is unusual to run out of places to plug things in, although there is only one tape loop. Awarded a prestigious industrial design award and featured prominently in the cult film 'A Clockwork Orange', the Beolab 5000 was undoubtedly cool, as well as cool-running!

Serious power was only one half of the story; what the Beolab 5000 also had was sophistication. The power amplifier used two special techniques which were seldom, if ever, tried again in a unit of this scale. Firstly the power supply was electronically stabilised to give a smooth and quiet source of power with minimal source impedance.

Because the voltage did not change under different loading conditions there was no need to quote separate figures for 'true' and 'music' power, they were both the same. The stabilising circuit was in effect a third amplifier that used the same 2N3055 transistors as the output stages in an elaborate and expensive circuit, but the results were well worth it – smooth power and a high degree of stability and reliability were the results.

The second technique was to run the two power amplifiers in anti-phase by electronically inverting one of the channels early on in the circuit. The thinking behind this is as follows. Most power is taken by powerful bass notes which tend to be largely in phase between left and right as there is little imaging information carried in the bass. Because of this, a heavy bass note would normally cause both power amplifiers to draw a lot of current from the power supply section at the same time, putting it under a lot of strain. However, if one channel is inverted the two power amplifiers draw current alternately, meaning that the power supply need work less hard and therefore performs better. The inversion is reversed in the wiring of the loudspeaker sockets, the only side effect of which is that a conventional headphone socket cannot be fitted. B&O later addressed this shortcoming with an add-on unit which was transformer coupled and could therefore perform the necessary phase inversion into a common ground point passively and in addition provided a means of adjusting the 'width' of the stereo image! This unit is pretty unusual and if you find one it may well cost you more than the amplifier itself, if headphones are important to you then the Beolab 5000 is possibly not ideal. The two anti-phase channels also made operation in bridged mono simple and an extra loudspeaker output was provided for this, all you needed then was a 120 watt domestic loudspeaker, of which there weren't many at the time!

The rest of the system comprised a superb matching tuner, the classic Beocord 2000 open reel tape recorder (later replaced by the similar 1800 and 2400), a couple of turntables which consisted of either a Dutch 'Acoustical' or a Thorens TD124 motor unit in a B&O plinth with a B&O ST-L arm and SP7 moving iron pickup and a choice of two loudspeaker models, the Beovox 3000 and 5000. Of all these units the tuner is a 'must have' and the tape recorders are nice if you

have the room (and the necessary mechanical skills to get them working). The two turntables are okay but the slightly later Beogram 4000 is also a popular choice, being prettier and nicer sounding, as well as representing better value for money at the moment. The loudspeakers are for completists only, the first two generations of Beovox 5000, despite their immense size, sound pretty flaccid by modern standards, even if you have the optional 2400 'cube' treble radiators to go with them. The third generation Beovox 5000, recognisable by its dome tweeter, sounds the least compromised and doesn't need the 'cubes' but something ten years newer and half the size will impress you more if chosen wisely.

SOUND QUALITY

With modern loudspeakers the amplifier sounds slightly lively, as if the loudness button is pressed ever so slightly in. This is understandable given the system's original makeup, but you will notice it now. It's not unpleasant, in fact it's quite enjoyable but never the less a slightly exaggerated top and bottom end remain the design's

main sonic signature. Other than that it sounds almost unbelievably modern, being agile and airy with endless power and no hint of the coarseness that was a characteristic of many early transistor designs. In comparison, the Quad 303 (which also uses 2N3055 output transistors) sounds small in scale and breathless under full load, not surprising as it gives away 15 Watts to the muscular B&O. Dating from a time before complementary pairs on NPN / PNP power transistors were available, the circuit uses AC coupling via large capacitors at the output of the amplifier and this limits the force and precision that can be achieved at the bottom of the bass register as the damping factor diminishes towards zero at 0 Hz (DC). This is what dates the Beolab but the effect is slight, only an A/B demo with a later fully DC-coupled model really shows it up.

There aren't many nineteen sixties transistor amplifiers that can give the moderns a run for their money but this is certainly one of them. I cannot recommend it highly enough if you're a B&O completist, or looking for something slightly different that's still usable today.

BUYING AND FIXING

For what you get the Beolab 5000 is still pretty cheap, between £200 and £300 should get you a nice one and projects start at around £50. Electronically they are as tough as old boots but common problems include jammed and non-latching switch gear, noisy sliding controls and the inability to set the bias and offset in the output stages properly due to resistors that have changed in value. I've never seen one with failed output or regulator transistors but should this happen, remember that only 2N3055 transistors with the 'H' suffix will do as replacements (which should preferably be of RCA manufacture); modern budget alternatives will have a short and unhappy life in this circuit. In general, precision components were used throughout so there is little to be gained in changing handfuls of parts 'on spec'.

Even the electrolytic capacitors, a traditional weakness in old hi-fi, don't seem to give that much trouble, although any which are bulging, crusty or leaking goo should obviously be changed (just don't expect to hear much of a difference). The phono stage, designed for B&O's moving iron cartridges but still perfectly usable with most MM types, is a fair performer but in standard form can sound a bit dull. Replacing the 1nF ceramic capacitors which are fitted across the base-emitter junction of the first stage transistor in the RIAA circuit with something smaller (I use 100pF polystyrene) will brighten things up nicely without making the sound too harsh, this is a common complaint with many B&O designs of this period (e.g. the otherwise excellent Beomaster 3000).

On the outside, the biggest problem is that the screen printed numbering on the front panel wears off very easily with use, giving the amplifier a scruffy appearance. The services of a professional engraver are the best option in this situation, if the condition of the rest of the cabinet justifies the expense. A few later examples had etched legends that were far more durable but even these can fade or turn pink with age.

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"I like to build snorting, whirring PC behemoths"



noel keyword

Publishing traditionally relies upon Macs, because of their superior font handling over PCs. This is why, when Hi-Fi World started in 1991 printers used Macs to rip (raster image process) to print – and if you didn't send them files from a Mac, boy were you in trouble. So I have used Macs as work machines for a long time, in Mac talk since System 7.

The first Mac Mini was part of Apple's rebirth in the computer marketplace and as a small but silent little box I soon found it was perfect for late night silence as I typed my column furiously before the final print deadline.

The Mini is the world's most unobtrusive computer, an attribute the computer business struggles to recognise, but Apple makes a meal of – hence the iMac. I like to build snorting, whirring PC behemoths that wind themselves up slowly into a technological frenzy and rip open files at lightning speeds before my eyes, but work with them – never.

Like a pet dog that grows old with you my little Mini – with no optical output I must add! – sits quietly and obediently obeying my commands. It's had many operations over the years to keep it up to speed, performed using two wallpaper scrapers to prize open the case. A new even faster 7200rpm drive, these days enhanced with SSD for longer life and healthier bones, is dropped in and off the old dog goes, a new vigour in its step. But there's a limit to what is possible and the end came when Lion dropped support for its venerable PPC processor.

I'm forever a computer sceptic and the latest Mac Mini was greeted with doubt and a defensive attitude when it came through my front door. I have learnt over years of computer upgrading that change can be a

bumpy process and improvement lies more in the eyes of the manufacturers and their fanboy press, than those of users. 'Vista' is the word that makes this point. Unfortunately, Lion is showing similarities.

Before Mac aficionados form into a lynch mob, let me apologise for offence, as I am well aware that the integration of OS-X 10.7.2 into iOS5 and the 5GB of storage free in the cloud invokes a new world that belittles the mortal dreams of Microsoft, Sony, Nokia et al. Apple has suddenly leapt into a space unoccupied by anyone else, one that no other manufacturer has the means to occupy, which is a little frightening – unless you own Apple shares. Integrating software with hardware in a tight and completely controlled manner has mown down all opposition and I wonder where this will go next.

For the time being though we can buy a little Mini for a low-ish price and be happy. It is still small, still quiet and our tests showed it works better than ever as a music source, which surprised me. For £599 you can't ask for more, especially as the Mini remains fundamentally easy to use as an everyday domestic computer, one the whole family will enjoy. I shudder when I go back to my DIY PC, faced with its warning messages and Control Panel and the need to tweak 'msconfig' to maintain control over what's going on. Lightning fast it may, but user friendly it is not. PCs are looking very yesteryear.

However, Lion is giving me a hard time saying I haven't got permission to open my own files, at which point my blood pressure rises to eruption levels! Unix based file permissions are apparently the problem and a user called Wheel has mysteriously appeared with more permissions than me! The 'net has it that this is

an historical overhang, Wheel being a colloquial user group name invoked when Unix was originally developed. I find that warnings about insufficient permissions that started with Snow Leopard are worse with Lion. And fixing permissions can be dangerous if you don't know what you are doing: I've already made that mistake and had to re-install Lion! Sweet the new Mini may be in many ways – and great for music – but it can be a little unco-operative if you transfer files in from other computers you use.

The Mini comes with iTunes of course and the whole iCloud proposition, which looks interesting to me. But 'syncing' to the cloud is something I'm just a little wary of. I've yet to stop iTunes wiping photos I have loaded onto the iPhone, whenever I sync, because I am not fully organised here yet, with all pics neatly stored in the Photo Library where the system can recognise them. This is going to take up a little more time, like a weekend to gather all those jpegs from over the years that sit buried in backup files from old computers. With my favourite pics mystically disappearing from my iPhone I'm not about to let cloud storage wipe out files that I did not meticulously store in the first place, simply because the sync settings were wrong.

And finally, oh joy when I heard from Item Audio that the new Mini can be torn apart and re-built! If you have ever home built a computer you will know that, like DIY hi-fi, it somehow works better than any thing you buy. That's why my little old Mini runs sweetly to this day. I'd read Apple had made the hard drive non-removable in the latest Mini, but Item Audio say not. Better, audio DIYers are already installing SSDs, better power supplies and what have you. I can't wait! Macs are handy for audio as well as publishing nowadays. ●

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"I downloaded an SPL meter from Studio6Digital and installed it on an iPad 2"



tony bolton

Readers of my column last month will remember that I was given a second hand Test Lab SPL meter by a friend, and following the arrival of the IsoTek Ultimate System Set-Up Disc (see HFW January 2012 p.49) with its range of test tones at the end of the disc, I became curious to get some actual definitions of the volume levels that I listen at. The readings that I achieved caused Noel some concern, since they seemed rather low, so I left you last month with the intention of getting the meter correctly calibrated before proceeding any further.

The opportunity arose a couple of weeks afterwards when I visited the office. Noel set up a speaker and his own Bruel and Kjaer meter as a reference, and we proceeded to feed the speaker with signals of a known level, choosing 80dB as the default point. Both meters were sited one metre away from the source. Noel was right. My meter consistently read about 15dB down, and also displayed significant roll off below 400Hz. Since the bass input to a sound accounts for the majority of the overall band energy, readings taken on this meter, if it was set to read single tones correctly, would be likely to be incorrect when metering music, or any other multi frequency sound.

With this in mind the meter was calibrated on an 80dB pink noise signal, this complex waveform having a similar sound pressure level to music, but without the fluctuations contained in music, that would leave potential for erroneous readings during the calibration process. Having got Noel's and my meters in agreement when subjected to pink noise, we started listening to some music through various pairs of loudspeakers. Halfway through this

I switched on my meter, held it in front of me and compared the sound pressure level with that showing on the Bruel and Kjaer. Both were in total agreement, so we considered the exercise a success, and I left to return home to Devon with my Test Lab wrapped up in my bag.

A couple of days later I unpacked it and decided to do a few experiments to get some realistic idea of what sound levels occurred in my house, the actual sound pressure levels that comprised my normal listening level, and also how far I pushed it when listening at what I consider to be quite high volumes. By this stage my curiosity was aroused having, over the years, read various charts which quote certain figures and liken them to a 'quiet room', or 'a passing motorbike', or 'jet plane taking off'. Now this is all very well, but like, I assume, most people, when confronted with an intrusive noise, such as a police car with its siren on going past me, I tend to withdraw from the noise as much as possible. We are also very good at blanking out quite loud noises on occasion, such as trains going past. After a while you cease to notice them if you live near to a railway line.

So I wanted some definition of relative sound levels to put these charts into perspective. I unpacked the meter, switched it on, and found it refused to read less than 60dB or more than 70, despite me talking loudly right beside it. It had gone wrong.

Not being daunted by this, I followed Noel's advice given at the end of my last column, downloaded an SPL meter from Studio6Digital and installed it on an iPad 2. The instructions say that it is calibrated for the average iPad microphone, but can be fine tuned for greater accuracy,

which will be done when the opportunity arises. In the meantime I set to work taking what should, hopefully, be reasonably accurate readings of both ambient noise levels and music and television replay levels.

Holding the SPL meter at ear level, in front of me, I discovered that the ambient noise level in our front room was between 38 and 41dB, while my upstairs listening room was 38dB, rising to 45dB when a vehicle went past on the main road situated approximately 100 yards away. Our dining room was around 36dB, rising to 49dB as I type this. The BBC lunchtime news was relayed through the Leema Tucana II/ Chario Ursa Majors at between 55 and 62dB as our normal level.

When listening to music at a what I consider to be a normal level (I used the music tracks on the IsoTek disc for this) the readings when playing the Bach 'Tocatta' varied from 55dB for solo notes to a surprising 82dB when the full organ swelled. The jazz track 'Everybody Loves My Baby' was more even at 70 to 76dB. I also discovered that the smallest of movements around my normal sitting position could cause quite large fluctuations in measured level, although this was not so obvious to my ears. I assume this is due to standing waves and other room orientated interference. My loud levels for the jazz were in the 83 to 89 dB region.

So I have at least found some reference points that I can define as quiet, normal and loud. From a practical point of view, I now have a means of ensuring that any comparative listening tests are carried out at the same measured sound pressure levels, so all equipment on review is treated as equally as possible. ●

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"without that dedicated work, we would have lost a window onto the passion of some of the most important jazz artists of our time..."



paul rigby

One of the more frustrating aspects of the classic jazz periods of the sixties and seventies is the sheer amount of music that is missing. We are spoilt, in these digital times. Today, if someone like Noel Gallagher or his creative mentor, Paul McCartney, so much as sneezes, then someone, somewhere, will have recorded it on either a hand-held recording device or a more professional recording gizmo while five other people are videoing it via secret cameras lodged in their hats, umbrellas or Pot Noodles.

Back in the sixties and seventies however, it was slightly more difficult to strap a reel-to-reel tape machine under your coat while their attendant microphones stuck out from a jacket lapel like a stick of Blackpool Rock. Less 'Ipcress File' and more like 'Carry On Spying'. I exaggerate, of course. Many fans and more intimate friends and colleagues of jazz artists did make recordings of live gigs, often quite openly, placing a reel-to-reel player with a microphone on stage for all to see. The music business, being far less strict and paranoid in those heady times, saw such practices and treated them with a great deal of patience, nonchalance and, in the majority of cases, indifference. Once the recordings were made, wholly for personal use at that time, the tapes were stored and forgotten about.

This is where the specialist jazz label Domino Jazz (www.discovery-records.com), provides a service and a solution. It scours the world, looking for jazz rarities, live gigs, lost professional recordings and more, to bring you lost rarities, often of essential importance to the fan.

Take the two CD set 'Miles Davis Quintet: Complete Live At

The Blue Coronet 1969'. At the time, this legendary outfit had just recorded the classic 'In A Silent Way' and was then taken out on the road to tour before moving back into the studio to record another jazz classic, 'Bitches Brew'. Davis, however, found this touring period frustrating for archival reasons. "Man, I wish this band had been recorded live because it was really bad," he chided. "I think Chick Corea and a few other people recorded some of our performances live but Columbia missed out on the whole thing."

Fortunately an archive, of sorts, does exist. A portion of this period was recorded by a member of the audience in New York during 21-29 June and 6-12 October (incidentally, 8 October featured an attempt on Davis' life by a drive-by shooting, the result of black promoters angered by Davis dealing with white promoters or, says the alternate theory, a drug deal gone wrong).

Is this recording of audiophile standard? Well, it's live, so that question is largely redundant and, no, this is not a soundboard recording. These recordings might be lacking in sonic brilliance but they are valuable historical documents. They also give the fan an insight into the Quintet's musical brilliance. The group were lean, mean and ready to bop. This CD shows artists right on top of their game. For that reason alone, we should be grateful that this recording exists at all.

There are plenty of other recordings that are available from the label which are just as interesting and significant. For example, John Coltrane's 'Complete Live In Stuttgart 1963' is available for the first time as a single set and features two songs – 'Impressions' and 'Mr. P.C.' – that

have never appeared before on any format. There's the never before heard performance of Sonny Rollins' 'Live In Munich 1965', featuring songs which Rollins rarely recorded such as 'Darn that Dream' and 'The Song Is You'. Then there is the rare collection featuring the Quincy Jones Big Band 'Complete 1960 European Concerts' that appears as a single package for the first time and includes all of the known recordings by Jones within this period.

The one major exception to the timing rule is the CD devoted to Bill Evans, the pianist and arranger. 'The Very Last Performance: At Fat Tuesday's September 10 1980', features Evans at the Fat Tuesday's club in New York, USA, just five days before his death on the 15 September, his body ravaged by drugs and alcohol. The recording is so rare that just about all of his discographies don't even register it, stopping on 8 September with a gig Evans performed at Keystone Corner.

Taking place in an intimate trio setting, Evans plays with guile and artistry while the recording is surprisingly good considering that it is an amateur tape recording. There is evidence of some aural tape deterioration which Domino Jazz has tried to correct but, again, the basic existence of this recording is not only valuable, it is critical as a piece of historical, archival evidence and a document to a great jazz artist.

The work that Domino Jazz does in the jazz field is not only admirable but it does an almost archaeological job of piecing together lost elements of our musical culture. Without that dedicated work, we would have lost a window onto the passion, talent and creativity of some of the most important jazz artists of our time. ●

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"I remembered a few of his treasured possessions, which are now prized members of my own collection"



adam smith

As the last days of 2011 approach, I like to sit back and reflect on what has been another truly exceptional year audio-wise. In terms of the hi-fi industry, new names have appeared, new products have been presented and I don't think that there is any doubt that the spirit of innovation is alive and well. I get the feeling that things are ticking along nicely after those couple of doom-laden years when we were all nervously gathered under the umbrella of fate, trying to dodge the storms of recession, but sunnier skies would appear to be ahead of us once more!

On a personal level, very little has changed in my main system during the year. The trusty old Garrard 301 is still spinning sweetly although a young upstart in the form of a 401 has been seeing increasing use recently, mainly because the open-frame style plinth in which I currently have it located is far easier for the large number of arm changes I seem to have been making recently! My Anatek phono stage and Naim Supernait continue to impress me with their sheer brilliance and although a vast number of loudspeakers have trooped through the doors of Smith Towers this year, with quite a few taking up permanent residence, my trusty Ferrograph S1s have still yet to be ousted on a permanent basis, despite the Leak 2075s having a damn good try. The trouble is, my listening room is simply too small for the Leaks, although this may not be a permanent situation; I'll return to that topic in a moment...

Most pleasingly of all, I have succeeded in carrying out the promise I made last year around Christmas time to downsize my turntable collection somewhat, and clear out those decks that, whilst good in their own right, really deserved a better home where they

will be used, than sat in my storage room. The slight problem was that I forgot I wasn't a supposed to be buying any more and so I am only around 10 units down rather than the fifteen or twenty that I should have been. Equally, some of those vacant spaces have been filled with loudspeakers and I seem to have spent an inordinate number of hours re-foaming this year. Rewarding, yes, but very messy at times!

So, what of 2012? Well, after a rather stressful few months, the Smith family just might be upping sticks and moving to a new abode. I say might as this summer saw us complete a successful house sale which then promptly fell through when our buyers pulled out. More buyers were found and then the sellers pulled out. A second house was found and the deal was done, whereupon both buyers and sellers pulled out but, just when we'd given up, things rose from the ashes and we just might be all systems go once more. Of course, whilst I am suitably excited about a bigger house, more room for friends and family and a bigger garden, the real icing on the cake is the promise of a nice, big Leak-friendly listening room, which has already been allocated! Keep your fingers crossed, everyone, and I'll keep you posted as to how it all pans out...

Naturally, this thought of moving has pushed me into attempting to sort out my equipment spares and general gadget store once more, but a recent event made me realise what a fumbling amateur I am in this respect. Regular readers may remember me mentioning my Uncle Terry, the man largely responsible for my descent into turntable addiction, and the sad news that he passed away last year. Well, recently my aunt contacted me to ask whether I would like to clear out his workroom and put the contents to good use so that

she could turn it into a bedroom once more. I didn't need asking twice! I remember only too well visiting them as a child and standing wide-eyed with wonder at the door of this Aladdin's cave of technological heaven, as my uncle designed, built, repaired, soldered and assembled all sorts of interesting things within its four walls.

I remembered a few of his treasured possessions, which are now prized members of my own collection, including his precious Ferrograph 6 series tape recorders and a magnificent original Avo 8 which looks like it has never been used. What really amazed me, though, was how beautifully organised everything was – drawers lined the walls and cupboards and every nut, bolt, resistor, capacitor, transistor, valve and diode was perfectly in its place and labelled with value, tolerance and working voltage. All manuals were filed both alphabetically and by application and, even after transport from Wiltshire back to Hampshire, I instantly know where anything is should I need it, as I was very careful to maintain the order when it was all home.

Even better, I had the feeling that Uncle Terry was watching closely as I arrived to hear the news that his magnificent round-the-house music system had fallen silent a few months previously. I felt sure that he would want me to have a crack at resurrecting it and ten minutes later, music was ringing out once more. I swear his photograph on the mantelpiece winked at me!

So there we are, I have more than enough projects to keep me busy in 2012 and I hope that you do too. If you are less of a fiddler than I am, however, then you are in an even better position as you can simply sit back and enjoy the music – that is what it's all about after all. Happy New Year! ●

vinyl section

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FUNK FIRM LP12 K DRIVE AND TOP PLATE P92

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REDBEARD GARRARD BEARING P96

Funk Firm's latest LP12 modifications - Doctor Tony Bolton performs surgery.

CLASSIC CUTS P95, P130

Paul Rigby remembers Nirvana's 'Lights Out' and The Who 'Quadrophenia'.



news

JAZZ CELEBRATION!

A whole host of labels are celebrating the jazz genre this month, starting with Speakers Corner which has bop guitarist Herb Ellis' 'Nothing But The Blues'. This is a classic from 1958 featuring Stan Getz, Ray Brown, Roy Eldridge and Stan Levy on a driven album that's full of variety.

Pure Pleasure's 'Chet Baker & Strings' (1953) sees the great man backed by cool strings and swinging bop while the label also offers Gil Evans Orchestra's 'Great Jazz Standards' that provides intriguing and sparkling arrangements to the likes of 'Straight No Chaser' and 'Django'. Evans' arrangement genius is also present on Miles Davis classic 'Sketches of Spain' (Waxtime), which takes a classical structure and turns it into a piece of modern art.

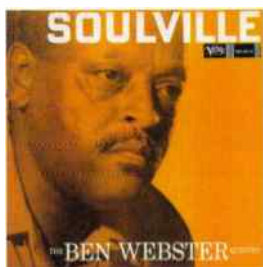
Also check out Doxy's two LPs with a free CD included within each: Ben Webster's 'Soulville', a sophisticated and witty release from 1957 that appeared in Webster's golden fifties era plus Charles Mingus' 'The Alternate Moods Of Tijuana' introduces alternative takes to the 1962 release, a strident and exhilarating session. Waxtime also offers the rather restrained The Dizzy Gillespie Octet with 'The Greatest Trumpet Of Them All' and Chet Baker's 'Sextet & Quartet'.

THE WEDDING PRESENT

Available within reissued 10" vinyl and presented in a box set wrapped in a paper ribbon, the collection includes the original album plus the EPs, 'Kennedy' and 'Brassneck' and a copy of the demo version of 'Be Honest', making its debut

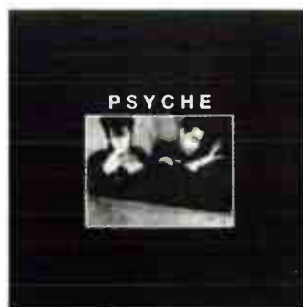


CHARLIE MINGUS TIJUANA MOODS



PSYCHE

Presented in a typically superb Vinyl-On-Demand package, this Canadian new wave outfit presents a driving beat packed with energy, passion and often crashing, primitive synths that act as dark matter scaffolding to an elastic band vocal, that seems to twirl out of control at times. It is strangely disconnected, sounding like a paean to a secret philosophy that only the lead singer knows about! A 3LP set with an added 7" and DVD, this 3LP version of the band's debut album includes demos, rarities and live cuts.



ROCK OUT WITH MOV

Music On Vinyl has a selection of rocking vinyl for all leather clad audiophiles out there, beginning with two from punk rock poet and influential female artist, Patti Smith. 'Wave' (1979) might not be her best but does glisten with some 'conventional' rock gems, and 'Outside Society' is an excellent two disc retrospective with personal liner notes from Smith. On a more pop-oriented rock note, Toto have two LPs on offer: the band's debut, 'Toto' (1978) and 'Hydra' (1979), the outfit's second release, which offered an eclectic rock selection with hits like 'Hold The Line'.

More straight ahead rock now and Deep Purple's 'Purpendicular' (1996) with Steve Morse at the helm who steered the group into more adventurous waters, especially the more acoustic fare. On a similar pathway is Nazareth's 'Rampant' (1974); it's a Southern boogie-fuelled hard rocking LP with serious guitar riffs that is always appealing and will find favour with Molly Hatchet fans as well as fans of...

Lynyrd Skynyrd, a blues, rock, country rock mix of creatures who infused the classic jam with a rebellious enthusiasm. Featuring the classic 'Free Bird', 'Pronounced Leh-Nerd Skin-Nerd' (1973), was a trim, raw, quality debut on any scale. Also look out for 'Try!' (2005), the John Mayer Trio's jam band rock outfit and Five Horse Johnson's rootsy hard rocking 'The Mystery Spot'.

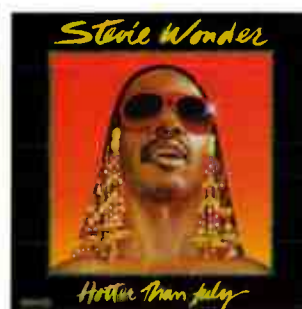
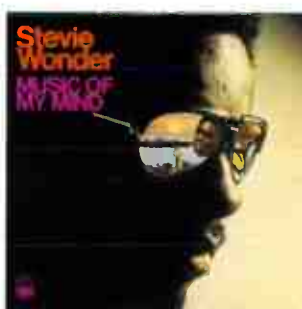


TRY!
JOHN MAYER TRIO
WITH STEVE JORDAN
AND PINO PALLADINO
LIVE IN CONCERT



STEVIE W

No, not a new England midfielder but a couple of Stevie Wonder crackers from Mobile Fidelity. 'Music Of My Mind' (1972) saw Wonder's first concerted use of the Moog and Arp synths and the formulation of his previous experiences into a structured, strong album while 'Hotter Than July' (1980) was a stormer that ended a run of albums including 'Innervisions', 'Talking Book' and 'Songs In The Key Of Life', packing in hits like 'Lately', 'Master Blaster (Jammin')' and 'Happy Birthday'.



...AND FINALLY

Tired of life, tired of politics, tired of people. Twenty-One Crows' almost pastoral retreat of an album, 'Songs Of Liberty' (Mulso Primary) throws the band into a small, dark, wooden shed, backlit by a single oil lamp, the sounds of the swamp all around, giving a sonic warning to a world that just won't listen.

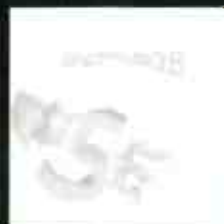
Dozer's 'In the Tail Of A Comet/Madre De Dios' (Headspin) is a 3LP rock scourge for the solar plexus. They are gut driven, guitar breeding, head throwing, hip junkies, offering music that sucks you into their private chaos.

More archive material from Jim O'Rourke and 'Old News #6' (Editions Mego). Haunting electronica with industrial flourishes merge with horror film tension.

Jim Haynes' 'The Decline Effect' (The Helen Scarsdale Agency) is a 2LP creation that shares O'Rourke's tension sequences but makes them more immediate and creepy with found sound creaks and subtle, off-stage noises before an industrial apocalypse.

On the Spectrum Spools label, Driphouse's self-titled album is a melange of classic ambient-electronica with a nightmare edge and organic keyboard grounding.

Finally, Pharaoh Chromium's 'Electronic Cremation' (a Ghazi Barakat project) features guest artist, Tim Gane from Stereolab, on this double album that combines tripped electronica with a large dose of moody esoteric noise and dark ambience.





LP12 fitted with the Clarity II top plate and motor. The K-Drive PSU is visible to the left on the deck. The arm shown is the Funk Firm's own. I fitted my Hadcock 242 Cryo for the review.

Spin doctor

Funk Firm's latest LP12 modifications add a d.c. motor and new top plate to improve the LP12's sound. Doctor Tony Bolton performs surgery.

Hot rodding LP12s seems to be this season's in thing, judging by the number of upgrade packages that I have looked at recently. This design from the Funk Firm is based on owner Arthur Khoubessarian's experience gained during many years of both turntable manufacture, and developing the capabilities of this well loved turntable in the guise of both Pink Triangle and more recently as The Funk Firm.

In this instance the top plate is replaced with a woven carbon fibre unit which promises to remove some of the resonances that colour the sound of the turntable, and a DC motor is fitted, in the unusual position of front left of the deck, instead of the more conventional back left corner. It is powered by

the K-Drive power supply unit. This features a pure Class A power supply with a single ended output stage. Servo control of the motor is applied with a light touch, only coming into action when speed errors are detected.

For the purposes of this review a special top plate with two motor mounting holes, and two motors was supplied to allow me to compare the difference the two mounting positions made to the sound of the deck. Along with this was a complete Sondek, minus arm board, arm and cartridge, which allowed me to transfer the normal Linn arm

board, Hadcock 242 Cryo arm and MusicMaker III cartridge from my own deck to reduce the variation in parameters down to those of the motor, it's position and the



The Clarity II top plate, showing the new motor position.

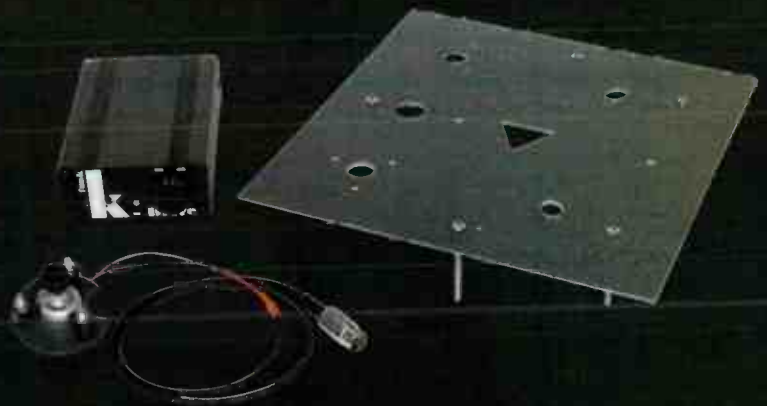
change in top plate. Normally the top plate would be drilled to mount the motor in the forward position only.

After suitable surgery was carried out on both decks, and the arm was correctly positioned and calibrated in its temporary home, I started listening with the motor in the normal place to accustom myself to the sound with a carbon fibre top plate in place of a stainless steel one.

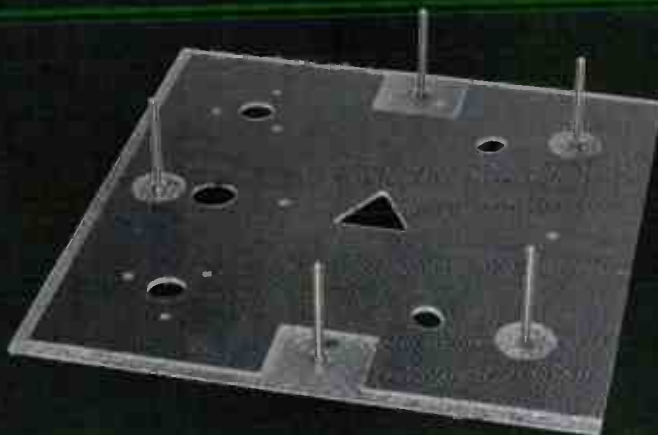
As regular readers will know, I have recently tried a new top plate from Tiger Paw (see HFV November 2011, p.106) and then upgraded the Origin Live DC motor unit that I have been running for some eight years. So I am familiar with the sonic benefits of DC drive, and found, compared to a standard LP12 with an AC motor and the normal top plate, that the sound had a smoother and more balanced feel to it, and most of the bloom in the upper bass area was removed. Since I did not have time to start swapping motors and top plates between plinths, this review is

vocals and an easy flowing melodic style. I felt as though I was a bit closer to the music and it's intimacy, being drawn into the gentle whimsical nature of the tunes. The spatiality of the recording increased, with a sensation of greater clarity to the structure and placement of the sounds. This allowed little micro-details that were less obvious before, to take a more appropriate place in the mix, adding to the feeling of involvement and intimacy that is a characteristic of this album.

These words, involvement and intimacy, came into my mind again when listening to the first two sides of 'La Traviata'. One of Verdi's most performed operas, dating from 1853, it varies from heartfelt duets, singing of love and loss, through to the more



The Clarity II top plate, DC motor and K-Drive power supply unit.



The underside of the special Clarity II top plate showing the two motor position holes as used in the review. Normally the Clarity II has just the one motor hole, at the front left of the plate (or top left in this upside down view).

not about comparing the Tiger Paw and Funk Firm top plates, rather, I am looking at the effect that repositioning the motor has.

Having played through a good selection of records I changed the belt over to the front motor and had another listen. I wasn't sure what to expect, but neither was I prepared for such an obvious change in the sound. This was one of those night and day type changes that causes a bit a reassessment of what had previously seemed to be fixtures in the cosmos.

The noise floor was considerably reduced, along with what I had previously perceived as occasional surface noise. Lemonjelly's first LP is a well produced excursion into gentle electronica with sampled

boisterous nature of the famous "drinking song"; 'Libiamo ne' lieti calici (Brindisi). Here I found Carlo Bergonzi, as Alfredo, and Montserrat Caballe singing Violetta, to be on vibrant form. This is a fulsome piece of opera, with the full orchestra augmented by the chorus backing the two leads. I was impressed with the way I was able to appreciate the layers in such complex sounds. It hung together in a totally harmonious way, yet I felt able to follow individual strands, be they instrumental or vocal, without losing the thread of the component of the music that I had chosen to focus upon.

This ability to dig further than I am used to into a performance became even clearer when playing a compilation of swing numbers

from the 30s. These transfers from the original 78s were well done, but there are obviously some restrictions to the sound quality due to the limitations of the recording equipment of the period. Again I felt closer to the actual performance than I usually feel when playing this record. The snap of the beat of the music had a certain freshness, and the clarity and shape to the sounds of clarinet, trumpet, trombone, drums and bass seemed a little more pronounced, and had a greater dimensionality.

It seems a simple idea, moving the position of the motor, and often it is the simplest ideas that are the most effective, and in this case that seems to hold true. I felt that all aspects of the sound

— from the perceived bandwidth, particularly in the bass department, through to its quality, shape, texture, timing and tonal colour, as well as its emotional integrity, improved by the simple expedient of moving the motor from the 11 o'clock position to the 7 o'clock spot. This alters the relationship between the pull of the motor and the needle in the groove, replacing what is a sideways force acting upon the cantilever, with one that is pulling in the same direction as the groove is passing under the stylus.

The effect is transformative and beneficial, and at a total of £1200 for the package looked at here, seems to offer pretty good value for the level of improvements on offer, I can only suggest that you listen for yourself.

SYSTEM USED:

Hadcock 242 Cryo arm/ MusicMaker III cartridge.
Luxman E200 phono stage.
Bent Audio TAP-X passive pre-amp.
2 x Quad 303 power amps.
Kelly KT3 loudspeakers.

MUSIC USED:

Caballe, Bergonzi, Milnes. RCA Italiana Orchestra and Chorus cond. Georges Pretre. Verdi 'La Traviata' RCA Victor Records SER/5564 - 6 1967

Various Artists 'Jazz In The Thirties' World Records SHB 39 1976

Lemonjelly 'ky' XL Recordings IFX1 LP139 2000

VERDICT

Top plate, motor and power supply that adds new levels of refinement to the Linn Sondek.

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K-DRIVE PSU & MOTOR £780

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FOR

- Deeper and more defined bass.
- Lower perceived noise floor.
- More defined imaging.

AGAINST

- Finish of top-plate may not be to everyone's taste.

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NIRVANA NEVERMIND UNIVERSAL



Nirvana loved pop but they also rocked like crazy and were generous with their influences. This meant that, unlike many of their contemporaries, the band tied up all the loose ends, offering a package that would lift punk, indie, post punk and more to a commercial level it had never before seen, changing the game...

'Nevermind' (1991) was the epitome of that philosophy, an album that is loud and raw and fresh, but with that major label gleam and glow and polish. This took the rough edges off the inherent punk-infused power, making it accessible. They stood for nothing, their music was the dream, not a political cause or a sociological end. Bass player for Nirvana, Krist Novoselic explained further, "I was always into music. I used to hang out with my father and listen to the likes of Chuck Berry and The Beach Boys, Dick Dale and A&M hit radio in the seventies. I seemed to be into many bands before the other kids at school and I didn't listen to the same things that others were listening to. That continues today – I own thousands of vinyl LPs.

"I remember when Kurt and I got into punk rock but other fans got all doctrinaire about it. 'I'm a punk now!' which for them excluded all else. They burned all of their Led Zeppelin records, pronouncing them false gods.

We thought, 'Well...no.. this is still

good music.' That, Aerosmith, Black Sabbath... it's all good music. We used to like music mashed up, appreciating all kinds."

'Nevermind' was, for many, life changing and for more, life affirming, as Novoselic confirmed. "There have been people who have come up to me and say, 'Kris, 'Nevermind' changed my life.' Which is great. I listened to the likes of Black Flag, Black Sabbath and so on and those records changed my life so, you know, I've been there. The human experience relating to music, how we react to it, it's an important part of society and a basic need."

For anyone who has a basic need to investigate Nirvana's iconic LP further, you can buy three box sets devoted to it and its development. Also available as a CD/DVD package, I decided to take a look at the slightly rarer vinyl version which packs four slabs of vinyl into a perfect-bound book-like sleeve. Pressed onto black vinyl (there is a picture disc version available elsewhere), this collection includes the original album plus, on disc two, the B-sides and Smart Studio Sessions. These continue on disc three along with the start of the Boombox Rehearsals. Then, on disc four, the Boombox Sessions conclude while, on the final side of disc four, you get a couple of BBC Sessions. Thirteen of the included tracks are previously unreleased while five are live cuts. You also get a coupon for the tracks to be downloaded as MP3 files. Have a good ferret around for

this coupon. It has a habit of getting caught up in the complicated sleeve arrangement.

"You can see the evolution of the album through those Boombox recordings with the sessions that we did in Madison, Wisconsin," said Novoselic. "There, you can hear the evolution of the songs and how we kicked them around. We recorded 'Smells Like Teen Spirit' and then Kurt did the vocals. We thought that a song like 'In Bloom' would be the hit song because it's more of a pop song but there was something about 'Teen Spirit'.

My personal favourites are 'Drain You' and 'On A Plain' but there's a lot of variety on there that goes back to what I was saying about having a volume of knowledge about music. There was no 'idea' behind Nirvana and how we looked. It all just came together. People have tried to over analyse what we did."

As for the package itself, it is rather frustrating that major labels still fail to 'get' audiophiles. The use of basic paper inner sleeves is just sloppy in a £60 package such as this. That said, there is nothing to fear from the mastering itself which is full of energy, is not harsh in the midrange, is dynamic and, while not the quietest pressing I've ever heard in my life, retains enough clarity to allow the music to sparkle.

According to Novoselic, "that's what good art should do – pull you into its own world." This pressing of Nevermind certainly does that. **PR**

Bearing Up

Adam Smith tries
RedBeard Analogue's
Super Bearing on his
Garrard 401.



As with so many things in life, when it comes to modifications on hi-fi equipment there can be a tendency for the basics to be somewhat overlooked. Nowhere is this more noticeable than with turntables; after all there are a plethora of tweaks, gadgets and gizmos for all sorts of turntables that are dedicated to their support, power supplies, visual finish and the type and range of arms that can be fitted to them. However, it has often surprised me that more is not done to what is effectively the heart of such a unit – the bearing. If yours is binding, rubbing, sticking, wobbling or mis-aligned in any way then all the power supply and support upgrades in the world aren't going to restore the performance that your turntable will be losing.

In some ways, nowhere is the bearing more of a key issue than on

a Garrard 301 or 401. After all, a Martin Bastin bearing upgrade was a key part of the re-discovery of the deck over 15 years ago by a certain Mr. N. Keyword of this very parish, and Dr. Bastin demonstrated very effectively that all those naysayers who had been sneering at the idler drive mechanism as the fount of all evil were somewhat wide of the mark.

Fast-forwarding to today you can have your Garrard bearing fettled to within an inch of its life by a number of companies, or modify it yourself with a new thrust pad and possibly a ball bearing. However, a very intriguing option is also now available through Northwest Analogue and comes from a gentleman named Jeremy Clark, trading as RedBeard Analogue.

Jeremy's Garrard Super Bearing may wear a rather eye-watering £595 price tag but it contains some

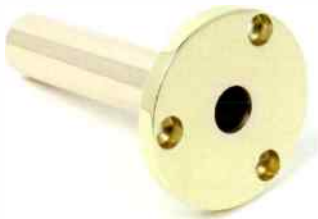
very intricate handiwork and some truly jaw-dropping finishing. Jeremy's thinking behind the design of the bearing is that the original units, whilst of good quality were designed with production repeatability in mind and, of course, back in the days of mono records with arms tracking at high forces. He argues that a stereo record contains as much vertical as horizontal information and that much of this vertical motion is being absorbed by what he sees as the ineffectiveness of the standard bearing's thrust pad arrangement.

He goes on to point out that the use of a ball bearing is equally counter-productive. He argues that "a shockwave emanating from the stylus interface radiates into the platter and down the bearing spindle. If it hits a ball, that ball will resonate sending its own resonant signature straight back to the platter and ultimately the stylus - noise is the result". As

a consequence, the Super bearing consists of a single bearing spindle with rounded base, spinning in a very tightly toleranced brass housing. This is completely sealed so that no lubricant can leak and there is no sacrificial bush or ball in between the two.

As befits a bespoke item with incredibly tight tolerances, the bearing has a strict run-in regime and is claimed not to give its best for nearly a month of use, something I can vouch for. RedBeard supply two different oils for the bearing – one thick and one thin. They suggest that the thinner oil should be used initially, cleaning and re-lubricating every 24 hours of running, and then changing once a week for the first month. After this, the thicker oil can be used once the bearing has successfully completed its initial run-in.

Fitment of the bearing is easy but one thing to note is that its base plate is slightly thicker than the old item, meaning that the platter sits a few millimetres higher than before, so re-checking your arm's VTA is a wise move after installation. Also, the spindle on the new item is much longer than that of the original Garrard, and I did slightly miss the stumpy, shiny old one, from a visual point of view! However, Jeremy states that the new length is to cater for the thicker mats that are increasingly popular. Also, the spindle itself is



available in over 40 different wood finishes, and is user-replaceable, as different spindle diameters are offered to cater for non-standard records, such as old 78s which sometimes had smaller centre holes. The spindle of the review unit was Burnished Indian Rosewood, and looked very smart indeed.

SOUND QUALITY

Initial listening tests carried out after a couple of days of continuous running on my Garrard 401 seemed to suggest no huge differences in performance, apart from a little less mechanical noise, so I duly followed the recommended run-in procedure for nearly a month, making sure to listen regularly in between oil changes! An extended evening of listening at the end of the month showed further notable

improvements but not, I believed, anything truly ground breaking; how wrong I was... Still, I listened to the deck every evening for a good week with the new bearing in place and enjoyed it but still wondered how I would write a review about something that seemed – well – a little underwhelming. I then re-fitted my old bearing whilst I wondered how to break it to Jeremy in the nicest possible way, sat down to listen once more and wondered what I had done to make my trusty 401 sound so rough, ragged, noisy and almost broken!

A thorough set-up check revealed no ills, so back in went the Super Bearing and all was well once more. In fact, "all was well" doesn't even come close to the rich, sumptuous and positively languid sense of ease with which the deck now filled my listening room. Compared to this, the original

matter what I chose to put under the stylus, the Super Bearing pulled an extra layer out of every performance. It never changed the innate nature of the Garrard, which is a very good thing – that magnificent bass was still very much present and correct, as was the utterly faultless timing for which the deck is rightly known. However, with the RedBeard in place, it seemed that unwanted artefacts that I had not noticed before were conspicuous by their absence and the treble congestion often mentioned as a negative against the deck seemed to have blown its nose and was now breathing freely.

The final note I made during my time with the Super Bearing harks back to Noel's original experiences and concerns the background noises made by the deck. With an ear close

"the helicopter at the start of 'The Best Days of our Lives' seemed determined to rip my loudspeakers apart"

bearing made the deck sound congested and unsure of itself across the upper bass and lower midrange, and this was with a bearing recently fettled by Northwest Analogue, so I know it's in top order. Spinning some soft classical music on the Super Bearing seemed to have each player in the orchestra expending less effort to achieve the same ends. The end result was simply more effortless and musically satisfying, but there was no hint of wobble or hesitancy – just a confident and assured overall demeanour.

Switching to some classic rock in the form of Pink Floyd's "The Wall", the deck had me almost holding onto my seat with its power and insight. It is a great recording with plenty of dynamics at the best of times and I love hearing it with a Garrard in the driving seat, but with the Super Bearing in place the interplay between the guitar and bass guitar in "Another Brick in the Wall Part I" seemed even more immediate, taut and sinister, and the helicopter at the start of 'The Best Days of our Lives' seemed determined to rip my loudspeakers apart with its sheer power and dynamism.

Meandering through all sorts of music in my record collection, it soon became apparent that, no

to the spinning platter, the result was a blissful silence and this carried across into the music itself, with no unwanted background noise or underlying mush to spoil things. Once again, the Super Bearing simply let the music flow through.

CONCLUSION

There's no point beating about the bush – if you are thinking of buying the RedBeard Analogue Super Bearing then, along with a Garrard 301 or 401 that is in fine fettle, you need deep pockets and an incredible sense of patience. It took nearly six weeks of running my own turntable for many hours a day for me to appreciate what the Super Bearing can do but believe me, it was more than worth the wait. Equally, do not be fooled into thinking that this will be a universal panacea for a poorly set-up deck in less than good condition because it won't. Peculiarly, because of this I wouldn't even advise putting it at the top of your modifications shopping list, because you really do need everything else in the chain to be right to fully appreciate what it can do. Heed this advice, though, and I would say that the Super Bearing is an almost essential purchase if you really want to hear the very best from your Garrard.

REFERENCE SYSTEM BOX
Garrard 401 turntable
Audio Note Arm Two/II
Ortofon Kontrapunkt b cartridge
Anatek MC1 Phonostage
Naim Supernait amplifier
Leak 2075 loudspeakers (modified)

VERDICT

It isn't cheap, but the Super Bearing coaxes hitherto unknown depths from the mighty Garrard 301 and 401.

REDBEARD ANALOGUE
SUPER BEARING £595
Northwest Analogue
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<http://northwestanalogue.weebly.com>

FOR

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- ease of fitment
- sonic effortlessness
- swappable spindle

AGAINST

- lengthy run-in period



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Special K

David Price enjoys the exquisite Esoteric K-03 'digital source drive'...

You'd never think there was a recession on. In the past couple of years, I've reviewed a stream of superb high end digital disc players, from the UK, US and Japan. Whilst it seems we may be counting pennies more carefully these days, there doesn't appear to be quite same sort of chill, economic winds blowing around the imaginations of people able to contemplate dropping £10,000 on machines such as this. So, the good news is that – if you're on the look out for a new super-fi separate, the choice is better than ever!

Unless there's more change down the back of the sofa than the last time I looked, I shall have to declare that I am not a prospective purchaser of the Esoteric K-03. Frankly, machines at this level can often alienate me for their sheer ostentation – they're so far out of my league I almost begin to take against them and their fancy ways. But I must confess that this time, I felt no such emotion – there wasn't the slightest sense of "if this is how the other half live, they're welcome to it". Instead, sat proudly on my equipment rack was one of the most delightful digital sources I've discovered in years.

I liked the Wadia S7i very much last month – at £14,000 I blooming well should have – but for all its American bluster and bombast,

there was still a slight sense of some attention to detail lacking. The casing was a redoubtable piece of metalwork for example, but compared to the bargain basement(!) Esoteric (which would give you enough change from the Wadia's price tag to buy a base model Kia Picanto), it's more than a little rough. Running your forefinger along the top of the Japanese machine is like caressing the smoothest silk; by comparison, the Wadia feels like dragging the carpet with your knuckles...

Okay, I know, don't judge a book by its cover. But look inside the Wadia and see its workmanlike plastic disc tray. I know this is good enough to get the job done, but you can't help thinking Wadia simply skimped here. Contrast that of the Esoteric's, which glides out like a prima ballerina on ice to reveal its superlative, cast alloy construction. The buttons on the Esoteric are a joy to the touch, whereas the Wadia's felt closer to those from the Hewlett Packard parts bin. The Wadia's display too, whilst characterful, has a slightly home-made quality to it whereas that of the Esoteric probably had an entire office worth of engineers tweaking it until it had the right size, pitch and hue of blue to be seen across the average Japanese house at five metres. Alright, maybe I'm overstating the differences, but see where I'm going?

On external fit and finish, the cheaper Esoteric knocks the mighty Wadia into a cocked hat.

Inside of course, the Wadia is a tour de force, but then so is the Esoteric. The K-03 is equipped with the new VRDS-NEO VMK-3.5-10 mechanism, which the company says has advanced substantially beyond existing VRDS mechs. If this is true, it's no small claim because TEAC (nee Esoteric) make some of the very best optical transports on the planet. It uses a high-precision turntable for spinning SACDs and CDs, said to improve read precision by mechanically correcting for surface run-out. There's also an all-new servo driver circuit specifically for SACDs and CDs, and a duralumin turntable with a 10mm steel bridge. A strong neodymium-magnet-driven coreless three-phase brushless spindle motor is fitted, along with a shaft-sliding type pickup where the laser beam consistently illuminates the disc perpendicularly.

As far as I'm concerned, there's no doubting the provenance of Esoteric transports. Indeed like petrol engines in Honda cars, they're the jewel in the crown, so to speak. It's what happens downstream where the machines are more prone to stumble, and certainly in my review of the 'entry-level' £3,500



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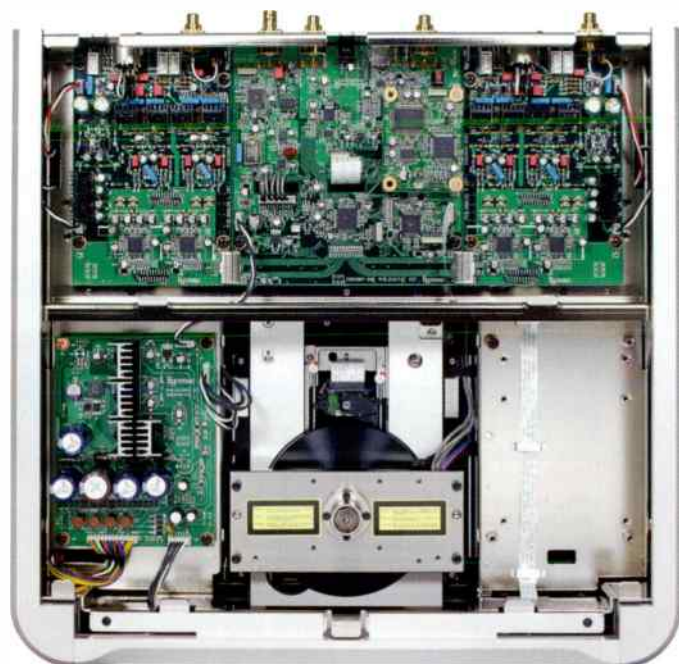
Esoteric X-05 in June 2010's Hi-Fi World, it felt like a great transport in search of a decent DAC. What of the K-03? Well, Microdevices Corporation's top-end 32bit AK4399 DACs are fitted, mounted on a separate analogue audio board for each of the left and right channels and configured for dual mono operation with the same layout for each of the two channels. The analog audio circuit is said to have a power transformer separate to that of the transport, and is equipped with two large-capacity toroidal transformers, one specifically for the built-in dual mono D/A converters and the audio circuits, and the other for driving the digital circuit and mechanism.

Like the aforementioned Wadia, the Esoteric is also a DAC with 24/192 digital inputs; one of these is



the latter being apodising to eliminate the pre-echo and ringing effects in the impulse waveform. There's even a Digital Filter Off mode, which bypasses all four of the digital filters, is also provided. The machine is said to have a high precision internal clock, but as per some other high end Japanese machines, an external clock facility is available. The K-03 has a WORD sync function to synchronise with an external WORD clock such as Esoteric's G-0Rb rubidium master clock.

As far as outputs are concerned, there's the usual RCA analogue outs plus fully balanced XLR audio outputs too – de rigueur on a Japanese



an asynchronous USB for connection of a PC or Mac computer. In order for the USB input to function correctly you need to download MacBook drivers from the Esoteric Japan website. There's a wide variety of digital conversion functions, which include a mode to convert DSD and PCM formats directly into analog signals, as well as PCM up-conversion to x 2 (64/88.2/96 kHz) or x 4 (128/176.4/192 kHz), from the original sampling frequency, and even a PCM to DSD conversion function is available. The full range of Esoteric upsampling and cross sampling to DSD is available through the USB input. Changes have to be made with the K-03 in stop mode.

It also sports four types of digital filters for PCM signal processing – two types of FIR digital filters and two types of short delay digital filters,

machine of course. It also has a switchable variable line out, so it can be used as a digital preamplifier, or can be configured to run as a line-level only source component. One coaxial digital output is supplied, although of course this doesn't work with DSD. The machine's oestopath-friendly 28kg weight is a function of its very large size (445x162x438mm), and the massive amount of metalwork inside. The leather finished remote control is a nice touch, a testament to the completeness of the design.

SOUND QUALITY

Kicking off 4hero's 'Morning Child' was quite a surprise. This one of those tracks that always sounds underwhelming, especially by 4hero's sky-high production standards; the mix has always seemed a bit gloopy

and vague to me, something of a dog's dinner. But I was amazed at the way the Esoteric turned it into a thing of coherence and consistency, bringing the listener closer to the music without in any way sounding forced. There was an unerring sense of clarity, yet it wasn't in any way the sort of nail-breaking, tooth-aching assault on the senses that came from the cheaper Esoteric X-05 I tried a couple of years back. The cheaper player seemed to machine-gun detail at me, whereas the K-03 is less forward in coming forward, instead letting strands of the mix make their own sweet, natural way to the listener, set in a vast and expansive soundfield.

Ironically though, despite being apparently less detailed, it actually proved far more so. This was down to the wonderful way it let individual strands assume their own space in the mix, sitting in a precise location from where they would play along unhindered by other competing instruments. This was strikingly apparent with 'Morning Child', which came across with an exquisite, crystalline clarity. One key reason for this, I found, was the sublime timing. It was almost like switching to a high end direct drive turntable from a wobbly budget belt drive – suddenly cymbals had a wonderfully natural feel, full of ringing harmonics and yet with no splash or smear. On lesser CD players they sound far more generic, almost as if they're samples from a sound library.

This amazing temporal accuracy was the root of the Esoteric's performance then, from which everything else followed. Presenting a starkly detailed picture of the music, it felt like you could peer in and practically walk around inside the stereo image. Pianos had a wonderfully full bodied and sonorous tone, then seemed to decay forever. At the same time, snare drum rim shots started and stopped on sixpence, the K-03 showing a delicacy to their playing that I've rarely heard. So many digital players don't quite do the timing thing, yet when the really – really – good ones like this hit the spot the results are breathtaking. The whole soundstage snaps into focus like first pressure on the shutter of a good autofocus camera, adding a wide angle and superb depth of field to crisp, pin-sharp image capture.

Tonally, the Esoteric isn't the brightest of CD spinners I've heard. But whilst that rolled off top end on CD looks dramatic [see MEASURED PERFORMANCE], it doesn't sound quite so obvious – especially through spry, crisp and dry modern

loudspeakers. Yes, I'd have liked a fraction more reach up high, to give pianos more atmosphere and cymbals just the slightest extra shimmer, but still it doesn't in any way sound muffled. Basically the Esoteric has a lovely silky treble (quintessential Jap high end, methinks!) that wants for very little. And that brilliant time-keeping dazzles with little details like cow bells, triangles and shaken tambourines, which sound so tactile and alive – even on bog-standard CD.

Moving to Compact Discs of the Super Audio variety, and the K-03 was finally in its element. Given its super performance on Red Book CD, I was expecting even more fireworks and that's just what I got. It was like someone had pressed that auto-focus button once more, and the music got one step cleaner and purer still, suddenly exposing stock CDs for the

just sleeps. Not this time though, as 'Hey Nineteen' has a distinct but very low level percussive track that hangs behind and between the main drum track. It's barely audible on almost every CD player I've ever heard, but here it was unsettling little 'Mimi', whose ears duly pricked up and eyes turned toward the source of the 'disturbance', obviously thinking she'd discovered the presence of a small furry creature behind my right hand Quad Electrostatic.

Such forensic precision had its good and its bad sides. It was great for classical music, providing a profound insight into the orchestra and the concert hall. An Esoteric SACD of Mozart's Piano Concerto No.20 (Curzon, English Chamber Orchestra) was an amazing auditory experience, with stunning insight into the original musical event. The rich,

Esoteric by comparison seemed to have the air-conditioning set at a precise sixteen degrees centigrade, just enough to keep warm but not sufficient to kick back and relax. Many won't regard this as a negative at all, indeed I'm not even sure I do, but it's certainly a distinct trait of the Esoterics I've reviewed. In the case of the X-03, it is far less acute than with the cheaper machines, but still there and worth drawing one's attention to. I shall spare you the inevitable Lexus-Cadillac analogy at this point!

CONCLUSION

In many ways one of the very best silver disc spinners I've ever heard (and just recently I seem to be hearing better and better ones almost every month, such is the rate of progress right now), the Esoteric X-03 is a triumph of digital engineering. Having a built-in DAC which works extremely well (my comments on CD sound hold for this, too) makes it a far more future-proof proposition. As long as you understand that its beauty lies in its flawless perfection – physically and sonically – and that it is a little devoid of character in itself, you will be bowled over by this machine. Whilst it could never be called good value in outright terms (no piece of hi-fi is at nearly £10,000), in the context of the performance of its price rivals, its worth is unarguable. If the recession hasn't affected you, then hear this now!

REFERENCE SYSTEM:
 Esoteric P30 transport
 dCS Debussy DAC
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VERDICT ●●●●●
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imposters that they are. The Human League's 'Seconds' is a wonderfully big sounding all-analogue synthesiser based track and the Esoteric showcased the richness and texture of these classic electronics to full effect. It produced a vast grandstand of sound in front of me.

But it wasn't until Steely Dan's 'Gaucho' SACD was placed on that delicious disc tray and the play button pushed that I really heard what it's capable of. This is one of my favourite albums of all time, and I've listened to it on practically every source I've ever had in my house. The Esoteric's rendition was about as close to the textbook definition of perfect as I've heard. Vast in spatial scale, with thunderous but tightly controlled bass and a midband of surgical cleanliness, the song was an enthralling experience. The sheer orderliness of everything was breathtaking – no compression, no muddle, no fuss. Only my one-time Marantz TT1000/Origin Live Conqueror and Lyra Titan i turntable bettered this performance, I think, being just a fraction more animated and open. The K-03 served up a masterly, mastertape-like musical moment.

As an amusing aside, even my cat was amazed. It regularly sits by my side as I listen to music, and normally

resonant piano was eerily lifelike, its harmonics ringing around the hall and sparkling like waves on a moonlit sea. There was a breathtaking atmosphere to the proceedings, one which made me wonder if recorded sound could really get that much more lifelike.

True, this recording in particular is one of the best I've heard, so it's not like the Esoteric had its work cut out, but the results were magnificent all the same.

Here's the problem though – the K-03 has absolutely no character that I can discern. In strict terms, that's surely a great thing. But its unerring perfection wasn't quite as fun as I'd expected. In this respect, the aforementioned Wadia S7i was better. It had the effect of – metaphorically speaking – warming the room up by a few degrees, making the musicians a little more relaxed and in tune with one another. The

MEASURED PERFORMANCE

Frequency response of the player, as delivered, rolls down strongly above 11kHz (-1dB), measuring -4dB down at 20kHz, with steady tones or a raised cosine pulse. The filters produce a variety of preferable response options.

Distortion levels were a trifle higher than usual, another surprise, but at 0.24% at -60dB not significantly so. All the same, this limited EIAJ Dynamic Range to a 98dB figure, where 100dB or more is common with good players.

Frequency response of SACD was maintained to 55kHz where it measured -6dB down, so the player has high frequency extension, if not to 100kHz as is possible. Distortion with SACD was very low as expected, measuring 0.026% at -60dB, which is about as good as it gets, and the player could resolve a -100dB dithered tone, with distortion of just 2.3%, one reason why SACD sounds so easy and pure.

Jitter was low, signal related jitter on a 1kHz -60dB signal measuring 30pS and random jitter around 10pS,

whilst low rate clock drift was a reasonably low 45pS, all good figures, up close to the best. NK

FREQUENCY RESPONSE



DISTORTION





PROFIGOLD PROC262 £15

For a CD or DVD player to function efficiently, it is important that the optical lens is kept clean and free from dust. Even in the cleanest of environments this isn't easy since all optical discs are 'non contact' formats so, unlike records and tapes, there is no moving physical contact to wipe any stray dust particles away.

Of course, the correct way to clean a CD player's lens is to dismantle the machine and then gently

swab the dirt away with a cotton bud soaked in isopropyl alcohol. Not only is the lens itself easily damaged by scratching, the electromagnetic focusing coils on which it is suspended are also extremely fragile, meaning that any cleaning needs to be done delicately.

For those who find this process too demanding there is this lens cleaner disc from Profigold. Like other similar devices it consists of an ordinary CD with brushes attached

to its reading side, the idea being as the disc spins, any dirt on the lens is brushed away. Some similar products have brushes so stiff that they end up battering the poor laser assembly into submission rather than gently cleaning it, but the twelve brushes on the Profigold disc are mercifully small and compliant and so I had no such reservations. Voice announcements recorded on the disc makes it very easy to use and a standard jewelcase is supplied to store it in afterwards. The brushes have no difficulty removing a light layer of dust, but won't of course shift the tobacco films and layers of greasy goo that one sometimes sees in hard worked players – you'll need the aforementioned 'deep wet clean' method for this.

The Profigold disc really proves its usefulness with machines that are difficult to clean manually, such as in-car models and computer CD ROM drives, but whether those brushes will last very long in the type of CD mechanism that loads the disc between two rubber rollers remains to be seen! Recommended. **TJ**

[Contact: <http://profigold.bandridge.nl/>]

soundbites

BLACK RHODIUM AVENGER MAINS CABLE £663.83/1.5M

Deep cryogenically treated, the Avenger includes three-core, 3 sq.mm, thirteen gauge silver-plated copper conductor wire plus rhodium-plated Oyaide C-037 IEC connector and Black Rhodium's polished and plated I3A, three-pin plug. Comparing it to a standard, basic mains connector via my Icon CD-X1 CD player and spinning Skunk Anansie's 'Hedonism', the Avenger exhibited a big bottom end. Low frequencies were dramatically extended giving this bold, meaty track real kick and punch.

A superior sense of clarity allowed the vocals to be expressed in far calmer fashion, as a chunk of mains-derived distortion was subdued while, dynamically, the track became a more involving listen. Playing Tina Brooks' Blue Note jazz piece 'True Blue' and the track 'Good Old Soul', the Avenger projected a

grandeur and more epic soundstage, extending the previous boundaries both horizontally and vertically. Also, cymbal work produced a richer, fuller treble. Midrange frequencies were also scrubbed clean.

Plugging in Isotek's Optimum mains cable (£300/1.5m) for a slightly fairer comparison, it was noticeable how much fuller the Avenger's treble output was. Those cymbals were richer in content, for example, while the brass-dominated parts of the track sounded crisper and fuller. The Jesus & Mary Chain's 'Candy' album had greater breadth, with the drums getting far more character. I heard a gorgeous rich



sweep of musical information. It's not often that you can describe a mains cable as 'exciting' but the Avenger adds a spectrum of sonic colour and puts a spring in the step of your music. **PR**

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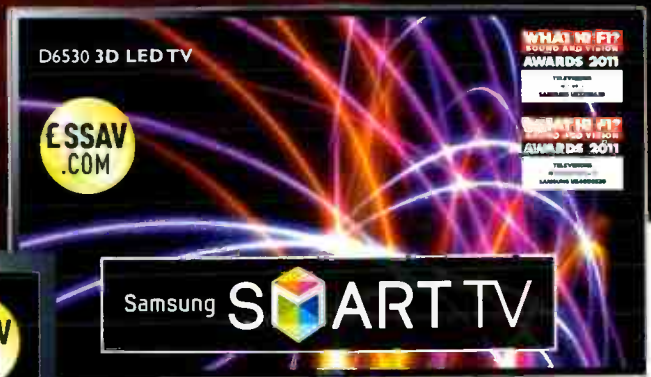
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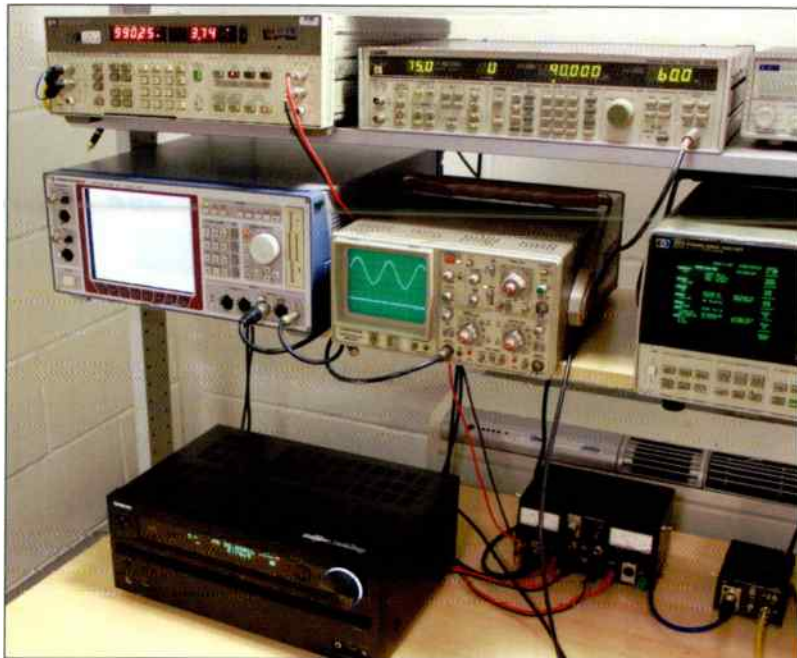
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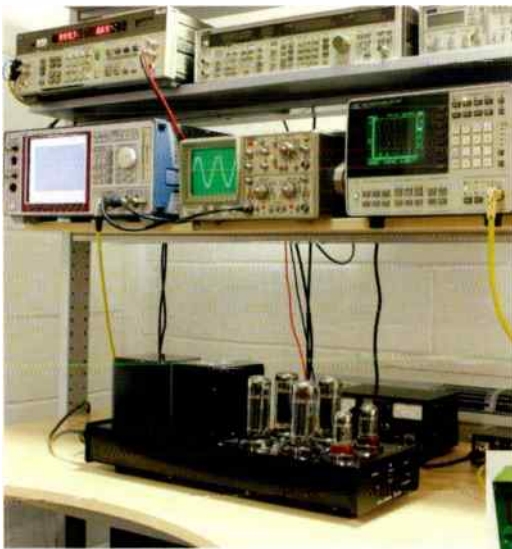
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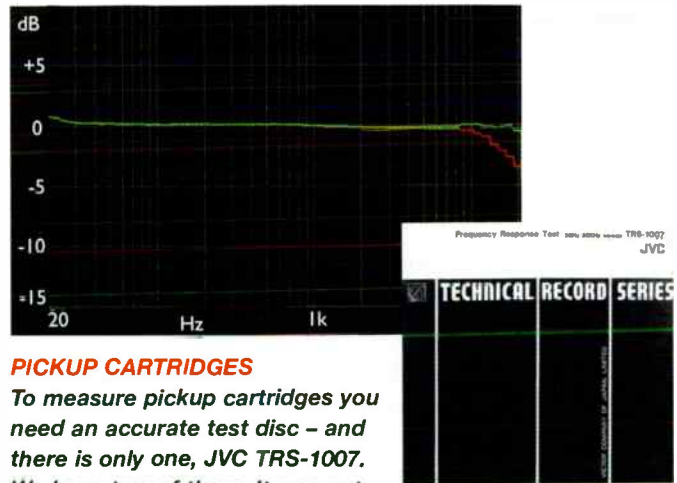
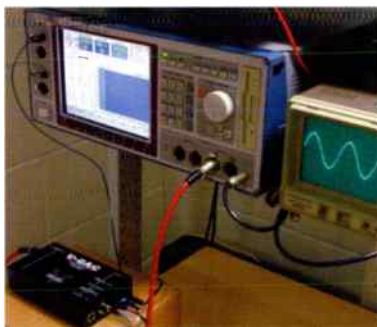
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Spectral DMC15SS BNIB full warranty	6850	4795
Spectral DMC 15SS x-demo full warranty	6850	3999

Amplifiers

Audio Technica AT-MA50 Mixing Amplifier S/H	399	149
Bel Canto EVO4 MKII amplifier S/H	3895	1599
Bel canto S300 S/H	2000	995
Chord Electronics SPM1400 B mono S/H	12000	3799
DPA MA1 class A monos BNIB	4400	2999
DPA Power Plus BNIB	950	649
Electrocompaniet AW120DMB x-demo	3490	2499
Electrocompaniet AW250R S/H	4999	1799
Electrocompaniet AW400 x-demo	7180	5950
Electrocompaniet ECI-3 x-demo	1750	1199
Electrocompaniet PI-1 x-demo	1425	999
Krell Evolution 302 black x-demo	12900	8999
McCormack DNA125 power amplifier S/H	1999	995
Prima Luna Prologue 2 Silver S/H	1690	1199
Prima Luna Prologue 2 Black 5 months old S/H	1640	1199
Rega Mira 3 Amplifier black S/H	598	299

Loudspeakers

Focal JM Lab Electra 1007be Classic + stands S/H	3499	1799
Konus Essence Bosnian Pine S/H	3500	1750
Martin Logan Fresco Centre x-demo	750	350
Martin Logan Quest Light Oak (new panels) S/H	N/A	1299
Martin Logan Summit X Cherry xdemo	12998	9799
Magneplanar MG12 3 months old	1850	1299
PenAudio Charm Sub modules x-demo	2175	1499
PenAudio Serenade x-demo	7250	4999
Sonus faber Cremona Elipsa Maple x-demo	12980	7999

Cables and Accessories

Apollo 80cm single column Stands S/H	149	99
CD 4 pillar 60cm stands HEAVY! S/H	279	149
Electrocompaniet ECS1 M6 feet x4 BNIB	189	49
Finite Elemente HD09 Amplifier Platform Maple S/H	1100	499
Jadis KT90 Valves x 4 BNIB	600	300
JPS Ultra Dual bi wire 2x8 Spades to banana S/H	549	279
JPS The Power AC+ 2m UK-IEC mains cable S/H	400	199
MIT Terminator II Biwire 2x10ft S/H	599	249
MIT MH750 Plus 2x5m speaker cables S/H	N/A	499
Partington Super Dreadnought 60cm S/H	199	159
Partington Dreadnought 60cm stands S/H	199	139
Spectral MI-350 20ft interconnect S/H	2100	899
Spectral Mi-330 UL2 1m BNIB	800	399
Spectral MI-330 UL2 1.5m BNIB	850	425
Spectral MI-330 UL2 10ft BNIB	965	479
Spectral MI-330 UL2 15ft BNIB	1125	579
Spectral MI-330 20ft interconnects x-demo	950	449
Spectral MH-750 25ft speaker cables x-demo	2000	995
Stereovox 2x2.5m HDXV speaker cable S/H	350	169
Stereovox HDVX 0.5M digital S/H	199	75
Transparent Balanced Reference 2x30ft x-demo	6345	3299
Transparent Reference SC 2x10ft x-demo	6192	3199

Tuners & Tape decks, power supplies

Magnum Dynalab FTR remote/Preset Tuner for Etude S/H	395	179
Yamaha RX V795RDS AV receiver S/H	N/A	149

Midland Audio X-change are looking for All high end audio separates best prices paid for good examples.

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- Transparent Audio
- Wadia
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- Wilson Audio

Midland Audio X-change are looking for Audio Research, Krell, Mark Levinson, Naim Audio, SME, Wadia.

AUDIOPHILE BASE STARBASE £1,800 (AS TESTED)

This modular hi-fi shelf system, comprising Three Level Base01 platforms and Three Level Starbase Frame, is rather more than your basic rack. It steers clear of the usual high mass, rigid, spike-footed designs.

The Base platform system utilises a suspension system. In effect, you have a skeletal frame and, upon this, is fitted a series of platforms that sit without any fixing, within. Each uses compliant beams supported by two feet that cantilever at each end providing tiny amounts of movement. This takes the load and passes it to the damper that is in turn, bonded to the frame, reducing airborne energy and, theoretically, distortion. An intriguing design, my only gripe with this particular variant was the tripod design. For some, the rear, centrally-placed, leg may get in the way of cables – but a four-legged version is available for those who need it.

The frame is available in black (silver on special order) with black or silver legs and platforms; each shelf can be supplied in different heights and impresses even before you fully unpack it. The packaging is a design feat in itself. A model of simplicity and logical thought, inside the outer box, each and every shelf is self-contained within a slide-out cardboard tray for easier building. Once constructed, I grabbed a bunch of CDs spanning a variety of genres for testing. I left the majority of my system resting on my reference shelving system, the Avid Isorak. I then isolated the CD player, placing it on a simple light table of the sort you might find in Ikea.

In comparison to the table, the Base offered an *immense* sense of clarity. The air and space surrounding the instruments on each CD reached almost desert-like proportions. It was, in the context of a 'mere' shelf, quite a shock. Another immediate effect was how clean the signal was across all frequencies. It was as if the Base reached into the mix with a scrubbing brush and removed the muck and dirt off the edges of

the upper mids and bass. Obviously interacting with the Base's isolation properties, the music was steadily stripped of several layers of insidious distortion that infects most of our music, often fooling us into blaming a major hi-fi component.

It took all of five seconds for the Base to prove the importance

More muddle was removed, with the Base allowing organic instruments to provide believable texture, while vocals sounded fresher, gleaming like chrome but without a hint of forwardness.

The most impressive part of the Base's improvement was heard in the lower frequencies. The Base added



of a good set of hi-fi shelves and to validate this particular design. Playing a range of musical genres on the CD player with the Base, gone now was that slight screech on female vocal tracks; lower frequencies felt clean, almost cool with greater focus and a leaner, more menacing heft. Treble flew through the air with gay abandon while strings had great sway.

I then compared the Base to my reference Avid Isorak shelf system (£285 per shelf for its three pole system). The Isorak is no mean performer, providing a rich, almost vinyl-like aspect to its presentation. It has a tremendous capability to reach into a song and retrieve previously lost detail and so would be a challenge to the Base. Running it side by side for a few hours was very revealing. The Isorak performed admirably but the Base pushed the sonic boundaries to new levels.

a deep, descriptive bass that revealed new aspects of the music that made you think twice about previously familiar recordings. I swear I could even hear sub-bass emanating from my Quad ESL-57s [really? Ed.]. I'll be seeing flying saucers land in my back yard, next...

This is a very special set of shelving – a Rolls Royce rack, in fact. It's a design that has been carefully considered and systematic in getting to the root of those destructive resonances that wantonly circulate around our hi-fi systems. Don't see this system as a set of pretty shelves that will go nicely with the lamp and the curtains, see it as a genuine upgrade that will have you re-evaluating much of your music collection. **PR**

[Contact: +44(0)845 643 6299.
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soundbites

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NOTTINGHAM ANALOGUE Studio Spacedeck turntable. Space arm. Excellent condition. £650. Tel: 0151 677 9861 (Wirral)

EXPOSURE 2010S CD player for sale. Excellent condition in silver. £170. Tel: Andy 01484 427 426

KIMBER D-60 digital coaxial interconnect. Never used! 1m. Phono plugs protective case. Half price £100 ono. Other items, active speakers. Tel: Mike 01902 884 694

WORLD AUDIO Design K5881 valve amp. Is now a classic. Good condition. £325. Tel: 01384 79402 or 0121 569 3947

CASSETTE DECKS: Sony STD777ES, three heads, Dolby B, C, S, boxed, manual, £45. Yamaha K330, two heads, Dolby B, C, manual, £30. Tel: 01275 462 948 (Somerset)

MUSICAL FIDELITY X-Can V2 headphone amplifier. Upgraded capacitors and diodes. Pristine, unmarked condition. £105 ono. Tel: 01639 641 043

ARCAM SOLO CD/FM/DAB All-In-One unit. Condition as new with accessories, manual etc and original box. £525 ono. Would consider part exchange for Linn Ninka/Keilidh speakers. Tel: 023 8073 8935

REGA 'COUPLE' high quality interconnect cable, immaculate, £30. Beyerdynamic DT 235 black headphones, closed back, velour earpads. Update of highly successful DT231. As new, £30. Tel: John 07971 136 711 (West Yorks)

AUDIO PHYSIC Spark, smallish floorstanders, black, excellent dynamic range, drive units still made, good working order, £600 (£2k). McIntosh MCD201 SACD/CDP variable volume, excellent sound, immaculate, triple boxed, remote, £1300. Would exchange for immaculate Graaf GM20 OTL. Graaf WFB two valve line pre, immaculate, c/w MM/MC, 10 pairs in/out £500. (£2.5k) Tel: Shalom Pinchas 07951 553 091

BELCANTO CD2, power supply, remote, packaging, excellent. £1350. Avondale NCC200 mono-blocks, power supply. £695 with leads. ProAc Studio 150 ewe finish, vgc, £550. Tel: 07733 174 990 (Hants)

DECCA FFSS Mk3 £150. Fons CQ30 lid with hinges £40. Elstone mains transformer SR350 £25. Mullard GZ34 very light use £25. Buyers collect. Tel: 01344 776 445 (Berkshire)

MARANTZ SA CDI ultimate player. Cost new £5000. Bargain at £1200 ono. Krell bass alignment active crossover filter. Cost new £1750. For any B&W Matrix loudspeaker, mint bargain at £750. Tel: 07989 437 921

USHER 719s plus stands. Mint condition. Stands retail at £500. Speakers including stands £650. Buyer collects. Tel: 07887 910091 (Stamford, Lincs)

CYRUS PRE amp £125. Cyrus power amp £100. Bose SoundDock Series II, unused, £140. Soundstyle rack, red glass marble effect shelves. Cost £300. Accept £80. Tel: Martin 011591 34579

TECHNICS SLP770 CD £65. Sansui AX701 tuner £65. Technics SL5 turntable £65. Shure SFG2 stylus balance, unused, £25. Marantz ST7001 DAB tuner, boxed, £185. Beomaster 901 receiver £50. Tel: 01708 457 691

QUAD QC Twenty Four pre amp (modern). Mods include MM phono stage, balanced input, capacitors. Excellent condition. Can dem. Buyer to collect. £600. Tel: 01530 272 801

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MUSICAL FIDELITY AI CD Pro £500 o.n.o. Musical Fidelity AI amplifier £450 o.n.o. Sold together will accept £700 no offers. Both excellent condition, boxed. Tel: Shaun 01226 244 341 evenings

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FOR SALE. Audio Synthesis Passion passive preamplifier £200, DAX audio synthesis - d/a converter £300 and Revox H6 FM tuner £300. All for cash. South London. Call Rick 07931 526 106.

FOR SALE: Technics SL1210 Mk2, very good condition, £249. Garrard 401 plus power supply £1200. Can post items if needed. Tel: 0207 499 8729

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SME 3009 MK2 non detachable headshell £10. Leak Troughline stereo 3 tuner. Working order. Offers to 01159 877 567 or 07783 327 689

QUAD 989 speakers, black. S.N. 239/240. Close to mint, with original boxes. Collection only. £1400. 01472 852900 (N. Lincs) e-mail ian@moortownstation.com

HARBETH COMPACT 7 ES-3s in cherry. Mint condition, boxed with Owners Certificate etc., £1100.00. Pickup (East Sussex) or carriage at cost. Email matthews.mike@btinternet.com or tel 01424 753641.

MICHELLE ORBE turntable, Manticore Magician tonearm, Denon DLS-1 cartridge selling £1400. Audio Synthesis phono stage £1400 selling £500 Exposure 4 power amp Exposure 17 pre-amp £3000 selling £900 Email: pmgovern@yahoo.co.uk

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KRELL FBP 250 watt monoblocks (10,000?) £2,500. Audio Research Reference 3 pre-amp (£8,450) £4,400 nearest offer. Gamut L3 speakers (£4,400) £2,400 including stands. Photos and details. yatestherapy@googlemail.com. 07899721899.

LEAK TROUGHLINE tuner for sale. Fully restored and supplied by GT Audio with audiophile stereo decoder. Cost £895. Will accept £550 ono. Tel: 0161 628 2703 (evenings) or mobile 07903 422255 or email: brianpyplacz@yahoo.co.uk.

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NEXT MONTH – MARCH 2012 ISSUE

December's darkest days are behind us. Now we can look forward to a New Year full of hi-fi goodies! Here is what we hope to have for you in the March 2012 issue of Hi-Fi World.

DIGITAL

Digital source round-up. We compare a whole slew of digital sources to explain clearly what they do and cut the confusion! Included are -

Cyrus Stream,
Cambridge NP30,
Squeezebox Touch,
Musical Fidelity M1 Clic,
Cocktail Audio X10 music streamer.

Mac Mini special with external power supply and internal SSD drive
- the latest Mac Mini gets serious Item Audio surgery.

Monitor Audio iD100 iPod dock

LOUDSPEAKERS

Usher Dancer Mini I Diamond
Audiovector Ki 3 Super
Acoustic Energy Reference 2
Tannoy DC-8T updated

VINYL

Goldring 1022GX cartridge
Northwest Analogue cartridge rebuild
Ortofon TA-110 arm
Rothwell Rialto phono stage

AMPLIFICATION

Ayon Spark III valve amplifier
Cambridge Audio Azur 650 amplifier
Phonosophie Classic 1 integrated amplifier
Audio Research SP17 valve preamplifier and
VS 115 valve power amplifier.

We cannot guarantee all the above will appear,
due to malfunctions, updates, failures, fire, flood,
cargo ships sinking or being boarded by pirates,
and whatever other reason we are told.



Usher Dancer Mini I Diamond

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THE WHO

QUADROPHENIA

1973

Q'uadrophenia', the film, was a gritty, focused piece of art examining the condition of the mod in society, how the individual is both pulled along by a fashion but also ruled by its expectations and is affected by its disappointments while focusing upon a single hero, played magnificently by Phil Daniels. It was also a film that arguably featured the best integration of a rock-based sound track yet seen within a music-centred movie. The music itself was not a masterpiece of hit singles and treasured moments, it held together more as a body or rock symphony, reflecting off the structure of the plot. Unlike 'Tommy', which was almost a series of set-piece events, 'Quadrophenia' flowed.

There is a lot of attention being brought to bear on the music, in particular, but because the album was released in 1973, it might be difficult to understand why now and not in two year's time. According to Pete Townshend himself, "there is a sequel to the 1979 film planned, that will continue Jimmy's life after his mod days, and which will go into production next year. The original 1979 film is being restored for Blu-ray with surround sound and an orchestra score is being developed by Rachel Fuller that could see the piece performed as part of the repertoire of international orchestras from around the world."

According to Townshend, the original vinyl version of the album was compromised by the rigours of life in and around The Who at the time. It led to a remixed CD, issued in 1996, that "...attended to

"nothing from The Who was ever 'regular' was it...?"

the fact that on some songs, Roger's wonderfully powerful vocals had been crushed on the vinyl version." Then you can add the fact that the DVD release, issued in 1997, only arrived with a mono sound track.

To fix all of those problems, Townshend has re-released *Quadrophenia* in three flavours. These include an LP release that arrives in a gatefold sleeve and is spread over two discs. But the jewel in the crown is the luxurious, CD-based, box set described as a 'Director's Cut' which has been produced, authorised and overseen by Pete Townshend. Present in a slip-case box, the set includes the original album over two CD discs, newly remastered; two additional discs featuring twenty-five demo tracks and a fifth disc EP DVD-A remixed for surround sound. You also get a hard-back book featuring new notes from Townshend plus rare photos, lyrics and memorabilia, a track-by-track guide plus a replica 7" vinyl single featuring '5.15' and 'Water' in a picture sleeve and you also receive six facsimile memorabilia inserts held in a card sleeve.

Finally, there is a digital element to this section via an area called Qcloud. Once opened, if you insert the first disc into your computer you will be able to access new content, direct. This includes much more memorabilia information than could be squeezed into the physical box.

The surround sound mix is not a throw-away extra designed to fill out the box set and increase the price but a realisation of the

quadraphonic version that Townshend wanted to release way back in 1972. "I had a recording on tape of Stravinsky's 'Firebird Suite' that became my model for 'pure' four channel recording and I played it to anyone that was sceptical," he said. Audiophiles will be intrigued to hear that Townshend had a Sansui-based quadraphonic system that reproduced vinyl encoded using Sansui's own QS matrix system and the SQ system developed by CBS.

Comparing the new album remaster with the earlier 1996 issue was enlightening. The new version injects far more air around the entire track giving a grander, more epic presentation while bass has been lifted so that John Entwistle's bass guitar is easier to discern. This in turn gives the music a far funkier, hip swaying value. Meanwhile, Keith Moon's drums are crisper with more impact and, generally speaking, the upper mids have a new sense of clarity. For example, the brass backing on 'The Real Me' is tonally more accurate while Townshend's guitar crashes throughout the track exhibit a great metallic character.

"(Quadrophenia) is a kind of distorted dream-view of two or three days in the life of Jimmy The Mod," said Townshend. "I hope that everyone who sits to listen to the album finds themselves in it and finds their own story. This is how pop and rock work for me, even rock opera should function in this way. This is not like regular drama." But then, nothing from The Who was ever "regular" was it? **PR**

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