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six network players



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World Radio History

welcome

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verdicts

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



As the new year kicks off we are faced with a deluge of "network players". Designed to play music stored on your computer, through an ethernet link, they can play iTunes through the hi-fi – or whatever Windows Media Player has stored we must not forget!

Computer audio files? They're low-fi aren't they? They were but Naim have come up with a player able to handle top quality 24/192 digital files and this raises a lot of issues. Find out more about this new player and the challenge

it throws down to others in our round up of network players starting p13.

If you'd like a diamond in your life then Usher's new Dancer Mini-One is worth hearing. Diamond coated tweeters are a difficult technology, but their DMD process gets it more right than others they claim – and they're right! Read more about this interesting loudspeaker on p38.

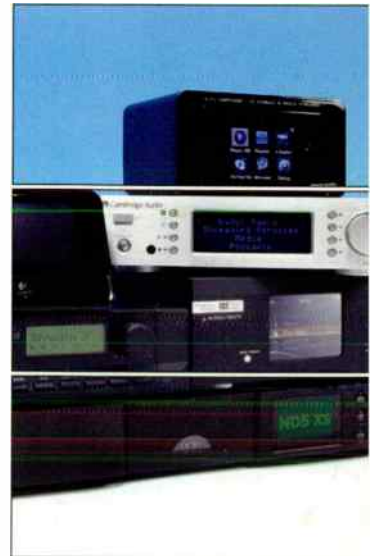
I love Tannoy loudspeakers – and I thought classical musician Rafael Todes would too. But he had another view! Read about the ever controversial subject of loudspeaker sound quality in this discussion over Tannoy's re-vamped DC8T on p46.

Network players may be what we all end up using tomorrow, but plenty of interest remains in what the world used yesterday – the LP. With some of the world's greatest musical performances still sounding best on vinyl there's a tomorrow for turntables like Avid's updated Volvere SP reviewed in this issue (p92). We all understand something that goes round and round and defies remote control! Music pure and simple. Bliss!

This issue covers the fast developing computer based technologies that we are going to see so much more of in 2012, but doesn't forget that the simple life has attractions too! I hope you enjoy it.

Editor

Noel Keywood



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.



ELECTRONIC MAGAZINE

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Distributed by Seymour Distribution Ltd 86 Newman Street London, W1T 3EX Tel: +44 (0) 20 7396 8000 Printed by Precision Colour Printing Tel: +44 (0) 1952 585585 Our Agents in Malaysia Millennium Hi-Fi & AV Simon Chang Showroom & office, 500-1-3 First Floor Wisma Indah (Shen Court), Jalan Tun Razak 50400 Kuala Lumpur, Malaysia Tel: 603 9283 8171 Fax: 603 9281 3762 e-mail: info@millennium-audio.com

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92

Avid Volvere SP high-end turntable



62

Monitor Audio i-Deck 100 iPod dock



42

Audio Research SP17 & VS 115 - a powerful U.S. valve amp combo



105

Ortofon TA-110 arm



58

Canor CD2 VR+ valve CD player



38

Usher Dancer Mini-One with DMD Diamond tweeter technology

AMPLIFICATION

- AUDIO RESEARCH SPI7 & VSI 115 42**
Rafael Todes is impressed by a big U.S. valve amp combo

DIGITAL

- NETWORK PLAYERS**
Noel Keywood listens to top quality digital
- NAIM ND5 XS 14**
- CYRUS STREAM X 18**
- COCKTAIL AUDIO X10 22**
- MUSICAL FIDELITY CLIC 26**
- CAMBRIDGE AUDIO NP30 27**
- LOGITECH SQUEEZEBOX TOUCH 28**

- MONITOR AUDIO i-DECK100 62**
Noel Keywood checks out a neat iPod dock

- CANOR CD2 VR+ 58**
Tony Bolton listens to a sophisticated valve CD player

LOUDSPEAKERS

- TANNOY DEFINITION DC8T 46**
Noel Keywood and Rafael Todes discuss
- ACOUSTIC ENERGY REFERENCE 2 71**
Paul Rigby appreciates compact, accurate monitors
- USHER DANCER MINI-ONE 38**
Diamond tweeters grace these quality floorstanders, Noel Keywood finds

CABLES

- TELLURIUM Q CABLES 81**
Paul Rigby listens to some impressive cables

FEATURES

- BRISTOL SHOW 12**
- OLDE WORLDE 78**
Adam Smith remembers the Odyssey RP1-XG tonearm

SOUNDBITES

- CLEARAUDIO SMART MATRIX**
- PROFESSIONAL RECORD CLEANING MACHINE**
- FURUTECH FT-809 TORQUE GUARD BINDING POSTS 119**
Tony Bolton

VINYL SECTION

- NEWS 90**
Paul Rigby has all the latest and greatest vinyl releases for you
- AVID VOLVERE SP 92**
Paul Rigby enjoys Avid's latest upgrades
- CARTRIDGE REBUILD 99**
Haden Boardman visits Northwest Analogue to hear about re-tipping
- ORTOFON TA-110 ARM 105**
Adam Smith listens to Ortofon's upgrade of a Jelco arm



7 COMPETITION

Your chance to win a pair of Castle Knight 2s in this month's competition

8 NEWS

Words from the front...

30 MAIL

Seven pages of your views; no small amount of controversy here...

74 SUBSCRIPTIONS

Ensure your copy every month and save money too!

51 WORLD STANDARDS

Brand new, updated guide to the latest and greatest hi-fi hardware on sale.

76 AUDIOPHILE VINYL

Paul Rigby rounds up the latest audiophile vinyl releases

65 WORLD CLASSICS

Brilliant designs that have stood the test of time...

83, 85, 87, 89 OPINION

The team get to grips with matters music, hi-fi and life!

112 DIAL-A-DEALER

A comprehensive guide to UK hi-fi retailers

116 CLASSIFIEDS

Two pages of second-hand bargains

120 NEXT MONTH

what we hope to bring you in the next sizzling issue...

121 ADVERTISERS' INDEX

122 CLASSIC CUTS

Paul Rigby listens to Jimi Hendrix



a worthy partner



WIN A PAIR OF **CASTLE KNIGHT 2 LOUDSPEAKERS** WORTH £400 IN THIS MONTH'S GREAT GIVEAWAY!

Here's your chance to win this fabulous pair of small loudspeakers, as reviewed in February's 2012 issue of Hi-Fi World! Here's what we said...

"The Castle Knight 2 achieves superb high-frequency performance with a 25mm soft-dome tweeter and a 150mm bass mid-unit driver made from a light yet stiff woven carbon fibre coned diaphragm providing good internal damping and low colouration.

The Knight 2 stands 380mm high, 200mm wide and 335mm deep, weighing 7.85kg. They are fitted with 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 traditional but slick in finish and looked classy.

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, plentiful treble detail pushes the high-end forward, creating a strong high-end atmosphere.

Kick drum and bass guitar in 'Rumour Has It' by Adele appeared to lack warmth and punch, when set

away from a wall. However, the low and upper bass still proved even and clean, adding a sense of depth to the sound stage. 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 a 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 they perform like no other".

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

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- ONLY ONE ENTRY PER HOUSEHOLD
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QUESTIONS

[1] What tweeter is used?

- [a] Hard dome
- [b] Squidgy gnome
- [c] Soft dome
- [d] Bone dome

[2] Where does treble sit?

- [a] Behind
- [b] In front
- [c] Nowhere
- [d] Everywhere

[3] Who played Africa Bamba?

- [a] Hendrix
- [b] Clapton
- [c] Slash
- [d] Santana

[4] They must be placed close to?

- [a] The fire
- [b] The ground
- [c] A rear wall
- [d] The sofa

March 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

DECEMBER 2011 CYRUS 6XPD AMPLIFIER WINNER:
Mr R.H. Taylor of Leeds, Yorkshire

news



Azur 851C DAC/CD

FRESH FROM CAMBRIDGE AUDIO

Cambridge Audio has broken its recent silence with a swathe of new products beginning with the Azur 851A integrated Class XD amplifier and Azur 851C DAC/CD player/pre-amplifier, both priced at £1,200 apiece.

Along with a meaty 120W at 8 Ohms, the 851A amplifier pays attention to noise and distortion reduction, boasting a large toroidal transformer along with an acoustically damped full metal chassis and the choice of balanced inputs.

The 851C CD player is packed with shiny technology including two Analog Devices AD1955 current output DACs used in dual differential mode and Adaptive Time Filtering upsampling (to 24-bit/384kHz) using a 32-bit Black Fin DSP (Digital Signal Processor).

You also get a 24-bit/96kHz driverless USB input plus three filter options: linear, minimum and steep. The inclusion of an XLR balanced output allows the sister 851A amplifier to be connected directly while the inclusion of an AES-EBU balanced digital input and output has been installed with an eye to connecting the company's own iPod iD100 dock, among other accessories.

Next up, the DacMagic 100 (£200) is the latest incarnation of this popular design which includes a new 24-bit/192kHz USB connector

offering asynchronous transfer. Also including the latest WM8742 24-bit DAC and a new upsampling indicator the chassis, available in silver or black, features one TOSLINK and two S/PDIF inputs.

Finally, the Stream Magic 6 is a new network music platform. Retailing at £700, it can source digital files from a PC, Mac or NAS drive. Capable of handling 24-bit WAV, FLAC, MP3, AAC and OGG Vorbis, as well as 88.2kHz files, the Stream Magic 6 also offers access to over 20,000 vetted Internet radio stations. The included iPhone or iPad app can also control all features as well as controlling the volume of both Stream Magic 6, a connected Cambridge Audio amp or AV receiver. Check out www.cambridgeaudio.com for more information.

iD100 dock
DacMagic 100

Stream Magic 6

COUNT TO TWENTY

Griffin's Twenty Class D amplifier uses Airport Express to capture an AirPlay stream, decodes it, then sends the lossless, amplified sound through speakers. The company says that the unit is easy to configure as it requires no setting up procedures. Complete with a mount for Airport Express and a power connection, the Twenty produces 2.1 channel sound, backed by a 20W of power with the ability to support a powered subwoofer. Contact www.griffintechnology.com/twenty for more information.





CURVES A GO-GO

Meridian's new M6 speakers utilise the company's DSP active technology and have been designed to work well with Meridian's pre-amp-like Audio Core 200 system.

The most striking element of the speaker design is the curvaceous nature of the cabinet that tapers to a peak at the top. A fair bit of technology and research has been invested into this cylindrical radiation loudspeaker – namely the use of a heavy and stiff barium-doped resin. What it offers is flexibility in positioning around the room, enhanced by the tuned porting system and the downward firing bass driver that benefits from floor-loading of its low frequency output. Priced at £4,500, click on www.meridian-audio.com for more information.



AIR ON A TEAC

Network music systems are flowing into the market at a rate of knots and Teac has added to the choice with the NS-X1, which is available in either black or silver and features both DNLA networking and support for Apple's Airplay facility plus FM and Internet radio. As you might expect, the Teac can handle music stored on your PC, Mac or NAS drive as well as an iPod, iPhone and iPad via a supplied dock or, indeed, wirelessly via Airplay.

Supported formats include MP3, WMA, WAV, AAC, OGG, FLAC, MPEG 1-Layer 1/2/3 and LPCM while this wall-mountable unit also includes a clock, alarm and sleep timer. Price is £230. Contact Teac on 0845 1302511, email info@teac.co.uk or click on www.teac.co.uk



DAC'S BACK

It's not just wireless network solutions that are a new trend in the hi-fi industry, it's the continued release of DACs too. The latest, via UK Arcam, is the D33, the company's most powerful DAC to date. Offering Burr Brown PCM1792 24bit/192kHz converters (one per channel), it also includes twin toroidal transformers in the power supply. The company even mentions its "state-of-the-art" 4-layer printed circuit boards which, it asserts, further improves sound quality. Couple that lot with an asynchronous USB input, two coaxial and two optical inputs plus a AES/EBU connection and damped, low resonance casework and you can see why Arcam is so bullish about its new release. Price is £2,000. Click on www.arcam.co.uk or more information.

Z PLAYER

Sony announce their new Z Series MP3 player. Described as a media player, running on the Gingerbread version of the Android operating system, the Sony Z-Series Walkman is a powerful little beast, packed with a 1GHz NVIDIA Tegra 2 processor, a very large 4.3inch WVGA LCD display and an HDMI out port. Sporting 8-to-32GB of RAM, reportedly superior sound quality and a wireless facility, is the Z Series an audiophile magnet and an ultimate player? Price is £300 for the 32GB version. Contact www.sony.co.uk or call 0845 6000124.





Klipsch Stadium



Klipsch Roomgroove



Klipsch Console

KLIPSCH GO WIRELESS

You can sense the theme for this month, can't you? Even a traditional loudspeaker manufacturer like U.S. based Klipsch is embracing the wireless music market — although in its own, inimitable, way. In this case, with three units that all support Apple's Airplay network standard that allows you to wirelessly stream music from an iPad, iPhone or iPod or via streaming iTunes from a Mac or PC. It also includes USB connections for direct connections

The first, the Roomgroove, includes 25mm tweeters with round Tractrix horns and 63mm woofers. The Klipsch Stadium is described by the company as a "2.1 tabletop sound solution". This meaty chassis includes dual 25mm, horn-loaded

tweeters and 76mm midrange woofers plus 133mm built-in subwoofers.

Finally, the Klipsch Console can only be described as a piece of furniture offering 2.1 audio system and plug n' play functionality. Offering support for music, movies and television, the Console provides HDMI, optical and USB ports, dual 90° x 60° Tractrix horns with 44mm titanium domes, high-compression drivers featuring Linear Travel Suspension (LTS), 254mm machine-spun Cerametallic woofers with folded cones and large motor structures and a 300mm non-resonant, woven fibreglass subwoofer drivers with large, four-layer, aluminium-wound voice coils. This is the straight talking, rather serious face of networkable music. Due out this winter, prices are to be announced. Click on klipsch.co.uk for more information.

CORRECTION

In February 2012's speaker group test we quoted the price of the Castle Knight 2 as £600 when it's really £400. Great value then, as they were tops for sound and finish.



Arabesque Mini



ARIA AirDream Audio



GLIMPSED AT CES

A number of new products were announced at the International CES show in Las Vegas, USA, over the period of January 10-13. Here's a few that won't be out and about for a little while but may serve as an early appetiser.

Devialet (www.devialet.com) has released an updated version of its D-Premier DAC which also operates as a preamp and power amp in a single chassis. New for the DAC is Devialet AIR, a Wi-Fi feature...but not any old Wi-Fi. Devialet has produced its own variant, especially for audiophile use, to improve reliability and sound quality.

Onto speakers and Crystal Cable's (www.crystalcable.com) second loudspeaker release. You may have seen the first, the Arabesque, which featured a glass cabinet. The new model, the Arabesque Mini (left), is a standmount with an all-aluminium enclosure.

MAKES SENSIA

Pure has launched a new touch screen wireless system complete with a 30W, Class D amp. Moving on from the original Sensia, the new 200D Connect variant includes a high resolution, capacitive colour touch screen: the first in its class, say the company.

Music can be sourced via a home-based storage system, the Internet or Pure's own Pure Music, cloud-based server that offers millions of music tracks available for a monthly subscription of £4.99 per month. Music can also be recorded instantly or timed for transfer to a USB stick via the supplied connector.

You can also use the screen to view weather reports, station slideshows, engage with Twitter and Facebook, read RSS feeds or view photos stored locally or via Picasa.

Priced at £250, the unit also offers an iPod/MP3 player socket, two alarms, sleep/countdown timers and a headphone socket. Contact www.pure.com, www.theounge.com or call 0845 1489001.



MAGNUM DYNALAB GO DIGITAL

Analogue-focused Magnum Dynalab has decided to doff its corporate cap towards the Internet with the announcement of three new Internet media tuners.

All three of the tuners include access to over 20,000 Internet radio stations via on board Wi-Fi antenna or wired connection to the household network. The boxes also offer FM, DAB/DAB+ and connections to digital sources such as AAC, Real, MP3, FLAC and WMA formats.

The included interface will feature a touch screen display providing information on that current track's metadata, genre, bit rate, codec and sampling rate.

Prices start from £1,500 for the MD 801 entry level solid state radio, followed by two valve models, the MD 806T at £2,345 and the MD 807T (featuring a full time upconverting DAC and a full triode design) at £3,995. A new flagship design will follow later, the MD 809T, sporting a 145mm touch screen, which is likely to retail for £6,745. In the UK, contact Audiofreaks on 0208 948 4153, email info I@audiofreaks.co.uk or click on www.audiofreaks.co.uk



Wilson Audio Alexandria XLF, available in the U.S. for \$195,000!

French company, Micromega (en.micromega-hifi.com), has announced the ARIA AirDream audio streaming network solution which apes Devialet by produced a new variant of Wi-Fi but the French developers have termed their incarnation as WHiFi; Wi-Fi for audiophiles, in other words.

Finally, news that Wilson Audio (www.wilsonaudio.com) has reworked its flagship speaker (right), the Alexandria X-2 Series 2, morphing it into the Alexandria XLF by adding – amongst other things - a new tweeter and tweaking the bass output. What do they sound like? It'll cost you a cool \$195,000 to find out.



See us at **BRISTOL!**

... at the Bristol Sound & Vision Show 2012

There is now just one chilly month to go before the UK's most popular hi-fi show is upon us once again in ever-sunny Bristol, from Friday 24th February through to Sunday 26th February 2012, from 10am to 5pm. And we will be there as always, on Stand Conservatory 2A on the Terrace/Conservatory floor (next to the Wilson Benesch room).

Come and see us with your questions, stories and systems.

This is always a popular and busy show, so do come. See you there!

For Show 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.



BRISTOL SOUND & VISION SHOW

See you There!

Show Opening Times

24th-26th February
10:00am - 5:00pm

Admission

Adults £9
Senior Citizens (over 65) £6
Students £6
Accompanied Children under 16 FREE

Two day ticket available
[more info](#)



Into the net

Network music players are taking over. Noel Keywood takes a close look at a group of them, from Naim's new ND5 XS to the Cocktail Audio X10.

The recent release by Naim of their ND5 XS and Cyrus of their Streamline series network players raises standards, and it raises issues. From the Naim we are talking about being able to play the highest resolution digital music files available – and by this I mean '24/192s' – that until recently have been the preserve of Blu-ray only. This promises superb sound quality, way above CD, from files that for the most part will be downloaded from the internet.

Network players are morphing from geeky computer peripherals to serious music sources, able to deliver astonishing sound quality. They can also be termed 'media players' playing files from a USB memory stick, a simpler and purer process than playing them from a computer. Although both methods were used in this review, USB took precedence for sound quality because it eliminates computer and network behaviours.

Hi-Fi network players are now getting easy to use, stable and reliable, as both Cyrus and Naim demonstrate. But the topic is plagued by geek speak and this arises from the genuine complexities of digital processing. What these players do is relatively simple to explain: they connect into the link that, at its simplest, lies between internet

and a home computer, termed a 'home network'. Through this they can receive internet radio, internet streaming services, and can read music files stored on the computer. Most have a USB socket too, reading music from it and the Squeezebox has an SD card reader too.

Until recently network players generally turned in mediocre results. But the market is changing fast and sound quality has improved drastically. Improvements have come from many directions. Not only have players become more sophisticated, studio recorded high resolution music files are becoming available.

Recording at 24bit, 96k sample rate resolution – much higher quality than CD – is relatively easy these days. The difficulty has been in delivering these recordings to the buying public. Ask for a '24/96' at HMV and you'll get blank stares. They have them on Blu-ray, but only as sound tracks to music concert videos (unless the Classical department sells 2L Blu-rays).

Audio in the form of high resolution downloads is where the market is going. No more trudging down to HMV, no more silver discs, and no more silver disc players either. Network players replace them and can deliver better sound quality.

Whilst iTunes and its ilk dominate music sales we get 128k AAC

compressed files and they sound nothing other than flat, lifeless and slightly coarse in nature. But even iTunes is on the move of course, and lossless files are becoming available, as well as premium 256k AAC compressed files.

Coming close to CD quality as these files do isn't good enough. CD was introduced in 1983 and is now archaic in technological terms. Studios have for years recorded music at 24bit resolution and it is these recordings, at 48k and 96k sample rate, that are becoming available on the internet for download. Here is where real improvement lies, where sound quality leaps ahead – at least, through a proper hi-fi network player. A good 24bit recording has a smoothness and easy but intense sense of internal detail that makes CD sound crude and bland. The high 96k data rate improves sound quality still further, giving less phasey and more solid, open treble, whilst 192k sample rate is seen as the Holy Grail of digital sound. It is no illusion: 24bit resolution hugely reduces both noise and distortion – and you can hear this.

Our round up looks at players from a different perspective then: from the top down. Now that Naim offer 24/192, what about the rest? Are lesser players still in contention? Find out here.



Top rate

Naim recently introduced their competitively priced ND5 XS network player, able to play highest resolution 24/192 digital audio. Noel Keywood hears top quality digital.

If you scoured our comprehensive review of Naim's NDX network music player in the October 2011 issue, then the new ND5 XS will look very familiar. It has much of the functionality of the NDX, but comes at a lower price in an ever more competitive market. Where the NDX we reviewed cost £2,995 the ND5 XS is available for somewhat less – £1,925 is being quoted by Naim. Our sample came with an optional VHF/FM plus DAB radio module, that broadened the product's scope past that of most other network players, but took the price to £2,175.

Whilst network players commonly have internet radio, few have VHF/FM. It offers good sound quality, providing a decent aerial is used to suppress hiss. That same aerial must also pick up DAB on the ND5 XS because they share an aerial input socket and this raises issues – more later.

So the ND5 XS with optional VHF/DAB module is a radio tuner of broad ability, perhaps unsurprising considering the reputation of Naim's NAT 05 XS VHF/FM tuner, considered one of the best sounding

available. Pressing Radio on the remote cycles it through FM, DAB and iRadio giving access to more stations than you'll get from most other network players or conventional tuners available.

Of course the ND5 XS is more than a radio. As a network player it can read music files from a computer – Mac or PC – providing they have a UPnP server installed, as usual. PCs have this in Window Media Player 11 (Vista onward) but Macs do not and need server software installed. The ND5 XS can also read music files from a memory stick that conveniently plugs into a USB socket on the front panel. Having Apple authentication, it can control and play music from an iPod Touch, iPhone or iPad connected up through their Apple USB lead and, using the free n-Stream app., the ND5 XS can also be controlled by these devices. Since the on-board green screen display and remote control are unexceptional in legibility, the remote being unilluminated for example, this is a useful option. At the price the ND5 XS is behind the curve here, many network players having either bigger screens viewable from a distance (Logitech

Squeezebox Touch (and/or better remote controls (Cyrus Stream series).

The ND5 XS has analogue outputs and an on-board DAC of some complexity that relies on a Sharc DSP engine to carry out digital filtering. Analogue is delivered to the usual pair of phono sockets and the inevitable DIN socket preferred by Naim – and given priority as factory set up; the phono outputs must be selected to make them live. The analogue outputs can be disabled if digital output is used. Volume control is not provided, so the ND5 XS cannot drive a power amp direct, unless a passive preamp is used. The remote control's volume buttons are for Naim preamps, although the Philips RC5 control code is common and will alter volume on many amplifiers.

INSTALLATION AND SET UP

The ND5 XS has a massive toroidal mains transformer with multiple output windings feeding different analogue and digital sub-circuits. As a result it is relatively large, measuring 432mm wide, 350mm deep including protrusions, and 87mm high. It is also



unusually heavy at 10kgs.

The rear panel has three S/PDIF digital inputs, optical via TOSLINK, electrical via phono sockets or a BNC connector. A CD transport can be connected up here, or a player acting as a transport using its digital output, the ND5 XS acting as a DAC, its analogue output feeding an amplifier.

There is a single digital output, S/PDIF via a phono socketed electrical connection; why no BNC or TOSLINK heaven knows. Presumably, Naim feel their on-board DAC will outperform most external DACs and the digital output is unimportant. Perhaps they are right. I used it and bumped into another reason; the ND5 XS played a 24/192 (AIFF) file just as Naim claimed it would, but the digital output remained stubbornly silent, whilst the analogue output delivered fine sound quality. I forgot that S/PDIF doesn't support 24/192, only 24/96. Using the on-board DAC and analogue output avoids such issues; you are assured of getting music! So if you want to play highest resolution 24/192 files, which run at a massive data rate of 9Mbps, against CD's measly 1.4Mbps, you cannot use an S/PDIF digital link. However, 24/96 sounds nearly as good I find, from using Blu-ray, so it isn't a big issue subjectively.

The rear panel also carries the usual RJ45 Ethernet socket, a USB socket that can hold a memory stick out of sight, remote control inputs and outputs for Naim system users, a wi-fi antenna socket and a VHF/DAB screw-on UHF aerial socket (not an old co-ax type). There is also a large military multi-pin socket to which can be connected one of three Naim upgrade power supplies.

Naim fit a module that uses what is known as SDR, or Software Defined Radio, to derive both VHF and DAB. The basic aerial signal is digitised and then processed to extract wanted radio transmissions, eliminating all the many analogue tuning circuits used in conventional tuners. The output of the module is digital Naim told me. The use of such a module explains why there is just one aerial socket, where DAB and VHF tuners usually have one apiece, to accommodate the different aerials required.

The ND5 XS initialised without hitch, saw the network and was identified by its MAC address on my home router straight away. It picked up my PC and its Windows Media Player 11 UPnP server and it saw a Logitech UPnP server running on Mac OS-X 10.7.2 (Lion), but it didn't see EyeConnect running on OS-X 10.6.8 (Snow Leopard) without a bit of coaxing (re-booting, switching things on and off!). This may be an EyeConnect problem though, as some other network players do not always see it.

Internet radio uses vTuner and brought in the usual thousands of stations worldwide, with a Naim recommended list bringing up Radio Paradise at 320kbps – and very nice it sounded too. As did Radio 3 running at 320kbps with AAC compression.

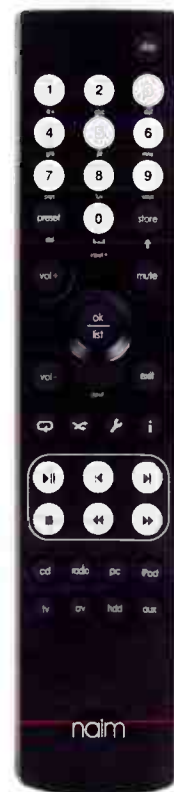
SOUND QUALITY

Naim say the ND5 XS can stream and play WAV, FLAC, AIFF, ALAC, AAC, WMA, Ogg Vorbis and MP3 file formats. I tested it with all formats at 24/48 and it worked fine. So standard rate files, compressed and uncompressed are played.

At high 24/96 resolution the ND5 XS played our WAV, AIFF and FLAC pink noise test files streamed from iTunes over ethernet, and from a high speed LaCie 4GB shielded WhizKey. These formats are all non-destructive of course; they don't use 'compression', better termed data reduction, and can provide a level of sound quality clearly superior to CD as a result, which is what we hope for from high resolution digital after all.

Streaming from iTunes on a 2011 Mac Mini (no CD drive, no 44.1k CD data clock conversion error and low jitter as a result) running Lion, the Naim fared well with standard CD rips. Much like the Cyrus Stream X also in this issue it was able to produce a tidier and more dynamic sound than most other music streamers and this is likely attributable to the effort Naim put into jitter reduction (see MEASURED PERFORMANCE). From the Eagles 'Long Road Out of Eden' CD that I use as an example of – er – standardised Rock (!) that tests for Rock dynamics in benchmark fashion, the ND5 XS sounded sweet and sparkly in its treble – not something I expect from network music reproduction. Here it was like the Cyrus Stream X and unlike the CD from which the track was ripped, so enhancement was occurring in the delivery chain, comprising BE12LU30 LG Blu-ray drive, Mac Mini and Naim ND5 XS.

What the ND5 XS managed so well was to give this music a sense of body and bass



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

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



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



The Brennan JB7 is available in Cobalt Blue or Titanium Metallic



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heft, some real power and drive, qualities that Naim live for and manage to deliver through their own in-house design techniques. To hear this I had to use the analogue output of course; digital gave me the sound of the Marantz receiver's DACs and analogue circuitry. But the Eagles album played superbly, sounding less congested and sweeter than from CD. Running the same tracks from USB WhizKey gave very similar results to streaming via ethernet from the Mac.

Running a number of 24/96 high definition music tracks showed the same clear midband and silky quality, but with deeper silences, a greater sense of sound stage depth and better instrument placement. I was impressed at how echoes from the percussive drum strikes at the start of 'Misery' from Dave's True Story' (HD Tracks) reverberated and tailed away into a dark background, where they would sound truncated on CD. The ND5 XS played its way through a wide variety of 24/96, always sounding stable, smooth and with lovely stage depth. In truth 24bit resolution in studio equipment as well as playback equipment contributes to superb sound quality more than high data rate and the Naim was fully able to display this.

Naim claim the ND5 XS can play 24/192 files and indeed it did play the Trondheim Soloists 'Divertimenti' from 2L of Norway at 24/192 resolution from the USB WhizKey, via its analogue output (the digital output falls silent because S/PDIF does not work at this data rate). This track and other 24/192s also streamed from the Mac, and at 192kHz AIFF Naim's display declared, so the ND5 XS is able to handle all high resolution formats, setting it apart from most rivals.

Sadly, I was aware from the off that the VHF tuner sounded dry and grey of tone, with little upper treble sparkle. Listening to Radio 3 intently to assess how annoying hiss would be I found instead that it hardened up and showed some 'spitch' on crescendos from flute and violin, suggesting the distortion we measured was audible. Ironically, hiss was not very obvious, possibly because of Optimod dynamic range compression at the transmitter, but occasionally a slightly coarse chattering sound came through

with volume turned up. I wasn't certain whether this was in the transmission or from the tuner, but whatever, the VHF module wasn't an especially pleasant listen by VHF/FM standards, which was a shame. It was better than most DAB, but worse than internet radio running at high 320kbps data rate.

CONCLUSION

It's expensive, but Naim pack a lot into the ND5 XS and most of it works very well. If you want serious sound quality from high resolution music files, right up to 24/192, then this unit provides it. Naim's on-board 24/192 DACs do a great job, supported by a huge power supply and again you pay for this. Because at

present the S/PDIF digital link cannot support 24/192 and no one is using HDMI (that can) the presence of a serious on-board DAC is crucial for those intending to download and listen to 24/192 maximum resolution files.

The only drawbacks are a disappointingly small display panel unreadable from more than 4ft or so away, and a VHF/FM tuner that doesn't show what this medium is capable of; Onkyo fit better analogue modules in their receivers.

In spite of all this, at the price and in view of what its rivals offer, Naim's ND5 XS can justify its place in the market as a superb network music player. It's easy to use, stable and reliable and sounds superb.



MEASURED PERFORMANCE

Frequency response at 44.1kHz sample rate (CD) measured flat to 20kHz, our analysis shows. With 96kHz sample rate the limit was a constrained 30kHz, not the 48kHz possible. However, although the increase in bandwidth isn't great the rate of roll off was slow and analogue like.

The DAC was very linear, producing a very low value of 0.18% distortion at 16bit resolution, -60dB, falling to 0.16% with 1LSB of dither applied in our Rohde & Schwarz digital signal generator.

At 24bit resolution the Naim DAC measured just 0.04% at -60dB – as good as it gets. EIAJ Dynamic Range with CD was a high 100dB because of the high linearity. Output was a normal Philips standard 2.15V.

Jitter from USB was very low, a -60dB signal inducing just 20pS of signal related jitter, less than 10pS random jitter and 22pS of low rate clock drift – all very low values, making the ND5 XS a very low jitter source.

The VHF/FM section of the tuner module uses Software Defined Radio techniques and possessed a performance fairly typical of the (budget) breed. Frequency response was reasonably flat to 11kHz, but exhibited the undulations of digital filtering. A hard cut-off above 12kHz eliminates all higher frequencies.

Distortion was high (2.5%) at full modulation on Left and Right, but low (0.1%) in the Mono (L+R) channel. At 50% modulation the figures had fallen to around 0.3% of 2nd and 3rd harmonic, more reasonable but still high.

Hiss was very high at -56dB (IEC A

weighted) and will be audible; analogue tuners typically manage -62 to -72dB. Sensitivity was good, however.

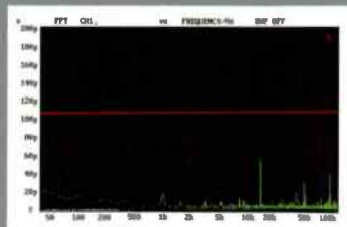
Naim's on-board DAC gave very good results and is well able to resolve high definition audio. Jitter was very low too. The VHF tuner was an SDR solution of mediocre quality though, afflicted by hiss and not for critical listeners measurement revealed. NK

Frequency response (-1dB)	
	2Hz-30kHz
Distortion (16bit)	%
0dB	0.0007
-6dB	0.0005
-60dB	0.16
-80dB	2

Separation (1kHz)	112dB
Noise (IEC A)	-108dB
Dynamic range	100dB
Output	2.1V

VHF/FM	
Frequency response	10Hz-11kHz
Stereo separation	28dB
Distortion (50% mod.)	0.3%
Hiss (CCIR)	-56dB
Signal for minimum hiss	0.6mV
Sensitivity	
mono	5µV
stereo	42µV

JITTER



VERDICT

Great sound quality with Naim heft, a wonderful DAC and full 24/192 handling. Only the display and VHF tuner could be better.

NAIM ND5 XS £2175

Naim Audio

+44 (0)1722 426600

www.naimaudio.com

FOR

- strong Naim sound
- handles all high res files
- front USB socket
- high quality DAC

AGAINST

- small display
- simple remote control
- no headphone socket
- mediocre VHF sound



Sweet Stream

Experts with digital, Cyrus have three network music players. Noel Keywood reviews the least expensive, the Stream X.

The Stream comes in three different flavours. The Stream X we tested is the simplest and cheapest version. Priced at £1400 it is hardly 'cheap' and this version is a relatively simple home streamer that reads music from your computer, from iPod or iPhone via digital USB cable (not dodgy analogue from the headphone jack!), plays internet radio, or reads from six digital inputs: five S/PDIF and one USB, on the rear only.

There are no analogue outputs, meaning no on-board digital to analogue convertor (DAC), so connection must be made by the single S/PDIF digital output, an electrical connection via phono socket. Cyrus don't even provide an optical TOSLINK digital output – always my preference for its slightly smoother sound – and S/PDIF does not support high resolution 24/192 stereo. So the Stream X cannot handle top resolution digital, Cyrus quoting 24/96 only in their literature, but more about this later.

There are two TOSLINK inputs, so a CD transport can be connected up via optical cable for example, but the signal is routed through to the digital output.

The absence of analogue outputs means connection must be made

into a 'digital' amplifier, meaning one equipped with an internal DAC like a Cyrus 6XPd, or into an AV receiver, or into a stand-alone DAC. However, as the Stream X does not have an on-board digital volume control, such a DAC cannot feed a power amplifier direct; it must go into an amplifier's Aux input, unless the DAC has its own volume control or a passive preamp with remote control of volume is used (oh, the options!).

A DAC and analogue outputs are fitted to the Stream XP (£2000), in both fixed and variable form. The DAC does handle 24/192 Cyrus told me. Then there is the Streamline, which has an on-board 30 Watt power amplifier that drive loudspeakers direct, price £1600. With less functionality than the Cambridge NP30, price £400, the Stream X looks costly, but it has some serious ability.

One big difference between these Cyrus streamers and all others are their lavish n-remote control that brings the interface to the user. Where with most other players a small screen on the streamer itself, usually far from the user on the other side of the lounge, offers the only view of what can be lengthy menu trees, Cyrus provide a remote control with a 40mm x 50mm colour display screen that is pin sharp, bright

and crystal clear. So in the late night Stygian gloom of my lounge I had no trouble scouring my computer's menus. As stepping through Windows style menu trees are a pet hate of mine, anything that makes their navigation easier gets a big thumbs up from me (OK, I was using a Mac so I can't really blame Microsoft for the tedium of menu trees!). Trouble is, fancy screens like this need power, making an on-board Lithium-ion battery and a charging system for it necessary.

Well, at least you don't have to worry about replacing AAAs any more. But there is a small penalty to pay. The remote must be left on a dock to recharge, or connected up direct to the USB charging cable that itself runs into a small wall wart power unit that Cyrus supply. Ours was a little shaky in its bayonet connection with a 13A plug interface so we used an Apple iPhone power unit that puts 5V down a USB lead in exactly the same way. The battery obviously has quite a large capacity because it takes 4-6hrs to fully charge it seemed – an overnight job. Whilst the Stream X has a yellow fluorescent screen that is as legible as that of most streamers, the n-remote was always preferable. Also, because it is 'wireless' (i.e. radio transmission) and not infra-red, it can activate the



"Gorgeous stage depth, big resonant strikes on kettle drum and a lovely aura of smoothness and civility characterised Minnesota Orchestra playing Rimsky Korsakov's 'The Snow Maiden'."

unit from another room.

Although the remote's screen and clear text were a blessing, the control buttons could have been better arranged and sized. The Return button in particular was a victim to style consistency, looking the same as other less used buttons surrounding it, and Naim manage without a Return button, using Scroll Back instead. Button function was consistent and sequences logical, unlike Cocktail Audio's X10 streamer for example.

There are many ways to set up a network streamer like this, as Cyrus note in their PDF owners manual (there is no paper manual, only a quick setup leaflet). Our system comprised both Mac and PC computers on a wired Ethernet home network, both with UPnP music servers. The Stream X fed a Marantz SR-8002 AV receiver, able to handle 24/96 over an S/PDIF digital link. Faced with 24/192 from a USB memory stick, however, the Cyrus reported 'file error' and remained silent so as I said earlier, this version of the Stream series cannot handle 24/192.

SET UP AND USE

Connecting up Stream X was simplicity itself because it needed just two signal connections. One was an Ethernet connection, which of course must have internet access via a modem for internet radio. You can connect via wi-fi but it will not support high data rates. The other was the digital output, which went to a Marantz SR-8002 receiver able to handle high resolution files.

Like most streamers the Cyrus takes time to initialise and read the network to see what is available. The MAC address is viewable under the Setup/Status menu on the remote control so the unit can be identified on a router's client list, but a device name isn't provided by Cyrus, unlike many rivals. There was no problem on our network, both Mac (EyeConnect on Lion) and PC (Windows Media Player 11) UPnP computer music servers coming up straight away.

Internet radio stations from Tunein (www.tunein.com) totalled 954 for the UK with most at 128kbps, but Absolute broadcasting at 192kbps and Paradise at 320kbps.

With domestic network streams now running at 4600kbps it shows just what a gap has opened up between old standards where pigeons could carry info faster than the 'net, to the expectations of today. Obviously, the 'net cannot handle high resolution streaming in real time, but what was once acceptable now looks archaic. So don't expect too much from internet radio in terms of quality, from the Tunein service via this otherwise quality streamer.

The Stream X played our 24/96 FLAC and WAV test files from a high speed USB LaCie WhizKey memory stick without difficulty. However, it would not play highest resolution 24/192 files, unlike Naim's ND5 XS, giving a file error message. Surprisingly, it did play 24/192 AIFF music files from iTunes over the network, but at CD quality, data rate reading 1400kbps. Cyrus said the Stream X did not down convert, saying either the UPnP



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server or iTunes were responsible. However, as this combo did deliver 24/192 to Naim's ND5 XS, I wonder whether a CD signal was being sent for best compatibility in absence of hand shake status data, as happens via HDMI with AV receivers. Here, default output is a data stream that avoids a 'no signal' scenario, if the receiver fails to signal its capabilities.

At 24/48 resolution and lower, MP3, AAC, Ogg Vorbis and AAC test files were all played by the Stream X. An iPhone connected up to the USB port using its own lead was seen by the n-remote and played properly.

As always Cyrus use their long standing (small) cast alloy cases to house the Stream X. Where shoehorning a powerful amplifier in, especially in Cyrus 8XPd form with its potential heat production and

intelligible. The bass line was a trifle more forceful, its presence just more obvious than being submerged in a general messiness. There was a slightly better feeling of general cohesiveness and even tonal balance from the streamed version too. Both transports seemed to upset things a little, the Cambridge adding most turgidness, the Cyrus transport adding a little mid-band shout, heard as an almost megaphonic effect to vocals. The streamed version was smooth and even in balance and a little fuller and more dense in its textures too.

As both sources (i.e. 2011 Mac Mini and Cambridge 650BD), under our measurements produce negligible jitter, and as the Stream X is one of the best sounding streamers I have heard to date, it would appear

Stream X had a taut low frequency performance that made for clean, powerful bass lines and impactful percussion. It brings music to life and 24/96 recordings were wonderfully enjoyable, a welcome move up the quality ladder from CD.

CONCLUSION

The Stream X was a delight to listen to. It was the best streamer I have heard to date by a good margin, bringing my computer music to life. Heavens, I even found listening to the computer enjoyable! OK, it isn't going to match my Garrard 401 but where other streamers struggle with high resolution audio files and my AV set-up, headed up by a Cambridge Audio 650BD spinning 24/96 and 24/192 Blu-rays shades everyday digital sources, the Stream X fought its way into contention. Naim now have a serious rival to it, or the Stream XP at least, in the ND5 XS but the Cyrus isn't out manoeuvred in terms of sound quality.

If you want to listen to high resolution digital that shades CD then the Stream X is a great way to do it. It even made me happy in the late night Stygian gloom of my lounge. Not only could I enjoy the sound, I could see what I was doing too! There are limitations, inability to reproduce highest definition 24/192 being the most obvious. But in practical terms this isn't such a big issue, because this level of resolution is currently rare and, in my experience with Blu-ray to date, 192k sample rate is not a major step up from 96k sample rate.

The Stream X may seem expensive but with superb sound quality and a great remote control it delivers the sonic goods and is well worth hearing if you are in the market for a top quality network player.

digital convertors, is a daunting task but ensures Cyrus products have low domestic visibility, the Stream X is a far easier proposition. It's incredibly light at 2.2kgs, 210mm wide and 350mm deep, but you must add 50mm rear room for connectors and USB memory stick; there is no front panel USB socket, an inconvenience for some users I suspect. A USB hub or extension cable would be needed to solve this by giving front access. There is no headphone output either.

SOUND QUALITY

If the Cyrus Stream X justifies its price it is through sound quality. Where streamed music usually sounds lacklustre and dynamically flat, this unit produced a pristine and dynamically lively delivery from CDs ripped to lossless AIFF in iTunes. Treble sparkled from cymbals in the Eagles 'Somebody' and I could tell straight away, as this is a much played test track, that sound quality seemed unusually good – too good!

Sure enough, making a direct comparison against the original CD, played in both a low jitter Cambridge 650BD Blu-ray player acting as transport, and a Cyrus CDt transport, against the streamed version, showed that some general congestion and turgidness had disappeared from the streamed copy, making vocals clearer and more

it is able to clean a digital signal to improve it. I noticed the same improvement to AAC compressed files on my iPhone that I never quite take seriously, such as Jackie Leven's 'Call Mother a Lonely Field'. As I have this on LP and CD the downloaded Apple version in 128kbps AAC is easy to dismiss but played through the Stream X it came to life. Again, the Stream X reduced the muddle and improved the sense of dynamism, adding life and zest.

Streaming 24/96 uncompressed AIFF files such as a live blues recording moved sound quality easily ahead of CD.

In its ability both to handle high resolution uncompressed music files without stuttering, spitting or difficulty, and produce great sound quality from them, the Stream X is a very strong performer. Gorgeous stage depth, big resonant strikes on kettle drum and a lovely aura of smoothness and civility characterised Minnesota Orchestra playing Rimsky Korsakov's 'The Snow Maiden'. Whatever I played the



VERDICT

Gorgeous sound quality, even from compressed digital music, but expensive and unable to exploit top resolution 24/192 recordings.

CYRUS STREAM X £1400

Cyrus Audio
 ☎ +44 (0)1480 435577
www.cyrusaudio.com

FOR

- sweet, dynamic sound
- compact and light
- clear, illuminated remote

AGAINST

- no DAC
- rear USB port only
- no 24/192

MEASURED PERFORMANCE

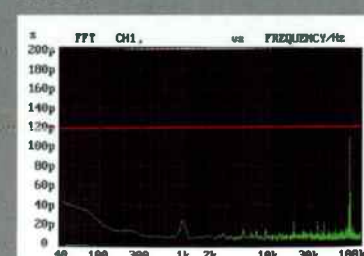
With no analogue outputs there is little that can be measured from the Stream X. Random jitter from the digital output was very low, hovering around 10pS our analysis shows. A 1kHz, -60dB test signal induced just 25pS of signal related jitter, seen as a small peak in our Rohde & Schwarz analysis – and this is very low. Around 40pS or more is common with this test.

High frequency jitter noise above 10kHz was also very low, a feature of well engineered network players that lifts them above a majority of silver disc players.

Low rate clock drift, seen as a rise in the trace at far left, reached a low value of 40pS. Any value below 100pS

is good; CD players with poor clock stability are terrible here. Premium hi-fi network players generally outperform most else in this area because of the emphasis placed on stability, low noise and jitter, and the Stream X matches the best, our measurements show. NK

JITTER





Heady Cocktail

A network receiver, amplifier and hard disc recorder – and all for £450! Noel Keywood investigates the Cocktail Audio X10.

Cocktail Audio's X10 music system is almost a complete hi-fi for £450; just add a pair of loudspeakers and you are there; there's an amplifier on-board. The cube plays CD using a slot loading CD player, and both internet radio and whatever music lurks in your computer via a home network Ethernet connection. It will also play music from a USB memory stick and connect up to an MP3 player / iPod through an analogue lead terminated by 3.5mm jack plugs. Curiously, Cocktail Audio suggest this input is connected to a radio – even though it has radio on-board! – or a turntable – a technology light years removed from what's inside this little box of tricks.

They are trying to make the point that the X10 can do it all, and perhaps it can – but don't expect miracles, or ease of use. The handbook, software and general functionality of this player leave a lot

to be desired. It is made in Korea by Novatron, whose claims are lavish (see www.cocktailaudio.com). In truth you cannot connect a turntable direct because there is no phono stage: a preamplifier is needed. What they mean to say is that it has an on-board Analogue-to-Digital converter able to convert analogue audio from sources like cassette and LP to digital, and it can record them to the internal hard disc as date stamped files in an AUX folder. Hence their claim that old music collections can be revived.

As befits a modern, compact and hi-tech device the X10 comes in a small box with convenient plastic carry handle. Inside the box is the main cube shaped unit, its external power supply, a remote control, a DVD ROM, a handbook and a USB 'printer' lead for direct linkage to a computer – an alternative to network linkage for those with no home network. The X10 can be used either as a mini hi-fi in itself, or

as a source feeding a proper home hi-fi. The on-board amplifier offers 30 Watts per channel and a pair of 1970s spring clip terminals act as links out to external loudspeakers, giving the impression that this is fitted to extend functionality rather than as a serious core ability. To keep the internal power amplifier cool in the small, unvented case a fan is fitted, which ran almost silently; when closer than 4ft from the unit, a low drone could be heard.

The X10 covers a lot of ground and the sheer breadth of its abilities will attract many users, but not unsurprisingly it runs on Open Source software and isn't an easy proposition for those with little computing experience who want a simple and convenient 'plug-n-play' option, like Naim's Unitique for example. Our sample came fitted with a 500GB SATA hard drive, but the unit can be bought without a hard drive fitted, or with up to 2TB. Since a CD consumes



0.65GB of space that makes for a notional 770 CDs on a 500GB disc if uncompressed WAV is used, but the quoted limit for the X10 is a realistic 650 CDs. The hard drive can be formatted in FAT 32 or NTFS (recommended) on-board by connecting up to an external Windows computer; we are not talking Macs here!

The large colour screen can be seen across a room and has six symbols on it, representing the on-board Music Database, Playlist, i-Radio, CD player/ripper, Browser and Setup. These illuminate when active, but they are not touch sensitive, unlike the Logitech Squeezebox Touch for example. There are, however, top buttons on the unit and a remote control of course, that carries a wide range of functions and is the primary input device. The remote includes digital volume, so even the TOSLINK output can be turned down! Our sample was updated to R1604 firmware before review.

As a CD player the X10 can deliver either an analogue output via its 3.5mm jack Line Out (there are no phono sockets at all) or a digital output via an optical TOSLINK. The latter is preferable, enabling connection to a quality external DAC and hi-fi system. I connected it into

a Marantz SR-8002 AV receiver. Push in a CD and its content is drawn from the on-line 'freedb' database; press a Menu button on the remote control and you can record the disc to the hard drive, or individual tracks. However, the control sequence for recording individual tracks from our X10 was both convoluted and entirely different to the description provided in the handbook. The role of the navigation buttons changed and often crossed over with that of the Return button, in random fashion in general use and individual track ripping highlighted this problem of random and arbitrary control functionality. Once acclimatised to this through experiment and usage the X10 generally performed its tasks correctly, and CDs can be ripped to WAV, MP3, FLAC or OGG (Vorbis), Flac being popular because it introduces no lossy compression (i.e. data reduction) and handles Meta Data. With 500GB - 2TB of disc space available lossy formats like MP3 are unnecessary.

The internet radio uses the on-line Reciva server (www.reciva.com). Favourite stations can be entered into a playlist and programmes can be recorded to the hard disc. They are entered to an i-Radio folder under date and sequential numbering format, so don't expect readable

identification as you get from the freedb database, unless the radio station transmits such info. You can however insert info yourself with a Tag Edit facility. Internet radio makes around 10,000 stations available, 824 for the UK alone from Reciva. Quality is mostly poor, down to a shaky 40kbps, with 128kbps typical but BBC Radio 3 now offers 646 kbps in AAC format which plays through the X10 and provides great quality from it. So not all internet radio is equal in quality terms, but those with slow internet down links will likely have to use the BBC's 196kbps WMA alternative.

The X10 will read music stored on computers over its Ethernet network link, declaring its MAC address so it can be identified on a router's client list. A USB dongle can be had for Wi-Fi but a wired connection supports higher data rates and better reliability. As usual it reads from a UPnP server, meaning a PC equipped with Windows Media Player, or



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a Mac loaded with third party UPnP software. However, whilst our X10 read a PC running Media Player 11 on Vista it would not see EyeConnect on a Mac running Lion (OS-X 10.7.2) that other devices like the Cambridge NP30 see, but it did see Logitech's Squeezebox server software for Mac and successfully played music from iTunes through it, running both AAC and WAV formats. This was then sent out to the Marantz receiver through the TOSLINK digital connection.

The X10 can act not only as a Client, as above where the computer acts as a music server, but also as a Server itself, where the computer then becomes the Client. An on-board Samba based server must be switched on, whereupon the on-board music sources will play through a PC's sound system via a Network link. All this worked straight away and seamlessly in our tests, albeit in deliberately 'vanilla' flavour computer set ups purposed for reviewing. This allows a music library on the X10 to play out through a computer for those that may want it.

That summarises the many roles of the X10. It handles most audio files including MP3, Flac, Ogg Vorbis, MP4, AAC, WMA and WAV, all of which played in our tests. Interestingly, although Cocktail Audio say nothing about the internal ADC and DAC it played a 24bit, 96kHz sample rate WAV test file, via the TOSLINK digital output and via the analogue headphone and loudspeaker outlets, showing the on-board DAC can resolve high definition audio files.

SOUND QUALITY

The X10 happily played all music files on our LaCie WhizKey USB memory stick, even 24/192 – and this made me suspicious. The TOSLINK S/PDIF digital output used cannot support 24/192, so a down conversion process was operating. Measurement showed bandwidth limited to 20kHz from a 96k sample rate test file, suggesting down sampling to 44.1kHz. Running through a wide range of recordings from standard CD rips through many high resolution 24/96 music files and some top resolution 24/192s such as Trondheim Solistene's 'Divertimenti' from 2L that I also have on SACD and Blu-ray in 24/92 resolution, the X10 was consistent in its sound and somewhat CD like. There was a lack of transparency, little delicate fine detailing and none of the dynamic life and honed air displayed by the Cyrus Stream X in particular. Best to say that the X10 manages a fair rendition, but it was unable to reveal differences between CD and high resolution files; it all



sounded much the same.

Results were similar from music files played from computer. Again all resolutions and formats were played, but with sound quality similar to that from USB.

Connected up to a pair of Usher S-520 loudspeakers the on-board amplifier did a fair job but treble was on the hard, scratchy side, likely attributable due to the crossover distortion we measured.

A recording to the hard drive via the Aux input, through the uber-budget on-board ADC was coarse and veiled, but then even Onkyo acknowledge that the cheap ADCs on their budget receivers, also priced £500, are to be avoided if possible – that's why they always provide a bypass in the form of Direct or Pure Audio mode. If there's one undiscussed reason why digital has always sonically failed us, it is because of the failings of ADCs used in the recording chain, so you cannot expect too much here either. ADCs always were a difficult technology, more so than DACs.

CONCLUSION

It's easy to summarise the X10: it does everything for next to nothing. Its appeal is to those who rate high feature count and low price as all important, the arbiter of value.

Unfortunately, although fiendishly clever in some senses, it's still the case that the X10 is cost cut to the bone and contains a lot of compromises, ones that affect sound

quality. It's useful as a do-it-all digital starter system, or as a student's bedsit system perhaps, but it doesn't do justice to the potential within high resolution digital audio files and in this respect disguises future possibilities from those with an interest in decent sound quality. It is good value then, providing sound quality isn't a priority.

VERDICT

A do-it-all network player, with internet radio, power amp and digital recorder, but sound quality was lacklustre.

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- poor remote control
- awkward control logic

MEASURED PERFORMANCE

The amplifier produced 28 Watts into an 8 Ohm load, but this rose to 42 Watts into a 4 Ohm load, so broadly speaking the amplifier is able to deliver the manufacturer's claimed output of 30 Watts. Frequency response, measured via the Aux input which passes through an input ADC, was limited to 22kHz by anti-alias filtering. Also, there appeared to be some form of dynamic range or volume control in action as signal increases were time lagged, even with DRC set to Normal (whatever that means). More importantly, quantisation noise generated by the ADC was very high, measuring -63dB when a full level test signal was notched out to measure resultant noise. This was much worse than the noise generated by cheap input ADCs found in AV receivers, so the X10 is poor here – and there is no bypass function. All analogue inputs are digitised, but badly, simply because the build budget is so low, to achieve a low retail price.

Digital signals from CD and a USB memory stick processed through the output DAC and power amplifiers revealed expectedly mediocre results. Bandwidth reached a 20kHz from a 96k sample rate pink noise test signal, where over 30kHz is expected (and 48kHz is the upper limit).

Distortion from the power amplifiers was low in the midband but high at 10kHz, measuring 0.48%, mainly third harmonic. Frequency response was uneven, if not unacceptable with response variations of 0.5dB or less across the audio band.

Although digital signals are processed in the digital domain by a digital volume control, frequency response still measured flat from our digital test files on memory stick and CD, played out through optical S/PDIF output. However, if volume is set higher

than '95' the power amps will overload when faced with full level (0dB FS) digital signals and this upsets the power supply and introduces artefacts into the digital output, no less.

Surprisingly in view of all the limitations of the X10, jitter from the digital output was so low, below 5pS, as to be almost unmeasurable when playing CD test tracks that from CD players produce significant amounts of jitter, 40pS or more. With a very low -90dB test tone jitter appeared, but only at a very low level of 10pS. As we were playing test signals from a CD it would appear that the digital output is re-clocking to minimise jitter, because the X10 sailed through these tests, where it was expectedly mediocre with all others, due to its low price and budget nature.

By AV receiver standards the Cocktail Audio X10 is mediocre in what it does. However, used purely as a digital in/out source it works reasonably well. Its ADC and DAC interfaces are pretty basic though, so do not expect great sound quality from them. NK

Power amplifier	28watts
Frequency response	10Hz-22kHz
Separation	68dB
Noise	-63dB
Distortion	0.4%
Sensitivity	600mV

JITTER





Musical Fidelity Clic

With its easy-to-read colour display, Musical Fidelity's M1 Clic network player is a delight to use – and it delivers great sound.

For less than you'd be asked to pay either Cyrus or Naim, the M1 Clic offers a lot of ability. It reads computer music files via a home network, over wi-fi or wired Ethernet; I tested it on a wired Ethernet link. It reads music files from a USB memory stick via a front panel socket, and from a iPod, iPhone or iPad via the Apple multi-pin connector link lead plugged into a rear USB socket, utilising the digital signal, not the lower quality analogue one from Apple's on-board converters.

The Clic has a lovely colour display screen, but the remote control is a dull affair, a cocktail of black, grey and blue, where spindly grey lettering sits on a granite grey background in tribute to late night illegibility! There are no controls on the player itself and CD Pause and Stop did not apply to music being played from USB or UPnP server, unlike many players.

Musical Fidelity include an on-board DAC, which opens up the possibility of playing 24/192 files – and indeed the Clic does so our

tests showed. The signal passes through Musical Fidelity's on-board DAC to its analogue output; there is no digital output. This allows no option of using an external DAC as a future upgrade – and I prefer to play 24/96 music over S/PDIF optical link into a Marantz SR-8002 AV receiver, using its on-board converters, to avoid analogue linking, even though differences aren't great.

Accompanying the DAC is a preamplifier with analogue inputs, that gives a useful x4 (12dB) gain. The DAC feeds this preamp, making plenty of gain available, and there are both fixed and variable outputs, volume being adjusted from the remote control.

Digital inputs comprising S/PDIF optical and electrical sockets, plus a USB input allow digital sources to be connected, such as a CD transport. There's even a Tape output.

The Clic played all 24/96 test files in FLAC and WAV, as well as AIFF. It even played Trondheim Solistene's Divertimenti in 24/192 AIFF and FLAC. Curiously it would not play our Ogg Vorbis 24/48k test file even though Musical Fidelity say it should,

but it had no trouble with AAC, MP3 and WAV at 24/48kHz, as well as CD rips at 16/44.1k.

The M1 Clic had a mild delivery that, subjectively, sat exactly half way between budget units like Cambridge Audio's NP30, and the Cyrus Stream X. It wasn't quite as pristine or dynamic as the Stream X, or as revealing of format, but it did still manage to show clearly the benefits of 24/96 over CD. Bass was in correct proportion if not quite as dynamically expressive as that of more expensive units from Naim and Cyrus, the midband wasn't quite as transparent but still offered great insight, and although treble lacked the sparkle I heard with both Naim and Cyrus players it was clean and airy all the same.

The Clic was smooth and easy to listen to, and gave a bigger, bolder and more couth sound than cheaper alternatives. It has a gentle air, as our measurements suggested it would. Along with all its many facilities, it is easy to use and offers great value overall.

Reviewed July 2011 issue

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Cambridge Audio NP30

A budget network player with a grown up specification, the £399 NP30 from Cambridge Audio is a great entry level product.

The Cambridge NP30 undercuts most other network players on price, at just £399, with the exception of Logitech's Squeezebox Touch. Unlike the budget Touch, which as a computer peripheral attempts a lot and adds in audio, the NP30 is a dedicated hi-fi network player, as is to be expected perhaps from Cambridge Audio. It connects either wired or wirelessly to a network and plays back music files from an NAS drive or computer connected to that network. It also has UuVol internet radio, streaming services and BBC podcasts. It will read from a USB memory stick too, but although it can be remote controlled by Cambridge Audio's free app for iPad or iPhone it will not play files from an iPad/iPhone directly via USB. There is an on-board Wolfson DAC and a pair of analogue outputs, allowing easy connection to any hi-fi system. Digital S/PDIF outputs in electrical and optical TOSLINK form are fitted too, but no digital input so it cannot be used as a DAC. Although the remote

control has volume buttons they are for other products; remote control of volume is not available on analogue or digital outputs. There is no headphone output but there are USB sockets front and rear, the front one having a rubber blanking plug. There are front panel controls and a remote control. It's quite a line up of facilities at the price.

The NP30 works with ordinary UPnP servers; it does not need its own like the Squeezebox. It saw EyeConnect on a Mac and Windows Media Player 11 on a PC, working perfectly with both. However, it would not see 24/96 AIFF files on a Mac and jumped tracks or just stopped with them, as it did with 24/192 files on memory stick. It did, however, see and play high resolution 24/96 WAV and FLAC files from iTunes, so there may be some format changing needed by those with Macs.

It otherwise sees a wide range of files including AAC in iTunes, AIFF up to 48k sample rate, MP3, Ogg Vorbis and many more. Cambridge Audio only claim 24/96 ability, not 24/192,

but that is to be expected on a budget player and is no big drawback.

With high resolution music files the Cambridge had a big, widescreen presentation that was dramatic in its own way. The sound stage seemed expanded, although in truth depth perspectives were limited compared to either Cyrus or Naim, but then the price is different. The NP30 did convey the benefit of high resolution music files, in terms of scale and dynamism, even though it wasn't as silky smooth as more expensive players, nor as crystal clear across the midband; a slight cloudiness prevailed. The DAC did very little to change the player's properties and worked well in this respect, flattening dynamic contrasts by the smallest amount.

At its price the NP30 is a great way to enter the network player market. It behaves much like more expensive players. Sound quality was very good and the display legible, if a little crude. It may perplex AIFF Mac users though!

Reviewed August 2011 issue

CAMBRIDGE AUDIO £399
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Logitech Squeezebox Touch

For a low, low price Logitech's Squeezebox Touch is a network player of broad ability. It sounds great too.

For just £250 you can get a nice little network player from Logitech that doesn't disgrace itself. It has to be good and that's why this little box of tricks, the Squeezebox Touch, has become so popular. But it has idiosyncrasies. From a small, upright colour screen legible at a distance, Logitech pack in a mass of ability: it's like an iMac. The Squeezebox touch links into a wired home network via the usual RJ45 Ethernet socket, or through wi-fi. It can read music files stored on a computer, or internet radio stations from around the world. It will also play music files from a USB stick, or an SD card, the latter being an unusual option. It connects into a hi-fi through analogue phono output sockets, with both optical and electrical S/PDIF as options. Amazingly, the handbook doesn't identify these sockets as inputs or outputs – and since there is a DAC on-board they could be either. It has a digital volume control that winds down volume even through the digital output. There is even a 3.5mm jack headphone output. A small remote control with fewer buttons than most simplifies operation or the touch screen can be used.

For just £250 the Squeezebox Touch has a lot of ability, but this little wonder has its own set of peculiarities. On-board is a decent if not stellar digital-to-analogue converter (DAC) and it will play 24/96 files through it, from memory stick or iTunes, our tests showed. It will also play 24/192 from iTunes, but as I used the S/PDIF digital output and this cannot support the 9Mbps data rate of stereo 24/192, the Squeezebox UPnP server was rate converting to avoid a no-sound scenario. Logitech do not claim 24/192 ability however. It played every test file in our arsenal in iTunes, including 24/96 WAV, but not 24/192 files from a memory stick, which was flagged as an 'unsupported file format'.

Logitech require owners to sign up to an on-line account before the Squeezebox Touch can be used. This gives them access to a free download Logitech UPnP server that the Touch requires. It will not work with other servers, including Windows Media Player 11, unlike most other network players. Logitech's server software is available for Mac and PC and worked on the recent OS-X 10.7 (Lion). It works well, however, and it delivers album artwork to the screen, a nice touch. The unit will not see a USB

memory stick until its own server is started, again unlike most other players that see USB seamlessly. And to swop from network to USB requires selection to be made in an awkwardly placed 'Library'. §

The Squeezebox Touch was an interesting and entertaining listen. Curiously, via its digital output and the full bandwidth 24/192 DACs of the Marantz SR-8002 receiver it sounded soft in its treble and warm in balance. Bass was fulsome though, if a little soft around the edges, giving the Squeezebox Touch a lot of heft in its sound. A nice, easy going midband and complete absence of harshness or digital glare made for great listening – and the benefits of high resolution 24/96 music files were apparent. Switching to the analogue output flattened perspectives a little and made for a slightly more prosaic presentation, but the same sound balance remained and quality was more than respectable. If the unit has a weakness it is in temporal definition; timing was a trifle vague, but this is not especially upsetting. For the price the Squeezebox Touch is undoubtedly great value, if finicky to use.

Reviewed September 2011 issue

LOGITECH SQUEEZBOX
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The new Naim and Cyrus players in this round up of network players deliver shockingly good sound from high resolution digital music files. It was – literally – a shock to hear how good music can sound from them, when you are used to what usually comes from a computer. The Cyrus even managed to make compressed tracks I've thought of as mediocre sound wonderful, as if enhanced. Is this possible?

Anything is possible in digital. A poorly timed digital signal can be read into a buffer and clocked out to eliminate jitter and subjectively improve bass (this may be down to removing high rate clock drift), imposing a sense of pristine temporal progression and clarity. Information that is not in the signal cannot be restored, but what is there can be made to sound better, instead of being transmitted into the signal chain in slovenly fashion. Think of it as curing a model of her acne before she goes out onto the catwalk. The beauty is there, in the structure as it were (!), but imperfections can spoil the picture.

Similarly, high resolution digital music can sound fabulous, as the Naim and Cyrus players showed, but we need to get rid of the pimples to enjoy it without distraction!

Quite how both Cyrus and Naim players can affect dynamic contrasts is difficult to understand with digital. Eliminating jitter by extravagant re-clocking techniques seems unlikely



The Cyrus Stream X manages 24/96 only; it has no-board DAC. For that they offer the Stream XP, priced like the Naim ND5 XS.

to explain this. However, there's no doubt that subjectively 24bit resolution can provide darker silences in the music, more fine background detail and a greater sense of space and air to performances as reverberant information is allowed to fade away into the background without being curtailed by a sea of graunch and quantisation noise. Listen to 16bit CD and then to a good 24bit recording and you will hear what I mean. Curiously, it is bit rate makes the headlines, 192k being seen as

the ultimate, bit depth attracting little attention. Luckily, anything above 44.1k sample rate is usually 24bit by default these days and if the original recording was a good one, receiving it as a download is a great way to retain fidelity.

The problem with this at present is that we cannot readily buy and play 24bit recordings, except as internet downloads. So players are hardly purposed to exploit them. This is where units like the Naim and Cyrus start to show their mettle. 24bit resolution drops the noise floor from -96dB of CD to -144dB and our Rohde & Schwarz digital generator and analyser clearly show how this affects everything. 24 bit signals are vastly cleaner than 16bit; quantisation noise – the bane of digital – just falls away.

Processing a 24bit signal properly to exploit that low, low noise floor is where I believe recent players are finding new levels of subjective ability. It takes super quiet electronics and power supplies, and also a digital domain that itself is not noisy. For, contrary to what is always said about digital, noise in a digital signal does affect sound quality. A misunderstanding here is that digital is – well – digital! It isn't. It is an analogue signal transmitting a digital code. Tending to analogue weaknesses in the digital domain is where sound quality improvements are coming from, but it takes 24bit resolution to show what is possible here.

But where do we get these lovely, shiny new recordings? That's the big question. At present only from websites as downloads. Where a track from CD is typically a 50MB download, a 24bit/48k track is 90MB, and at 96k sample rate it is double that, or 180MB. Don't talk about 192k sample rate!

Downloads this size are going to take time, but having said that our computers update regularly using file sizes as large, or larger – as Vista users are well aware! This is where 'lossless compression' comes in. The files can be shrunk to around half that size, to halve download times. And FLAC is the popular free file format for doing this. Apple have their



Naim's new ND5 XS isn't cheap but it has a superb on-board DAC able to process top 24/192 digital music files.

own ALAC, which complicates the issue. In this review we used basic PCM in the form of a WAV file that all network players must be able to handle, as well as FLAC. We also used AIFF, Apple's version of WAV, that most network players handle – but not the Cambridge NP30 surprisingly. This review was not concerned with data-reduced file format compatibility, meaning MP3, AAC etc. It was about getting the very best from high resolution digital files, a challenge thrown down by Naim's ND5 XS with its ability to reproduce 24/192 files.

Where do we buy high resolution music? Naim's music label carries such files, as do many others. Just take a look at the U.S. site 'HD Tracks' to see a whole slew of classic Rock performances in 24/96 and 24/192 resolution to see where the future for audiophiles lies (they only sell to U.S.A. credit cards at present). This is the future. It does necessitate large downloads but at last, 30 years after the arrival of CD, it offers appreciably better quality. And, unlike Blu-ray, you don't have to get involved in surround-sound and AV religion. This is pure audiophile music territory and should interest studios and the professional music industry in particular, because it offers a 'free' path from studio to end user without Sony or Philips getting in the way. Digital Rights Management remains an issue though.

Network players are still a little 'difficult' to use. Their simple, old fashioned menu trees are horrible and some have idiosyncrasies. However, U.K. players in particular use chip sets from Taiwan and behave in very similar fashion. None of them have to see a network. Music can be downloaded to a computer, transferred to a memory stick and played from that – termed 'sneakernet' in the U.S. because you walk the memory stick to the player!

That network players also get internet radio and other streaming services extends their functionality of course. But this round up concentrates on their role as high fidelity players and here they show the future has great potential.

mail



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A pair of KEF Q100 loudspeakers are on their way to **DR ROBERT M. CARTER**, Letter of the Month winner in our February 2012 issue.

Letter of the Month

GEEK SPEAK

I was pleased to see that you are to do a piece on computer audio. This is a highly confusing area, not least because of the geek-speak used (for an appalling example try "HAL I/O using DAC native physical formats "Integer Mode" (instead of CoreAudio 32bit float)") but also because we don't understand what is actually happening to the digits. Nobody I know can even explain how data is read off a simple memory stick.

I have music files of various kHz on a Mac laptop and have seen many programmes being touted as better than iTunes - Amarra, VLC, Songbird, Audirvana, Fidelia etc - for sending the signal to the DAC (in my case, the optical input of a Quad CDP2 with variable output into a Quad 909).

Why should this be? It's 'only' a sequence of noughts and ones. It would be useful to do a group review and explanation of what these programmes do and don't do, for both Mac and PC users.

Another topic so far resistant to explanation concerns the use of mid-stream gadgets like the V-LINK which make the signal asynchronous ('out of time' according to my dictionary). I read somewhere that up-sampling DACs like the Quad also perform this function, so therefore I presume I would not benefit from the extra box because the signal would be asynchronous twice?

Other questions - wireless vs metal wire vs optical cable between computer and DAC? Why not review the AVI ADM9T speakers with built-in DAC and amps - surely made for computer



Weiss INT 202 - a pro Firewire to S/PDIF convertor for £1200! Around the back are phono socket and XLR (AES/EBU) digital S/PDIF outputs to feed a hi-fi. Now audio from computers is being taken seriously such convertor units are "springing up like daises" say Item Audio.

audio?

If you feed high-res files into an upsampling DAC, does it normalise them and then re-up-sample, or leave them as they are?

How does all this affect jitter (apparently audio's devil incarnate)? I'm sure there are many people with more questions in this vein but who don't have the time or knowledge to do the investigating. I just hope we can understand the answers!

Regards,
Nick M Jones

Musical Fidelity say -
There are two (different)
"resynchronisation" methods going

on, one after the other, which just makes sure that the flow of the data is stable. Whether the second "resynchronisation" (in the sample rate converter /DAC) is actually lowering jitter would be extremely difficult to tell.

Most off-the-shelf USB audio chips (TI PCM2706, for instance) only go up to 16 bit, 48kHz. This means down sampling will occur in the computer, losing some detail and resolution if hi-resolution files are played through the TI chip. This information is permanently lost from the data stream, so even up-sampling in the DAC itself could never "bring it back".

The V-Link converts (to S/PDIF

only; no up sampling; or any other magic) USB audio at up to 24 bit, 96kHz. This will be of maximum benefit to files that were originally recorded, stored and played in this format.

Therefore there is a clear benefit in using the V-Link for the playback of higher resolution (96kHz) files.

Very best regards,

**Simon,
Musical Fidelity**

Item Audio say –

One of the more interesting buzz products springing up like daisies are USB to S/PDIF converters. D-A converters persist in sounding better via coaxial S/PDIF. According to M2Tech, S/PDIF receivers have inbuilt 'jitter rejection' that is capable of reducing input jitter by a factor of 20 or even 30. From the PC's perspective, however, there are numerous hardware and software issues to resolve to deliver a well clocked digital signal via coaxial S/PDIF – issues that USB neatly sidesteps.

Notwithstanding USB's own difficulties as an exit route for audio data, asynchronous USB and FireWire are (in principle) ideal transmission protocols, even for long-run cables. Its ubiquity is also a major plus: for most Mac users (Mini, iMac, laptops) it remains the only out-of-the-box alternative to the jitter-plagued combi optical port.

Hence the demand for a box that accepts computer-friendly USB or FireWire on the one side and emits DAC-friendly S/PDIF on the other. The past two years have witnessed a growing awareness that a computer designed for number-crunching duty is in some crucial respects ill-suited to service as a music player. The two-headed dragon of jitter and galvanic noise cannot be slain in software, or by add-on soundcards: isolation, rebuffering and re-clocking have therefore become the concepts du jour in computer audio. **Mark**

We will be reviewing a group of USB to S/PDIF convertors in our next issue, April 2012. **NK**

FLEXY FLOOR

I read with interest the recent letter from Steven Summerscales entitled *Four on the Floor in the October 2011 Edition of HI-FI World*. His dilemma as to which tone arm to use with his resurrected Technics SL1200, and your advice, prompted me to contact you for advice on selecting a suitable arm for



A Garrard 301 deserves a good matching arm and cartridge. It may be a golden oldie but a modern arm best suits.

my turntable.

I am using a Garrard 301 with Analogue Audio Kokomo replacement bearing, together with an SME 3009 II Improved fixed-headshell which is rewired with Incognito (I think) cable and features a replacement bronze knife edge bearing also from Analogue Audio. I'm currently using an Audio Technica MLX 150 as they're dirt cheap in North America (\$350), which is important as the stylus often needs replacing due to child damage.

The plinth is my own design similar to the Loricraft, but with a 2" thick Baltic birch plywood inner plinth (supporting the chassis), and a maple outer plinth (this is Canada after all).

The plinth supporting the chassis sits on felt pads (think wood floor protectors) as opposed to Loricraft style semi-squash balls, as these were found to cause the deck to unduly react to footfall impacts on the suspended timber floor.

The plinth, which was made for me by a family friend who is a semi-professional woodworker, sits on rubber feet that perform relative well as audio frequency vibration isolators. My friend has offered to build me a lid to protect the delicate arm and stylus from infant activity.

Associated equipment is an EAR 834P phono amp modified as per Romy the Cats recommendations (<http://www.goodsoundclub.com/Forums/ShowPost.aspx?postID=2052>), and running Mullard and Enjoy the Music tubes (valves).

I'm using an Audio Limits passive preamp (made in Canada) and Marantz MA5 mono blocks with replaced electrolytics (including the 22,000uF power supply caps, which required a little bit of butchery to the internal chassis). This purchase was inspired by one of your articles, as my Leak Stereo 60 (the actual one you reviewed in your magazine purchased from Classique Sounds) also failed the

kid test I found myself in the habit of picking up broken ECC83s from the living room floor!

Speakers are currently Celestion Ditton 33s (with replaced crossover caps) picked-up off E-Bay to temporarily replace my DIY transmission lines which are being modified with kid resistant drive units (and reworked cross-over).

Anyhow, to get to the point I would like to replace the tonearm to push the performance of the record playing system up a notch, or two. My record collection consists of mainly 60s, 70s and 80s discs, either bought new or more recently second hand. I also have some recent 180g discs of remastered rock albums.

The MLX 150 uses a Microline stylus, which I have found to be invaluable for playing the many less than perfect albums in my possession.

There are two routes to a potential improvement that I have been considering. Either a 9" replacement tonearm for the SME 3009, such as the Origin Live Onix (around \$600) or Silver (\$900). Alternatively, I could get the 301 plinth rebuilt to accommodate a 12" tonearm such as the Jelco 750 L (\$750). I have read on-line that the 9" Jelco 750 offers significant improvements over the Linn Ittok when used with a Garrard 401, and was a little surprised to read that in your opinion the Audio Origami modded Rega and OL Silver offer a big improvement over the Jelco.

I am familiar with the Ittok, having used it on a Sondek with a Benz Micro Ace before emigrating to British Columbia. I was happy with this combination, but at that time was fortunate to have concrete floors in my London apartment, which made using a spring isolated turntable considerably easier than in a house with suspended wood floors.

I have also previously owned a Garrard 401 which I used with an Origin Live modded Rega 250 together

with the aforementioned Ace. I was not so enthralled with this combination, which I put down to the Rega.

So the first question that springs to mind is whether a 12" tonearm is fundamentally better than a 9" tonearm due to improved geometry, or does one get what one pays for irrespectively of the length of the arm?

The second question is whether any of the options I've been considering will actually offer any noticeable improvement over the rewired SME 3009 plus bronze bearing? If not, which arm should I be considering to make a worthwhile improvement.

Note that my Interconnect cables are Van den Hull Integration Hybrid or Audio Limits Silver. Loudspeakers cables are Nordost.

Many thanks for a great magazine. As you might guess, I particularly enjoy the Olde Worlde articles.

Regards,

**Mark Gaudet,
Maple Ridge,
British Columbia,
Canada**

Ooh – that's a funny combination of components Mark. I am not acquainted with the Technics MLX 150 cartridge but if they are "dirt cheap" then it is hardly likely to be in keeping with the other items and your system in general.

The Goldring 1000 Series cartridges we usually recommend as cheap and cheerful MMs and Ortofon's 2M Black as the best MM available. Obviously, with young children bending styli you don't want to go down the MC route.

As you are a DIYer, a protective acrylic cover may be an idea.

A Garrard 301 with Analogue Audio Kokomo bearing, mounted on a good solid plinth deserves far better than an SME 3009 MkII Improved with fixed headshell. As lovely as they are, structurally they are not so clever. The world moved on long ago, as did SME. I would recommend a modern Rega RB301 as a minimum, which is much improved over older RB250s. Jelcos are good but not the best optimised designs around.

Long 12in arms are innately less rigid than shorter ones and not quite so grippy and fast sounding, but they are very smooth and suitably dynamic. I choose to use an SME312S with a Garrard 401 and am not looking for the more sterile sound available from stiff 9in arms, especially with silver wiring.

So to summarise, I advise you go for a better arm. Whilst using a budget cartridge a costly 12incher is perhaps overkill. As you may be

wary about Rega then a Jelco 750T is a known goodie in the Jelco range and may be easy for you to obtain in Canada.

Finally, I have suspended wooden floors and they upset my turntable until I realised that the wooden beams in corners betwixt chimney breast and wall were dead areas unaffected by what the rest of the floor was doing, when the joists flexed. The joists run at right angles to the floorboards of course, so look at your boards, imagine the joists beneath and you will understand how, when they bend, your floor moves. Dead corners or suchlike will then be obvious and here footfall will not affect your deck.

Hope that helps. **NK**

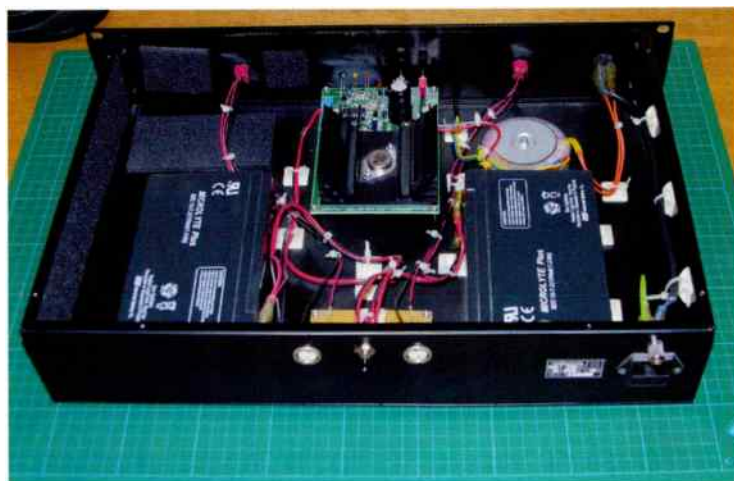
BATTERY POWER

I know from past reading of Hi-Fi World that you have an interest in surround sound, Ambisonics etc. I have recently found a very useful surround sound decoder from a German company called the Decoderstation 5 available from Teufel Audio direct by ordering from their web site for about £170 including carriage.

The decoder has two optical and two S/PDIF digital inputs, three line level stereo analogue inputs, a 5.1 throughput and a 5.1 output, all in gold plated phonos. The decoder comes in a metal case with Perspex/plastic front containing a small display. The decoder allows equalisation adjustment of speaker volumes for initial set up, with adjustment of speaker distance and size. The Cambridge Audio Azur 840E preamp I have allows one input to be fixed with the overall volume then controlled from the Decoderstation 5. A remote control and comprehensive instructions are provided. The decoder has Dolby Pro Logic (Music and Films) and Stereo 5.1 modes and automatically switches to Dolby Digital or DTS for

DVDs. The results from connecting up a Freeview box (with a hard drive) or a DVD player to listen to movies or music broadcasts via the optical connection (my Freeview box etc do not have S/PDIF) is very good, better than I expected. My interest is listening to music and my system is aimed at that, but the Decoderstation 5 is a relatively inexpensive but high quality addition to extend sources of listening. If only the Decoderstation 5 included Ambisonics. I did have a Minim Ambisonics decoder years ago, but it could not keep up as my system improved. However experiencing Ambisonics was something I have not forgotten.

The downside of the Decoderstation 5 is the power supply which consists of a wall wart connected via a shaver adaptor which does not inspire confidence. The power requirement is +12volt DC. Fortunately, I built a dual 12 volt rechargeable battery power supply some years ago to power a Perpetual Technologies resolution enhancer, the P-1A. I have attached a photograph of the battery power supply. The battery power supply on the P-1A opens out its sound, adds more detail and depth and firmer bass without the obvious distortion resulting from a mains derived supply. I am assuming the same applies to the Decoderstation 5 I powered from it as well; I have not tried the Decoderstation 5 on its wall wart. The battery power supply was built using a Velleman lead acid battery recharging circuit, available as a kit, with slight modifications. The unit contains two 12 volt 7.5 Ah batteries which are needed as the current requirements of both the P-1A and the Decoderstation are high. The unit could equally also provide power to items like the Musical Fidelity V-DAC (at 12v DC) or could be changed to a 6 volt supply to power things like the Arcam rDac which is supposed to respond extremely well to a battery supply. The unit could also



The 12V lead acid battery power supply built by Peter Graves. It "opens out the sound", he says, "adds more detail and depth and firmer bass".

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!

You can reply to Letters using the e-mail link at the top of the page -

World Mail June 2011 issue

Write to us! E-mail → letters@hi-fiworld.co.uk

Letters are published first in the magazine, then here in our web archive. We cannot guarantee to answer all mail, but we do manage most!

Or comment in the Comment section at the bottom of each page.

Your experts are -
DP David Price, editor; NK Noel Kaywood, publisher; PR Paul Rigby, reviewer; TB Tony Bolton, reviewer; RT Rafael Todes, reviewer (Alegri 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.

Add your comment

Your name:

Subject:

Comment:



Word verification:

Post Preview

The screenshot shows the HI-FI WORLD website interface. At the top, the magazine title 'HI-FI WORLD' is displayed in a large, bold, red font. Below the title, there are several navigation and content sections:

- LATEST**: A small thumbnail of the magazine cover with the text 'Available in 42 countries' and '...OR READ ONLINE'.
- Magazine issue data**: A list of issues from September 2011 back to March 2010. A 'Display # (All)' dropdown menu is visible at the top of this list.
- FRONT PAGE**: A link to the 'Home' page.
- NEWS**: A list of news items including 'New LP', 'CD, DVD, Blu-ray', 'Amplifiers', 'Loudspeakers', 'Internet Audio', 'Tuners', and 'AV receivers'.
- FEATURES**: A list of feature articles including 'Sound Reviews', 'Albums', 'Olds Revisited', 'World Favourites', and 'World Audio Design'.
- Contact**: A link to the contact page.
- COMPETITION PRIZE**: A promotional banner for the August 2011 issue, featuring a 'TRIANGLE COMETE LE Loudspeakers winner Dr Chris Corrigan of Grays, Essex'.
- SEVENOAKS & AUDIO T STORE**: Promotional banners for these retailers.
- audio T**: Another promotional banner.

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'.

be adapted to provide a 12 volt split rail supply (+12v/0v/-12v) or the same again in 6 volts, though this type of supply seems rare now.

**Peter Graves,
Hartlepool**

Yes, nice idea Peter – and a very neat unit you have made too; I'm impressed! Both Farnell and RS Components catalogue some interesting sealed lead/acid batteries



The Kingrex SLAP power supply charges sealed lead acid batteries automatically.

with relatively vast capacities in ampere-hours, and Maplin have them of course (Yuasa). Anyone not minding to set them onto recharge every night after letting the cat out could likely use such batteries to benefit, in the way you describe, because they can deliver very heavy surge currents over short periods. Mains powered equipment can really drain the juice, especially when current hungry displays and lights are on-board. Digital Signal Processors also consume a lot of current, many amperes at full chat, so a 20AH (Ampere Hours) should provide an evening's listening I'd guess – and I see you use 15AH.

Readers not happy to DIY can buy a Kingrex SLAP (7AH) for £275 from Item Audio, which does the same job (www.itemaudio.co.uk). **NK**

TRANSFORMED

I purchased a transformer preamp from Music First Audio earlier this year and I would agree wholeheartedly with your oft-quoted comment that it is "so good I swear it is surrounded by magic". My Linn Sondek sounded so good through it that I decided to invest in the moving coil pre-amplifier as well. This sounds absolutely brilliant through the moving magnet input of my Icon Audio PS3. Better than this, Jonathan Billington delivered it to me personally and helped me set it up: what service! I attach a picture of us: in addition to me and Jonathan you can also see my Quad electrostatics and my harpsichord! Incidentally I was delighted to have won

the competition for the Triangle Comete LE loudspeakers this month. I always send in my postcard and I couldn't believe it when I saw my name on the winner's line in the November issue. Thanks very much: I can't wait to hear them! What a happy bunny...

Chris Corrigan

PENNY WISE

I recently found three significant upgrades to my record deck that cost next to nothing.

1) Change pickup lateral alignment from Baerwald (nulls at 66mm and 121mm) to Stevenson (nulls at 60mm and 117mm). This makes negligible difference to the sound at the start and middle of record but towards the end of side the reduction in lateral tracking angle significantly improves the sound.

2) Adjust tracking force to optimise sound balance. Forget about vertical tracking angle (VTA) - its tracking force that affects the sound: with most cartridges increasing tracking weight dulls treble and increases bass and fine adjustment to get it just right is well worthwhile.

3) With these changes and other adjustments (loading, arm mass etc.) optimised, my deck (Walker CJ611 Mayware Mk V arm/ Denon 103 with Expert Stylus Paratrace stylus) really started to sing but there was still a slight residual treble harshness at times.

The Walker turntable has a hard,



Chris Corrigan (left) and Jonathan Billington from Billington Transformers and Music First Audio. That's a fine setup Chris!

non-resonant Tufnol platter resting on a sub-platter of the same material – could the interface between these be the source of the problem? Separating them with small strips of paper around the perimeter had a surprisingly large effect on the sound, getting rid of the

harshness but giving an overdamped, subdued treble. Replacing paper with small pieces of 3M Magic Tape adhesive tape, gave much improved clarity and perfect sonic balance. Treble reproduction is now remarkably good. It seems that the pieces of tape separate the two surfaces, preventing rattling and also introduce a little damping. These changes cost next to nothing but their combined effect is a major upgrade that has brought the sound much closer to reality. Those who own other record decks may also find it worthwhile to experiment with small pads of different materials inserted between main platter and subplatter.
Yours sincerely,
Alasdair Beal

Thanks for that Alasdair. There are hours of fun and fiddling in all this and I especially like your suggestion of separating platter from subplatter with Magic tape. **NK**

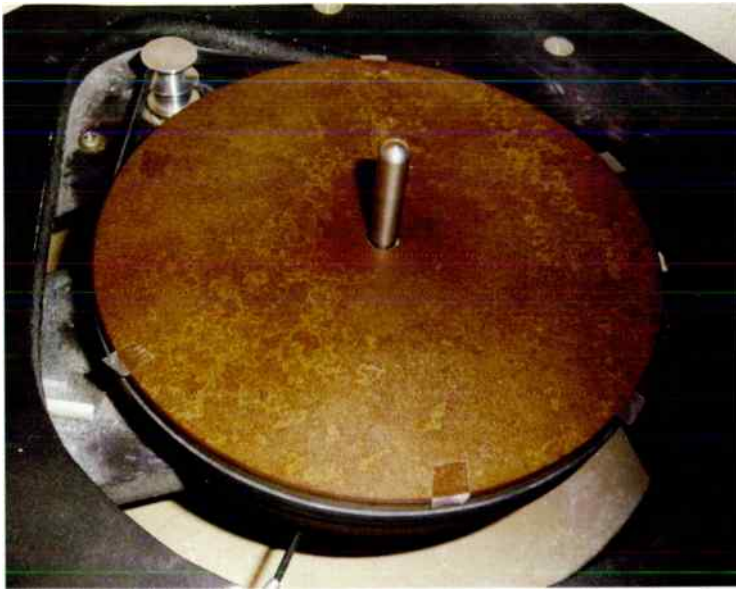
MISSING MUSIC

It was Tony Bolton's remarks in September about the quality of vinyl reissues that motivated me to sit down and write this epistle. I hope you can find a few minutes to read through the story and perhaps Tony can reply.

My two friends and I were recently well elated to see that Warner had re-issued Eric Clapton's "Unplugged" on a double album. We all bought copies and agreed that we'd have a group listening session to play the new LPs and have fun comparing them with the original LP and the CD. While playing side 2

of the new LP re-issue we happened upon a couple of sonic anomalies which sounded as though four or five guitar notes were being skipped over at one place during each of the two songs "Lonely Stranger" and "Layla".

There was nobody actually singing



The Tufnol subplatter of Alasdair Beal's Walker turntable with pieces of 3M Magic Tape attached. OK, it doesn't look so good, but it is clever.

at those points in time on either of those tracks so we weren't quite sure what we were hearing. This album has always been one of our absolute favorites and we know every bar that's played so we did know immediately that something was amiss. We investigated further by playing the CD and the new LP in parallel through an amp with fast A/B switch-over between two sources. Our turntables have speed controls so we got both sources nicely synchronised on exactly the same notes and listened attentively.

The result of this comparison left us in absolutely no doubt. During "Lonely Stranger" at precisely 4 minutes and 44 seconds (timing as read from the CD player display) the LP sound track suddenly and audibly skips forward by just under two seconds and remains ahead of the CD by exactly this amount until the last note is played. During "Layla" the same thing happens at 3 minutes and 20 seconds. It's especially easy to monitor the time shift that occurs during "Layla". Continue listening to the LP track until you hear the background girls return towards the end using the words "begging darling please" and on the word "please" switch over to the CD – you'll be just in time to hear "begging darling please" being sung again. These three words/five notes take just under two seconds to sing/play. These "missing bits" are pretty much coincident with one revolution of the LP groove. It's almost as if two neighbouring grooves have merged together during the master-cutting process – but we don't have a microscope so we can't verify if that is the case. Needless to say, we repeated all the same tests with all three new copies of the double album available to us and using different turntable/arm/pickup combinations – all our tests produced identical results. All

three copies of LP side 2 are flawed in exactly the same way. Sides 1, 3 and 4 are OK at least in that respect.

Subsequent emails to Warner and to Eric Clapton's website have all remained unanswered. Seemingly a total lack of interest.

I cannot agree more with Tony Bolton: if possible, steer clear of reissues. If the industry doesn't want to take sufficient care with their reissues and ignores constructive feedback from customers about defects that have crept in they really don't deserve the revenue that reissues generate. It's a pity that the QC seems to have failed somewhere in the process. Admittedly the anomalies occur in places where nobody is actually singing so somebody who test-listened to the master (or the test pressings) and happened to have cloth ears or doesn't know the music might not notice the skipped notes. I and my friends did notice and frankly it has spoiled our enjoyment of what could have been a really significant vinyl release. What can one do in such a case?

For your additional info the "matrix" serial numbers on all the three copies we've listened to are: 1-468412-B and BB31540-01 B1.

If you've got access to a review copy of the new double album (and the CD or the older LP for comparison) perhaps you could take a listen in the same way we did. If your vinyl copy doesn't exhibit the described anomalies we'd appreciate

knowing the "matrix" numbers stamped on your copy and where it was sourced but we're hoping you can help to shed some additional light on this and advise how we might proceed.

There's always the possibility that we are imagining things and/or going off our collective rockers with overdoses of vinyl but we are convinced there are problems with these LPs but we haven't managed to succeed in bringing it to the attention of the manufacturer. Not for want of trying though.

Thanks for taking the time to read this – we're looking forward to your opinions/responses/advice.

Kind regards,
Christopher Warrender,
Vienna

Hi Tony. That's a great bit of detective work and other readers may want to comment. We don't have the particular recordings and pressings you mention, so are unable to comment ourselves. **NK**

LESS DRIVE

I'm a big reader of your magazine since years, and I'm trust so much in your reviews, and opinion. I live in Hungary, so I'm very glad to see your magazine is available in electronic form too.

I have a pair of Elac 310 CE speakers and a Denon PMA-1510 AE amplifier at home. I usually listen to music from my Mac Mini through an HRT Music Streamer 2+ DAC, so I'm on "digital". I listen to every kind of music from classical to rock. I'd like to ask you, what amplifier do you suggest



Eric Clapton's Unplugged album. The re-issue has missing notes, says Christopher Warrender.

to this system? I like the Denon's sound, but I find it a bit strong to my 70W 4ohm speakers. So I'd like to try something else with less power, but more musicality at a price around 1000-1500 GBP. I thinking about a Hungarian constructor's product called Heed Audio

Obelis SL. Do you ever heard it?

Thank you.

Yours sincerely,

Tom Talicska,
Hungary

Hi Tom. We do not know Obelis. Si I am sorry to say. I suggest you consider a Naim Nait as an alternative to the Denon. It has a stronger sound and will bring more vigour to your music. An interesting alternative is the new UnitiQute, with its on-board network player and 30W power amplifiers. **NK**

DOWN UNDER

As you know, this audiophile hobby of ours is an interesting, at times complicated and often frustrating and I am therefore on the bludge for some of your wisdom.

The story begins when I purchased a Goldring Moving Magnet cartridge from a UK based online store, to go on my Rega P2, a little over 15 months ago. I had decided to rejoin the vinyl fraternity and this purchase was based on Hi-Fi World's recommendations of the Goldring as an MM to consider, although, I know it is often advised by you to try before buying. I am afraid that trying this cartridge is not possible in the far south eastern coast of this big brown country of ours.

The cartridge duly arrived, but not before I read an article on HFW about Audio Origami and the modifications

become with a simple arm transplant. You can put the pieces together, freshly modded arm, new cartridge, new direct drive turntable, some more DIY mods = Audio Heaven.

The arm arrived back in OZ, I plugged it on the Rega with my old cartridge and listened to my vinyl until I could buy a SL 1200 at the right price and carry out the suggested mods (if the Rega is this good, imagine how good the Technics would sound).

So, fast forward to last month and here I am, the Rega P2 has been sold on, the Audio Origami'd Rega arm is mounted on an SL 1210 with a DIY off board power supply, DIY Sorbothane feet, Isoplat mat and the Goldring 1042.

But here is the rub, I seem to have a 3dB difference from the left channel in the Goldring, so, I find myself with a cartridge that is over 12 months old, albeit unused, and in no way able to return it to the place I purchased it from to claim the thing is faulty, as the warranty is expired.

So here are the questions. Is about 3dB difference in balance OK for a Goldring 1042? (I have temporarily fixed it by adjusting the balance in my pre amp) or is the cartridge faulty? Is it possible to have this fixed? (sealed unit). Should I suck it up and live with it?

Alternatively, would a Rondo Bronze be a good match for the current arm set up (given I purchase a MC phono pre or alternatively, source a couple of step up transformers for my current home made

you other than the turntable and arm).

Budget about 1k AuD (music, all genres from classical to punk). Should I sell the lot and continue buying CDs and SACD? Should I stop reading magazines and getting weird ideas? Please help!!

Regards

Gerry Martin,
Batamans Bay,
NSW,
Australia

Hi Gerry. Your big brown country is a wonder to fly over though; I'm always transfixed by its size and by the fact that there's no one down there! And the scenery; if you live in the smoke like I do it's eye popping, even if your wild life isn't so friendly!

On the subject of pickup cartridges your Goldring 1042 definitely should not have a 3dB channel imbalance. This is usually caused by shorted coil turns or a mis-wound coil (I have come across the problem just once), although stylus damage is a possibility. I spoke to Goldring and their view was it's out of its warranty period and that is the end of the matter. Well, I tried! **NK**

CD AS GOOD AS VINYL

I shall be updating my system next year and have a budget of between £2000-£3000. I have Rega Planar 2 deck and a Creek OBH 15 phono amp which I want to keep as the basis of a new system. The current stereo is a Technics separates system from 10-12 years ago and has the SL-BD22 turntable that has already been updated with a Pickering cartridge.

The Rega Planar 2 I plan to have upgraded via (inspire Hi-Fi). I am not much fussed about having a receiver for radio so will have most of the money available for an amp and speakers.

Somebody told me that as a rule of thumb whatever I spend on an amp should be the same for a pair of speakers.

I was also told that to make my CDs sound as good as vinyl I should be looking at £1000 on a CD player. Are either of these pieces of advice right?

I would need a system that was at home with both vinyl and CD (although vinyl is my preferred media) and capable of playing various genres of music including rock, jazz, folk and classical. Is this too much to ask for the budget I have? Could you recommend an all round set up?

Yours faithfully,
Ian Josland,
Dartford,
Kent

Hi Ian. The Planar 2 is way out of date, especially if fitted with the Acos



Combining network player and amplifier, the Naim UnitiQute is a neat all-in-one for modern times.

and improvements that Jonny 7 could perform on Rega arms.

My Rega RB250 arm duly took a trip to the UK to get all shiny and re wired. Whilst waiting for its return, I read another article that told me all about direct drive turntables, specifically, the Technics SL1200 and how good it could

MM phono pre).

What ready made MC capable phono pre would you recommend for my set up (aforementioned turntable and arm, DIY solid state AB amps, DIY speakers using Scan Speak drivers, DIY phono pre solid state discreet circuit). (I know this little lot will be a mystery to

arm. You don't say what cartridge is in this turntable either. Get a Rega P-3 24 with a Rega RB301 arm if you can, and a Goldring 1022GX cartridge. This is a great basic source with strong dynamics, well differentiated treble from a Fritz Gyger stylus and a big, well hewn sound stage. Only the turntable is a little weak in suffering vague timing against the best – but that's why it's not too expensive.

CD will forever sound different to vinyl and whether it could be "as good" is a specious argument. We are comparing apples to oranges here! However good CD gets, LP always seems to stay a step ahead, probably because CD is fixed to a 30 year old specification whilst LP is able to evolve. Try auditioning a CD player with valve output stage to hear an interesting alternative and Icon Audio have a nice one in the CDX1 and the Canor CD player in this issue (originally the Edgar) is another great player. You will be spending at least £1000 for a really good player or DAC, to avoid digital harshness.

Spending around £1000 on an amplifier and loudspeakers also works well, although the loudspeaker side of the equation can vary somewhat. For example, Q Acoustics make good floor standers in the 2050i loudspeakers, costing around £500 and Monitor Audio the Bronze BX5 for a similar price and both are good. Moving up the price scale Triangle make the Antal EX for just over £1000 and this is a lot of loudspeaker for the money.

Your budget is plenty big enough but you do need to tread carefully as you obviously are casting your net a little wide at present. **NK**

SPINNING BACK

I have now been using computer audio for six weeks. Set it up correctly and tried DACs ranging from £200 – £7500 (same one as yours I suspect) and using CDs ripped to WAVs with Exact Audio Copy and also high resolution downloads. This morning I put on a record for the first time in months, Boney M 'Night Flight to Venus' (total rubbish) LP I have had for at least thirty years. On an unmodified Technics SL1200, purchased from a pawnshop a year ago after reading your magazine, and which I fitted with an ancient SME 3009, and an equally ancient Shure M55E with a new stylus from Maplins (elliptical, £19, the most expensive stylus in the shop).

Punch? Attack? Involvement? I cannot take it off. Don't know why I bothered with all this computer stuff.

Regards,
Mark E Powell,
Southampton



Used by Hi-Fi World reviewer Paul Rigby, Icon Audio's CDX1 has a valve output stage and sounds more analogue than most CD players.

Yep, you're so right. Vinyl still has it for excitement. Time to start tuning the Technics though, isn't it Mark? Let's see – an SME309 would do nicely, fitted with an Ortofon 2M Black. Or if that is all too much, go the Rega RB301 route, with Goldring



Shure M55E cartridge – best replaced.

1022GX. And you will be in heaven without damaging your records. I had a Shure M55E once and I'll swear it ate vinyl for breakfast and probably all other meals. Get rid! **NK**

BUDGET SACD

Reading the review of the Bladelius SACD player in a recent issue got me thinking. My favourite source has always been vinyl (I have an Avid Volvere Sequel, Graham Phantom 2, Transfiguration Phoenix and LFD MCT phono stage). I have tried many CD combinations and have a Teac T1, Trichord modded into a

Mk1 Chord DAC64. Although this is a good CD front end it always leaves me wanting for more, and often I can't be bothered with uncovering the turntable and cueing up records, cleaning, etc etc.

Anyway, I have never even heard an SACD player and I fancy dipping my toe in and giving it a try. What with the recession and all, I am not in a position to spend a couple of grand, but if the format is to my liking I could in the future. So my question is this: can you recommend me some SACD players that I could seek out and purchase second hand for about £300 quid or so? The rest of my system is Neat ultimatum MF9 speakers and Audiovalve Buldar 300 mono power amps (massive things) and Audiovalve preamp, from Germany. Cables are all high quality.

Many thanks,
Billy Valler

You can get a modern CD / SACD player, the Sony SCD-XE800, for just £250 and is one possibility. Second hand a player like the SCD-XB790 comes to mind and this goes for around the price you quote and gives a great sound from SACD.

SACD gives a smoother and more fluid sound than either CD or PCM in all its forms and is a very easy listen, popular with classical music in particular. You will not find much other than Classical on SACD now though; it is a moribund format and because mastering costs are high, likely to remain so. **NK**



Sony SCD-XE800 CD / SACD player costs less than £300 new.



Diamond Life

Bring a Diamond into your life with Usher's Dancer Mini-One loudspeaker, Noel Keywood says.

Usher, a Taiwanese company, have an impressive factory by global standards and an engineering department, including anechoic chamber, most companies would die for. They rely on advanced engineering to produce a high technology product and our measurements show little compromise to the notion of accuracy. The Be-10 we reviewed in the June 2009 issue was a stunner, but this is a big loudspeaker with a big price tag – £10,000 no less. The Dancer Mini-One reviewed here lies in the same series, with the same cabinet shape and finish, but is scaled down to suit smaller rooms and pockets. It also comes with Usher's own specially developed Diamond tweeter, recently added to all Dancer series models.

Standing just over one metre tall (1062mm) this loudspeaker hits the common 1m benchmark. At 320mm wide the cabinet is relatively slim and relies on a base for stability. The sturdy curved cabinet is heavy, total weight with base being 37.3kgs. Usher's website (www.usheraudio.com) shows five finishes, deep gloss Enzo Read and Piano Ivory, plus Walnut, Violin and Maple wood veneers. The veneers have a silk finish; they are not lacquered.

This is a two way loudspeaker with 7inch (178mm) bass unit and 1.25inch (32mm) dome treble unit. They cross over at 2.3kHz according to Usher. The bass unit is reflex loaded by a slot port at the base of the front panel. The rear carries a sturdy bi-wire connecting panel able to accept heavy gauge bare wire, 4mm plugs or spades. Links are removed to enable bi-wiring. The Mini-One is a premium loudspeaker and the quality of cabinet finish, trims and the connecting panel is first class.

Usher explain that diamond coating is a process that has been around for some time, and used on tweeters too. However, it adds too much mass and, sure enough, B&W's Diamond tweeter does peak up at 15kHz our measurements of the 804D (February 2011 issue) show, confirming this. To avoid this effect Usher have used a laminated dome with diamond-metal-diamond structure that does not resonate sharply in the audio band, they say and sure enough, measurement confirmed this, although there is a peak above 19kHz. So the problem hasn't disappeared, it has been pushed upward out of the way. It leaves Usher's DMD Diamond tweeter with a flat in-band frequency response and a sound far removed from the clatter of saucepans that

aluminium dome tweeters suffer. Diamond tweeters are known for lacking the metallic zing, even rasp, of metal domes and deliver masses of fine detail.

In our experience though, synthetic materials in loudspeakers demand a very long run in process, far longer than traditional natural materials. Where two days continuous run-in (48 hours) is adequate for most loudspeakers, our B&W 804Ds were obviously not right until they'd been run for 120 hours. B&W don't acknowledge

measurements suggested, the Dancer Mini-Ones were light in balance, their broad treble lift pushing percussive transients forward. Amy Winehouse sang 'Tears Dry on their Own' crisply from centre stage and drum strikes cut out of the loudspeakers strongly. Fine detail was thrown outward and initial transients of hand claps jumped out. The diamond treble units were sparklingly clean in their handling of cymbals and metallic percussion instruments but overall the sound was a little on the hard side. Bass was firm and went low but it wasn't

"his violin was intensely lit, full bodied and perfectly placed on the sound stage"

this need, which complicates the issue about whether a loudspeaker is fit and ready for review. Usher interestingly quote 60 hours minimum and 180 hours as fully run in and that seems about right – but in practice it means the speaker must be run continuously in a room or chamber for seven days, no less. We put 120 hours on ours with overnight and weekend running, even though they came run-in, the importers said. Diamond tweeters I suspect need very long running in. This requirement affects audition. If loudspeakers on demo or under review have not been run for a sufficiently long period they will not be representative and in my experience can sound quite unpleasant. This can skew people's perceptions of a product and it is a particular difficulty with diamond tweeters. So before auditioning the Dancer Mini-Ones be sure they have been fully run-in and are not fresh from the box, an observation that applies equally to B&W Diamond loudspeakers.

SOUND QUALITY

The Dancer Mini-Ones were run in using pink noise and then Monitor Audio's peculiar De-Tox disc. As they had been used by importer Hi-Audio they were pretty well used by the time serious listening began.

I started off using our in-house Musical Fidelity AM50 Pure Class A amplifier. Most loudspeakers are developed using solid state amplifiers and used with them too, so this is an initial benchmark reference point. As our frequency response

prominent.

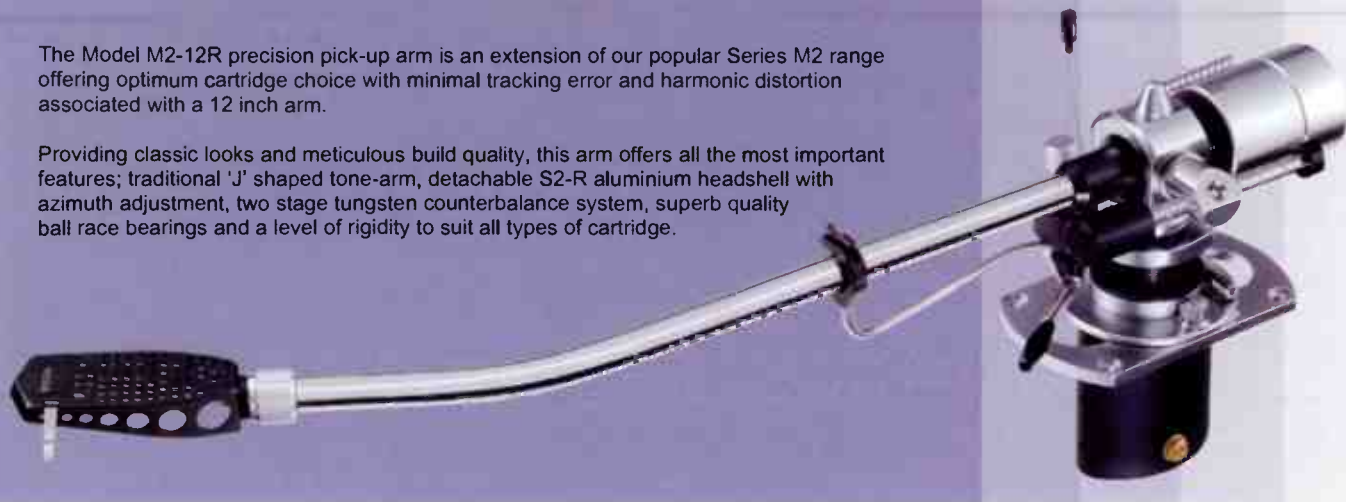
Usher like a technically accurate sound and the Dancer Mini-Ones were no exception. They image nicely and I could hear right around Amy Winehouse at the microphone but



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our AMS50 has a dry delivery and it wasn't a symbiotic partner for these Ushers. So our Icon Audio MB845 Mk II valve amplifiers were given 30 minutes to warm up and I continued with them.

With the MB845 MkII, bass became bigger if a little soft around the edges due to its lower damping factor, but it had plenty of presence and the loudspeaker's sense of control was good. Where this combo worked was in allowing the Usher's excellent midband insight to be a benefit rather than a drawback, a strength of a good thermionic source. Amy Winehouses' vocals stretched out, hard wrought against a clear background, fine decays around cymbals, drums slowly fading away around her. Treble wasn't as sugar sweet as that from B&W's Diamond tweeter, but the Dancer Mini-Ones were a better integrated and more balanced loudspeaker overall, without the one-note treble of the B&Ws. They displayed treble emphasis with the 'Back to Black' album and this persisted with Angelique Kidjo's 'Fifa' album. 'The Sound of the Drums' had nice rolling deep bass and plenty of it, with an emphatic note structure. Percussion stretched across a wide sound stage in front of me, in the plane of the loudspeakers. Cymbals were ringing strong and clear and quite obvious, even with the loudspeakers pointing straight down the room, not angled in. But this album does have strong treble and the Ushers did not disguise the fact. They are dry and very analytical, setting up an intensely detailed sound stage on which every little nuance is heard. The way the Dancer Mini-Ones laid out backing vocals in broad sweep across the end of the

room was impressive.

Lady Gaga's vocals stood out against a background of thunderous bass from 'Bad Romance', synth staking out a simple theme at left, interjections from far right, with Gaga's strenuous delivery given good force centre stage, elaborated by intense detail. The tweeter had some sting though; it takes no prisoners. This is likely explained by a steep resonant peak above 19kHz. Diamond coated tweeters tend to be like this; B&W's diamond tweeter peaks lower down.

Whilst Rock sat firmly between the loudspeakers, as it is mixed, the Dancer Mini-Ones opened out impressively to display the scale of the London Symphony Orchestra playing Tchaikovsky's 'March Slave'. Kettle drums thundered weightily, cellos were intense whilst pipes and horns played out the military theme in a sense of clear open space. The fast pace and tight timing of the LSO was beautifully portrayed, if again cymbal crashes were a little intense.

The wide open sound stage and excellent imaging of the Ushers was again apparent with Nigel Kennedy playing Vivaldi's 'Spring'. His violin was intensely lit, full bodied and perfectly placed on the sound stage. The English Chamber Orchestra stretched out majestically behind him, sitting

in a clear open space. I would have preferred a little less emphasis on the upper harmonics of the higher strings but in exchange I heard the richness of the instrument and the whole picture hung together beautifully.

CONCLUSION

The Dancer Mini-Ones are very Usher, meaning superbly engineered, beautifully made and technically closer to perfect than most. What you get is a very 'correct' sound, one that is coolly accurate, with excellent bass and a super clear midband; they successfully offer a taste of the wonderful Be-10, in a smaller package.

The Dancer Mini-Ones are impressively well engineered, made and finished, and capable of wonderful results. Like the Be-10s though you do need a very good amplifier, one that is powerful yet silky smooth at the same time, to avoid hearing the amplifier's own limitations. A great loudspeaker then, wonderfully engineered and impressively built, but demanding of all around it.

REFERENCE SYSTEM
Electrocompaniet ECD1 DAC
Icon Audio MB845 MkII power amplifiers

MEASURED PERFORMANCE

Our third-octave frequency response analysis shows a smooth and even characteristic typical of Usher. There are virtually no dips or undulations across the audio band and the dip at 180Hz is attributable to a vertical mode in our measuring room. Forward output from the bass unit extends down to 50Hz and below this the port takes over, extending coverage right down to 25Hz, into subsonics.

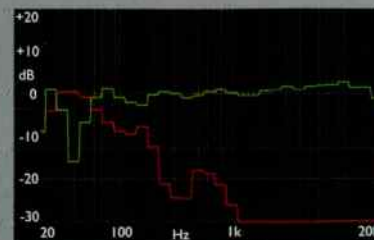
Points to note here are that a frequency response as smooth as this suggests very low coloration, and this property was borne out in our 200mS decay analysis. There is a steady lift in treble output with rising frequency, enough to result in a light balance and, finally and not shown, the diamond coated tweeter has a peak at 20kHz that subjectively may be relevant.

Sensitivity was low at 85dB SPL from one nominal watt (2.8V) of pink noise. The reason for this is that Usher have used a high DCR bass unit measuring 7.2 Ohms, where most are 4 Ohms these days. Consequently, overall impedance is high, the reactive component adding as a vector sum to produce an overall impedance value of 10 Ohms no less. The Dancer Mini-One needs quite a lot of power to go loud as a result, a minimum of 50 Watts; as floorstanders go it is not

especially sensitive.

The Dancer Mini-One is a technically accurate loudspeaker enhanced by smooth treble lift, to give obvious treble sheen, perhaps to emphasise the Diamond tweeter. It is engineered well and cannot fail to give good sound quality. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●●●
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FOR
- seamless clarity
- clear treble
- tonal neutrality
- low colouration

AGAINST
- treble sheen
- require long run in & careful system matching



If you want a massive resource of power the Audio Research VS115 power amplifier is for you, says Rafael Todes.

Research Resource

In the thermionic dark-ages, (1970-1985?) when only a handful of manufacturers continued to produce valve gear, Audio Research stood out as one of the major players to keep the glass tubes burning. Founded by William Z. Johnson in 1970 and based in Minnesota USA, Audio Research was recently taken over by an Italian Investment Management Company, Quadrivio, backed by the Bank of Italy.

The Audio Research VS115 at a glance bears striking resemblance to the VS110, with open architecture and a natural anodised top plate (a childproof cover is available as an extra to protect prying fingers

from burns). At closer inspection, the rear panel now sports balanced as well as single-ended operation, and the power transformer has increased in size. The bandwidth has been extended to 100kHz from 40kHz, and the power has been ratcheted up by 20W/channel to 120W/channel into 8 ohms. There are bias test points on the rear panel, which can be tweaked with a screwdriver, with the assistance of a voltmeter. Being a 'fixed bias' amplifier means, confusingly, bias has to be occasionally adjusted – every few months approximately, according to usage – as the valves age. Fixed bias gives more power than auto bias where no adjustment is needed.

There is also a 12v trigger which allows remote switch-on. The power cable is included in the package, a heavy 20 Amp IEC which has non-standard fittings. The amplifier weighs in at a massive 28.2kg, with dimensions of 44.5cm width by 48.3cm deep and 20.1cm high. Aesthetically, it looks more like a cooking hob than an object of sex-appeal, but this is in keeping with Audio Research's utilitarian style that places function over form.

My conversion to valve amps started with a three year relationship with an Audio Research VS55, a 55 Watt amp which had an enticingly

"an extremely attractive proposition for those who want a velvety smooth sound"

sweet sound, but ultimately lacked the power to drive my B&W 802s. The VS115 is a more forceful version of the VS55, with eight 6550 output valves, instead of four for the VS55. The four driver valves are 6H30s.

SOUND QUALITY

Listening to the tempestuous last movement of Mahler's 1st Symphony, conducted by Bernard Haitink on Philips, the Audio Research has an obvious thump and wallop to it. It has power and plenty of grip below, and produces an airily sweet sound. My reference amplifier is not a million miles away; it's made by VAC, a small U.S. company based in Florida, and it uses two KT88s per mono block. I use the Shuguang Treasure Series valves, as compared to the Russian 'Winged Cs' on the Audio Research.

Whilst my lesser powered reference doesn't have the bark of the Audio Research, it is more spatially precise, and seems to separate the orchestral sections

more accurately. There seems to be more complexity to the sound. The Audio Research produces a big, all-encompassing wave of sound, that impresses with its sheer bluster and wumpf, but underneath the shock and awe, there seems to be less tonal detail than I hear with the more modest VAC amps.

There is an incredible smoothness to the texture, a far cry from your classic £5,000 transistor affair. Absolutely no hint of any steely metallic grain that I so often hear, and revile. A silky sound,

which is inherently beautiful, lush and ripe. It makes every orchestral string section sound like the Vienna Philharmonic on a good day! It's also blisteringly fast and dynamic, much more so than I remember my VS55 to have been. In the closing moments of the Mahler, you really hear the percussion and bass section driving the music to its climax, not reacting to it a split second later. This gives the climax a sense of 'rightness' without the compromise of an amplifier that doesn't time so well.

I am always amazed at how good Frank Sinatra can sound on the right system. "That Old Black Magic", a 1961 Capitol recording, is beautifully orchestrated and performed by the backing band. Sinatra's voice sounds frighteningly real, the amp captures the timbre of that million dollar voice perfectly. It's a big, generous and warm sound. The Audio Research's extra padding and fullness makes his voice as sweet as honey.

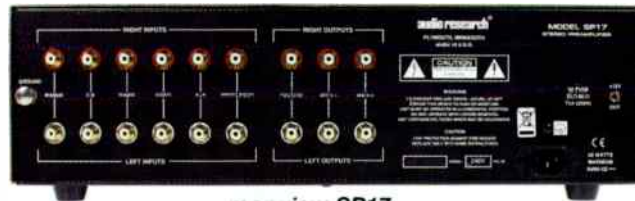
The accompanying preamplifier

sent for review was the Audio Research SP17, and most of my listening was done with this and a Music First passive preamp. The two preamps proved to be highly contrasting. The Audio Research SP17 is a warm-hearted addition to the line-up, you can really see what it's doing, good and bad when you listen to a fine passive preamp. The Music First is definitely leaner and meaner, better spacially, the orchestra sounds smaller, but more accurate. Whilst I can see the merits and musicality of the Audio Research preamp I personally think that the combination of valve preamp with valve power amp is a bit like chocolate cake with chocolate sauce, a bit too rich. In my books, a good passive preamp allows the power amp to enrich without excess, chocolate cake with raspberry coulis to stretch the cooking metaphor!

Listening to a BBC Radio 3 recording and broadcast of Gergiev and the Mariinsky Orchestra from the Proms of Tchaikovsky's Swan Lake, the power amp is in its element. A huge image of the massive Albert Hall space, sumptuously reproduced,



rear view VS115



rear view SP17

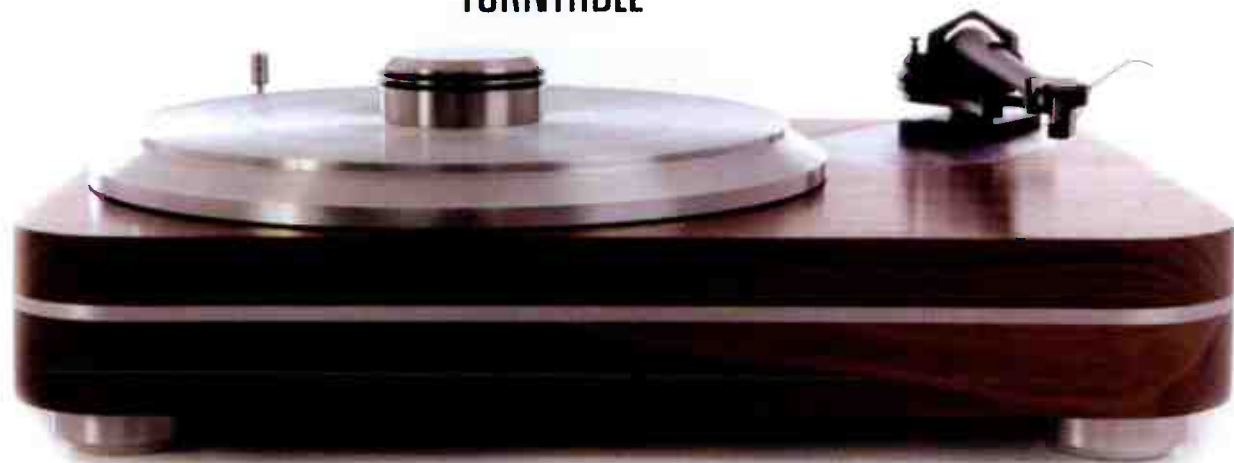


internal view VS115



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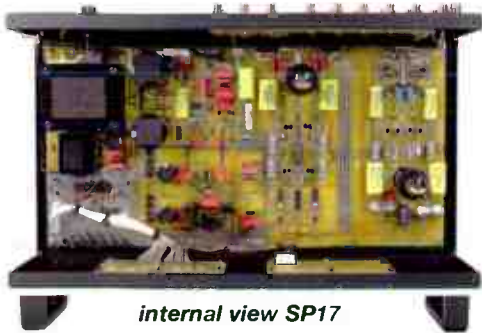
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internal view SP17

fluid and musically convincing, perhaps the leanness of my reference Naim NAT02 tuner with a passive preamp, enriched by the ARC power amp is a match made in heaven.

Moving on to vinyl, Mozart's 'Gran Partita', a Philips recording with winds from the Concertgebouw Orchestra: Although the overall sound is big and fruity, I can't help feeling that the combination of the Icon Audio PS3 phono-stage with the VS115 yields just too bloated an image. It is not unpleasant, just too much of a loss of spacial and timbral information. It is still a sound I prefer to a hard-edged, grainy transistor amplifier, but perhaps a good transistor phono-stage would be better suited.

This amplifier is big, sweet and rich, but doesn't seem to be bothered too much with the timbral subtleties that I've heard in the best valve amps. It's just a different emphasis



– whether right or wrong. Another example of this particular U.S. approach is the way great American String Quartets approach the music of the celebrated Russian composer Dimitri Shostakovich. His music is about a hundred shades of misery, ranging from despair to depression. There is a tendency for American groups to 'Hollywood-ise' his music, to make it sound beautifully rich and sonorous, rather than capture the shades of misery within it. It is Shostakovich through rose-tinted spectacles,

and I am afraid that I see this trait with the Audio Research VS115. It is sometimes necessary to produce ugly sounds to be faithful to the intentions of composers, and the VS115 stops short of this. Sonorous and even romantic it may be, powerful enough for Rock certainly, but critically revealing – perhaps not.

This amplifier needs careful partnering. While it has a tendency to 'sugar the pill', it produces some exquisite noises and is an extremely attractive proposition for those who want a velvety smooth sound and who place aesthetic enjoyment above the referential/analytical. For my taste, the suggested partnership

with the Audio Research SP17 is a step too far calorifically, as I think this amplifier performs best with leanness further up the chain – in the guise of a good passive preamp. But if you want oodles of power and enormous punch, the like of which you just will not find elsewhere, even in valve – tube?

– amplifiers then this combo has no rivals. Immaculately engineered and finely finished, I know from experience that Audio Research amplifiers stand apart and impress, a tradition the VS115 and SP17 continue.

REFERENCE SYSTEM
 VAC Auricle Musicblocc
 B&W 802ds
 Chord Speaker Signature Speaker Cable
 Music First Audio Copper Classic V2 Preamp
 Bel Canto CD2
 Weiss DAC202
 Icon Audio PS3
 Timestep Technics 1210
 Ortofon Cadenza Bronze
 Naim NAT02

MEASURED PERFORMANCE

The VS115 produced 112 Watts under test, into both 8 Ohm and 4 Ohm loads, so coupling efficiency of the secondary is good. It delivered 120W at 40Hz too, showing the output transformers do not saturate at low frequencies and there is plenty of bass power. Damping factor was peculiarly low, measuring just 3.2. This suggests little feedback is used and will give the VS115 full sounding bass with most loudspeakers. It needs over damped loudspeakers, not ones lightly damped to emphasise bass when working with transistor amplifiers. Bass quality then will depend upon a loudspeaker's acoustic and magnetic damping.

Treble output started to fall away above 10kHz, measuring -1dB down at 15kHz, a low value. Most valve amplifiers reach 20kHz at least and again this suggests feedback is limited. Input sensitivity was low, 1.6V being needed for full output. This demands a preamp with a high x8 gain to achieve an input sensitivity of 200mV, eliminating passive and transformer preamps.

The SP17 preamplifier has a modest gain of x4, so input sensitivity with the VS115 is 400mV, not very high. However, there is a MM phono stage on-board, so an external one is not needed, for MM at least. It has a high gain of x900 overall, through to the preamp output, enough for all MMs, if barely enough for MCs which need more gain than this with an insensitive power amp like the VS115. Equalisation was accurate, with some slight emphasis toward high frequencies. Equivalent input noise was normal enough at 0.3µV, IEC A weighted, meaning inaudible hiss in use. Input overload occurred at an acceptable 40mV, and output overload at a high 15V.

The SP17 and VS115 measured

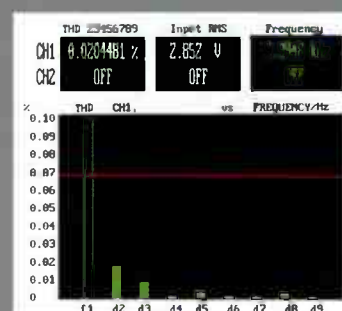
well in all areas. However, the power amplifier will sound warm in balance and it has very low output impedance / damping factor so loudspeaker matching must be done with care. The preamp measures well all round. NK

Power	112watts
CD/tuner/aux.	
Frequency response	4Hz-14kHz
Separation	82dB
Noise	-88dB
Distortion	0.02%
Sensitivity	1.6V
Damping factor	3.2
Disc	
Frequency response	12Hz-38kHz
Separation	68dB
Noise	dB
Distortion	0.12%
Gain	x222
Overload	40mV

FREQUENCY RESPONSE



DISTORTION



VERDICT ●●●●●
 Big sounding, sweet and rich, with oodles of power, the VS115 power amplifier is superb. The SP17 offers more of the same.

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FOR

- plentiful power
- large, thunderous sound
- build and finish

AGAINST

- bias adjustment needed
- not analytical
- unlovely appearance



Dual

Tannoy's updated Dual Concentric DC8T loudspeaker split opinion in World Towers. Noel Keywood loved it; Rafael Todes wasn't so sure!

Tannoy loudspeakers are great fun and impressively accurate, by design – and I like this. All the same, I had some reservations about the upmarket £4000 DC8T I reviewed in our July 2009 issue, ones that weren't apparent in the larger but otherwise similar DC10T reviewed later in our November 2010 issue. Following my comments and those of their Japanese distributor, Tannoy decided to tweak the DC8T to rid it of an obvious deficiency, a small midrange suck-out identified in our measurements that made it sound soft; it was too laid back even for my tastes. This short review is an update on the DC8T that, I feel, is one of the market's more interesting loudspeakers.

I thought reviewer and classical violinist Rafael Todes might like its qualities too – but he didn't! You can read what he thought of them too.

Here's a quick resume of the Definition DC8T. It is a one metre tall floorstander that incorporates the best Tannoy technology in a beautifully made and finished domestically acceptable loudspeaker. By this I mean it uses their Dual-Concentric drive unit, but it isn't part of their Prestige range, where size plays second fiddle to performance and Pickfords deliver. The DC8T is man handle able and you could substitute 'woman' for 'man' since it is no macho lift, weighing 21 kgs (76lbs). Tall and slim, the original wasn't so stable, so Tannoy have now fitted a plinth to widen its footprint. The lacquered wood veneer used is lovely to look at and touch and helps make this Definition look classy. Tannoy's trims are tasteful too and at the rear sits a bi-wire connecting panel with green earth terminal that earths all internal metalwork, something that technically makes sense as there are a lot of coils of wire inside, able to pick up Radio Frequency (RF) signals and earthing chassis work should help prevent this.

Opinion

The entire frequency range is handled by a modern Dual Concentric drive unit incorporating a horn loaded 25mm titanium dome tweeter firing out through the centre of the 8in bass/midrange cone. This cone uses a treated paper pulp cone with rubber edge surround and is has the damped, dull 'thwack', when struck with the finger, of a well damped polymer cone; there's none of the 'ring' of a metal cone. I make this point deliberately – more later!

Bass from the Dual Concentric drive unit is augmented by an 8in bass unit sitting below it, both units being reflex loaded by a rear port. Tannoy don't make loudspeakers lacking bass and the DC8T is no exception. Aware that it may over-excite some rooms they provide foam bungs that, we found from measurement and listening, audibly reduce subsonic output below 40Hz. Tannoy's foam bungs were more needed than those of most loudspeakers, because this loudspeaker is capable of very heavy subsonics; it runs almost flat down to 20Hz. Sounds good if you are a bass freak – and I like to feel the room move! – but it can really set some rooms off badly, according to their dimensions, so the bungs are quite important. Because our listening room has a main mode at 24Hz, below the lower limit of most loudspeakers but not the DC8Ts, the bungs were pushed in and out quite a lot in our attempts to maintain a sense of balance. It provoked our room strongly at a very low 24Hz and this did at times border on excessive.

There are a few interesting technical features of this loudspeaker. The tweeter reaches an octave lower than most, doubling wavelength at crossover. This improves phase matching and off-axis dispersion and is, I found when dealing with this whilst designing World Audio Design loudspeakers, an important point. At 3kHz a half-wavelength is just 55mm, making random mechanical phase error due to drive unit spacing of a

distant tweeter significant. With the Dual Concentric this extends to an easier to cope with 110mm.

Also, the tweeter is brought closer to the bass/midrange cone apex that radiates at high frequencies, than is possible in loudspeakers with separate tweeters, again improving phase matching. These twin benefits together result in a more solid sound to instruments like violin in particular, an instrument that suffers both from amplitude and phase variation of other loudspeakers, making it sound vague and hazy in embodiment and uneven in power.

Capitalising on this Tannoy have steadily flattened and smoothed the amplitude response of their pressure loaded tweeter, by use of a Tulip waveguide. By any standards the DC8T measures very flat to 20kHz as modern loudspeakers go. But as most loudspeakers these days have raised midband and treble output, the Tannoy sounds – shall we say – less bright. Add in the fact that it throws less treble energy at walls and ceiling, and overall it comes across as warm



unit. All these reproduce real detail whilst retaining tonal accuracy and demonstrate what is possible. All put more treble energy into a room than a Tannoy Dual Concentric so all have a brighter demeanour. So whilst the DC8Ts measure flat to 20kHz and are accurate, they seem very mild, even warm and rich, or 'chocolatey'.

"it is the sort of unforced insight you get from high quality electrostatic panels"

or, as Rafael says, "chocolatey".

Fair enough, but to me, as an engineer and long term listener, I prefer this form of accuracy than the shriek (as I hear it) of most loudspeakers that have been made quite deliberately bright by their designers (or sales team) to compete in a showroom, where they will appear detailed and insightful. This isn't a good loudspeaker, it is a contrived loudspeaker.

A truly good loudspeaker will sound fabulously detailed whilst also tonally balanced and here we turn to Quad electrostatics, notably the One Thing Audio ESL-57 revamp, a Martin Logan X-Stat panel or an Eminent Technology magnetic planar drive

unit. It is the nature of a horn: they throw acoustic energy in one direction, in this case at the listener, but not at walls and ceiling.

I can live with this; I find it mild and relaxing. But there is much more to a Tannoy's sound than this.

SOUND QUALITY

It was immediately obvious that the revised DC8T has more midrange bite than the one we reviewed in July 09 issue. This made vocals more concise and raised intelligibility. From Sade through to Duffy, via Renee Fleming (!) I could more easily catch every word.

After initial orientation had shown me the DC8T is bolder

than before and I was happy with the new balance, it was time to dig a little deeper. Would the new balance detract from the Tannoy's ability to play Duffy's 'Rockferry', a very difficult track that contains deliberately added digital distortion, or "graunch" as the recording engineer explained in an interview. Loudspeakers with raised treble from metal dome tweeters make this track unlistenable, but Tannoy's DC10T handled it adeptly – and so did the updated DC8T I found. Duffy was still firmly placed centre stage, but a little more forward than before, whilst the accompanying 'orchestra' was bearable.

The loudspeaker's midrange/treble horn measured more smoothly than the earlier one and it sounds it too. 'Syrup and honey' has Duffy at the microphone with little accompaniment, demonstrating her fascinating natural tremolo and this track is another make or break for me: it is a live vocal with surrounding studio atmosphere, such as that is, and can sound extraordinary through a revealing loudspeaker, but quite flat and artificial though an average one. The DC8T handled the track beautifully, placing Duffy firmly in front of me, her initial intake of breath, voice control and projective power all delivered evenly and with great insight. This was no gloss over, but a real good look right into what was happening during the take – and I quite simply loved it. The only small query that popped up was why high treble sounded a little absent, making for a sense of warmth.

Spinning Amy Winehouse's 'Rehab' again showed how focussed and forceful the Tannoy pressure horn is. This is a loudspeaker that pushes out the midrange as if from a high pressure fire hose. Where other loudspeakers paint up the sound in front of you the Tannoys throw it toward you: projective is the word here – like no other! Not everyone likes the effect, but I love it. It pumps up the dynamic life of a track, by going from soft to loud with an alacrity that is rare in loudspeakers.

In true Tannoy fashion the DC8Ts have a silky smooth balance but with Rock they come at you. In other words, Rock rocks! You get the full force of a performance thrown straight at you; there's nothing laid back about a Tannoy. Yet whilst I say that, they do not have ringing upper treble or artificial detail. Cryogenic crossover treatment gives these Definition loudspeakers great insight, but it is the sort of unforced insight you get from high quality electrostatic panels such as Martin Logan's

X-Stat panel, or Eminent Technology's magnetic planar drive units. Tannoys don't have quite their level of ability – no ordinary loudspeaker does in spite of their manufacturer's hyperbole – but the DC8Ts got convincingly close. Rim shots fired out from centre stage with such force yet solidity, it was a fright.

Solidity? Yes, another strength of Tannoy's central horn is that it



runs from 1kHz all the way up to 20kHz, meaning the DC8T lacks the phase and amplitude problems of most other loudspeakers – and I can hear it is a smooth, yet solid portrayal of rim shots, cymbals and, most importantly, violins. As Amy Winehouse's 'Back to Black', slowed to a funereal pace, instruments across the sound stage were solidly wrought in a way other loudspeakers rarely manage.

There were times when I became aware of a slight cuppiness and all these effects were apparent with the gravelly vocals of Willy De Ville singing 'Spanish Harlem'. Accompanying piano had a sense of scale and body that was lovely, helped by this loudspeaker's forceful

dynamics. A live recording, there were yelps from the audience, applause and all those noises off that live suffers / enjoys – and the DC8Ts made them all convincing.

Elvis singing 'Fever' again had the Tannoys sounding warm and full-bodied, but very close and insightful. Hand drums and finger snaps were clear as a bell and punched out. The laconic acoustic bass line sounded rich and full, but was easily expressed: the DC8Ts deliver big bass, if not as excessive as the DC10Ts. I ran them with bungs out to get subsonics – and with Lady Gaga's Monster boy did I get them. These loudspeakers get down to 20Hz with ease, mainly from the port, and deep synth effects had the settee trembling beneath me as waves of sub-bass rippled across our listening room. Better, these lows are very well controlled, stopping and starting clearly. Drum strikes at the start of Angelique Kidjo's 'Agolo' underscored this point, sounding full and powerful, yet with clear temporal form.

Bass in general could be described as fulsome and soft; the ports pump out a lot of subsonic info and this makes for a weighty low end that can sound over inflated. The foam bungs supplied suppress this, lowering subsonic power whilst little affecting ordinary bass levels.

After Rafael pointed out that these Tannoys don't do orchestral depth I take his point. I find them clear, informative and wonderful in left and right imaging, giving the Royal Philharmonic both force and scale playing Tchaikovsky's 'March Slave'; timpani nearly had me over the back of the settee and pipes trilled from left and right in convincing fashion. But Rafael pointed out that the orchestra is not layered backward in a stage possessing discernible depth. Since he has plenty of experience sitting in an orchestra – and I have not! – I take his point, although miking techniques may come in this.

With the piano of Arcadi Volodos



RAFAEL TODES SAYS

Listening to Nigel Kennedy playing 'Spring' from the Four Seasons, the soundstage was more forward than I'm used to on my B&W 802Ds, it was fairly shallow, but immediate. The solo fiddle did sound really solid, none of the falling between two drive unit problems that can plague other speakers for violin reproduction.

With the forces of a chamber orchestra, I didn't feel outstanding separation between the different sections of the orchestra; the overall effect was generous, but a bit blurred in terms of image.

There was no signs of harshness or shrieking, the sound being very mellow and chocolate-like. I noticed that the speaker performed very well at low listening volumes. It also had the ability to function well when the volume levels were cranked up.

Renée Flemming's dulcet tones came across in a less fulsome way than I would have liked, possibly due to the "cupped" nature of the tweeter, as if a part of her spectrum was missing.

Another curiosity that I noticed was listening to Volodos playing Liszt. The left hand of the piano appeared to be spatially recessed compared to the slightly forward right hand covering the higher frequencies – an oddity.

Overall, the Tannoy DC8T is fairly easy to live with, pleasant sounding, and is highly capable, but it didn't get everything right.

though there was no such limitation; quite the reverse, the Tannoys reproduced its scale and its power, as well as the surrounding acoustic picked up by the microphone. But lower notes (left hand) from the bass cone were more recessed than upper ones (right hand) from the tweeter Rafael felt.

With Rock music depth perspectives are not such an issue. Perhaps the Tannoys are just too pushy and whilst this may well suit most musical genres it does not perfectly capture the live depth perspectives of an orchestra.

Another issue for Rafael that I must admit does not trouble me is the issue that affects all co-axial drive units: the mid and treble fires out through a cone and a megaphone effect can be heard. Rafael said Renee Fleming appeared to be singing from a booth and after transferring to open panel LFT-16s we both understood the issue and agreed about it. For me, the Tannoy's strengths of cohesiveness, point source coherence and smoothness outweigh what I perceive as a minor effect. But such things are a matter of taste and expectation.

I should quickly point out that Tannoy's concentric horn tweeter has undergone a lot of development recently, smoothed by a tulip waveguide. Criticisms based on older iterations of the horn are not valid for the DC8T. As with any concentric driver

though, you must listen slightly off-axis, to avoid symmetric cancellations. Measurement shows the DC8Ts are wonderfully smooth off-axis, one

reason they have a silky quality, but they are less smooth on-axis, and older units were a lot worse in the respect.

CONCLUSION

Tannoys are known as studio monitors, as well as domestic loudspeakers and they have an enviable reputation in both. What I enjoyed so much in these updated DC8Ts did relate more to Rock than classical, I must admit. Yet I find them very enjoyable with Classical too, and effective even with difficult instruments such as violin and piano. Rafael's objection is of compressed perspectives and here I suspect there is a trade off between the projective nature of the horn that suits Rock more than orchestral work. As £4000 loudspeakers go I find the DC8Ts smooth, accurate, great fun and revealing too. This is a wide range of strengths, wider than that of most rivals, so if you want a 'chocolatey' loudspeaker, as Rafael might want to say, then this is the one. It is a high quality Tannoy, it is unerringly accurate and it is a great listen.

MEASURED PERFORMANCE

Our pink noise frequency response shows the bass/midrange unit delivers a smooth, peak free output up to 1kHz as before. The smoothness of output suggests low colouration, something our decay spectrum backs up. Our pink noise analysis shows that the Tannoy goes very low, flat down to 60Hz from forward output, below which the port takes over, peaking acoustically at 36Hz. With port output measuring +4dB over forward output at 80Hz, it is approximately 10dB up at 36Hz which is why there is plenty of subsonic oomph.

The horn takes over above 1kHz and this explains a small dip at 1.5kHz. Above this crossover point the horn's output extends smoothly up to 20kHz. It is the exceptional smoothness of output that shows just how far Tannoy have developed this drive unit, few loudspeakers are as even and accurate.

The DC8 T is very sensitive, producing a massive 91dB Sound Pressure Level from one nominal watt of input (2.84V), but partly because its impedance is low, measuring 5 Ohms with pink noise. The bass unit has a very low DCR of 2.7 Ohms and where low frequency power is drawn (30Hz -200Hz) the DC8 T is a 4 Ohm loudspeaker our impedance analysis shows.

Acoustic damping imposed by the port is broad around 36Hz, keeping the usual peaks / phase shifts low, an aid to amplifier matching (valve amps should be set to 4 Ohms).

A long term 200mS decay spectrum was very clean, being free from peaks although the cabinet is hot in places.

The horn was very clean, giving a decay spectrum up with the best and approaching that of an electrostatic. The two front drivers generate very little distortion, less than 1% bass distortion from 25Hz to 100Hz and then less than 0.2% up to 6kHz, a very good result. The port is less linear, like most, producing 8% distortion 20Hz-30Hz declining above this frequency to 5% at 40Hz and 1% at 70Hz.

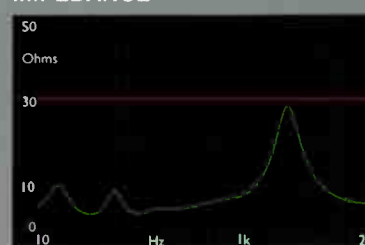
The newly upgraded DC8T is remarkably flat and accurate in its forward response and will sound less shouty and bright than most rivals. It is, however, a very accurate and smooth performer under measurement. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●●
Refined and punchy loudspeaker that is chocolate smooth, yet excitingly projective. Big bass too.

TANNOY DC8T £3950
Tannoy
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* Offer expires: 31st August, 2012

WORLD STANDARDS

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

TURNTABLES

REGA RPI 2010 £225
Pleasing sound, fine build and ease of set-up and use make this a great first 'real' hi-fi turntable.

REGA P2 2008 £300
Excellent value for money engineering, easy set up and fine sound.

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

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

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



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

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

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



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

INSPIRE ECLIPSE SEv2 12 2010 £2,349

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

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

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

DR FEICKERT WOODPECKER 2010 £3,445

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



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

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

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

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



E.A.T. FORTE S EVO 12 2010 £4,750

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

ACOUSTIC SOLID ONE 2007 £4,050

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

SME MODEL 10A 1995 £4,556

Exquisitely engineered deck and 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.

TO NEARMS

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 BLUE2011 £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. Superlative 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 DAI100 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.

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

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



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

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

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

MERIDIAN GO8.2 2011 £2,400
Everyman's modern high end CD player, the stylish, well made Meridian has an extremely enjoyable yet refined and accurate sound.

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



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

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

ELECTROCOMPANIE 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 CDPI 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.

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

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

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

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

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

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



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



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

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

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

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

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



CHORD CHORDETTE DUAL 2010 £799

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

ASTIN TREW AT8000 2010 £880
Expansive, detailed, powerful sound makes this a leading sub-£1,000 contender.

A.N.T. AUDIO KORA 3T LTD 2010 £995
Exceptionally musical and natural sounding all discrete transistor phono stage, with highly lucid, valve-like presentation.

AVID PULSUS 2010 £1,100
Powerful, propulsive, expansive sound puts this right at the top of the £1,000 phono stage tree.

QUAD QC24P 2007 £1,200
Dynamic performer that can be used on its own as a complete phono-level preamp.

ICON AUDIO PS3 2008 £1,500
Super sounding valve phono preamplifier, with an expansive, engaging and organic nature that makes vinyl sheer joy!

SUTHERLAND 20/20 2010 £1,999
Well engineered, smooth sounding solid-state phono stage with a charm of its own.

EMILLE ALLURE 2010 £2,495
Just as the name suggests, this is a lovely way to play LP with an exceptionally open and lucid sound.



AVID PULSARE 2010 £3,800
This superbly built, well specified phono stage has a powerful and authoritative sound that bristles with detail and energy.

WHEST PS.30 RDT SE2011 £4,500
The least solid-state sounding Whest we've heard, this builds on the family strengths of precision and grip but adds a welcome poise and fluidity.

NAT AUDIO SIGNATURE 2011 £5,633
Sophisticated sounding, unusually engineered MM and MC phono stage, but faces stiff competition at this lofty price.

AMPLIFIERS

ICON AUDIO STEREO 40/III 2010 £1,200
Excellent starter tube integrated, with plenty of detail and an expansively musical sound.



AUDIOLAB 8000S 2006 £400
In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound but not the world's most beguiling.

NAIM NAIT 5i 2007 £725
The italic 'i' version remains one of the most musically competent and dynamically engaging integrateds at the price.

CAMBRIDGE 840A V2 2007 £750
Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

SUGDEN MYSTRO 2010 £1,225
Sugden's first Class AB integrated in a long time surprises; rollickingly good fun, it loses surprisingly little in smoothness to its Class AB siblings.

NAIM NAIT XS 2009 £1,250
With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth beyond class expectations.

CREEK DESTINY 2 2010 £1,445
Beautifully voiced integrated amplifier with a distinctly seductive, tube like sound. A solid-state superstar!

SUGDEN A21A S2 2008 £1,469
Crystalline clarity, dizzying speed and forensic detailing makes this seminal design the most musical at the price, but power limited so needs sensitive speakers.



CYRUS 8XPD 2010 £1,500
A quality integrated that suits all genres of music providing insight and clarity in a compact but flexible package.

ANATEK A50R 2007 £1,600
Simple integrated amplifier with super bass grip and effortless dynamics.

VINCENT SA-236MK 2010 £1,749
Big, powerful and expansive sounding hybrid transistor amplifier, with a lively, musical nature.

NAIM SUPERNAIT 2007 £2,475
Integrated *tour de force* from Naim that combines impressive functionality and connectivity with super sound.

AUDIO RESEARCH VS160 2009 £3,298
Load of tube power allied to a strong bass and smooth open midband makes this a grin-inducing listen.

LEEMA TUCANA II 2010 £3,495
Polished high end integrated amp that combines power, detail and genuine musicality with a good range of facilities.



SUGDEN IA4 2007 £3,650
Goodly amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrateds.

QUAD II CLASSIC 2010 £4,500
Beautiful retro styled integrated amplifier with a subtle, supple sound - although needs matching to speakers that are easy loads.

QUAD II CLASSIC INTEGRATED 2010 £4,500
Thoroughly modern music maker with classic style and great pedigree, this amp sings with gentle music but is no headbanger!

SIM AUDIO MOON 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 integrateds we've come across, this combines hear-through transparency with musical get-up-and-go.

DARTZEEL CTH-8550 2010 £16,500
Charismatic and quirky high end solid-state integrated amplifier with superb sound and a charming visage.

HEADPHONE AMPLIFIERS

FIDELITY AUDIO HPA 100 2011 £350
Great little headphone amplifier with a lively yet refined and open sound.

MUSICAL FIDELITY X-CAN V8 2008 £350
Open and explicitly detailed sound plus serious bass wallop and the ability to drive anything to very high levels makes this a great partner for most mid-to-high end headphones.

PREAMPLIFIERS

CREEK OBH-22 2008 £350
Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral sound.

ICON AUDIO LA-4 2011 £800
Uses early 6SN7 triodes for liquid sound, has plenty of gain and remote control.

NUFORCE P-9 2007 £2,200
Impressive two box preamp with superb resolution and an engaging sound.



DPA CA-1 2010 £2,650
Excellent solid-state preamp with a meticulously detailed and propulsive sound, but a deep velvety tonality.

MELODY PURE BLACK 101D 2007 £3,295
The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.

MF AUDIO CLASSIC CII SILVER 2010 £4,500

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



MODWRIGHT 36.5 PRE/PSU**2010 £5,995**

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

MUSICAL FIDELITY PRIMO**2009 £7,900**

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

POWER AMPLIFIERS**XTZ AP-100****2010 £520**

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

QUAD 909**2001 £900**

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

NUFORCE REFERENCE 9SE V2**2006 £1,750**

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

**DPA SA-1****2010 £2,850**

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

QUAD II-40**2005 £3,230**

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

ELECTROCOMPANIET NEMO**2009 £4,450 (EACH)**

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

ICON AUDIO MB845 MkII**2010****£5,500**

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

**QUAD II-80****2005 £6,000**

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

MUSICAL FIDELITY AMS50**2010 £7,000**

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

LOUDSPEAKERS**Q ACOUSTICS 2020****2010 £140**

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

ACOUSTIC ENERGY NEO I**2007 £199**

Tidy and well balanced standmounters with pleasing clarity and detail.

MISSION MX2**2011 £200**

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

ACOUSTIC ENERGY NEO I v2**2010 £225**

Civilised sounding speaker with fast and tuneful bass.

B&W 686**2007 £279**

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

WHARFEDALE DIAMOND 10.3**2010 £290**

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

MORDAUNT SHORT**AVIANO 2****2010 £300**

Classy sounding standmounter at a still affordable price.

KEF IQ30**2009 £330**

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

**USHER S-520****2006 £350**

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

XTZ 99.25**2010 £640**

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

**ACOUSTIC ENERGY AEI 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**

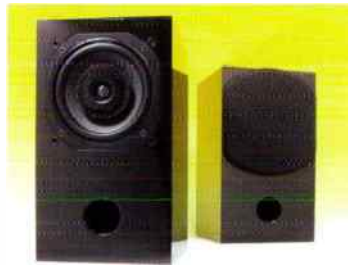
Exceptionally smooth, spacious and refined mini monitors that beguile and excite in equal measure.

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.

STANDARDS

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 £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...

INTERCONNECTS

**TELLURIUM Q
BLACK** 2010 £276/3m
A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.



**TECHLINK WIRES
XS** 2007 £20
Highly accomplished interconnects at an absurdly low price. Stunning value for money.

**WIREWORLD
OASIS 5** 2003 £99/M
Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

**CHORD COMPANY
CHAMELEON 2** £90/M
One of our favourites, these are musical performers with a smooth yet open sound.



DNM RESON 2002 £40/M
Neutral and transparent - a steal!

**VDH ULTIMATE
THE FIRST** 2004 £260/0.6M
Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space results in a cracking cable for the money.



**TCI CONSTRICTOR
13A-6 BLOCK** 2003 £120
Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

MISSING LINK CRYO REFERENCE 2008 £375
Currently our favourite 'affordable high end' interconnects, with a deliciously smooth, open and subtle sound without a hint of edge or grain. Superb value, inasuch as it's as good as some designs at three times the price.

**TUNERS
DENON TU-1500AE** 2006 £120
Excellent entry level analogue tuner; slick sonics and fine feature count make it a bargain.



**CAMBRIDGE
AUDIO 640T** 2005 £250
Sweet sounding digital/analogue hybrid with fine build and finish at the price.

ARCAM FMJ T32 2009 £550
Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.

**CREEK CLASSIC
TUNER** 2006 £550
No tuner offers better sound per pound; wonderfully three dimensional and smooth from bottom to top.

MICROMEGA FM-10 2010 £750
Don't let the modest proportions fool you, this is a state-of-the-art modern analogue tuner with bespoke internals giving a warm, expansive sound.

MYRYAD MXT-2000 2005 £800
Sumptuous sound and excellent build is all most will ever need in a tuner; superb.

MAGNUM DYNALAB MD-90T 2010 £1,295
Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.

**MAGNUM DYNALAB
MD-100T** 2006 £1,895
One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.



SYSTEMS

YAMAHA CRX-M170 2007 £200
One heck of a lot of quality performance on DAB, CD and FM for £200! Optional matching £120 NX-E300 loudspeakers aren't too shabby either.

TEAC DR-H300DAB 2008 £329
Nicely built and styled mini with fine performance on all sources that even plays DVDs!



NAD C-715DAB 2008 £429
Small, neat looks cover a truly capable system that shows just what a compact design can achieve.

ARCAM SOLO MINI 2008 £650
Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to its bigger brother.

SHANLING MC-30 2007 £650
Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.



**PEACHTREE AUDIO
IDECCO** £1,000
Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.

ARCAM SOLO 2005 £1,249
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

LINN CLASSIK MUSIC 2008 £1,250
Neat update of the original and best one-box stereo system; superbly musical sound beats equivalently priced separates.

NAIM UNITIQUE 2010 £1,350
Great little half width one-box system with truly impressive sound allied to a wealth of source options.



MERIDIAN F80 2007 £1,500
Fantastically built and versatile DVD/CD/DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn't a 'proper' hi-fi product; most see sense when they listen to it...



AURA NOTE MUSIC CENTRE 2007 £1,500
Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.

NAIM UNITI 2009 £1,995
Uniquely versatile one box music system with excellent ergonomics and sonics to match. A landmark product for Naim.

**LINN CLASSIK
MOVIE** 2007 £2,250
Superbly built all-in-one that offers excellent sound across all formats and is surprisingly easy to use.



MERIDIAN SOOLOOS 2.1 2010 £6,990
Thanks to its crisp styling and bright, colourful touchscreen, plus excellent search facilities this is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.

MARANTZ 'LEGEND' 2007 £22,000
The combination of SA-7S1 disc player, SC-7S2 preamp and MA-9S2 monoblocks delivers jaw-dropping performance.





East to West

Back into the U.K. again from East Europe comes the impressive Canor VR+ valve CD player, originally called the Edgar CD-1. Would we be impressed like before? Tony Bolton listens.

Back in the February 2008 edition of this magazine, David Price was very impressed with the Edgar CD-1 CD player, and it went on to win a Globbie in the August edition of that same year. Fast forward to 2012, and the company has been renamed Canor and the CD player has gone through two reincarnations to become the CD2 VR+ model under review here.

Gone are what David described as the "cottage industry" build quality and the polished wood fascia, to be replaced by a substantial and well finished case with a sand-blasted brushed alloy fascia and a large dot matrix display that can be easily and clearly read from the other side of my sitting room. The casework, measuring 435 x 122 x 370mm (w x h x d) is finished in a hardwearing Dupont product that comes in black, regardless of whether the fascia is finished in

silver or black.

The controls for the usual functions are grouped around the logo in the centre of the fascia, with the tray located to the left. The remote control duplicates most of these and adds a dimmer for the display, which can also be switched off completely, resulting in a small but noticeable improvement in the sound quality.

Inside, power comes through a large 73VA toroidal transformer, which has separate shielded feeds for the analogue and digital sides. The latter consists of a Philips L1210/65 CD drive, and a 24bit/192kHz Burr Brown PCM1792A convertor chip. It then passes through a pair of 12AX7 LPS (ECC83) valves for phase shifting (one for each channel) and amplified through 6922s (ECC88) before reaching the output sockets at the back. An EZ81 valve rectifier is used in the power supply feeding the audio stages, a reliable way to enhance

purity and depth perspectives.

The VR+ model gains Mundorf zinc-foil capacitors instead of the polypropylene units used on the VR version, and more carefully selected and matched Russian Electro-Harmonix valves. The circuit was designed by Zdenek Brezovjak, co-owner of Canor, and chief engineer.

After my usual 48 hour running in period I plugged the Canor into the front room system and settled down to listen. I can honestly say that this is one of the few digital players that has impressed me from the first track that I listened to. I started with Rossini's 'L'italiana in Algeri Overture' and was immediately drawn into the world of the late baroque. This is a piece of music that has a sort of enjoyable bounce to it, and I found myself swept along by this player's rendition. I enjoyed the power of the performance, where there seemed to be a certain joie de vivre in the orchestra's approach to the piece.





"its ability to portray sounds in a detailed manner, without over-emphasis, or glossing over bits that it found too difficult"

I would normally choose my vinyl copy of this to listen to, the majority of the CD players that I have heard seeming to somehow lack a certain humanity in the performance. The Canor stood out as one which transmitted this. I felt more in contact with both the music and the performers than I usually do when listening to digital sources.

Apart from this subliminal 'humanising' of the music, I found myself enjoying exploring the differing textures and tones of the instruments involved, in the same way that I would when listening to it on the sacred black-stuff. Stringed instruments had a correctness in their timbre, neither glossily smooth, nor shouty and shrieky, and the sound of bow on string seemed to resonate within a polished wooden body that helped me to visualise the performers in action. Brass, again, displayed little micro-details in the sound that seemed to me to be realistic, and far removed from the more two dimensional character that often puts me off listening to classical music through the digital medium. It managed the same trick in making classical music palatable that drew me to the resident Leema Acoustics

Antilla 2S Eco CD player, although presented from a slightly different sonic angle. The Canor seemed a bit richer in its sound, perhaps a little more full bodied.

Staying with brass driven music I moved onto to some vintage Tommy Dorsey recordings. These are transferred from original shellac masters and can sound a bit rough and ready through a lot of CD players. The Canor did a very good job in making the music something that I wanted to indulge in. I felt that the energy of the music came through, and the whole presentation was tightly timed, with that snap to the rhythm that makes 'swing' something that you want to dance to, rather than just sit in a chair and

listen to. Recorded in New York in 1936, 'Somebody Stole My Gal' was a popular tune covered by many bands at the time. The Dorsey version, with solos from Max Kaminsky on trumpet, Joe Dixon on clarinet and Dorsey on trombone is one of my favourite recordings of this track, and through this player, proved to be hugely enjoyable. Yet again, this is a track that I would normally choose to listen to from an analogue source, but here found the digital media to be very palatable.

Coming a bit more up to date,





Inspire Hi-Fi

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Audio World Show 24th & 25th March 2012

HI-FI WORLD REVIEW



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5 GLOBES

For:

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- superior grip and focus
- enhanced dynamics
- fit and finish

Against:

- nothing

- Full package £799
- Sub chassis with arm board £299
- Acn mat £25
- Hercules PSU £169
- Plinths £POA
- Complete Re Build & Service £50

PLUS... OUR LATEST ADDITION TO THE UPGRADE...

Offering those who want to go the DC route. We now have Origin Live Ultra and Advanced power supplies and motors available to be fitted with or without a VIVID Upgrade.

ULTRA PSU and motor upgrades £345 + FULL VIVID UPGRADE. Total Package £995
ADVANCED PSU and motor upgrades £582 + FULL VIVID UPGRADE. Total Package £1,232
Origin Live's exciting range of tone arms also available to be fitted with your LINN upgrade.

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and wanting something a little more aggressive sounding, I tried the Yardbirds 'For your Love'. This features Eric Clapton on guitar, prior to his departure to join John Mayall and the Bluesbreakers. The guitar sound is anything but pure, with distortion and other effects added to give a certain rawness to the sound which contrasted with the generally smoother sounding guitar bands of the period. The CD2 VR+ dug into this with gusto, seeming to revel in the drive to the beat, as well as fleshing out the guitars into hard edged dramatic sounding instruments. The almost casual dispensation of the vocals sat in front of this sound which was being propelled along by the harpsichord strummed by Brian Auger, and the rhythm section being supplemented by bongoes. It was vivid and powerful.

My last choice of disc was a psychedelic trance album called 'The Secret of the Thirteen Crystal Skulls' which contains tracks by various artists well known in the genre. The last track, 'The Seventh Revelation' is by my favourite group; Shpongle. This starts with sampled voices, which are joined by drums and then guitars, with keyboards adding some very twisted sounds to the mix. The music is uptempo, and gradually builds until suddenly the drums take over for a truly energising break with a swirling keyboard sourced bass sound backing them. This track should be quite an intense ride - it is designed to get a dance floor full of people moving frantically - and the Canor rose to the occasion superbly. The soundstage seemed big enough to take the crowding of instruments as they swirled around, and spacious enough to allow them to define themselves separately, rather than descend into a complex sonic blur.

This is what has impressed me with this player: its ability to portray sounds in a detailed manner, without over-emphasis, or glossing over bits that it found too difficult. It displayed an unshakable decorum when presented with some of the stranger noises found in modern electronica, or the harshness of a distorted electric guitar, and the sense of breeding that is required to make digitally formatted classical music enjoyable.

As I mentioned earlier there was a certain full-bodied richness to the sound that I, for one, thoroughly enjoyed, but it resisted the urge to overdo this, staying on the right side of lush. I tend to favour analogue sources for my personal listening for a variety of reasons, one of which is the ability of analogue to portray the human involvement in the creation of music. I rarely come across a digital player that is truly effective in doing so. One such machine is the Antilla, as already mentioned, and the Canor CD2 VR+ has managed to join this very select club of what I call musical sounding CD players.

A lot of players that I hear are very 'correct' sounding, but seem to produce a slightly technical sound that can come across as a little soulless and emotionally uninvolving. This one doesn't. I felt immersed in the music, drawn into its emotional content. It also seemed to have the edge over most CD players in being able to create the impression of a three-dimensional area in front of the speakers for the instrumentalists to occupy. It was quite wide, but crucially, seemed to have depth as well, so the Philharmonia Orchestra came across as being seated in the traditional horseshoe pattern rather than spread out in a neat line abreast.

I am very impressed with this

machine. I won't say that it has an analogue sound because I do not think that any digital medium can. But I will say that it proved to be one of the most musically convincing players that I have ever heard, and one that has made my CD collection more enjoyable to listen to than nearly any other player that I have encountered. As such, it is unequivocally recommended.

REFERENCE SYSTEM:
 Leema Acoustics Antilla 2S Eco CD player.
 Leema Acoustics Tucana II amplifier.
 Chario Ursa Major loudspeakers.

MUSIC USED:
 Rossini 'Favourite Overtures'
 Giuliani conducting the Philharmonia Orchestra
 EMI Records HMV 7 67802 2 1993
 The Tommy Dorsey Orchestra
 'Featuring the Clambake Seven'
 Archives of Jazz 3801262 1993
 The Yardbirds 'The Very Best of the Yardbirds'
 Music Club MCCD 023 1991
 Various Artists 'The Secret of the Thirteen Crystal Skulls'
 Tip World Records TIPWCD26 2002

VERDICT ●●●●●
 Musically coherent and tuneful, valve driven CD player from Slovakia. Lovely sound.

CANOR CD2 VR+ CD PLAYER £3,100
 Sound Foundations
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 www.soundfoundations.co.uk

FOR
 - rich and inviting tonality
 - smooth treble
 - detailed
 - timing and punch

AGAINST
 - slow start up

MEASURED PERFORMANCE

Frequency response was relatively flat as valve CD players go; many have treble roll off. The Canor CD2 reached 21kHz though, but there was slight plateau lift at lower frequencies and I wonder whether this player may have a bit more body or heft in its sound than usual, as a result.	-60dB	0.2
	-80dB	2.1
	Separation (1kHz)	112dB
	Noise (IEC A)	dB
	Dynamic range	98dB
	Output	2.9V

Distortion levels were very low, again as valve CD players go. Normally second harmonic distortion dominates at high levels but there was no sign of this with the CD2, distortion at 0dB measuring 0.0006%. At -60dB this figure had risen to 0.2%, which is normal enough and good as valve players go. One reason is the valves used generated little noise, less than in most players. The measured noise figure was low at -113dB and EIAJ Dynamic Range good at 98dB. Output was a high 2.9V.

The Canor CD2 VR+ measured very much like an ordinary CD player, the valves used having little measured impact, unlike most valve players where figures deteriorate a little. This is a well engineered player. NK

Frequency response (-1dB)	2Hz-21kHz
Distortion	%
0dB	0.0006
-6dB	0.0008

FREQUENCY RESPONSE



DISTORTION



Deck Music

Monitor Audio's i-deck 100 iPod dock gives great sound if you position it right, finds Noel Keywood.

Here's another i-thingummy, but quite a neat one. Plug your iPod or iPhone onto its 30 pin connector, and it will play your music through on-board powered loudspeakers. Yes, it is as simple as that. Monitor Audio's i-deck 100 is an all-in-one mini sound system that attempts to get the best sound possible from the digital output of an i-thingummy with no additional technology or religion needed, just like B&W's ground breaking Zeppelin. Monitor Audio have added in some interesting extras, like automatic room correction to deliver decent bass, and their own high quality C-Cam metal cone drive units, all for £300.

To get it into context in a fiendishly complicated marketplace, the i-deck 100 acts only as a mini hi-fi for an iPhone or iPod. Although it uses the digital output for best sound quality, processing it through an on-board Digital-to-Analogue Converter (DAC) rather than using the cost compromised convertor in the Apple player that delivers to the headphone output, there is no optional output to an external hi-fi system. That makes it a very different beast to many other docks, from Onkyo and Cambridge to



"fast, pacey bass that Monitor Audio loudspeakers are known for"

name two popular examples in the UK, that channel the digital output to an external hi-fi system (and video to a TV).

Monitor Audio also make an i-deck 200 model with bigger drive units and more power, but the 100 is fine as a quick, convenient and space saving way of listening to downloads at home, where space is limited and dangling wires unwelcome. With a base measuring 320mm wide, 245mm high and 210mm deep, you can squeeze it in almost anywhere but that, I found, was one drawback; it doesn't work so well in some positions, as I'll explain later. It uses Class D 'digital' 30W amplifiers feeding the bass units and 15W feeding the tweeters.

Connection to the mains is through a 'calculator' lead and standby power consumption low at 0.33 W Monitor Audio say.

Weighing 2.9 kgs the i-deck feels solid and it is well made and nicely finished, as I'd expect from Monitor Audio whose loudspeakers really are amongst the best finished in the business. Less lovely was the cursory instruction sheet that uses crude diagrams to explain set up. I puzzled over this, how to put the remote together, which way around the battery goes and why the i-deck would not respond to the remote – then suddenly it did. It can be slow to respond so rapid button pushing brings no result. Perhaps I was having a bad evening





placed my iPhone onto the docking plug, pressed the play button and out came music.

SOUND QUALITY

The i-deck sounded agreeable, if not quite right when I fired it up. After spinning through tracks I know well from Sharon den Adel through to Renee Fleming I became aware that vocals sounded a little muffled and indistinct, but bass pace was superb, in true Monitor Audio fashion, and there was plenty of nice, sonorous treble. My loudspeaker design experience told me there was a 'gap' between tweeter and woofer, a

higher I put it and on balance it managed well enough. In this area, whilst displaying a slightly soft demeanour across the midband.

However, the bass tuning system does work well and the result is the sort of fast, pacey bass that Monitor Audio loudspeakers are known for; the i-deck 100 very much displays the house sound here; it is crisp and on the beat.

The same applies to treble, which was obvious but even natured and of very good quality considering price.

So sound quality wise the i-deck shows its pedigree and I fancy it gives better results than most alternatives, with snappier bass than B&W's Zeppelin, helped by the corrective tuning system. Placed reasonably high the midrange softening effect is muted, acting to remove brashness from harsh compressed downloads, a better option than being thrown too much info from a poor source, an aurally unpleasant experience. Even though the 'speakers fire out at an angle at either side there was little sense of stereo, an inevitable limitation of an all-in-one with no dangling loudspeaker wires.

CONCLUSION

The i-deck 100 is a neat little player that does its job well, bringing a nice snappy sound to your iPhone or iPod, when positioned correctly. In truth it could do with what loudspeaker engineers describe as "more even dispersion characteristics" but Monitor Audio's automatic bass tuning system works well and ensures that even, tight and fast paced bass is available wherever it is used. Combine this with fine treble quality for the C-Cam tweeters and you end up with a very agreeable sound for an equally agreeable £300.



but it seemed not to respond to my best efforts initially and then the next day all worked perfectly! There is an analogue Aux input of 300mV sensitivity at rear for connection of other players. Apple devices are charged whilst docked.

Monitor Audio have incorporated a room tune system that corrects bass output for certain classic positions, as found in the Kama Sutra of acoustic engineering. These are the one-pi position, meaning a flat surface, the two-pi position meaning a flat surface and a rear wall, and the three-pi position meaning a flat surface and two walls, known to ordinary mortals as a corner. They even give you pictures to illustrate these positions. Fascinating stuff indeed!

Turn it on and the i-deck makes some funny noises as it quickly tunes into the room and makes appropriate adjustments. It's all over and done with in seconds, before you can do anything useful toward using it. I

chasm into which vocal intelligibility was disappearing. Measurement was required to solve the mystery!

And measurement told all. There was indeed the gap I heard, with the i-deck placed low; I placed it 2ft above floor level on a low shelf initially. Its small bass/midrange unit fires upward at an eager angle but in truth placing the i-deck low isn't the best thing to do. It gives an accurate sonic balance at ear height, but this is impractically high for most of us. I found vocals more intelligible the



VERDICT ●●●●● £

This neat iPod and iPhone dock offers nice sound with great bass. It needs careful placement though.

MONITOR AUDIO
i-deck 100 £300
+44 (0) 1268 740580
www.monitoraudio.co.uk

FOR

- easy to use
- good bass quality
- compact size

AGAINST

- best at ear height
- basic instructions
- no line output

MEASURED PERFORMANCE

Frequency response of the i-deck 100 stretches from 70Hz up to 18kHz under measurement, but a midrange dip around 3kHz makes for a soft sound.

FREQUENCY RESPONSE





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WORLD CLASSICS

Here is our list of the great and good from audio's glorious past, products that have earned their place in hi-fi history. You'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price.

We do not sell these products. It is for your information only.

DIGITAL

CAMBRIDGE AUDIO CD1 1986 £1500

Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.

CAMBRIDGE AUDIO CD4SE 1998 £200

A touch soft in the treble and tonally light, but outstanding in every other respect.

LINN KARIK III 1995 £1775

The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

MARANTZ CD73 1983 £700

A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC -super musical



MARANTZ SA-1 2000 £5,000

The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



MERIDIAN 207 1988 £995

Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

MUSICAL FIDELITY TRIVISTA 2002 £4000

When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

MERIDIAN MCD 1984 £600

The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.



NAIM CDS 1990 £ N/A

Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.



SONY CDP-101 1982 £800

The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!

SONY CDP-R1/DAS-R1 1987 £3,000

Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.



SONY CDP-701ES 1984 £890

Sony's first ever bespoke high end audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperback-sized remote control.

TECHNICS SL-P1200 1987 £800

CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pro' use and laden with facilities - a great eighties icon. Sonically, it's pure fun, with hefty bass that can still show weedy modern players a thing or two!

YAMAHA CD-X1 1983 £340

Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

COMPACT DISC TRANSPORTS

TEAC VRDS-T1 1994 £600

Warm and expansive sound made this a mid price hit. Well built, with a slick mech.



ESOTERIC P0 1997 £8,000

The best CD drive bar none; TEAC's Tokyo boys pushed the boat out in style. Brilliantly incisive, ridiculously over engineered.

KENWOOD 9010 1986 £600

The first discrete Jap transport was beautifully done and responds well to re-clocking even today.

DACs

CAMBRIDGE AUDIO DACMAGIC 1995 £99

Good value upgrade for budget CD players with extensive facilities and detailed sonics.



DCS ELGAR 1997 £8500

Extremely open and natural performer, albeit extremely pricey - superb.



DPA LITTLE BIT 3 1996 £299

Rich, clean, rhythmic and punchy sound transforms budget CD players.



PINK TRIANGLE DACAPO 1993 £ N/A

Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard. Clever plug-in digital filter modules really worked!



QED DIGIT 1991 £90

Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

TURNTABLES

ARISTON RD11S 1972 £94
Modern evolution of Thorens' original belt drive paradigm, Scotland's original super-deck was warm and musical, albeit soft. Still capable of fine results today.

ADC ACCUTRAC 4000 1976 £300
Bonkers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

PIONEER PL12D 1973 £36
The beginning of the end for the British turntable industry. When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL112D was off the pace compared to rivals



PIONEER PLC-590 1976 £600
Sturdy and competent motor unit that performs well with a wide range of tonearms. Check very thoroughly before buying due to electronic complexity and use of some now-obsolete ICs.

DUAL CS505 1982 £75
Simple high quality engineering and a respectable low mass tonearm made for a brilliant budget buy. Polished, smooth and slightly bland sound.

GOLDRING LENCO GL75 1970 £15.65
Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today from specialists. Eminently tweakable. Similar 88 and 99 motor units are budget 301/TD124 rivals.

LINN AXIS 1987 £253
Simplified cut-price version of the Sondek complete with LVX arm. Elegant and decently performing mid-price package. Later version with Akito tonearm better.

LINN SONDEK LP12 1973 £86
For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Recent 'SE' mods have brought it into the 21st century, albeit at a price..



MARANTZ TT1000 1978 £ N/A
Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.



MICHELL GYRODEC 1981 £599
Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved until recently. Early examples sound cold and mechanical, but now right on the pace. Clean, solid and architectural sound.

TECHNICS SPI0 1973 £400
Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SPI0/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

REGA PLANAR 3 1978 £79
Brilliantly simple but clean and musical performer, complete with Acos-derived S-shaped tonearm. 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb budget buy.

GARRARD 301/401 1953 £19
Heavy metal - tremendously strong and articulate with only a veiled treble to let it down. In many respects, better than the seventies 'superdecks' that succeeded it.



ROKSAN XERXES 1984 £550
Supposedly the first to 'better' the LP12. Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

SONY PS-B80 1978 £800
First outing for Sony's impressive 'Biotracer' electronic tonearm. Built like a tank with a clean and tidy sound, albeit lacking involvement. Scarily complicated and with no spares support - buy with caution!

THORENS TD124 1959 £ N/A
The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.



TOWNSHEND ROCK 1979 £ N/A
The product of academic research by the Cranfield Institute, this novel machine has an extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

TRIO LO-7D 1978 £600
The best 'all-in-one' turntable package ever made, Trio/Kenwood threw their 'engineering best practice' book at this one with startling results. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

ACOS LUSTRE GST-1 1975 £46
The archetypal S-shaped seventies arm; good, propulsive and involving sound in its day, but ragged and undynamic now.

AUDIO TECHNICA AT 1120 1978 £75
Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few quid to spend.

ALPHASON HR100S 1981 £150
First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.



SME 3009 1959 £18
Once state of the art, but long since bettered. Musical enough, but weak at frequency extremes and veiled in the midband. Legendary serviceability and stunning build has made it a cult, used prices unjustifiably high.

GRACE G707 1974 £58
This early Japanese example of the tonearm art has a smooth, lyrical sound. Imported by Linn, fitted to early LP12s. Sonically way off the pace now, though.

REGA RB300 1983 £88
Inspired budget esoterica. Detailed, tight, neutral sound but tonally grey sounding in absolute terms. Responds well to tweaking, and its cheaper RB250 brother better still.



SME SERIES III 1979 £113
Clever variable mass design complete with Titanium Nitride tube tried to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

HADCOCK GH228 1976 £46
Evergreen unipivot with lovely sweet, fluid sound. Excellent service backup.



LINN ITTOK LVII 1978 £253
Arguably the first 'superarm'; Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. Now off the pace, but the final LVIII version worth seeking out.

NAIM ARO 1986 £875
Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes.



TECHNICS EPA-501 1979 £ N/A

Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

INTEGRATED AMPLIFIERS/COMBOS

DELTEC 1987 £1900
Fast, dry and with excellent transients, this first DPA integrated is the real deal for eighties obsessives. Ridiculously punchy 80W per channel from a tiny, half-size box. Radical, cool and more than a little strange.

ROGERS A75 1978 £220

The prototypical Audiolab 8000a – lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet and open to listen to.

EXPOSURE VII/VIII 1985 £625

Seminal mid-eighties Exposure pre-power, offering most of what rival Naim amps did with just that little bit extra smoothness and sweetness. Still, it's by no means 'sweet' by today's standards, being lean, punchy, musical. It's also possessed of that quintessentially eighties look – frumpy black steel boxes with rough silk screened logos!

**SUGDEN CS1/PS1 1976 £130**

Soft sounding early Sugden combo with a plethora of facilities and filters, complete with seventies-tastic DIN socketry. A sweet and endearing performer as you'd expect, but lacking in power and poor load driving ability, so partner carefully.

VTL MINIMAL/50W MONOBLOCK 1985 £1,300

Vacuum Tube Logic was one of the Europe's biggest tube names in the eighties, and it shows. Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

A&R A60 1977 £115

Sweet and musical feature-packed integrated; the Audiolab 8000A used its blueprint to great effect.

**CREEK CAS4040 1983 £150**

More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

AUDIOLAB 8000A 1985 £495

Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.

**MCINTOSH MA6800 1995 £3735**

Effortlessly sweet, strong and powerful with seminal styling to match.

SUGDEN A21 1969 £ N/A

Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

MISSION CYRUS 2 1984 £299

Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.

**MUSICAL FIDELITY A11985 £350**

Beguiling Class A integrated with exquisite styling. Questionable reliability.

**NAIM NAIT 1984 £350**

Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

NAD 3020 1979 £69

Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.

**MYST TMA3 1983 £300**

Madcap eighties minimalism, but a strong and tight performer all the same.

ROGERS CADET III 1965 £34

Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves

**ROTEL RA-820BX 1983 £139**

Lively and clean budget integrated that arguably started the move to minimalism.

CHAPMAN 305 1960 £40

Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper second-hand.

PREAMPLIFIERS**AUDIOLAB 8000C 1991 £499**

Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.

CROFT MICRO 1986 £150

Budget valve pre-amp with exceptionally transparent performance.

AUDIO RESEARCH**SP-8 1982 £1,400**

Beautifully designed and built high end tube preamplifier with deliciously sweet and smooth sound. Not the last word in incision or grip, but that didn't matter to those who aspired to it.

CONRAD JOHNSON**MOTIV MC-8 1986 £2,500**

Minimalist FET-based preamplifier from the Yank valve specialists is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden high end stuff. Something of a curio, but worthwhile nonetheless.

LEAK POINT ONE STEREO**1958 £ N/A**

Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

LINN LK-1 1986 £499

A brave attempt by the Glasgow boys to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not half bad for under £100.

LECSO AC-1 1973 £ N/A

Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.

**QUAD 22 1958 £25**

The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it's for anacrophiles only.

QUAD 33 1968 £43

Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...

NAIM NAC32.5 1978 £ N/A

The Salisbury company came of age with this, their classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

POWER AMPLIFIERS**HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110**

Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

LEAK STEREO 20 1958 £31

Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



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

LECSO API 1973 £ N/A
Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

MARANTZ MODEL 9 1997 £8000
Authentic reproduction monoblocks still more than cut the sonic mustard. Highly expensive and highly sought after.

MICHELL ALECTO 1997 £1989
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!

LEAK POINT ONE, TL10, TL12.1, TL12 PLUS 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 ST-8 1978 £353
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.



CREEK CAS3140 1985 £199
Excellent detail, separation and dynamics – brilliantly musical at the price. T40 continued the theme...

NAD 4040 1979 £79
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica. Needs a good antenna to work properly, however.

NAIM NAT03 1993 £595
The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

PIONEER TX-9500 1976 £295
Another of the serious classic solid-staters. Boasts the usual high end Jap package of fine sound, brilliant sensitivity and superb build.

LEAK TROUGHLINE 1956 £25
Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Fed to a modern outboard decoder they're deliciously lucid with true dimensionality.



YAMAHA CT7000 1977 £444
Reputedly the best of the classic Jap analogues, this combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

QUAD FM4 1983 £240
Supreme ergonomics and styling allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



REVOX B760 1975 £520
More of a semi-pro machine than a domestic bit of kit, the Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?

NAD 4140 1995 £199
Brilliant affordable digital tuner has a smooth, detailed musical sound plus sensible real-world facilities.

ROGERS T75 1977 £125
Superb mid-price British audiophile design, complete with understated black fascia. Fine sound in the true Rogers mould – smooth and sweet with fine dimensionality.

SANSUI TU-9900 1976 £300
A flagship Japanese tuner designed to steal sales from the likes of Accuphase and Revox, it boasts superlative RF performance and an extremely smooth and lucid sound, along with very fine build and finish.

SONY ST-5950 1977 £222
One of the first Dolby FM-equipped tuners, a format that came to nought. Still, it was Sony's most expensive tuner to date, and boasted a very good sound quality allied to brilliant ergonomics.

SEQUERRA MODEL I 1973 £1300
Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.



TECHNICS ST-8080 1976 £180

National Panasonic's specialist hi-fi brand was a big hitter back then, and this is no exception. Superb FM stage makes for a very clean and smooth listen with lots of detail and depth.



ANALOGUE RECORDERS

YAMAHA TC-800GL 1977 £179

Early classic with ski-slope styling courtesy of Mario Bellini. Middling sonics by modern standards, but cool nonetheless!



AIWA XD-009 1989 £600

Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

NAKAMICHI CR-7E 1987 £800

The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



PIONEER CTF-950 1978 £400

Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.



REVOX A77 1968 £145

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days. B77 better, but couldn't match the Japanese.



SONY WM-D6C 1985 £290

Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.



SONY TC-377 1972 £N/A

A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

DIGITAL RECORDERS

SONY MDS-JE555ES 2000 £900

The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.



PIONEER PDR-555RW 1999 £480

For a moment, this was the CD recorder to have. Clean and detailed.

MARANTZ DR-17 1999 £1100

Probably the best sounding CD recorder made; built like a brick outhouse with a true audiophile sound and HDCD compatibility.



KENWOOD DM-9090 1997 £500

Serious and sophisticated sound thanks to well implemented ATRAC 4.5; surprisingly musical MD recorder.

SONY TCD-8 DATMAN 1996 £599

Super clean sound makes this an amazing portable, but fragile.

LOUDSPEAKERS

ACOUSTIC RESEARCH

ARI8S 1978 £125

Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, although finesse was most definitely not their forte...

BBC LS3/5A 1972 £88

Extremely low colouration design is amazing in some respects - articulation, stage depth, clarity - and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence. Partner with Rogers 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 T27 / BI 10 combo as seen in the BBC LS3/Sa. Doesn't play loud, needs a powerful transistor amplifier, but rewards with fine clarity and imaging.



SPENDOR BC1 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 (500WV) 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.



CLASSICS

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 'pooof' 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

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Mob: 0116 2835821
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www.flashbacksales.co.uk/classique

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www.wembleyloudspeaker.com

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Email: paul@bowersandwilkins.co.uk
www.bowersandwilkins.co.uk

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(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.revox.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



Friends Reunited

Updating an old favourite, the Acoustic Energy Reference 2 stand-mounted speakers provide, says Paul Rigby, an intriguing design evolution.

Taking a classic model – in this case the Acoustic Energy 2 speakers – the new Reference 2s are an evolutionary step-up from this well regarded design, keeping the off-set treble unit but bringing it right up to date with a range of new, anti-distortive, design elements. In fact, the attention to detail, engineering and general build quality smacks of a speaker that looks and feels more expensive than it actually is – there is a distinct value for money whiff about the Reference 2s. This two and a half-way, reflex port-loaded design, spanning 920x185x255mm and weighing a meaty 14kg is available in ebony only.

The offset tweeter position does produce odd results, as we found during his testing. "There

is a phase dip" confirmed Spandl, "produced on purpose, I hasten to add. As you change the horizontal angle, then the relationship between the woofer and the tweeter changes, altering the phase".

The upshot is that, if you listen to the speaker with the tweeter positioned on the outside of your soundstage then this should suit smaller rooms. Swap the speakers around so that the tweeters are positioned on the inside and those with larger rooms should hear improved sound.

"The speaker cabinet is made from a sandwich of materials," said Spandl. "Two layers of MDF with a layer of very high density rubber glued in-between so that it forms a self damping sandwich. The idea is that the panels don't resonate at all

so they don't transmit sound. If you play the speaker and stick your ear right up against it you won't really hear any sound coming through the cabinet."

The 130mm pressed alloy mid/bass driver is based upon a company-produced driver initially produced for the Radiance One speakers. Designed to further reduce distortion, it has been improved: "it's what's called an overhung design complete with a foam edge – used instead of a rubber surround. This results in a slightly faster bass response. The driver also features a voice coil that is wound twice: once inside the former and once outside so its heat dissipation is almost doubled and that keeps the drive unit cooler which means that the power handling is improved, reducing its thermal compression.



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This improves the performance of the cross-over while the speaker sounds more consistent at all power levels, adding to the dynamic performance.

The 38mm Neodymium Ring Radiator tweeter is the same as that seen on the Radiance One, arriving with a waveguide faceplate so that the tweeter's "...low frequencies are pushed out at the same angles as the high frequencies" said Spandl.

The final attack on distortive effects occurs within the cross-over which is not on a PCB but is hard wired onto an MDF board, treated with silicon suspension. This means that these essential components are not being shaken around as much, reducing the distortion.

SOUND QUALITY

After running in the AE speakers for a few days, and then spinning the Barclay James Harvest CD 'Victims Of Circumstance' the Reference 2s proved, not surprisingly, far easier to drive than my Quads, gaining a few notches of gain in the process. Positioning the AEs with the tweeters on the outer side of the chassis, within my relatively large listening room, the speakers sounded 'in your face' with an obvious lifting of the upper midrange. Violin sweeps, at the beginning of the track were prominent while the introductory shimmering guitar glistened with an added prominence but some upper frequency peaks were a little harsh and bright.

Changing the positioning of the tweeters to the inside of the chassis, there was a dramatic decrease in the sharpness of the midrange which allowed the upper mids to perform at their peak, spewing detail over the entire soundstage. It was during this configuration that Spandl's anti-distortive efforts were seen at their very best as the midrange basked in a new sense of clarity while the switch from the upper to the lower frequencies was seamlessly smooth, adding to the sense of transparency.

The AE's emphasis on detail also continued in the lower frequency areas which resulted in a thumping, tight, punchy bass response. The Reference 2 speakers might not exude the same ease and grace of the Quads but the AEs do give the listener a sense of urgency, action and a sprightly, energetic personality that works well with digital, up-tempo music.

Playing the highly compressed 'Stronger' via the Sugababes, the AEs did reveal that, even with the superior placement, the speakers still experienced a slight upper midrange



lift, a little more than my smooth electrostatics, resulting in challenging top notes. Low frequencies provided a crunching hard core malice, however, grinding bass to down and dirty levels. Subtle midrange details were enhanced too, lifting them from obscurity and shining a spotlight on previously lost information.

Turning to vinyl and an original HMV pressing of Count Basie's 'Count Basie And The Kansas City 7', the AEs proved to be a more pleasant experience than a digital source, they responded well to the warm analogue signal providing a balanced output and giving the Basie piano a mature tone but one soaked in a revealing complexity that shone a light on this tonally layered instrument. Bass was lifted, adding drive to the track, while sax and trumpet provided a reedy, textured, personality and a purity of presentation. That flattered both instruments while enabling the personality of both artists to come through.

The Reference 2s were also successful in saving the acoustic guitar from obscurity. The subtly mastered instrument attached itself to the percussion early in the track and is easily missed with speakers that are less than attentive in the detail department. The AEs are a perfect solution for those vinyl audiophiles who want to explore every aspect of the master because they shine a light on every dark, undiscovered corner.

Spinning The Pixies' 'Surfer Rosa', the deep,

3D, sound stage was successfully portrayed. The cutting electric guitar sequence on 'Break My Body' enabled the AEs to convey the power, passion and excitement of the piece without any negative connotation, confirming just how analogue-friendly the Reference 2s actually are. The speaker's ability to dig deep into the

mix, rescuing little-heard details, was shown again and again.

Within the track, 'Broken Face', and in the

multi-tracked vocal sequence, the AEs were able to dig deep into the mix and highlight the extraneous shards of the vocal sequence, capturing the performance in full.

CONCLUSION

While the Acoustic Energy Reference 2 speakers are decent all-rounders, the speakers perform best when viewed as specialist audiophile tools. Yes, they perform well in a digital scenario, especially within a balanced hi-fi chain where they provide exceptional musicality featuring lively, punchy bass frequencies and an incisive midrange but they come to life in an analogue-centric system, working with the grooves to dig deep into the master to extract sometimes long lost detail.

REFERENCE SYSTEM
 Icon Audio CD-X1 CD Player
 Avid Acutus/SME IV/Benz Glider
 Icon PS3 phono amp
 Aesthetix Calypso Preamp
 Icon MB845 Monoblocks
 Quad ESL-57 Speakers (One Thing Modified)
 Black Rhodium Ninja speaker cables

VERDICT ●●●●●
 Works well with CD but really flies with the beloved wax. Vinyl fans need to arrange a demo, tout suite.

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www.acoustic-energy.co.uk

FOR
 - build quality
 - transparency
 - musicality
 - clarity

AGAINST
 - midrange lift

MEASURED PERFORMANCE

The pink noise frequency response shows a smoothly falling output all the way up to 20kHz – a very unusual characteristic. This and the ultra smooth output of the ring dome tweeter will ensure the Reference 2 sounds silky smooth, likely full bodied. Our frequency response was taken with tweeter on the outside, not the inside as usual (the Reference 2s come as handed pairs). With tweeter on the inside a small phase dip appears, the response looking less good. Acoustic Energy say use as preferred.

The port damps the bass unit well, both the red trace of port output shows and the impedance trace. Output peaks at 30Hz so bass should have good subsonic heft.

The Reference 2s were fairly sensitive, producing 87dB from one nominal watt of input (2.84V), impedance being on the high side at 8 Ohms with pink noise. The bass unit has a DCR of 5 Ohms and this fixes a high minimum.

A long term 200mS decay spectrum was reasonably clean, being free from peaks although the cabinet is hot in places.

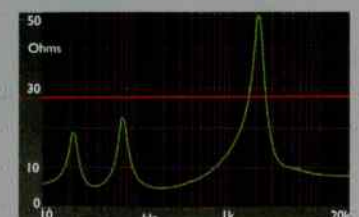
The Reference 2 is unusual in its flat, slowly falling output and will sound fuller and less bright than most rivals. It is very accurate under measurement though and is a true reference. NK

FREQUENCY RESPONSE



Green - driver output
 Red - port output

IMPEDANCE



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Space Odyssey

Adam Smith remembers the Odyssey RPI-XG tonearm.

Back in the 1980s, before digital had taken such a hold on our lives, many small, independent companies specialising in vinyl replay equipment had a great time of it and, most intriguingly, Scotland seemed to be something of a vinyl 'Silicon Valley'. Along with Linn, names like Fons, Ariston, STD, Systemdek and Syrinx were popular, if low volume manufacturers who made sure that we all could make the best of our Spandau Ballet 12 inch singles and Cure LPs!

The gradual takeover of CD spelled the end for many of these companies with some remembered more than others. However, two that remain firmly implanted in my memory were Source and Odyssey, who eventually came together under the Source-Odyssey name to market one of the most visually impressive turntable/arm combinations ever made.

Odyssey Engineering was started by John Gordon in 1981. Having been made redundant from a model making company he took his redundancy package and decided to set up making arms, something not too difficult given his training in machining. Slight concerns arose about being able to take on the 'big boys' but, heartened by the discovery that many of those famous names in vinyl were actually people making items in their shed, or in small workplaces with two or three employees, he decided to give it a go.

His garage duly converted, John began production of the RPI tonearm, which incorporated some very novel thinking. The original design ethos behind the arm can be read on the 'Geometry and Design' section of the Odyssey tonearm blog (see Box for details) but the basic ethos was to make an arm

that was universal in application and asymmetric in layout, such that resonance issues could be avoided by attempting to discourage their formation. It was this latter theory that gave the arm its distinctive appearance, with arm tube, bearing, counterweight, main pillar and cartridge all offset from each other. The RPI was a success and John took on more employees and moved to larger premises, also attending shows around the world to spread the word about it.

As time went on, John found that most of his production went to the Far East and so he struck up a distribution deal in Hong Kong, the owner of which eventually moved to the USA and set up Odyssey Engineering USA. Final assembly was completed here and distribution dealt with through California, but personal reasons led John to close his workshop in 1987 and sell off his tooling, thus marking the effective end of Odyssey.

A brief re-launch did occur when Jack Lawson (currently of the Audio Salon in Glasgow) bought the rights to manufacture the Source turntable from designer Mike Moore, with John agreeing to consult and assist them in making the Odyssey arm once more under licence, with a few changes here and there. However, the engineering company who were to do the work sadly went into receivership and so the project came to an end and John bought up the remaining stock of parts, many of which remained hidden away until very recently. John then left the hi-fi industry but was persuaded back into the limelight by a recent suggestion on an internet discussion forum that he had died!

He happily announced that this was not the case and such was the interest in the Odyssey arms, a few



more have been refurbished from those NOS parts, including the one that you see here that I was lucky enough to purchase. John states that he currently has plenty to keep him busy and has no plans to make any new arms but admits that he is gradually "being sucked back in" to the industry, so you never know!

MODELS

The original RPI arm, first offered for sale in 1981, was a straight arm featuring a triangular cartridge mounting platform at one end and a triangular mounting base at the other, with shims for height adjustment, and a black lacquer finish. Chrome and coloured lacquers were optional, as were s-shaped arm tubes with connectors for Decca cartridges, plus a damping unit. This was followed by the RPI-X which changed most of the arm's component parts, most notably an SME pattern mounting plate with an eccentric clamp to hold the arm pillar, allowing for easy alignment simply by rotating the arm to suit. Wiring, bearings and the cueing system were also updated and more of the arm was made from aluminium, much of the original having been brass.

The RPI-XG (or Export Gold), as covered here, came next, utilising a very striking gold plated finish on the brass parts and anodised aluminium alloy on the rest. As with the RPI-X, the arm tube was detachable at the bearing housing and different tubes were available to give low, medium and high mass options. There was also a 12 inch option with a J-shaped tube and three different counterweights, to suit all cartridges. The



arm's final incarnation, under the Source-Odyssey moniker, was the RPI-XGII, changing colouring to black and gold and dispensing with the removable arm tube.

Other prototypes were mooted over the years, including the RP2, a budget arm; the RP3, a flagship design; the RP4, a cheaper alternative to the RPI for Source turntables, and the RP5 which was another budget design conceived prior to Source-Odyssey. Sadly none of these ever saw the light of day beyond prototype stage.

SOUND QUALITY

In use, the Odyssey is a very interesting mix of styles and offers an overall sound that does a lot of things very well indeed and very little badly. I was first struck by the magnificent, solid and deep bass that flows with a glorious sense of fullness and ease. Whilst it isn't as fast or punchy as the likes of an SME 309 or even my own Alphason HR-100S, it gives nothing away to either in terms of extension or sheer impact. Equally, a slightly more fulsome bass can often be paired with a degree of bloat in detail terms, but the RPI-XG has no problems here, picking up low end detail, such as a softly played bass guitar, magnificently.

In the midband, the Odyssey has a fine and well ordered sense of rhythm and insight. Instruments are well rendered but always with

the underlying signature warmth in place. In simple terms, the RPI-XG is very 'analogue' and will find many fans amongst those who consider the likes of an SME to be too 'digital' in terms of its forthright and insightful nature. Even the RPI-XG's treble has just the right level of smoothness to make it an easy and rewarding listen but it never glosses over any fine detail or attempts to assault your ears by hammering home top end foibles.

With my Audio Technica AT-OC9 MII cartridge fitted, the Odyssey absolutely sang its heart out. The two are a match made in heaven as the RPI-XG tames the occasional sting in the OC9's treble but without ever stifling its superlative fine detail resolution and top end crispness. Add in a soundstage that stretches well in all directions with a firm sense of focus across both its depth and width and you have an arm that is truly rewarding and a highly enjoyable musical companion.

BUYING

As might be expected from a low volume manufacturer, Odyssey arms are not exactly in plentiful supply, and their superb engineering and fine sound quality seem to ensure that lucky owners tend to hang onto them. Most common are the RPI-X and RPI-XG variants and these can command prices of between £300-£800 depending on condition. No

official service is available but John does have a few boxes of parts kicking around so it is worth contacting him through the aforementioned blog if you need something. The arms are very well made and so nothing is particularly likely to go wrong, other than the usual issues of bearing wear and wiring fragility, both of which can be easily sorted out by the likes of Audio Origami, who also have experience of making custom armtubes for the RPI-XG.

CONCLUSION

As a hi-fi obsessed teenager, one of my main memories of my first ever Bristol Hi-Fi Show was the absolutely beautiful looking and exquisite sounding turntable that I saw in one of the rooms there. It was a Source with Odyssey arm and I decided there and then that I would own one of those arms one day!

Twenty-ish (cough...) years later, that determination has paid off and I have to say it was worth the wait. The RPI-XG is beautiful but it is also a fine sounding tonearm and makes me proud to think of what has been achieved in garages all over the UK over the years. To John Gordon, I can only say: are you sure you don't fancy designing the RP6?!

The Odyssey tonearm blog, with technical details, history and model details can be found at <http://odyssey-tonearms.blogspot.com>

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Totally Wired



Newly released within Tellurium Q's Graphite cable range, Paul Rigby wonders if the Black power cable and Graphite speaker cables can reach the sonic heights that their price demands.

Ready to be unleashed on an unsuspecting public, these new cables are made from... they're designed with...their core components are...well, OK, the company won't say. In fact, it makes a point of refusing to declare any specifications. After hearing the inflated science fiction from some of its competitors that's probably a wise move. The point of cables is how they sound, after all.

Reviewed in the last issue of Hi-Fi World, the Black Rhodium Avenger DCT++ is one of the finest mains leads in its price bracket (£663 per 1.5 metres) so was an interesting reference comparison for the Tellurium Q Black (TQ Black) while the Black Rhodium ACT2 speaker cables (£300 per metre) were utilised as references for the Tellurium Q Graphite speaker cables.

SOUND QUALITY

Taking the power cable first and spinning the Sugababes' compressed to hell CD track 'Stronger' via my Icon CD-X1, I was surprised by the TQ Black's performance. Compared to the Avenger, the TQ Black exhibited a more meaty bass response. In fact, it was almost Brontosaurus-like in its mass. Low frequencies were notable by their heft and weight. What raised the eyebrow, however, was the simultaneous increase in air around the upper mids. The TQ Black provided a new sense of freedom, expression and emotion. Concomitant with these

advantages was the TQ Black's enhanced clarity, a result of the removal of inherent distortion which allowed detail to emerge. Lastly, instrumental separation was simply astounding. Wide gaps appeared in between each, giving both an outline and profile to each instrument.

Moving to jazz and Freddie Hubbard's 'Open Sesame' on XRCD, the brass tones can overlap on a middling set of cables. Despite the Black Rhodium's excellent performance, the TQ Black eased the instruments further away from each other to produce clear daylight. The enhanced, accompanying clarity giving a great sense of meaning and maturity to the music. Even on solos, the rather poorly positioned piano was no longer swamped by the percussion. The treble shimmered with delicate amounts of reverb that reflected off each cymbal strike while the enhanced bass drove the entire track, enhancing musicality.

The Tellurium Q Graphite Speaker cable (TQG) was first tested with the Sugababes track. First impression was of an extraordinary focus that made the ACT2s sound muddled and confused, in comparison. TQG-driven low frequencies now resembled a layered jam sandwich cake instead of the ACT2's melange of bass notes. The TQG was able to identify distinct tonal differences while sweeping away the bass bloom that infected the track. Upper mids were also stripped of distortion that allowed the female vocals to shine with a fragile innocence. An added

bonus was a general becalming to the peak limiting, once harsh tones fell to a slight upper mid hardening.

Generally, the amount of clarity that exuded from these cables opened up a swathe of new detail while enhancing current noises enough to force my ears into an aural double take.

Freddie Hubbard's Blue Note, jazz classic never sounded so good. The new clarity allowed his trumpet to relax. His own confidence appeared now to be sky high as he played without any apparent effort, letting the notes flow and encouraging his skill and talent to speak for themselves. Tina Brooks' sax produced a new swinging musicality that gave the impression of a musician who couldn't keep still. Here, upper mids offered a blue lagoon of clarity that the ACT2s just could not match while the extra detail conveyed a sonic story that the ACT2s found foreign. Percussion, meanwhile, was both driving and subtle. Treble was highly effective, drumsticks seemed to, not so much strike the drum skin, but bounce off it. Such was the perceived energy from this part of the extended sound stage.

CONCLUSION

So, are the new Tellurium Q cables worth the money? Definitely. When combined, the improvement was on the scale of a hardware upgrade. As for the difference in cables? Wholly palpable and easily heard. Frankly? These are the best speaker cables I've ever heard.

VERDICT ●●●●●

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"Lemon is that it's a rock label with a personal touch"



paul rigby

You know, sometimes, in this column, I've had a bit of a whinge about major labels. And not without justification on many occasions. After all, they can be obstructive, bureaucratic, paper-shifting jobsworths that know as much about music and the content of their own archives as a tea leaf knows about the East India Company (to paraphrase a dead satirist). They're not all bad, of course: there are plenty of good people out there but when you consider that these people are the custodians of much of our musical heritage it leads you towards a state of exasperation. Extracting music for reissue from a major label is a bit like having to organise an SAS raid on your local library just to get a copy of *Pride & Prejudice* to browse through the next time you're on the loo. You can see how frustrated I am when I feel the need to insert two relatively witty metaphors in the same paragraph!

This is why we depend so much on the passion, the knowledge and the enthusiasm of independent labels. One of those that I have never previously mentioned in this particular editorial space before is the rather bitter sounding, cheek sucking, Lemon label which exists as an entity within the Cherry Red organisation. How they work gives you a great example of what the independent sector does and how their dealings with the majors differs from, say, working directly with musicians.

Lemon exists because, on a basic level, Cherry Red needed a rock label and so the Lemon label was set-up to cater for the genre, "I used to run the catalogue department at Sanctuary and then I went over to

Universal when we got bought," said Steve Hammonds, main A&R man for Lemon. "Then I left to move to Cherry Red to help work with the Lemon label.

"We either license the music directly from the band or via the majors. It depends on what gets cleared by the majors to what we launch. We have a lot of license requests that we put out to the majors and other companies. For example, we have a Humble Pie album on the way and that took two years to clear. That was probably less to do with the label being at fault and more to do with consent issues and gaining approval relating to marketing and legal ... every contract has to be checked."

Two years? OK, I'm not privy to exactly which Humble Pie album we're talking about but here we are in 2011 and it's still taking two years to clear an album which is probably over thirty-five years old. And the industry moans about piracy. If it managed to get off its legally constrained, arse, then maybe the music business wouldn't be taking the next left turn towards its final, Elephant graveyard resting place.

"Some bands we approach directly. I have a lot of contacts in the industry. I've been working in it for over twenty years so I'm aware of what's around," said Hammonds who is exactly the sort of man that the majors dumped unceremoniously, to cut costs, several years ago and replaced with suits and then wondered why no-one even knew where the Sellotape was, never mind the masters to, say, Dylan's fourth album, ("Next to Sellotape?" you can imagine Tarquin the accountant venturing).

But you can see, when you look at the Lemon roster, which albums have come from the major labels and which have come direct from artists. Take The Deaf School album 'English Boys/ Working Girls'. Lemon got to know the band, who held the copyright to the album, "We licensed directly from the band. When I worked with Sanctuary, I worked with Deaf School. I knew the singer pretty well and one of the guys in the band and they opened their archives and rarities for me. Working directly with a band will always offer more cooperation and better access to rarities."

Graham Parker was another example, in the Lemon Roster. Hammonds' colleague in the label, Mark Brennan, "...had direct contact with Parker. He's a big fan and he knew what rarities were out there. The personal touch makes a big difference."

That's not to say that B-sides and rarities cannot be sourced from a major label but it requires plenty of preparatory work beforehand. You, as an independent reissue label, need to know the question before you will receive a correct answer so, in some respects, you have to be more aware of a major label's content than they are. That is, the major won't spend extra time digging up rarities on your behalf. They're busy...filing.

The great thing about Lemon is that it's a rock label with a personal touch. The artists on the roster tend to be favourites of the staff working there so they put more love and care and enthusiasm into those releases which will please both the fan and the audiophile. Check it out, they are packed with goodies from Uriah Heep to Steve Marriot and from Trapeze to Vinegar Joe. ●

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"I firmly believe, major gains in performance can be achieved by relatively simple means"



tony bolton

Over the years a great many pages of print and gallons of ink have been used discussing the effects of cables in a system. There are still those who are firmly believe that if two lengths of wire measure the same, then they must sound the same; a view that was universal until the 1980s. In the same way, if you dig back into the history of our industry you will find that the generally held opinion was that if two amplifiers measured the same then they would also produce the same sound, and that it was speakers that made systems sound different to each other.

As our understanding of the interaction of resonance and microphony on the sound of any piece of equipment has increased, there have been moves to produce stiffer, more resonance free casework for electronic items. Internally, components are now routinely placed in compliant mountings to prevent, for example, any vibration from a mains transformer being transferred to the signal path. All of this has small but beneficial effects, usually producing a sound that is generally perceived as being less grainy and more focussed and precise.

There are still areas awaiting improvement though. As you can see in this issue, I have just found that changing the speaker terminals on my Chario Ursa Major loudspeakers has had a transformative effect. It was a change that was so dramatic that it has caused me to wonder why I hadn't considered this course of action before. But, like most people I have focussed my attention of the cables that link a system up, and provide the power to it. Here, I firmly believe, major gains in performance can be achieved by relatively simple means.

Some years ago there used to

be an oft quoted maxim that you should spend 10% of the cost of your system on the cables. I have a different take on this. My version is to spend at least the same amount as you have on each component, on the cables linking it up. Now some would view this as being somewhat over the top, but I have found that even very modest systems respond incredibly well to having better quality wires connecting them together.

An example of this occurred recently when a friend was discussing the concept of upgrading his hi-fi. It is a combination of Marantz amplifier, a Philips CD player and a pair of Eltax floorstanding speakers all bought from Richer Sounds some ten years ago, with the more recent addition of a Pro-Ject Debut III turntable. They stand on a home made equipment rack built from wood and acrylic, and are linked up with cables bought at the same time, that adhered to the 10% rule in their cost.

The sound of this system was pleasant enough, but not overly inspiring, and he had gradually begun to feel the need to upgrade and was wondering where to spend a rather limited budget. I suggested that a cable upgrade and a little bit of tweaking to the casework of the CD player and amp would be a cheaper and more effective way of improving the sound, than spending the same amount of money, and only being able to change just one of the electronic components.

To demonstrate this I took a range of wires with me to his house, ranging from some Van den Hul 'The Bridge' speaker cable (no longer in production, but originally costing around £6 per metre), a pair of Ringmat Developments OFC Pure Power speaker cables (currently £306 for a 3m terminated pair) and some lengths of Chord Company Signature (£160 per metre including

termination).

As we worked our way up through the cables the effect upon the sound of the system was huge, and caused my friend to do some serious head scratching. Each seemed to bring new layers of detail in the sound to the fore, as well as providing deeper and more coherent bass, greater openness in the mid range and a smoother and greatly extended treble response.

The biggest difference lay between his original Gale speaker cable and the Van Den Hul, with nearly as big an improvement when installing the Ringmat example. The Signature took the sound up another level again, leaving my friend somewhat flabbergasted at the true capabilities of his hi-fi, and mildly frustrated that he had lived with what he now saw as a somewhat restricted performance from his kit for so many years. Having decided that new cables and interconnects were definitely on the shopping list we turned our attention to the electronics.

I produced some bitumastic car sound-deadening panels, available from good car accessory shops for around £15 each. We took the lids off his CD player and amplifier and applied suitably trimmed panels to the metal work, taking care that ventilation holes remained clear. This time the sonic effect was smaller but still obvious, with the sound acquiring more depth and clarity, and in particular, in the high treble, where high hats lost a rather crunchy sound and began to have a more precise shape to them.

Such tweaks are usually most effective with budget equipment where the demands of pricing restrict a company's ability to 'hotrod' its products, although older, originally more expensive components such as my Quad 303 power amps can also gain. A little experimenting can bring big gains. ●

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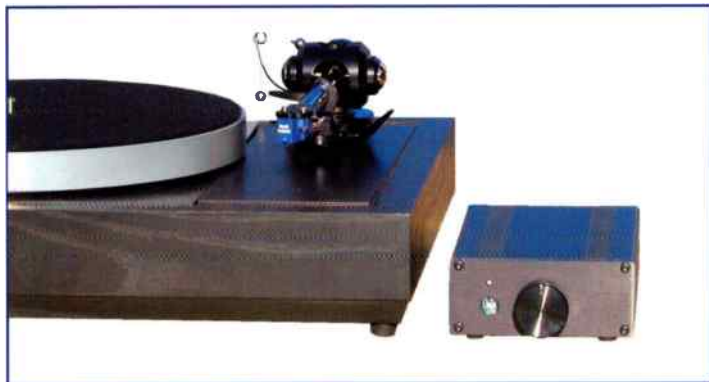


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noel keywood

Having once wandered around with a Sony Walkman Pro in my pocket – this was the 1980s – a pair of quality Sennheiser earphones clamped to my head and Hendrix playing 'Voodoo chile' left to right and back again through the centre of my brain, I don't spend so much time with today's update, an iPhone 4S feeding VJay fold up headphones with 'Now That's What I Call Music' No 80.

Over the intervening years, around 25 of them no less, sound quality has taken a dive. With no trouble at all I once transferred LP onto TDK MA metal tape using my Nakamichi ZX-9 cassette deck and could enjoy wonderful sound from a great musician. The result was a fantastic experience at the bar in my local, or in an airport lounge on the way to somewhere or other in a Lockheed Tristar. Twenty five years later Pixie Lott squeaking at me from a 128kbps AAC download just isn't the same!

As great as iTunes is as a music library and distribution service, what tumbles out at the user end of things is sonic toot.

In the name of an easy life / download, we now get mangled sound quality fed through a device that is small, cute, easy to use but is a telephone, or a snazzily re-dressed MP3 player, one that uses AAC. Sound quality has lost out to convenience and the result is curiously lifeless and uninvolved music – music in a form best used as background wallpaper. I don't feel much urge to listen to it even on lengthy underground journeys – and with the latest Within Temptation album waiting to be investigated in my pocket.

Everyone else around me in London seems happily transported to somewhere distant and perhaps nice

by this peculiarly limited technology; what will they make of it I wonder if things start to get better – much, much better?

Already I've stopped noticing how many people have made the step up from ear buds to proper headphones. This suggests quality is still an issue, one today's listeners are prepared to pursue. My little fold up VJays don't look much but they have a lovely sound for such a modest device, free from the thin, scratchy sound of so many ear buds.

There's definitely mileage in using better headphones, as there always has been. But play any ordinary low res. download – 128kbps or 256kbps – through the digital output of an iPod or iPhone via a decent Dock and into a hi-fi system and you don't end up with a significantly more moving experience than I get on the Bakerloo line. Better headphones are not the answer, but they are a useful extra piece in the jigsaw that makes up a complete musical experience – and another piece, possibly the final one, is on its way.

With current downloads it is impossible to resurrect what has already been consummately destroyed. Often destroyed twice over! First the music was recorded in inadequate 16bit resolution to suit CD, then it was stripped of any remaining subtleties by being further reduced to MP3 or AAC form. What is left comes out as a simulacrum of the original, a barren representation from which the life and soul has been drained. I doubt I'd have ever been moved by 'Voodoo chile' if I'd first heard it in this lifeless form. And why, when I so like Within Temptation, have I not properly listened to their latest album sitting patiently on my iPhone?

CD set an unfortunate standard way back in 1983, one consumers have been stuck with for 28 years. How ironic that a technology seen

at the time as a great step forward would ultimately hold the world back. But that's digital. It is rigidly fixed in quality terms and cannot be changed, only replaced.

The internet makes possible a music delivery system with almost infinite capacity and reach. And ever decreasing computer and digital audio hardware (chip) costs combine with this to give us the ability to process audio of almost any bit depth and data rate. The very fabric of music delivery is changing and what is happening is monumental.

The silver disc is truly over, not just because it is seen as old fashioned, but because it has had its technological day. Outdated and hopelessly stultifying, a commercial and technological barrier lying between artist and listener, the availability of high quality downloads shows us what lies ahead.

Downloading high resolution music files has nothing to do with iTunes. Anyone can sell them and we can all download them without a Mac or iTunes in sight. Load them onto a memory stick, walk it over to the hi-fi, plug in and press Play and you have high resolution digital music hot from the studio, playing back through your hi-fi. For this month's network player round up that's just what I did – and the results were amazing.

In future I suspect we will be using USB memory players with remote control, an on-board wideband DAC and likely an HDMI high data rate digital output instead of S/PDIF. It will show us all what decent digital can do. Playing from USB avoids computer religion.

When portable players able to cope with high resolution digital appear, at last I'll have a modern device for my pocket able to give that old Sony Walkman a run for its money. Er – who can play the guitar these days? ●

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Transparent Acrylic Plinth

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£ 775

2 Xperience Super Pack

Transparent Acrylic Plinth

Pro-Ject Evolution Tonearm

Ortofon Rondo Red MC Cartridge

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Pro-Ject Audio is distributed in the UK by Henley Designs Ltd.

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Worldradiohistory

"this serves to alienate the traditional music-buying customer like myself"



adam smith

It was a few months ago in this very column that I raised my concerns about the future well-being of HMV and recent news items would seem to suggest that their decline is continuing at a steady rate, with profits falling further. The problem is, after a visit to their 'flagship' store recently, I can understand why this is but, equally, I'm not sure what can be done about it!

The store in question is, of course, on London's Oxford Street and, during a recent visit to the capital, I managed to escape for an hour or two whilst Mrs. Smith was safely engrossed in the shoe department of Harrods. I had in mind a list of around eight LPs that I wished to purchase – all of which were recent releases and I felt sure that the top store would see me right. Unfortunately, I was mistaken; of those eight I came away with just two and was informed that they only actually stocked four of them anyway.

Now, at this point I should clarify that none of these LPs were on the fringes of what most people would describe as music – after all I tend to stick to more specialist outlets when attempting to purchase my latest Patagonian nose-flute albums. No, these were all new and big-selling, so I was quite surprised.

My surprise didn't end there, though. Having failed dismally on an LP quest, I decide that at least I might be able to pick up a handful of seven inch singles but, unable to locate any, I grabbed a passing assistant and enquired as to their location. "I'm sorry, sir" he told me "we don't sell them any more; only the occasional limited edition release".

Naturally, I was disappointed and, having exhausted all my vinyl options but still having another hour or so to kill, I decide to head for the CDs and see if anything took my fancy there.

Up the aisle I wandered, round the corner and what did I come face to face with? Yes, that's right, a rack of seven inch singles. Only a small rack, I grant you, but a rack nonetheless.

After a rummage through these and then a fruitless search for one or two CDs I wanted, I left and headed for the Underground, my two LPs clutched firmly in hand and wondering what to make of my experience.

What I concluded was that I had left the premier store of the country's main high street music emporium with a much emptier bag and fuller wallet than I had intended. On the way I had spoken to an assistant who had no idea what the store sold and this had been capped off by the irritant that was another assistant flying a remote control helicopter around the store the whole time I was mooching through the CD racks because half the ground floor of the shop is now taken up by iPod dock, games consoles, "amusing" gadgets and those damn annoying helicopters.

I can't help feeling HMV are in a perpetual spiral down now. People are buying music online, either in hard format or download and so their sales are suffering. This has led them to turn to other areas of sales such as those aforementioned technology items that seem to have lost their high street presence since the demise of the Gadget Shop, but this serves to alienate the traditional music-buying customer like myself who would love to keep supporting them but keeps walking out of their stores empty-handed.

The biggest irony of all, though, lay in the Southampton store that I visited last weekend. The store management have adorned the stairs down to the basement with old LPs, twelve inch and seven inch singles.

The basement houses CDs and has only a small vinyl section. As I walked out empty-handed again, I did a quick count and was amused and depressed in equal amounts to find out that there were more records on the stair walls than there were for sale in the racks! I really don't know what the answer is, but I suspect HMV need to find it quickly.

Finally, I would like to share with you some sad news that reached me just before Christmas, namely the passing of designer David Lewis. Many will not know his name but I think most will know his work as he operated as chief designer for Bang & Olufsen since the 1970s, firstly on a freelance basis and then as head of his own design studio, and designed some of their most iconic products. These including the Beosound 9000 6 CD player and the Beolab 8000 'organ pipe' loudspeakers and it is testament to his skills that these are not only some of the most famous B&O items, but also two of the longest-lived, with both still in production.

I was lucky enough to meet David and interview him for the Bang & Olufsen magazine a few years ago and he was a warm, intelligent and fascinating character who was still clearly as passionate about design as he had been when he first started his career. Listening to his observations on what made a good design was truly thought-provoking experience as he believed that clean, simple and functional design was the key to successful design, rather than merely overloading items with gadget upon gadget; as he put it "I believe that the less you complicate things, the more interesting people will find them". For me, the world will be a less stylish place without him and, on behalf of the whole Hi-Fi World team, I would like to extend our sympathies to his friends, family and colleagues. ●

vinyl section

contents

MARCH 2012

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AVID VOLVERE TURNTABLE 92

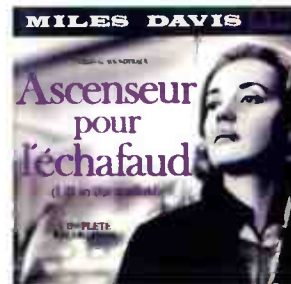
Paul Rigby

NORTHERN TIP 99

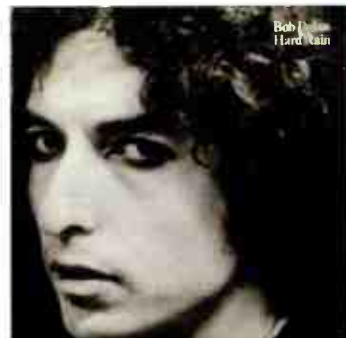
Haden Boardman visits Northwest Analogue to investigate their fascinating cartridge re-tipping service.

ORTOFON TA-110 ARM 105

Adam Smith



news



DOIN' IT FOR THEMSELVES...

Those who are partial to wallowing in the art of the singer-songwriter should check out the new batch of discs from the folks at Music On Vinyl. Take the rather theatrical 'Frank's Wild Years' (1987), a typically eccentric set of arrangements overlying a more traditional song structure from Tom Waits using slightly bizarre instruments on a European theme.

Also JJ. Cale's 'Naturally' (1971) that includes 'After Midnight', the song that Eric Clapton made a hit. A lesson is laid back country rock.

Jazz fans should check out Miles Davis' 'Ascenseur Pour L'Enchafaud' (1958) a song track from a French noir movie that exudes cool bop. A wonderfully moody piece that has too long been ignored.

Next is Solomon Burke & De Dijk's 'Hold On Tight' (2011). "De' who?" you ask? Burke teamed up with a Dutch rock/R&B band to make this album, reworking some of the band's back catalogue using translated lyrics for Burke to tackle. The resultant mixture of rock, soul and gospel is a match made in heaven.

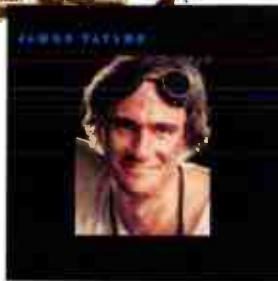
Then there's Captain Beefheart's first proper studio release, 'Safe As Milk' (1967), featuring Ry Cooder, an LP of relatively accessible Beefheartian work. Featuring blues rock, doo wop, folk and soul. That said, Beefheart cannot resist adding avant-garde touches.

Peter Tosh's 'Equal Rights' (1977), one of the best reggae albums ever made, integrating political fervour in amongst the tunes that included 'Get Up, Stand Up' and 'Apartheid'. Sometimes the politics did tip the balance towards preaching but the whole album remains impressive.

Joe Cocker's 'Mad Dogs & Englishmen' one of the best live albums ever with a blistering version of 'Cry Me A River', a whopping great band behind the man plus his energetic Grease Band sound plus an excellent recording to please audiophiles.

Also check out Bob Dylan's 'Hard Rain' (1976), not his best work but great for completists.

THE CARS CANDY-O



MO-FI TRIO

Three new releases from US-based Mobile Fidelity includes Rod Stewart's 'Every Picture Tells A Story' (1971), an absolute cracker of an album and one that every rock fan should own, no-matter what you might think of the spiky-haired poser. The featured 'Maggie May' is but one of the beautifully performed and interpreted songs that features both authority and a creative wealth.

Also look out for The Cars' 'Candy-O' (1979). It didn't top the band's debut release but does feature a wealth of treasures including 'Let's Go' and 'It's All I Can Do' plus James Taylor's 'Dad Loves His Work' (1981) which improved upon 1979's 'Flag' and features the hit single, 'Handy Man'.



DAMAGED MUSIC

New from the Damaged Goods label is the second and latest release from Thee Spivs, following on from last year's 'Taped Up' debut it crams fourteen tracks of sparkling punk. It's like we never left 1977. The band are raw, eager, hungry, sparse, primitive – essential for punk fans.

Also look out for Billy Childish & the Spartan Dreggs' 'Forensic R'n'B' which mixes a bizarre combination. Imagine Anthony Newley in a late seventies punk band, the fifties vocal tone adds a unique twist.



POST-OASIS

Noel Gallagher's High Flying Birds has released their first, self-titled, album on the Sour Mash label. It has now been issued on vinyl as a limited edition, heavyweight. As an album, it's good but not great, reaching the level of the last two Oasis LPs – there's enough quality song writing to attract Oasis fans, however.

KATE BUSH – ANOTHER ONE?!

Like the proverbial bus(h), you wait all day for one then two pass by at the same time. First, this year, we had the 'Director's Cut' release. Now, in a pattern that almost reflects nineteen sixties and seventies scale of creative output, Bush is back with another album. '50 Words For Snow' gives you an hour of music featuring just seven songs which, like the snowscapes themselves, provides plenty of room for Bush to utilise all of her creativity to roam free, backed by a sparse accompaniment. A startling album.

50 Words For Snow
Kate Bush



...AND FINALLY

Evariste's 'Do You Know The Beast?' (Nosmoke) is the collected discography of this quirky but always unique individual who is as experimental as Serge Gainsbourg but has the innovative powers of another Joe Meek.

From Germany, Chic's 'Le Freak Live!' (Sireena) features both Sister Sledge and, of all people, Guns n'Roses guitarist, Slash – which is just ever so slightly bizarre, giving 'Le Freak' a heavy rock flavour. A party celebration from the classic soul outfit.

From the Crimson Shadows comes 'One Step Beyond Sanity' (Groovie) which really fooled me. I thought they were a mid-sixties garage group but, in fact, they were a mid eighties revivalist outfit from Sweden. Offering a unique vocal sound, Nuggets fans take note.

Elder's 'Dead Roots Stirring' (Headspin) is a full-on, stoner-doom rock double album that reflects stylings from the seventies. Introducing slightly more complex song structures, the group have a top quality release on their hands with boundary pushing, exploratory sonics a go-go.



Disc Duo

Avid has completed upgrades on its best selling Volvere SP and Sequel SP turntables. Paul Rigby wonders if the changes are worth the subsequent increase in price.

Both the Avid Volvere SP and Sequel SP turntables have a deserved high reputation in audiophile vinyl circles for high quality and value for money.

Both turntables have recently undergone improvements within their core design that promise advances in sound quality. There is a price to pay, however, as both turntables now cost £500 each extra.

I asked the Avid boss, Conrad Mas, what improvements have been made to the designs. "The Volvere's power supply has been separated from the chassis for the first time,

which means that we have been able to remove the cooling fins as well as fill in the cut-outs that were featured as part of the older design. This has made the chassis stronger. That strength has now been reinforced by 700% because the chassis is also thicker: moving from 18mm MDF to 22mm MDF. The old chassis will break under 40kg of load but the new version will take over 320kg."

Mas declared that he wanted to move the power supply to an external chassis in order to incorporate a larger transformer. There was no capacity to have it installed onto the original chassis,

"This means that the power supply is kept away from the turntable within a screened case so that, on this basis alone, the turntable will improve its performance. The larger transformer helps too. It gives the turntable more oomph."

Moving to a larger toroidal transformer promised to reduce noise, making its operation more stable with a greater headroom of power to improve speed consistency. But what of the customer base? Volvere customers tended to buy the turntable because the power supply was attached to the chassis. Is Mas shooting himself in the foot?



"with Avid, we are a bit like Porsche. That is, our turntables and designs have got the basic essence right"

"There is a large amount of people who perceive that having a separate power supply is better. In the old Volvere, it didn't really make much difference because we had the transformer encased underneath the drive motor. Now we have moved to a bigger transformer and have made modifications to the power supply, the chassis is not compatible, hence the separate supply."

There have been improvements to the costlier Sequel, but fewer of them and less significant than those in the Volvere. The previous Sequel chassis was basically a Volvere design but without the built-in power supply.

Now, the Volvere and Sequel have exactly the same chassis created to the same new specifications and thickness.

There is an option for current users of the Volvere who wish to upgrade to the Sequel standard. Mas explained the practicalities of the process, "It's easy because all you need to do is undo three screws underneath the turntable whereupon the motor housing comes off. You then put the Sequel motor housing on there and attach the Sequel power supply. The upgrade price is £1700."

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WHAT HI-FI?
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Volvere and Sequel turntables are not what you would term revolutionary. Mainly because the entire turntable range features top-down technology from the Reference design in the range, the Acutus. A philosophy that Mas confirms: "the best way of describing our products is that they are evolutionary. You look at some cars, say, and you can draw a convenient metaphor. Some turntable manufacturers act like Ford. When they bring out a new Ford Focus it looks nothing like the old model. The only similarity is that both share four wheels.

Some turntable manufacturers act in the same way. They even act like that within a current range, as if they are constantly re-inventing the wheel. With Avid, we are a bit like Porsche. That is, our turntables and designs have got the basic essence right because we take the basic design from the top-of-the-range Acutus. With the new Volvere and Sequel variants, all we are doing is slowly tweaking and improving. With a Porsche, you may see five incarnations of a broadly similar product. With the Porsche 911, for example, it's a standing joke that they have not changed anything in the last fourteen years.

"You can actually see subtle differences that we are making to our products, all of the time, but each change makes a significant improvement. And yet all of our turntables have family ties. All of our turntables have the three-point suspension, the same bearings and the same clamping system. Yes, there are subtle changes but in effect it's the same thing, it's not a completely different design."

For this review, as the Volvere has experienced the greater improvements of the two turntables under discussion, I decided to give it a more thorough review, bringing in an older model Volvere to perform a straight A-B comparison with the newly upgraded version. After this, I decided to compare the new Volvere with the recently upgraded Sequel – the Sequel being the next logical upgrade step for any Volvere owner.

At first glance, the Volvere/Sequel comparison is a complete waste of time. After all, the Sequel is more expensive and it offers a higher specification, so it should be a better bet, shouldn't it? Well, ordinarily, yes, but think about it for a minute because this aural comparison is not as redundant as you might think. Often ignored by hi-fi magazine review teams, major upgrades to a well established line of products can sometimes provide an unbalancing



effect. The reason for the comparison is to see if the brand balance has been retained and if the Sequel still provides a valid upgrade. If Avid have got this wrong, the upgraded Volvere will have closed the gap on the Sequel to such an extent that the new Sequel will be largely redundant. If that is the case, then the extra £1,500 to purchase a new Sequel SP will be a waste of money and you might just find that the Volvere SP becomes a bargain.

But, one thing at a time. Let's check out the old and new Volvere SPs first.

SOUND QUALITY

Initially spinning the Count Basie LP, the original HMV pressing of 'Count Basie And The Kansas City 7', right from the off, the new Volvere impressed over and above the older, original model. Firstly, the introductory drum-based rim shots sounded rounder and fuller. Relatively minor beats in the grand scheme of

more involved personality.

Greater complexity within Basie's piano performance produced a more focused delivery and an inherent, multi-timbral complexity that was new to the upgraded Volvere. Also high on the improvement list was bass which now exhibited a greater presence. Fuller and richer, bass took a more dominant role in driving the music forward.

Distortion has also been reduced which improved the rich nature of the soundstage as clarity increased, providing a quieter background in which the brass could better express itself. The sax, especially, benefitted here. It's reed-like tones now had an expressive texture. The new suite of extended frequency highs and lows were best expressed in the treble-heavy cymbal effect which positively shone, keeping the track light, almost ethereal at times.

Moving to a more aggressive beat and The Pixies' track, 'Debaser' from their 'Doolittle' LP, recently

GETTING TO KNOW...

The Volvere SP £4,000

Utilising a twin belt system, this sprung sub-chassis design features a one-piece, integrated clamping system on a threaded spindle. Running at 33 1/3 and 45 rpm, the speeds are changed on the chassis itself while the standard SME armboard can be changed for other mountings to order.

The Sequel SP £5,500

Also featuring a twin belt system on a sub-chassis along with the same clamping system and arm options, the Sequel differs from the Volvere by having its 33 1/3 and 45 rpm speed options triggered on the front fascia of the external power supply.

The Acutus SP £10,000

Featuring the same belt, arm, speeds and speed select options as the Sequel, the Acutus features a twin-dial clamping system to clamp to the spindle and then the record afterwards along with a more complex sprung chassis build.

... also in the range Diva II £1,600, Diva SP £2,600, Acutus Reference SP £15,000

the track, the rim shots now took a more important role, with a new and surprising physicality that was not there on the older model. This feature married well with the subtle acoustic guitar which now had a

reissued via Mobile Fidelity, the dynamic qualities of this rocking classic hit me straight between the eyes as the improved Volvere's bass added both focus and punch to the lower frequencies, giving the ear



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A SEQUEL TO THE SEQUEL

The worry for the upgraded Sequel was that the Volvere would move in on its territory, becoming sonically so close that the reason for buying a Sequel at all would be negated. I set up the Volvere and the Sequel with the same arm and cartridge that I utilise on my Avid Acutus: the SME IV and Benz Glider, to provide consistency during the comparison.

Playing The Pixies' track first proved to be quite shocking. Yes, the Volvere produced a very attractive and welcoming sound but plugging in the Sequel transported the ear into a whole new sonic world. The improved chassis unleashed the Sequel, lifting the already impressive sound to new heights. Unlike the steadily improved sonics of the Volvere, the Sequel actually picked up the basic foundations of the sound and completely rearranged them. This was no improvement, this was a complete reinterpretation as the soundstage moved from 2D to 3D and onion layers of detail heaved into view, adding depth while, like the famous bra commercial of yore, the deck 'lifted and separated' the aural structures producing a quite startling presentation.

Lead vocals were raised and pushed forward while instruments became entities of their own. Bass guitar now sounded like someone was pulling and rolling their thumb from one string to another – full of personality and character, in other words. Electric guitar soared, surrounded by copious air and a newly discovered but effective subtle reverb. The general impression of the deck was one of tremendous smoothness. A bit like the 'Hitchhiker's Guide To The Galaxy's, totally black, frictionless spaceship that sat in the car park of the 'Restaurant At The End Of The Universe', the Sequel eased its way through music without any effort at all.

Playing the jazz-infused Basie LP, the Sequel showed just what a top all rounder it is. Double bass was now a major part of the arrangement instead of an afterthought while the sax sounded so slinky and sexy that it really should be submitted to the British Board Of Censors before your ears get anywhere near it. Trumpets displayed a purity of tone that rolled with the melody while the treble-soaked cymbals presented themselves as heavenly conglomerations.

So, does the Avid Sequel SP sound like a £5,500 turntable? Most definitely. In fact, Avid boss, Conrad Mas, was honest enough to share his view that the Sequel SP is actually the best value for money turntable in the range. As an Acutus owner myself, after hearing the Sequel SP, I have to agree. Further, however, I'm a little worried at just how close the sound of the Sequel is to the Acutus. Yes, the Acutus is richer in tone, deeper and fuller with a symphonic presentation but the Sequel SP encroaches upon the Acutus territory, muscling in on many of its standout points.

That's what the Sequel does so well, it opens your brain to treasures of newly discovered detail, reintroducing you to your record collection.



a greater impact. This adds to the entertainment value of the upgraded turntable because Rock provided a more guttural slam, enhancing the shock value of drums.

Similarly, bass guitar was now more meaty, taking a more significant role in how the track was driven. The bass guitar gave the track more direction too, acting as a rudder. But lower frequencies are not the only improvements here. The tambourine rose from the mire on the left channel. Before, this percussion instrument melded into the background but, with the upgraded Volvere, this treble-heavy sonic ingredient played a significant role, simultaneously adding musicality but, because it sat at the extreme of the channel, it stretched the soundstage, creating a larger entertainment vista.

Finally, acting as a significant cherry on the top of this

fulfilling cake, lead singer, Black Francis, produced a sound that was fuller and more confident, generating more power in his delivery and creating a better understanding in the mind of the listener as to just how much emotion Francis was putting into his performance.

CONCLUSION

There are upgrades and there are upgrades, but the new Volvere SP provides a significant overhaul of the entire sound spectrum. The improvements are not minor, nor are they selective so it is frankly amazing that Avid refuses to add a blaring addendum to the Volvere SP brand such as the 'Volvere SP Pro' or even the 'Volvere SP GTI'. But then Avid has always had an understated view on life.

There are no shouty marketing men on tap here. This is a company that enjoys giving you a gentle nudge and then letting the hardware do the talking. The Volvere SP does more than that, it sings.

REFERENCE SYSTEM
 Icon PS3 phono amp
 Aesthetix Calypso Preamp
 Icon MB845 Monoblocks
 Quad ESL-57 Speakers (One Thing Modified)
 Black Rhodium Ninja speaker cables

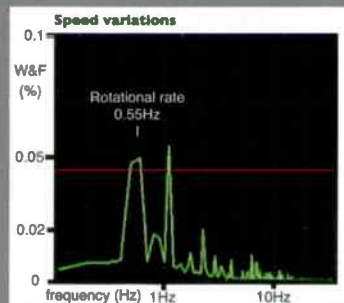
MEASURED PERFORMANCE

The Avid Volvere ran at exactly the right speed. Unweighted wow and flutter measured 0.15% DIN peak and 0.08% with weighting applied. Our spectral analysis clearly shows 0.06% cyclic wow at the basic rotational rate of 0.55Hz, which is low. There is an equal amount of second harmonic but very little in the way of flutter components above that frequency. The Volvere is a well engineered, giving good results for belt drive. NK

total (unwtd) 0.15
 total (wtd) 0.08

speed error 0
 wow 0.08
 flutter 0.05

WOW & FLUTTER



VERDICT

It may cost £500 more now but the money has been efficiently invested into a design that turns an excellent design into one that is a finger tip away from brilliant.

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AGAINST
 -nothing

Re tipped rare Koetsu cartridge, prototype twin pivot arm on fully restored Garrard 401, plus slate plinth; Northwest Analogue in a snap shot.

Northern Tip

Haden Boardman visits Northwest Analogue to investigate their fascinating cartridge re-tipping service.

Specialists in audio are rare but often distinguished – One Thing Audio come to mind, specialists on Quad ESL-57s. In the last year the name Northwest Analogue has appeared, earning itself a good reputation. The company's web site reveals a wide range of equipment and services. Their interests range from valve amplifiers to record clamps and cables, slate equipment supports, system wide set ups and general advice. Of interest to us here though is a rare cartridge re-tipping service, accompanied by turntable service, modification and repair options.

As their name suggests, the company is located in the North West of England, in a small suburb of Preston to be precise, and not a million miles away from my base in Wigan; a site visit to Northwest Analogue HQ was duly planned and actioned.

The company's founder Dominic Harper, originally from the Midlands,

makes no bones about the way the company was started: accidentally! Dominic had been servicing people's turntables along "mates rates" lines for fun in the evenings; while continuing to work in a totally unrelated industry. Specialising in idler drive technology from the likes of Garrard, Goldring and Thorens, but not turning his nose up at any other record reproducer put in his direction, his home slowly filled with other people's turntables – referred via word of mouth and internet forums.

One day, he managed to rip the tip off one of his own favourite cartridges (haven't we all) and could not find anyone willing to repair the unit for anything like a reasonable bill, or with any guaranteed results. Dominic made contact with several companies specialising in producing tips. He managed to secure himself some replacement styli and cantilevers, and then set about repairing his own cartridge. To his surprise and delight, not only had

he managed to repair the damaged device, but the new tip had audibly improved the sonic performance of the unit.

As a member of one of the many on-line forums, he excitedly posted his results and in return was virtually flooded with enquires about whether he was willing to apply his skills to other 'dead' cartridges. With some spare cantilevers and stylus tips in



Vintage Benz, an original MC3, now with ruby cantilever and FG tip.

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hand, Dominic took the “no win – no fee” approach, initially offering to look at them for free. By this time it was becoming clear his evening activities with Northwest Analogue were more dominant in his life than his full-time job, and with his partner Natalie’s support, Dominic quit his job and Northwest Analogue was formed into a full time business.

Skip forward to 2012, and the small cottage based company is focusing on its range of turntable plinths and supports (see Adam

cartridge that had been written off by its original owner.

I was treated to tea and cake while I quizzed him on his audio outlook, engineering and future developments. Dominic’s house has been taken over completely by his work. One bedroom acting as store, another cartridge workshop. The garage is packed with huge stands and boxes. I noticed the hallways and kitchen loaded with customer repairs. Dominic gets on with the physical

something that was frankly ‘dead’ dynamically, the original G800 had been totally transformed. If there was any doubt that stylus/cantilever had a dominant effect upon sound quality, here was some concrete proof.

The price differences between the different options offered by Northwest Analogue seemed surprisingly small, all being quite moderate, the cost – say – of a good mid-range cartridge. Dominic said that his restoration of an old,

“it was incredibly hard to get the parts to work with – getting in the front door of people like Fritz Gyger – but we managed”.

end of things, while Natalie handles the email and telephone.

Re-tipping cartridges is no mean feat. Dominic confesses “It was incredibly hard to get the parts to work with – getting in the front door of people like Fritz Gyger – but we managed”.

At the moment the company offers cantilevers and styli from Fritz Gyger and an ‘unnamed’ Japanese company. Cantilever options include ruby and nickel, with a polished elliptical diamond stylus tip offered as the ‘budget’ option, progressing through FG-II and Gyger-S stylus profiles.

Dominic was rather reluctant to go into full details of his rebuild procedures. I am envious of the man’s skills here. He kindly showed me a bag of stylus tips, I could barely see the little blighters, never mind work out how to remove them from the bag and fit them to the similar sized microscopic cantilevers, and then attach them to the cartridge body with correct alignment and make them work.

I was supplied with the technical details of a Fritz Gyger stylus, and for your information it is just 0.55 millimetre long, and has a square section of 0.15 mm. The stylus width in contact with the record is less than 0.03 millimetre.

Proof of the pudding however, was a lowly little moving magnet Goldring G800. This is a classic of the 1970s, but hardly famed for anything of real seriousness or remote audiophile merit. With its detachable stylus, a direct comparison between the original G800 tip and a nickel cantilever / elliptical stylus version from Northwest Analogue could be quickly and easily performed and it proved quite a revelation. From

dead, budget cartridge body would give much better results than the same funds invested in a shiny new cartridge and stylus. I personally have never really considered re-tipping a moving magnet cartridge; older classic moving coils are more obvious candidates for a work over, but the re-tipped G800 proved this option to be more than valid.

Dominic was clearly organised and structured in his work shop. A separate system based around an original Technics SL1200/II was used for testing, running in, and quality control. A powerful microscope and a very steady pair of hands are used to complete the cartridge rebuilds.

A cornucopia of both customers and Dominic’s own cartridge collections was displayed to me; given the time it would have been great to experience the sonic qualities of these newly rebuilt devices, and I am more than tempted to send up one of my vintage Ortofon SPU pickups for a rebuild.

The experience gained in a relatively short period of time, and the amount of cartridges the company has worked through has put them in a fairly unique situation experience wise: it is not as if this kind of thing is taught at college anywhere, unlike acoustics or



Miracle transformation; lowly Goldring MM fitted with new cantilever and stylus.



Rare Supex 900E, stripped and ready for rebuild.

Smith’s review in Nov 2011 Hi-fi World) turntable servicing and cartridge re-tipping services.

A long term reader of Hi-fi World, Dominic’s own hi-fi system shows a clear influence, and is far from conventional. His turntable, a Garrard 401 on (of course) Northwest Audio Slate plinth, prototype twin pivot arm (from another well-known analogue specialist), home-made John Linsley Hood transistor RIAA pre amplifier, transformer based passive control unit, valve push-pull EL34 mono blocks driving open baffle coaxial drive units with supplementary active sub-woofer, also mounted on the open baffles. This system was being used to check out a customer’s recently re-tipped Koetsu rarity. On an unfamiliar set up it was hard to judge ultimate sound quality, but there was a real clarity to the sound, especially in the upper mid and treble, proving that the front end was in perfect fettle – not bad for a



A very expensive box of Fitz Gyger ruby cantilevers.



Can you see them? The box is around two inch square.

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electronics.

When asked if there is anything he cannot sort out, the answer came back "plenty". Damaged coils, broken bodies, vital parts missing can make anything incurable.

The latest planned addition to the workshop is a custom made micro coil winder to aid in the repair and manufacture of cartridge armatures. The next stage from this is for Dominic to produce his own unique cartridges.

SLATE PLINTH

I was more than impressed with the company's Lakeland slate plinth system. It can be custom made for all the classic turntables and to accommodate customer's arm requirements. These plinths are high mass, rigid and have low coloration.

Northwest Analogue's matching stand system, honed at the same time, matches the plinth in both aesthetics and sound. Although not manufactured on site (there is a limit to what can be done in a bungalow!) Dominic's designs in slate have only just been touched upon. He is convinced of the sonic advantages of using this natural material throughout a high fidelity system. There is already a record clamp, and earlier on I did mention open baffle loudspeakers – which are about to be given the slate treatment, and I bet the idea of using the material for a cartridge body has been considered.

My only personal experience of

using a material similar to slate was a reconstituted slate plinth (Garrard 401) I purchased nearly twenty years ago. This particular unit contained more glue than the rock-like material I was expecting; it had a notably 'rubber' sound to it. At that time, I much preferred my Dastin Maxplank. The Northwest Analogue Lakeland slate plinth was clearly cleaner and faster sounding.

REBUILDS

Turntable rebuilds can start with a basic check-up, to a full strip and restoration. Every nut and bolt is removed, cleaned, and where necessary replaced. Modification can include improved main bearings, springs, washers, bolts – basically every part of a deck. Again, Dominic prefers working on Garrards, confessing his preference for the 401 above the 301. Although he has used a 401 for the past fifteen years, he still owns the Thorens TD124 he used before that, citing a different sound and much easier set up; the 124 needing a much less demanding plinth. The Thorens deck is less influenced by the plinth than say a Garrard or Technics SP10 with arm mounted directly to it.

The rebuild work is taken very seriously and customers with high-end decks like the 401 are encouraged to go down the full 'nut and bolt' rebuild path. Garrard bearing replacement is also on offer, there is no doubt replacing the main



Life-long audio enthusiast Dominic, now full time Guru at Northwest Analogue.

bearing changes the sound of the deck; the one offered by Northwest Audio is quite a monster physically and price wise – but the option to try it is there.

Dominic has a devout and clear passion for his work. To manage to get some of the parts he has from Japan and Switzerland shows his gritty determination, and to be able to implement them effectively is testimony to his natural skills. His views and designs may not be everyone's tastes, but he is very steadfast in them. He seems to have a real knack mechanically with both turntables and cartridges, an almost 'sixth sense' with them. He has dabbled in cable construction, but to me his core strengths are as stated. From their small Preston base I can fully understand how the company's reputation has grown so strong so quickly, and I for one am looking forward to future developments.

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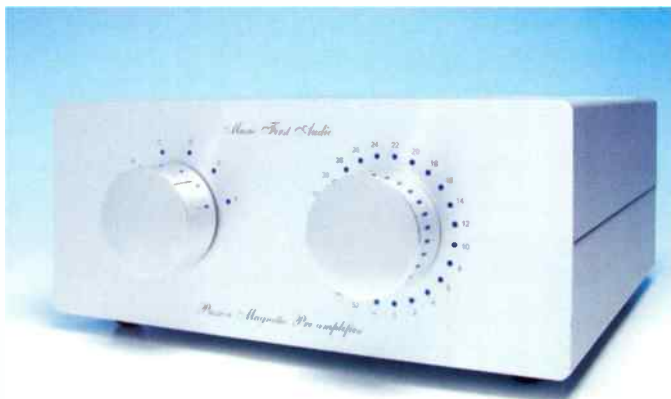


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Fully Armed

Adam Smith takes a listen to Ortofon's new TA-110 tonearm.



It has long been known that Ortofon have their arms manufactured by Jelco in Japan, but until recently, the models were under-represented on these shores. Four models existed, the AS212 and AS309, which were nine and twelve inch statically balanced designs respectively, plus their RS212 and RS309 brethren, which were similar in outward appearance but applied tracking force dynamically, using a calibrated spring.

Not so long ago, the nine inch '212' variants were discontinued and replaced by the TA-100, which bears more than a passing resemblance to the Jelco SA-750D, giving rise to numerous internet rumours that it was nothing more than a tarted-up Jelco. However, in my experience, internet rumours can seldom be relied on and the TA-100 has now been replaced by the TA-110 reviewed here, and a twelve inch version, the TA-210 added, both of which sell alongside the AS309 and RS309.

So what exactly does your £1200 buy you? I was particularly interested to find out as I have been a Jelco SA-750D owner for three years now, having bought the review arm from Sound Hi-Fi after I covered it in the

February 2009 issue of Hi-Fi World. Currently the Jelco retails for around the £400 mark so more than a tweak here and an Ortofon badge there would be needed to justify the £800 difference.

As soon as I undid the box, I had a feeling things were going to be quite different. Said box is the first big difference, as it is a big and classy leather-bound affair (unlike the polystyrene-in-a-cardboard-sleeve of the Jelco!) and contains some very different items inside. The arm itself is based around Jelco's patented single point cross suspension system with an s-shaped tube. The most notable addition is to be found under the arm, where Ortofon have a slit made in the tube which is then filled with vibration-damping rubber. The twelve inch TA-210 actually takes this a step further with two slits and two different grades of rubber to act on different areas of the frequency spectrum. Other delights in the box include a proper setup and instruction manual and a very nicely made plastic alignment gauge which aid easy arm base positioning and setup.

The TA-110 can be used with a wide variety of cartridges in its standard headshell, but is also

eminently suitable for Ortofon's increasingly wide range of SPU pickups, thanks to its two part counterweight. If further balance mass is required, the supplied auxiliary weight is simply slipped onto the rear of the standard weight and the second set of calibrated tracking force figures used when dialling in the requisite playing weight. The auxiliary weight has rubber o-rings in its internal diameter, so it fits securely and easily but without any risk to the superb finish of the arm. Simple, but effective.

Also included with the TA-110 is an Ortofon LH-2000 headshell, and the arm lead supplied is Ortofon's 6NX-TSW1010 pure copper double shielded cable. Given that these two items retail for £70 and £220 respectively and factoring in all the other worthwhile improvements to be found both adorning the arm and tucked inside that lovely box, suddenly the price hike over the SA-750D doesn't seem quite so heinous after all.

Furthermore, although a cursory glance might lead one to believe that the SA-750D and TA-110 share most common parts, closer inspection reveals this not to be the case. The base of the arm that supports the

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ROGUE AUDIO 98 MAGNUM PRE AMP
VTL PRE AMP (DAVID MAMLEY DESIGN 1 OWNER)
ROGUE AUDIO 66 MAGNUM REMOTE PREAMP (ONE OWNER FROM NEW)
ANTIQUE SOUND LABS LJO1 PRE AMP/HEADPHONE AMP
ANTIQUE SOUND LABS MINI PHONO (2 BOX WITH NOS MULLARD VALVES)
WORLD AUDIO DESIGN KT-88 INTEGRATED VALVE AMP (WAD BUILT)

SOLID STATE

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KRELL EVOLUTION 402 STEREO POWER AMP ONE OWNER BOXED
OENON PMA-QS10M 30 KILO INTEGRATED & MATCHING TU-OS10 TUNER
VERY RARE CHAMPAYNE GOLD FINISH CAN SPLIT
KRELL KAV 300R ULTRA RARE 3000 AMP/TUNER (E3950 ONE OWNER FROM NEW)
JEFF ROWLAND MODEL 3 MONOBLOCKS
JEFF ROWLAND COHERENCE-1 2 BOX PRE C/W PHONO STAGE
PASS LABS ALEPH P PRE AMP
MCCORMACK DHA-125 POWER AMP (1 OWNER FEW MONTHS USE (E22007)
PATHOS INPOWER CLASS A HYBRID MONOBLOCKS (SUPERB 83K7)
H-CAT 12-B AMERICAN PRE AMP WITH WTC CONTROL (E2800)
H-CAT P-12A AMERICAN PRE AMP (E25007)
ROKSAN S1.5 POWER AMPS 2 OFF EXCLT CONDITION RARE
MUSICAL FIDELITY TRI-VISTA-300 MONSTER INTEGRATED
MERIDIAN 502 PRE AMP ONE OWNER
MERIDIAN 557 PRE AMP ONE OWNER FROM NEW
MERIDIAN 557
ADVANTAGE 1200 INTEGRATED AMP (2K7)
DENON AVC A11 SR AV AMP GOLD (E2K ONE OWNER)
DPA ENLIGHTENMENT (NEW OLD STOCK-ULTRA RARE)
DPA THREE BOX PRE AMP EXCLT
DPA 50S PRE AMP C/W PHONO STAGE
DPA 50S POWER AMP & CABLES (ONE OWNER LITTLE USE)
DPA 50S POWER AMP & CABLES
ALCHEMIST FORSETTI 2 BOX PRE RCA/XLR (ONE OWNER)
MUSICAL FIDELITY DOCTOR THOMAS POWER AMP
MUSICAL FIDELITY MA-50 MONOBLOCKS
CLASSE SIX-L TWO BOX PRE AMP ONE OWNER
ROTEL RSP9018 PROCESSOR ONE OWNER (E15007)
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B&W 801 MATRIX SERIES-2 MONITORS IN WALNUT FABULOUS!
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MARTEN MILES CHERRY (8K+ NEW ONE OWNER FROM NEW)
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BOLZANO VALLETRI BV3003 & BV SUBWOOFER FANTASTIC!
PODIUM 1s FEW WEEKS USE ONLY (E60007 NEW)
HARPER QUARTETO FABULOUS FLOORSTANDERS (E4000)
MIRAGE M18I BIPOLAR GIANTS (E6500) (ONE OWNER FROM NEW)
AURUM CANTUS MUSIC GOODNESS (E2500)
THEIL CS 1.5 (ONE OWNER FROM NEW)
AURUM CANTUS VSM GLOSS BLACK (E1700)
CELESTION A-2 SANTOS ROSEWOOD
CURA CA-30 FLOORSTANDERS (E3000 ONE OWNER FROM NEW)
AURUM CANTUS LEISURE 3 SE (LAST PAIR E1350)
AURUM CANTUS BLACK ORCHID (LAST PAIR E1300)
SMELL TYPE-C MKIV AMERICAN WALNUT
AURUM CANTUS LEISURE 3SE
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VINYL

SME HIS TONEARM WITH SPARE WAND
VPI JMW-9N TONEARM
NOTTS ANALOGUE MENTOR ARM (LITTLE USE)
MISSION 774 TONE ARM UPGRADED LEAD
EMINENT TECH MODEL 2 AIR BEARING LINEAR TONEARM
LINN LP-12 CIRCUS/TRAMPOLIN/WALLHALLA (JUST SERVICED)
DENON DP-1200 LTD./SHURE CARTRIDGE DIRECT DRIVE CLASSIC
NOTTS ANALOGUE MENTOR
SUGDEN OPTIMA MM/MC PHONO STAGE
ANTIQUE SOUND LABS MINI PHONO (2 BOX WITH NOS MULLARD VALVES)
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EX.DEM E350
EXCLT E695

AS NEW/BOXED E675
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MINT E1395
MINT/BOXED E1395
VGC E1795
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cueing lever and arm rest is thicker, more solid and less resonant and the plating of the whole arm is much thicker, smoother and has a far more deep and lustrous shine than its cheaper cousin. In fact the SA-750D looks a bit dowdy alongside it!

SOUND QUALITY

The Ortofon was installed onto my Garrard 301 with both Ortofon 2M Black and Kontrapunkt b cartridges and listened to over a period of a good few weeks after the Jelco had been resident there. As soon as stylus hit groove, I was surprised and pleased to hear that the TA-110 took musical performances to a notably higher level. It sounds like a very well developed design in the way in which it simply cuts through the grain and mushy present in poor pressings and recordings to really cut to the chase and deliver the goods.

At the bottom end, bass from the TA-110 was firm, beautifully extended and magnificently detailed, ensuring that the whole performance was anchored in a firm and stable foundation. Bass lines sat perfectly within the mix, neither becoming overbearing nor shrinking off into the background in a hesitant manner. The Ortofon seemed perfectly able to judge how much punch to offer and did exactly that, so that the likes of Bob Marley had my floorboards vibrating in sympathy but yet softly played classical or jazz tracks skipped along with a fleetness of foot that made the reggae bombardment a distant memory.

This sense of couthness and ease carried itself throughout the midrange and right into the upper registers of the treble. Even better was the fact that, at no point did the TA-110 show any sign of losing control, no matter what sort of input it was fed. 'The Day That Never Comes' from Metallica's 'Death Magnetic' twelve inch single box set gave the bass drivers in my loudspeakers a splendid workout and the arm threw out the full force and

fury of the track with consummate ease, yet it did nothing to disguise the obvious distortion inherent in the track thanks to the appalling mastering foisted upon this otherwise excellent album. Equally, though, this aberration did not spoil the music underneath – the Ortofon simply pushed the bad bits of the pressing aside neatly and concentrated on maximising the enjoyment of the good.

With this in mind I eagerly cued up some classical and was not disappointed by what I heard. The sense of anticipation as Ravel's 'Bolero' built up from barely a whisper to its magnificent crashing crescendo had me on the edge of my seat, bouncing up and down like a child on Christmas Eve waiting for Santa! As things took off, the TA-110's soundstage seemed to physically grow in stature rather than just turning up the loudness level, pulling the orchestra right out into my room. My only slight complaint here, and on one or two other classical recordings, was a slight sense of veiling over instruments at times. In one piece, two violins were sharing lead duties and the TA-110 made sure that they were reproduced with passion and civility but yet, at the same time, they both sounded like identical instruments, whereas I am used to hearing one exhibit a subtle but noticeable richness of tone over the other with both the SME 309 and Audio Note Arm Two/II arms I have been using recently.

At the very top end, however, the TA-110 is as pure and clean as could be wished for. It has an over-riding velvety nature but its insight is formidable, yet always with an underlying purity and sweetness which makes it an

REFERENCE SYSTEM BOX

Garrard 301 turntable
Ortofon 2M Black and Kontrapunkt b cartridges
Sondex DE-1 and Anatek MC1 phonostages
Naim Supernait amplifier
Modified Ferrograph S1 loudspeakers

easy and captivating listen; it really does sound highly developed and 'expensive' for want of a better phrase! The civility and sheer purity that it conveys are usually found in much more expensive designs, and the TA-110 offers a tantalising slice of true high end vinyl life.

CONCLUSION

It is clear to me that, whilst the Jelco family heritage may not be all that well disguised physically, the Ortofon TA-110 arm is a very different beast to those arms with which it shares basic DNA. The changes made by Ortofon to its basic design and the high quality of the trimmings with which it is supplied elevate its performance to a much higher level. In fact, the only real weakness I can see facing the TA-110 is that its price puts it amongst some very strong competition including the likes of Rega's RB1000, the SME M2-9 and, my personal favourite at this level, the Audio Note Arm Two/II.

In the face of such competition, however, the Ortofon puts up a sterling fight and gains ground over some by virtue of the superlative completeness of its package and its ease of setup and wide compatibility thanks to its detachable headshell design. If you are in the market for a £1000-ish arm, you use an SPU or value the ability to change cartridges with ease and speed, then I think you need look no further. However, even if these facilities are of less importance to you, I would still place the TA-110 high on your audition list; it has some very enticing strengths.

VERDICT

A superbly made and finished arm that offers a sound that is as polished and classy as its finish.

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FOR

- taut bass
- superb clarity and composure
- smoothness and insight
- build and finish

AGAINST

- slight midrange sterility

MEASURED PERFORMANCE

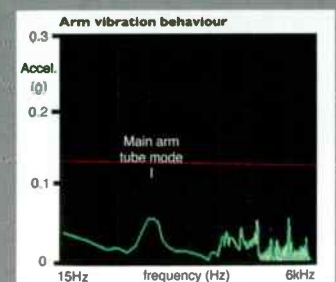
The Ortofon TA-110 arm has a first bending mode at 220Hz, a typical but fairly low value suggesting it is less stiff than many modern types, expected from its standard pipe construction and heavy headshell. However, it is well damped by the rubber insert, so the main mode is well suppressed and the usual related third order mode is absent. There are no other discrete modes below 1kHz either, giving the TA-110 an unusually clean vibrational spectrum.

The workmanlike sturdy headshell well resists high frequency ringing, better than most and this results in a clean spectrum above 1kHz. This usually results in smooth sounding

treble.

In all Ortofon's anti-vibration strategies in the TA-100 work well, providing a conventional looking and easy to use arm that performs up with the best, measurement suggests. NK

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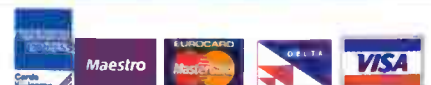
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AUDIO PHYSIC Spark One, smallish, sensitive floorstanders, excellent, black, suit lowish power valve amps (£2k) £500. Graaf WBF Two line pre, valve, with MM/MC, immaculate, triple packed, 10 pairs in/out, (£2.5k) £500. Good buy. Melody, piano black, high power quality valve monoblocks, RCA and balanced inputs, intended for panel speakers, almost new condition, unmarked (£8.2k) £1800. Triple boxed bargain. No profiteering. Shalom, a good year. 07951 553091 (London N.W.)

ARCAM 10P3 power amp, 3x 100w, as new, boxed, £400 + postage. Russ Andrews RGB Scart lead, 1 metre, as new, list £189, £60 + postage. Tel: 01772 812 992

NAKAMICHI TX1000 turntable. Self centering, ultra rare. Cost new £5000. Great condition, £4500. Wharfedale corner speakers, extremely rare. Offers for large 15" bass speakers. Email: michael@gypsytower.com

MISSION 753 speakers, black ash, 4 drivers plus tweeter, 3 way spikes, £200. Also Yamaha decoder, Dolby 5.1, black, DSPE 390, mint condition, £50. Tel: 01455 220214 (Coventry)

EXPOSURE 2010S CD player for sale. In silver. Excellent sound and condition. £170. Tel: Andy 01484 427 426

MILLER KREISER sub speaker. Active powered V75 MkII. Cost £600, £350. Mission surround sound theatre centre speaker. Also two rear speakers. Blach ash. One owner. Any demonstration. Mint. £150. Tel: 01455 220214 (Coventry)

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CYRUS CDXT SE2 Transport for sale quartz silver, unmarked, with box, manual and remote £900 .Also matching Cyrus PSX-R power supply for £300. Email: brianpyplacz@yahoo.co.uk or mobile: 17903 422255.

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TRICHORD DINO Mk2 phono amplifier complete with 'Never Connected Dino+' Gen 2 Power Supply and High Performance Power Interconnect Lead. All excellent condition £500. email gz00@gmx.com, tel: 07972533063 (Cumbria).

FOR SALE Mordaunt Short MS20i Pearl Edition (black) bookshelf speakers - £40 Partington speaker stands (aluminium finish) - £40 Bill (Bromley, London SE) 0208 464 9055

FOR SALE Rare Sony T-CK88b (early ES / Esprit) Tape deck. Very good condition. For Sale @ £400. Mobile 0787 571 9136 Email: Lesiegriffiths@fastmail.fm

ROTEL RA04SE amp in black, immaculate, boxed, less than one year old £175. Bowers & Wilkins 685 Loudspeakers in light oak, immaculate, boxed £195. Tel 07503197807 email seanj8@orange.home.co.uk

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FOR SALE a pair of Quad II Forty Monoblock power amplifiers fitted with matched cryogenic KT88 valves and less than 20 hours use in 'as new' condition and supplied in original boxes and packaging. £2950 ono. Tel. Steve 01268 785808 (Rayleigh Essex), Mob: 07505042660.

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PAIR LEAK TL12+ grey monoblock valve amps, just serviced, excellent condition, great sound! User manual included £650. Mission Cyrus Dacmaster and Preamp £125 each. John 07515284997. (Suffolk)

TEAC TI TRANSPORT, faulty laser but complete with Trichord Clock 4, N.C Power Supply (cost £320), in great condition, boxed with remote and instructions. clock is transferable. Bargain £225.00. Tel Dave 07884 430988, 01260 280033.

MARANTZ CD17 KI Sig mk1 in black for sale, mint, no box, cost £1300. Stunning player, battleship build. Superb as a transport. £400

MICHELL ISO MC Phono preamplifier and Hera Power supply. All excellent condition, £200. email gz00@gmx.com, tel: 07972533063 (Cumbria).


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WANTED FAULTY or non working Quad 34 and 44 preamps, Quad fm3 tuners. Contact Mike 01758 613790.

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CLEARAUDIO SMART MATRIX PROFESSIONAL RECORD CLEANING MACHINE £995.00

Record cleaning machines come in many shapes and sizes and a new boy on the block is the Smart Matrix Professional from German manufacturer Clearaudio. This replaces the Smart Matrix which I reviewed a couple of years ago and have been using ever since.

This new model is a fresh design from the ground up, and is manufactured in-house at the

Clearaudio factory in Erlangen. It features the vacuum turbine and gear motor from the more expensive Matrix series, housed in a newly designed, heavily damped case which measures a compact 345 x 345 x 205mm and weighs in at 12kg.

Operation is simple. The record is clamped to the platter and the top of the three buttons on the front is pressed to make the platter rotate clockwise. A small amount of the supplied Pure Groove cleaning fluid (not suitable for shellac or acetate records since it contains alcohol) is put onto the disc and spread using a felt topped plastic brush. To ensure thorough coverage the disc can be made to rotate anti-clockwise by pressing the middle button on the machine (whilst the top one is still depressed). After this the suction arm is rotated to sit over the disc and the vacuum is actuated by pressing the bottom button.

The first thing I noticed was how much quieter than its predecessor this machine is - I felt no need to use earplugs during cleaning sessions (the factory quote a 60 - 65dB noise

level) and also how much quicker it was at drying a record. I generally found two to three rotations in each direction were sufficient, whereas the previous machine required three to four to achieve the same result. This may not sound much of a difference, but did increase the speed of the process so that I averaged about 18 records in an hour rather than 15.

It was very effective, removing dirt and dust deposits from the grooves, leaving a very quiet background to the music on all but really dirty records, which required a second cleaning. Even new records benefitted, since the mold release agent (which stops the disc sticking to the stampers) is rarely properly cleaned off at the pressing plant.

Although £995 seems a lot of money, this machine is very effective, very well built and carries a three year guarantee. The resultant clarity, definition and quiet background of your records makes it a worthwhile investment. **TB**

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www.audioreference.co.uk

soundbites

FURUTECH FT-809 TORQUE GUARD BINDING POSTS £110.00 PER PAIR.

Over the years it has generally become accepted that cables can have a positive effect upon the sound of a system and this knowledge has extended to take into account the effect of the plugs attached to them. Japanese high-end manufacturer Furutech have taken this a step further and investigated the sonic effects of the terminals at the back of loudspeakers and have introduced the FT-809 Torque Guard Binding Posts.

Most speaker binding posts use brass in their construction even though this is not necessarily the best electrical conductor, it is chosen because it is a durable material and will not deform when tightened up. Copper is a better conductor but too soft to be used in these applications. Furutech have got around this problem with a cleverly designed binding post that uses Alpha grade pure copper as a conductor, mounted inside a polycarbonate housing. The secret of these

terminals lies in the construction of the casing which has a ratchet mechanism that will not allow them to be overtightened and crush the connectors.

These are quite big, with a maximum diameter of 30mm and an overall length of 79mm, so will not fit into the space provided on some speakers by the more conventional smaller terminals. The just fitted onto the back of the Chario Ursa Majors with only a couple of millimeters between them. In this instance fitting involved removing the cones to get access to the terminal mountings. Electrical connections can be either soldered or crimped depending upon the type of termination used in the crossover.

I can honestly say that I was somewhat stunned at the improvement to the sound that these terminals made. It was akin to the difference between using el-cheapo 79 strand speaker cable compared to one costing £60 or more per metre. All aspects of the sound from the deepest bass to the highest treble gained in definition, shape, tonal

colour and texture. The soundstage deepened and seemed considerably better lit, and the timing and drive to the music seemed greatly enhanced.

The Charios currently retail in their native Italy at Eu7999.00, so an outlay of £440 to upgrade the sound in such an easy and sonically obvious way, can only be regarded as money well spent and excellent value. **TB**

www.soundfoundations.co.uk
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NEXT MONTH

*Pictured
Quadral Vulkan VIII*

With winter's chill upon us – global warming permitting – you can rely on Hi-Fi World to bring some warmth and light to lift the gloom from February. Here's some of what we hope to bring you.

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Rothwell Rialto phono stage
Goldring 1022 GX cartridge - a budget MM special
Tellurium Q phono stage

DIGITAL

USB-to-S/PDIF convertors - who said all digital
sounds the same?
HENLEY SOUNDBOX DS - a natty new network player
NAD VISO - new technology media player from NAD
Mac Mini Special - hack your Mac

AMPLIFICATION

Cambridge 650A gains exotic bits
WAD KEL34 valve amplifier kit

FEATURES

Buying high resolution music on-line
Replacing CD - a media player for tomorrow

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Nakamichi Dragon

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15 Audio	106
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Basically Sound	100
Billy Vee	104
Black Rhodium	20,24
Brennan	16
Classique Sounds	100
Eclipse	108
Emis Audio	40
EnjoyTheMusic.com	118
Fidelity Audio	96
Furutech	24
Heathcote Audio	106
Henley Designs	50,80,88
Hi-Fi Rack	72
Hi-Fi Sound	98
Hi-Fi Wigwam	104
Ian Harrison	102
Icon Audio	64
Inspire Hi-Fi	44,60
Isokinetik	96
Mantra Audio	102
Mei-Xing Electronics	20
Midland Audio Exchange	104
Music First	104
Musical Fidelity	84
Origin Live	86
Pannell & Partners	24
Q.A.T	6
Retro Reproduction	102
Rock Solid Sounds	104
Sevenoaks	109,110,111
SME	40
Sonik Circle	96
Sound Hi-Fi	82
Soundfoundations	IFC
TelluriumQ	20
Turntable World	98
Usher	IBC
World Design	118

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11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30

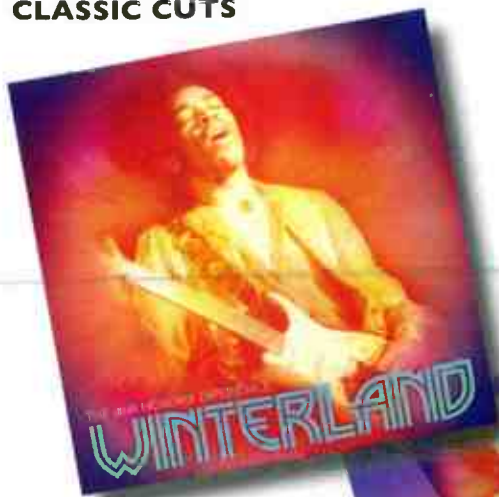
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THE JIMI HENDRIX EXPERIENCE WINTERLAND 2011

"there's a sense of clarity and intimacy that is rarely heard on a live album."

Performed by The Jimi Hendrix Experience, this pizza-style box set features a selection of live cuts from three shows over three days at Winterland in San Francisco, which commenced on 10 October 1968. Taking eighteen songs as his base, Hendrix would visit classic songs like 'Purple Haze' and 'Hey Joe' but also turned to more obscure takes such as 'Manic Depression' which he rarely played live. All of this activity occurred just a couple of weeks before the release of his third album, 'Electric Ladyland'.

Contrary to what you might have read elsewhere, this is not the first time that this music has ever appeared on the shelf. A few tracks appeared in the 'Live At Winterland' collection in 1987, but this is the first comprehensive overview of the event.

This eight LP vinyl version mirrors the 4CD box set which is also available to buy now, taking the best of the concerts and featuring tracks from the first and second shows. The fourth disc from the CD version is intriguing because the vinyl version varies the running order. For example, 'Red House' is on track four within the CD version but track three on the vinyl version. The principle reason is due to the space limitations of the vinyl format. For example, because 'Red House' spans a whopping fifteen minutes and twenty-one seconds, it demands a full side of a single piece of vinyl. Hence, the latter stages of this box set required a selection of juggling to fit everything on successfully. That

said, everything that resides on the CD box set is packed on this eight LP vinyl collection. That includes a full length interview on the B-side of the eighth disc in which Hendrix talks about his influences but also recognises his own place within the musical pantheon and the Winterland performances, "Take the show tonight. Nothing was put on. It was exactly what you felt," he said.

We were fortunate that all of the music from this concert was recorded by the original sound engineers, Bill Halverson and Wally Heider. As such, Hendrix and the Experience were on fire, the group being at the peak of their performing powers with both passion and energy searing across a stage that struggled to restrain them. In contrast to that intensity, there is also a sense of relaxation to this music. That's partly down to the length of time Hendrix had to dwell upon his art. After all, this was a man who travelled constantly, packing and unpacking, moving from gig to gig. This show, spanning days, allowed him to dwell upon his technique for a longer than normal period which produced a more considered performance in which he was able to concentrate.

Sound quality on this vinyl pressing is excellent. There's a sense of clarity and intimacy that is rarely heard on a live album. Hendrix is heard here as a man who is totally in control of his powers. Right from the 'warm up' excursion into 'Tax Free', you bathe in a molasses-like

exploration of the electric guitar. It's almost as if Hendrix is reacquainting himself with an old friend. His fingers stretching the life blood strings of his guitar. You can hear that he is making a mental connection with his music. The sonic feedback, distortive resonances and heavy, grinding nature of the Hendrix style makes you believe that this man is actually playing electricity. Energy flows through his fingers, lights up his expressive face and fizzes through the fuzz of his trademark afro.

Another track, 'Sunshine Of Your Love' is a free flowing exploration that encapsulates the emotion of this classic Cream song. It's more than a respectful celebration, however, as Hendrix simultaneously rushes to cover the vocal and instrumental backing via his flailing hands on a single guitar. It's a feat of sonic origami.

Often, live albums and, more so, live box sets can be seen as exploitative, ripping off the paying customer, praying on the fan's leaning to buy anything by their musical heroes while delivering nothing more than a poor sounding, melange of lazy jamming and mind numbing self regard. Here, we have the opposite, all three musicians are heard at their best, giving their all, playing for the crowd and themselves, flaunting their creativity and, well, showing off with a smiling abandon. If you're a Hendrix fan – buy it. If you're an audiophile – buy it. If you love the guitar – buy it. Can you sense a theme here? **PR**

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