

HI-FI WORLD

FEBRUARY 2018

UK £4.50

www.hi-fiworld.co.uk

FREE READER CLASSIFIED ADS IN THIS ISSUE!



PMC TWENTY5.24
loudspeaker



AURALIC ALTAIR
streamer/dac/pre-amp



T+A G 2000 R
turntable

ROHDE & SCHWARZ
MEASUREMENT



EXCLUSIVE!

LUXMAN LX-380

hybrid valve amplifier



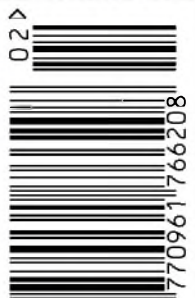
ASTIN TREW AT2-2100 INTEGRATED AMPLIFIER **EXCLUSIVE!**
KEF LS50 WIRELESS LOUDSPEAKERS
FiiO Q1 Mk2 2ND GEN HEADPHONE AMPLIFIER
PRO-JECT PHONO BOX BT E **EXCLUSIVE!**

COMPETITION



WIN A PAIR OF
MARKAUDIO SOTA GESTIB
LOUDSPEAKERS WORTH £1950!
(UK ONLY)

FEBRUARY 2018



9 770961 766208

LETTERS - THE BEST WINS A PAIR OF TANNOY MERCURY 7.2 LOUDSPEAKERS! (UK ONLY)





It's got to be Perfect

Your music deserves quality cables



We go to great lengths (and precise tolerances) to produce our class-leading cables. From solder and grubscrews upwards, everything is rigorously examined.

At the higher end of things, we build strictly to order. Every Signature, Sarum T and ChordMusic product is tested visually, electronically and audibly before being signed-off by senior staff.

All this care and attention helps maintain our international reputation for realistically priced audiophile interconnects and speaker cables - featuring our unique Super ARAY conductor technology and advanced (Taylor®) shielding materials, backed-up with over 30 years of innovation and experience.

Designed and built in England by music lovers since 1985. Enjoyed by music lovers all over the world.

Demonstration cables available from all good Chord Company retailers. Find your nearest at: www.chord.co.uk



"the difference will be immediately evident, such is the transparency of the interconnects and loudspeaker leads."

Chord Signature Range
Hi-Fi World Dec 2015



"It's rare that something truly different comes along in the world of loud-speaker cables - but Chord's new Sarum T is just that."

Chord Sarum T Speaker Cable
Hi-Fi World Dec 2017

THE
CHORDTM
COMPANY



welcome

EDITOR

Noel Keywood
e-mail: editorial@hi-fiworld.co.uk

DESIGN EDITOR

Faiza Chunara
tel: +44 (0) 20 8206 6018
e-mail: adproduction@hi-fiworld.co.uk

PRODUCTION EDITOR

David Noble
tel: +44 (0) 20 8206 6019
e-mail: classifieds@hi-fiworld.co.uk

SALES MANAGER

Louise Palfrey
mob: +44 (0) 7917 047 548
e-mail: louise@hi-fiworld.co.uk

ADVERTISING EXECUTIVE

Joanna Holmes
mob: +44 (0) 7958 602347
e-mail: joanna@hi-fiworld.co.uk

PUBLISHER

Noel Keywood
e-mail: publisher@hi-fiworld.co.uk

FREE READERS CLASSIFIEDS

tel: +44 (0) 20 8 206 6019
e-mail: classifieds@hi-fiworld.co.uk

SUBSCRIPTIONS

tel: +44 (0) 1442 820 580
fax: +44 (0) 1442 827 912
e-mail: hifiworld@webscribe.co.uk

PHOTOGRAPHY

David Noble
tel: +44 (0) 20 8206 6019

WRITERS

Paul Rigby, Jon Myles, Martin Pipe,
David Tutt



They've all been looking in the wrong place perhaps. Whilst loudspeaker manufacturers vie with one another to deliver a knockout blow to passing bats, to increase sales in Transylvania perhaps, PMC voice their loudspeakers the other way around – to deliver obvious bass. Perhaps that's where their rivals should also be looking; at least it would seem so after listening to PMC's twenty5.24 loudspeakers

Jon Myles reviews on p17. These are bass machines worth hearing. By happy happenstance – I think I can say! – the

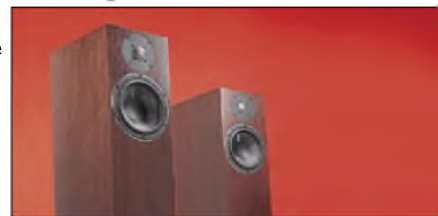
PMCs worked wonderfully with Luxman's LX-380 hybrid integrated valve amplifier I review on p10. This gorgeously built and finished amplifier doesn't boast massive bass in its specification, but PMC's twenty5.24s were just the solution. From not so many wonderful valve Watts I was regaled by a powerful delivery, full of life and dynamism from this pairing. You really have to listen to a uniquely different product like the Luxman to fully appreciate how lush and lovely music can sound.

I could almost use that description for the sound that issued forth from FiiO's headphone amplifier when playing DSD from an iPhone, see p33. Yes, I never quite imagined doing this: somehow an iPhone and DSD digital don't go together, at least the way I see it. But by using a slew of clever techie ideas they can be persuaded to get along very well, to deliver quite extraordinary sound quality from the pocket.

Why are people talking about cassette again? Surely it isn't going to make a comeback like the LP? Well, it could be. As vinyl sales continue to climb around the world and are now overtaking those of CD, people are eyeing the next big thing it seems. And I'm eyeing my Nakamichi: time for a service methinks. Our Readers Letters, on p28, continue to divine the future I could say.

Whatever is happening we cover it in Hi-Fi World. Including going backwards as we go forwards!

Noel Keywood
Editor



hi-fi world

Audio Web Publishing
Studio 204,
Buspace Studio,
Conlan Street,
London W10 5AP
www.hi-fiworld.co.uk

verdicts



OUTSTANDING

EXCELLENT

GOOD

MEDIOCRE

POOR

VALUE

amongst the best
extremely capable
worth auditioning
unremarkable
flawed
keenly priced

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

Go to our website www.hi-fiworld.co.uk to buy an electronic version of this magazine, individual issues, back issues or a subscription.

Distributed by Select Publisher Services Ltd. P.O. Box 6337, Bournemouth, BH1 9EH UK Tel +44 (0) 1202 586848
Printed by Precision Colour Printing Halesfield 1, Stirchley, Telford TF7 4QQ, United Kingdom 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

All unsolicited submissions and goods are at the owner's risk. We accept no responsibility for such submissions, nor do we undertake to return them.
No material may be reproduced from this magazine without the publisher's written permission. © Audio Web Publishing Ltd

contents



23

ASTIN TREW AT2-2100
INTEGRATED AMPLIFIER



51

KEF LS50 WIRELESS LOUDSPEAKERS



80

AURALIC ALTAIR STREAMING DAC



84

T+A G 2000 R TURNTABLE

LOUDSPEAKERS

PMC TWENTY5.24 17

Transmission line loading delivers big sound from a slim cabinet, says Jon Myles.

KEF LS50 WIRELESS LOUDSPEAKERS 51

KEF's LS50 standmounts go active - with impressive results. Jon Myles listens in.

DIGITAL

FiiO Q1 MK2 2ND GEN HEADPHONE AMPLIFIER 33

Noel Keywood thinks FiiO's new headphone amplifier is a true bargain.

AURALIC ALTAIR STREAMING DAC 80

A DAC/streamer/pre-amp in an affordable package. This could be the heart of a great system explains Jon Myles.

AMPLIFICATION

LUXMAN LX-380 HYBRID VALVE AMPLIFIER 10

Luxman's new LX-380 harks back to the past in terms of looks - but this valve/transistor hybrid is a sonic joy says Noel Keywood.

ASTIN TREW AT2-2100 INTEGRATED AMPLIFIER 23

Astin Trew's latest integrated amplifier has power with a silky sound, says Jon Myles.

CHORD TTOBY POWER AMPLIFIER 39

Martin Pipe finds Chord Electronic's TTooby power amplifier is something special.



10

LUXMAN LX-380 HYBRID VALVE AMPLIFIER

FEBRUARY 2018

VOLUME 27 : NO. 12

CABLES

57 QED XT25 LOUDSPEAKER CABLE

A budget loudspeaker cable which punches above its weight. Jon Myles takes a listen.

FEATURES

36 DSD FEATURE

Playing DSD. Noel Keywood explains how – and why.

MAINS

21 TITAN AUDIO STYX POWER BLOCK

A power block to improve your system - without breaking the bank. Jon Myles says why.

OLDE WORLDE

59 JVC KD-720

Martin Pipe looks back at a budget cassette deck that took on the likes of Nakimichi's high-end players.

VINYL

82 NEWS

All the latest and greatest vinyl releases for you, from the pen of Paul Rigby

84 T+A G 2000 R TURNTABLE

A German-engineered turntable with MC cartridge and a beguiling sound. Noel Keywood spins it up.

89 AUDIOPHILE BOOK

Paul Rigby casts his eyes over a lavish book detailing the best of Latin American and Canadian music between 1963 and 1976.

91 PRO-JECT PHONO BOX BT E

A phono stage with Bluetooth? Unusual but effective finds Martin Pipe.



REGULARS

7 NEWS

Words from the world...

28 MAIL

Five pages of your views, wonderful as always...

43 COMPETITION

Your chance to win a pair of MarkAudio Sota Cesti B loudspeakers.

44 WORLD STANDARDS

Updated guide to the latest and greatest hi-fi hardware on sale

54 SUBSCRIPTIONS

Ensure your copy every month and save money too!

62 AUDIOPHILE CD

Paul Rigby rounds up the latest audiophile CD releases.

74 WORLD CLASSICS

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

65,67,69,71,73 OPINION

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

86 DIAL-A-DEALER

A comprehensive guide to UK hi-fi retailers.

95 CLASSIFIEDS

This month's second-hand bargains.

96 NEXT MONTH

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

97 ADVERTISERS' INDEX

98 CLASSIC CUTS

Paul Rigby takes a look at The Alan Parsons Project seminal Eye In The Sky album.



Tellurium Q®

10 products of the year and most wanted components in just 2 years by preserving relative phase relationships in a signal



Introducing the new award winning Black II speaker cable

"Tellurium Q have surpassed themselves here. It is often said that all cables colour the sound of a system to some extent, but the Silver Diamonds do it to a lesser extent than any other product I've heard so far."

John Myles, HiFi World

"If you're looking for a major jump in your system's performance, I'd suggest buying a pair of these instead of considering a hardware upgrade. Before you write this advice off to cable delusion, expectation bias, or the recent Mercury retrograde phase, please take note: I have never said this in TONE's 11-year history"

Jeff Dorgay, Tone Audio

"Well, I have just stumbled upon a speaker cable that I'm very tempted to put in a class of its own"

Mono & Stereo



facebook.com/telluriumq

telluriumq.com

+44 (0)1458 251 997



email:news@hi-fiworld.co.uk

news



PHANTOMS OF THE OPERA

Those clever people at Devialet have pulled off something of a coup by opening a new store in Paris's famous Palais Garnier opera house – usually off-limits to commercial organisations.

The store features the French brand's full range of amplifiers and active loudspeakers and is also the sole stockist of a special edition of the company's Phantom Gold 'speaker named Devialet Gold Phantom Opera de Paris. It features a gold finish by the famous Ateliers Gohard – the people responsible for the restoration of the gold at the Palais Garnier and on other famous French buildings.

Hi-Fi World visited the store recently and was treated to an array of 16 Phantoms playing Bach and Pink Floyd – a truly stunning experience. So if you're heading to the French capital pop in for a listen.



LEEMA PULSE IV

Anyone looking for digital, analogue and Bluetooth capability in an amplifier might do well to take a look at the new Pulse IV from Welsh manufacturer Leema.

Priced at £2295 it has a claimed output of 80 Watts per channel but also features an MM/MC phono stage, seven digital inputs fed into a 32-bit/384kHz-DSD capable Sabre DAC as well as being able to handle aptX Bluetooth from smartphones, tablets, computers and laptops.

The specifications look impressive at the price. We hope to bring you a review soon but for further details go to www.leema-acoustics.com.



BACK IN BLACK

It's big and it's black. Actually it is blacker than ever. KEF has announced a special edition of its award-winning R700 floorstanding loudspeaker.

Priced at £2200 the Black Edition is limited to 500 pairs and features a new deep gloss finish to the cabinets as well as a black trim ring around the Uni-Q driver and matching chrome plated terminals and feet.

The loudspeakers are available now and you can find out more at www.kef.com.

VINYL SURGE

The vinyl revival continues – with industry body the BPI (British Phonographic Industry) predicting UK vinyl sales will top 4 million for 2017.

That is a significant increase on the 2016 total of 3.2 million which in itself was some 66.5 per cent up on the previous year.

Top-sellers are said to be Ed Sheeran's 'Divide' album with the ever-bickering Noel and Liam Gallagher's solo efforts following closely behind.

You cannot help but feel that if Oasis ever reformed those sales would go through the roof (but we aren't holding our breath here).



NEAT IOTA XPLORER

County Durham's expert loudspeaker manufacturer Neat is following up the success of its Iota Alpha mini-floorstander with a larger version.

The Iota Xplorer uses the same basic configuration of the Alpha – a top section housing Neat's own PI-R3 170mm bass/midrange drive unit alongside an Air Motion Transformer (AMT) tweeter in a horizontal array – but has an enlarged lower cabinet incorporating two bass drive units. One unit is located on the bottom panel, facing the floor, whilst the second is located internally, directly above the first, in a sealed isobaric arrangement, handling only low frequencies and acting as an integral subwoofer system.

For more information go to www.neatacoustics.com

WATER MUSIC

Not content with providing sound systems for the Bentley range of cars, Naim has now pushed the boat out by supplying bespoke audio solutions for luxury yachts.

The Salisbury-based company has joined forces with Plymouth's Princess Yachts to fit its hi-fi systems into their rather opulent vessels.

The custom-integrated Naim for Princess audio system is based around its range of Uniti all-in-one players with a Uniti Atom amplifier fitted in the yacht's sportbridge, saloon, cockpit and master stateroom.



LYRICAL BEAUTY

It's called Lyric – and take one look at it and you'll soon see the reason. Why? Well, it's a wi-fi loudspeaker with a 22-inch translucent screen that actually displays the lyrics to the song in real time when you stream from your smart device.

Not just that but the font and style of the display actually changes depending on the genre of music being played.

The Lyric connects to the internet to scan a database of 2 million songs (with more being added regularly) and if it cannot find the relevant ones displays random graphics.

Hand-built in Japan (with only 15 a month currently being produced) the Lyric employs two specially-designed co-axial drivers plus a passive bass radiator for the sound driven by a 40 Watt amplifier.

The price? A cool £4320. That said, it's certainly impressive. Hi-Fi World was given an exclusive demonstration of one in London recently and we came away rather taken with the sound quality and graphics.

Place this on a table or shelf and your visitors won't be able to take their eyes off it (we couldn't!).

Watch out for a review in a future issue of Hi-Fi World or go to www.lyric-speaker.com for further information.



ECM EMBRACES STREAMING

Jazz and classical music specialist label ECM has announced its catalogue has now been made available to subscribers of major music streaming services such as Tidal, Spotify, Apple Music and Amazon.

The roster includes significant releases from the likes of Keith Jarrett, Arvo Part and Jan Garbarek.

ECM

PRO-JECT ALL-IN-ONE

The vinyl revival has seen a number of new budget turntables arrive on the market – but Pro-Ject's Juke Box E could be one of the most interesting yet. Here's a deck with a built-in moving-magnet phonostage, Bluetooth receiver pre-amp and power amplifier, all housed in one box. Simply add a pair of loudspeakers and you are away.

The unit is based on a modified version of the Pro-Ject Primary with the same aluminium tonearm and an Ortofon OM 5E cartridge. The amplifier has an output of 50 Watts. It is available now priced at £370.



ROBERTS RADIO

Iconic British radio manufacturer Roberts has introduced a new model – featuring Bluetooth connectivity alongside internet radio, Spotify Connect, DLNA streaming and USB input.

The Stream 94i also has tone controls and a six-position equaliser to allow users to tweak the sound – useful if moving the unit from room to room.

It's available now priced at £200. See www.robertsradio.com/uk for more information.

SONORO SOUNDS

German manufacturer Sonoro (not to be confused with Sonus) has announced a new range of affordable multi-room products.

The Sonoro Stream, Sonoro Relax and Sonoro Meisterstück offer a range of features and are priced at around £220, £330 and £900 respectively.

The Stream is an internet radio featuring both Bluetooth and wi-fi connectivity as well as in-built Spotify Connect for streaming music.

It uses a 7.5cm main driver with two passive radiators. The Relax is a more advanced version of Stream with the ability to store 10 Spotify playlists as well as 40 preset radio stations plus adding FM, DAB and internet radio.

The star of the show, though, is the Meisterstück – an all-in-one unit featuring four drivers and five Class D amplifiers which can play back from CD, USB or Bluetooth. More information is available at www.sonoro.de/en/.



NEIL YOUNG FREE STREAMING

Canadian music legend Neil Young has been an enthusiastic backer of high-resolution music – and now he's taken it a stage further.

He has released most of his back catalogue on-line to be streamed in either hi-res or CD quality.

The service is free for the moment and includes his music from the likes of *The Squires in 1963* to his new album *The Visitor* – available in full 24bit/192kHz resolution.

Other highlights include the seminal collections *Weld*, *Harvest* and *Ragged Glory* which are all available in CD-resolution quality. For die-hard fans there are also unreleased tracks available to listen to.

It's one interesting development in the internet streaming industry and we can't help wonder if other artists might follow suit. Let's hope so.

To sign-up for the music go to www.neilyoungarchives.com.



TEAC GOES COLOURFUL

Tired with plain black turntables? Teac may just have the answer in the shape of the TN-420 deck.

Undoubtedly colourful due to its tie-dye like finish which is achieved by a special printing process the belt-drive model also features an MDF chassis topped with an aluminium platter.

It also boasts both phono and line-level outputs as well as USB for recording vinyl to a computer or laptop.

It is available now priced at £330.

Go to www.teac.com for more information.





Its looks hark back to the past – but this new Luxman hybrid valve/transistor amplifier has a modern sound, finds Noel Keywood.

Pure Luxury

They don't make 'em like they used to – until you see the new Luxman LX-380 valve amplifier from Japan that I'm reviewing here. Japan went down the nostalgia road somewhat before the UK and this new amplifier mines Japan's not-so-distant past beautifully. It doesn't just look good, it feels solidly hewn and its controls are delicious to use. Luxman always produced great products – I've owned many – and this amplifier gets right back to the qualities that attracted me and so many others decades ago.

The LX-380 is not quite pure though: it is a hybrid. The pre-amplifier stages are solid-state; only the power amplifier is valve (tube) equipped, using 6L6GCs. These are

compact tetrodes considered good for 30 Watts in guitar amplifiers where overload is tolerated, but for around 20 Watts in everyday audio use where long life from lower anode volts is preferred – and indeed Lux make this point in their user manual, 'operating conditions of the output tubes having some allowance' they say.

So the LX-380 delivers 20 Watts per channel. It may seem feeble against the 100 Watts or more we expect nowadays, but in conjunction with sensitive floorstanding loudspeakers (90dB from 1 Watt) it is more than enough for very high volume. If you don't want to wake the dead then it will drive smaller loudspeakers nicely too but I'd recommend large standmounters as a

minimum for reasonably high volume coupled with strong bass.

I've seen worries about the unreliability of valve amplifiers, the expense of running them and what have you. Yes, power output valves do need replacement after a few thousand hours of use but 6L6GCs are plentiful and around £42 for a matched pair – not a king's ransom. Expect



around 3 years for three hours of use per day, every day – heavy going. Auto-bias makes bias adjustment unnecessary.

The LX-380 is very user friendly then: it is what it looks, an everyday integrated amplifier, built to standards long gone and with a sound only valves can give – easy going, free from transistor fatigue and with a capacious soundstage. The tubes are hidden and heat output is moderate, so everyone – including the cat – is safe.

Like any self-respecting valve amplifier the LX-380 is heavy, weighing 17.6kgs (39lbs). But it doesn't take up a lot of space, measuring 440mm (17.3in) wide, 403mm (16in) deep and 197mm (7.8in) high. Most of the weight lies in the two output and one mains transformer but the case is solidly built and Luxman don't skimp, using a chunky machined alloy fascia with a superb standard of finish. The control knobs and switches are likewise solid machined alloy, having beautifully smooth yet silent actions. I should mention that Luxman advise space be left around the unit for heat dispersal; I'd suggest 6in (15cms) or so above.

Although the volume control looks like a conventional motor driven (remote control) Alps, in fact it is an electronic attenuator with discrete resistors selected by relays operated from a normal volume potentiometer. This gives the feel of a volume control and allows a motor to be used to rotate the knob by remote control.

Such a system has the accuracy



A 6L6 output valve, sitting in a printed circuit board mounted ceramic socket – a common arrangement in modern valve amplifiers.



Our underside view shows large yellow high-voltage film capacitors and large resistors typical of valve amplifiers. Switching is carried out by sealed small-signal relays.

and quality of a resistive attenuator, including its immunity to overload, whilst also ensuring frequency response is unaffected by volume control position, as it unfortunately can be when a conventional volume control is used in a poorly designed circuit. To do this you must use logic to switch the relays – it is a complex but very purist way of changing volume.

Clever stuff then – electronically sophisticated and expensive to produce – but effective in theory and in practice our measurements showed. The volume control of the LX-380 is a great piece of modern audio engineering in an amplifier that's seemingly old by looks. This well illustrates what Luxman are offering here: the best of today with the best of yesterday. The past brought up to date.

Like all Luxman amplifiers this one carries a wealth of facilities. It has four Line inputs to accept CD, DVD players and what have you. They are very sensitive, suiting low output devices like low gain external phono stages and old portable players or analogue tuners with low output.

There is a phono stage for LP, front panel switched to suit MM or MC cartridges. The entire pre-amplifier is solid-state so you don't

get valves here.

Unlike most modern amplifiers this one has Record Out and Monitor input RCA (phono) sockets to handle external open-reel recorders, or cassette decks – a real blast from the past! The valve power amplifier can be accessed direct from Main In sockets – useful for today's portable players and DACs that have their own volume control and high output (1V or more).

Like amplifiers of yore, there are Bass and Treble tone controls, here with switched turnover frequencies. This makes fine adjustment of frequency extremes possible – great for subtly tailoring the sound of connected loudspeakers. In true audiophile fashion the tone control circuitry can be switched out with a Line Straight lever switch.

The front panel switches and controls do not appear to switch directly: rather they actuate relays, so there was a small kerfuffle when I flicked a lever, because this initiates mute/relay/unmute sequences. You get longer life and better sound quality over that life with this approach but not the instantaneous response of switching direct.

A solidly carved remote control unit alters volume and has a Mute function but does not select input or

*'The REFERENCE 3s
were powerful and punchy,
detailed - and totally enjoyable.
Outstanding - amongst the best.'*

KEF REFERENCE 3,
Hi-Fi World,
January 2017



THE REFERENCE By name, by rights, by feats.

Once in a generation we design and hand build loudspeakers of such stunning quality they set the standard by which all others are measured for years to come. THE REFERENCE, for connoisseurs who demand uncompromisingly accurate yet musical sound, capturing the full emotional range, depth and detail of the original performance.

KEF

OBSESSED WITH HIGH RESOLUTION

the other controls and has no On/Off function.

The rear panel carries two pairs of 'speaker sockets, for A and B loudspeaker pairs. Front panel switching selects A, B, or A +B together.

The rear panel carries chunky modern loudspeaker terminals – no sign of the horrible spring clips or shaky screw terminals of the past that allowed shorts and tarnished quickly. They accept spades, 4mm banana plugs or bare wires. All other inputs are unbalanced through the usual RCA type phono sockets; there are no balanced XLR connectors.

Internally there is one protection fuse within the mains transformer primary circuit but none in the secondary HT lines, to protect the output transformer primaries in event of tube failure – something I consider important. Since fuses and fuse holders are cheap I am surprised at this.

SOUND QUALITY

The Luxman sounded unhappy driving our in-house reference Martin Logan ESL-X hybrid electrostatic loudspeakers: bass was limited. This



One of the ECC82 small signal preamplifier valves, also used for phase-splitting. Valves like this have a long life of around 10,000 hours.

surprised me because valve amps like our Icon Audio Stereo 30SE (30W) are a perfect match.

Contrarily, PMC's twenty.5.24 loudspeakers were a match made in heaven. The PMCs have obvious and well-extended bass as well as strong treble with a smooth and easy midband. This did not just suit the LX-380 but the two sounded fabulous together. This does

suggest however that the LX-380's limited bass power of 8 Watts (see Measured Performance) needs to be understandingly accommodated. Loudspeaker matching is an issue but I believe it will suit most conventional floorstanders.

Digital was fed in from an Oppo BDP-205D Universal disc player, meaning CD and hi-res from an optically attached Astell&Kern AK120 portable player. For LP I used our in-house reference Timestep Evo modified Technics SL-1210 Mk2 turntable with improved control circuits and linear external power supply, carrying an SME309 arm with Audio Technica VM750SH MM cartridge and, alternatively, an Ortofon Cadenza Bronze MC cartridge to assess both MM and MC inputs.

Spinning Josefine Cronholm's 'In Your Wild Garden' (CD) the reason for buying a valve amplifier was thrown at me: her voice had enormous contrast against a silent background that made for a feeling of great dynamic power.

Valve amplifiers do this, they have seemingly muscular delivery that suggests big audio power even when only a few Watts are in action.

Then there was ease of delivery,

Four 6L6 output valves and three ECC82 double triodes are visible, together with twin output transformers and one big mains transformer. Vertical daughter boards at front and rear carry preamp and support circuits.

primary feedback taps.

The result was an utterly gorgeous sound, vocalists having a lovely rounded presence and lively nature. Treble was as sweet as I could hope for, the emphasis of the PMCs being reasonably obvious at times, but also contributing to conspicuous and precise stereo images across the

"There was ease of delivery, a fluidity of event that makes for a lifelike presentation free of the mechanical sound from transistors."

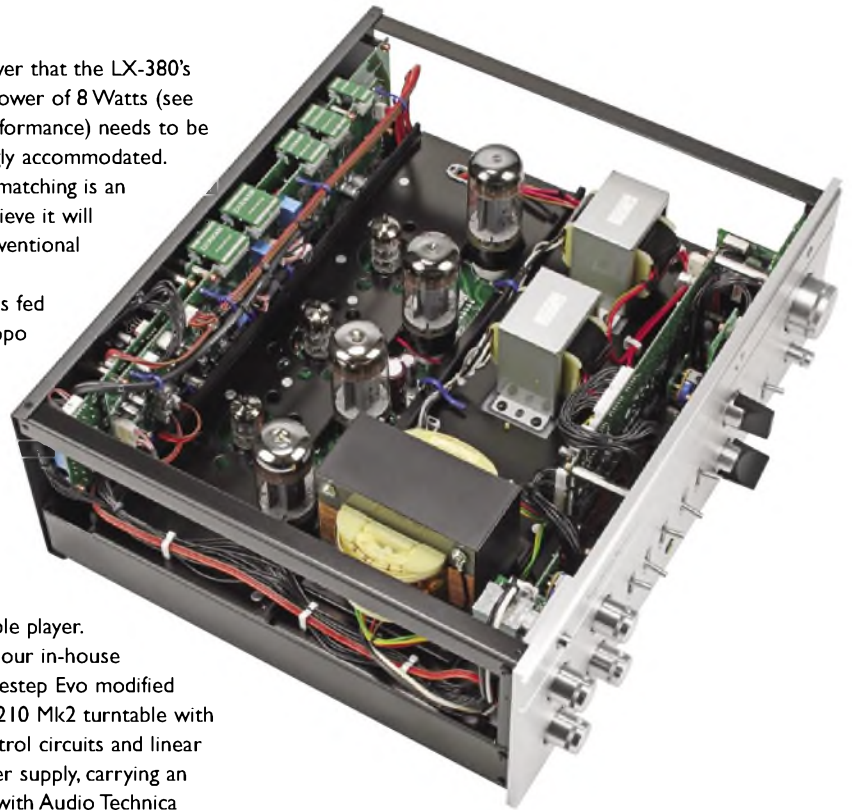
a fluidity of event that makes for a lifelike presentation free of the mechanical sound from transistors. The Luxman's LX-380 captured all these thermionic wonders beautifully.

The 6L6GC tube has a reputation for sounding sweet and that was certainly the case here. Some valves, like the 5881 and KT90, can sound a bit hard, which rather defeats the object of using valves in the first place, but not the 6L6GC that here sits in a 'Mullard circuit' Luxman say, looking to me like the Mullard 5.20 without Ultra-linear

sound stage.

The Berliner Philharmoniker playing Strauss' 'Don Quixote' (24/96) stretched wide and filled our large listening room, massed horns having a lovely brassy quality and plenty of dynamic push. But when all fell silent for a solo violin the Luxman tracked this change beautifully, conveying its emotional impact in full.

Whatever I played, digital from the Oppo was graced by the Luxman's signature sound – but so too was analogue from LP after switching from Line 1 to Phono and





FOCAL | CLEAR

A year after Elear and Utopia, the latest addition to Focal's high-end headphone line is built around a new generation of full-range 'M'-shape dome speaker. Clear headphones reveal the tiniest details of musical creation. Made in France, Focal continues its quest for absolute sound with this new reference headphone. Clear promises listening worthy of the best loudspeakers.

Open Reference headphones

Distributed exclusively in the UK and Ireland by SCV | www.scvdistribution.co.uk | 03301 222500



Ranks of gold plated phono socket inputs, including Tape and Pre-out/Main-in. At left is a Phono input, plus earth post, catering for LP. A front panel switch selects MM or MC cartridge matching.

pressing the Technics On button. With Audio Technica's VM750SH MM cartridge the bass line behind Mark Knopfler's 'Madame Geneva' was firm, expressive and easy to follow via the PMC loudspeakers. The whole delivery was liquidly smooth, atmospherically spacious and a performance to wallow in.

At high volume there was no hiss or hum, LP sounding as deeply silent as CD. I swapped the VM750SH for

our Ortofon Cadenza Bronze MC cartridge and flicked the front panel lever switch to MC (no clicks or thumps).

Again, there was virtually no hiss and plenty of available gain – so no apparent matching problem. But the Cadenza was less glassy up top and a tad more amenable and considerably more powerful in its bass. The reggae-like bass line of Dire Straits 'Ride Across the River' was

expressed superbly well, sounding strong, deep and articulate. So in spite of poor measured figures I heard a great result here. The PMCs give strong bass without drawing bass current and this suited the LX-380 perfectly.

CONCLUSION

They don't make 'em like they used to: in the LX-380 they now make 'em better. You pay for this sort of quality and attention to detail but Luxman amplifiers always were more expensive than the herd. They have to be with all the facilities that come included. With our Timestep Evo updated Technics SL-1210 Mk2 turntable and a new Audio Technica VM750SH MM cartridge, spinning LP in particular brought past wonders back to life in entirely modern form, giving a luscious sound. So if you hanker after an easy to use amplifier built the way they were – with no digital in sight – the new LX-380 from Luxman is a must. Just use it with suitable loudspeakers to ensure strong bass.

MEASURED PERFORMANCE

The 6L6GC power amplifier output stage is quoted at 20 Watts and just about managed this within a 1% distortion limit. However, it was down to 8 Watts output absolute maximum (3% distortion) at 40kHz due to output transformer core saturation – quite a severe drop. Together with a damping factor of 1.7 the LX-380 will be no bass machine. However, with floorstanding loudspeakers of 90dB sensitivity – not uncommon – 5 Watts or so is enough for extremely high volume so the LX-380 is fine if used in an appropriate system.

Distortion was low, measuring 0.2% at 1 Watt and 1kHz, comprising mostly second harmonic. This figure rose slightly to 0.26% at 10kHz – still a good result. Distortion increased with rising output, hovering around 0.5% at full output (volume).

The output transformers swap power, which needs big cores, for bandwidth – easier to achieve with small cores and bobbins. Frequency response measured flat to a high 60kHz our analysis shows – very wide for a valve amplifier. It also reached flat down to 3Hz – not the best idea as core saturation occurs very early at such low frequencies. Digital usually contains no deep lows but LP can have strong warp signals at 5Hz, but a Subsonic filter is

fitted.

Frequency response was unaffected by the 88dB stepped LECUA volume control that is placed within the preamplifier that is solid-state. Line input sensitivity was very high at 120mV and noise low at -95dB, with no hum.

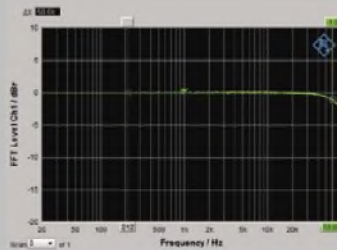
Phono stage equalisation was accurate, giving flat response from 10Hz

to 20kHz with MM and MC. The Subsonic filter rolled off output below 100Hz, being -1dB down at 50Hz and -17dB down at 5Hz – plenty enough to suppress LP warp signals. The Bass tone control, set to 150Hz turnover, compensated for subjective lightening of bass reasonably well when turned up by a very small amount; it has fine resolution.

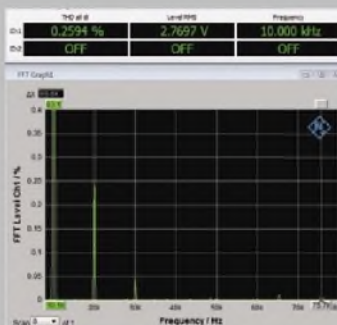
Phono input sensitivity was very high, 2mV MM and 0.12mV MC being enough for full output. Overload was high at 85mV and 11mV respectively and noise was also low at -82dB and -65dB respectively, the latter representing a super-low 0.07µV equivalent input noise.

The LX-380 measures well in all areas except bass power, where a limit of 8 Watts was out of keeping with all else. **NK**

FREQUENCY RESPONSE



DISTORTION



Power (8 Ohms)	20W
Frequency response	3Hz-60kHz
Distortion (10k, 1W, 4 Ohms)	0.2%
Sensitivity	120mV
Noise (Line)	-95dB
Damping factor	1.7

PHONO	
Frequency response	20Hz-20kHz
Distortion (10k, 1W, 4 Ohms)	0.3%
Sensitivity (MM/MC)	2mV / 0.12mV
Overload	85mV / 11mV
Noise (MM / MC)	-82 / -65dB

LUXMAN LX-380
£6,000



OUTSTANDING - amongst the best

VERDICT

An elegant integrated, hybrid valve amplifier packed with facilities – and a great sound. Low power, but must be heard.

FOR

- build and finish
- luscious sound
- ease of use

AGAINST

- no balanced input
- limited fuse protection
- low bass power

IAG
+44 (0)1480 447700
www.quad-hifi.co.uk

BOX•DESIGN

BY PRO-JECT AUDIO SYSTEMS



Pre Box DS2 Digital pre-amplifier shown with Amp Box DS2 stereo power amplifier.

DS2 LINE

For over 10 years, Pro-Ject Audio Systems' Box Design range of compact hi-fi electronics has been a central part of the popular trend toward more convenient hi-fi systems.

By sticking to established hi-fi principles and ensuring each and every box is meticulously designed, the Box Design range allows for users to set-up a complete hi-fi system that suits their requirements, without encroaching on space or breaking the budget.

The new DS2 boasts a whole new aesthetic appeal, with wooden side-panels flanking the 206mm wide aluminium/metal sandwich case.

All DS2 products also benefit from superior technical designs, including new 4-layer PCB configurations, for extremely short signal paths with less interference and signal-loss. The quality also carries through to the pots, controls and enviable list of features each device in the range can boast.

[VIEW THE FULL RANGE ONLINE NOW](#)



Distributed by Henley Audio

T: +44 (0)1235 511 166 | E: sales@henleyaudio.co.uk | W: www.henleyaudio.co.uk

Musical Transmission

PMC's latest twenty5.24 floorstander uses transmission line loading to produce a big sound. Jon Myles turns up the volume.

PMC is one of few loudspeaker manufacturers able to straddle the worlds of both domestic hi-fi and professional studio equipment. The Biggleswade-based company's products are used in Abbey Road Studios in West London as well as Kraftwerk's Kling Klang Studio in Germany's Dusseldorf.

Formed in 1991 as the Professional Monitor Company its first product was the BB5-A – snapped up by the BBC for use in its Maida Vale studios. It has also been used for mastering by Prince and Stevie Wonder.

For the home market though, PMC has built a loyal following for its hi-fi loudspeakers around its Advanced Transmission Line technology. This places the bass driver near one end of a long tunnel (the Advanced Transmission Line) which is heavily damped with acoustic material specified carefully to absorb the upper bass and higher frequencies radiating from the rear of the bass driver.

The lowest frequencies are allowed to pass down the line and emerge from the large vent in the same polarity as the driver's frontal radiation - the vent effectively acting as a second bass driver.

It's the technology employed in the latest PMC twenty5 series - including the £4470 twenty5.24 on review here. Standing 1015mm tall, the 'speaker is nevertheless relatively slim with a width of just 192mm and a depth of 419mm. The cabinet itself is tilted slightly to help time align the drivers, and it features stiff high-mass stabilising bars.

The transmission line vents through two ports at the front that feature proprietary in-house designed Laminair wave guides developed using aerodynamic

BLACK | BEAUTY



Evocative styling
Contemporary features

Enjoy the warm, clear sound of valve amplification from all your audio devices with the new v40 from Blue Aura.

blueaura.co.uk

v 40
Blackline





The PMCs use a new Laminair vent developed from Formula 1 aerodynamic modelling to reduce turbulence from the air exiting the transmission line.

modelling techniques derived from Formula 1. PMC says these ports better control airflow to reduce turbulence and therefore increase efficiency, as well as giving faster bass and greater dynamic headroom.

All-new drivers have also been employed. The mid/bass unit is a 170mm resin-bound, fine-weave glass fibre and pulp hybrid cone with a long-throw voice coil. The tweeter is a 27mm soft dome driver made from Sonolux, developed in collaboration with Norwegian drive unit specialists SEAS. At rear there's a single pair of 'speaker binding posts.

As well as the Amarone finish of our review pair, Oak, Walnut and Diamond Black are also available.

In terms of fit and finish the PMCs are superbly put together, from the crisp cabinet edges to the heavy, machined stabiliser bars that allow height adjustment of the spikes, making levelling easier.

SOUND QUALITY

While these loudspeakers might look slim, the sound they produce is exceptionally big. Connected to an Astin Trew AT2-2100 integrated amplifier with its smooth, accurate sound (see our review in this issue), the PMCs managed to fill our large listening room with ease.

That transmission line and new mid/bass driver have been carefully judged, allowing the 'speakers to produce clean and powerful bass. The electronic bass line of The Chemical Brothers' 'Block Rockin' Beats' (24/96) was authoritative and punched much harder than I was expecting.

Yet bass from these 'speakers was neither boomy or slow. Instead it had pace and agility - serving to push the track along at just the right speed. With acoustic instruments

such as Jimmy Garrison's bass on John Coltrane's 'Live At The Village Vanguard' I could hear the body of the instrument and the resonance as notes decayed. PMCs are often described as a musician's loudspeaker and I could see why here. The whole performance had a natural, realistic portrayal to it, Coltrane's saxophone soaring above the backing musicians and out into the room without sounding disconnected from the band.

The tweeter is incisive, having a slight brightness to it that works to bring out the detail in many tracks. Conversely the midband is softer without the forthright nature of some rivals. It's a different balance to most loudspeakers, one that sounds subjectively exciting. Over a long period this balance makes a lot of sense - the twenty5.24s were never tiring whatever music I played.

And they went loud with little effort. Turning up volume on the crescendo at the end of the third movement of 'Beethoven's 5th' the

power these loudspeakers produced almost knocked me off my feet. The orchestra simply thundered out of the 'speakers in all its majestic glory. Classical music lovers will love these loudspeakers for the sense of scale they can produce.

It doesn't matter what genre you prefer, the new twenty5.24s replay it with life and musicality - and excellent timing even on dense, complex pieces such as Ornette Coleman's 'Free Jazz' where they managed to unravel the two separate jazz combos (one through each 'speaker) and lay out the various parts with clarity.

CONCLUSION

Thanks to their Advanced Transmission Line loading the twenty5.24s produce big, bold bass that competes with larger loudspeakers possessing multiple drivers. They are distinctive - but that's no bad thing if you are seeking something different, a sound that conveys all the emotion and craft in your favourite music.

MEASURED PERFORMANCE

Our frequency response analysis of PMC's twenty5.24 shows a slow roll off in output in the upper midband that will soften its sound, making it less forthright but more amenable than a lot of current designs. The tweeter, however, has a strong presence, introducing treble lift of +3dB at 10kHz. This is enough to be audible, adding in brightness and sharpness to the high end, providing a strong sense of incision.

PMC ensure their loudspeakers produce strong bass and the twenty5.24's large cabinet and vented

bass system gave output down to a low 40Hz (green trace). The large area floor port (red trace) extended this down to 30Hz and its broad response suggests even bass quality free from resonance (boom).

Usually, a broad, flat port response like this reflects back into the impedance curve, suppressing residual peaks either side of the main port resonance - but not in this case. The impedance curve shows quite sharp bass port tuning at 38Hz, suppressing a strong fundamental resonance. This is an unusual result, showing the twenty5.24 differs from the norm and will have distinctive bass quality.

Sensitivity was good, measuring 87dB from one nominal Watt of input (2.8V), especially since overall impedance measured with pink noise was a high 10 Ohms, due to the use of an 8 Ohm bass unit (most are 4 Ohms these days). The impedance trace is peaky (reactive), making amplifier matching critical.

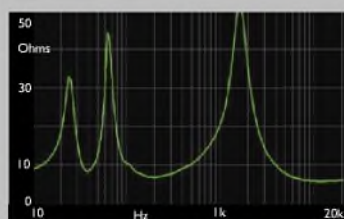
The twenty5.24 is well engineered but differs from most else. It will have strong and deep bass that measurement suggests will be even in nature. There will be a softer more amenable delivery than that of many modern loudspeakers, making it less brash/forthright, but an easier listen. Upper treble will be obvious and likely sharp however. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



PMC TWENTY5.24 £4470



OUTSTANDING - amongst the best

VERDICT

A big-sounding loudspeaker with excellent bass and incisive treble if a slightly restrained midband. Will go loud in even the largest of rooms.

FOR

- good, clean bass
- big sound
- timing
- build quality
- can play loud

AGAINST

- slightly sharp treble
- soft midband

PMC
+44 (0)1767 686300
www.pmc-speakers.com

made in the UK

◦ CHORD ◦
Chord Electronics Ltd.

Hugo₂

Portable DAC/headphone amplifier

WHAT HI-FI?
★ Stars of CES | 2017 ★



THE LEGEND, REMASTERED

SUPERCHARGE YOUR LISTENING EXPERIENCE

NOW



49,152-tap FPGA DAC - twice the original Hugo

More output power - 1.9W into 8Ω



Lower distortion - 0.0001% THD

768kHz PCM

Future-proof PCM support

Native DSD

Advanced Native DSD support up to 512x

4 new playback filters to choose from



Remote control functionality

We're in the midst of a digital audio revolution and Chord Electronics is at the forefront

visit chordelectronics.co.uk for more information and to locate your nearest dealer



/chordelectronics



@chordaudio



/chordelectronics

Power Up!

From Northern Ireland comes a new mains block from specialist manufacturer Titan Audio. Jon Myles is impressed.



Northern Ireland-based Titan Audio takes the business of delivering power to your hi-fi system very seriously. So seriously that its engineers have collaborated with experts from Queen's University in their home city of Belfast to refine their products – including the new entry-level Styx power block.

Priced at £150, the Styx is hand-built at Titan's headquarters and features a number of innovative details. Take it out of the box and the build-quality is immediately impressive.

The block features six high-current sockets and an IEC inlet so users can choose their own power cord – with Titan (naturally) recommending its own Styx lead costing a reasonable £50.

Housed in an aluminium casing to reduce magnetic and RFI interference, there are also acrylic side panels which lift the Styx off

the ground to stop mechanical vibrations entering the unit. The screws attaching the panels are made from Japanese high tensile steel and torqued to further reduce vibration.

Inside, oxygen-free copper wiring is used to connect the sockets – unusual at this price where busbars (solid metal bars) are usually used. Titan say this maintains consistent power output and claim the Styx has twice the current delivery of standard mains distribution blocks.

For added peace of mind the Styx also comes with a lifetime warranty – a standard feature across all of Titan's product range.

SOUND QUALITY

I plugged a variety of components into the Styx, both CD players and amplifiers – including a high-powered McIntosh MC152 amplifier, Astin Trew AT2-2100 integrated and even a pair of KEF's excellent LS50 Wireless loudspeakers (see reviews this issue).

The results were uniformly impressive. The amplifiers, especially, took on more authority with a seemingly tighter grip on the 'speakers which translated into added punch.

Playing New Order's 'Brotherhood' through a pair of PMC D-twenty5.24 floorstanders the already prodigious low-end response

gained even more power – Peter Hook's melodic bass positively pumping out of the loudspeakers.

Front to back depth also improved giving an even more three-dimensional aspect to the music.

With the little KEF LS50s the sound grew in size and instrumental separation was improved, allowing me to pick out details I hadn't heard before.

This effect remained true no matter what piece of equipment was plugged in. With an Oppo UDP-205 universal disc player CDs had a noticeably smoother and more refined sound – sounding almost analogue-like in their nature.

Going back to a standard mains block showed just what a difference the Styx was making – the music becoming less vibrant with a more shut-in feel. In fact, I couldn't wait to plug the Styx back in so good were the improvements it brought.

CONCLUSION

Titan Audio's Styx power block is something of a must if you are looking to wring that extra bit of performance from your system. It works equally well with budget as well as high-end equipment, is superbly engineered and, most importantly, adds extra musicality to the sound. At just £150 I'd say it's something of a bargain.

TITAN AUDIO STYX £150



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

A superbly built power block that delivers in terms of both looks and sound quality. Highly recommended.

FOR

- improves bass
- adds detail
- high current delivery
- lifetime warranty

AGAINST

- nothing

Titan Audio
+44 (0) 2890726003
www.titanaudio.co.uk

PIEGA

Loudspeakers (UK) Ltd



PIEGA STOCKISTS

- | | |
|--|---|
| AUDIO GOLD
London
Tel: 0208 3419007 | MIKE MANNING
Yeovil
Tel: 01935 479361 |
| AURAC SOUND & VISION
Billinghurst
Tel: 01403 784193 | PREMIER SOUNDS
Bodmin
Tel: 01208 892995 |
| EMPORIUM HIFI
Suffolk
Tel: 01508 518542 | AR DANIELS
Kings Stanley
Tel: 01453 822137 |
| GRAHAMS HIFI
London
Tel: 0207 226 5500 | MIDLAND HIFI
Wolverhampton
Tel: 01902 380083 |
| HARROW AUDIO
Middlesex
Tel: 0208 930 9933 | NOTTINGHAM HIFI CENTRE
Nottingham
Tel: 0115 978 6919 |
| HIFI LOUNGE
Dunton, Beds
Tel: 01767 448121 | ORTONS AV
Northampton
Tel: 01604 637515 |
| HOME MEDIA
Kent
Tel: 01622 676703 | AUDIOVATION
Huddersfield
Tel: 01484 424000 |
| LEAKES ELECTRICAL
London
Tel: 0208 505 6325 | DOUG BRADY HIFI
Warrington
Tel: 01925 828009 |
| RIVERSIDE HIFI
Middlesex
Tel: 0208 892 7613 | SUPERFI
Manchester
Tel: 0161 835 1156 |
| SEVENDAKS NORWICH
Norwich
Tel: 01603 767605 | BOOTH SCOTLAND LTD
Inverurie
Tel: 01467 620570 |
| SIGNALS
Ipswich
Tel: 01473 655171 | HIFI CORNER
Edinburgh
Tel: 0131 556 7901 |
| UNILET
New Malden
Tel: 0208 942 9567 | AUDIO T
Cardiff
Tel: 029 2022 8565 |
| AUDIO T
Bristol
Tel: 0117 926 4975 | LIGHTING SOUND AND VISION
Londonderry
Tel: 028 703 42354 |
| AUDIO T
Cheltenham
Tel: 01242 583960 | |
| LIVING HOMES
Somerset
Tel: 01458 445555 | |

STUNNING PRODUCTS & EXCELLENT REVIEWS

Call us NOW on 01344 893932 or
email: sales@piegaloudspeakers.co.uk
www.piega.ch/en/



A Trew Romance

Astin Trew's new integrated amplifier is a sonic star, says Jon Myles.



Astin Trew (or ASTINtrew as their logo has it) have been producing hi-fi since 1983. During that time the company has established a strong reputation for building well-engineered, sweet-sounding electronics at realistic prices.

Based in the Welsh town of Haverfordwest the company designs and builds all its products in Britain. It also places a big focus on research and development, refusing to rush any new component to the market until it is sure they can measure up to their exacting standards.

So, when Astin Trew announced a new integrated amplifier we were keen to get our hands on it and duly received a pre-production sample of the AT2-2100.

In typical Astin Trew fashion this is a no-nonsense design – a basic but powerful integrated amplifier offering 90 Watts per channel into 8 Ohms and 130 Watts into 6 Ohms (see Measured Performance for full details). You do not get an internal DAC nor the likes of Bluetooth connectivity.

What you do get, however, is a handsome-looking product that at

£1895 goes up against the likes of the Naim Nait XS2, Creek Audio's Evolution 100A or Roksan's Caspian M2.

Housed in a 200mm x 550mm x 500mm (H/W/D) steel cabinet with a milled aluminium fascia, the AT2-2100 uses dual mono power supplies with two 160VA transformers while the volume control is a ladder resistor network – a purist solution.

Connection options include five unbalanced RCAs plus a pair of balanced XLRs. There's also pre-amp

and sub-woofer outputs.

The front panel has small switches on the left in a recessed oval window to select input with the volume control on the right – although all these functions can be accessed by the small but well laid-out remote.

One other interesting feature is a

button marked 'Warm' in the middle of this fascia. It adds in a little second harmonic distortion and, as the label suggests, does add some warmth to the sound (more of which later).

SOUND QUALITY

Pressing the Astin Trew into service with first a pair of Spondor A1 standmounts and then the larger PMC D-twenty5.24 floorstanders it was evident this amplifier has a seductive, smooth sound.

With John Coltrane's 'Live At The

This amplifier doesn't major on huge bass, sharp treble or over-emphasised midband – instead it hangs everything together extremely well.

Village Vanguard' I was struck by just how clean and open the soundstage was. Coltrane's saxophone was possessed of real body and accurate timbre while the backing musicians were presented in their own space. Listening closely I could hear every part of Reggie Workman's fingers on his bass in 'Spiritual'.

SPENDOR

REVEALING EVERY DETAIL

Spendor D-Line loudspeakers reveal every nuance of the performance with absolute clarity, precision and realism. With their transparent, superbly natural sound and extraordinary resolution, they create an airy, spacious soundscape, then invite you in to explore, uncovering new depths, textures and definition in your music.

MADE FOR MUSIC.
DESIGNED FOR YOU.





There are five RCA inputs as well as balanced XLRs, and pre-amp and sub-woofer outputs.

More impressive, though, was the way the AT2-2100 managed to convey the emotion in the music. This amplifier doesn't major on huge bass, sharp treble or over-emphasised midband – instead it hangs everything together extremely well to give a mellifluous performance where the music just flows naturally.

It's a quality that pays dividends on some harsher recordings such as 'Definitely Maybe' from Oasis. Here the Astin Trew took some of the zing from the guitars but without losing the impact.

There was an undoubted valve-like quality to the sound with the same richness and sense of musicality. Pressing the 'Warm' button, that came through more



The remote control is well laid-out and easy to use, controlling inputs and volume with minimal fuss.

strongly. It's not exactly a night and day difference but the effect is noticeable.

Which setting you prefer will be down to individual taste and what you are playing, but the Warm setting works well to tame some of the harder-edged sounds of modern recordings.

Compared to the similarly priced Naim Nait XS2 the Astin Trew sounds a little less dynamic, lacking the propulsive thrust of the former. However, it compensates with a silkier presentation that is rich in detail.

On Fleetwood Mac's 'The Chain' (24/96) Stevie Nicks's vocals were sweet sounding with no trace of sibilance. Mick Fleetwood's drums also came across with power – the rim-shots especially having a kick to them.

Timing-wise this amplifier is also spot-on. Even with the strong bass

of the PMC loudspeakers it never sounded flabby or bloated, all the time keeping a firm grip on the drive units.

With The Clash's version of the reggae classic 'Time Is Tight' Topper Headon's kick-drum was thrust into the room while his metronomic strick work was tight and composed so the track was propelled along in just the right fashion.

Higher up the scale the twin guitars of Joe Strummer and Mick Jones had both bite and depth. Impressively, the Astin Trew captured

the decay in the notes as they faded away without slowing the overall sound. Not all amplifiers manage this.

CONCLUSION

The Astin Trew AT2-2100 may not be loaded with features. Instead it is a dedicated audiophile design and an undoubted star I felt. It has the rich, authoritative sound of a valve amplifier yet it has transistor power able to drive even the most demanding of loudspeakers. So it comes highly recommended; this is a specialised audiophile design.

MEASURED PERFORMANCE

Power output of the AT2-2100 amplifier measured 90 Watts into 8 Ohms and 130 Watts into 4 Ohms, so this is nominally a 100 Watt amplifier. With a high damping factor of 60 it will have subjectively 'tight' bass control.

Distortion at all frequencies and power outputs was extremely low – just 0.007% at 10kHz, 1 Watt – a revealing test of crossover distortion where 0.1% is a good result. The AT2-2100 is a super-low distortion amplifier – but interestingly Astin Trew fit a 'warm' button on the front panel that deliberately adds in a little second harmonic distortion, if a small 0.1%.

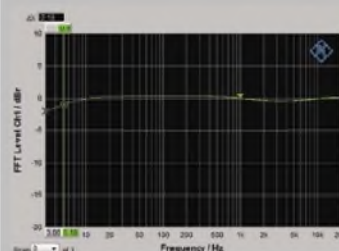
Second harmonic becomes audible as a slight lightening of timbre at around 3% so this small addition is not going to do much – but selecting 'warm' also alters frequency response in a way that will be just discernible.

Frequency response was wide and flat, stretching from 6Hz to 100kHz. Selecting 'warm' imposed a small dip in the upper midrange of -1dB centred at 3.5kHz – very unusual. Our published response shows this tailored characteristic. In conjunction with second harmonic it is meant to give a valve amplifier like sound, 'like' being the operative word. It is a simulacrum but may be 'nice', especially in softening the hard midband of many modern loudspeakers.

Input sensitivity was very low through the RCA phono socket (unbalanced) inputs, measuring 1.1V – half the sensitivity of even insensitive amplifiers (400mV). This is OK for silver disc players (2V out) but low for most external phono stages, demanding volume be turned right up.

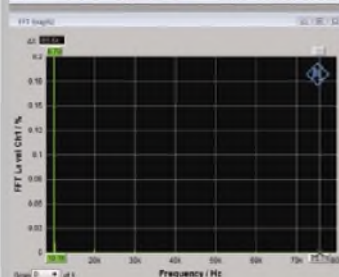
The AT2-2100 is a sophisticated low distortion amplifier in essence. It's 'warm' button has been carefully engineered. **NK**

FREQUENCY RESPONSE



DISTORTION

THD at 0dB	Level @ 0dB	Frequency
0.0067%	2.6710 V	10.000 kHz
OFF	OFF	OFF



Power (8 Ohms)	100W
Frequency response (-1dB)	6Hz-100kHz
Distortion (10k, 1W, 4 Ohms)	0.007%
Sensitivity	1.1V
Noise	-105dB
Damping factor	60

ASTIN TREW AT2-2100 £1895

OUTSTANDING - amongst the best.

VERDICT
A powerful transistor-based amplifier with an almost valve-like sound which makes for a thoroughly musical experience.

FOR
- Smooth, rich sound
- power
- build quality
- great bass

AGAINST
- No DAC or Bluetooth

Air Audio Services Ltd.
+44 (0)1491 629 629
www.airaudio.co.uk



01202 911 886
bournemouth store

01592 744 779
glenrothes store

f t
follow us

web site: www.jordanacoustics.co.uk



KANTA N°2

three-way floor standing loudspeaker from focal

Want the latest
fashion or a more
classic look for your
Kanta N°2?

A wide range of colour/finish
combinations are available
to fit into every interior
space. Please ask for
more details.

RETAIL
£6,999

0%

FINANCE AVAILABLE*

Initial 20% deposit of
£1,399.80, then £186.64
per month for
30 months*

*Finance is subject to status & conditions.

For further information, please call 01202 911 886 or email ask@jordanacoustics.co.uk

With 100wpc, moving magnet phonostage, tone controls, headphone/subwoofer output and remote control, McIntosh's first hybrid amplifier is more than a little bit special!

The McIntosh MA252 combines the best of vacuum tube and solid state design to create an amplifier that is both visually and sonically stunning.

MA252

hybrid integrated amplifier from mcintosh



RETAIL
£4,500

0%
FINANCE AVAILABLE*

Initial 20% deposit of
£900.00, then £150.00
per month for
24 months*

*Finance is subject to status & conditions.

For our full product range, please visit the web site: www.jordanacoustics.co.uk

Mail



LETTER OF THE MONTH PRIZE

Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of Tannoy Mercury 7.2 loudspeakers.

Answers by: NK - Noel Keywood; JM - Jon Myles; PR - Paul Rigby; MP - Martin Pipe.



Tannoy Mercury 7.2 loudspeakers

www.tannoy.com

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

A pair of Quadral Argentum 520 loudspeakers are on their way to BOB PERRY, Letter of the Month winner in our January 2018 issue.

Letter of the Month

BACK TO CASSETTE

My vinyl front-end is common enough, a Michell GyroDec SE, Rega RB300 with Michell Techno Weight, Goldring G2500 cartridge. The digital replay is Sony SCD-EX800 SACD player for DSD music, and acting as a transport into Audiolab Q-DAC for L-PCM music. Also much loved but now in semi-retirement since the arrival of the Q-DAC is a beautiful John Shearman Phase Seven HDCD player (Hi-Fi World December 1999). I have changed nothing since adding the Q-DAC five years ago and my wife and I can sit for hours listening to our sizable music collection. Then I had a thought.

Having moved house some 7 years ago, when setting up my system in its new "music studio" (previously a dining room), I decided to omit my Yamaha KX-580 cassette deck and leave it boxed up. I have since been digitally capturing vinyl onto my music server using a Terratec Phono PreAmp iVinyl ADC and Audacity software. The trouble with vinyl music to digital, it ends up sounding less like vinyl and just like L-PCM. I may as well save coding time and buy the CD versions.

So this summer I have reinstated the KX-580 for replaying many old TDK SA and TDK MA vinyl recordings,



A Yamaha KX-580 cassette deck. "Recordings sound really musical with no loss of clarity" says Dr. Russell Sceats.

and make some new vinyl compilations too. It took some experimentation with interconnects, but I settled on Supra EFF-1 for record and replay. What a revelation! The cassette recordings sound really musical with no loss of clarity. In fact, the vinyl recordings on cassette sound more like DSD, and nothing like L-PCM.

One bit DSD follows the music waveform in a similar way to an analogue voltage from a cartridge or the electromagnetic domains of a tape feed. Up a bit or down a bit at high sample rate, DSD requiring little more than a low-pass filter. L-PCM spits a large amplitude number at each sample for the DAC to interpret, and then noise shaping and all sorts. I will not bother digitising LPs to L-PCM anymore.

Plus, the C90 running time suits single LPs and double LPs. My wife is also very happy, since I now have the four original Pixies LPs on two cassettes, so she does not have to worry about loading and reloading the GyroDek for each side of Surfa Rosa or Trompe le Monde. Just press play.

Last week New Scientist published a short article "In a Spotify world, why does anyone want to listen to cassettes?" (<https://www.newscientist.com/article/2153176-in-a-spotify-world-why-does-anyone-want-to-listen-to-cassettes>) "A US cassette firm is spooling up production again to meet renewed demand for cassettes. Do people really want to go back to the flimsy magnetic tape of the 1980s?" asks Paul Marks.

National Audio Company Inc. and their Audio Cassettes can be found here <http://nationalaudiocompany.com/>

Debaser

Dr. Russell Sceats

I'm surprised that the Terratec is obviously digital in its sound, since it uses a Cirrus Logic 5341 ADC with 24bit resolution. I don't know this chip but to date I have found 24bit ADCs do a reasonably good job with vinyl; it's 16bit ADCs that make analogue sound like it's emerging from a tin can. No wonder CD always sounded bad; it had no chance of sounding good. I am told by Rob Watts however (Chord Electronics DAC designer: Mojo, Hugo, Dave etc) that ADCs are still the weak link in the digital audio chain, so your experiences seem to bear him out. What hope is there for the rest of us!

As you find cassette a better option than 24bit digital then you will now be joining the steadily growing band of mutineers demanding we return to analogue. And as Sony reopen their Japanese vinyl pressing plant to meet growing demand for LP, will TDK, Maxell or Taiyo Yuden re-enter cassette tape manufacture? I also wonder whether Technics, after entirely re-working the Direct Drive turntable motor, might next re-work a new open-reel tape recorder. We would all like to own an RS-1500 upgrade methinks. **NK**

REDUCING BOOM

My question for you is regarding my Icon Audio Stereo 40 and Quadral Chromium 8 loudspeakers wired with Tellurium Q Black cables

I really like the sound put out by these components (in fact they continually amaze me with the quality produced and can only imagine what a true high-end system must sound like!), but noticed in my room the bass from the Quadral's was getting a little boomy at times.

I tried using foam bungs in the back ports and this did help a little but they still had a slight boomy sound on some music. So, after a bit of experimenting I found that if I moved the speaker cables from the 8ohm output to the 4 ohm output on the Icon Audio, it eliminated the boom completely!

I don't blame any of the components here, they are really good, it is just the make up of my room (and as I can't really afford to move house to

improve the sound of my audio system, I have to adapt!)

I just wanted to confirm, as you have far more experience with these items than I, that I won't harm the amp or speakers by running them on the 4 ohm outputs?

I read all I could on the Internet but as always nothing listed accurately covered what I wanted to know. Thank you for any help you can give me with this.

Andrew Burtchaell

Hi Andrew. Yes, the 4 Ohm tap has lower output impedance and offers better electrical damping. It commonly gives a slightly 'drier' sound as a result, but also well suits the 4 Ohm bass units used in most modern loudspeakers. So you have made the right choice – and there is absolutely no problem in using the 4 Ohm tap. Valve amps are far more durable than transistors amps. **NK**

The basic rule is to match the impedance but ideally a lower speaker impedance is better than a high one on any given valve output termination. The 4 ohm tap is controlling the bass drivers better as, if I remember the review of these speakers correctly they have a impedance that matches 4 ohm outputs better at bass frequencies. Hence the better sound you have found. **DT**

TECHNICS SL-15

I currently use a Technics SL-15 (with original cartridge and NOS stylus). Sounds fantastic with the rest of my QUAD system. However, it has developed a fault and I cannot seem to find someone to service these 'specialist' turntables. It was last serviced/repaired by Richard Peachey of Vantage Audio in 2010 but I can no longer contact him.



Terratec Phono PreAmp iVinyl uses a Cirrus Logic 5341 ADC to convert LP to digital.

Can you help with any suggestions? I also have 2 x SL7s.

Perhaps your magazine would like to feature it when fully serviced, especially as I have an original cartridge and 2 x NOS stylus.

Your help would be most appreciated.

Kind regards

Graeme Boyd

The Technics SL-15 is a small, high quality parallel tracking turntable from the very early 1980s, before the advent of CD. It does have a PLL direct drive motor that will give the pitch stability so loved by many Technics users. It is not easy to service and few parts or equivalents are available. Vantage Audio closed a few years ago so there seems little hope there.

If you like the sound of your parallel tracking Technics turntables, why not try a SL-1200, either one of the 3 million old ones or one of the new ones like the excellent SL-1200-GR? Dave Cawley, Sound Hi-Fi.

Hi Graeme. You don't say what the fault is with your SL-15 and given its age there may be components here that no longer exist. There are a huge number of suppliers professing to have rare parts but whose components are – let's say – 'compromised'. So it isn't always possible to repair things.



Icon Audio Stereo 40 amplifier has tighter bass with the 4 Ohm output, Andrew Burtchaell tells us.

Drop me a message or call so we can discuss the fault then I may be able to give you better advice.

Dave Tutt
Tutt Technology
Chatham, Kent
dave_london@hotmail.com or
telephone: 07759 105932

SONY PS-HX500

My interest was piqued when I saw, after reading your review, the letters regarding the Sony PS HX500 turntable, particularly the reader who has upgraded the cartridge to one of the new AT series of cartridges.

I read in the review that changing the cartridge is a bit of a pig so I contacted my local Sony Centre about changing the cartridge, only to be told that the guarantee would then be invalidated! So where do you go from there?

Regards
David Prior

Hi David. Thanks for that. Depressing that Sony expect users to stay with the fitted cartridge that is poor and severely limits performance of the package. That's how you lose your reputation for producing quality products.

An AT3500 OEM cartridge at £15 or so (retail price) would have given a far better sound, showing just how cost-cut this turntable package is, in order to offer DSD digital output over a USB computer connection (but to PCs only). Best to be aware of issues like this that consume the build budget. In effect, fundamental sound quality, as determined by the cartridge, is traded against offering a beguiling extra – DSD digital to your computer.

All the same, this is obviously one popular turntable, as our review has produced endless comment. Just shows what brand name and brand value can do. I feel Sony need to put more thought and effort into products like this for their own sake though. Technics shiny new Direct Drive turntables, made in Japan to highest standards, will stand the test of time where the PS-HX500 will not.

NK

METRICS OF CABLES

I've recently upgraded my system and now run a Rega Elex-R into B&W CM6 S2 speakers (On B&W FS-CM S2 stands), bi-wired with 2m lengths of Cable talk Concert 2 cable, which is now somewhat North of twenty years old,



Sony PS-HX500 turntable sends DSD to a PC. It has a high quality Analogue-to-Digital Converter on-board.

and cost me £15/m at the time. I'm at a loss as to where I should be looking for new speaker cable in terms of type and price. Is there a rule of thumb regarding budget? For example should I be aiming to spend a certain percentage of the system cost, or doesn't it work that way?

Another thing I'm not sure about are the relative merits of single wire and bi-wire cables. If I spend, for example, £20 per metre, what will give me better sound, twenty quid single wire, or twenty quid bi-wire cable? Maybe 20/m is laughably cheap, I'm really not sure. Can you help me please by making some recommendations?

Thank you for your time and patience.
 Regards,
Jeff Smith

As such I'd be looking for a loudspeaker cable that doesn't impose too much character into the sound to let them work best together. I'd always recommend going for single-wired and then replacing the links at the back of your loudspeakers with jumpers constructed from the same cable. With £20 bi-wired you are in effect buying two lengths of a £10 cable. Spending £20 single-wired opens up more options and your equipment certainly deserves it.

Tellurium Q's Blue immediately springs to mind which, at around £70 for a terminated 2 metre pair will be comfortably within your budget and significantly improve on your Cable Talk Concert 2s. Its open, transparent with a good sense of control. Add a pair of Blue



Tellurium Q's Blue cable, a great way to connect up your loudspeakers – at an affordable price.

Hi Jeff. There's no rule of thumb on how much of your budget you should spend on cables. It's more important to find ones that suit your ears and equipment. Both the Rega amplifier and B&W loudspeakers are good performers with punch but basically open sound.

jumpers at £60 for the B&Ws and you should find a significant upgrade to your system.

Other alternatives include Chord Company's Rumour cable, Atlas Hyper 2.0 and Black Rhodium's Twirl. All of these work well with Rega amplification.

As ever there's a matter of personal taste with cables so try them out first if you can. **JM**

BUDGET STREAMING

I have been a regular subscriber to Hi-Fi World since the first issue and, down the years, this has had a considerable influence on the equipment that I have collected – Leak Stereo 20, WAD6550, Garrard 401, Leak Troughline to name a few.

Although my preference is vinyl, I have, of necessity, a large CD collection. For a while, I have been considering dipping my toes into the waters of digital streaming. Your article in the June 2017 issue led me to realise that I could do this fairly cheaply, so I have now purchased a Yamaha WXAD-10 streamer and a WD My Cloud storage drive. I have now transferred most of my digital downloads and CDs on to the latter. That was time-consuming, but not difficult.

Thus far, I am impressed with the versatility of the WXAD-10. It offers access to myriad online radio stations, many with high quality sound, to suit all musical tastes, as well connecting seamlessly to my stored music on the My Cloud. The sound quality is very good, if not quite up to my beloved Troughline or CD player with Chord DAC, both of which I revert to for critical listening.

However, I have noted that the sound has become more open than it was straight out of the box. For more relaxed and varied listening, what is offered is the ability to dip into my music collection and play any track at the touch of a finger on my tablet, all for around £250. My only regret is that the Yamaha does not have the option of an external DAC but that would be wishful thinking at its price.

Changing the subject, but still in the vein of value for money, I recall that in the early days of Hi-Fi World there was very much a hands-on approach with many DIY articles and even supplements. That element is less present nowadays and I, for one, hope that future issues address this omission. There are many kits out there – or modifications that offer something different from the norm and, potentially, better value. I am not suggesting that you re-enter the minefield of kit production, but that does not stop evaluations, reviews and a little more tinkering.

Paul Topping
Lancashire

Hi Paul. I'm delighted you have discovered the joys of streaming. The



"I am impressed with the versatility of Yamaha's WXAD-10 streamer" says Paul Topping.

WXAD-10 is an excellent way to start. Remember, if you want to improve quality you can always upgrade the Yamaha to something like the Arcam rPlay with a digital output that can then be connected into the Chord DAC. **JM**

INEXACT AUDIO COPY

I have been copying my CDs onto a solid-state hard drive by way of a Windows computer in small box put together for me by Trichord. When copying CDs I have a stand alone screen which I plug into the back of the box to see what is going on as I use Exact Audio Copy (EAC) for extraction. Regarding playback I use an Android tablet courtesy of J River and my armchair.

This system has worked reasonably well for the last three years or so – until now. Without boring you with too much detail I have found the recorded files are getting in a real jumble with some of the albums under the wrong names and even tracks in albums that do not belong there. Also, some albums have disappeared. EAC is not working as it should: it's not picking up the CD images also any recorded CDs do not appear in the usual album and track listings but are in another folder.

I have not got the computer skills to sort these problems out – it's way too complicated for me and I am fed up with the frustration of it. Can you suggest a much simpler system that would be suitable? I do like the convenience of the tablet whilst sitting down but I do not intend keeping this present system as I do need it to be much simpler for copying and storage of my CDs.

In the future I might try some of the

high definition music files but streaming music would not be much good to me as it's not cheap and during the Spring and Summer I am out a good deal and play my system very little.

My system comprises of Gyrodeck fitted with Origin Live Silver MK 3 and Trichord phono stage, Astintrew Concord DAC, a pair Roger Sanders Eros electrostatic speakers with Alecto amps. one for each panel, a 720 watt bass amp built for me by Trichord. I use the Orca pre-amp and a speaker management system which enables the sound to be adjusted for ones ears and the room. I have to say when it is up and running it sounds nearly as good as a wind up gramophone playing 78s through the old horn.

Sorry about this long-winded rigmarole but I do hope you can help with the above problem

Kindest regards,
David Miller



The Naim Uniti Core is an ideal way to store all your digital files.

Hi David. I'd recommend a Naim Uniti Core to get around your problems. It is a stand-alone server which rips CDs, attaches metadata and can be plugged into your system without the need for a computer in-between.

It works seamlessly and may well just address your problems. **JM**



Our close up of an Audio Technica VMN740ML stylus assembly shows its miniature V magnets just ahead of the cantilever hinge – a white rubber disc.

SHAPING SOUND

One of the best reads this year was “Shaping Sound with Geometry” in your December 2017 issue. Very interesting. A stylus that can give more information about what is in the recorded grooves is of course something good. When we talk about information retrieval the old standard conical stylus cannot compare to Microline, Shibata etc. I have experience of conical, elliptical, Hyper-elliptical and Shibata and I prefer the conical stylus. Yes, you lose some of the information from the record but I think the sound is more musical. With a light tonearm I prefer the Shure M91 with the conical stylus.

And now let us talk about the fascinating new cartridges from Audio Technica. Let us compare them with the Denon DL-103. It has been in production since 1962 and you can buy it today. Amazing!

If we compare frequency response the Audio Technica is near ruler flat. And so is my Denon DL-103 with a load resistance of 1000 ohm, although there is a dip of 0.3 dB between 5 and 10 kHz. The DL-103 has the same tracking ability (300 Hz) as the Audio Technica. And this from a Moving Coil cartridge from 1962! The Audio Technica has lower distortion, lateral 0.6% vs 0.75% and vertical 0.3% vs 1.4%.

There is one thing one needs to know about the Denon DL-103. The specification says that the compliance is 5 which is very low but this is at 100 Hz. If you want to compare it to other cartridges you need to know the compliance at 10 Hz. If you measure the compliance of DL-103 at 10 Hz which is the norm you get a more user friendly lateral 13 and vertical 8. There is no problem to use a medium weight

tonearm.

I think the DL-103 is a very good cartridge. H-Fi World says it is a popular and much loved budget MC with big bass, smooth treble and deep sound stage. I agree. Sometimes I can miss some of the ambience of the recording with the DL-103 but it is very true to the recorded sound.

On my Christmas wish list I wish a test where you compare the Audio Technica with the DL-103. A comparison with one of the best cartridges from 1962 with one of the best from 2017. Some might think this would be interesting reading. In the mean time I will probably buy the VM740ML and do the test myself.

Yours sincerely
Olle Janelv
Gothenburg
Sweden

Hi Olle. Thanks for your views. When you buy an Audio Technica VM740ML please write to us so as to share your experience with others. Mike Tartaglia Kershaw has already done so and is very happy with his VM740ML.

Ah, the Denon DL-103 again! I would say this is a very different experience. It is full bodied, deeply sound staged and with fulsome bass. Definitely a lovely sound and fantastic at the price; people around



Denon's renowned DL-103 budget moving coil cartridge; it has a spherical stylus.

the world rightly love it. You will find the VM740ML quite different. It is more delicate and revealing up top, faster and more incisive. It does not, however, have the sound stage depth or bass of the Denon, as I recall it.

A reason for this is that moving coil cartridges have virtually no wire in them. Wire generates thermal noise (and hum, distortion etc) so by having less MCs benefit, something you cannot get around. The penalty? A special preamp is needed, adding to cost.

The Audio Technicas are moving magnet (MM) designs with more wire and higher output, but they inevitably lack the stage depth of an MC. So an

MM will never sound quite like an MC: it is like comparing chalk with cheese. But MMs are less expensive, have user replaceable styli and don't need a special preamplifier, all factors important to users that a simple MM/MC sound quality comparison does not take into account. **NK**

CONNECTION COMPROMISE

When connecting say a CD player's digital output to a DAC, to obtain a true 75ohm connection, BNC connectors should be used. Is this connection compromised when you use a cable which is terminated with phono plugs and you use BNC adaptors? If you used a BNC terminated cable to BNC sockets, would you be able to hear any differences in the sound?

Regards
Mike Bickley

Hi Mike. This is, in its underlying technological background, an evily complex subject. All sorts of horrors can occur if you don't terminate properly, such as reflections down the line, jitter, dropped bits (no, not those bits) and things that don't work at night – when you get home and switch the hi-fi on that is.

A 1.2Mbp/s digital stream from CD has a fundamental frequency of 1.2MHz and, if pulse definition is to be maintained, needs x5-x10 analogue bandwidth – demanding a 10MHz cable. At these frequencies a 75 Ohm cable does ideally need to be terminated with 75 Ohm BNCs to work properly, avoiding reflections. Insufficient bandwidth will slow pulse transitions and, through time domain indeterminacy in the zero crossing point, increase jitter in receiving circuits. Jitter and reflections are minor in short domestic cables, but can become major in long recording-studio cables, for example. There are lots of caveats in here, including varying data rate changing the spectral content of digital, and re-clocking restoring pulse timing.

I doubt you would easily hear the difference between cables linking a CD player to a DAC, but I would not like to bet on it. Generally, you get a clearer sound with harder temporal definition from quality digital cables I find – as might be expected. Our measurements clearly show a balanced AES/EBU S/PDIF link gives less noise and higher dynamic range than either an electrical cable BNC terminated or an optical cable – and AudioQuest even make a battery powered AES/EBU cable! **NK**

A mini marvel

The new FiiO Q1 MkII portable headphone amplifier brings DSD playback to an iPhone – and sounds superb with all else, finds Noel Keywood.

DSD from an iPhone? Yes, that's a major claim FiiO (China) make for their recently released Q1 MkII headphone amplifier I'm reviewing here. DSD offers better quality than standard digital (PCM). So this claim caught my eye.

An iPhone can only accept and play 24/48 hi-resolution (PCM) digital files. They give better sound than CD when listening on headphones – but not by much. DSD is an attractive alternative, but Apple don't readily accept strange file formats or – especially – proprietary ones into their walled garden. DSD is a Sony-fied version of one-bit PDM digital – entirely different from PCM and almost as alien as Windows to any Apple based system. I thought my iPhone might block or blow up.

Happily it did neither. DSD slid through and into my Oppo PM1 planar magnetic headphones, or Philips Fidelio X1s from an iPhone 6S without too much fret or fuss. And what greeted me was a great sound – it was worryingly good.

The new Q1 MkII headphone amplifier is purposed to suit iPhones and has been certified by Apple. It connects in digitally through the small Lightning socket on the base and routes the iPhone's digital output through modern, high-quality audio circuits to deliver better sound quality via its own headphone

output socket(s).

The case is small, 107mm long including the volume control but not connecting leads, 59mm wide and 12.5mm thick, designed to be strapped to the iPhone with rubber bands (supplied) if need be, forming a unit that's just about pocketable. A user can play high-resolution audio files of the highest specifications from an iPhone whilst commuting or on the move – a nice idea.

It might be tiny – and light at 102gms on our scales – but this little unit packs in a lot of modern technology. Inside it uses a recent (2015) AKM (Japan) AK4452 digital-to-analogue convertor specified at 115dB dynamic range, a figure our measurements verified. Importantly, it is fed by an XMOS digital processor that deals with the problem of sending DSD over a digital connection (USB) not purposed for such things. XMOS specialise in this malarkey and do a great job with high-quality audio.

Why bother? DSD offers a lovely sound that is open and spacious – free of the hard, mechanical quality typical of PCM. At the same time, for all those not bothered about playing DSD, the Q1 MkII will also handle standard digital (PCM) up to 32/384 resolution, above the usual 24/192 considered to be the upper quality limit. Our measurements showed it does a great job at this too, well conveying the benefits of hi-res digital

by being free of noise and distortion.

The little Q1 MkII has two headphone outputs, one a normal unbalanced 3.5mm jack, the other a tiny 2.5mm balanced headphone jack. The latter offers better sound but is difficult to use: you need headphones wired to accept balanced input (separate leads to each earpiece) and a 2.5mm four pole plug is both miniature and fragile. I've broken a few in use and find them impractical.

Additionally, the FiiO has a Line output, but it gives the same voltage as headphone and is not fixed level like most, output being determined by volume so I don't understand its purpose.

A small but firm-action volume control with in-built on-off switch feels good to the touch. Power comes from internal re-chargeable 1800mAh batteries, charged through its micro-USB connector; it charges from a computer or 5V power supply though not from a phone to preserve its battery life. Supplied leads enable connection to an iPhone or a computer. Small slide switches on the base set headphone output (GAIN) to High or Low and provide bass boost to pep up the weak bass from lightweight over-ear headphones.

As it stands the Q1 MkII provides higher quality than an iPhone's own headphone socket. The latter provides 500mV maximum output (volume) and 103dB dynamic range; the Q1 MkII provides 1.5V



twenty5 series

THE DEFINITION OF PERFORMANCE

A quarter of a century of research, obsessive design and craft has produced the **twenty5** series – loudspeakers that deliver all the passion of the original performance, conveying every nuance. The range refines our **ATL** bass-loading concept with new drivers, new materials, and **Laminair**, a revolution in audio dynamics. With its natural musicality, vivid audio picture and rich, enveloping bass at all levels, the **twenty5** series lets you feel the music, not simply hear it.



"This is a seriously talented speaker that has to be on everybody's shortlist at the price."

twenty5.21 - Hi-Fi Choice '17

Book a demonstration

See our dealer listing online, or contact us

T +44 (0)1767 686300
www.pmc-speakers.com



maximum volume and 114dB dynamic range – quite a step up.

In absolute terms this puts the little FiiO right up with good quality mains powered DACs, if not in contention with the best that manage 124dB dynamic range. It is still very good, if not comparable to the larger Chord Electronics Mojo. But this is when playing the best an iPhone can deliver, 24/48 PCM digital.

What about DSD? I started out saying the FiiO can play DSD from an iPhone, as they claim. Well it can, but it can't. To do so you have to load a DSD player into the 'phone first, like Onkyo's HF Player I used – and this costs £9.99 for the hi-res version (the standard player is free). Then hi-res PCM and DSD files can be loaded to the phone and played via the FiiO. It's a bit of a fiddle, mostly because of the iTunes interface, but Onkyo's player is better than the iPhone's own iTunes player in ease of use and sound quality, so once the struggle to get it up and running is over, music play from the phone is both easier and more capable. It also offers a range of esoteric DSD options that were flagged up as in Beta test form (at Nov. 2017) but I experienced no problems.

SOUND QUALITY

In a nutshell the Q1 MkII comes over as full-bodied yet very smooth. FiiO have traditionally offered a gentler approach than Astell&Kern, whose players are dramatically snappy.

This little headphone amplifier has the smoother presentation of big mains-powered DACs like Audiolab's M-DAC+ (ESS Sabre32 DAC), reflecting the way recent top AKM DAC chips have been heading – and in contrast to Chord Electronics DACs like Hugo 2 and Mojo I have reviewed in earlier issues. Think big, powerful yet silky smooth, verging on warm in basic presentation.

From Fleetwood Mac's 'Dreams' (24/96) to The Doors 'Love Her Madly' (AAC) the Q1 had a generous, full-bodied sound underpinned by solid pace: 'Love Her Madly' drove through my headphones with the aura of a Mack truck in the fast lane. Interesting that this compressed track had the same basic nature as hi-res, even if the crudeness of AAC was obvious.

So what you get is a barrel-chested sound from any music played, hi-res offering a greater range of contrast, subtleties and expression. With all EQs off bass was almost

peculiarly strong – Queen's 'Radio Ga Ga' (24/96) pounded at my ears with its heavy synth bass line, thrown at me from the Q1. The little FiiO is massive in its low end delivery, if not as tight as mains powered DACs. I had a sense of it being slightly overblown here – and all EQs were most definitely off.

The Q1 MkII showed its mettle with high-resolution digital – but it was DSD that proved the clincher. Sent from the iPhone packed as DoP, rather than converted into PCM, cymbals rang as clanky metal items – I could hear the brasswork as it were – and there were long decay tails with 'House of the Rising Sun' (Cyndee Peters, DSD 5.6MHz). This performance was riveting in sound quality: there was a tremendous feeling of space around the performers, it was relaxed yet natural, instruments were precision imaged and there was so much timbral information – those cymbals – that it dripped with reality. This carried through with a wide range of DSD tracks (.dsf and

.dff) some, like those from the Doors re-mastered from the analogue tapes sounding wholly different to earlier presentations; I was taken aback.

Connecting Oppo PM1s to the balanced output gave a slightly tidier sound with sharper outline, as if a little fuzz had been removed.

CONCLUSION

The little Q1 MkII was frighteningly good at times. Those times were playing DSD from my iPhone. But even with standard digital (PCM) of normal or high-resolution it gave great sound quality: big bodied, smooth and easy, yet subtly fluid and detailed. Beguiling in fact. To get the most from it you need to buy additional software, but this little unit has a low price that is out of all proportion to its high quality.



The bottom face carries a microUSB input socket and small slide switches for adjustment of Gain and Bass.

MEASURED PERFORMANCE

The tiny Q1 MkII headphone amplifier delivered 1.5V when set to H (High) and 0.76V when set to Low, from the standard 3.5mm headphone jack. Good figures in themselves if not a massive step up on the output of an iPad, for example, that offers 1V – or mobile 'phones. With a 24/192 digital input frequency response reached 40kHz (-1dB) before rolling off to the

upper theoretical limit of 96kHz, as our analysis shows. This is a good result, ensuring even and open sound with hi-res digital.

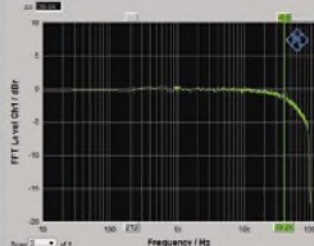
Distortion from the AKM4452 DAC was low at 0.04% (-60dB, 24bit) – excellent for such a small and inexpensive unit. Our analysis shows an absence of distortion harmonics.

Due to low distortion and noise, EIAJ dynamic range measured a healthy 114dB – again fine for such a small and inexpensive headphone DAC/amplifier. It is well above CD at 102dB, allowing the benefit of hi-res digital to be conveyed.

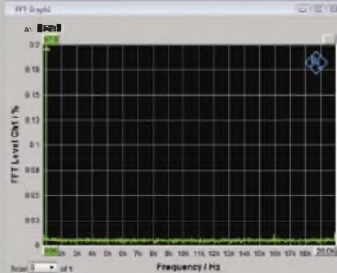
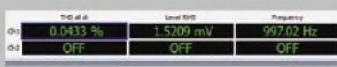
The balanced output surprisingly offers double the output (3V) of unbalanced (1.5V), a tad less distortion (0.03%) but the same 114dB dynamic range – very good figures. Line output was much like the 3.5mm headphone output, with 1.6V maximum from a volume controlled (not fixed) 3.5mm jack and 115dB dynamic range.

The FiiO Q1 MkII offers very high performance figures, especially for a small battery portable device. **NK**

FREQUENCY RESPONSE



DISTORTION



Frequency response	4Hz- 40kHz
Distortion (24bit, -60dB)	0.04%
Separation	89dB
Dynamic range	114dB
Noise	-112dB
Output (H/L)	1.5V / 0.76V
Output (balanced)	3V

FIIO Q1II (2ND GEN) DAC AND HEADPHONE AMPLIFIER £89.00



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Superb sounding iPhone headphone amplifier that uses latest technologies to impressive effect.

FOR

- sound quality
- plays DSD
- balanced output

AGAINST

- hi-res DSD player an extra

Advanced MP3 Players
+44 (0)343 289 6880
www.advancedmp3players.co.uk

Playing DSD

Confused about the file format DSD, how to play it back and what are the benefits? Noel Keywood explains all.

DSD or Direct Stream Digital is a funny old technology – and a very confusing one. All the same, the ability to play DSD is slowly creeping into audio as a high-end feature, even though processing and playing it through a conventional PCM based digital audio system can be both confusing and difficult to achieve. Here's a non-technical overview explaining what DSD offers and how to use it.

DSD has a reputation for good sound quality with audiophiles around the world. It offers a more 'organic' or natural sound free of the perceived hard, mechanical quality of conventional PCM. That is both the general perception and our own, based on using it.



Cookie Morenco, founder of Blue Coast Records (California) has built a reputation around offering high quality DSD recordings, promoting the format.

Although technically there is argument about this, our measurements clearly show very low distortion and noise across the audio band, if deteriorating performance at high frequencies as its critics note. But as the ear is most sensitive up to 7kHz and insensitive above 10kHz, this may accord with what we hear.

It isn't uncommon to hear DSD that seems only a little different

to PCM, likely because it has been derived from poor PCM. Much recorded digital is poor PCM at source: a bad recording blighted by audibly discordant quantisation noise from a sonically inadequate digital convertor (ADC), perhaps 16bit from the 1990s. But nowadays, as more effort is being put into mastering of what have become historic performances, the sonic benefits of DSD are becoming more obvious. DSD sound quality varies then, according to the provenance of a recording.

So far I have used the acronym PCM twice and not explained that it is "standard digital". This is what you get with CD and in all computer files, including WAV, FLAC, ALAC, MP3, AAC and absolutely all else; they are all PCM variants. DSD is a totally different form of digital and some even argue it isn't digital – but I won't go into this. DSD files come with the file identifier suffix .dff, a basic file format without meta data, and .dsf – Sony's later file format with meta data.

The problem with DSD is it's very different. It is digital in that it comes as a stream of digits, but amplitude data is not numerically encoded, instead lying within the density of pulses in the stream. Such a pulse stream converts to analogue through a simple low pass filter – very elegant. The conceptual 'simplicity' of Pulse Density Modulation (PDM), DSD being Sony's commercial variant, makes it very attractive for audio work.

DSD can be transmitted and stored, and easily converted to

analogue – but it can't be processed and computers have difficulty dealing with it because they are designed for PCM.

You cannot play DSD on a PC using Windows Media player, nor on a Mac using the iTunes player



A Sony Music SACD from Japan that uses DSD in its hi-res layer to good effect, delivering wonderful performances from pianist Arcadi Volodos.

– their free in-built players. You must first obtain and load a DSD capable player such as Foobar 2000, J River, or Onkyo HF Player, all requiring payment, or the free Teac/Sony music player or Pure Music player. These will all recognise a .dsf or .dff DSD file and play it: the progress bar will move and other things may light up or go round and round to indicate play – but you won't hear anything. That's because all digital-to-analogue convertors in computers work with PCM only; they have no idea what DSD is and will stay resolutely silent, or you may get some hiss and faint music.

So don't spend money on a software DSD player expecting to hear DSD until you have sorted out how it will be turned to analogue. This may well change in the near future because adding DSD decode to an audio DAC chip is relatively easy. Most high-quality audio DAC chips handle DSD as standard these days,

but the older and simpler designs used in computers do not, as there is no perceived need for DSD decode in mainstream computing. Consequently, conversion of DSD to analogue must happen outside the computer in an external DSD-capable device, raising another problem – how to get it there.

An S/PDIF digital link can handle DSD but this is uncommon. Nowadays, USB (Universal Serial Bus) is used, but the transmission of DSD

into DoP format for transmission over a USB link. The receiving device must be able to recognise this data as DoP (not PCM), in order to send it to a DSD DAC for conversion to analogue audio.

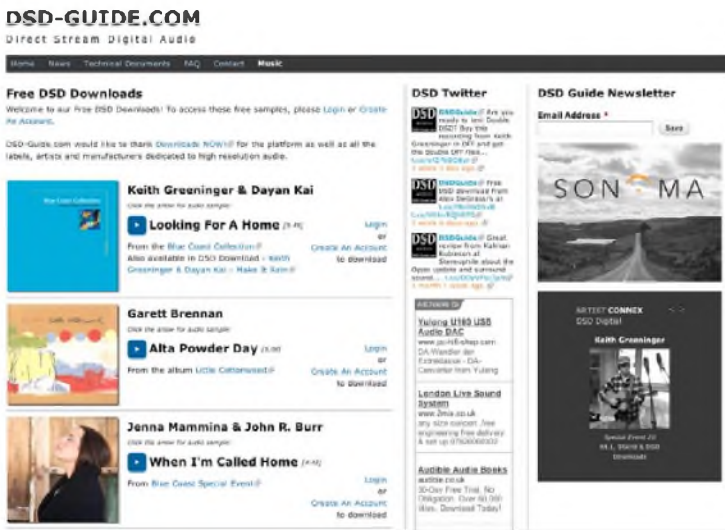
The advantage of this scheme is that DSD can be sent and received by both PCs and Macs, and bi-directional

DSD

Direct Stream Digital

DSD is in 'native' mode, adding to the confusion surrounding this issue. This is for PCs only. Their audio driver can be upgraded to an ASIO driver from Steinberg to send/receive DSD as-is, not packaged into USB audio data frames. Technically, the only benefit is lower data rate. Again, the receiving device must be able to both recognise and handle this data scheme. Macs cannot use this method because their audio drivers are inaccessible. Native isn't common because of its difficulties. If you want to receive native DSD, a PC able to send it and a receiver able to recognise it are needed.

Finally, on the issue of sending DSD over a cable, a common fool-proof solution is to convert it to standard digital (PCM). This



For a wealth of DSD information go to DSD-Guide.com online.

audio over USB is not within the USB Audio standard so computers cannot send DSD over a USB cable under normal circumstances; they can do it with a bit of fiddling though. Take a deep breath here while I explain.

Clever people at dCs (UK) came up with a way of packaging DSD into USB audio data frames in a scheme known as DoP. It requires the sending device to be able to package

communication between host and device is retained – a feature of USB. A drawback is that a receiving device unable to recognise DoP (most) will reproduce noise with faint background music. As dCs note, the system at least fails 'safe' in this circumstance.

One misunderstanding I have seen in an internet forum is that this implies DSD is turned to PCM.

It isn't. Within a USB data frame both are just a series of pulses; they only become PCM or DSD when stripped out and processed by an appropriate method.

DoP works very well. To use it you need a DSD player or computer that packages the stream into DoP so it can be sent over USB. In my review this month of FiiO's Q1 MkII portable headphone amplifier it is Onkyo's HF Player app, downloaded to my iPhone that does this.

An alternative and seemingly purer method of transmitting



Look at all the feet sticking out. This isn't a millipede but a complex Sony DSD processing chip with arrays of connection points.



Blue Coast Records and Sony Music at the California Audio Show. Day long demos of recorded music, talks about professional recording techniques and sound quality, live performances, artist interviews and much else...

overcomes all problems but rather defeats the purpose of DSD in the first place.

So much for all the horrors of trying to send DSD audio down a wire! In most cases if you have got this far the device at the other end of the cable will know DSD when it sees it. If it can recognise DSD, then it will be able to process it through a DSD digital-to-analogue convertor; that's the easy bit. Music at last!



AirPlay is a trademark of Apple Inc.



Your music. Your speaker. Your choice.

Introducing Mu-so Qb by Naim. The compact wireless music system designed by our specialist audio engineers in England. Offering versatile features and 300 watts of power, Mu-so Qb has to be heard to be believed. Why compromise?



Power Chord!

Chord's awesome Hugo TT now has a matching power amp. Martin Pipe tries out the TToby.

A couple of years back, we reviewed the Hugo TT (Table Top) DAC/headphone amplifier. The TT can be connected to any amplifier on the market because it has a volume control. Few power amps match its distinctive styling so Chord have introduced the complementary TToby. Like its DAC partner, it has both phono and XLR inputs – you can't use both at the same time. I'd also advise disconnecting headphones from the Hugo TT, if listening via the TToby and speakers. Left plugged in, my Focal Utopias acted as a rather muffled and insensitive stereo microphone whenever the Hugo TT was switched off – odd. Another annoyance is that although the power switch of the Hugo TT is conveniently on its front panel, the TToby's is inconveniently on the back! But apart from that, the two units go very well together.

The substantial loudspeaker output terminals accept bare wire, spaded or terminated in banana plugs. Inside, the TToby is constructed to the impeccable standard we've come to expect from Chord. Despite what you might expect from such a compact package, the power amplifiers – 100 watts per channel

into 4 ohms, with less than 0.02% distortion – are not Class D. Instead, Chord has specified a Class AB design, based on paralleled pairs of latest-generation power MOSFETs. These transistors are heatsinked by the unit's generous metalwork. The power supply is a compact switch-mode design, eliminating the big transformer needed by a linear supply. This explains TToby's compact dimensions, along with use of the casework as a heatsink.

SOUND QUALITY

To assess the subjective performance of the TToby, I used Quadral Aurum Wotan VIII speakers and the Hugo TT as a source. This was fed by a Cambridge CXN streamer, accessing CD rips and HD audio from USB drives or folders on a NAS.

Radio 3's 320kbps AAC stream, as received via the CXN, revealed just how good the Beeb can sound over the 'net. Lunchtime and evening concerts featuring material from – amongst others, Stravinsky, Beethoven and Dvorak – made for a compelling listen. The natural organic musical flow of the Hugo TT is complemented by the speed of the TToby, leading to excellent reproduction of percussion and

transient detail. It's salutary lesson for those who still believe that FM (admittedly better than DAB) is the final word when it comes to listening to Radio 3 at home.

The Hugo TT and TToby are musical to an almost-analogue degree, but this partnership is no slouch in the analytical stakes either. Their resolving power means that if the BBC was ever to do the right thing and revive the summer's worthwhile 'Concert Sound' lossless stream, you'd be able to tell it apart from AAC. The two also fared well with recorded classical music, like a mid-80s digital recording (CD rip) of Sibelius' Symphony No. 2 in D major, Op. 43 (Vienna Philharmonic/Leonard Bernstein). It was clean, open and natural; the strings and brass, in particular, leaped out at me.

Pizzicato strings and delicate drum-rolls emerged from the soundstage. And when the music started speeding up in the scherzo of the third movement, as the symphony progressed towards its dramatic finale, clarity was maintained. There was not a trace of congestion!

The system's resolving power was also evident after switching to a completely-different musical style – Depeche Mode's early albums (24bit



The new 800 Series Diamond
didn't get better by chance.
It got better by change.
868 changes to be precise.

Bowers & Wilkins

bowers-wilkins.com



downloads). I could follow details (for example, the bright sequenced melody bubbling under the Speak and Spell track Photographic) as I never could with my original LPs. The band's experimentation with sound manipulation on Construction Time Again were experienced in a new light.

A later electronic album – the quirkily-vocoded glitchcore reinterpretations of classic songs, ranging from James Brown's Superbad to Lennon's Imagine, that make up Lassigue Bendthaus' Pop Artificielle – showed commendable control of the speaker's larger drive units when reproducing bass. Bendthaus' (another alter-ego of Senor Coconut Uwe Schmidt) cover of ABC's Be Near Me was a particular treat; its low-end was tuneful and satisfyingly-deep, when it needed to be. The

electronic percussion and synthetic atmosphere were endowed with an engaging vitality. No matter what was thrown at the Hugo TT and TToby – a wide range of other material, ranging from Radio 4 to ELO – they never let me down.

CONCLUSION

It's hard not to like this maverick combination. It's flexible – if you're prepared to overlook Hugo's lack of support for analogue sources – and proves that a musically-satisfying performance and an analytical nature need not be mutually-



The upper section of the internally-busy TToby is dominated by the amplifiers and a collection of smoothing capacitors. Beneath is a heat sink for the output devices. At the bottom are two fan-cooled (quiet!) switched-mode power supplies.

"Pizzicato strings and delicate drum-rolls emerged from the soundstage."



The TToby's power supply is built in, an IEC mains socket and adjacent but inconveniently located mains switch show. Robust quality speaker terminals and unbalanced (phono) and balanced (XLR) inputs are fitted. Only one can be connected though.

exclusive. My only serious criticism? It's a shame that the amp's power switch is stuck away on the rear panel. For its part, Chord recommends leaving it switched on "when not in use" as "TToby consumes very little power when idle". When Chord gets around to designing their successors – WTA filters with even more 'taps', and Class D amps that do indeed exude 'raw power' – I hope some kind of triggering will be included, so that when you turn the DAC on or off the amp follows suit.

MEASURED PERFORMANCE

The Chord Electronics TToby power amplifier uses a switch-mode power supply and Chord Electronics Class A/B Mosfet output stage for compact case dimensions. It became very warm at idle; the case acts as a heat sink. Power measured 50 Watts into 8 Ohms and 90 Watts into 4 Ohms – enough to drive any modern loudspeaker to high volume, but a tad below the 100W claimed.

TToby managed low distortion, 0.01% at 1kHz and 0.07% at 10kHz, 1W, our analysis showing the latter. Whilst the harmonics are extended, their level is low and did not change in amplitude pattern with level – a good sign that suggests they will have little aural impact.

Frequency response analysis shows response into 4 Ohms, where it extends flat to 60kHz (-1dB). Into 8 Ohms this

figure was 80kHz (-1dB).

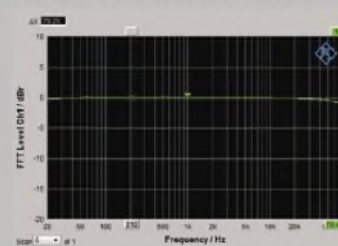
Input sensitivity of both Line (phono socket) and Balanced (XLR socket) inputs was identical at 0.7V, where 1V is common for power amps – so the TToby is sensitive. Noise was low at -95dB.

The output damping factor of 60 was negative, voltage rising slightly into a low load: Cambridge amplifiers have exhibited this in the past. Output impedance is very low so the aural impact likely minimal.

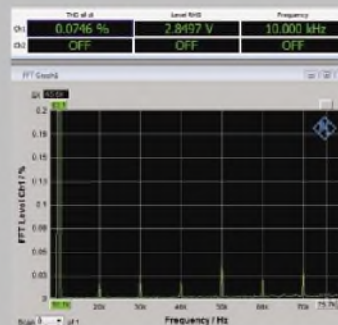
TToby measured well in all areas, if shy of Chord Electronics own figures in power and bandwidth. **NK**

Power (8 Ohms)	50W
Frequency response	4Hz-60kHz
Distortion (10k, 1W, 4 Ohms)	0.07%
Sensitivity	700mV
Noise	-95dB
Damping factor	60

FREQUENCY RESPONSE



DISTORTION



CHORD TTOBY
£2899



OUTSTANDING - amongst the best.

VERDICT

Enjoyable, revealing and gutsy.

FOR

- beautifully-made
- visually matches the Hugo TT
- insightful and powerful

AGAINST

- rear mains switch
- no power triggering

Chord Electronics
+44 (0)1622 721444
www.chordelectronics.co.uk



AUDEZE™

LCDi4

HAVE YOU HEARD THE LIGHT?

Our goal when designing the LCDi4 was to make the absolute best-sounding in-ear experience. We took our award winning LCD-4 planar magnetic design and scaled it down to offer all the performance at a fraction of the size and weight.

Designed to deliver a truly wide and accurate soundstage, superior transient response and bass response flat from 900Hz down to 5Hz, the single-driver LCDi4s offer a coherency of sound lacking in multi-driver designs.

Using the same ultra-thin diaphragm that is used in the LCD4s and all our patented technologies like the Fluxor magnets and Uniforce voice coil technology, the LCDi4 ushers in a new benchmark for realism in in-ear headphones. The distortion (THD) is less than 0.1% overall even at high volumes, an amazing achievement for in-ear headphone designs.

Weighing 12 grams per side, the headphones – handmade in our California lab – come with a new magnesium top housing and premium, braided cable made of silver-plated OCC copper with Kevlar threads for additional strength. A luxury leather travel case completes the LCDi4's portable perfection.

Experience the LCDi4 now at

SELFRIDGES&CO



AUDIOSANCTUARY

highend
headphones
Since 1984



WIN

**A SUPERB PAIR
OF MARKAUDIO
SOTA CESTI B
LOUDSPEAKERS
WORTH £1,950
IN THIS MONTH'S
GREAT GIVEAWAY!**

Here's your chance to win a pair of MarkAudio Sota Cesti B loudspeakers we reviewed last month. Read the review excerpt below and answer the questions.

"For a start these 'speakers are handed. While the two drivers are arranged in the usual way, one above the other, the fascia has an asymmetrical waveguide CNC-machined into it. With the guide facing outwards you get wider dispersion, while facing inwards gives a tighter, more focussed stereo image.

I'd advise experimentation here as it's very much a matter of personal taste, and is influenced by proximity to side walls.

Then there's the drivers themselves. Instead of the usual mid/bass tweeter arrangement these are in fact two full-range units which differ only in size. The bottom is an 11cm Sota (State Of The Art) driver while the top measures 5cm.

Designed by MarkAudio founder Mark Fenlon and built in-house, they have a shallow cone profile and are constructed from an alloy. MarkAudio says that as the drivers are identical in construction they have the same

dispersion characteristics – which is not the case for a traditional cone mid/bass plus dome tweeter. This makes the use of a low order filter much more feasible.

The drivers have long stroke suspension and are also extremely low mass, Mark himself saying he comes from the Colin Chapman/Lotus school of engineering where the mantra "Simplify, then add lightness" held sway".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 9th February 2018 to:

**February 2018 Competition,
Hi-Fi World magazine,
Studio 204,
Buspace Studio,
Conlan Street,
Notting Hill,
London W10 5AP**

RULES AND CONDITIONS OF ENTRY

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

QUESTIONS

[1] Are the 'speakers

- [a] handed
- [b] footed
- [c] beheaded
- [d] ambidextrous

[2] What is machined in

- [a] cat flap
- [b] lubrication point
- [c] asymmetric waveguide
- [d] drain holes

[3] Is the cone profile

- [a] hemispherical
- [b] rectangular
- [c] shallow
- [d] convoluted

[4] The drivers are

- [a] extremely low mass
- [b] elephantine
- [c] diaphanous
- [d] pliant

entries will be accepted on a postcard only

NOVEMBER 2017 WINNERS: GOLDRING E3 CARTRIDGE
Mr. K Midgley of Conwy, Mr S. Dohery of London, Mr. D Priestley of Bradford,
Dr. M. Malik of Surrey, Mr. P Sumpter of Keighley



WORLD STANDARDS

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

TURNTABLES

AVID INGENIUM £800
Great bass response and upper midrange detail allied to clarity makes this a must-hear at its price-point



CLEARAUDIO INNOVATION £6400
Expensive, but offers great results from a finely honed and beautifully finished belt drive turntable, with servo control from the platter to keep a grip on tempo like few others. Can be fitted with a Clearaudio tangential arm, or any conventional design. Awesome



INSPIRE MONARCH £4,350
A rebuilt from the ground up Technics Direct Drive, having blistering pace and dynamics allied with smoothness, sophistication and purity of tone. A true reference.



LINN LP12SE £3,600
The UK's most iconic turntable, the legendary Sondek goes from strength to strength. New Keel sub-chassis and Radical DC motor add precision and grip to one of the world's most musical disc spinners. Expensive though

MICHELL GYRO DEC £1700
Wonderful styling coupled with great build and finish make this turntable a delight for friends and family. It has an attractive clear acrylic dust cover, and you can mount just about any arm. A current design standard



PRO-JECT ESSENTIAL DIGITAL £300
A budget turntable that turns in a great analogue performance, but also has a hi-res digital output. Send 24/96 across your lounge via optical cable to a DAC and get great audio quality. Or record LP to your laptop



REGA RP3 £550
The first of the super-quality Regas, little compromised by price and featuring Rega's outstanding RB303 tonearm, suitable for MM and MC cartridges. A standard at the price point

TIMESTEP EVO £2100
The famous Technics SL-1210 MkII Direct Drive but with improved plinth, isolation, main bearing and power supply, plus an SME arm (add £1500) DD convenience, rock steady pitch and fab sound at a great price. Our in-house reference



TONEARMS

ORIGIN LIVE ENCOUNTER MK3C £1,745
Origin Live combines carbon fibre and ebony to marvellous effect in its new 12-inch arm. Creamy and rich in presentation, the Encounter delves deep into the mix for a satisfying listen.

HADCOCK GH-242 EXPORT £810
Consummately musical, lyrical sounding tonearm, but needs the right turntable.

ORIGIN LIVE ONYX £450
Easy, smooth, creamy nature that reminds you why you're listening to vinyl in the first place. Essential audition at the price.



REGA RB303 £300
A one piece tapered casting makes this arm's structure almost unrivalled. Great dynamics and superb imaging, for MM and MC. Reference quality for peanuts

SME 312S £1,600
Twelve inch magnesium alloy tapered arm tube plus SME V bearings. An insightful yet smooth and relaxed sound. Superlative build completes the package. Our Editor's steed



SME 309 £1500
A one-piece tapered 9in arm finished like a camera and slick to use. Superlative SME quality and sound at affordable price

SME V £3000
Offers rapid fire timing and a sense of precision, plus rock solid dynamics. Top dollar for deep pockets

CARTRIDGES

AUDIO TECHNICA AT-OC9 ML III MC £420
A fine sounding MC with strong bass and super fine treble from a great stylus – yet inexpensive.



AUDIO TECHNICA AT-F3/III MC £150
Great value entry level moving coil with detail and grip you just can't get from similarly priced moving magnets

BENZ MICRO ACE SL MC £595
Smooth, lucid and full-bodied, award-winning, hand-made cartridge from Switzerland

BENZ MICRO WOOD SL MC £945
Highly finished Swiss moving coil that plays music with riflebolt precision

DENON DL-103 £180
A popular and much loved budget MC with big bass, smooth treble and deep sound stage. Fantastic value.



LYRA TITAN I MC £3,500
Breathtaking speed and dynamics from LP, helped by diamond coated, boron rod cantilever.



ORTOFON 2M MONO SE MM £80
A mono cartridge purposed for The Beatles in Mono microgroove LPs. Fitted with a top quality Shibata tip. Fab for the four.



ORTOFON 2M BLACK MM £400
As good as it gets from MM. Fabulous detail and insight from a Shibata stylus, good bass and excellent tracking.

ORTOFON CADENZA BRONZE MC £1,400
A mid-price MC with a slightly livelier presentation than the super smooth Cadenza Black. High-end sound at midband price – great value.



ORTOFON CADENZA BLACK MC £1,800
Ultra smooth and dimensional moving coil with bass and punch aplenty. Lovely stylus.

ORTOFON A95 MC £3,750
Fast and extremely detailed, this is an MC cartridge that sets standards.

REGA CARBON MM £35
Budget price for a competent cartridge with a fairly unflappable nature. Ideal for beginners.



GOLDRING 1012GX MM £250
A glorious sounding cartridge with solid bass and strong dynamic punch, plus excellent treble from its Fritz Geiger stylus. Fun and affordable.



SHURE M97XE £80
Big warm sound, but great tracking and bullet proof stylus protection from damped guard. A survivor.

VAN DEN HUL DDT-II SPECIAL MC £995
Long-established cartridge from Holland with an open and dynamic sound.

PHONO PREAMPS

CAMBRIDGE AUDIO 651P £200
Clean, concise sound from MM and MC cartridges at a very low price. A real bargain.

ICON AUDIO PS3 MKII £2,500
All valve MM phono stage with MC transformer option, graced by big, spacious and relaxed sound.



LUXMAN EQ-500 PHONOSTAGE £4,495
A fully-equipped phono stage from Japanese manufacturer Luxman that offers comprehensive cartridge matching allied to superb sound.



LEEMA ACOUSTICS ELEMENTS ULTRA £1,199
Smooth and detailed sound with the ability to accommodate most modern cartridges. Exceptional value for money.



PRO-JECT TUBE BOX DS £425
Compact MM and MC phono stage with valve output circuit and a big sound.



QUAD QC24P £995
MM and MC, oodles of gain, a volume control – and valves! Looks superb and sounds even better: smooth, atmospheric and big bass.

TIMESTEP T-01MC £995
New, minimalist phono stage that sonically punches well above its weight.

PREAMPLIFIERS

ICON AUDIO LA-4 MKIII £1,400
Uses early 6SN7 triodes for liquid sound. Has plenty of gain and a remote control into the bargain.



MF AUDIO CLASSIC SILVER £4,500
One of the best preamplifiers we've heard at any price, this transformer-coupled marvel does very little wrong. It's powerful, clean and open, yet delicate. Its sound is unmatched at or near the price.

MING DA MD7-SE £1,520
A valve preamplifier with an open, effortless sound and a big soundstage. It has plenty of gain so will accept any source and drive any power amp. A real beauty.



INTEGRATED AMPLIFIERS

ARIAND PRO845SE £1,499
Pure single-ended valve magic. Low-powered but immediately gorgeous, easy-going yet forcefully dynamic at the same time.



AUDIO RESEARCH VS160 £3,500
Power house sound with enormous pace and punch from traditional U.S. muscle master Audio Research. Breathtaking, but expensive.



CAMBRIDGE AUDIO AZUR 651A £350
Dual-mono construction and meaty toroidal power supply combine to produce a solid and sharp sound with sonics far beyond its price point.

CREEK EVOLUTION 100A £1,500
Superb build and smooth confident sound make this powerful amplifier a benchmark.



CYRUS 8DAC £1,400
Trademark shoebox-sized Cyrus integrated now offering 88Watts per channel, plus DAC. Svelte delivery from a dainty case that fits in anywhere – and isn't Class D!

EXPOSURE 1010 £495
Entry-level integrated from Exposure has excellent upper mid-performance with an almost valve-like sound.



ICON AUDIO STEREO 60 MKIII £2,800
Excellent tube integrated with plenty of power and an expansive soundstage, plus KT150 tube option and bias meter for easy adjustment.



NAIM NAIT 5Si £925
Naim's fabled entry-level integrated amplifier is updated to si status. Demos Naim's superbly muscular sound at entry level.

SUGDEN A21SE £2,480
Class A amp with fantastic sound quality producing hard, sculpted images, deep detail and tight bass. Just don't expect disco-like sound levels!



POWER AMPLIFIERS

AUDIO RESEARCH VS175 £7,498
Powerful, fast valve sound that makes everything else look weak at times. Needs careful matching but well worth the effort.

AUDIO RESEARCH VS115 £5,000
Oodles of power with enormous punch. Rafael Todes said it provided "shock and awe" while retaining incredible smoothness and texture.

ICON AUDIO MB845 MKII £7,600
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.



ICON AUDIO MB81PP £15,000
Big Russian transmitter valves deliver 200W from these massive monoblock amplifiers. Frightening in every sense.

MCINTOSH MC-152 £4,995
Stunningly insightful sound with enormous bass punch from a uniquely designed transistor amp. Amazing audio, a league up, if expensive.



QUAD ELITE QMP MONOBLOCKS £2400 PR
The proverbial iron fist in a velvet glove. Plenty of power but delivered with an assured and confident nature. Smooth on top and easy on the ear but can rock out when needed.

QUAD II-EIGHTY MONOBLOCKS £6,000 PR
Powerful and expansive sound from modern design monoblocks that also look lovely. Superb – used by us as a reference.



LOUDSPEAKER FLOORSTANDER

B&W 803 D3 £12,500
B&W's updated statement floorstanders deliver depth and definition with breathtaking speed and authority, aided by a diamond coated tweeter. Expensive – but enormously impressive.

CASTLE AVON V £1,600
A big floorstander at a modest price that suits the average room. Refined ribbon treble and deep bass give it a great delivery.



EMINENT TECHNOLOGY LFT-8B £2,500
Excellent U.S. planar magnetic loudspeaker at bargain price. Utterly superb - a must hear.

EPOS K2 £1,000
A fun sound that is tidy all round and very engaging, with solid bass. Music as you hope it to be.

FOCAL ARIA 926 £1,400
Simple, clean, neutral sound – easy going but well engineered and affordable.

MARTIN LOGAN SUMMIT X £16,698
Matches Martin Logan's XStat electrostatic panel to a powerful subwoofer to provide extended, powerful bass. Dramatic sonic purity. Awesome – all but unmatched.



MARTIN LOGAN ELECTROMOTION £2,500
Martin Logan's budget baby XStat hybrid electrostatic. Fits into any lounge to give electrostatic levels of clarity and imaging.



QUADRAL CHROMIUM STYLE 8 £1,700
A supremely smooth yet open sounding loudspeaker. Clean and detailed treble from a fine ribbon tweeter. Accurate yet informative and enjoyable. Pure class.

QUADRAL DRKAN VIII AKT IVS £6,200
Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter.



Q ACOUSTICS 2050i £480
A large floorstander at a budget price. Offers high sensitivity and big sound and has very few flaws for the price.

SPENDOR SP100 R2 £6,495
Retro looks but a sound that's hard to match. Spendor's 12" bass unit provides massive low-end grunt with a room-filling sound.

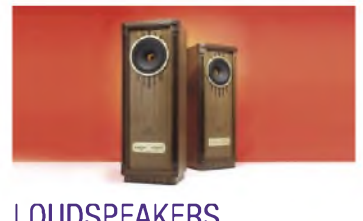


SPENDOR A3 £1,300
Fine little floorstander with a smooth, natural midband and even tonal balance. Ideal for smaller rooms.

TANNOY DEFINITION DC10 TI £6,000
Enormous power with great projection. Glorious subsonics too. Need little power to go very loud and have superb finish into the bargain.



TANNOY KENSINGTON £9,950
Big but not overpowering, punchy modern sound from classic cabinetry. Need little power to go very loud and suit a traditional home, or castle.



LOUDSPEAKERS STANDMOUNT

ACOUSTIC ENERGY NEO 1 V2 £225
Civilised sounding speaker with fast and tuneful bass.

ACOUSTIC ENERGY AE1 CLASSIC £845
Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.



ELAC BS243 £1,000
More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.



EMINENT TECHNOLOGY LFT-16A £1,200
U.S. planar magnetic bookshelf loudspeaker with unrivalled mid-band and treble. Hear it before all else.

WHARFEDALE DIAMOND 220 £200
Builds on the success of previous Diamond ranges with better bass, more detail and a greater sense of scale.



KEF LS50 £800
Supremely musical mini-monitors which sound much bigger than they look.



MARTIN LOGAN MOTION 35 £1,300
Folded Air-Motion tweeter gives a taste of Martin Logan's electrostatic sound in a standmount. Different from the standard mini-monitor and all the better for it.



PMC TWENTY.21 £1,575
Transmission line loaded standmount with a big box sound from a compact cabinet. Punches well above its weight.



Q ACOUSTICS 2020i £165
Great little bargain-priced stand-mounts with a friendly, fun yet surprisingly refined sound. Hard to better for a pair of starter loudspeakers.

WHARFEDALE DENTON £500
A beguiling mixture of retro looks with modern, high-technology drive units. The Denton has an easy-going, big-hearted sound with a touch of trad warmth that should appeal to many.



HEADPHONE AMPLIFIERS

CREEK OBH11 £150
Designed specifically for low to medium impedance (30 Ohm – 300 Ohm) headphones the little Creek has a marvelously well-judged sound.

CHORD MOJO £399
Class leading portable DAC and headphone amp with ability beyond all else. Big, open spacious sound.



EPIPHANY EHP-02 £99
PP3 battery-powered portable gives great sound quality at an almost giveaway price. Happy with the output from an iPod or CD player, the little epiphany is a true bargain.



ICON AUDIO HP8 MKII £650
The HP8 MKII valve-based headphone amplifier brings the spacious sound of valves to headphones. And it matches 'em all.



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

MUSIC FIRST PHONE BOX £276
Brings a big stage, plenty of detail and rich, deep colours to the sonic spectrum.



OPPO HA-2 £250
Remarkable performance and sound from ESS Sabre32 DAC in a slim portable package.



CD PLAYERS

AUDIOLAB 8200CDQ £949
Inspired CD player and DAC with price-performance ratio like no other. Capable of matching designs costing much more.



CANOR CD2+ £3,100
Musically coherent and tuneful valve-driven CD player from Slovakia. Lovely liquid sound.



CAMBRIDGE AUDIO AZUR 651C £410
Snappy modern presentation from this budget CD player. Cracking audiophile entry point for any digital fan.

CHORD RED REFERENCE MKIII £16,000
A unique and massive engineering exercise that could well be the best CD player available. Chord's Pulse Array DAC technology produces a musical experience like few others. A true reference player.



ESOTERIC K-03 £9,495
Superb high-end silver disc spinner that is beyond criticism. Devoid of its own character but has a flawless presentation.



EXPOSURE 101 £395
Detailed player with fine sense of timing should be an automatic entry on any demo list at this price.

ELECTROCOMPANIET EMP-1/S £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.



OPPO BDP-105D £1200

Universal player and DAC that makes CD and Blu-ray (+DVD) sound deep, spacious and full bodied. Reference quality that's affordable.



REGA APOLLO-R £550

Rega comes up with a fine CD player again. Tremendous detail and an easy, unforced sound at all times. Few bells and whistles but made up for by its superb sonic ability.



ROKSAN KANDY K2 £900

A charmingly musical performer at the price - this is a surprisingly sophisticated CD player for the money.



TUNERS

CAMBRIDGE AUDIO AZUR 651T £299

Value-packed AM/FM/DAB and DAB+ ready tuner. Precise and detailed with excellent resolution of spoken word.



CREEK DESTINY 2 £550

Creek's tuner expertise shines through in the Destiny 2. This AM/FM receiver is wonderfully three-dimensional and smooth.



MAGNUM DYNALAB MD-90T £1,900

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



DACS

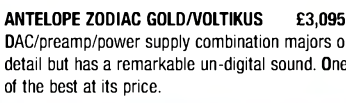
AUDIOLAB M-DAC £600

Excellent sound from ESS Sabre32 DAC and impressive flexibility with a unique range of filter options make this a stand-out product. Low price is the icing on the cake



AUDIOLAB Q-DAC £250

Stripped-down version of Audiolab's M-DAC loses some features but retains much of the sound, making it a veritable bargain.



ANTELOPE ZODIAC GOLD/VOLTIKUS £3,095

DAC/preamp/power supply combination majors on detail but has a remarkable un-digital sound. One of the best at its price.



CHORD 2QUOTE HD £990

Superb build quality and exceptional sound from this compact unit. Boasts the ability to handle DSD direct via USB and has an exceptional soundstage. One of the best DACs you can buy.



DCS DEBUSSY £8,000

DCS's bespoke 'Ring DAC' circuit gives a beautifully-fluid, almost analogue sound that encourages long listening sessions. Not cheap but worth every penny.



NORTHERN FIDELITY DAC £650

Packed full of features, including Bluetooth and USB, this ESS Sabre32 equipped DAC offers crisp, insightful sound at low price.



METRUM OCTAVE £729

Unique two-box digital-to-analogue converter with great sound at a great price. Cuts upper treble, though.



NAIM DAC £2,400

Superb high-end digital converter with a probing, punchy and forensically-detailed sound.

TEAC UD-501 £699

Feature-packed DAC with benefit of DSD playback. Superb sound means little to touch it at the price.



RESONESSENCE INVICTA MIRUS £4,499

One of the most highly spec'd DACs available, with a smooth yet entrancing presentation. Few approach it.



NETWORK PLAYERS

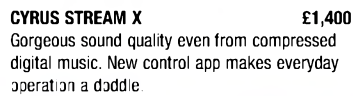
CHORD DSX100 £7,500

Chord's proprietary DAC circuit shines in their top-of-the-range streamer. Hear-through clarity with a sound rich in detail, dynamics and soundstage.



CAMBRIDGE AUDIO NP30 £399

Budget offering from Cambridge offers a great introduction to network streaming.



CYRUS STREAM X £1,400

Gorgeous sound quality even from compressed digital music. New control app makes everyday operation a doddle.



CONVERT TECHNOLOGIES PLATO £2999.00

A network player with amplifier that does it all, including turn LP to hi-resolution digital, and add cover artwork from the 'net.



NAIM NDX £2,995

Clean, incisive and very detailed sound with Naim's traditional pace and timing make this one of the best network music players around.

NAIM ND5XS £2,175

Great sound quality with traditional Naim heft. A wonderful DAC with full 24/192 handling. Only the display could be better.

NAIM NAC-N172 XS £1,650

A pre-amp/DAC/streamer package provides a taught, rock-solid presentation with a tonally rich midband and a superior sense of rhythm.



PRO-JECT STREAM BOX RS £1,095

Unusual valve-based streamer/preamp with variety of inputs and a lovely liquid sound. Not the most detailed but compensates with sheer musical verve.

QUAD PLATINUM DMP £2,500

Combined CD/network player has all the usual Quad elements but with added zest and detail that brings life to everything you care to play.



DIGITAL SOURCES

ASTELL&KERN AK100 MKII £569

Portable high-definition digital player with superb sound quality. Punchy and fast.



FiiO X3 £150

Fabulous value player with nice easy sound and full range of abilities. Small and light. For newbies.

LOT00 PAW GOLD £1,500

Reference quality sound; it's like carrying your hi-fi in your pocket. Equivalently large too, but stunning headphone quality.



NAIM HDX £4,405

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

NAIM UNITILITE £1,995

A 50W amplifier with traditional Naim heft, a CD player and vhf/fm radio, plus network input and Bluetooth make this a great all-in-one.



PORTABLE SPEAKERS

BAYAN SOUNDBOOK £149.99

Superb design and great sound make for one of the best portable Bluetooth speaker/radios on the market. Not the cheapest – but worth every penny.



IRIVER IBA-50 £69

Big, warm sound with plenty of volume and clean at high levels. Muscular sound compared to many rivals.

CABLES

BLACK RHODIUM TWIST £71/3M

Twisted to fight off radio frequency, the Black Rhodium speaker cable is easy on the ear with a fine sense of clarity and focus. A remarkable performer at the price.



MAINS CABLES R US NO.27 £95

Offers a sprightly pace with a precise nature. Fast performance enhance frequencies and beautifully etched detail.



CHORD SIGNATURE REFERENCE £900

Majors on timing, detail and openness. Capable of getting the best from most systems and a recommended upgrade.



TELLURIUM Q BLACK 280/3M

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

TELLURIUM Q SILVER DIAMOND £804/M

An open, natural and transparent sound that is difficult to beat, from these great loudspeaker cables.



HEADPHONES

AUDEZE LCD-3 £1,725

A planar magnetic 'phone that offers monitor quality. Strong sound with silky, dark quality that others struggle to match.



B&W P3 £170

Beautifully presented headphones from the loudspeaker specialists. Feed them a good quality source signal and they reward with excellent sound.



JAYS V-JAYS £49

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

NOBLE K10 INC. FITTING £1,279

Custom fit in-ear phones with 10 drivers deliver a sound that is out of this world. Personal and perfect.



OPPO PM-1 £950

Planar magnetic phones with a warm, easy but big bodied sound that draws you in. Need a lot of drive, but deliver superb bass.



SENNHEISER HD700 £599

Tremendously fast with a strong, focussed, lower-frequency range and a firm bass punch.



YAMAHA HPH-MT220 £150

Purposed for indoor monitoring yet light and comfortable enough to be used on the move. Excellent sound quality marred only by a slight warmth to vocals.



Loudspeakers your valve amplifier will love!

Valve amplifiers prefer speakers of simple design to get the best of their intimate, relaxed sound quality. This can be degraded by "difficult loads" and complex speaker crossovers. All our speakers have been carefully designed and tested using only valve amplifiers, so you can be sure of outstanding results.



MFV 15h Huge sound from as little as 9w. Fabulous mid range. Huge sound stage with the deepest bass. Large pressure driven horn. 15" Custom bass driver 65cm w, 112h, 60d 70kg £9999 pr inc Stands and covers



FRM3 Two of our special 8" full range units for extended bass. Very versatile may be configured in several ways Ideal for a large room. 9w+ £2,499 pr



FRM 2 Super. Piano black or red. 8" full range with seamless response from full bass to extended treble from one unit with a fraction of normal power. £2,349



MFV3 Super. Conventional design with simple crossover and highest quality components real veneer 15 w+ Only £1,799pr



MFV 3 std. Same as the Super but without the upgrades. Exceptional performance for the price! Only £1199pr



MFV 4. Smaller floor stander 2 1/2 way for those wanting a very neutral sound from a compact speaker. £1099 pr Only 25w x 87h x 88d



FRM 2 Amazing monitor style speaker very clean neutral sound with excellent power handling, ideal for stand mounting £899.95 pr 27w x 101h x 32d



FRM 1 Stand mount version of our FRM range speaker with seamless purity of our superb 8" full range driver. Uncluttered purity for small amplifiers and SET's 30w 51h 33d £1199 pr



A good loudspeaker is only as good as the sum of its parts! Clockwise: Our full range unit with its huge rare earth magnet. Super rigid alloy basket MFV series mid/bass driver with large alloy voice coil tube for excellent heat dissipation and linearity. Internal bracing to reduce resonance. 1/2" thick bitumen compound sheets fitted to selected speakers to eliminate cabinet resonance. MFV series silk dome tweeter cones matched in pairs for super-smooth treble.



MFV 6 Where space is a problem our compact monitor delivers a surprisingly big presentation. 9W+ SET or PP. 18w x 31h x 24d £599 pr



MFV LS3/5A Our version of the vintage BBC monitor. Super accurate delivery for a smaller room Superb rosewood veneer £1599pr



We assemble our own drivers from the finest components

Limited Offer!
£200 minimum PX for any speakers*

Come for a listen at our Leicester showroom or order from one of our appointed dealers. For more information see our website, ring or email us, or ask for our latest brochure printed on *real* paper! Buy direct from us or through one of dealers.

UK only prices including 20% VAT *Limited offer while stocks last. Applies only to UK sales from Icon Audio Ltd Leicester. T's & C's apply

KEF's Wireless Wizards



The new L550 Wireless active loudspeakers from KEF are an all-in-one solution that take up little space but pack a mighty punch, says Jon Myles.

A decent hi-fi system can take up a lot of space in your living room, with source components, amplifier, loudspeakers and the like. But need it be so? Not according to KEF whose new L550 Wireless loudspeakers junk the clutter without sacrificing sound quality.

How so? These are a pair of active standmount loudspeakers incorporating their own amplification as well as built-in Spotify and Tidal compatibility for accessing streaming services, the ability to find music on your own home network (from

a NAS drive or computer) as well as being able to deliver tracks from smart devices via Bluetooth.

Based on the excellent-sounding KEF L550 passive loudspeakers, these new actives are slightly larger to accommodate the electronics and heatsinking but are still relatively small at 30cm x 20cm x 30.8cm (H/W/D).

The drive units are the same though, in the shape of the tried and tested KEF Uni-Q array which uses a 25mm aluminium dome tweeter sitting in the centre of a 13cm magnesium/aluminium mid/bass cone to provide a point source

arrangement.

A proprietary Tangerine waveguide is fitted in front of the tweeter that, KEF say, helps dispersion.

But it is on the inside where things get truly interesting. Each loudspeaker has an internal DAC for processing digital signals as well as amplification developed in co-operation with KEF's sister company Gold Peak Electronics.

Designer Jack Oclew-Brown told me this involved extensive listening tests until the exact specifications were decided – which resulted in a Class D module being employed

Astell&Kern

A&ultima SP1000

INTRODUCING A TRULY
LUXURY LISTEN



Introducing the Astell&Kern A&ultima SP1000, a new flagship player that changes what is possible from portable audio, in terms of both performance and desirability. The SP1000 takes the award-winning success of the AK380, launched two years ago, and raises the quality bar for high-resolution sound on the move.

Available now in **Stainless Steel** and **Copper** editions



Available now at [amazon](#) · [Harrods](#) · [SELFRIDGES & CO](#) · [AUDIO SANCTUARY](#) · [hifi lounge](#)



The master unit of the LS50 Wireless contains all the main inputs, including optical and USB digital and analogue. You can also choose between desk/stand and wall/free space settings to optimise positioning.

for the mid/bass unit with separate Class A/B amplification driving the tweeter. It means there's 200 Watts per channel feeding into the former with 30 Watts per channel going into the latter – giving a healthy dose of power.

The 'speakers operate in a master/slave configuration with the right-hand unit containing the inputs and connected to its partner by a (supplied) cable. Take a look at the back of the master loudspeaker and you'll find analogue stereo inputs (RCA phono sockets), plus digital optical S/PDIF and USB type B inputs, as well as an ethernet socket for connecting to a home network. The internal DAC is capable of handling 24-bit/192kHz files through the USB and network connections with the optical going up to 96kHz signals.

Each loudspeaker also has controls for adjusting the sound for different speaker placements with options for close-to-wall or free space positioning. Download the free KEF app for tablets or smartphones and there are even more options for tailoring the sound.

And, of course, while they may be dubbed Wireless that's not quite accurate – you'll still need to plug each unit into a power outlet and connect them together.

SOUND QUALITY

Active loudspeakers have much going for them, not least the fact that the designers can precisely match the amplification to the characteristics

of the drive units. They also remove the influence of 'speaker cables on the sound.

Done well they have a punch and authority passive loudspeakers struggle to match – and that is exactly how these KEFs sound.

Despite their relatively small size they have a big soundstage, the internal amplifier configuration projecting music well into the room with excellent left to right dispersion.

Playing Massive Attack's 'Safe From Harm' (24/96) I couldn't help but be struck at how deep and insightful the bass sounded. There's no overhang or unsettling boom but just a clean, precise rendition of the notes.

The same goes for the mid-range and treble. With Arvo Pärt's haunting 'Tabula Rasa' the Uni-Q driver brought out the space around the sparse piano parts while also retaining the natural decay of the notes.

Compared to the original passive LS50s these active versions have a touch more dynamism to them which works superbly with up-tempo music. Using the Bluetooth facility via an iPhone 7 Plus, the electronic synth bass of Lady Gaga's 'Bad Romance' throbbed with power yet never overwhelmed the vocals. Instead the whole track hung together beautifully combining a great sense of timing with superb detail.



The top of the master speaker has touch sensitive controls for selecting inputs.

Such was the performance on offer I couldn't help but turn the volume up – and the KEFs didn't complain. Even at, frankly, ear-splitting levels they stayed composed and tuneful – a testament to how well active loudspeakers can sound.

Those looking for the sub-sonic bass and overall scale that larger floorstanding loudspeakers can provide won't find it here. But the LS50s are so well-judged that you never think of what is missing but simply revel in the overall sound on offer.

CONCLUSION

KEF has fashioned something special with the LS50 Wireless package. For £2000 you are getting an excellent loudspeaker with a streamer, DAC, pre-amp and amplification built-in which won't take up too much room but more importantly sounds superbly entertaining. Simply plug in, listen and enjoy.

MEASURED PERFORMANCE

The LS50 Wireless has a very smooth frequency response our analysis shows, free of variation except at 1.5kHz where a dip corresponds to a peak in port output, suggesting an internal cabinet mode responsible for phase cancellation – not uncommon in small cabinets. Subjectively this will not be easily audible.

The LS50's smoothness of output suggests very low colouration due to an absence of minor resonances. The slight downward tilt toward high frequencies ensures there's good body to the

FREQUENCY RESPONSE

Green - driver output
Red - port output



sound and the absence of a crossover dip and treble peaking tells of strong detail, yet smooth treble. This makes for amenable long term listening.

Set to Free Field (no close rear wall) and Stand Mounting bass is strong and extends smoothly down to 50Hz, the port (red trace) contributing to output around 40Hz. The speaker produces plentiful bass, but not subsonics. Selecting Desk mounting reduced upper bass and gave the flattest measured result. Selecting Wall reduced lower bass by a few dB.

The LS50s needed a low 93mV input to Aux to produce 90dB sound pressure level (very loud) so they can be connected to any mobile phone or tablet headphone output and reach full volume.

The LS50 Wireless will sound smooth, mild yet strong in bass output. Selecting Desk gives a drier bass delivery but one that is more accurate. In all, this is a very well developed loudspeaker of great ability, measurement shows. **NK**

KEF LS50 WIRELESS £2000



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

Enthralling sound from a pair of loudspeakers which pack in a DAC, pre-amp, streamer and Bluetooth. A truly innovative package from KEF.

FOR

- clear and detailed
- tight bass
- connectivity options
- sound bigger than they look

AGAINST

- nothing

KEF
+44 (0) 1622 672 261
www.kef.com

A PERFECT NEW YEAR

VISIT OUR WEBSITE: www.hi-fiworld.co.uk

**A SUBSCRIPTION TO HI-FI WORLD
MAKES THE PERFECT GIFT FOR
YOUR NEAREST AND DEAREST.**

SAVE

...up to

26%

Subscribe today and you will get a special discounted rate giving a **saving of 15% to 26%** off the cover price. That's an amazing **£3.83 - £3.33 per issue including postage.**



So don't delay, take out a subscription today!

FOR BACK ISSUES ENQUIRIES PLEASE CALL

01442 820580

OVERSEAS SUBSCRIPTIONS IF YOU LIVE OUTSIDE THE UK,
PLEASE CALL FOR OUR LATEST PRICES

+44 (0) 1442 820580

SO WHAT ARE YOU WAITING FOR? CALL NOW!!!

SUBSCRIPTION HOTLINE 01442 820 580

Lines open Mon-Fri 9.00-5.00 or (weekend answering service available)

FOR OUR
ON-LINE MAGAZINE
GO TO WWW.HI-FIWORLD.CO.UK

email:
hifiworld@webscribe.co.uk

TREAT FROM HI-FI WORLD

WHY SUBSCRIBE TO HI-FI WORLD?

- 12 issues a year delivered straight to your door.
- Be first to grab a bargain in our "Free Reader Classified Ads" section.
- Run by dedicated hi-fi engineers and enthusiasts.
- Subscribers receive a minimum 10% Discount annually.
- Hi-Fi World has become famous for its informative reviews and radical kit designs.
- **PLUS!** Subscribe by Direct Debit and receive a 16.5% discount on a yearly subscription (UK only).

Instruction to your Bank or Building Society to pay by Direct Debit



Please fill in this form and send to:

Originator's Identification Number

Hi-Fi World, Subscriptions Department, Unit 4 College Road, Business Park, College Road North, Aston Clinton HP22 5EZ

4	2	7	0	4	9
---	---	---	---	---	---

Name and full Postal Address of your Bank/Building Society

To: The Manager	Bank/Building Society
Address	
Postcode	

Name(s) of Account Holder(s)

--

Branch Sort Code

--	--	--	--	--	--

Bank/Building Society Account Number

--	--	--	--	--	--	--	--	--	--

Reference

HF

Instruction to your Bank or Building Society

Please pay Webscribe Ltd Direct Debits from the account in this instruction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this instruction may remain with Webscribe Ltd and, if so, details will be passed electronically to my Bank/Building Society.

Signature(s)
Date

Bank and Building Societies may not accept Direct Debits Instructions for some types of accounts
The guarantee should be detached and retained by the Payer

The Direct Debit Guarantee



* This Guarantee is offered by all banks and building societies that accept instructions to pay Direct Debits
 * If there are any changes to the amount, date or frequency of your Direct Debit Webscribe Ltd will notify you 10 working days in advance of your account being debited or as otherwise agreed. If you request Webscribe Ltd to collect a payment, confirmation of the amount and date will be given to you at the time of the request
 * If an error is made in the payment of your Direct Debit by Webscribe Ltd or your bank or building society you are entitled to a full and immediate refund of the amount paid from your bank or building society
 * If you receive a refund you are not entitled to, you must pay it back when Webscribe Ltd asks you to
 * You can cancel a Direct Debit at any time by simply contacting your bank or building society. Written confirmation may be required. Please also notify us.

TERMS & CONDITIONS: You will receive 12 issues per year. Minimum subscription term is 12 months. Prices include P&P and are correct at the time of going to press. All prices are quoted in sterling. Offer available for UK subscribers, only. For enquiries relating to overseas pricing call + 44 (0) 1442 820 580.

I would like a years subscription to Hi-Fi World and receive a discount off the cover price (I have read and accept the terms and conditions).

I would like to pay for my 12 issues by:

6 monthly Direct Debit: Pay £22.00 every 6 months saving 19% off the yearly subscription rate of £54.00

Annual Direct Debit: Pay £40.00 every 12 months saving 26% off the yearly subscription rate of £54.00

Annual cheque/credit card: Pay £46.00 saving 15% off the yearly subscription rate of £54.00

Cheques made payable to Audio Web Publishing Ltd.

Your Details

Title _____ Forename _____

Surname _____

Address _____

Post Code _____

Daytime Tel: _____

Email: _____

Please debit my VISA MASTER MAESTRO AMEX (SWITCH)

Security No: (last three digits printed on the signature strip)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Valid from Date: ____/____/____ Expiry Date: ____/____/____

Switch card issue No:

Cardholder Signature: _____

Outside UK:-

EUROPE Airmail **£50.00**
OVERSEAS Airmail **£70.00**



Send this form to:

Hi-Fi World, Subscriptions Department Unit 4 College Road, Business Park, College Road North, Aston Clinton HP22 5EZ

ortofon

accuracy in sound



Q

uintet

Since 1948 Ortofon have introduced nearly 100 different moving coil pick-up cartridges to the hi-fi market. Their latest models in this long and proud heritage are the Quintet Series.

All Quintet cartridges use the same ABS thermoplastic bodies and neodymium magnets, but each model in the range has its own sonic expression that reflects its status. From the well-rounded **Quintet Red**, through the smooth **Quintet Blue** and spacious yet dynamic **Quintet Bronze**, up to the pure audio excellence of the **Quintet Black S**; this series offers something for every discerning listener at a very attractive price.

The Quintet Series also includes a true-mono cartridge, for accurate reproduction of older mono recordings.



Distributed by Henley Audio
T: +44 (0)1235 511 166 | E: sales@henleyaudio.co.uk | W: www.henleyaudio.co.uk

Excellent XTs

QED's new XT25 budget loudspeaker cables offer outstanding value for money, says Jon Myles.

During the past 12 months I've had the pleasure of listening to a number of excellent loudspeaker cables from the likes of Chord, Tellurium Q, Black Rhodium and Atlas.

Another stand-out has been QED's flagship Supremus – a cable that managed to match more expensive rivals. It still costs £150 per metre so isn't in everyone's price range. Luckily, Woking-based QED has a number of less expensive alternatives in its range, including the new XT25.

Priced at £70 for a 3 metre pair, and cold-welded with QED's Airloc 4mm banana plugs or spades, this loudspeaker cable falls very much into the budget mid-range category. Despite that it boasts many features trickled down from QED's higher ranges.

Chief of these is the use of a combination of the company's X-Tube and Aircore technologies – where the 99.999% oxygen-free copper conductors are arranged around a central hollow insulating rod.

A low-loss, low-density

polyethylene (LDPE) dielectric is also employed alongside careful spacing of the conductors to give low capacitance – which QED says has been preferred during repeated listening tests.

An aluminium Mylar wrap is used to shield the cables from EMI/RFI interference – an increasing problem from the use of wi-fi and smart devices within the home.

Despite all this the XT25 is surprisingly thin and pliant – meaning it is easy to route even in the tightest of spaces. The Airloc plugs are also well-made, fitting securely into an amplifier's outputs.

SOUND QUALITY

Plugged into a Naim Atom streamer/amplifier the QEDs present a nicely balanced and well-detailed sound. On The Smiths' 'How Soon Is Now' they did an excellent job of conveying Johnny Marr's layered guitar parts. Morrissey's vocals sounded expressively emotional but were also intelligible and with nice solidity.

Moving to The Killers and their 'Hot Fuss' CD, bass guitar was tight and tuneful, never sounding boomy even through a revealing pair of PMC loudspeakers. Up top cymbals had

a nice zing, making them stand out – but they were neither bright nor unpleasant.

These cables won't unearth all the detail that more expensive cables can manage (QED's more expensive XT40s, for example, will give you a bit more) but they are a definite upgrade on basic 'speaker leads and match or better almost anything else at this price.

Listening to Steve Earle's 'Washington Square Serenade' the XT25s captured the bite of the guitars, as well as the rasp of Earle's voice. They also made the music hang together in a toe-tapping fashion that had me listening to the CD all the way from beginning to end. And that's just what a good 'speaker cable should do.

CONCLUSION

The XT25 offers a fine upgrade to basic loudspeaker cables – sounding more authoritative, detailed and open than its price would suggest. Slot this into a budget or mid-priced system and the resultant improvement in quality cannot help but make you smile. At £70 for a terminated 3 metre pair they offer remarkable value for money.

**QED XT25 £70
(PER TERMINATED
3M PAIR)**



**OUTSTANDING - amongst
the best.**

VALUE - keenly priced.

VERDICT

A loudspeaker cable that offers performance well above its price. A well-balanced sound with excellent detail.

FOR

- detailed
- well balanced
- expressive
- price

AGAINST

- nothing

Armour Home Electronics
www.qed.co.uk



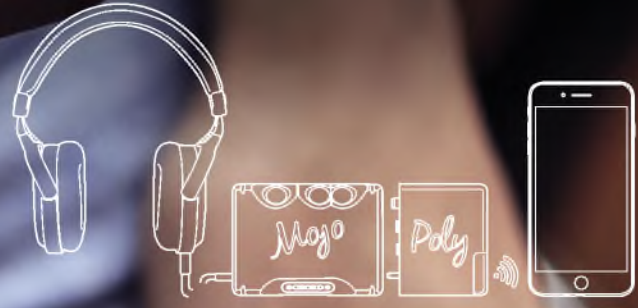
Turn your smartphone into a wireless high-res digital audio player



Chord Electronics Ltd.



Combine the Poly streaming module with the multi-award-winning Mojo DAC/headphone amp and effortlessly stream music from your devices both at home and on the go, wirelessly.



Poly



#chordpoly

Available from amazon.co.uk
discover more: chordmojo.com

- 9 hour battery life
- Bluetooth A2DP Connectivity
- WiFi 2.4GHz Connectivity
- Airplay Connectivity
- Micro SD Card Storage

Record value

Most readers can recall exotic cassette decks like the Nakamichi CR-7, Revox B215 and Tandberg TCD-910. But Martin Pipe argues that popular budget models, like this JVC KD-720, have their place in hi-fi history too.

JVC's KD-720 was a budget cassette deck (£85) sold between 1978 and 1980. A replacement for the basic CD-1740, the KD-720 was highly successful – not least because it was regularly recommended by consumer organisations and hi-fi press. Many were sold, especially here in Britain, and to this day they regularly crop up at car-boot sales and on eBay. It even formed the centre piece of an upmarket disco console, where it was used to insert 'jingles' or record segues of the music guaranteed to get you 'on the floor' (the '70s were of course disco's heyday!). Despite this ubiquity, there's little information about this cassette deck online. Not even the mighty www.hifiengine.com site holds any information about this model, and the archives at JVC (UK) were unable to help.

So what made the KD-720 a winning design? For a start, it met the



DIN 45500 specifications for hi-fi equipment, as a sticker adjacent to the Dolby logo proudly acclaim. Although seen as a bare minimum, this simple sticker inspired consumer confidence. The machine's separate bias and equalisation flip-switches enabled it to be broadly-compatible with all of the tapes then on the market – ferric/Type 1 ('norm'), chrome/Type 2 ('CrO₂/SA') and a short-lived hybrid of the two known as 'ferrichrome' or Type 3 ('Fe-Cr'):SA' is Super Avilyn, Japanese tape manufacturer TDK's 'pseudochrome' Type 2 formulation – which was a 'safe' choice for the KD-720. There's no fine-bias tweak, though, and this machine was on the drawing-board long before the much-hyped metal tape (Type 4) came onto the scene. It can however still play metal tapes recorded elsewhere, provided the EQ switch is in the 'SA/CrO₂' (70µs) position.

The aforementioned Dolby logo – along with a switch and green LED – point to the presence of the all-conquering noise reduction system. Another LED – red this time – indicates when the deck is in its recording mode. And that's where the KD-720 really scores; JVC's attentions to detail impress even now. The backlit 'old-school' VU meters, which like the controls are angled to aid readability, are larger and of more practical value than ones fitted to much more expensive

decks. They are monitored, when setting recording level with the adjacent slider controls. JVC's only omission here is an LED to indicate the musical 'peaks' that electromechanical meters are simply too slow to register.

JVC built the KD-720 around a solidly-engineered transport fitted with a single motor and two heads that are accessible for cleaning. Of these the 'Cronios' record/play' component ranks alongside the 'permalloy' heads fitted to the deck's budget contemporaries. The transport's piano keys have a delightfully positive feel, and include a 'pause' key you can press when the phone starts ringing, the radio DJ starts speaking or the piece of music you're recording comes to an end. Add to this the headphone socket, provision for microphones and tape counter, and you have everything that was essential for everyday use. Plugging mikes in 'over-rides' the 'normal' inputs – on which subject, phono and DIN sockets are specified to ease interfacing the deck to as wide a range of equipment as possible. It's a shame the KD-720 makes no provision for use with a timer, but you can't have everything in JVC's entry-level deck!

The machine's mechanism features a full auto-stop system



Here we see the non-nonsense two-head transport of the JVC KD720 – as it came to me! Clearly, it hadn't seen a service for a while. Note the oxide on the capstan shaft and pinch roller; these were cleaned thoroughly with isopropyl alcohol. The record-play head – a 'Chronios' type, compatible with ferric, chromium-dioxide and ferrichrome tape – and other metal components in the tape path were then demagnetised.

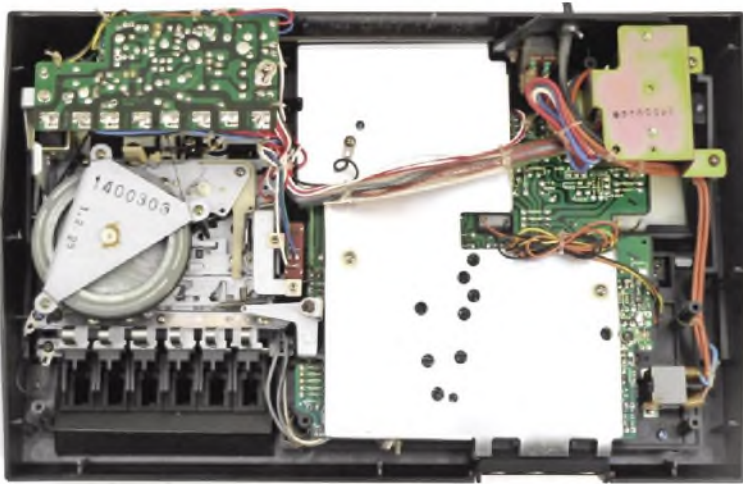
FOCAL | KANTA N° 2

Kanta inaugurates a new vision of the Premium loudspeaker. Completely dedicated to performance, for the first time it combines a Flax sandwich cone speaker driver with a legendary Beryllium tweeter. It delivers a precise, detailed sound that brims with warmth and musicality. With its incredible style and its broad range of finishes, Kanta delights the eyes as much as the ears...

Performance meets style

Visit focal.com to discover more.





The basic design and uncluttered internal layout of the KD720 makes it relatively easy to service. As discovered, fast wind was sluggish and it took a while for playback to be brought up to speed. The cure was a new main (flywheel) drive belt – this can be seen in the picture. To ease alignment, the screening of the main circuit board is stamped with identification-legends near the holes that provide access to the associated presets.

– in other words, the transport shuts down after fast forward and rewind, as well as record and play (with lesser top-loaders, auto-stop operates only with the latter operations). A reed switch works with a magnet fitted to the tape-

testimony to the strength of the engineering that made Japan such an industrial powerhouse back then. In contrast to the extensive disassembly work required with some of the newer high-end decks I've attended to, replacing the KD-720's belt

"The low-end is surprisingly articulate, and some Bach organ works got the depth they needed."

counter pulley – it activates a solenoid coupled to the stop key. A large and heavy dynamically-balanced flywheel, coupled by flat belt to a servo-controlled DC motor, helps to 'iron out' speed irregularities, ensuring that short-term pitch stability will be good with decent cassettes. It's good that JVC paid attention to 'hidden' details like these, as they are important when it comes to performance. A better use of the customer's money than skin-deep 'gimmicks'...

Also telling in this respect are the internals. Removing the base reveals that the KD-720 is built to last – its mechanism a complex arrangement of substantial pulleys, springs, levers, idlers and cams – and thought has been given to servicing. My sample – picked up for £8 at a car boot sale – only needed a new main drive-belt to restore it to full working order. It's yet another

proved to be a straightforward ten-minute operation. The electronics are screened to prevent pickup of mains hum, and sensibly JVC has labelled the internal presets for the benefit of those who may be required to calibrate the machine.

And sound quality? Actually, it's not bad at all, especially considering the machine's vintage. Pre-recorded tapes lack treble crispness, but that's not exactly unusual; head azimuth may have been slightly out. Quality media, recorded on high-quality 3-head decks from decent sources, fares much better. The low-end is surprisingly articulate, and some Bach organ works got the depth they needed. This sort of music also showed the strength of that mechanism and its flywheel, which is more substantial than the ones fitted to machines far more expensive than the KD-720. Not once did I hear any tell-tale pitch wavering!

With complex rock and orchestral material, the soundstage could sound rather congested – but I've heard far worse!

Turning to recording – with mid-80s TDK SA tape – the KD-720 turned in a fair performance. Its only downside was notable treble compression and a reduction in high-end energy that could be partially-compensated for by switching the EQ to its 'norm' (120µs) position during playback. BASF Chrome Maxima, on the other hand, sounded a little 'bright'; this points to slight under-biasing. However, the EQ switch could be kept in its 'CrOs/SA' position – this aided signal-to-noise ratio. Recordings made on a TDK 'D' tape were rather dull, but that's to be expected from budget tape. 'New old stock' Maxell UD-XLI, a far more expensive Type I blank, didn't suffer from this quite as much. And Fe-Cr tapes? If you can find one, please let me know!

Cassettes are currently enjoying



One of the best features of this modestly-priced deck is the backlit metering, readable thanks to its angled 'wedge' design.

something of a revival, even if decent blanks are hard to come by at a sensible price nowadays (hint: 'used' tape is very cheap – just reuse that!). Admittedly the KD-720 does not represent the last word in cassette performance, but it will give results that are nevertheless very acceptable. As a relatively-simple design, though, it's going to be easier to maintain and keep going than an all-singing, all-dancing 3-head front-loader dependent on obscure proprietary chips that will be very difficult to find should they need replacing. And it's fun! I enjoyed using my KD-720 to make up compilation cassettes of material from vinyl and CD – and yes, that pause button came in very useful!



UPP

Upp/This Way

Go on, how many of you know this band, then? There may be a few aficionados out there but I'll bet you're in the minority. If that's the case then you're missing out, people. They were a British outfit, active during the '70s that pushed out a mixture of rock, a bit of pop and jazz. Populated by Stephen Amazing (Steve Fields to his mother, on bass guitar – and previously of Clark Hutchinson), Andy Clark (also from Clark Hutchinson – guess which bit he was – on keyboards) and Jim Copley (major session drummer for the likes of Jeff Berk, Ian Gillan and more, on drums) plus David Bunce (aka Zak Starstosky, guitar, also a producer and member of Driving Sideways).

This album emerged from a visit by Jeff Berk himself during a studio rehearsal session. Apparently the rather exuberant Beck "kicked the door down" on the way back from a gig with David Bowie

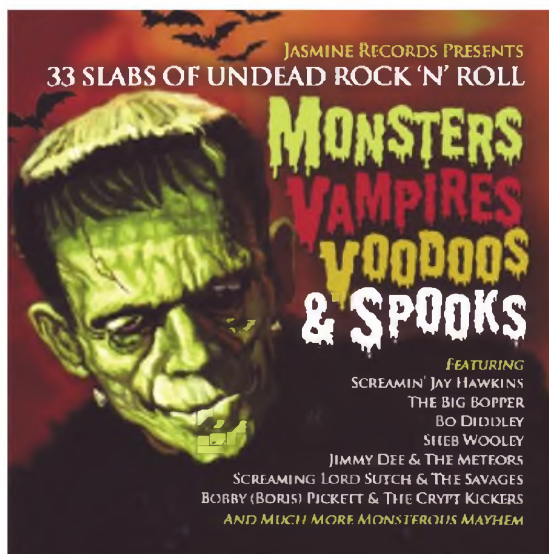
and was impressed. He would subsequently produce and play guitar on the self-titled debut and the sequel, 'This Way'.

The songs themselves feature a decidedly West Coast smooth and easy vibe while the music has an underlying funk, bass being prominent to emphasise the fact while the synth and Beck's lead guitar added drive and instrumental wonder to many a track sequence.

As for mastering? There's a fair bit of compression been cast all over the soundstage. I had to lower my gain quite a bit to arrive at a listenable volume. This adds lift to the upper mids and a glare within guitar crescendos. The sound's inherent smooth nature is its sonic saviour, though.

You can hear more guitar greats from this label via The Gary Moore Band ('Grinding Stone', 1973); Blood Sweat & Tears ('In Concert', 1976), ZZ Top ('Antenna', 1993) and Hot Tuna (Live at New Orleans House', 1969).

AUDIOPHILE CD



VARIOUS

Monsters, Vampires, Voodoos & Spooks
Jasmine

There are, as the CD puts it "33 slabs of undead rock'n'roll" here with suitably resplendent artwork to back it all up.

You get the obviously named tracks from highly respected artists such as LaVern Baker's 'Voodoo Voodoo', Bo Diddley and his 'Bo Meets the Monster' and Screaming Jay Hawkins' 'Little Demon'.

The sheer joy of compilations like this though is to hear more obscure but resplendent tracks such as Sharkey Todd & The Monster's 'Horror Show', The Spooks' 'The Spook Walks' and the gloriously named Frank N. Stein & The Tombstones' 'Graveyard Giggle'.

Additional gems include Screaming Lord Sutch & the Savages with 'Til The Following Night'. Sutch, before his Monster Raving Looney political career, was a centre of hot British talent promotion. He regularly featured

superb musicians including supreme talent from the likes of Ritchie Blackmore to Nicky Hopkins, Jimmy Page, Noel Redding and more.

On the subject of sheer talent, also check out Johnny Fuller, a West Coast bluesman, here singing 'Haunted House' but known for his recordings that also covered gospel, R&B and more.

For mastering, the tracks retain a relatively high compression rate, although some are more extreme than others: understandable with such a wide spread of sources and time periods and expected because we're talking mass market, 'in your face' single tracks here.

Also on Jasmine is 'The Compete Rerordings 1960-1962' of Mark Winter; 'The Return of Bill Black's Combo' including two albums and singles; the early years of 'Jimmy Gilmer & The Fireballs' plus Link Wray & The Wraymen's 'Jack the Ripper 1957-1962'.

It's the first time this album has appeared on CD. It is a bit of a 'lost' album that – according to the fans out there – was killed off by the advent of punk. Being released in 1978 they might have a point. A straight-ahead British rock album, it features London-born French himself who some might remember from his days fronting Atomic Rooster, Cactus and Leaf Hound. On this one, he's joined by ex-Small Faces/Faces man, Kenney Jones (whose next stop after this album was a stint with The Who), Dave Markee (a staple with Eric Clapton and Brian 'Thin Lizzy' Robertson, Micky Moody (Juicy Lucy and Whitesnake), Tim Hinkley (Bo Street Runners (!)), Peter Wingfield on keyboards. Even smiling Joe Brown appears with his banjo, for goodness sake.

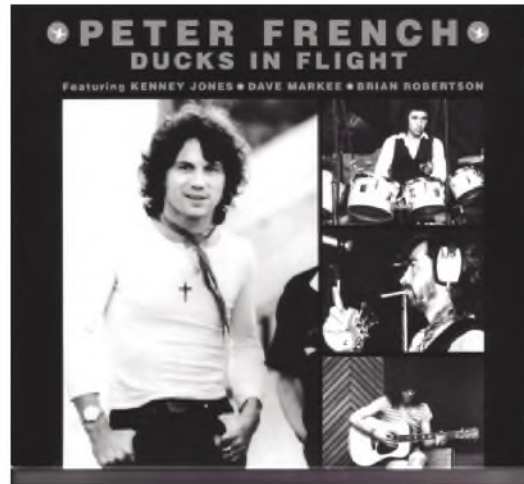
"I worked with Geoff Haslam the producer who had done a grown job on the 'Ot'N'Sweaty' Cactus album. It was Geoffrey

who helped me source the musicians. I was absolutely thrilled to bits that he got guys in the calibre of Brian Robertson, Dave Markee and Kenney Jones, said French.

An album full of solid performances, throughout, it has been unfairly ignored by history and needs more attention by British rock fans who will love the energy, passion and musical talents of all involved.

In mastering terms, the music offers a very respectable presentation for a CD with a broad soundstage highlighting a relatively large amount of air and space. As such, the music flows in a relaxed and easy going atmosphere.

More Repertoire releases this month includes Climax Blues Band 'Live at the BBC 1970-1978', The Blues Band 'Live Album' plus two from Chris Farlowe 'Live at the BBC' plus 'From Here to Mama Rosa with the Hill' (1970) plus bonus tracks.



PETER FRENCH

Ducks in Flight
Repertoire

AUDIOPHILE CD

You might not know Melvin Sparks but does Grant Green tinkle any bells? If you know the soul jazz guitar of Green then Sparks' style, at the very least, will be more familiar to you. Sparks was not the largest name in the jazz canon but this guy knew his stuff and had a wide appreciation of music, giving him a full and varied style. He sat in with B.B. King, he played guitar for Little Richard and Sam Cooke and you'll even see his name on sessions with Sonny Stitt and Lou Donaldson. His first solo work, 'Sparks!', was released by Westbound in 1970 and he continued to release album works right through into the Noughties until his death in 2011.

This CD release is a bit special because it contains an unreleased album. Coming just after the release of his patchy album release, '75' which was issued, unsurprisingly, in 1975, this work

was recorded and an acetate was even created from it but it was never formally released onto the market.

Around this time, jazz players had big problems. No-one wanted to know trad jazz. Jazz artists tried to mix it up by turning to fusion, played with R&B singers and, with this unreleased album, adding disco flavours. It worked (and then some) for the supreme jazz guitarist, George Benson, but never quite hit the tracks for Sparks. There's a thought that an artistic dispute scuppered any possible success he might have had with the album at the time.

For the mastering, there is an admirable dynamic performance on offer here with a broad and spacious soundstage displaying a fascinating performance. Mids are relatively insightful with a bass response that has both guts and drive. The use of the original master has certainly paid off here.



MELVIN SPARKS

I'm Funky Now
Westbound

CELEBRATING QUICKSTEP

HI-FI WORLD'S BEST LOUDSPEAKER CABLE AWARD 2016

Capture the Excitement, Emotion and Drama of your Music

Exclusive connectors
GN1 'Straight Line Contact'
Loudspeaker Plugs



Hi-Fi World Best
Loudspeaker
Cable Award 2016 *

The **exclusive technology** of our very best cables can now be enjoyed by a much larger audience!

EXCLUSIVE FEATURES

- Balanced Sound ✓
- Musically Entertaining ✓
- Stunning Clarity ✓
- Sharp Definition ✓
- Authentic Imaging ✓
- Excellent Timing ✓
- Effortlessly Open ✓

Read the reviews in full at www.blackrhodium.co.uk to discover how these reviewers describe the outstanding Quickstep sound quality.

"Quicksteps were surprisingly balanced in tonal terms while the design offered a naturalistic reflection of the music that was entertaining and extremely natural in its approach."

Paul Rigby- theaudiophileman.com

* *"They get out of the way of the signal that few others do at this price and allow you to hear the music unsullied and in all its glory."*

Jan Myles, Hi-Fi World

"For sound per pound this is an excellent choice for the audiophile offering a detailed soundstage with exceptional speed, and a sound that was very open and effortless."

Janine Elliot, Hi-Fi Pig



Go buy your own Quickstep Cable NOW at your nearest Black Rhodium Dealer or via www.blackrhodium.co.uk

Hear QUICKSTEP at these dealers

- Nintronics 01707 320 788 | Peak Hi-Fi 01226 761 832 | AUDIO-PHILIA 07518 151 516
 Analogue Seduction 01733 350 878 | Audio T Swansea 01792 474 608 | DoGood Audio 01515 253 845
 Ian Harrison 01283 702 875 | Homesound 01316 621 327 | MCRU 01484 540 561 | Planalogue 01865 693 032

"These are not malicious robots that demand Arnie's intervention"



Noel Keywood

In last month's issue I could not help but notice how many times the topic of product quality, lifetime and disposability came up. OK, not so uncommon – we live a consumerist throw-away society; I've got a big 28in Samsung computer monitor beside me right now, just a few years old, that is about to hit the bin. Also last month we carried a poignant letter from a reader who started out in his youth – as I did – building valve amplifiers, saying he didn't understand electronic products any more. Say hello to the future.

A major driver behind increasing complexity and diminishing serviceability is price. Machines can build 100 amplifier boards in a few hours, with little human intervention. When Harold Leak wanted to build 100 amplifiers in 1955 he needed to use a small team of skilled people who sat at benches with soldering irons, each likely building two per day at best.

The difference in cost between these two assembly methods is so great it is all but impossible to pass on to potential buyers. It's why hi-fi was once a high-cost luxury product until the Far East with low cost labour, then even lower cost automated assembly, like the Panasert machines used by Panasonic (Japan) in the 1970s, came onto the market with such force. Britain was nowhere in this picture at the time (and isn't anywhere in particular even today).

I got to see all this first hand in Japan during the late 1970s, when Matsushita (Panasonic) laid on Press trips to their factories – notorious for gruelling daily schedules that had us journo's getting up at ungodly hours, shuffling onto coaches in the dark, and walking around vast factories and into product briefings all day. Followed by Sushi on a conveyor belt!

By the early 1990s Deltec

Precision Audio in Cardiff, Wales, UK, had bought a Philips 'pick-and-place' machine that similarly populated circuit boards automatically. Rob Watts, founder and MD, explained at the time that these machines and the special micro-miniature 'Surface Mount' (SMD) components they used held advantages for audio work.

Wind the clock on two decades or so and robotic manufacturer, where machines do all the work, has become commonplace. Recently I looked into what it would cost to get a small batch of phono preamplifier boards built by robot and found that Newbury Electronics (UK) could spit them out so quickly and cheaply it made little sense for me to hand solder even one prototype. I was shocked!

If such a board goes wrong, it costs so little it makes no economic sense to repair. Worse, because of the way it is built, humans cannot easily repair such boards in any case – another reason to just throw it away.

What we have here is creeping automation, the advance of the robots. These are not malicious ones that demand the intervention of Arnold Schwarzenegger in the Terminator films so much as ones that, in replacing humans, destroy jobs. So no lines of dextrous workers soldering any more to boost the family income, or perhaps, even survive.

The altar of competition at which we worship, where ever lower price is used to defeat 'rivals', seemingly to everyone's mutual benefit as it broadens widget (iPhone etc) availability does, in practice, remove low skilled work for people. That's a brutal reality.

From what I see, the argument that jobs are transferred elsewhere, to those who design, build and service the robots, or tend them,

doesn't wash. The whole point is to reduce cost; a mortised cost would not go down if the process was overburdened by other expense, such as programming costs. Indeed, I was fascinated to find that I had to design my own board using a programme (e.g. KiCad) a machine could follow.

If I wanted to commercialise the phono stage (I don't!) that, by the way, is fully discrete and fully balanced, each circuit board would cost £20-£50 if a reasonable quantity was ordered. Move the order to the Far East where such robotic manufacture is common, increase the order quantity and aim for global distribution and you can start to see the makings of a decent business proposition – which is another story.

What this shows is if you want to produce a competitive audio product nowadays you have little option other than to go down this route. It's how most modern audio products are built and in future, as complex digital chips are purposed for automated manufacture, the only way anyone will be able to go. Hand solder a product? No chance. There will be no alternative romantic option of a hand built product that can be repaired and re-used to avoid landfill.

I tried to repair my Samsung monitor. Blown parts in the power supply were replaced, only to find big, complex chips further downstream had also gone skyward; repair would be impossibly difficult and made no sense.

Tomorrow will be a disposable one for most of us, whether we like it or not. Which is entirely the wrong phrase because everyone likes low price so we all do like it.

But for sound quality I still prefer a nice simple little valve amplifier like the Mullard 3-3 that both reader Pat Rickwood and I once built. Hours of simple fun followed by a great end result. ●



quadral 

AURUM RODAN 9

RRP £4,999.00

For your nearest dealer call 0203 5442338
More fantastic products from NuNu Distribution Limited
www.nunudistribution.co.uk

NuNu Distribution Ltd



"I'm talking to you about my childhood, about the quality of the TV shows"



Paul Rigby

It's easy to browse through a magazine but a tad more challenging to browse through a CD. I was doing that recently with a new release from Jasmine (www.jasmine-records.co.uk) called 'Classic TV Themes of the 50s & 60s'. Subtitled 'Danger Men, Mavericks, Thrillers and Twilight Zones'.

I found myself dwelling upon the back of the CD, reading names of old TV programmes. The issue was that I would read one TV title and that would whisk me back to a strong memory from the distant past. Even though a lot of these titles are American-centric, I remember watching 'I Love Lucy' on TV with my family as a child. It would be on around 5pm...maybe 6pm on a weekday, I recall. My mother, being a rabid Hollywood fan, lapped up the performances from ex-Hollywood star, Lucille Ball. All I remember was a lot of shouty talking from Ball and the cast and not particularly funny jokes.

Also on the CD is the theme from the 'Twilight Zone', a series that remains fascinating. I have the complete series DVD box sets here and now and still admire series creator Rod Serling's writing prowess.

Other programmes I remember included westerns such as Gunsmoke, Wagon Train and Bonanza. You can learn a lot about background life in general from any western production, which imposes its current social values onto the characters and plotlines. Comparing and contrasting a thirties Western with seventies western is a fascinating pursuit in itself for an amateur social historian.

Being a bit of a vintage TV fan, there's plenty of other names here that I've become familiar with as the years have passed, largely due to import purchases from the American version of Amazon. Notable series

included Maverick, Laramie, Dinah Shore's Chevy Show and Cheyenne.

You see, though? You see what I'm doing? I listened to this CD, I read about the TV programmes and I'm talking to you about my childhood, about the quality of the TV shows, retail information and social history for goodness sake! What about the music? Will that even get a mention?

And this is the issue I wanted to talk about. Whether you're talking TV themes or original soundtracks from a film, the onscreen action and our memories from that tend to dominate. All too often, the quality of the actual music runs in a poor second or third. And it's not really fair.

Why? Because there is so much top quality music out there that falls into this genre. Whether you're talking Oscar-nominated film soundtracks or terribly obscure library music from Italian TV, there is a wealth of incredible music that most music fans ignore.

Of course, there are many people out there who do appreciate such works, yet some specialise in this type of music, sometimes to the exclusion of everything else. I'm likely not appealing to you guys, if you're more worried about quality than content – especially historical content – so you can relax. But for the rest, what about the new CDs from the Soundtrack Factory (www.discovery-records.com), for example?

How many of you know that the original release of the cult classic film, 'Cape Fear' (pre-de Niro) starring Robert Mitchum was penned by the wholly wonderful Bernard Herrmann? The same guy who wrote the music for Hitchcock's 'Psycho', Welles' 'Citizen Kane' and had a direct influence on The Beatles' string work on the hit single, 'Eleanor Rigby'?

Also on Soundtrack Factory is the soundtrack of Carol Reed's classic, 'The Third Man', often called the best British film ever (despite – cough – starring two American movie stars), with its incredibly effective expressionist photography. Anton Karas' imminently hummable theme is featured here along with other renditions from the likes of Chet Atkins and Earl Bostic.

The music itself, the actual work, is ripe for high praise. It's often ignored, though. Yes, you do find other artists who recognise it for what it is. The Bostic and Atkins remakes of The Third Man theme are two examples alongside the recently released SF/comedy film, Barbarella soundtrack 're-imagining' from The Italian Sure Academy (on Avant, also www.discovery-records.com) but I prefer to adore the original work.

Ripe for such admiration is the prolific Ennio Morricone. Famous for his spaghetti western soundtracks, Morricone has penned over 500 scores. Some of them terribly obscure (fans will talk about his classic works backing Italian softporn films, for example). In fact, Music on Vinyl (www.musiconvinyl.com) has released three new LPs from the man's nineties phase: 'Richard III', 'City of Joy' and 'La Notte E Il Momento'. Morricone displays a genius in orchestration, melody but also how he uses off-the-wall instrumentation and voices.

It's this innovation that is often to be found in soundtracks of all types and just one more reason why this genre of music needs further attention from music fans. Why not give it a try? Pick a favourite film or TV show, find out the composer of the music from the same and investigate his other works. You might be surprised how quickly you become a fan. ●

THE VINYL REVOLUTION



The EVO and the new EVOke now you have a choice!

The new EVOke has world beating performance and right now we have the unit reviewed in this issue and a brand new one for sale. Performance figures are comparable with the world's most expensive turntables and the ability to fit any arm or cartridge mean you can have the EVOke that you want.

The EVO was used by Hi-Fi World to evaluate the Beatles In Mono records and is now used as their reference. The EVO comes fitted with the legendary SME 309 tonearm loved by so many and a cartridge of your choice.

We have worked with direct drive turntables and moving coil cartridges for 35 years. We can supply completely new units with 6 year guarantees, used ones with 5 year guarantees, or we can convert your own.

Stereo, Mono & 78 rpm Artisan Noriyuki Miyajima has been making phono cartridges in Japan for more than three decades. Only recently discovered by American and European audiophiles, they have since received rave reviews all over the world and deservedly so.

Every Miyajima cartridge is handcrafted in-house by a dedicated full-time team of six based in Fukuoka. The cartridge bodies are individually precision-milled from rare and exotic hardwoods including ebony, rosewood and African blackwood (mpingo). These dense natural materials lend a vibrant and natural tonality to the sound.

Miyajima - Benz LPS - Denon DL103 - DL-102 mono - Audio Technica AT33 & OC9
SME Turntables & Tonearms - Oyaide - Furutech - Klipsch - 78rpm - SL1200 Mods

Tax free best prices for World wide mail order by Fed Ex

Sound Hi Fi Dartmouth Devon 01803 833366 www.SoundHiFi.com



SCHITT
.EU.COM

Sieveking
sound



electromod
the sound connection



SYNERGISTIC
RESEARCH
NEVER COMPROMISE

AEON

MrSpeakers

“This BBC gem of a documentary introduced music I’d never heard before”



Jon Myles

I'm no big fan of the BBC licence fee in its present form. For one, it is a regressive tax whereby everybody pays the same, meaning those households on the lowest incomes are proportionately harder hit than their better-off counterparts.

Secondly, in these days of multi-channel TV with the likes of Netflix, Amazon, Sky, YouTube and others providing content every bit – and often better – than the UK's state broadcaster it is starting to look increasingly anachronistic.

When the Office of National Statistics reclassified the licence fee to that of a tax in 2016 it noted “in line with the definition of a tax, the licence fee is a compulsory payment which is not paid solely for access to BBC service. A licence is required to receive ITV, Channel 4, Channel 5, satellite, cable”.

In other words if anyone wants to receive a TV signal then they have to pay the BBC. It's a little like saying I have to pay a tax to Sainsbury's even though I shop at Waitrose, Asda or Tesco. That may be a slightly crude analogy but it does hold true.

The BBC has also, perhaps not surprisingly, spent significant amounts of money lobbying government for the present means of funding to be retained. Suggestions that the service should move to a subscription model have been dismissed out of hand by the corporation on the basis that it would reduce the quality of its output. This is rather a disingenuous argument as their main fear is that they will lose revenue if people just pay for what they want to see.

All of this explains my dislike of the current funding model for the BBC. But, then, something comes along that makes me question my own criticisms.

Which is exactly what the BBC's World Service radio programme 'The Music Of Time - Chile' did. I came across it one Sunday morning while unable to sleep – and this gem of a documentary introduced music I'd never heard before that was both powerful and politically relevant.

It revolved around what the Chileans call *Nueva Canción Chilena* (New Chilean Song), a folk genre that was born out of the country's social struggles.

Its main proponents helped Salvador Allende become Latin America's first democratically elected leader, until in 1973 General Pinochet seized power in a military coup.

After that the musicians found themselves enemies of a totalitarian state. Many were exiled, others imprisoned and some even murdered. In the days following the coup Victor Jara was taken to the Estadio Chile stadium, tortured and then killed at the hands of the military regime.

Presenter Wyre Davies gave a beautifully nuanced history of *Nueva Canción* – explaining where it came from, how musicians such as Violeta Parra and Victor Jara had travelled the country collecting traditional melodies and songs and seeking inspiration to create songs with social themes which would resonate with the Chilean population.

Interspersed with the interviews were great performances from

the artists that – despite me not understanding a word of Chilean Spanish – resonated with their humanity, at times anger but ultimately hope for the future.

There were also some fascinating facts to emerge – such as the phrase that 'The People United Will Never Be Defeated!' actually first emerged from a Chilean folk song.

Wyre Davies's conclusion as to how the struggles of the artists and their constant musical criticisms of the Pinochet regime helped in its eventual overthrow was truly heart-lifting.

The day after hearing all this I downloaded some of the tracks featured in the programme and was transferred into a different world with a full understanding of what the music meant and how it was inspired.

Violeta Parra's body of work is especially beautiful. She was an accomplished acoustic guitarist and also possessed a beguiling, haunting voice. This is music at its passionate best.

'The Music Of Time - Chile' is still available on the BBC's iPlayer app and there are four more episodes of this show to come, featuring different countries – and how music played a part in their social and political history. I'll certainly be listening into each one of them from now and I'd urge you to do the same.

Which does make me feel that perhaps the BBC and its funding model is perhaps not as bad as I thought – when they produce this type of thoughtful, brilliant and illuminating content. ●

Over 160 brands booked
with more to come!

SOUND & VISION

THE BRISTOL SHOW

23rd – 25th February 2018. 10 a.m. – 5 p.m. every day at the Bristol Marriott City Centre Hotel



**SAVE TIME
& MONEY
Buy Your
Tickets
Online***

www.bristolshow.co.uk

ADMISSION

Adults

£12.50 on the door
£11 online*

Students & Seniors (over 65)

£11 on the door
£9.50 online*

Multiple day tickets
available online only

Accompanied Children
Under 16 FREE

*online booking fee applies

audio T

BRANDS INCLUDE: Acoustic Energy, Air Audio, Albedo, Anatech Distribution, Apollo Hi-Fi, Arcam, Armour Home Electronics, Art Vinyl, Astell & Kern, Astin Trew, Atacama Audio, ATC, ATI Amplifiers, Atlas Cables, Auden Distribution, Audeze, Audio Analogue, Audio Detail, Audio Note, Audio Pinnacle, Audio Technica, Audioengine, Audiolab, AudioQuest, AVTech Solutions, AVM, AVTech Media, Big Red Sales, Blue Aura, Bluesound, Bowers & Wilkins, Bryston, Buffalo Technology, Canton, Cary Audio, CH Precision, Chord Company, Chord Electronics, Chord Mojo, Creaktiv, Creek Audio, Custom Design, Cyrus, Dali, Decent Audio, Diamond Vinyl, discOvery, Diverse Vinyl, Dual, Dynaudio, ELAC, Elipson, Epos, Exertis, Exposure, Focal, Funk Firm, Fyne Audio, Gekko Cables, Glanz, Gold Note, Harbeth Audio, Hegel, Henley Audio, Hi-Fi World, Hi-Fi+, HIFICRITIC, hORNS, IAG, iFi Audio, Innuos, IsoAcoustics, JL Audio, Karma AV, KEF, Keith Monks, Kennerton, Knosti, Kog Audio, Kordz, Kudos Audio, Leema Acoustics, Lehmann, Loewe, Lumin, Malvern Audio Research, Markaudio-Sota, MCRU, Melco Audio, MGY OÜ, Michell Engineering, Ming Da, Mission, Mitchell & Johnson, Miyajima, Mobile Fidelity, Monitor Audio, Musical Fidelity, Nagaoka, Naim Audio, Naim Label, Neat Acoustics, Nordost, Novafidelity, NuForce, NuNu Distribution, Okki Nokki, Onkyo, Opera Loudspeakers, Ophidian Audio, Optoma, Origin Live, Ortofon, Pearl Acoustics, Piega, Pioneer, Planalogue, PMC, Prism Sound, Pristine Vinyl, Pro-Ject, ProAc, Puntan Audio Laboratories, Q Acoustics, Q-Up, QED, quadral, Quadraspire, Questyle, Rega, REL Acoustics, RHA, Rohde & Schwarz, Roksan, Ruark Audio, Russell K, Scansonic, SCV Distribution, Select Audio, Sennheiser, Sonoro, Sony, Sota Acoustics, Sound Foundations, Spondor Audio, T+A, TAD, Tangent, Teac, Technics, Tellurium Q, The Vinyl Adventure, Timestep, Tonar International, Totem Acoustic, Townshend Audio, Unison Research, van den Hul, Vinyls Best, Vivac, Vivid Audio, Vogel's, Von Gaylord Audio, Wharfedale, Wilson Benesch, XTZ Sound and many more

**HI-FI, STREAMING, HOME CINEMA,
PROJECTORS, VINYL, HEADPHONES
- THEY ARE ALL AT BRISTOL!**

**Witness the launch of dozens of
new products, with many brought
directly from the Consumer
Electronics Show in Las Vegas**

► The UK's largest & longest running
Hi-Fi Show now in its 31st Year

**£10,000 OF HI-FI
TO BE WON IN THE WHAT HI-FI?
SHOW COMPETITION**

► Experience the latest hi-fi and talk to
the manufacturers

► Exclusive product launches

► Exclusive deals & special offers

► FREE headphones for students

GETTING TO THE SHOW

BY TRAIN: Temple Meads Station is a short
distance from the Marriott.

BY CAR: From the M4 take J19 (M32
- Bristol). Follow signs for City Centre and
RAC signs to the Show. For those using
satellite navigation systems the hotel post
code is BS1 3AD. Easy local parking in
Cabot Circus car park and Broadmead
and Bond Street NCPs.



www.bristolshow.co.uk

For the latest news and a
full list of brands exhibiting
please visit our website

Organised by

In association with



audio T

WHAT HI-FI?

"My Sony TC-366 reel-to-reel recorder is almost as old as I am"



Martin Pipe

Most of the domestic quarter-inch reel-to-reel machines sold between the 1960s and the 1980s ended up being used purely to record music from records or the radio. A rummage around any decent audiojumble will usually turn up such home-made tapes. Usually, the contents are identified on the library box – if there is one! And hopefully the tape format, primarily meaning speed and number of tracks, possibly playback EQ, also Noise Reduction if used. Here's some guidance on what can be a confusing subject.

The 7.5ips (inches per second) tape speed tended to be used for music if quality was paramount, although 3.75ips was popular for uninterrupted recordings of long programmes like concerts. At 7.5ips, a 7in. spool containing 1,800 feet of long-play tape will provide approximately 45 minutes of recording per track – double that for the slower speed.

With a machine that is a half-track model, the two stereo tracks are recorded across the width of the tape – meaning it can be used in one direction only. Thanks to the wide tracks, though, you get decent performance (low noise and resilience to 'dropouts').

Stereo radio-broadcasters used half-track recording, at 7.5ips or 1.5ips; larger 10.5in. NAB spools (you'll often find these at audio enthusiast events too) were favoured here.

If you have a 4-track machine, open-reel or cassette, a typical stereo album will fit on each side of a tape. Owing to Philips' desire for compatibility between mono and stereo hardware you couldn't record different material independently on each of a cassette's four tracks, as home musicians wished to do.

However, in the 1980s and 1990s musicians could buy Portastudio-type four-track cassette recorders (which, by the way, are great for recording quadrasonic material!) and these tapes can turn up for sale.

But with quarter-track reel-to-reel, you don't have such limitations. You can record a mono album on each track. That 1800ft tape could hold, for example, 7.5ips recordings of the first four Beatles albums (Please Please Me, With The Beatles, the A Hard Days Night soundtrack and Beatles for Sale) in their original mono form. That would be a nice find at a car boot!

At the other end of the scale, quadrasonic decks (like the Teac A3340, itself a popular choice with home-recording musicians and small studios) can record on all four tracks simultaneously.

This Teac offers a neat 'simul-sync' feature whereby the record head corresponding to one of the tracks is routed to a playback preamplifier. This eliminates the 'delay' introduced by the spacing between the record and play heads, enabling a musician to 'play along' to a previously-recorded track while recording the new contribution to another track. Some of the results can be quite impressive (especially if noise reduction is used).

A flipped half-track stereo tape will also play backwards. Musicians (among them The Beatles) used this property to great effect, especially with echo!

Half track tapes will play acceptably well on a quarter-track machine, but not vice-versa. Each half-track head will partially 'read' two of the four tracks, with the practical upshot that you'll usually hear something intelligible, accompanied by another programme in 'gobbledegook' form...

Some of these second-hand

tapes from car boot sales or audiojumbles can be a rewarding listen (among them Radio 3 concerts featuring world-famous orchestras and conductors) and a fascinating insight into their recordists' tastes and hi-fi habits.

It's odd to find LPs recorded on tape that was more expensive than the records, but if they were 'virgin' copies they'd be free of wear and unpleasant 'pops' and crackles. Sometimes these recordings reveal faults with turntables, such as rumble and mistracking! Evidently, the idea of 'source first' had not registered with whoever had recorded such tapes...

Some less-valuable tapes will end up being bulk-erased and passed on – together with a Sony TC-366 stereo 4-track deck from the early 1970s I'd speculate – to a lad that has started getting into music production.

Skills like tape splicing, which endless-loops need, have been lost in the era of 'cut-and-paste' digital editing. A half-track machine like an old Revox A77, a machine familiar to countless musicians opens up the realms of reverse playback.

But my Sony TC-366 reel-to-reel recorder that is almost as old as I am – and needed nothing more than a quick service and new take-up reel drive belt to restore to full working order – would be a great first step for anyone interested in old analogue recording and editing techniques. It can also replay many car boot and audiojumble tapes – always low cost – with 'interesting' results, but it cannot cope with all for the reasons I have described. Open-reel tape recorders, now regaining popularity, were – fundamentally – complex professional work horses with a variety of specifications. Domestic versions mimicked their complexity: old tapes you buy now may be a challenge to play properly. ●



PERREAUX

New Product Release

255i Stereo Integrated Amplifier

The 255i is Perreaux's most powerful, most sophisticated integrated amplifier. It's performance and specifications are truly impressive, but hearing the 255i is when you will truly appreciate the quality engineering, design and craftsmanship. The 255i is the most advanced integrated amplifier Perreaux has ever produced.

Optional internal 32-bit/384kHz Digital to Analogue Converter (DAC) and Moving Magnet/Moving Coil (MM/MC) Phono Preamplifier modules ensure complete integration of digital source components (such as network music servers and set-top digital receivers), as well as turntables, into a high-performance system.

Rated Power Output (Per Channel): 250W into 8Ω, 500W into 4Ω

Maximum Power Output (prior to clipping, per channel): 360W into 8Ω, 530W into 4Ω

Digital Inputs: 2 SPDIF Coax (RCA), 2 SPDIF Optical (Toslink), 1 USB (Type B)

Chipsets: ES9038PRO Sabre DAC / XMOS chipset solution (32 bit / 140db noise floor)

RRP: £6,895



The Perreaux 255i will soon be available to test in the Elite Audio showroom and for home trials



audio physic

Audio Physic CODEX Loudspeakers

In the history of AUDIO PHYSIC, the AVANTI loudspeaker model is an internationally-renowned classic and the latest relaunch has been able to thoroughly convince the discerning ears of audiophiles and reviewers. The CODEX goes a step further. Based on its larger volume and the consistently advanced AUDIO PHYSIC technologies in the chassis and crossover design, the CODEX draws on the company's full potential.

Height: 1195 mm / 47.0"

Width: 202 mm / 8.0"

Depth: 370 mm / 14.6"

Required Space Width x Depth: 360x500 mm / 14,2x19.7"

Weight: ~ 44 kg

Impedance: 4Ω

Frequency Range: 28 Hz - 40 kHz

Sensitivity: 89 dB

RRP: £9,750

No Risk 30 Day Home-Trial Period



web: eliteaudiouk.com

e-mail: info@eliteaudiouk.com

tel: 01334 570 666

"reel-to-reel machines can be a bit of a challenge for space, spares and time"



Dave Tutt

Thought I should start this month's column by bringing you up to date with the Teac x2000 open-reel tape machine I'm bringing back to life.

After fitting new belts for the capstans we had tape motion – but there were still a few issues. Running the tape was okay but it would start to loop between the pinch rollers and thus loose contact with the heads. Swapping the pinch rollers helped a little but it seemed there was no back tension – or for that matter very much pickup. Two presets on the power printed circuit board needed adjusting slightly.

As I didn't find any electronic failures I guess it was just down to drift caused by age. With any machine that has had mechanical work the electronic control system is bound to complain a little. The tape picked up smoothly and the tension arms raised to a more standard play angle once the presets had been adjusted. It was such a little adjustment that the preset positions didn't actually look any different when finished. Anyway, once put back together the tape mechanism worked well.

These machines have more bass than some other, often older designs where it is muddy due to excessive biasing. This Teac has a clean, well balanced sound when using Maxell tape, with no obvious detrimental characteristics that would suggest degradation from a copying process.

The x2000 has dbx noise reduction, a wideband system with compression and expansion across the whole audible range, compared with Dolby B or C that covers higher frequencies only. dbx uses EQ to limit the adverse effects of the process. Simple 2:1 compression and expansion (companding) processes can cause the bass to modulate the whole of the audio content which

is audible as a pumping sound. It is a rather unpleasant effort but was largely absent in this machine thanks to the pre and post EQ function.

This also means that frequency response irregularities, usually at the ends of the audio bandwidth are not exaggerated by the noise reduction so it is a perfectly reasonable process to use.

There are a few things about dbx you might not like though, according to preference: keeping it off and hearing a small amount of tape noise, or putting it on and living with some of the issues within any noise reduction process. I don't have any particular feelings about this.

When I go back to my old recordings most have been compressed by such noise reduction so I have to de-compress (expand) using the same system, or the tunes sound very odd! 12dB of midrange EQ boost and 2:1 compression makes recordings without the opposite process used during playback sound like the source was bass and treble light and the rest processed through an old AM radio!

The x2000 is now back with its owner. We did an exchange when he collected: I got a Teac x10 which is similar but without dbx or an electronic digital tape counter. Simpler in manufacture then but it seems with rather more faults – electronic control ones this time. Rewind and Fast Forward were poor because the 24 Volt motors were both trying to drive at the same time even though one was supposed to be providing just back tension. Similar motor control issues affected Play.

A capstan belt was also required, but there's only one on this model even though the dual capstan mechanism is much the same. Testing the control circuitry was pretty much inconclusive, so I was faced with a blanket replacement

task. So this machine is now on the bench and undergoing component replacements. Perhaps I'll have more to say about it soon.

Additionally, this month has seen some interesting arrivals at the workshop. If the Teac x10 and an Akai GX400 with physical damage were not enough, I have six others! There are two Sony TC377 recorders with belt and smoke issues, a Philips N5170 that is dead, a pair of mono Ferrograph Series 7 machines and a Ferrograph Logic 7 stereo. That many reel-to-reel machines at once can be a bit of a challenge for space, spares and time. They should keep me busy for the next month or so.

A Philips DVD-936SA DVD player arrived recently by courier. It had undergone some modification work to improve its SACD and CD playing performance. On arrival though it was dead – but then being over 12 years old perhaps this is to be expected; a new power supply is underway. With over £1000 of modifications to it to improve the sound I have to say that buying a £1500 SACD player would have probably been more cost effective. Fitting a linear power supply for just the 15 Volt rails, as well as a reclocking circuit, doesn't seem a great way to improve things – different rather than better!

So I now have to build a linear 5 / 3.3 Volt equivalent supply that fits the box and can run the digital circuits in what remains of the original player. I have no idea what the current demand of either of these two supplies is so there will be something of an educated guess and some over engineering to start with. This will then bring the thing back to life – hopefully! With fewer specialised mechanical parts it's easier to fix than all the tape machines flooding in. ●

+44 (0)7759 105 932
dave_london@hotmail.com
www.tutt-technology.co.uk

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

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.

TURNTABLES

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.



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

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

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

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

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...

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

MICHELL GYRODEC SE 2005 £1,115
Design icon with superlative build. Sound is beautifully smooth, effortless and exceptionally expensive.

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

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.



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.

SME MODEL 10A 1995 £4,700
Exquisitely engineered deck and SME V tonearm combo that's an extremely accomplished performer with classical music.

LINN AXIS 1987 £253
Cut-price version of the Sondek with LMX arm. Elegant and decently performing package. Later version with Akita tonearm better.

TECHNICS SL-P1200 1987 £800
CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pr' use and laden with facilities - a great eighties icon.

ROKSAN XERXES 1984 £550
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.

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.

MICHELL GYRODEC 1981 £599
Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved. Clean, solid and architectural sound.

TOWNSHEND ROCK 1979 £ N/A
Novel machine has extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

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



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 RR300, which added detail at the expense of warmth. Superb budget buy.

SONY PS-B80 1978 £800
First outing for Sony's impressive 'Rotracer' 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!

TRIO LD-7D 1978 £600
The best 'all-in-one' turntable package ever made. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

ADC ACCUTRAC 4000 1976 £300
Rankers 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 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.

PIONEER PL120 1973 £36
When vinyl was the leading source, this brought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL1120 was off the pace compared to rivals.



TECHNICS SP10 1973 £400
Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10 will give any modern a hard time, especially in respect of bass power and midband accuracy.

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.

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

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.

GARRARD 301/401 1953 £19
Tremendously strong and articulate with only a veiled treble to let it down.



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.

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 counter-weight modification.

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

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



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.

MICHELL TECNOARM A 2003 £442
Clever reworking of the Rega theme, using blasting, drilling and rewiring!

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

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

SME SERIES V 1987 £2,390
Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

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



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 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.

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.

LINN ITTOK LVII 1978 £253
Japanese design to Linn specs made for a musical, rhythmic sound with real dynamics. The final LVIII version worth seeking out.

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.

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

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.

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.

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.

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.



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.

INTEGRATED AMPLIFIERS

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

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.

SUGDEN A21A S2 2008 £1,469
Crystalline clarity, dizzying speed and forensic detailing. Power limited so needs sensitive speakers.

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

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

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

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

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.

MCINTOSH MA6800 1995 £3735
Effortlessly sweet, strong and powerful with seminal styling to match.

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.

EXPOSURE VII/VIII 1985 £625
Seminal pre-power, offering most of what Naim amps did with just that little bit extra smoothness. Lean, punchy and musical.



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.

VTL MINIMAL/50W MONOBLOCK 1985 £1,300
Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

MUSICAL FIDELITY A1 1985 £350
Beguiling Class A integrated with exquisite styling. Questionable reliability.

MISSION CYRUS 2 1984 £299
Classic 1980s minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



NAIM NAIT 1984 £350
Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

CREEK CAS4040 1983 £150
More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

MYST TMA3 1983 £300
Madcap eighties minimalism, but a strong and tight performer all the same.

ROTEL RA-820BX 1983 £139
Lively and clean budget integrated that arguably started the move to minimalism.

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.

ROGERS A75 1978 £220
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.

A&R A60 1977 £115
Sweet and musical feature-packed integrated; the Audiolab 8000A remains a classic.



SUGDEN C51/P51 1976 £130
Soft sounding early Sugden combo with a plethora of facilities and filters. A sweet and endearing performer but lacking in power and poor load driving ability.

SUGDEN A21 1969 £ N/A
Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

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.

CHAPMAN 305 1960 £40
Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper secondhand.

POWER AMPLIFIERS

ELECTROCOMPANET NEMO 2009 £4,995 (EACH)

Norwegian power station as cool as a glacier tonally, yet impresses with sheer physicality and fleetness of foot. 600W per channel.

NUFORCE REFERENCE 9SE V2 2006 £1,750
Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.

QUAD II-80 2005 £6,000 PER PAIR

Quad's best ever power amplifier. Dramatic performer with silky but dark tonality, blistering dynamics, serious power and compellingly musical sound.



QUAD 909 2001 £900
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.

NAIM NAP 500 2000 £17,950
Flagship amplifier will drive just about any speaker with ease. Factor in the company's trademark pace, rhythm and timing and it all adds up to one effortlessly musical package.

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!



MUSICAL FIDELITY XA200 1996 £1000
200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.

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 experience.

KRELL KMA100 II 1987 £5,750
Monoblock version of the giant KSA-100 is one of the seminal 80s transistor power amplifiers. Massive wallop allied to clean and open Class A sound makes this one of the best amplifiers of its type.

RADFORD STA25 RENAISSANCE 1986 £977
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.

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.

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.

LECSON AP1 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.

QUAD 303 1968 £55
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

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 rarely value means high price.

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.



LEAK POINT ONE, TL10, TL12.1, TL12 PLUS 1949 £28
Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical. Deeply impressive in fine fettle.

PRE AMPLIFIERS

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.

CONRAD JOHNSON MOTIV MC-8 1986 £2,500
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a sory, light balance in the mould of Sugden. Something of a curio, but worthwhile nonetheless.

AUDIO RESEARCH SP-8 1982 £1,400
Beautifully designed and built high end tube pre-amplifier with deliciously sweet and smooth sound. Not the last word in incision or grip.

LINN LK-1 1986 £499
A brave attempt to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not bad for under £100.

NAIM NAC 32.5 1978 £ N/A
Classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl! but a tad forward for digital.

LECSON AC-1 1973 £ N/A
Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.

QUAD 33 1968 £43
Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...



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!

QUAD 22 1958 £25
The partner to the much vaunted Quad II mono-blocks - cloudy and vague sound means it's for anacrophiles only.

LOUDSPEAKERS

WHARFEDALE DIAMOND 10.3 2010 £290
Great small standmounters for audiophiles on a budget; dry punchy sound with impressive sound-staging at the price.



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

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...



SPENDOR A5 2009 £1,695
Multi-talented floorstanders with generous scale and punch and Spendor's classic mid-range detail. Deliver a sound that thoroughly engages whatever you care to play.

MONITOR AUDIO PL100 2008 £2,300
The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble.



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.

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

ISOPHON GALILEO 2007 £2,100
Big standmounters that really grip the music and offer quite startling dynamics and grip.

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

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.



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.

B&W 686 2007 £299
Baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

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.

B&W 801D 2006 £10,500
In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.



REVOLVER CYGNIS 2006 £5,999
Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

USHER BE-718 2007 £1,600
Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

USHER S-520 2006 £350
Astonishingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.

ACOUSTIC ENERGY AE1 CLASSIC 2006 £845
Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.



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!

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.

TANNOY WESTMINSTER 1985 £4500
Folded horn monsters which sound good if you have the space. Not the last word in loudness but can drive large rooms and image like few others.



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 coarse at high frequencies and limp in the bass. Speakers would never be the same again...

HEYBROOK HB1 1982 £130
Peter Comeau designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic.



QUAD ESL63 1980 £1200
An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.

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.

ACOUSTIC RESEARCH AR18S 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...

YAMAHA NS1000 1977 £532
High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabinets equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



JR 149 1977 £120
Cylindrical speaker was ignored for decades but now back in fashion! Based on classic KEF T27/B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but has clarity and imaging.

KEF R105 1977 £785
Three way Bextrene-based floorstander gave a truly wideband listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace.

SPENDOR BC1 1976 £240
Celestion HF1300 tweeter meets bespoke Spendor Bextrene mid-bass unit. The result is a beautifully warm yet focussed sound. A little bass bloom necessitates careful low-stand mounting.



IMF TLS80 1976 £550
Warm and powerful 1970s behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms not a forte.

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.

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.

LEAK SANDWICH 1961 £39 EACH
Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.

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.

SYSTEMS

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



NAIM UNITIQUE 2010 £995
Great little half width one-box system with truly impressive sound allied to a wealth of source options.

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.

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. Just listen.

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.



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



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

ARCAM SOLO NEO 2006 £1,100
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

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



TUNERS

ARCAM FMJ T32 2009 £600
Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.



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.

MYRYAD MXT4000 2005 £1,000
Sumptuous sound and top-notch build quality make for a tempting AM/FM package. Warm and richly detailed on good-quality music broadcasts.

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

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

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



NAD 4040 1979 £79
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica.

MARANTZ ST-8 1978 £353
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.

YAMAHA CT7000 1977 £444
Combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

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 good sound quality with brilliant ergonomics.



ROGERS T75 1977 £125
Superb mid-price British audiophile design, complete with understated black fascia. Smooth and sweet with fine dimensionality.

SANSUI TU-9900 1976 £300
A flagship Japanese tuner. It boasts superlative RF performance and an extremely smooth and liquid sound.



TECHNICS ST-8080 1976 £180
Superb FM stage makes for a clean and smooth listen.

REVOX B760 1975 £520
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?

SEQUERRA MODEL 1 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.

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. Deliciously liquid with true dimensionality.

HEADPHONE AMPLIFIERS

GRAHAM SLEE NOVO 2009 £255

Dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.



MUSICAL FIDELITY X-CAN V8 2008 £350

Open and explicitly detailed sound plus serious bass wallop. A great partner for most mid-to-high end headphones.

CD PLAYER/RECORDERS

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.

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.



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 with a true audiophile sound and HDCD compatibility.



CAMBRIDGE AUDIO CD4SE 1998 £200

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

SONY TCD-8 DATMAN 1996 £599

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

LINN KARIK III 1995 £1775

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

NAIM CDS 1990 £ N/A

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

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.



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.

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.

CAMBRIDGE AUDIO CD1 1986 £1500

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



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.

SONY CDP-701ES 1984 £890

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

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.

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!



ANALOGUE RECORDERS

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.



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.

PIONEER CTF-950 1978 £400

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

YAMAHA TC-800GL 1977 £179

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

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.

REVOX A77 1968 £145

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days.

COMPACT DISC TRANSPORTS

ESOTERIC PD 1997 £8,000

The best CD drive bar none. Brilliantly incisive, ridiculously over-engineered.

TEAC VRDS-T1 1994 £600

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

KENWOOD 9010 1986 £600

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

DACs

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.

CAMBRIDGE AUDIO DAC MAGIC 1995 £99

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

PINK TRIANGLE DACAPO 1993 £ N/A

Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

QED DIGIT 1991 £90

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

CABLES

MISSING LINK CRYO REFERENCE 2008 £495/0.5M

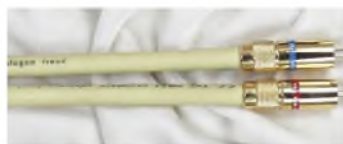
High end interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

TECHLINK WIRES XS 2007 £20

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

VDR ULTIMATE THE FIRST 2004 £250

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space.



WIREWORLD OASIS 5 2003 £99/M

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

Advanced Auralic



Following on from its award-winning Aries wireless streaming bridge, Auralic has introduced the Altair – an all-in-one DAC, streamer and pre-amp. Jon Myles finds it a winning combination.

Auralic has been gaining praise for the past eight years with its range of advanced digital music products. We were so impressed with its Aries wireless streaming bridge it was nominated Best Network Player for 2017 (see Hi-Fi World January 2018 issue).

Good as it is, though, the Aries needs to be connected to a DAC; it has no in-built digital-to-analogue converter. So enter the Auralic Altair costing £1749. It replicates the functionality of the Aries (£1495) but also has a DAC, adds pre-amp capability and a headphone amplifier.

Housed in a single slim 6.5cm x 33cm x 23cm (H/W/D) chassis the Altair can stream digital audio files via shared network folders, UPnP/DLNA servers and the likes of Tidal and Qobuz subscription services. It is

also Bluetooth equipped and able to receive music wirelessly from smart devices – typically a mobile phone – or computers. An added feature is a dealer-fitted 2.5" hard disk or solid state drive for internal storage of files.

The rear panel carries AES/EBU, co-axial, optical (Toslink) and USB 2.0 digital inputs, alongside balanced XLR and unbalanced RCA phono socket outputs. All the major music file formats are supported up to 32bit/384kHz PCM, as well as DSD64, 128 and 256. The only thing missing is MQA – although the jury is still out on whether it will take-off.

Inside the box the Altair uses a highly-regarded ESS Sabre32 Series DAC driven by Auralic's Femto master clock technology to reduce jitter. There is a linear power supply with a custom toroidal transformer – accounting for much of the unit's

7lb weight.

On the front is a long display screen, headphone jack and a single rotary control for volume and accessing all the various functions. One of these is a set of four digital filters – Precise, Dynamic, Balance and Smooth (more of which later). Users can also control the Altair through the supplied remote control or, as I did, Auralic's free Lightning DS app (iOS only at present).

Set-up is simple with the Auralic finding my wi-fi network and all stored music within a matter of minutes once the two aerials were attached to the rear. The connection stayed stable throughout the review period. You can also use the Aries wired if desired – if your wi-fi network is a little flaky perhaps – but I had no trouble streaming hi-res PCM and DSD files wirelessly.

SOUND QUALITY

Starting off by streaming a 24/96 rip of Richard Dawson's latest 'Peasant' album the Altair revealed itself to be precise and detailed with the welcome ability to pick out subtle



FILTER MODE

1: PRECISE 4: SMOOTH
2: DYNAMIC 5: BACK
3: BALANCE

Four digital filters are available – Precise, Dynamic, Balance and Smooth. All can be selected from the front panel.



The rear panel carries a mains power switch, an array of digital inputs and both phono socket and XLR (balanced) outputs.

nuances in the music.

On the delicate folk of 'Beggar' the strike and decay of the strings on Dawson's acoustic guitar were entirely realistic - so much so I could close my eyes and picture his fingers on the fretboard. The Altair also brought out all the emotion of his sweet falsetto vocals on this piece.

Pushed to handle something a little more up-beat with The Jesus And Mary Chain's feedback-infused 'Psychocandy' I found Altair to be excellent at layering the instruments. Where other DAC/streamers can compress everything into a sonic squall here I could make out all the guitar parts and bass lines. Added to that was a superb sense of speed - every track pumping along at just the right pace.

As mentioned above there are four filters on offer: Precise is said to offer best measurement with a flat frequency response, Dynamic has a gentle roll-off of the high frequencies, Balance is designed to minimise pre-ringing and echo effects while Smooth uses a minimum-phase design and is recommended by Altair as the best all-round option.

I tried them all with Led Zeppelin's 'When The Levee Breaks' which has a dense mix featuring a pounding rhythm section, wailing harmonica and intricate guitar work. The differences were subtle but on the whole I preferred the smooth setting - with Precise sounding a little more harsh with cymbals and Balance just a shade too polite. It's horses for courses, though, and others may disagree.

Whatever the choice, though, the Auralic's basic character remains the same and it is one that is thoroughly engaging.

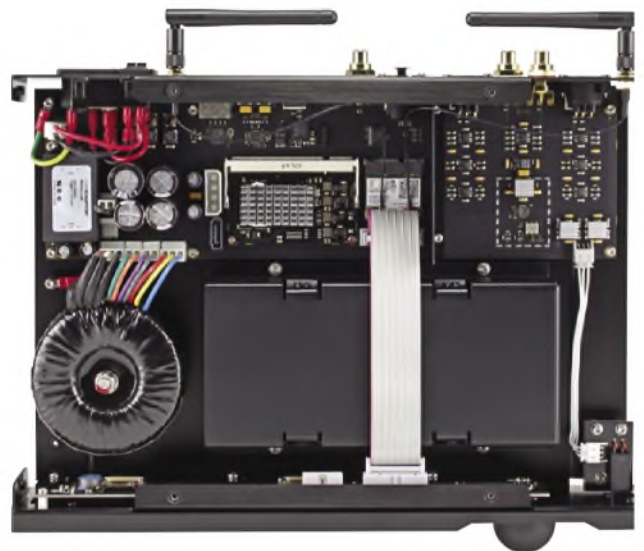
I recall marvelling at how good Daft Punk's 'Random Access Memories' (Studio Masters Edition - 24bit/88kHz) sounded through an Auralic Aries feeding a Chord 2Qute DAC (combined price £2495). The Altair matched that - but at significantly lower cost. The same low noise floor brought instruments to the fore and there was similarly a sense of vibrancy to the sound.

I put together a quality system around the Altair, connecting it to a Naim Nap 100 power amplifier and a pair of Neat's Iota Alpha

loudspeakers. At a total cost of £3894 this was one fun combination with firm bass and great midrange detail, keeping me playing track after track. What more could anyone want?

CONCLUSION

Auralic have a deserved reputation for high quality digital at a realistic price - and the Altair is proof of that. It's a multi-purpose component offering flexibility, performance and ease-of-use that can act as the centre of any digital music system. Just add decent loudspeakers and a power amplifier for a top-notch system.



Inside the Altair uses an ESS Sabre DAC with a linear power supply - which Auralic believe is better than a switch mode alternative.

MEASURED PERFORMANCE

The Altair has at heart an ESS Sabre digital-to-analogue convertor (DAC), supported by a linear power supply (i.e. not switch-mode). Auralic claim 124dB dynamic range - a very high value - and this is possible from the Sabre32 Series our measurements show. However, the Altair falls slightly short at 121dB from both Phono socket and XLR socket outputs. It's not a significant shortfall in sonic terms and the Altair is still up with the best in this important aspect.

Distortion was a low 0.02% at -60dB with 24bit digital and 0.21% with 16bit (CD), the latter value being determined by 16bit quantisation noise, not the DAC. These figures were measured from both S/PDIF (coax, optical, AES) and USB inputs. The optical input is able to process 192kHz sample rate digital.

Output from the Phono sockets measured 2.2V and from the XLR sockets 4.5V - both typical values.

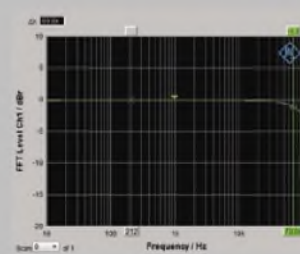
Frequency response measured flat to 70kHz, contracting to 48kHz in Balance mode. The filters changed measured frequency response little, and not at all within the 20Hz-20kHz audio band, even with CD's 44.1kHz sample rate, so the audible difference between filters will be slight.

The Altair measured well and will give sound quality up with the best.

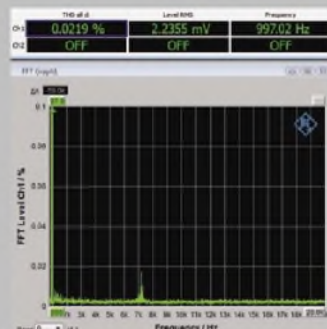
NK

- Frequency response (-1dB) 4Hz-70kHz**
- Distortion (10k, 1W, 4 Ohms) 0.02%**
- Dynamic range 121dB**
- Noise -120dB**
- Output 2.2V / 4.5V**

FREQUENCY RESPONSE



DISTORTION



AURALIC ALTAIR
£1749



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT
All-in-one DAC/streamer/pre-amp that sets a new standard at its price. Offers flexibility with superb sound quality.

- FOR**
- multi-purpose
 - superb sound from its Sabre DAC
 - option of internal storage
 - easy to use
 - price

AGAINST
- no MQA

Auralic
www.auralic.com

vinyl section

contents

FEBRUARY 2018

www.hi-fiworld.co.uk

T+A G 2000 R TURNTABLE 84

A German-engineered turntable with MC cartridge and a beguiling sound. Noel Keywood spins it up.

AUDIOPHILE BOOK 89

Paul Rigby casts his eyes over a lavish book detailing the best of Latin American and Canadian music between 1963 and 1976.

PRO-JECT PHONO BOX BT E 91

A phono stage with Bluetooth? Unusual but effective finds Martin Pipe.

news

THE SELF PRESERVATION SOCIETY

Nothing to do with the film, 'The Italian Job', but ECC 100 (www.ecc100.co.uk) releasing a 3LP compilation – reworking songs from the late sixties and early seventies. Including Eliza Carthy, Jackie Oates, Julie Tippett and Marry Waterson, songs include classics such as Focus' 'Hocus Pocus', Genesis' 'I Know What I Like (In Your Wardrobe)' and the Zombies' 'She's Not There'. Includes a USB with extra tracks and other content.



The Self Preservation Society

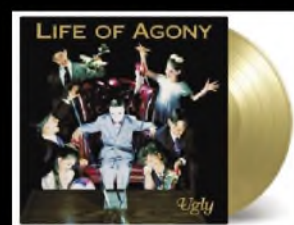


AT THE MOVIES

The soundtrack imprint from Music on Vinyl includes 'Fargo Year 3' via Jeff Russo. A numbered double album gatefold in blue and red vinyl with an eight-page booklet.

'War for the Planet of the Apes' has been produced by Michael Giacchino on red vinyl. Also a double album but on red vinyl only and limited to 1,000 copies.

Finally, look out for Dark Tower by Tom Holkenborg (also known as Junkie XL). Limited to 1,000 copies, this double album gatefold includes a four-page booklet and blue and black mixed vinyl.



MUSIC ON VINYL

Out now via MOV (www.musiconvinyl.com) is Buddy Guy and Junior Wells 'Play the Blues' (1972). Produced by Eric Clapton, Tom Dowd and Ahmet Ertegun and starring J. Geils, Clapton himself, and Dr John plus others, this is an excellent LP that works well, despite the extended original gestation.

Also look out for Shocking Blue's 1973 release, 'Ham', the all noise metal from Life of Agony and 'Ugly' (1995) which threatens as much as it entertains and Ringo Starr's 'Time Takes Time' (1992), his then best release for many years, a Beatles-centric LP produced by Don Was.

DEMON COMPS

The compilation theme continues with Demon's (www.demonmusicgroup.co.uk) 'Winter Wonderland' (featuring seasonal hits from Brenda Lee, Dean Martin and Bing Crosby), 'The 70s Pop Annual' (including tracks from the Sweet, Suzi Quatro and The Jacksons) and 'The 80s Pop Annual' (including tracks from Wham!, Adam & the Ants plus Irene Cara).





RHINO RIP IT UP

The rise and rise of Talk Talk begins with the oddly derivative, New Romantic/Roxy Music edge to the debut LP, 'The Party's Over' (1982). There was still plenty to like here though and things merely improved with 1984's 'It's My Life' that upped the quality of the songwriting.

Rhino's also offering three Alice Cooper LPs including the 1969 debut, 'Pretties for You' that had yet to enter his signature malformed rock, but explored reasonably produced psychedelia instead. 1981's 'Special Forces' (Cooper was into militaria at the time) offers a stripped down yet patchy rock output. 'Love it to Death' (1971) is of a different stripe, though. This coherent third LP enters Cooper's trashy rock world for the first time in his career.



SIREENA

From Sireena (www.sireena.de) is On The Frontier's 'Shoot' and featured ex-Yardbirds/Renaissance member Jim McCarty, guitarist Dave Greene (Raw Material), bassist Bill Russell and ex-Manfred Man drummer Craig Collinge. Short-lived project with plenty of prog, jazz, country and psyche flavours.

Also check out Nattefrost's 'Skaldic Themes', an attractive, soaring and layered suite of electronic music.



KSCOPE

From Godsticks is 'Faced With Rage' (*Kscope*; www.kscopemusic.com) reflecting that high energy punchy prog heard via Pineapple Thief and the like – but on a more aggressive level.

No-Man's 'Returning Jesus' (2001) is out again. Featuring Porcupine Tree's Steven Wilson once more, plus Tim Bowness (Colin Edwin and Steve Jansen guest).

Anathema's songwriter, Daniel Cavanagh, has issued a piano-centred solo work, 'Monochrome', packed with melodic prog.



JOHNNY CASH

Two LPs from Vinyl Passion. The first, 'The Rebel Sings' includes the content of six EPs: 'Country Boy', 'The Fabulous Johnny Cash Vol.1' and 'Vol.2' as well as 'Vol.3' plus 'Songs of Our Soil Vol.1' and 'Johnny Cash Sings The Rebel - Johnny Yuma'. You get twenty-four tracks in all.

Also look out for 'The Greatest Hits' from 1955-1961 via Sun, on half speed vinyl via Charly.

...AND FINALLY

They're a jazz trio: keyboardist Jamie Saft, bassist Steve Swallow and drummer Bobby Previte offer 'Loneliness Road' (*RareNoiseRecords*; www.rarenoiserecords.com) but provide three tracks with vocals by Iggy Pop. Less shocking, more brooding.

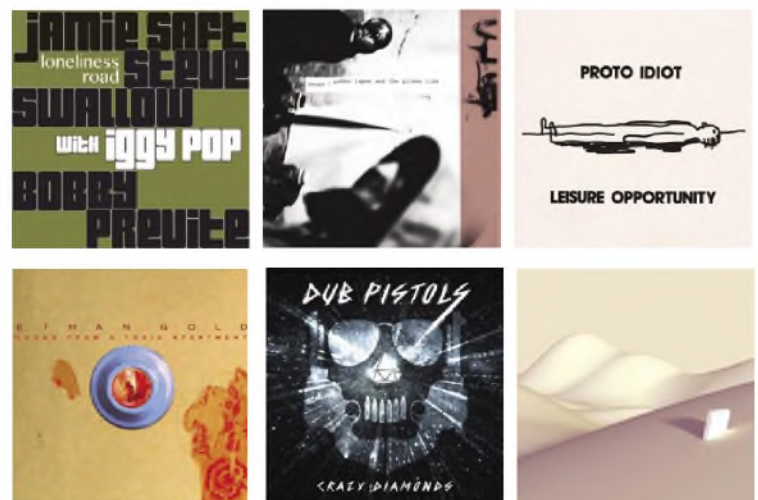
From Douga is 'Hidden Tapes and the Golden Tide' (*Do Make Merge*; dougabandcamp.com). Resembling classic jangly-guitar, 80s indie, it's infused with sparkling vocals and uplifting melodies. Lovely.

Proto Idiot's 'Leisure Opportunity' (*slovenly.com*; slovenly.bandcamp.com) has a pop-punk aura. Edgy rhythms, noisy guitars, humour (!), staccato vocals, lots of confidence, swagger and innocence.

Ethan Gold's 'Songs From A Toxic Apartment' (*Gold*; www.ethangold.com). Earnest and well crafted. A singer-songwriter of what I call Competent Rock. Full of rounded edges and achievable challenges.

Dub Pistols' 'Crazy Diamonds' (PIAS) offer a new slice of dance-rap-reggae that's uplifting and relevant, spilling over with energy.

Charles Howl's 'My Idol Family' (*Oh Many*; www.ohmany.co.uk) has that slightly arty rock sound with fragile and sensitive vocals that demand you sit and listen in silence. Just in case you might scare them away.



A class apart



T+A's latest G 2000 R turntable equipped with a moving coil cartridge and excellent tonearm is a testament to the benefits of good German engineering, finds Noel Keywood.

T+A intensely engineer their products to top German standards; I've been to the factory and met the founder. No floppy stuff there! No surprise then that the G 2000 R turntable in this review is built to impressive standards, has a superb quality of finish and – beneath the surface – relies on finely honed technology.

That is not to say it's design is out of the ordinary however, being a two-speed belt drive built onto a heavy, sturdy plinth using an isolation absorber T+A say, not a spring suspension system. Like my Garrard 401 it relies on sheer mass for isolation, much of which is provided by any support surface – shelf or table – able to withstand its consid-

erable weight of 14kgs (31lbs).

Whilst the turntable is engineered by T+A, the arm is a wrapped carbon-fibre design – a tweaked Clearaudio Verify it appears. Our review sample came as a package, this arm carrying a Clearaudio MC-2 moving coil (MC) cartridge, as well as T+A's optional phono stage fitted internally. So specified, the G 2000 R is purposed to feed the Line input of an amplifier; it has no alternative Direct output, unlike many turntables, so an external phono stage can't be hooked up at a later date. But then, what you get with the G 2000 R is a very high standard of performance in the first place, reflected in the price – and lessening any need for upgrade.

Working backward as it were

the Clearaudio MC-2 cartridge is the crown jewel of the package and largely determines sound quality; the arm and turntable must get the best from it by not introducing their own particular problems – and that is how I approached this package – from the front backwards. Other arms and cartridges are available options, as is the internal phono preamp.

Measurement showed the MC-2 moving coil is what Clearaudio and T+A claim, a precision engineered device with a very high standard of performance. Channels are closely matched they say, and that is exactly what I found – better matching than usual. The Microline stylus, fitted to a boron rod cantilever, traced inner grooves with little loss, so it reads short wavelengths and fine detail



A machined zinc hub with press-fit bearing is driven by a closely sited synchronous a.c. motor. The belt is specially ground T+A say (i.e. not a cheap rubber O-ring).

very well. Distortion was low and tonal balance supremely accurate: this design has no treble lift to add zest, nor treble loss to add warmth; it just gets the sound right. Throw in excellent tracking ability and you have a cartridge that, with ceramic coated magnesium-alloy body possessing threaded screw holes and easy to align block-shape is quite a proposition. Bought alone the MC-2 can be had for £720; I'd have priced it at £1k minimum. Of course, MC cartridges are like fine wines: they can be good but they may not suit your taste – and I'm no great lover of Boron cantilevers (or tweeters), feeling they sound a bit cold. Would this one be so? More later.

The arm has a lightweight vestigial head shell platform, attached to a wrapped carbon fibre arm tube that is stiff and light. I like to hand cue and the flat finger lift wasn't ideal for this, raised curve shapes being preferable since they give more clearance above the LP surface and by curving over the finger don't slip from it. The damped lift/lower platform, that most people will use, worked well however. The downforce and anti-skate mechanisms are uncalibrated, so a downforce gauge is needed and anti-skate set according to a routine in the manual. It's a fairly simple arm then, if well built and finished.

The turntable uses a synchronous

motor fed by a quartz-referenced a.c. source, T+A say, coupling to a zinc hub through a short ground belt. Atop the hub sits a heavy platter of pressure die-cast aluminium fitted with a thick silicone rubber mat. Speed change is electronic, selected by front panel push buttons. Much is made of the turntable and plinth structure being damped and resonant free.

There is no conventional all-enclosing hinged dust cover, just a formed acrylic sheet that is less expensive, acting as a cover. It must be put aside when using the turntable so space is needed.

The optional PH-G-R MC phono stage module has four banks of DIP switches, accessed from beneath the turntable, to adjust sensitivity and load (15 Ohms up to 650 Ohms), allowing the turntable to optimally match other MC pickup cartridges, but if you want to swap to MM this board must be changed for an MM board. DIP switches are cheap and have limited life so are not an ideal solution to switching low-level signals.

There are no markings, on circuit board

or base plate, to identify the purpose of the four switch banks – instead this is in the owner's manual only.

A universal MM/MC board with by-pass switch would be better. In its favour, however, the MC board had massive gain range of x228 up to x3735, able

to cope with all MC cartridges, and very low noise too (see Measured Performance for full details).

SOUND QUALITY

I connected the G 2000 R straight into our Icon Audio Stereo 30 SE single-ended valve amplifier driving Martin Logan ESL-X hybrid electrostatic loudspeakers.

As vinyl playing goes this is a simple system able to reveal the wonders of LP – and that's how it turned out. T+A have made the turntable silent in every way (no hiss, nor hum) and I could wind volume up to maximum and hear nothing – stony silence.

Placing needle into groove I was greeted by an even, correct and perfectly balanced sound from all the LPs that slid onto and off the platter.

Exactly as claimed and as our measurements confirmed, the Clearaudio MC-2 cartridge was



The arm is fitted with a magnetic anti-skate device, seen clearly here at front. But it is uncalibrated, as is the counter-weight.

coolly correct yet concise and insightful. I noticed straight away that images were centralised perfectly between the loudspeakers due to the unit's precise channel balance. There was no hint of skew in tonal balance either, the sound coming across generally as smooth and neutral.

And this last word just about sums up what I heard overall, a sound from LP that approached that from CD, yet without digititis of course (quantisation noise etc). Bass thundered out nicely from 12in 45rpm singles like Billy Ocean's 'Get Outta My Dreams, Get Into My Car' – if not with the muscular slam of my Ortofon Cadenza Bronze in SME3 12 arm on Garrard 401 turntable. There was fine detail retrieval, though, unaccompanied by top-end emphasis or spit, the long reverb used to




T+A's MC-2 moving coil pickup cartridge, a slick fit in a beautifully finished arm – also from Clearaudio.

Dial A Dealer Directory

directory of Hi-Fi Dealers throughout the UK and Ireland.

The Right Note
Music in the home



BATH

Music in the Home
 Tel: +44 (0)1225 874728
 Web: www.rightnote.co.uk

Digital: Aurender, Bel Canto, CEC, dCS, Gamut, VertexAQ
Vinyl: Aesthetics, Graham, Spiral Groove, Transfiguration
Tuners: Magnum Dynalab
Amplifiers: Aesthetix, Bel Canto, CAT, Gamut, Storm Audio, Vitus, VTL
Loudspeakers: Avalon, Gamut, Kaiser Acoustics (Chiara & Vivace), NEAT, Totem, Velodyne (subs)
Cables: Chord Co., DNM, Nordost, Siltech, Tellurium, VertexAQ, Mains Aletheia, Vertex AQ
Supports: Arcici, Black Ravioli, Hi-Fi Racks, LeadingEdge, Stands Unique, Vertex AQ
Room acoustics: LeadingEdge

The **AUDIOBARN**
 Old Harlow Essex



01279 454 860
 theaudiobarn.co.uk

ATLAS
 the performance connection

Eos
 4dd
 POWER CABLE

Eos
 Modular 4.0
 POWER BLOCK



atlascables.com

6 Audio

Vivid Audio AVM
 Sendor Dynamique
 Black Rhodium Hi-Fi Racks
 Acoustic Signature Devialet

01403 713125 | 07950 274224
 info@sixaudio.co.uk
 www.sixaudio.co.uk
 Partridge Green, West Sussex

divine audio

AnalogueWorks
 Croft Acoustics
 Graham Slee
 KLE Innovations
 London
 Lounge Audio
 Meridian
 Rogue Audio
 Trenner & Friedl

www.divineaudio.co.uk
 01536 762211 tim@divineaudio.co.uk

9 High Street, Hampton Wick,
 Kingston upon Thames, Surrey KT1 4DA
Open: Tuesday - Saturday 10am - 6pm
0208 943 3530

Infidelity
 MUSIC & CINEMA SYSTEMS

NAIM, LINN, REGA, ARCAM, B&W 800 SERIES, PMC, FOCAL,
 DYNAVECTOR, KUDOS, VELODYNE, STAX, LYRA, OPPO,
 TANGERINE AUDIO, TELLURIUM Q.

SEE AND HEAR THE VERY BEST

CEDIA MEMBER **clarity**

amp3  **DIGITAL PRIDE.**
COWON

sales@advancedmp3players.co.uk 0343 289 6880 www.advancedmp3players.co.uk

Official UK Cowon Distributor

Cowon Plenue D (PD) High Resolution 32GB Music Player
 24bit/192kHz high-resolution audio from a variety of formats
 Up to 100 hours of playback from one charge
 Micro SD card slot for expandable memory up to 128GB
 Available in Silver & Gold - Only £199

★★★★★



portray an invisible woman in Jackie Leven's 'Young Male Suicide Blessed by Invisible Woman' being a tad more obvious in its modulation and echo trail. I only ran into a problem with Neil Young's 'Tell Me Why' from After the Gold Rush (re-mastered, 180g vinyl) where forward vocal harmonies sounded harsh and not as I know them; immediate comparison with the Cadenza Bronze in SME309 via an Iron Audio PS3 phono stage was more insightful and lacked harshness.

You can hear cartridge cantilevers, especially ruby and diamond coated types, but the boron rod of the MC-2 was difficult to pin down. It was fast and concise, a tad less sonorous and a little more mechanical than my Cadenza Bronze (that Ortofon label 'romantic') and there was not the fine resolution and insight of our Ortofon A95 – but that the less expensive MC-2 can be compared is a tribute to it. All the same, listening to Marianne Thorsen



A rear view showing dust cover, and rear RJ45 sockets for remote control links to T+A products.

playing violin at centre stage, on 2L's LP of Mozart's 'Piano Concerto's' (DXD recording, 180g vinyl), her violin sounded briskly clear and fine string detail was abundant.

A strong sense of temporal stability was obvious, if not the metronomic precision of our Timestep Evo modified Technics Direct Drive. At the same time the G 2000 R had solid pitch and not the slightly vague pitch of most belt drives. The Verify arm comes across as smooth and colour free, if not

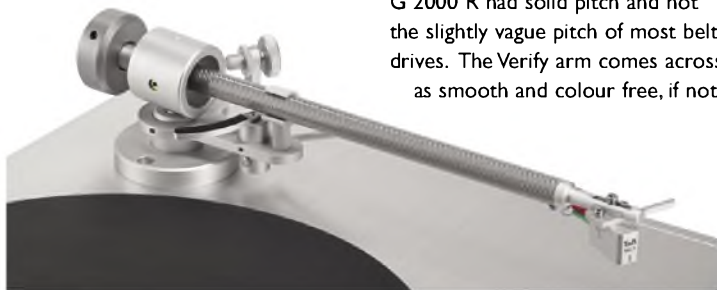
PRICES

MC-2 cartridge - £520.50 as a fitted option
 PHE-G - Built in phono-stage (MM or MC) - £545.00
 All prices include VAT.

quite as punchy across the upper bass region as more expensive designs, but that is about all. These are minor observations.

CONCLUSION

As a package the T+A 2000 R with Clearaudio MC-2 cartridge offer a fine rendition from LP – what you get is a long way up the ladder, at the price. A dedicated and informed engineering approach and attention to detail pay off handsomely. There are no characterful extremes, so much as a coolly neutral sound that is an object lesson in good engineering.



The G 2000 R arm is from Clearaudio – and is stylistically well matched to the turntable.

MEASURED PERFORMANCE

Turntable was speed accurate, with no appreciable error from precise 33.3rpm according to our DIN test record with its 3150Hz test tone. Unlike most belt drives, the T+A had almost no speed wander; it delivered 3151Hz with +/-1Hz variation.

With little change in basic speed Wow was low at 0.07% and DIN weighted Wow&Flutter came in at 0.06% – a very low value. The heavy platter and servo-regulated motor deliver fine results, subjectively giving a strong grip on musical timing.

Structurally, the arm was stiff and non-resonant, having a well suppressed mode at 125Hz and a sharp but narrow resonance at 500Hz, encompassing little energy, measurement with a Brüel&Kjær accelerometer attached to the cartridge support platform showed.

Frequency response of the fitted Clearaudio MC-2 cartridge measured almost ruler flat across the audio band our analysis shows, showing this is a highly developed moving coil transducer.

Inner groove loss (red trace) was minimal too, -1dB or so above 10kHz, showing a tip profile able to read short inner groove mechanical wavelengths. With good tracking, correct VTA and low distortion (0.4% 2nd harmonic), 26dB channel separation and healthy output at exactly 0.4mV at 3.54cms/sec this is a very high quality moving coil cartridge.

The internal phono stage had accurate RIAA equalisation and a perfectly flat frequency response as a result. Some roll down in gain below 30Hz provides a small amount (-7dB) of warp attenuation at 5Hz. Gain was low, just x228 at 1kHz, as delivered, but this can be increased. Distortion was minimal at 0.02% and equivalent input noise low at 0.08µV.

This package measured very well all round, delivering top notch results out of the box. **NK**

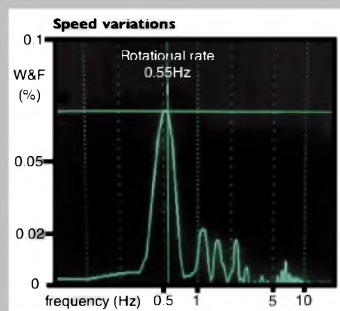
Speed accuracy 0% error
Wow 0.07%

Flutter 0.04%
Total W&F 0.06%

FREQUENCY RESPONSE



WOW & FLUTTER



T+A G 2000 R TURNTABLE WITH CLEARAUDIO TONEARM
£4,111.00



OUTSTANDING - amongst the best.

VERDICT

A well balanced and technically impressive turntable package that offers top notch sound from LP.

FOR

- balanced neutral sound
- easy to use
- hum and hiss free

AGAINST

- uncalibrated arm
- unmarked DIP switches
- hard in sonic character

Kog Audio
 +44 (0) 2477 220650
 www.kogaudio.com



sounddeck By SDS

Order online at sounddeck.co.uk

Sounddeck PM £90

The perfect way to enhance your turntable including Linn or Technics. Available in 295mm, 292mm or 285mm sizes Sounddeck PM uses an aluminium laminate which converts vibrational energy into negligible amounts of heat which lets the stylus process information in the grooves without interference from feedback and rumble. While the stylus is collecting vibrations and sending them up to the cartridge it is also forcing vibrations back into the record, these are collected and recycled through the system creating secondary noise which has to be processed by the system. The Sounddeck PM absorbs this noise so the system can process pure music without all the background mush - resulting in a cleaner sound.



Sounddeck DP Damping Puck £115

Available in polished stainless steel 745Grams or aluminium 262grams
The Sounddeck DPS damping puck is machined from two pieces of stainless steel bonded together with a layer of polymer. It sits firmly over the top of a turntable's spindle - holding the vinyl securely to the platter to extract a larger soundstage, firmer bass and extra detail.



Sounddeck DF £48 (set of 4)

Available in 75mm Squares or 80mm Circles
Sounddeck damping feet are 3mm thick vibration absorbing steel pads which isolate speakers, amps, turntables and components from vibration and feedback. They prevent speakers from driving the floorboards or shelving which enables them to operate in a vibration free environment resulting in a cleaner sound. They are also supplied with soft neoprene pads to prevent marking shelves or floors.



Visit sounddeck.co.uk for information and links to hifi reviews.



WORLD
DESIGNS

hear the music . . . not the equipment

- WDKT88 32 watts per channel ultralinear push pull stereo amplifier. Single input power amp or integrated with multi-input relay switching
- WDKEL84 15 watts per channel ultralinear push pull stereo amplifier. Single input power amp or integrated with multi-input relay switching
- WDPHono3 All triode passive equalization valve phono-stage. Dual input option. MC step-up transformers available. Requires WDP5U3 power supply
- WDPRe3 Transformer coupled single ended valve pre-amplifier. Low output impedance. Multi-inputs utilizing relay switching. Requires WDP5U3 power supply
- WDP5U3 High performance choke power supply
- WDHD35 Transformer coupled single ended valve headphone amplifier. Multiple settings for headphone impedance matching.



Kits and Components for the Audiophile Community

07972 055492 sales@world-designs.co.uk

www.world-designs.co.uk

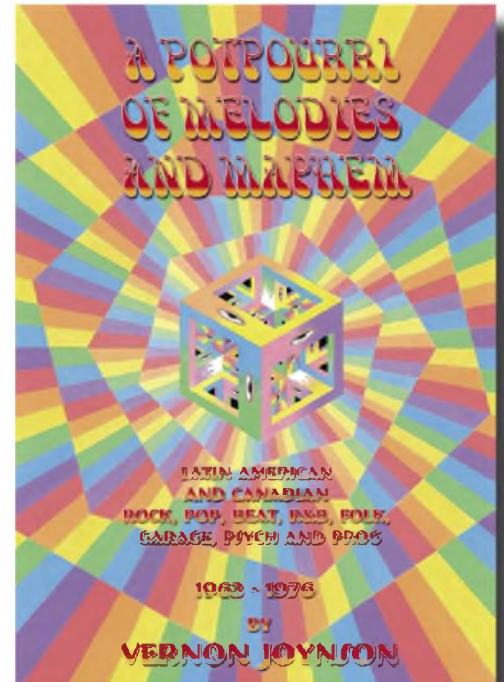
Mayhem and fun

The latest in a new series of music-related books. Paul Rigby looks at tomes that go that bit further than the rest.

A POTPOURRI OF MELODIES AND MAYHEM: LATIN AMERICAN AND CANADIAN ROCK, POP, BEAT, R&B, FOLK, GARAGE, PSYCH AND PROG 1963-1976

Author: Vernon Joynson

Price: £55



Joynson is back with another magnificent and hefty tome. Although, as usual, I suspect that half of the writing time was spent penning the title: it's another mighty one folks. Presented in soft back and spanning a quite enormous 886 pages, the focus is similar to the last Joynson book reviewed in these pages, 'A Melange Of Musical Pipedreams And Pandemonium', in that it focuses on two or more seemingly diverse and unrelated territories. In that case it was Australia, New Zealand, Africa and Turkey. Here, it's Latin America and Canada.

I did ask Joynson about this head scratching territorial jumble around the time of the release of the last tome and I assume that his answer then is also relevant to this new book. Basically, he wants to squeeze as much into a single book as possible. He might say that it adds value but I suspect that the production budget has a greater say in things.

In those terms, that's fine and I applaud Joynson in 'finding a way' to display his meticulous information to the world. His own company, Borderline, is a tiny publishing house where money is always in short supply. If the price to pay for the existence of these fascinating books

is a slightly odd contents list, then so be it.

That contents list is a little eccentric at times, the initial 296 pages of Latin American information being followed by 537 pages of Canadian (including French Canadian) releases. There are also entries from artists who were from neither of these territories but may have been based in one or the other.

Then, slightly bizarrely, you get a discography of the reissue record label Gear Fab, which I always considered an American concern – hey ho – plus a final twenty page selection of Stop Press entries that adds more Latin American information. Obviously a last minute entry, then.

Including twelve pages of colour illustrations featuring a host of speedily attired LP covers, the book offers its information within a familiar format. Familiar to fans of Borderline books, that is. Covering the genres listed above, each band/artist features a biography with details of the members of the band, if applicable, the album and singles releases produced by the same, format information (I've even seen information for CD-ROM), years of release, catalogue numbers, what compilations they might have appeared on and any available images

and LP cover pictures that can also be shoe-horned in. You'll also find, where available, juicy bits of artist history that might not be wholly music related – but that adds flavour to the artist. Leonard Cohen's bankruptcy details are one example. All of the above information is densely and closely typed and is also completely engrossing.

Slightly quirky and unconventional it might be but this joyous and joyful book is not only comprehensive in its coverage but offers a gamut of enlightening and surprising record releases. As a bit of a music geek, if not freak, being in the company of Joynson means being in the company of a like mind.

Hence, you enter into his book and find yourself completely at ease. I was going to suggest that this book will offer hours of fun and exploratory enjoyment but, who am I kidding here, that should be years of fun and enjoyment! Great value, heaving with precious rarity information, A Potpourri Of... (yada, yada, yada) is a complete winner!

Call 01323 732459 or click on www.fminor.com for more information.

MIDLAND AUDIO XCHANGE

The Old Chapel
Forge Lane
Belbroughton
Worcestershire
DY9 9TD

t. 01562 731100
f. 01562 730228

e-mail. sales@midlandaudiox-change.co.uk
web . www.midlandaudiox-change.co.uk



**Midland Audio Xmas -New year sale Starts on
27th December at 9.00**

Ex - demo and second hand items

	Was	Now			
Digital			Preamplifiers		
Antelope Audio Zodiac + DAC S/H	1800	799	Audio Research LS28 xdemo	7498	5999
Audio Research DAC9 xdemo	7498	5999	Burmester 035 with MC phono xdemo	6140	3999
Auralic Altair DAC/Streamer S/H	1749	1199	Loudspeakers		
Bel Canto CD3T transport silver Silver	1700	1199	Bonicke W8 Oak xdemo	5800	4999
Bel Canto DAC2.7 DAC Silver Xdemo	2500	1599	Chario Syntar 530 xdemo	1695	699
Korg DAC10 headphone DABNIB	220	149	Sonus faber Venere 1.5 inc stands	1598	899
MBL 1611E Reference DAC S/H	20900	4999	Sonus faber Venere 2.5 xdemo	2498	1499
Melco N1A Black Server S/H	1750	1099	Sonus Faber Venere Centre Damaged	748	279
Musical Fidelity Encore 225 xdemo	4399	2499	Wilson Sabrina xdemo	20000	12999
Musical Fidelity MX DAC xdemo	799	499	Wilson Sasha II xdemo	39000	27500
Musical Fidelity NuVista CD Player xdemo	7149	4999	Yamaha WX030 wireless speaker S/H	195	99
Naim Audio NS01 Server xdemo	3795	2250	Accessories & Cables		
Naim Uniti Core xdemo	1899	1499	47 laboratory Kishermon 2m xdemo	700	349
Plato Classic Streamer amplifier xdemo	4350	2499	47 Laboratory Kishermon 3m BNIB	800	499
Puresound A800 valve CD Player S/H	1100	£499	47 Laboratory OTA Kit 4708 BNIB	800	499
Weiss DAC202 USB option fitted Xdemo	8000	3750	Analysis Plus Oval 12 2 x3m Xdemo	230	129
Weiss INT202 firewire interface xdemo	1100	599	Analysis Plus Oval Digital 2m BNC digital	99	49
Weiss Man 301 Server /Ripper xdemo	8200	4999	ASC tube traps xdemo	680	249
Weiss Medea + usb DAC Silver xdemo	13990	6999	Audioquest Leopard 1.2 arm cable BNIB	699	479
Weiss PSU101 xdemo	1199	649	Finite Elemente Pagode signature xdemo	2290	1499
Analogue			Magnum Dynalab MD108 mk1 S/H	6995	2995
Audio Research PH9 xdemo	7498	5999	MIT shotgun online S3.3IC 1m pair RCA	1100	399
Bergmann Magne xdemo	8500	4499	Musical Fidelity Stable 1 platform BNIB	199	99
Bergmann Sindre xdemo	14250	7499	PS Audio Perfectwave 5.1 BNIB	220	149
Burmester 100 phono stage xdemo	11540	6999	Revelation Audio Labs Prophecy Firewire	499	199
Funk Firm LSD with Denon 103xdemo	1850	999	Russ Andrews BMU1500 S/H	1600	1199
Linn Adikt MM cartridge New	600	379	Van den Hul CS122 2x2.5m	180	99
Ortofon MC Anna xdemo 100 hrs use	5499	2999	Van Den Hul D352 hybrid 2x2.5m	220	119
Rega P25 Cherry Super Elys S/H	725	399	Velodyne Impact 12 subwoofer xdemo	499	299
RS Laboratory RS1 Unipivot Tonearm S/H	N/A	599	XLO ER SWY 5m subwoofer cable NOS	299	149
Tara Labs Aura Time & space Morch S/H	N/A	2499	XLO ER6 0.5m RCA digital NOS	99	20
Transcriptors RF1 Rega 301 xdemo	1500	999	XLO Pro100 2x3m speaker cable NOS	399	99
Well Tempered Labs RIAA xdemo	350	275	<i>Midland Audio X-change are looking for All high end audio separates best prices paid for good examples.</i>		
Amplifiers			<ul style="list-style-type: none"> • Suppliers and installers of High Quality Audio Systems • Audio Research • Atacama • Bergmann Audio • Chord Electronics • Conrad Johnson • Constellation Audio • Copland • Crystal Cables • Devialet • Dynavector • Emm labs • Entreq • Exogal • Finite Elemente • Harbeth • Jadis • Koetsu • Kuzma • Krell • Lavardin • Lecontoure • Magico • Martin Logan • Magneplanar • Meitner • Melco • Neat Acoustics • Primaluna • Primare • Puresound • Rega • Shahinian • Sonus Faber • Spendor • T+A • Technics • Transparent Audio • Wadia • Well tempered lab • Wilson Audio 		
Audio Research Ref110 S/H	8998	2999			
Audio Research VT80 xdemo	7498	5999			
Auralic Merak Mono amplifiers xdemo	4999	2499			
Burmester 036 power amplifier xdemo	6140	3999			
Copland CTA506 Vlave amplifier xdemo	4498	2999			
Jolida JD502 B valve amplifier S/H	N/A	499			
Musical Fidelity M3si BNIB	1299	950			
Musical Fidelity Nu Vista 800 exdemo	8799	5999			
Pathos Acoustics Classic Remix xdemo	2399	1499			
Resolution Audio M100 monos xdemo	7200	4999			
T&A HV3000 integrated xdemo	11988	7999			
Technics SU G700 xdemo	1899	1299			
Unison Research Simply Italy xdemo	1750	1199			

Midland Audio X-change are looking for Audio Research, Krell , Mark Levinson , Naim Audio, SME, Wadia.

Look, no wires!

With Pro-Ject's Phono Box BT E, reckons Martin Pipe, your vinyl can reach out into new territory

There is something a little disconcerting when you see an LP playing on a turntable, whilst its sound pours forth from a wireless Bluetooth speaker on the opposite side of the room – or, for that matter, another room altogether! Yet that's exactly what the Pro-Ject Phono Box BT E is designed to make happen. We've seen a number of affordable turntables with Bluetooth built in (Ion, Teac, Audio-Technica and Pro-Ject's own VT-E BT spring to mind), transmitting wirelessly across a room to a Bluetooth receiver. But I haven't thus far seen an independent phono stage with the technology.

The Pro-Ject Phono Box BT E is built into a compact enclosure. It matches MM (and high-output MC) cartridges only. Its Bluetooth wireless output can be driven by a phono input, or a line source fed from a 3.5mm socket. Flipping between the two is a rear-panel switch (wrongly-labelled on our sample – something that, importer Henley Designs assures us, will be fixed).

Such provision is useful, as you'll be able to listen to other sources through your Bluetooth audio system. It also means that

any conventional audio system into which you place the BT E – there's a line-level 3.5mm output, enabling it to be used as a conventional phono stage – doesn't 'lose' an input. The switch is passive, and so your line level source can be routed to the output even when the BT E isn't powered up by the accompanying 'wall wart'. When the unit is active, the line-out and Bluetooth are available simultaneously; something that, with appropriate configuration of equipment, allows us to compare 'direct' and Bluetoothed paths. Unfortunately, there's no level-adjustment, of the sort built into the wonderful little ART USB Phono Plus we reviewed last month so full dynamic range might not be available.

There are no LEDs to indicate audio level or power status. And Bluetooth pairing doesn't involve pressing buttons. Switch on the unit, and then your Bluetooth audio gear. The latter will 'lock' into it, and start playing whatever music is being fed into the BT E. Yes, it's as simple as that! In response to these comments Henley Designs' Simon Powell told me that "the E Line is designed to be both 'plug and play', and ultra-affordable. By making the pairing

process automatic and eliminating the need for LEDs they can make this product ultra-competitive".

Inside the unit, the phono stage is fully-enclosed within a metal screen that's soldered to the circuit board. This prevents any external noise, notably from the Bluetooth module, from causing audible interference.

On the subject of Bluetooth, Pro-Ject have specified the SBC (sub-band codec) rather than apt-X; the sampling rate, meanwhile, is 44.1kHz.

SOUND QUALITY

Bluetooth receivers are built into a bewildering variety of audio products these days. I tried a Cambridge G2 Bluetooth speaker, a Otone Soundbase (a TV stand with speakers built-in) and a Chord Hugo TT DAC with Bluetooth support, feeding Chord TToby power amp and Quadral Aurum Wotan VIII speakers.

In order to facilitate comparison between the 'direct' and Bluetoothed audio signal from my turntable (a Technics SL-1210 Mk2, fitted with an Audio-Technica AT440MLb cartridge) extra gear was pressed into service. This consisted of a passive variable attenuator for the BT E's analogue output, and a switch-box that allowed



Enjoy the Music.com[®]

Enjoy the Music.com is the Internet's leading information site for high fidelity audio equipment and consumer electronics since 1995. Being affiliated with many prominent publications plus offering its own *Review Magazine* and over 200 show reports online, *Enjoy the Music.com* is official media partners with AXPONA, Los Angeles Audio Show, and RMAF plus Internet partners with *The Absolute Sound*, *Australian Hi-Fi*, *hi-fi+*, *Hi-Fi World*, *HIFICRITIC*, *HiFi Media*, *NOVO*, *Sound Practices* and *VALVE* magazine.

LAAS
LOS ANGELES AUDIO SHOW

ROCKY MOUNTAIN
INTERNATIONAL
AUDIO FEST

AXPONA
AUDIO EXPO NORTH AMERICA



Billy Vee
SOUND • SYSTEMS

London Linn & naim Specialist

CALL SALES: (020) 8318 5755 or 8852 1321 - 248 Lee High Road, London, SE13 5PL
Web: - www.billyvee.co.uk email: sales@billyvee.co.uk Full delivery and installation services.



Full Naim Uniti & Classic series available



Full Linn DS range on demonstration

Trade in your CD Player & claim up to £1000 against a new digital Streaming player - offering you easier access to your music and better sound quality

Please call in or visit billyvee.co.uk for full details of this and other great new performance enhancing promotions



TO ADVERTISE HERE
PLEASE CALL JOANNA HOLMES ON
+44 (0) 7958 602347
OR EMAIL:
joanna@hi-fiworld.co.uk

it to be instantaneously-substituted for the Hugo TT. It was possible to set this attenuator and the Hugo TT's volume control for identical sound levels.

My first discovery was that the 3.5mm Line output's polarity was 'reversed'. A test LP with channel-identification track showed that the Bluetooth output is correct however! Hopefully, Pro-Ject will fix this anomaly at the same time as the incorrect input-switch labelling.

Such niggles apart, the Phono Box BT E did a good job. I had no issues getting it to communicate reliably with my Bluetooth gear, although the range in my home was rather limited – after seven or so metres, dropouts became

sounded a little 'edgier'. The guitar of this smooth dance number seemed to have taken a step back into the mix too.

Classical music is perhaps more revealing of Bluetooth's lossy compression. Vivaldi's Concerto in C for Bassoon and Strings (ASV Digital DCA 545 - Three Bassoon Concertos - English Chamber Orchestra/Philip Ledger; Daniel Smith, bassoon) is a case in point. Heard via the direct path, depth and space are much in evidence. Ample room was given to the solo instrument, while the orchestral strings were conveyed with surprising delicacy. These fineries are 'smoothed over' via Bluetooth, and there's also a contraction in



The inside of the Pro-Ject Phono Box BT E. A metal box shields its sensitive analogue electronics to interference from the Bluetooth radio transmitter. It interfaces to the phono stage via three wires soldered to a 3.5mm socket.



Pro-Ject has given some thought to the connectivity. There's a line output for a stereo amplifier and you can switch between the internal phono stage and external line-level input sound.

objectionable on my Cambridge G2. As a phono stage, it yielded a creditable performance.

Using the BT E as a turntable preamp, the four varied 'movements' of Mike Oldfield's Platinum suite (Virgin V2141) fared well. Oldfield's guitars (prominent in the first two parts) could easily be followed, although a little congestion was evident towards the end of the second. Charleston, the third movement, marks a change in style; the brass parts at its core were given bite, while the rhythms flow naturally.

Plunging into bass territory, I found that the BT E could be a little inhibited – compared to the similarly-priced ART USB Phono Plus. That means the 'throb' of bass guitars and synthesisers don't quite have the impact they're entitled to. But definition at this end of the spectrum wasn't sacrificed. Take for example Legacy, from Electronic Realizations for Rock Orchestra (Passport 9299 752) by Synergy (one of keyboardist Larry Fast's alter egos). The synth bass here is delicious – deftly controlled and tuneful. There's just not much of it...

And so to Bluetooth. Relative to 'direct' listening, I found that Luther Vandross' vocals in I Wanted Your Love (Epic EPC 25608)

space.

Remember that I'm being overly critical here, courtesy of equipment that's unlikely to be partnered with the BT E. Judged overall, and in appropriate context, the BT E does a creditable job. With mainstream

Bluetooth audio products, those musical subtleties are unlikely to be audible in the first place!

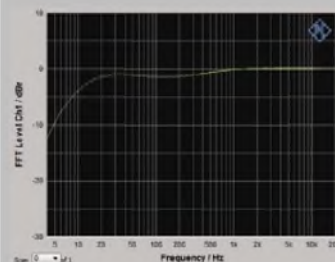
CONCLUSION

The Phono Box BT E does not offer the last word in performance, but then again it doesn't claim to – and look at the low price. If you're after a phono stage that will do justice to a budget turntable and like the idea of streaming your music to – say – a Bluetooth speaker in an adjacent kitchen, then it will fit the bill nicely. The line input is a neat touch. The 'sillies' we discovered are going to be corrected, I was told. In all then, there's plenty on offer here.

MEASURED PERFORMANCE

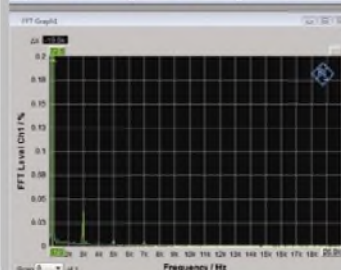
Our response analysis shows slightly low gain in the RIAA 318µS charac-

FREQUENCY RESPONSE



DISTORTION

THD @ 10%	Signal RMS	Frequency
0.0461 %	661.09 mV	1.0000 MHz
OFF	OFF	OFF



teristic giving a small shelf reduction in output below 1kHz that will make the BT E sound light in balance. There is a useful roll off in subsonic gain, enough to attenuate LP warp signals.

Gain was on the low side for MM at x70, from Phono in to Line out (3.5m stereo jack) where x100 is common.

A figure of 2.5µV equivalent input noise was a few dB above the common 1.5µV-2µV range for MM but since MM cartridges generate more hiss (Johnson noise) than MM input electronics this isn't an issue. Distortion was low at 0.04% and overload satisfactory at 33mV in / 2.3V out.

The BT E measured reasonably well, but it is a budget product and not super-accurate in RIAA equalisation. **NK**

Frequency response	20Hz- 20kHz
Gain	x70
Overload	33mV in / 2.3V out
Separation	62dB
Noise	0.25µV e.i.n.

PRO-JECT PHONO BOX BT E £89



GOOD - worth auditioning

VERDICT

A neat way of bringing vinyl into the Bluetooth age, if you don't want to splash out on a new deck.

FOR

- Bluetooth from phono or line sources
- very easy to use and set up
- a fair musical portrayal

AGAINST

- lack of bass depth
- analogue outputs reversed and incorrect switch labelling

Henley Designs
+44(0)1235 511 166
www.henleydesigns.co.uk

IAN HARRISON HI-FI SALE!

HI-FI AT DISCOUNT PRICES. FREE NATIONWIDE DELIVERY

Email: ian.harrison@mercian.myzen.co.uk

SPECIAL OFFERS!! NEW YEAR SALE! UP TO 40% OFF!!

CARTRIDGES UP TO 30% OFF PHONO STAGES UP TO 25% OFF TURNTABLES & TONEARMS UP TO 25% OFF CABLES UP TO 40% OFF

VAN DEN HUL MC10S £825, ORTOFON CADENZA BLUE £950,
AUDIO TECHNICA AT-ART7 £800, AT-ART9 £725, AT33SA £545, AT33PTG/II £375

TONEARMS

AMG
CARTRIDGE MAN
GRAHAM
HELIUS
MICHELL
MOERCH
MOTH
ORIGIN LIVE
ORTOFON
PRO-JECT
REED
REGA
SUMIKO

HEADPHONE AMPS

CREEK
FIDELITY AUDIO
GRAHAM SLEE
ICON AUDIO
LEHMANN
PRO-JECT
SUGDEN

AMPLIFIERS

CREEK
EAR/YOSHINO
ICON AUDIO
SUGDEN
TOM EVANS

ACCESSORIES

DIGITAL STYLUS GAUGES, RECORD CLEANING MACHINES, CLEANERS, AUDIO CASSETTES

CARTRIDGES

AIR TIGHT
AUDIO TECHNICA
BENZ MICRO
CARTRIDGE MAN
DECCA LONDON
EMT
GOLDRING
GRADO
HANA
KOETSU
MY SONIC
ORIGIN LIVE
ORTOFON
SOUND SMITH
TECHDAS
VAN DEN HUL
ZYX

SPEAKERS

ACAPELLA
CABASSE
EPOS
HARBETH
ICON AUDIO
OPERA AUDIO
Q. ACOUSTICS
TAYLOR ACOUSTICS

CD PLAYERS

CREEK
EAR/YOSHINO
ICON AUDIO
SUGDEN

PHONO STAGES

EAR YOSHINO
GRAHAM SLEE
ICON AUDIO
LEHMANN
MUSICAL SURROUNDINGS
PARASOUND
PRO-JECT
PURE SOUND
ROTHWELL
TOM EVANS
TRICHORD
WHEAT AUDIO

CABLES

BLACK RHODIUM
IXOS
KUBALA-SOSNA
PEERLESS
PRO-JECT
QED
SUPRA
TRANSPARENT
WIREWORLD

RECORD CLEANING

PROJECT
MOTH

WIRELESS

BLUESOUND

TURNTABLES

ACOUSTIC SOLID
AMAZON AUDIO
INSPIRE
LUXMAN
MICHELL
MUSIC HALL
PRO-JECT
REED
ROKSAN
SRM TECH
T+A
THORENS

HI-FI FURNITURE

ALPHASON
ATACAMA
CUSTOM DESIGN
HI-FI RACKS
MUNARI
MUSIC TOOLS
NORSTONE
QUADRASPIRE
SOUNDSTYLE
TRACK AUDIO

HEADPHONES

AUDIO TECHNICA
BEYER
ERGO
GRADO
PSB
SENNHEISER

* PHONE FOR TERMS. PLEASE PHONE TO CONFIRM PRICE & AVAILABILITY PRIOR TO ORDERING. ALL GOODS ARE BRAND NEW & BOXED WITH FULL U.K. GUARANTEES. NO EX. DEM OR EX DISPLAY GOODS. NO GREY IMPORTS. GOODS ARE NOT SUPPLIED ON APPROVAL. SORRY, NO GENERAL CATALOGUES. PLEASE PHONE OR WRITE FOR SPECIFIC REVIEWS, BROCHURES OR PRICES. SUPPLIER OF HI-FI PRODUCTS & ACCESSORIES SINCE 1986 MAIL ORDER ONLY FROM: IAN HARRISON, 7 MILL HILL, REPTON, DERBY, DE65 6GQ.
TEL: 01283 702875. 9am - 9pm INCLUDING SUNDAYS.

studio **AV**

SEE, HEAR AND FEEL THE DIFFERENCE

HI-FI | DEMO LOUNGE | ELITE BRANDS
EXCEPTIONAL PERFORMANCE

Come and see us in the
T+A room at the
Hi-Fi Show Live
in Windsor on
21-22 October.

Coming Up:
11th November
T+A & Melco event at
studioAV. Call or email
to register your interest



WWW.STUDIOAV.CO.UK

01753 863300 sales@studioav.co.uk

rock **hifi**

...Stands for excellence



Cosmic Black

White Quartz

Star Galaxy

Granite is the ideal material for a loudspeaker stand. Heavyweight, stable and luxurious-looking you will find no better foundation for your sound. All stands are hand-made in Wales from local material.

For sizes, colours and bespoke editions contact:

E martin@rockhifisupport.co.uk T 01267 236110 M 07930523854

criterion audio



Criterion Audio is a premium hi-fi dealer in Cambridge. From vinyl and valves to the latest in streaming and headphones, we can help you find the perfect audio system to suit your budget and needs. Call us on 01223 233730 to arrange a demo.

Criterion House, Oakington Road, Cambridge CB3 0QH
www.criterionaudio.com info@criterionaudio.com

free reader Classifieds

TERMS AND CONDITIONS: Only one advert per reader. No Trade adverts. This section is strictly for readers selling secondhand hi-fi equipment only. Maximum length per advert is 30 words. Adverts over 30 words will not be accepted. Telephone numbers and E-mail addresses are treated as one word. Model numbers are treated as one word i.e. Quad 303 = two words. Email your advert to: classifieds@hi-fiworld.co.uk or fill in the form on page 97 and post it to Hi-Fi World Free Readers Ads, Studio 204, Buspace Studio, Conlan Street, Notting Hill, London W10 5AP. Sorry, we cannot accept adverts over the telephone. The Publisher reserves the right to judge submissions.

MARANTZ PM-11S1-K1, silver, £1600 PM-11 + SA-11S1-K1, gold, (new) £3250 VPI Classic 30th Anniversary turntable including JMW 10.5 Memorial arm and Dynavector DV20-XL cartridge, £2650 (new). Vintage Sony PS-333 Direct-Drive fully auto turntable, £325. Tel: Brian 01773 831 830 afternoon or evenings (disabled owner, prefer dem/collect mid Derbyshire)

EAR 834L line pre amplifier, £550. Linn Kan speaker stands, £40 All in excellent condition. Tel: 07505 057 414 anytime

GOODMANS DIMENSION 8, excellent condition, £150. Wharfedale E70 drive units. Full set for pair. Excellent condition. £175. Dahlquist DQ10 speaker, mint condition, grey grilles, £500. Tel: 01446 418 207 or 07716 182 278

REGA P3, 2016 version, £300, boxed, as new. Rega Fono MM Mk2, £100, as new, boxed. Rega TT-PSU, as new, boxed, £100. AT150SA, mint, boxed, £100. Tel: 07583 078 744 (Notts/ Derby area)

DALI SENSOR Five floorstanding speakers in walnut. Mint condition. Sorry, no box £100. Denon DRA-F101 Receiver and marching CD player in silver. Both excellent. £70. Tel: 01243 607 988 (Chichester, West Sussex)

EXPOSURE 3010S2D (£1790) with phono board (£260) 4 months old, finished in black with all packaging and in unmarked condition. £1295. Tel: 02380 730 359 or 07956 131 728

SONUS FABER Concerto loudspeakers & stands (vgc boxed) £750; Klipsch KG4.5 loudspeakers vgc £250; Pair of Leak TL10 amps for restoration £500 douglhare63@gmail.com 01584 831861 (Shropshire)

MOTH VINYL Cleaning Machine Mk2 with cover, brush, small bottle containing some cleaning fluid £220 or near offer. Buyer collects because of weight and size. Tel: 020 8590 8530

WANTED: LEAK Stereo 20 valve amplifier. Gold or grey finish. Condition not important, not working, poor paintwork, no valves, even extra holes drilled in chassis ok. Please ring John 01435 830 736

DENON DCD1700 Excellent, boxed. Had since new. Fully working. Can send photo's & demo. (Cost £600 in its day) £95 ono. Buyer collect. (Heavy). Tel: 01245 473 054 or Email: murrayj.todd@virgin.net (Essex)

PIONEER VSA E08 digital signal processor amplifier. Audio visual multi purpose, total output 490watts. Signal - noise .08. Ideal for home cinema central hi-fi audio system, even small club. £200. Tel: 07745 601 356

B&W AS2 sub-woofer, boxed £125. Marantz ST7001 DAB/FM tuner, boxed £125. Marantz PM7001 amplifier, boxed £150. Sony ST5066 vintage tuner, very good condition. £30. Tel: 01708 457 691

NAIM NAT 02 FM stereo tuner. Immaculate. Boxed. Offers. Can Post. Speaker stands. White Marble bespoke. Built by a monumental mason. 470mm high 355mm deep 270mm wide 27.4 Kg £5. Collect. E Midlands. Pictures available. Changed speakers to a smaller model 07783 327 689, spinkrays@gmail.com

REGA R55 floorstanding loudspeakers. Cherry finish, excellent condition with box £450. Tel: 01772 862 264 or Email: pahatesloo@gmail.com

MARTIN LOGAN CLX Electrostatic Loudspeakers complete with matching sub-woofer. RS Acoustic marble plinths for all 3 items, in as new condition £10,000. Can be heard at my home in Reading. Perer: 07831745391. Email: lonewolfpeter@e2s.com

HI-FI ENTHUSIAST requires a reprint or copy of the Sugden Audio tuner DTFM. Can anyone in the hi-fi arena help to track one of these manuals. Sugden Audio no longer available on their database. Many thanks. Keith 07919061178 keijab@googlemail.com

SONY STR 3800L receiver £40, collect only. QUAD FM4 Tuner £45. Cambridge Azur DacMagic-B £50. Plus post for smaller items. Tel: 01827 706569 (Staffs)

REL T5, pristine, leads, manual £200 ono. Chord Chameleon Silver Plus, balanced, 1m £80 ono. Chord Rumour 4, 4m pair, bananas, £160 ono. Chord Chameleon Silver Plus, 1m, RCA, £30 ono. Email: mikethompson48@hotmail.com Tel: 01582867139 (Bedfordshire)

RUSS ANDREWS Crystal 24/ Kimber 12TC speaker cable, 1m pair with Kimber banana plugs plus super burn in and deep cryogenic upgrades applied. RRP £450 - £190. Tel: 01902 884694. Email: jukey39@yahoo.co.uk

AUDIO RESEARCH D115 Mk2. 17 valve power amplifier. Overhauled and re-valved. Superb condition. £1395. mack.entrepose@talktalk.net 07930 121847

LUXMAN PD 131 direct drive turntable, SME 3009 arm, new mm cartridge, mint cond, £495. KEF 200c center speaker, mint cond, £250. Tel: 003531 2014427

ROGERS LS7 Speakers £200; Lead filled speaker stands £65; Pioneer integrated amp A656 £120; Sony TC377 tape deck £55; Martin Supermax speakers £55; Quad FM tuner £65; Tel: 02476327293

HANA EH moving coil cartridge RRP £384. Selling for £200 or very near offer. Brand new, never used, boxed, unwanted gift. Tel: John 01483472650 (Woking Surrey)

WANTED IN perfect condition Murphy AB94SR radio-gram. Cash waiting within reason ps this model only from 1970/71. Tel: 07543454828

USED, BUT in mint condition, Audinquest Type 4 speaker cable 1m x2, factory terminated with QED plastic airlock 'banana' plugs at speaker end and Audinquest BFA plug at amplifier end (good for the Cyrus amplifier). Bought brand new from Audio Visual Online in July last year. Recently upgraded to Tellurium, thus selling these £35 including delivery. Email: dariusdirect@outlook.com

FOR SALE as new Lehmann Rhineland Headphone amp in black livery RRP £335. Selling for £150 ono. Plus Van den Hul D-501 Hybrid tonearm cable RRP £140. Selling for £70 ono. Cables RCA to 5 pin DIN plug end at 90 degree angle. Suits all SME & Rega tonearms. Tel: John 01483472650 (Woking Surrey)

MUSICAL FIDELITY A32 RDS Tuner £125. Absolutely spotless, remote, original box. Pet and smoke free home. Kept covered and clean. Beautiful, Michael (Cheshire). Email: imeldayates@hotmail.com 07500804700

NEXT MONTH

MARCH 2018 ISSUE



ACOUSTIC ENERGY AE109 LOUDSPEAKERS

Right now we are running in and listening to Acoustic Energy's budget floor standing loudspeakers, the AE109s – price just £500.

Acoustic Energy's loudspeakers have always impressed us – with their engineering and their sound.

The new AE109s are already gathering praise as our review process runs.

Don't miss reading about them in fine detail – informed by measurement – in our next and great March 2018 issue.

Available on bookstands around the world, on-line and at Apple Newsstand.

Also, we hope to bring you –

WORLD AUDIO WDPRE4 PREAMP

NOVA FIDELITY X35 ALL IN ONE

LONGDOG AUDIO P6 MONOBLOCK AMPLIFIERS

ROBERTS RADIO STREAM 94i

LUXMAN D-380 CD PLAYER

FIIO BTR1 BLUETOOTH ADAPTER

SONUS FABER OLYMPICA 1 STANDMOUNT LOUDSPEAKERS

...and much more.

This is a selection of what we hope to bring you, not a complete list. We regret that due to a wide range of issues, we cannot guarantee that all products listed above will appear.

**PICK UP THE MARCH 2018 ISSUE OF HI-FI WORLD ON SALE JANUARY 31ST 2018,
OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: SEE PAGE 54**

FREE READER CLASSIFIED ADS ORDER FORM

STOP PRESS

ADVERTISERS INDEX

Absolute Sounds	OBC
Advanced MP3 Players	86
Astell & Kern	52
Atlas Cables	86
Audeze	42
Audio T	70
B&W	40
Billy Vee	92
Black Rhodium	64
Blue Aura	18
Chord Electronics	20,50
Criterion Audio	94
Devialet	IBC
Divine Audio	86
Electromod	68
Elite Audio	72
EnjoyTheMusic.com	92
Focal	60
Henley Designs	16,56
Ian Harrison	94
Icon Audio	58
Infidelity	86
Jordan Acoustics	26,27
KEF	12
Midland Audio Exchange	90
Naim	38
Nu Nu Distribution	66
Piega	22
PMC	34
Rock Hi-Fi	94
SCV	14
Six Audio	86
Sound Damped Steel	88
Sound Hi-Fi	68
Spendor	24
Studio AV	94
Tellurium Q	10
The Audio Barn	86
The Chord Company	IFC
The Right Note	86
World Design	88

TERMS AND CONDITIONS: Only one advert per reader. Maximum length per advert is 30 words. Adverts over 30 words will not be accepted. No Trade Adverts. This section is strictly for readers selling secondhand hi-fi equipment only. Telephone numbers and E-mail addresses are treated as one word. Model numbers are treated as one word i.e. Quad 303 = two words. Sorry, we cannot accept adverts over the telephone. The Publisher reserves the right to judge submissions.

You can email your advert to us at: classifieds@hi-fiworld.co.uk or write or type your advertisement copy in block capitals with one word per box and post it to us at:

Hi-Fi World Free Readers Ads,
Studio 204,
Buspace Studio,
Conlan Street,
London W10 5AP

We cannot accept adverts over the telephone

1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30

Name: _____

Address: _____

Post Code: _____

Daytime Tel: _____

FREE READER CLASSIFIED ADVERTS COPY DEADLINES
 MARCH 2018 - 8TH JANUARY
 APRIL 2018 - 6TH FEBRUARY

THE ALAN PARSONS PROJECT

EYE IN THE SKY
1982



"There is a sense of pop-based coherence here that elevates this LP into classic status"

The Project was an odd bod idea. It wasn't really a band. Not quite, at any rate. It was more a concept that Parsons oversaw. This was typical Parsons. A guy who always saw big pictures – as his time at EMI as producer and engineer proved. He'd worked on 'Abbey Road' with the Beatles, with McCartney on several Wings albums, Al Stewart and more. Pink Floyd's masterpiece, 'Dark Side of the Moon' was his masterpiece and the reason Parsons is so revered.

His own Project albums mostly saw him develop an over-arching theme. Yes, he played keyboard and did a bit of singing but it was the songwriter, Eric Woolfson, who was the principle creative force behind the Project's albums, in company with the likes of Arthur Brown, Colin Blunstone (Zombies) and Allan Clarke (Hollies).

This album was released in 1982 and was the band's most successful album, establishing Parson's pop or – at best – soft rock cred with its Top Three hit title track.

The LP focuses on an omniscient spy but the concept was fairly light in touch and could easily be forgotten while the gentle, sweet and luxuriant sounds exuded. There is a sense of pop-based coherence here that elevates this LP into classic status without any trouble at all.

Parsons did muse upon the origination of the LP and the source of the LP's title, "I think Eric, after 'A Turn of The Friendly Card' album, an obsession with gambling and I think the strongest image, lyrically, is probably a hidden camera, a casino camera or a surveillance camera and I think that's what 'The Eye In The Sky' is."

The hit title song from the album, very nearly wasn't: "When he played me the song, originally, with the band there, we struggled for a long time to try and get the right feel for it and I've never been allowed to forget the fact that I was ready to drop the song and say, 'No, this isn't going to work. We should drop it and go on to something else.' We just couldn't get a good feel for it. It didn't gel and then suddenly we hit upon this chugging feel, doom, doom, doom, doom, doom, which worked great and

we proceeded with it."

Anyone looking to re-acquaint themselves with this album would be advised to check out the Legacy Recordings, thirty-fifth anniversary edition of the release as a deluxe collector's box set featuring rare and unreleased material. It includes three CDs (featuring the original album plus bonus tracks, Eric Woolfson's songwriting diaries, previously unreleased bonus material and a surround sound and stereo HD version of the original album on Blu-ray).

Also included are two vinyl LPs (the original album newly struck at half speed on four sides at 45rpm at Abbey Road Studios by Miles Showell), a flexi-disc replica of an original 1982 promo, a 60-page hardback book featuring newly-written essays, previously unreleased images recently discovered in Eric Woolfson's personal archive and new interviews.

Alan Parsons commented: "It was a wonderful experience to hear all the multitrack tape tracks from 'Eye In The Sky again' and for the first time in nearly 35 years, in their raw unmixed form. Hearing the various elements, performances and moments of magic that were selected for the final mixes of the songs was an amazing experience. Of course not everything we recorded back then is heard on the final mixes but the included bonus tracks in the box set give an interesting insight into what was not used on the final mixes."

To finish, Parsons had a quick comment for hi-fi fans. "Audiophiles will be pleased to know that there is a brand new 5.1 surround sound mix – which I am extremely pleased with incidentally – and also a Hi-Def stereo version taken from the original analogue stereo master tape which was recorded simultaneously alongside the digital mix."

The mastering on the principle format in the box set, the vinyl discs, offers a beautiful performance that offers low noise playback. Top quality midrange insight not only provides impressive sense of clarity, but brings texture and focus to the vocal performance, combined with a relaxed yet massy bass. Quality sound with a treasure trove of rarities in and around a classic original album. What more do you need?

PR

E X P E R T **PRO**

AUDIOPHILE EVOLUTIVE SYSTEM

1000 **PRO**

BEST MEASURED PERFORMANCES
AT ALL POWER LEVELS



0.00025% · 1000W · 6Ω
THD+N (harmonic distortion + noise)

0.0001% · 10W · 6Ω
THD (harmonic distortion)

0.001Ω
Output impedance

133 dB
Signal-to-noise ratio

Inventors of the world's best amplification technology - ADH® - we are constantly working towards the ultimate perfection: zero distortion. In this passionate quest, we thoroughly reviewed the electronics of our systems to develop the new Expert Pro line.

DEVIALET

INGÉNIERIE ACOUSTIQUE DE FRANCE

"All in all it was a sonorous and sophisticated sound that swept over me in a wave."

- John Myles - Hifi-World Magazine

"A major step forward in amplifier performance"

- Robert Deutsch - Stereophile Magazine

WHEN HISTORY AND HEART COLLIDE

"The DiaLogue Premium HP sound is so captivating in my system
that I can't seem to resist. You win PrimaLuna!"

- Paul Mah - Dagogo

"A PrimaLuna is not just a flirtation, it is an investment in pleasure"

- Rene Van Es - The Ear Magazine



 **absolute sounds ltd.**

International Distributors & Consultants of Specialised Hi-End Audio & Video Systems

58 Durham Road, London, SW20 0TW T: +44 (0)20 89 71 39 09

W: www.absolutesounds.com E: info@absolutesounds.com

For Your Nearest Dealer Please Visit The [Absolute Sounds](http://www.absolutesounds.com) Website

 **PrimaLuna®**