

HI-FI WORLD

OCTOBER 2019

UK £4.50

www.hi-fiworld.co.uk

FREE READER CLASSIFIED ADS IN THIS ISSUE!



NAIM NDX2
streamer **EXCLUSIVE!**



PRO-JECT X1
turntable **EXCLUSIVE!**



AUDIO TECHNICA OC9X SERIES
cartridges **EXCLUSIVE!**

ROHDE & SCHWARZ
MEASUREMENT



COMPETITION



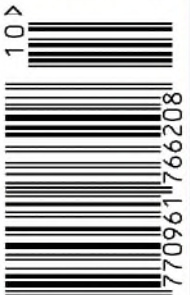
**WIN A CAMBRIDGE AUDIO
AX C35 CD PLAYER
& AX A35 AMPLIFIER
WORTH £600!
(UK ONLY)**

EXCLUSIVE!

QUADRAL ORKAN 9

loudspeakers

OCTOBER 2019



10 >
9 770961 766208

MEZE AUDIO EMPYREAN HEADPHONES **EXCLUSIVE!**
DENSEN B150+ INTEGRATED AMPLIFIER **EXCLUSIVE!**
TRIANGLE ESPRIT TITUS'EZ BOOKSHELF SPEAKERS



**FIVE PAGES OF LETTERS - THE BEST WINS A PAIR
OF KEF Q150 LOUDSPEAKERS! (UK ONLY)**

[master]

The definitive version. Ultimate performance, bespoke audiophile cable collection

Chord Company Signature, Sarum and ChordMusic form the vanguard of our cable ranges. A master collection that features our latest conductor, insulation and connector technology.

High-end audiophile quality at a realistic price and each one built to **your** specific requirements. Arrange a demonstration with your nearest Chord Company retailer and hear the difference for yourself.

Designed and hand-built in England since 1985 by a dedicated team of music-lovers. Find more information and a dealer locator at: www.chord.co.uk



CHORDTM

COMPANY



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 6017
e-mail: classfieds@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 602 347
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 6017
e-mail: classfieds@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 6017

WRITERS

Paul Rigby, Martin Pipe, David Tutt.



There are upsides and downsides to the measurement of products we carry out. It takes time, using a lot of expensive test equipment – the downside. But it also unearths problems and strange behaviour – the upside. Yet measurement rarely draws criticism – even interest. But not so this month as you will read on p75 where we re-test Audiolab's 6000N streamer.

There's a lot going on here – behind the scenes. Audiolab have industry standard, high quality test equipment, able to match the results of our test equipment. Sad to say, a lot of manufacturers do not – hence lack of interest and stony silence. Audiolab expect our measurements to be similar to theirs as a result – and this is how it should be. But as you'll read it all went pear shaped with their 6000N!

In the end we did get similar results: mystery apparently solved. I hope you find our re-test interesting.

There's another 'technical discussion' in our forever fascinating Letters section, p26. This time it is Wharfedale's Peter Comeau who complains about our testing. Savvy Hi-Fi World readers will know that Wharfedale is part of the IAG group, like Audiolab. Wharfedale use classic loudspeaker measurement techniques and expect our results to tally with theirs – which they usually do. If they do not then there is a problem somewhere. One that needs to be sorted.

This is good, diligent engineering and I'm happy to let it run in Hi-Fi World. It is what we are about. And it illustrates what lies behind today's products, as well as being genuinely informative to readers – providing we explain it in understandable terms of course. I do hope you find the discussion about Wharfedale's Denton 85th Anniversary issue, within Letters, a good read.

There are other actors in town. Cruising slickly along come Naim with their NDX 2 streamer – a tad pricier than Audiolab's 6000N – and reviewed on p34. Vinyl is getting ever more complex also, Audio Technica making it so with their latest and greatest OC9X series moving coil cartridges that you can read about on p84.

I hope you enjoy this fun filled issue of Hi-Fi World! The quest for high fidelity remains challenging – but fascinating.

Noel Keywood
Editor



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

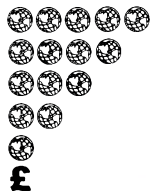
analyser, using pulsed and gated sinewaves, in a large room to eliminate the room's influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer

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.

hi-fi world

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

verdicts



OUTSTANDING

EXCELLENT

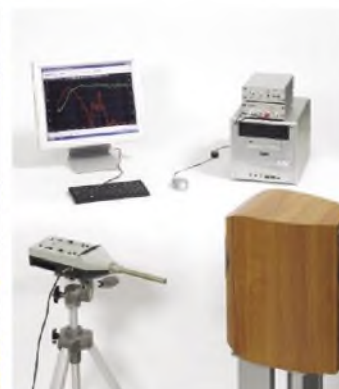
GOOD

MEDIOCRE

POOR

VALUE

amongst the best
extremely capable
worth auditioning
unremarkable
flawed
keenly priced



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



LOUDSPEAKERS

QUADRAL ORKAN 9 LOUDSPEAKERS 10

A large floorstander from Quadral of Germany, engineered for a fine sound. Noel Keywood listens.

TRIANGLE ESPRIT TITUS EZ BOOKSHELF LOUDSPEAKERS 44

From France comes Triangle's new small mini marvel, a bookshelf design that delivers great results, says Martin Pipe.

DIGITAL

NAIM NDX STREAMER 34

Naim's top quality streamer, massively capable and with stunning sound quality. Noel Keywood is suitably impressed.

AUDIOLAB 6000N NETWORK PLAYER 75

A re-run review of a fascinating budget streamer that has Noel Keywood on the phone. Lots to learn here!

AMPLIFICATION

DENSEN B150+ AMPLIFIER 17

A powerful amplifier of specialised design covered by Martin Pipe.



OCTOBER 2019

VOLUME 29 : NO. 8

FEATURE

89 AUDIO TECHNICA TIPS

Modern stylus tip shapes make the vinyl LP ever more revealing. Noel Keywood covers the issues.

OLDE WORLDE

49 B&O BEOVOX C40 LOUDSPEAKERS

A small stylish loudspeaker in aluminium that you can pick up for a song. Martin Pipe looks at the issues – and the sound.

VINYL

78 NEWS

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

80 PRO-JECT X1

A newly upgraded budget audiophile turntable from European specialist Pro-Ject. Noel Keywood spins vinyl.

84 AUDIO TECHNICA OC9X CARTRIDGES

A new range of affordable moving coil cartridges with advanced styli, reviewed by Noel Keywood.

89 AUDIO TECHNICA TIPS

What lies behind Audio Technica's latest tip shapes. Noel Keywood explains.

93 AUDIOPHILE BOOK

Paul Rigby reads Crossover the Edge, by Alexandros Anesiadis.



HEADPHONES

22 MEZE EMPYREAN HEADPHONES

Headphone expert Martin Pipe looks closely at high quality headphones from Romania.

REGULARS

7 NEWS

Words from the world...

15 COMPETITION

Your chance to win a Cambridge Audio AX A35 amplifier and AX C35 CD player worth £600.

24 SUBSCRIPTIONS

Ensure your copy every month and save money too!

26 MAIL

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

38 WORLD CLASSICS

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

56 WORLD STANDARDS

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

64 AUDIOPHILE CD

Paul Rigby rounds up the latest audiophile CD releases

67,69,71,73 OPINION

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

88 DIAL-A-DEALER

A comprehensive guide to UK hi-fi retailers.

94 CLASSIFIEDS

Second-hand bargains.

96 NEXT MONTH

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

97 ADVERTISERS' INDEX

98 CLASSIC CUTS

Boomers Story, by Ry Cooder. Reviewed by Paul Rigby.



HI-FI WORLD
"OUTSTANDING-
Amongst the best!"
August 2019

hi-finews
OUTSTANDING
PRODUCT

Hi-Fi
Choice
RECOMMENDED



Stereo 40 MK IV

New Upgraded Model. Now With Headphone Socket

HI-FI WORLD
"OUTSTANDING-
Amongst the best!"
March 2019

hi-finews
OUTSTANDING
PRODUCT

Hi-Fi
Choice
RECOMMENDED



Stereo 300 MK II

Sublime Sound From Vintage 300B Triodes



hi-finews
OUTSTANDING
PRODUCT

60 + 60 Watts Triode
115 + 115 Watts UL
New Tung Sol KT150

designed by David Shaw

MB90 MK II Monoblock Power Amplifiers many features

HI-FI WORLD

See us at
THE
UK hi-fi
SHOW
26-27th October
at HIFISHOW.co.uk



Stereo 25 MKII

Simplified ST40 30wpc UL, High Quality Headphone Socket



HI-FI WORLD

Hi Fi World
"Best Valve
Amplifier"

Stereo 30se

Stereo 30se KT150 Valves Pure Class A, 28W UL, 18w Triode

Innovative Designs
From Icon Audio

HI-FI WORLD

hi-finews
HIGHLY
COMMENDED



PS1 MKII MM/MC

Our extraordinarily good value pure valve phono stage. MC and MM

Hi-Fi
Choice
RECOMMENDED

HI-FI WORLD

HI-FI WORLD



PS3 MKII MC/MM Phono Preamp

Pure Valve Phono Preamplification At Its Best!



HP8 MKII

Pure Triode With Output Transformers matching 8-600 Ohms

Up to 20% off B grade & Ex-demonstration items
Technically perfect with minor cosmetic blemishes. Full Guarantee. Come and audition in our Leicester showroom. Most models available Ring or email for availability. Subject to availability. Prices vary.

FREE! High Quality Bluetooth speaker worth £75 with each order over £1000

Solar Powered just leave by a window to charge!

0% APR Interest Free Credit
Purchases over £1120 ask for a quotation

Sincere apologies for our website problems.
Our new website is now up and running!

Probably the best value in valve amplifiers! We make From 15 watts per channel to 80w integrated or 16w to 250w mono blocks. Immerse yourself in our warm easy listening detailed sound. David Shaw has been making innovative highly regarded amplifiers for 19 years which are all leaders in their class, some like the unique ST845 or HP8 have no equal, and others like the ST60 and ST40 are "outstanding" in performance and value for money. All our amplifiers are handmade, "point to point" with our own hand wound transformers in our own factory and finished in Leicester. Built to last and be easily serviced.

Various upgrades are available including capacitors and valves. As a UK company we offer rapid economical service on all our products both old and new. 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 or worldwide distributors
UK only prices including 20% VAT and mainland delivery. Some models show upgraded valves E&OE

email:news@hi-fiworld.co.uk

news

LUXMAN REPLAY

Luxman may have attracted attention for helping to kick off the valve revival, but older readers might remember its contributions to the art of vinyl replay. Take for example the platter of its innovative PD-300, circa 1980, which incorporated a vacuum suction system to hold down LPs, dealing with unwanted resonances. It disappeared, like so much else, with the uptake of CD.

Times change however and now we have the PD-151, which sells for £4500 with arm – £1000 cheaper than the armless PD-171. Both are belt driven from a DC motor, but lack vacuum hold-down. Three speeds – 33, 45 and 78rpm – are offered. To reduce the influence of external vibrations, key components – including the motor, electronics and the bearing upon which the 4kg platter and stainless-steel central spindle sit – are attached to an “underslung structure” that is suspended from the main chassis.

Other features of the PD-151 include a static-balanced tonearm with magnesium headshell, convenient front-mounted controls, integral power supply, 10mm machined aluminium top panel, individual ‘fine’ adjustments for all three speeds and dust-cover.

Contact: IAG, +44 (0)1480 447700. www.luxman.com



AN APPLE A DAY...

Computers and networking have infiltrated the world of home audio, yielding technologies like Apple's AirPlay 2 that facilitate large-scale enjoyment of music collections held on present-day marvels like Macs, iPads and iPhones.

NAD's free BluOS 3.4.20 software update brings AirPlay 2 compatibility to a number of their recent products – specifically the C58 BluOS 'streaming DAC' and M10 'streaming amplifier'. BluOS is basically a music-orientated operating system, designed specifically for the computers inside some audio products.

AirPlay 2 is also supported by the BluOS 2i module (£399) that can be plugged into the MDC (Modular Design Construction) upgrade slots of NAD's C368 and C388 integrated amplifiers. “Once the update is complete”, NAD tell us, “AirPlay 2 will be active...users can then stream music services, podcasts, audiobooks, movies, games, YouTube audio, TV sound and music stored on their devices”. Oh, and let's not forget Siri voice control.

Contact: NAD, nadelectronics.com



KLIPSCH GOES RETRO

New from the American brand are two new 'heritage' audio systems claimed to bring “mid-century modern design” and “superior stereo sound” to the wireless speaker market.

Using 57mm full range drivers and a 114mm woofer powered by bi-amplification, the £260 One II is reckoned to “sonically-punch above its 3.86kg weight”. It will connect to Bluetooth devices, version 4.0 supported, but there's also a 3.5mm jack for analogue sources.

To distinguish it from the competition, the 33cm-wide One II boasts real-wood veneer and - for “tactile pleasure” – smart metal switches.

Moving up the scale we find the larger Three II, that adds an MM phono stage for vinyl listening. However, a USB Type B port will also transform the £395 Three II into a 192kHz/24-bit capable computer audio system. The extra money also buys a more potent 2.1 speaker complement that includes dual-opposed bass radiators. The result, Klipsch tells us, is able to “fill even larger spaces”.

Both of these distinctly 1950s-influenced models will be available by the time you read this.

Contact: *Henley Audio (UK distributor)*, +44 (0)1235 511166. www.henleyaudio.co.uk



AN EPIC STORY



Chord Company's hand-built Epic USB cable that sells for £400 in 1 metre form is a high-performance design they describe as having been "engineered to provide an increasingly-sophisticated range of USB DACs, music streamers and digital source components with an unadulterated signal".

Based in part on the £800 Signature Super ARAY USB, the Epic USB has a sonic performance that its Wiltshire maker reckons is "only fractionally behind that of the original Signature USB". Silver-plated copper conductors and 'refined' Ohmic Type A and B USB connectors are employed – as is 'high-speed' PTFE insulation and Chord's long-established proprietary 'Tuned ARAY' technology. The latter is claimed to "maximise performance and sonic accuracy at a given price point".

As with other Chord interconnects, particular attention has been paid to the cable's critical shielding. 1 metre is standard, but longer versions – up to 5 metres – can be custom-made to order. Chord told us the Epic USB sets "a new standard for this level of USB cable".

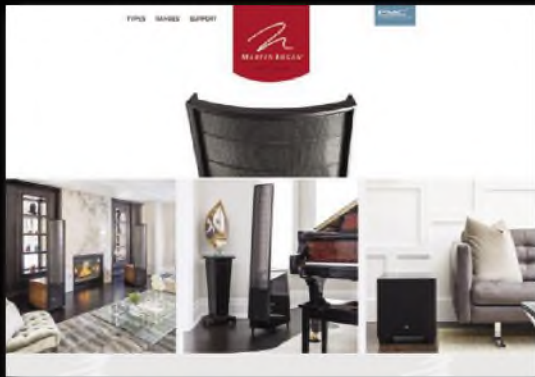
Contact: *Chord Company, (01980) 625700*

NEW FROM GERMANY...

Thonet & Vander? A new one to us, too – although the roots of this "German multinational audio brand" can apparently be traced to 1949.

Newly-added to the company's 'bookshelf' range are the Kurbis Bluetooth 'studio monitors', that will set you back £180 via that well-known hi-fi retailer Amazon. "With an integrated amp", explains the press info, the active bass-reflex Kurbis are said to be "exquisitely balanced...from extreme bass lows to crystal-clear treble". Features include "340W (68W RMS)" of onboard amplification "with no distortion with deep bass, even at 100% volume", cabinets made of 'HDAA wood' "a natural polymer of high density", side-mounted treble/bass tone controls, 5.25in. woofers with Aramid-fibre cones and 1in. silk-domed tweeters. 'Hammer Bass' technology allegedly "magnifies the impact of bass frequencies" while the perhaps unfortunately-named "Drone FX" is said to enhance "detail in the entire frequency range...to create a fantastic listening experience". Input is via Bluetooth (4.0 is supported) or line-level phonos.

Further details: <https://thonet-vander.com>



LOGAN'S RUN

PMC, best known for its domestic and studio-monitoring speakers, also has a distribution arm. It has just taken on Martin Logan's unique electrostatic speakers from the US, thereby "enhancing PMC's offering to UK retailers and audiophiles".

According to PMC divisional director Ian Sutton "We needed to expand our offering... Martin Logan, while most famous for its flat panels, has a very strong and extensive range of 'lifestyle' and installation speakers that complement our other brands".

PMC Distribution's initial aim is to "strengthen" the UK presence of the flagship Masterpiece electrostatics in the UK before turning its attention to Martin Logan's custom-installation models, SLM lifestyle range, Motion home-cinema gear and BalancedForce subwoofers.

Contact: *PMC, +44 (0)1767 686300. pmc-speakers.com, martinlogan.com*

STREAMING AT ITS PRIME?

Streaming of classical music is on the rise, with BPI figures suggesting growth of 42% in 2018. The time could therefore be right for a new streaming service, Dutch-American startup Primephonic, aims to "do for classical music what Spotify did for the music industry". A team of 20 people with musical backgrounds are administering Primephonic's collection, which currently stands at 1.5m pieces of music. Their work (as opposed to reliance on artificial intelligence) will facilitate a 'smart search' that will help you track down what you're looking for - or discover new works that fit your tastes. Primephonic - which claims to offer a 'fair payout model' - is operational now, with apps for iOS and Android; there's also a web player. A £8-per-month 320kbps MP3 option is offered, or there's a £15-per-month 'platinum' option with 24-bit lossless (FLAC) streaming.

More information: www.primephonic.com



A BETTER BLOCK

UK-based iFi, best known for its diminutive audio products, has produced a distinctively wedge-ended PowerStation six-outlet mains block that, in the words of its maker, “ensures that any audio or AV system is supplied with clean, consistent electricity to unlock its full potential”.

iFi says the problem of mains quality can be “particularly acute for those living in towns and cities”. It blames the “abundance of cheap switch-mode power-supplies... and the sea of RFI/EMI in which we are constantly bathed”.

To fight these gremlins iFi has built Active Noise Cancellation II into the PowerStation. This is said to be more effective than the passive-filtering. iFi compares its active approach, which uses “inverse-noise current to cancel out the noise in the mains signal”, to noise-cancelling headphones. ANC II, claims iFi, will reduce mains-borne noise “consistently across the entire spectrum, by approximately 40dB”.

The PowerStation also features a diagnostics system that indicates correct polarity, and whether the system has a ground/earth in place. A related feature is “Intelligent Ground” connectivity designed to circumvent the lack of an effective earth and the hum problems that can result.

Inside the PowerStation’s anodised aluminium case, each mains outlet is independently-isolated in its own chamber to prevent “differential-mode cross-contamination”. Continuous-cast OFHC (Oxygen-Free High-Conductivity) copper is used for the heavy-gauge internal wiring, busbars and mains outlets. The latter are standard 13A outlets, an IEC socket connecting PowerStation to the mains. All clever stuff and, at £499, PowerStation is considerably cheaper than many alternatives.

Contact: *iFi*, 01 704 227204. www.ifi-audio.com



CASSETTE COMEBACK?

The humble ‘Compact Cassette’ was conceived in the early 1960s by Philips, as a user-friendly audio format for low-quality applications like office dictation. Progress in terms of performance, Dolby’s ‘B’ noise reduction and the development of new tape formulations like chromium dioxide made it sound good. However, it was the introduction of the Walkman by Sony that propelled the format to new heights of success. The record industry increasingly-supported it with an abundance of pre-recorded cassette choice. Dubbing albums (yours...or those belonging to friends!) to blank C60s or C90s, meanwhile, prompted the ‘home taping is killing music’ campaign.

Cassette allowed smaller labels to get their artists ‘out there’, and music fans could lovingly curate compilations (‘mixtapes’) for friends and associates. Cassette albums (and singles!) eventually outsold their vinyl equivalents, being eclipsed in turn by CD in the 1990s. Digital was to seal the fate of the cassette, mass-marketing of media and machines alike eventually ceasing.

The BPI now reports that cassette’s fortunes are improving. Pre-recorded sales have been on an upward trend since 2016, nearly 40,000 units having shifted so far this year. Accounting for 4,000 of these are American art-popster Billie Eilish’s debut album *When We All Fall Asleep, Where Do We Go?* - currently 2019’s biggest-selling cassette release.

You can now buy a Bluetooth cassette-player, but alas no decent hi-fi decks; second-hand’s evidently the way to go! And making mixtapes? Seek out ‘new old-stock’ cassettes, or record over old material...

Further information: <https://bit.ly/2ZnKSQy>





ORKAN CAN!

Quadral's new Orkan 9 loudspeaker can deliver a lovely sound, Noel Keywood says.

Reviewers have their preferences and I admit Quadral's high end Aurum series loudspeakers are one of mine. Their Wotan VIII (reviewed August 2012 issue) with ribbon tweeter made me sit up and smile and 'World reviewer Martin Pipe uses them today as his reference. The Chromium Style 8s I reviewed in our March 2016 issue were similarly superb. Reviewed here are their new Orkan 9 loudspeakers, a large floorstander sitting just over one metre high and graced with Quadral's ribbon tweeter, price £3999.95 a pair, so not cheap. But I like them!

The Orkan 9 is about as big as most people would want, meeting

the one metre high criterion that manufacturers prefer. It's heavily built with an internally braced MDF cabinet weighing 32kgs on our scales. Dimensions of 103cms high, 22cms wide and 38cms deep make the Orkan 9 blend in easily, our review samples having deep gloss black finish. Fine acoustically

"the longer I listened the more I was drawn in"

transparent grilles made little difference to performance measurement showed, so they can be used on or off, as is common. The cabinets sit on fixed plinths with stick-on pads. A set of Alto-

Extremo Lyd 1 feet can be supplied at £275 extra per pair – £550 in all. With the base set horizontal the cabinets tilt back, making the midrange units fire slightly upward toward listeners.

Quadral manufacture their drive units in Germany (Hanover) rather than buy them in. At top on

the Orkan 9 sits their quSENSE aluminium ribbon tweeter, kept short, they say, for better vertical dispersion. Below it lies a 155mm diameter Altima midrange unit with composite alloy cone having



The Alto-Extremo Lyd 1 feet available as an optional extra, to give improved floor isolation.



A large reflex port is positioned low on the cabinet's rear panel. Below it are sturdy, gold plated mono-wire terminals. The feet shown are an optional extra.

a gentle inverted bowl shape. This covers a wide range, working from 3.7kHz they suggest in their specs, down to 260Hz, to give a consistent sound from the Orkan 9, although our measurements show the tweeter starts to come in around 2.5kHz. The midrange unit sits in a damped chamber that absorbs rear radiation.

Below the midrange unit sit two 180mm diameter Quadral Altima bass units, loaded by a chamber reflex ported on the rear panel. By using similar materials for all drive units Quadral keep the Orkan 9s consistent in tonal colour.

Connection is through mono-wire terminals – there is no bi-wire option. They are sturdy, gold plated and accept bare wire, spade terminals and 4mm banana plugs.

SOUND QUALITY

I ran the Orkan 9s from our Creek Evolution 100A amplifier through Chord Company Signature Reference cables. Sources were an Oppo BDP-205D Universal player to spin CD, still one of the smoothest and best CD players even though not available any more. Connection was XLR out to the Creek's balanced inputs, using

Chord Company Epic balanced cables.

Hi-res was sent through the Oppo from a MacBook Pro running on battery power to avoid ground loop noise, using an Audirvana + player to deliver DSD as well as hi-res. For the most part though I feel high quality CD best represents the common listening experience and used high dynamic range (uncompressed) CD tracks of good quality to avoid CD distortions. This is something of an issue with good loudspeakers, since their revealing nature can make things sound worse rather than better when spinning dodgy digital.

However, the Orkan 9s are not a loudspeaker that throw

"The Orkan 9s stay with Quadral's design ethos of absolute accuracy – one of the reasons I like them so much"

information out in brutal fashion. Rather, like all other Quadral Aurum series loudspeakers I have reviewed, the new Orkan 9s were creamily smooth and deeply svelte; "sophisticated" is the word that I kept on using in my listening notes. What you get here is an easy yet natural sound that, the longer I listened the more I was drawn in. With Henry Mancini's Pink Panther theme (CD), gentle cymbal taps had filigree detail, the ribbon tweeter making its abilities supremely obvious without any sense of push imposed by deliberate emphasis. It was delicately sweet in delivery. Meanwhile, the rest of the orchestra cruised along with engaging strength. A lovely performance, clear and refined.

Nils Lofgren's complex finger work on guitar with Keith Don't Go was similarly set out with

almost unnerving clarity, strings resonating vividly in front of me. And again the Orkan 9s just got on with the job with slick ability: I wasn't assaulted, just pulled into what was happening and how fast yet controlled his playing was. Whilst the tweeter has ability that marks it out as a ribbon rather than a dome, it integrates well and sets up pin sharp images across the sound stage. Lofgren's vocals were clean and clear but held within the mix, not jumping out as can happen with a loudspeaker having emphasis in the upper midband.

The Orkan 9s stay with Quadral's design ethos of absolute accuracy – one of the reasons I like them so much. Superficially this makes them sound laid back against others – but they are in fact more subtly revealing.

After run in the Orkan 9s took on a fulsome sound balance with strong lower mids and bass, the synth percussion work in Safri Duo's Samba Alegreo moving our large listening room (6550 cu ft) with ease. There was power aplenty in their bass, although it rolls along rather than stabbing out, having a sense of engaging warmth. Think: big bass.

Stripped bare performances, the lone piano of Benjamin

Grosvenor playing Chopin Nocturnes (24/48) and Diana Krall's Narrow Daylight (24/96) were cast in a pure gentle light that was romantic yet revealing: no rough stuff here. Meanwhile the Chicago Symphony Orchestra playing Mahler's Symphony No 8 stretched out on a large stage in front of me, the ribbon tweeters giving pin sharp images of instruments and a clear rendition of the choir. The Orkans don't project out strongly: part of their gentleness comes from the sound stage lying back a little. From memory the Chromium Style 8s were more open and disengaged from the cabinet.

CONCLUSION

Quadral's Aurum Orkan 9 loudspeakers are distinctively smooth and svelte yet revealing and with powerful bass. There was some sense of a sound stage being held back and of bass being heavy



Quadral's ribbon tweeter sits close to the midrange unit for good phase matching, to give a consistent sound at different listening (ear) heights.

rather than fast – not properties of Quadral's I have reviewed in the past. All the same, every loudspeaker has particular qualities, which is what sets them apart – and the pure treble and deep insight of the Orkan 9s still had me impressed. More sophisticated than most else, they are worth auditioning. A lovely loudspeaker that I found gently beguiling.

MEASURED PERFORMANCE

Quadral's Aurum series Orkan 9 was smooth and flat across the audio band from 180Hz to 16kHz like most of their loudspeakers. This German manufacturer concentrates on accuracy: their loudspeakers rarely have emphasised bass or treble – unlike most others today.

Smoothness of response indicates low colouration, due to lack of small local resonances in the drive units – mainly the cones – that show up as small peaks and troughs. The Orkan 9s lack this, meaning they are less coloured, and also less characterful.

Quadral's ribbon tweeter has been kept in check: there is no emphasis of highs, output rolling off above 16kHz. This result was consistent with the measuring microphone on-axis or laterally off-axis, ribbon tweeters having wide lateral dispersion, so they do not need to be toed in to point at listeners.

Vertical dispersion was more variable than a dome tweeter but a relatively low crossover frequency

of 2.5kHz (as ribbon tweeters go) and close siting of tweeter to mid-range made phase matching good, minimising change in sound with listening height.

Bass output below 180Hz was also restrained our analysis shows, measuring around -2dB down, but with peaking around the 35Hz port frequency. This type of response suits near-wall placement in medium sized rooms, keeping room-gain in check. The Orkan 9s will be able to produce deep lows with power.

The impedance trace is resistive, lacking peaks, and it is low, overall impedance with pink noise measuring 5 Ohms, so the Orkans draw current from an amplifier and a sturdy design with good power supply (e.g. Naim) best suits, or a valve amplifier with a 4 Ohm tap.

Sensitivity was good at 87.5dB from one nominal Watt of input (2.8V) but not as high as is common (90dB) for a speaker of the size.

Measurement suggests a colouration free, neutrally balanced

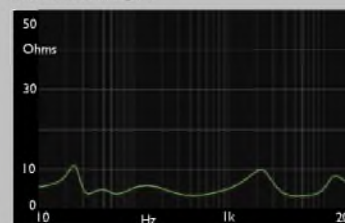
sound, with bass suited to medium sized rooms (16ft, 5.5m or so long), positioning close to a rear wall likely best. NK

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



QUADRAL ORKAN 9 £3995



OUTSTANDING - amongst the best

VERDICT

Creamy smooth, deeply detailed. Big bass, a tad slow.

FOR

- smooth, easy sound
- superb treble
- tonally accurate

AGAINST

- some warmth
- slow bass
- expensive

Nu Nu Distribution
+ 44 (0) 203 5442338
www.nunudistribution.co.uk



METICULOUS, ABSOLUTE FOCUS

Never miss a beat

A record's spiral groove is around 420m per side and over this distance, the needle will dance savagely, vibrating at up to 20,000x a second, capturing millions of transients at a micron level. Remaining rock-solid where it matters is Huei, an advanced phono preamp that never loses focus. Microprocessor-controlled and distilled from 30 years of UK amplifier manufacturing, Huei brings the legendary Chord Electronics' precision to vinyl playback.

CHORDELECTRONICS.CO.UK



Huei

◦ CHORD ◦

Chord Electronics Ltd.



WIN

CAMBRIDGE AUDIO'S SUPERB AX C35 CD PLAYER & AX A35 AMPLIFIER WORTH £600 IN THIS MONTH'S GREAT GIVEAWAY!

Here's your chance to win two products from Cambridge Audio, the AX C35 CD player and AX A35 amplifier. Read the review excerpt below and answer the questions.

"First there's the AX C35 CD player and then the AX A35 integrated amplifier that comes with a built-in phono stage (see Measured Performance for more details).

Combined price of the pair is £599.98 – just £299 each. That's a decent price these days when a set of cables or interconnects can cost

more.

What do you get for your money? First off, the AX C35 is a standard-sized silver disc spinner that will play CDs as well as MP3 and WMA files from home recorded CD-R, CD-RW and CD-ROM discs. It also includes a dedicated digital output, allowing users to record from CD to a digital format, or connect a standalone DAC to improve sound quality.

The AX A35 integrated amplifier matches this CD spinner, sharing the same silver case and gently sculpted underside. It is a classic Class A/B design – not Class D – with internal

linear power supply, not a cheap switch-mode.

Cambridge rates power output at 35 Watts per channel (see Measured Performance for Hi-Fi World's definitive figures) – which might not sound a great deal but is enough to drive most loudspeakers to decent levels in a medium-sized room.

Both units come with dedicated remote controls that are functional and not over-cluttered – easy to use I found".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 11th October 2019 to:

**October 2019 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] Rated power is -

- [a] 45 Watts
- [b] 35 Horsepower
- [c] 35 milliWatts
- [d] 35 Watts

[2] The amp is -

- [a] Class A/B
- [b] Class B
- [c] Class D
- [d] Class A

[3] The power supply is -

- [a] switch-mode
- [b] coal fired
- [c] linear
- [d] tread mill

[4] Volume reaches -

- [a] decent levels
- [b] shattering levels
- [c] low levels
- [d] no levels

**ENTRIES WILL BE ACCEPTED ON A POSTCARD ONLY
PLEASE ENSURE YOU PUT A TELEPHONE CONTACT NUMBER ON YOUR ENTRY**

**JULY 2019 WINNER: CHORD SHAWLINE X LOUDSPEAKER CABLE
Tim Axon of Aylesford, Kent**



SPENDOR

REVEALING EVERY DETAIL

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

MADE FOR MUSIC. DESIGNED FOR YOU.

spendoraudio.com

Beat this...

Martin Pipe tries the smart-looking Beat B-150 integrated amp from Densen

Life is too short for boring Hi-Fi". One cannot disagree with that sentiment, which also happens to be the slogan of Densen – a hi-fi company that, like those other non-boring audio operations Dali, Gato, TacT, Copland and (of course!) Bang and Olufsen, hails from Denmark. Yet for all this the styling of its £3,600 (approx.) Beat B-150 integrated amplifier as featured here, and come to think of it the firm's other products, comes across as conservatively-neat rather than 'exciting' and 'edgy' (unless the latter is being applied literally). I do however like the retro alphanumeric red LEDs on the brushed-aluminium front panel, which are flanked on either side by quartets of buttons that place the unit into or out of standby ('idle' in Densen parlance), select inputs, raise or lower volume and mute the sound altogether.

Other buttons engage the surround-sound mode, if you have one of the optional internally-fitted analogue-fed 5.1 preamp boards. Priced at 400 Euros (or 1,000 euros, if you want the 'high-end' one), these are designed to drive a combination of the B-150's own amplification, and external Densen units like the B-340. You can also opt for information about preset volume level - or, if you have a surround board fitted, the levels of each channel in turn. This will presumably allow you to configure levels, using some kind of noise generator; I can't speak definitively for what goes on in surround mode, because the review sample was a purely-stereo model. Here, volume is regulated by using the B-150's microprocessor to switch banks of precision resistors into or out of attenuators by means of relays - which can be heard clicking every time the volume is changed. The 200-step system is claimed to offer

excellent matching between channels, and won't wear out as quickly as conventional pots.

Plenty of inputs are provided and, as standard, they're all unbalanced line-level phonos (no balanced XLRs here!). All are given labels that appear on the LEDs - no means of personalising them is offered (unless you have the remote - more on this later). So, what you get are CD, tuner, line 1, line 2, tape 1 and tape 2, plus inputs and outputs for a Densen processor (basically, using the B-150 to reproduce the front left and right channels of a multichannel audio system). You also get two volume-controlled pre(amp) outputs, for those who want to bi- or even tri-amp.

As well as the aforementioned 5.1 preamp boards, the B-150 can be fitted with an MM (300 Euro) or higher-end MM/MC (600 Euro) phono stage (selected as Line 1) and an internal DAC (Line 2, if you're



Simplicity at its best.

Pro-Ject
AUDIO SYSTEMS



PHONO BOX S2 ULTRA

Only £200.00

Let your music take centre stage with the new Pro-Ject Phono Box S2 Ultra, a fully discrete, audiophile-quality phono stage designed to deliver the full beauty of a vinyl record.

The Phono Box S2 Ultra delivers a true high-fidelity sound performance that belies its small form and attractive price. An array of features for easy pairing with any modern cartridge, be it MM or MC; alongside the pin-point accurate split RIAA equalisation circuit, as well as the introduction of a subsonic filter, ensures your music sounds right in any environment.

Features



- Audiophile phono stage in a compact chassis
- No Operational Amplifiers (op-amps) used
- Audiophile-grade polystyrene capacitors used inside
- Precise split RIAA equalisation
- Switchable Subsonic Filter
- Switchable input impedance, capacitance and gain
- Solid metal casing available in black or silver



already wired for vinyl). You can't have a DAC and surround-sound installed simultaneously, as the same rear-panel space is occupied by the relevant connectors. Densen, out of interest, makes matching tuners and CD players; hence the rear-panel provision of a 15-pin 'Denlink' control port.

My sample was internally-fitted with a £360 (approx). 'FabelCAST' DAC - an "easy" way of "adding streaming functionality to a Densen product"; its presence turns our particular model into the £4290 B-150CAST. A USB port provides power to a "relatively-cheap streaming device such as a ChromeCast Audio or AIO Connect." Said device feeds the FabelCAST with digital audio via its optical input. "In this way," a Densen support technician told me, "you can upgrade the streamer when new hardware becomes available". FabelCAST - which has a "new type of 24 bit/192kHz converter, mounted under a shielding box" and is "optimized for perfect performance in all areas" - will handle 24-bit PCM audio, at sampling rates of up to 96kHz. The optical port can of course be fed from any digital source with the necessary output. An identically-priced DAC alternative, the FabelDAC, has two coaxial inputs. These options must be fitted by the dealer, either at the time of purchase or as an upgrade.

What I don't like about the B-150 is that, despite its hefty asking price, the remote control is a £200-odd optional extra (the 'Gizmo'). As well as for convenient day-to-day use, it's needed to configure things like preset volume control, input names and display brightness. Dealers who have trouble selling the remote will need to do such work for customers.

Densen might have equipped the B-150 with two tape inputs (and recorder outputs), but monitor loops



The B-150 is dominated by an enormous toroidal mains transformer, rated at a whopping 750VA. The case acts as a heatsink for the output transistors, explaining why it can get warm over time.

Densen has screened the digital sections (DAC chip and control microprocessor) to avoid noise from contaminating the delicate small-signal analogue stages.

are absent. "The channel (input) you are listening to is sent to the tape deck for recording, so do not switch input during recording" says the manual. Least of all the tape input, unless you want a positive feedback loop - and all that implies for the health of your speakers. You would think that Densen would have designed the B-150 so it remembers different level settings for each input to avoid 'jumps' in volume - but it doesn't. Nor are there provision for headphones, or any control over stereo balance.

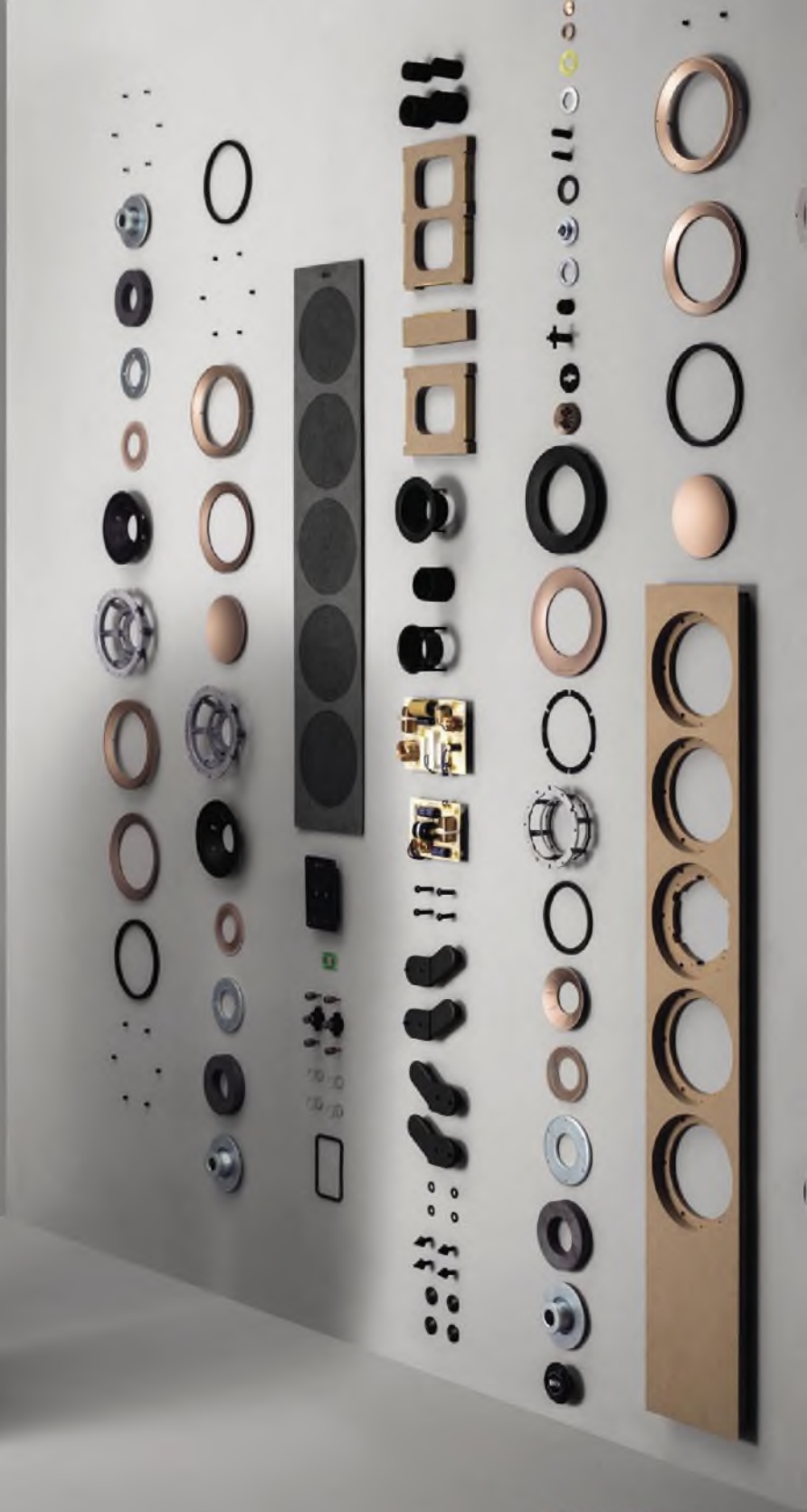
What you do get though are two channels of 100W of Class A/B power into 8 Ohms (double that for 4 Ohms) with 0.05% THD, made possible by a power supply built around 750VA of custom-made toroidal mains transformer and 130,000uF of reservoir capacitance. No wonder the B-150 weighs 14kg. Despite this, Densen still considers it worthwhile to offer B-150 users

an external power supply (the 1,500 Euro 'I-NRG'). For surround, maybe?

The amplification, which feeds one pair of speakers via the usual pair of binding posts (4mm banana plugs are also accepted here), employs Densen's "patent-pending" DMCD ('Densen Mass Current Distribution') technology. This, I was told, gives the B-150 a "tremendous grip on even the most difficult loads...which it handles with an ease and musicality that belies (sic) even the most discerning listener". More technical details were alas not forthcoming. Densen claim that its wide-bandwidth amp design goes up to 400kHz, and so it should sound fast and agile. The power amplifier circuitry is said to be identical to that of Densen's B-330, while the pre-amp section is very close to that of the B-250. This makes it, according to our friend in Denmark, "simply a killer amp in sheep's clothing!" Internal construction is neat, with high-quality



Plenty of connectivity here – six line-level sources can be accommodated. Two of them can be used for tape, but there are no tape loops. Preamp outputs facilitate bi- and even tri-amping, while a processor loop will aid the B-150's integration into home cinema system. Proprietary system control and Naim-like external power supplies are also catered for, but only one pair of speakers can be attached.



The new R Series. The only thing to remain the same is the name.

At KEF the quest for sonic perfection demands constant innovation. So when we sought to improve R Series we completely re-engineered it and changed everything. Discover the full story on our R Series website and find your local KEF dealer for a breathtaking demonstration.

[KEF.COM/RSERIES](https://www.kef.com/rseries)



'The KEF R3s are exceptional performers.'
What Hi-Fi? Awards 2018

KEF

OBSESSED WITH HIGH RESOLUTION

components and sensible use of screening to reduce noise pickup (the microprocessor control section, for example, is enclosed).

SOUND QUALITY

I tried the B-150 with three sets of speakers - Acoustic Energy AE109s, reference Quadral Aurum Votan V11s with revealing ribbon tweeters, and the little Triangle Esprit Titus Ezs reviewed elsewhere in this issue. My source was a Cambridge CXN v2, which drew upon a library of losslessly-compressed CD-quality and hi-res material.

Initial impressions were of relay 'chatter'. When the unit is woken

"It's dynamic, punchy and engaging – and in a neat slimline physical package too."

from standby, these devices buried within the unit automatically select the resistors corresponding to the last-used volume level. It's not an instant process, as the volume is gradually raised to this point (similarly, entering standby 'fades out').

Perhaps more disturbing is a somewhat-overblown bottom end. After a number of hours, though, the B-150's performance settled down - thereby proving the importance of burn-in. Indeed, in matters bass-like this amplifier turned out to be exceptionally good - fluid and communicative, with depth and slam where needed. It even made the most of the Triangles in this regard.

Take for example the bass synth of Devo's Speed Racer (16-bit FLAC); here it was gutsy, with real punch, yet the other elements within the mix were still identifiable and in their correct proportions.

Turning to the prog rock of A Tower Struck Down, from Steve Hackett's first solo album Voyage of the Acolyte (24-bit FLAC, pristine LP transfer) found depth and solidity in the lower register, which was largely the responsibility of erstwhile Genesis bandmate Mike Rutherford. The B-150 also did justice to the full range of Hackett's guitar contributions, and other sonic elements like the 'bite' of the piercing monosynths and Phil Collins drumming.

On which subject the 80s-vintage analogue synth textures, fluid bass line and insistent electronic

percussion of Totally Enormous Extinct Dinosaurs' Tapes and Money (16-bit FLAC) did not challenge the B-150. At lower listening levels, traces of 'roughness' spoil the oboe that you'll hear at the beginning of the Voyage of the Acolyte track Star Of Sirius. This is suggestive of crossover distortion, which shouldn't be a 21st-century issue. However, it became less noticeable as time went by.

The solo instrument of Mozart's Clarinet Concerto (16-bit FLAC) was beautifully-defined; by this time I had chosen this recording, the roughness noted early was no longer evident. I could make out every nuance of Martin Frost's clarinet, which was in

perfect balance with the Deutsche Kammerphilharmonie Bremen's orchestral backing. String timbre also fared well, while the accuracy of instrumental positioning suggests a freedom from sound-staging difficulties.

Steve Reich's Music for a Large Ensemble (16-bit FLAC) pulsed along with excitement and flow, demonstrating a commendable grip with drive and rhythm and vindicating that 'Beat' prefix. As the music washed over me, the tonal colours of the instrumentation responsible at that point were compellingly imparted.

All listening was through the B-150's line inputs. The internal DAC was detailed and communicative, but a tad lean-sounding compared to my Cambridge streamer's own converters.

CONCLUSION

The Densen B-150 is, true to the vision of its maker, far from 'boring' hi-fi. It's dynamic, punchy and engaging – and in a neat slimline physical package too. However, a Naim Supernait it isn't.

Given the B-150's expense (shades of B&O?), the decision of Densen not to include a remote is a joke. At a time when basic infra-red universal handsets can be spotted in pound-shops, Densen has made this a £200 (yes, seriously!) an option. Not being 'boring' has its drawbacks...

MEASURED PERFORMANCE

The B-150 delivered 128 Watts into 8 Ohms and 225 Watts into 4 Ohms so has plenty enough power to go very loud in all rooms, slightly exceeding the common 100 Watt threshold.

Distortion levels were low in the

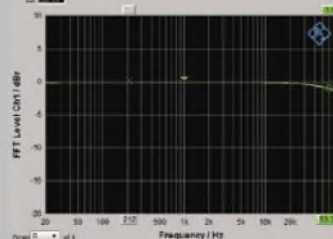
midband but high by current standards at high frequencies (10kHz) due to classic crossover distortion – 0.2% into 8 Ohms and a very high 0.4% into 4 Ohms that some tweeters reach. Our distortion analysis shows the odd-order (3rd, 5th etc) components crossover distortion produces and this may well introduce coarseness to treble.

Input sensitivity was normal at 350mV through all line inputs; there was no phono stage in our model and balanced XLR inputs are unavailable.

A low output damping factor figure of 23 suggests low internal feedback.

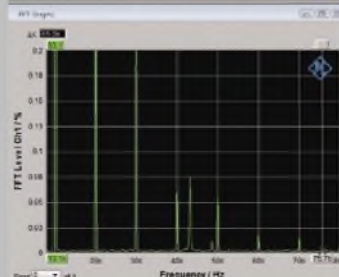
The Densen B-150 is powerful but measures poorly in distortion terms: it has classic crossover distortion. **NK**

FREQUENCY RESPONSE



DISTORTION

THD at 8 Ohms	Leveling	Frequency
0.4269 %	2.1127 V	10.000 kHz
OFF	OFF	OFF



Power (8 Ohms)	128 Watts
CD/tuner/aux.	
Frequency response (-1dB)	
5Hz-59kHz	
Separation	89dB
Noise (IEC A wtd)	-96dB
Distortion (10kHz, 1W, 4Ω)	0.4%
Sensitivity	350mV
Damping factor	23

BEAT B-150 INTEGRATED AMPLIFIER
£4,290
 (FOR 'CAST' VERSION, AS REVIEWED)



EXCELLENT - extremely capable

VERDICT
 The B-150 is spoilt by sillies. like harging £200 extra for a remote.

FOR
 - punchy and detailed
 - solidly-built, with expansion potential

AGAINST
 - remote not supplied
 - no tape loop
 - no XLR inputs

Elite Audio
 +44 (0)208 836 3524
 www.eliteaudiouk.com/
 densen



Lost in the Meze

Martin Pipe dons some distinctive headphones from Romania.

It all started with a Strat. Romanian industrial designer Antonio Meze wanted a pair of headphones that inspired the same 'emotional connection' he had with his Fender Stratocaster guitar...and, one presumes, headphones that also conveyed its sound accurately! Meze couldn't find any so in 2011 he founded Meze Audio to realise his vision. He started off by experimenting with components that were already available. Meze quickly determined that the look, feel and sound he was after could only be achieved with wooden earcups. After a number of attempts, Meze (the company) launched the £300

closed-back 99 Classics to acclaim in 2015. It has also produced in-the-ear 'phones both affordable (the £75 I2 Classics) and high-end (the £1,000 five-driver Rai). However its latest venture, the £2,749 Empyrean, takes Meze into the elite of headphone finery.

The full-sized circumaural Empyrean, an open-back design, is described by its maker as the "object" into which Meze (the man) was able to "pour his passion for music...an object full of personality and life". The Romanian-handbuilt Empyrean is said to "embody the

classical values of clarity, balance and harmony." Such properties are obviously important to those with a professional musical involvement as well as audiophiles and I note that Meze's website is full of endorsements from musicians around the world

– including our own Chvrches. Naturally, at this price level you expect attention to be paid to "engineering, the choice of materials, craftsmanship and reliability".

Some of these qualities are evident when I picked up the distinctive and substantially-built Empyrean. To a unique carbon-fibre arch with floating leather-covered headband are attached "anatomically designed ovate" earcups with artfully CNC-milled aluminium skeletons. Into these are built the cutting-edge high-tech drivers – which make the Empyrean, according to Meze, "the first isodynamic hybrid headphone in the world". Supplied with the 430gm Empyrean in its padded metal briefcase are two pairs of earpads (one leather, the other made from

an Italian synthetic suede-like material called Alcantara).

And the 3m cable connecting cable? It connects to the headphones via pro-grade mini-XLR on the base of each cup and is terminated in a 6.3mm (1/4in) stereo jack plug. A 3m 4-pin XLR cable is available as a balanced alternative; for personal players you can specify a shorter (1.5m) cable with a 3.5mm jack plug. Detachability facilitates upgrades, as well as convenient replacement in the event of loss or damage. You can buy upgrade cables and replacement earpads from the firm's website, but for the new Empyrean nothing shown at the time of writing.

A key element of the Empyrean is its high-tech 'isodynamic hybrid-array driver', developed in conjunction with an established Ukrainian "team of researchers and engineers" known collectively as Rinaro Isodynamics. Each of the fibreglass-infused ABS casings accommodates a sophisticated 0.35-tesla neodymium 'hybrid' magnet system working in conjunction with a lightweight diaphragm. This features two independently-shaped planar voice-coils – one 'switchback' or zig-zaggy, the other spiral-shaped. Advanced stuff – and patents are pending.

Such sophisticated technology,

says Meze, "allows sound to be targeted with more accuracy around the natural form of the ear". The reckoned benefits of the maverick Meze/Rinaro design include improved high-frequency performance (up to a bat-troubling 110kHz), better imaging, high efficiency (100dB@1mW/1kHz), low distortion – "under 0.1% THD" across the audio range, claims Meze. Also a maximum sound pressure level in excess of 130dB. It presents a nominal load of 31.6 ohms to a headphone amplifier.

SOUND QUALITY

I partnered the Empyrean with a number of devices – a laptop connected to an ADL A1 portable DAC/headphone amplifier, a FiiO X3 personal player and a Cambridge CXN v2 feeding Chord TToby or Prism Callia DAC/headphone amplifiers from USB and NAS music storage. A custom 6.3mm socket to 3.5mm plug adaptor was used when necessary.

Meze's attention to detail and unusual design have paid off; listening over long periods raised no fatigue issues – both in terms of musical reproduction and physical matters like ear-comfort and headband pressure. Nor did I encounter any problems with compatibility or drive. All of the headphone amps



I tried were able to yield useful practical volume levels without audible signs of strain.

Something else was obvious from the outset. I could not fault the Empyrean when it comes to openness, transparency and clarity; this is one seriously-revealing headphone! I could easily pick out basslines, melodies and percussive elements – the Theremin buried in Depeche Mode's Tora! Tora! Tora! (Speak and Spell, CD FLAC rip) emerged with greater precision than it does via lesser headphones. Even with complex orchestral fare, for example Britten's War Requiem performed by the LSO under Gianandrea Noseda (24-bit FLAC), Empyrean delivered the goods with vigour, panache and a stunning stereo image. Mercifully, such analytical prowess isn't at the expense of musical satisfaction. In this regard, the Empyrean cuts it with the best.

Treble was crisp, although a little midrange 'forwardness' was occasionally noted with speech, from Radio 4 fare and Radio 3 announcers, for example.

I found the bass tuneful and on the whole accurate, but some 'warmness' could be perceived with certain material. Bibio's Before (Ribbons, CD FLAC rip) is an already warm-sounding track, but its kick drum and bass had more body. My reference Focal Utopia headphones have similar resolving power but, tonally-speaking, greater neutrality. That said, the less-expensive Empyrean has a charm of its own – and plenty of points in its high-tech favour.

With the earpads off, you can make out the arrangement of the Empyrean isodynamic hybrid-array driver's two independently-shaped planar voice-coils. Note too the unusual headband. The Empyrean can be used for hours at a time without malaise, despite its not-insignificant weight.



Meze's Empyrean comes in a neat padded mini-briefcase. The package includes two sets of earpads, one leather, the other Alcantara. The different materials subtly-influence what you hear, but both are comfortable against the ears.

MEZE EMPYREAN, £2,749



EXCELLENT - extremely capable

VERDICT

Wonderful design coupled with strong sonics.

FOR

- long-term comfort despite weight
- detailed yet musical presentation

AGAINST

- warm rather than neutral
- only one set of cables supplied

SCV (UK distributor)
www.scvdistribution.co.uk
+44 (0)3301 222 500

A LITTLE AUTUMN CHEER

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@websubscribe.co.uk

Mail



Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q150 bookshelf speaker

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

LETTER OF THE MONTH PRIZE



KEF Q150 BOOKSHELF SPEAKER

<https://uk.kef.com/products/q150-bookshelf-speaker>

(subject to availability - Satin Black / Satin White)

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

A PAIR KEF Q150 LOUDSPEAKERS are on their way to MIKE BICKLEY, Letter of the Month winner in our September 2019 issue.

Letter of the Month

HOW DOES IT SOUND?

In response to my e-mails you asked – how does my system sound? Well good, read very good and at times not so good. Will explain more in a moment.

Just to re-cap, system now consists of VPI Prime Signature with Ortofon Quinix Black MC cartridge, EAR 834P phono stage, Canary Audio Ct-600 CD transport + Chord Qutest DAC, Sugden A21SE amplifier and Martin Logan Classic ESL9 speakers. All wiring is mid/high-ish range Morrow Audio. This system has been in place since Christmas, complete with the sound panels behind speakers and speakers placed on RS granite slabs.

Getting back to how it sounds, well the key thing that seems to mostly affect the sound and my enjoyment is the volume level. The system sounds super at lower volumes and this is what I tend to use these days. Recently listened to a selection of albums, including Lewis Capaldi, Florence & the Machine, Lori McKenna, John Botler Trio, Lucie Silvas, Pearl Jam, Pink Floyd, The Who to name a few – and all sound pretty good to these 50+ ears.

I do find that with vinyl the bass is superb, a bit more oomph to it than CD. Note that both are superb and I love



"I decided to go for the EAR 834", says John Speight, to drive his Martin Logan hybrid electrostatic loudspeakers.

the holographic feeling – I can touch the artist singing in front of me affect.

My dad (who is in his 80s), an ex electrical engineer who always quoted measurements and was down recently from the Midlands, after a few hours listening he got up and said "I understand now why you spend so much on this". A convert I feel and he always refers back to how good Aretha Franklin, Etta James etc. sounded :-)

However, there are occasions (when wife is out) that I get opportunity to turn up the volume a bit, well maybe more than a bit. I used to love listening to music loud in the past but now,

if I go beyond quarter on the volume control I find the sound getting quite shouty; bass is pretty good, solid and not boomy but the sound seems to flatten and it is almost like the album has gone from being good to bad.

This is more pronounced on CDs, especially newer CDs and compilation albums (note that some of these sound rubbish at lower volumes as well), examples such as Greatest Showman have been dumped into the car for occasional listening when I feel like a sing-a-long

Kind regards
John Speight

Hi John. Sounds to me like you are overloading the poor little Sugden A21SE! It has great sound quality but not so much power – around 20 Watts I recall. If you want to go really loud at times then you will need 80-100 Watts. This suggests either a quality solid-state amplifier, like a Creek Evolution 100A, or a valve amplifier like the Icon Audio MB90 MKII mono blocks or perhaps an Audio Research VT80SE.

When it comes to getting the best from electrostatics, especially the Martin Logan Classic ESL9s which are about the best going, then I recommend valve amplifiers. You have to be careful with solid-state because the XStat panels are down to 1 Ohm at 20kHz and draw heavy transient current at high volume, which induces distortion from solid-state that the Classic ESL9s will make obvious. My safe recommendation is Creek or Quad, because they maintain clean treble under duress. If you are interested in something else get some time at home with it to be sure treble quality is acceptable.

Great to hear your dad appreciated the system. As an engineer you can tell him the big XStat electrostatic panel produces one-third the distortion of conventional drivers (0.1% against 0.3%), a point rarely mentioned anywhere. With no box to send back reflected sound either, what you have is a loudspeaker that out-performs others by a big margin. Martin Logan's Classic ESL9s are amongst the best loudspeakers I have ever heard. You have a hi-fi race horse. But it must be fed properly. **NK**

MORE ON HOW IT SOUNDS

Since my last letter I have been busy listening to amplifiers to replace the Sugden A21SE. I have been listening to my system a lot recently and found it extremely rewarding, especially with vinyl. However, I was finding issues if I turned volume up above low level listening. I also found that many of the recent vinyl and CD albums I had purchased were not really that enjoyable, especially if volume was raised beyond 9 o'clock on the A21SE.

I have been listening to albums such as early Pink Floyd, Kate Bush, Roger Waters, Beach Boys (Smile is a great album), Beatles (Live at the Hollywood Bowl and Sgt Peppers two examples), Lewis Capaldi, Tom Walker, Katie Curtis, Talking Heads – to name a few.

Initially I thought of the Sugden IA4



The Martin Logan Classic ESL9 loudspeakers used by John Speight, featuring a 12in wide XStat electrostatic panel.

and thank you to Kevin at Definitive Audio, Nottingham for setting up a morning session listening to said amplifier. My Dad and I had a fantastic time listening to the IA4 via Definitive Auditorium speakers; however, it was very challenging as the speakers are significantly different to the Martin Logans I have.

We also listened to a Canary Audio pre/power 300B valve based

combination that sounded superb and this got me thinking about a return to valves. It also made me realise how much I love the clarity of the electrostatic speakers. Picture of setup attached.

Today, Trevor and Gavin from Guildford Audio travelled over to demonstrate a number of amplifiers from EAR and Copland These included the EAR 869 UK made valve integrated



Icon Audio MB90 monoblock power amplifiers – powerful at 90 Watts.

X1

Pro-Ject
AUDIO SYSTEMS

THE NEXT GENERATION OF AUDIOPHILE TURNTABLES

In 1991, Pro-Ject Audio Systems started a revolution in the Hi-Fi world with the introduction of the Pro-Ject 1 turntable. A new high-end, low budget turntable at a time when CD was king. Against all odds, we were creating interest in analogue audio at a time when others were turning their backs.

Flash-forward to the present day, with the introduction of our all-new X1 which reimagines the classic turntable design and elevates the sound performance to new heights. You will find no plastic here, only high-end, durable materials that boast an audiophile sonic performance at a fantastic price.

The X1 is available in three finishes to suit any home décor; a premium walnut wood veneer or luxurious black or white eight-layer gloss paint.



**Electronic speed control
for 33, 45 and 78 RPM**

**8.6" carbon/aluminium
sandwich tonearm**



**Pick-IT S2 MM cartridge
designed by Ortofon**

**Belt-driven acrylic
platter supplied**





"My visit to Kevin at Definitive Audio was chilled and I would recommend both to anyone interested in purchasing good equipment" says John Speight.

SE amplifier with only 17 Watts per channel, the EAR 834 EL34 push-pull valve integrated with 40-50 Watts and the Copland CTA 405 integrated using KT150 valves with a massive output of 75 Watts!

Starting off with the EAR 834 my initial thoughts were that the vocals were very clear and great but bass and other aspects not so good.

We then moved onto the 17 Watt 869. This clearly struggled and my tendency was to raise volume which then resulted in bass becoming blowzy (best word I could think of to describe it).

Following on was the biggy Copland with its 75 Watts. This sounded very good with the EAR834P phono stage and also the internal phono stage. Some of Roger Waters The Pros and Cons of Hitchhiking sounded very good but something niggled me so we brought back the EAR 834 and although bass was not as clear, the voices sounded much more natural.

Going back to the EAR 869 was interesting. Voices were very clear, expressive – but compared to Copland and the EAR 834, the bass and background instruments were not distinct/as clear. I think the 869 was struggling with the speakers.

A hard decision – but I decided to go for the EAR 834, currently listening to another Roger Waters album, Is This the Life We Really Want? It sounds just right.

A huge thanks to Kevin and Gavin at Definitive Audio. I appreciated their efforts and willingness to spend Saturday with me, fact you came 50+ miles to me and then spent 3-4 hours helping to set up and demonstrate the amplifiers, without any pressure was really appreciated. There was no attempt to influence, no attempt to Cross-sell

or critique setup etc., was very relaxing and really helped me to make decisions on what I liked. I also liked that they allowed me to keep their demo 834 while my order was processed (I want it in black!).

I would add that my visit to Kevin at Definitive was equally chilled and would recommend both to anyone interested in purchasing good equipment in a nice environment. Just make sure you allow yourself plenty of time to enjoy the experience.

Just to recap, my system now consists of VPI Prime Signature turntable, Ortofon Quinex Black MC cartridge, EAR834P valve phono stage, EAR834 valve integrated amplifier, Canary CT-600 CD transport, Chord Qutest DAC and Martin Logan ESL9 Classic hybrid electrostatic loudspeakers. This system is on a Mapleshade maple Samson v3 4" rack and wired with Morrow Audio cables and MCRU power cables.

Last comment. Have RS acoustics stopped selling granite platforms? I use

this for speakers along with GK Acoustic panels which have helped a lot but when I googled RS I could only see on eBay.

Regards

John Speight

Hi John. Good to hear you have sorted out the issue of amplifier compatibility. Not so easy with one of the most advanced and critical loudspeakers available – your Martin Logan Classic ESL9s.

Nice to know that Definitive Audio, Nottingham were so helpful and that you and your Dad are happy. **NK**

DENTON DEBATE

Thank you for your review of the Denton 85th Anniversary 'speakers. Unfortunately a missing piece of information seems to have spoiled what would otherwise have been a fabulous review – namely that the speakers are designed to be used with the grilles on.

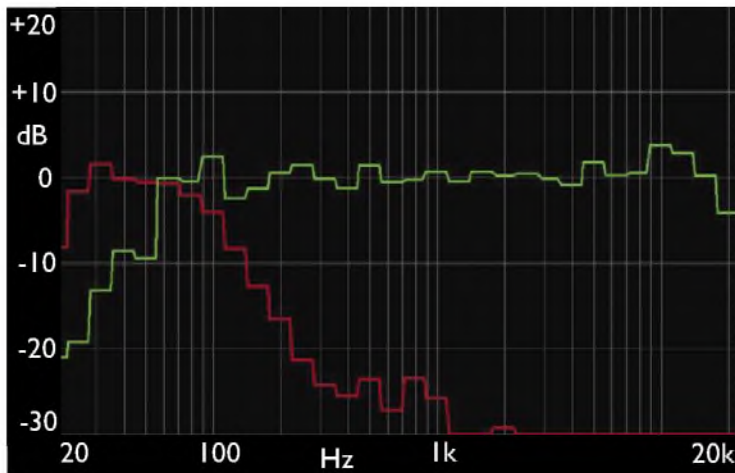
Unlike many modern-styled loudspeakers we wanted to create a piece of furniture with the Denton, both in its choice of quality real wood veneer and the fabric of the grille. As the baffle is recessed, the protruding edges of the cabinet cause interference effects in the upper midrange and treble which we can neatly solve by the shaped cutout in the grille.

I agree that, with grille off, the treble sounds too bright, as you correctly ascribed. With the grille on, though, I think you'll find that the tonal balance is restored and there is no need for your '1 Ohm resistor tweak'

I'm so sorry that this info about listening with the grilles fitted didn't make its way to you, but I do hope



Wharfedale 85th Anniversary loudspeaker. "Designed to be used with the grilles on" says Peter Comeau, reducing treble to give a more natural sound.



Wharfedale Denton 85th Anniversary issue – frequency response with grille on. The grille damps treble output from the tweeter, but some emphasis remains.

that you are able to measure and listen again as I'm certain it will transform the way you feel about these speakers.

Best wishes

Peter Comeau

**Director of Acoustic Design
IAG Group Ltd**

Hi Peter. Measurement of a loudspeaker is made with grilles removed to give the best result possible from a loudspeaker that a buyer is able to attain, meaning with grille and supporting frames removed. This removes the variability introduced by grille cloth and reflections from support frames.

Nowadays grilles are designed to be acoustically transparent and typically affect treble output little, introducing around -0.5dB attenuation. The Denton 85th Anniversary grilles do indeed absorb a lot more treble energy, far more than is common nowadays – and this isn't explained in the user product data, as it should be I feel. Nor was it communicated to us.

With the grille on to suppress treble, the Denton 85th Anniversary 'speakers project less treble our analysis published here shows, although there is still some peaking of +3dB around 10kHz, unlike the Denton 80th Edition reviewed in our November 2012 issue (grilles off).

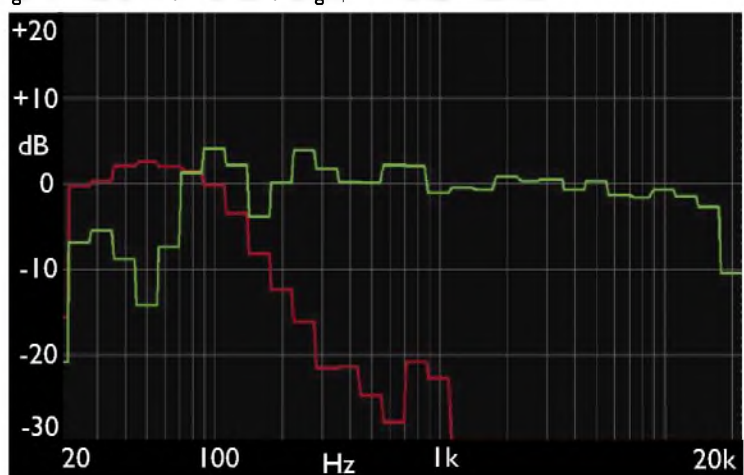
I used a 1 Ohm series resistor with grille off in the July 2019 issue review because it gives a smoother result so remains a useful alternative, especially for those who may wish to see the drive units. But running the speakers with grille on is obviously more convenient.

Re-listening to our review samples with grille on, treble was reined back to be less obvious but

there was still some wispieness, likely from the treble peak remaining. But then this is down to the variability of grille cloth and why most designers don't rely on it for sonic tuning purposes.

Playing Fleetwood Mac's Dreams again, a digital (24/96) transcription from analogue master tape of Rumours, through our Creek Evolution 100A amplifier and Chord Company Signature Reference cables, the bright balance of this transcription remained obvious, but it was aurally palatable.

Spinning Alison Goldfrap's Ride a White Horse (12in 45rpm), played by an Audio Technica VM750SH Shibata tipped MM cartridge in Timetsep Evo modified SL-1210 Mk2 with SME309 arm, via Icon Audio PS3 MkII valve phono stage, the obvious sibilance in "horse" was largely countered by baffle on, some wispieness again remaining. However, I found I could turn volume right up – and did – to get the full drive of this disco single,



Wharfedale Denton 80th Anniversary frequency response. The red trace shows port output that, being flat and wide, means broad acoustic damping. The 85th Anniversary edition is similar. See Denton Desire.

from what is a £550 loudspeaker.

Spinning a wide selection of quality audiophile LPs the Denton 85th grille-on were a little brighter than the 80th grille-off, that I remember sounding very svelte. But the 85th Anniversary Denton has more powerful bass and a bigger sound.

Obviously your design intentions have changed from the 80th to the 85th but this was not conveyed to us – hence review with grilles off, as before and as per usual. Putting the grilles on makes a large difference and swings the balance in their favour sufficiently to add a Globe rating.

For a modest £550 the Denton 85th Anniversary edition is one powerful sounding loudspeaker that plays very loud in good old style, if with modern sound balance. Great value then, especially when the high standard of finish is taken into account. Thanks for your efforts! **NK**

DENTON DESIRE

Thank you for replying to my earlier letter I am sorry to dredge up the matter of bass damping in the Wharfedale Denton 85 again. But looking at the corrected impedance curve published, it looks to me like the old Denton 80 had better damped bass than the new 85. Yet in your review you stated that the new 85 is better suited for closer to wall placement?

My persistent interest in this topic is due to my intention to buy the Denton 85. Due to the tiny size of my flat I have no choice but to place the speakers at 30cm or preferably less from the back wall (I hate poorly damped bass but I don't have much choice regarding placement)

Best Regards

Keith Fonseka.



"When I use the Garrard 401 it still impresses – not bad considering it is over 40 years old!" says Mike Bickley.

It is not an easy matter to judge bass damping from the impedance curve alone. So many factors contribute to the perceived level of bass in a room that the only completely satisfactory way is to try before you buy.

A distance of 30cm from a rear wall is no problem for either of the Denton designs. They were both designed to be used in smallish rooms and therefore close to rear wall placement, on sturdy stands, was part of the sound tuning requirement. A minimum of 10cm would suffice, but the actual distance will depend, as previously mentioned, on the low frequency effects in the room and should be adjusted by ear.

Peter Comeau
Director of Acoustic Design
IAG Group Ltd

Hi Keith. They are just about identical in broadness of port output (red trace), as shown here. The impedance curves are also very alike. The Denton 85th Anniversary has stronger and deeper bass and more treble – but see our further 'Denton Debate' above. They are a viscerally enjoyable loudspeaker that I am sure you will be happy with. Fantastic at the price. **NK**

GARRARD 401

I don't want to open a Garrard 401 / Linn Sondek debate, but I will say this. The Garrard 401 came off the production line at Swindon as a turntable that was essentially right. What users didn't understand was the important part the plinth played

in achieving a good sound: this was incorrectly identified as rumble when fitted in a thin wooden motor board!

The 401 fell out of favour as the Pioneer PL12 deck flooded the market, I seem to remember. Like your 401, mine has had the benefit of a Martin Bastin bearing, and one of his idler wheels. Also I recently renewed the brake pad. I use a Ringmat MRA support system on the platter.

Other than those changes, my 401 remains in its original form. The Linn Sondek however, has had numerous retrofits, so I wonder if it was correct when it was released!

As you infer the two turntables



put a different slant on the recorded sound, at the end of the day, its down to preferences. When I use the 401, it still impresses, not bad considering it is over 40 years old!

Regards
Mike Bickley.

BRONZE AGE?

Do you have any experience with a Cadenza Bronze moving coil cartridge on an LP12/Ekos? I am interested in fitting this to my turntable. I have heard

it on a Pro-Ject and it sounds great.

Any thoughts? Or experience? Or compatibility?

Many thanks and kind regards

Anthony Tsolaki

Hi Anthony. The Cadenza Bronze is a lovely sounding cartridge, as you have heard. It weighs 11.7gms so is heavy; with fixing screw the Ekos will need to balance 12gms – worth checking beforehand. Otherwise, the Bronze is an 'MC lovely', with strong bass and sweet high end, plus very neutral and clear sound from its tapered alloy cantilever. It remains my favourite. The Ekos is a good arm and very likely to suit I feel. **NK**

MESSY CABLES

Today's problem is the cables and wires that spoil the aesthetics of my living-room. I have a regular audiophile-type rack, with three shelves, open on all sides. On it sits the usual stuff from diverse manufacturers – valve amplifier, turntable, CD player, plus various small boxes for phono stage, DAC, power supplies etc. It looks OK, particularly in the evening when the valves give off a nice warm glow. But the cables and wires trailing around the back of the rack disturb my overall appreciation of the system.

I dress the cables from time to time using plastic ties. They help, a bit. But then I succumb to the urge to swap out a component, just to see what it sounds like, and have to cut the ties and can't be bothered to replace them immediately.

Perhaps I'm just not a hardcore audiophile after all? Any advice?

Regards
John Beverley

Hi John. The only suggestion I have is that you make short custom cables to eliminate all that spare stuff that dangles down untidily. Or perhaps get them made up for you by a dealer. If you can handle soldering – and good soldering takes a little practice – then it can be a rewarding experience to make your own cables, especially when you get to see the exotic cables and connectors that exist today.

The only difficulty here is buying quality cable in sensible lengths rather than as a full reel, but StudioSpares sell by the metre length, as do Canford (who have a wide range of audio cable). As you say, cable clips and ties etc become a nuisance when you want to swap things around. **NK**



01202 911 886
bournemouth store

01592 744 779
glenrothes store

website: www.jordanacoustics.co.uk

PMC[®]

NEW Fact Signature Models from PMC



Re-engineered versions of the renowned fact.8 and fact.12 loudspeakers

fact·12[®]
signature

EXAMPLE
Initial 20% deposit of
£2,999.00, then **£399.87**
per month for **30 months***

£14,995

0%

FINANCE AVAILABLE*

*Finance is subject to status & conditions.

fact·8[®]
signature

EXAMPLE
Initial 20% deposit of
£1,399.00, then **£186.53**
per month for **30 months***

£6,995

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

Introducing the new NAIM NAITs with Added Love for Vinyl



SUPERNAIT 3 (TOP)
NAIT XS 3 (BOTTOM)

SUPERNAIT 3

EXAMPLE
Initial 20% deposit of
£699.80, then **£155.51**
per month for
18 months*

£3,499

NAIT XS 3

EXAMPLE
Initial 20% deposit of
£439.80, then **£146.60**
per month for
12 months*

£2,199



Features the DA1
Digital Audio Module,
which can be replaced
by new modules as new
digital audio technologies are
developed, keeping your C49
up to date with digital music
formats and viable well
into the future.

McIntosh
C49 AUDIO PREAMPLIFIER



MODEL
C49
Pre-amplifier

EXAMPLE
Initial 20% deposit of
£1,099.00, then **£183.17**
per month for **24 months***

£5,495

***0% Finance examples above are subject to status & conditions**

Screen time

Want a colour screen for artwork? Naim's NDX 2 streamer is for you says Noel Keywood.

There are streamers – and Naim's streamers. The NDX 2 (£4999.00) I am reviewing here is an upmarket version of the ND5 XS 2 (£2299.00) 'entry-

level' we reviewed in the May 2019 issue. You can tell by the on-board screen! Otherwise you might be baffled because they look similar, but unsurprisingly the NDX 2 is better equipped.

There's little digital the NDX 2 cannot access. It offers connection to on-line music services such as Spotify and Tidal and has vTuner to pick up the 10,000 or so radio stations streaming to the 'net around the



world. Digital connection is via wi-fi or wired ethernet – I used it wired.

With UPnP it can stream from any home network server including a Windows PC (or Mac with UPnP software), to read all those CDs ripped so laboriously to a NAS drive – or perhaps furtively grabbed from a friend! However, no need here to load it onto a NAS drive since the Naim can also read music files from a USB drive plugged in at front (left) – something I find very easy and convenient when music files are

whizzing around everywhere. There's a rear USB for more permanent storage.

Additionally, there are no fewer than four S/PDIF digital inputs on the rear panel, two opticals, one BNC electrical and one RCA phono socket electrical, again all easily selected by the app or remote control.

With Bluetooth (aptX HD) it accepts music streamed by direct radio link from a mobile 'phone or tablet. Apple Airplay and Google Chromecast are supported and the

NDX 2 also integrates with Roon, as a fully certified Roon Certified end-point device. With Roon you get album artworks delivered consistently to the on-board screen (and app) from its data base.

As you might have guessed by now, there is a free control app for mobile 'phone/tablet for those with wi-fi, but also a remote control – missing from the ND5 XS2 – for those who would rather not fiddle with the 'phone or a tablet, but of course you then get a track list on



the screen only and may need binoculars.

The case is 87mm high, 432mm wide and 324mm deep, weighing a hefty 10kgs, so as streamers go this is a big one. One of the reasons is that Naim use a massive toroidal mains transformer inside, feeding a linear power supply. No cheap switch-modes here!

The alloy case is of tank-like construction, with clean edges and rock solid feel. At right sit Naim's soft-touch back illuminated press button controls, but with remote and app available there's not much need. And I find Naim's app easy to use; there aren't too many obscure side functions; most of what you need to see and do sits in plain sight.

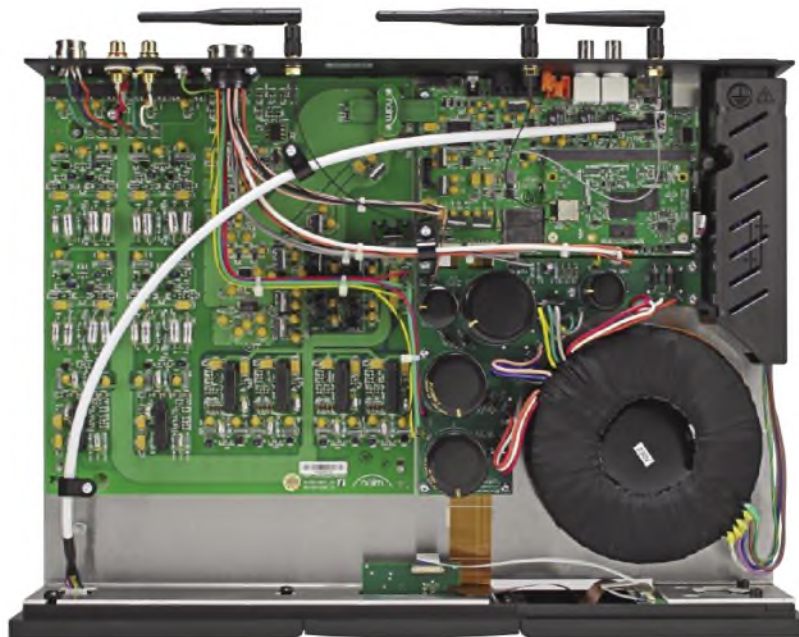
Naim say they use a Burr-Brown PCM1792A digital-to-analogue convertor chip with their own digital filters and current-to-voltage convertor. Shame there are no filter options available, although Naim's filter is pretty drastic by digital standards – and it gives fine sound. But then I often end up preferring slower filters that restrict analogue bandwidth, so no big surprise.

Files up to 32bit at 384kHz resolution (PCM) are readable, plus a wide range of file formats including WAV, FLAC, Apple Lossless (ALAC), Aiff, MP3, M4A, and Windows files such as WMA. DSD64 and DSD128 are playable as well, I found.

Omissions are remote control of volume – a surprise – and balanced XLR outputs. There's no headphone output either. All disappointing at the price.

SOUND QUALITY

I hooked the Naim NDX 2 up to our network and ran it mostly from our Melco N10/100 ethernet connected server. However, I also used a USB flash memory drive plugged in at front and our Astell&Kern AK120



Massive toroidal mains transformer (bottom right) marks the NDX 2 out as 'a Naim'. It feeds a huge linear power supply and low noise regulated power lines that all contribute to the Naim sound. The main board is neatly laid out.



portable player plugged in optically. Measurement showed no difference between these inputs except optical will not play 192kHz sample rate data, which is a TOSLINK connector limitation, rather than a system limitation.

Initially I partnered the Naim with our Creek Evolution 100A amplifier, connected by Chord Company Epic unbalanced RCA phono plug terminated cables (the

mean Daz (Persil?) clean, washed of grunge, clear and strong at bass frequencies and with a gloriously open sound stage of spacious dimension – but without warmth.

Classical enthusiasts will gurgle with delight – as I did! With large orchestras like the Berliner Philharmoniker playing Don Quixote, Horn Concerto 2, Richard Strauss (24/96) the NDX2 threw up a massive performance that spread

"The clincher with NDX 2 is sound quality. What I heard was convincing"

Naim lacks XLR), but it sounded so good I decided to move on to our Icon Audio Stereo 30SE single-ended valve amplifier to squeeze out some more.

Loudspeakers were Martin Logan ESL-X hybrid electrostatics, cables Chord Company Signature Reference and an Isotek Evo 3 Mosaic Genesis re-generated power supply provided clean mains of 0.1% distortion to the system, instead of the 3%+noise that affects our London supply (fairly typical value).

The NDX2 had a distinctive sound, sort of Naim-ish. By that I

wide across the room, giving the orchestra scale and presence. The Naim's strong low-end delivery of kettle drum strikes also brought power, but the presentation is a clean one, with no hint of softness. Horns had excellent timbral resolution, sounding richly metallic, yet were crisply delivered; quite a fast sound for Naim and that's why I said Naim-ish. In the past Naim was more laid back I recall.

The NDX 2's character was interesting with Rock. Playing the challenging Dreams from Fleetwood Mac (24/96) I was hit by a sound



Two external wi-fi aerials and one Bluetooth aerial help make the NDX 2 sensitive to household router and phone signals, aiding data speeds and reception stability. There is an array of digital inputs and Naim's DIN socket output at right, but no XLR balanced outputs from the DAC.

I could get along with. Big and spacious, with Mick Fleetwood's drums punchy and powerful; Naim bass again. Steve Nicks sang in a clean space between the XStat electrostatic panels, easy to take in. The oft-heard brightness of this old classic translated into a pure delivery from the NDX2, if one that made clear its strong treble. It's not warm or reticent, but sharply defined up top.

Diana Krall's *Narrow Daylight* (24/96) usually comes across as soft and laconic, but the NDX 2 took a different view. It saw further into the timbral qualities of the piano and elevated Krall's vocals by placing them in a pure space, her vocal intonations made obvious. The slow bass line was tight and clean. Quite a vivid view, not soft or laconic. But the DSD64 version of this track NDX 2 showed to be soft and laconic, teasing out the differences between PCM and DSD. Arresting in the DSD version though was the simple plucked bass that came across as strong, clear yet texturally rich – no wobbly simulacrum here.

I ran a test of impurity! Well, it can be fun and ideally should be. The Eagles' 'Somebody', from *Journey Out of Eden*, is compressed (CD) and can sound messy, but the Naim delivered the whirling Hammond organ and Glen Frey's vocals in clean enough and enjoyable form, if not warmed and smoothed. The Naim has strong top end revelation but it pushed this track along with strength and tempo.

CONCLUSION

The clincher with NDX 2 is sound quality. What I heard was pretty

convincing, especially in sound stage size and overall propulsive power. The NDX 2 delivered both Rock and Classical in dramatic form between our electrostatic panels. Sonically it was supremely well honed, something of a reference for what is possible from streaming. And if you crave tight

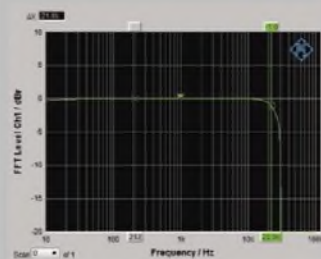
bass, come here.

Lack of volume control is a negative at the price, although not if your amplifier has it. But whatever device you have with digital on it, this streamer will play – providing you are prepared to miss out on 24/192 from optical – no deal breaker.

MEASURED PERFORMANCE

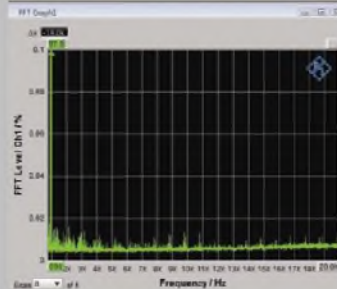
Frequency response of Naim's NDX 2 reached 22kHz (-1dB) from its S/PDIF electrical input (BNC) at 192kHz sample rate PCM (and all lower sample rates), where 96kHz analogue bandwidth is the theoretical maximum, often achieved. Naim traditionally bandwidth limit to 22kHz or thereabouts with their amplifiers and NDX 2 follows this

FREQUENCY RESPONSE



DISTORTION

THD at 0	Level	Frequency
0.0439 %	2.2496 mV	996.91 Hz
OFF	OFF	OFF



pattern. There are no optional filters to change this. Results were identical from our ethernet wired Melco N10/N100 network server.

The optical inputs accepted up to 176.4kHz sample rate with our QED Quartz optical cable used in tests, as well as two other cables, going silent with 192kHz. With optical this is sometimes a matter of plug fit but jiggling the plugs – which sometimes works – did not work here.

Distortion at peak output (0dB FS) measured 0.0005% and at -60dB with 24bit a low 0.04%. The presence of some noise resulted in a mediocre 112dB EIAJ Dynamic Range value, from digital and network inputs, far below the 127dB claimed by Burr Brown for their PCM1792A DAC chip. Output (fixed) measured a standard 2.2V, similar to that of CD players; there is no volume control.

The NDX 2 measured well, with very low distortion and Naim's usual limited bandwidth. Dynamic range was mediocre however. **NK**

Frequency response (24/192)	
4Hz-22kHz	
Distortion (-60dB)	0.04%
Separation	97dB
Dynamic range	112dB
Noise	-1106B
Output	2.2V

NAIM NDX 2
£4999.00



OUTSTANDING - amongst the best.

VERDICT

A great sound, large and spacious. Does it all, almost.

FOR

- big sound stage
- strong, tight bass
- easy to use

AGAINST

- no volume control
- no headphone output
- no XLR balanced output

Naim Audio
+44 (0) 1722 426 600
www.naimaudio.com

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, pacy 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 LVX arm. Elegant and decently performing package. Later version with Akito tonearm better.

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 RB300, which added detail at the expense of warmth. Superb budget buy.

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

TRIO LO-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
Bonkers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

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



TECHNICS SP10 1973 £400
Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

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 Thorens' 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 £15.6S
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.

TONEARMS

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

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 masterpiece.

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 rarity 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, TL/12 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 spry, 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 monoblocks - 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&W 686 2007 £299
Baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

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.

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 AF1 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
Smallest two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...

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 cabs 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.

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.

CLASSICS

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.



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.

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

SHANLING MC-30 2007 £650
Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MF3 player input. Very low power, though.



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



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 lucid 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 lucid 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.

TECHNICS SL-P1200 1987 £800
CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pro' use and laden with facilities - a great eighties icon.

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.

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.

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 unadulterated 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 40000 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 P0 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.

VDH 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.



EZ does it...

Martin Pipe lends his ears to an unusual pair of French bookshelf speakers.

I must admit that, until very recently, speaker manufacturer Triangle had managed to slip beneath my radar. But since 1980, the French firm has been “designing, making and assembling high-quality speakers” of various design. All have

one goal in mind – the recreation of the ‘live music experience’, although Triangle aren’t entirely clear what the implications are for music born in artificial IT-rich studio environments. Play it via Triangle speakers, though, and in the firm’s own words “the sound-

stage opens, the musicians stand in front of you, each instrument is distinguished accurately and the music gives you the chills”. Today, the wide range of products that Triangle reckons can achieve such magic run the gamut from self-contained Bluetooth/DLNA speakers

to imposing floor standers.

Hi-Fi World's reviewing team looked at one of the latter (the Antal EX) back in 2010. A couple of years later, Triangle's Color – a bookshelf/stand-mount bass-reflex design, was featured in these pages. The Triangle speaker we'll examine this time round – the Esprit EZ range's £620 Titus – has more in common with the Color. It's a compact (standing a foot or so high) bass-reflex design, which Triangle says can be used either as a "stereo speaker, or for the surround channels in a home-theatre system".

Visually, the Titus EZ is quite striking – and not only if you have paid extra for the sumptuous glossy finish (white or black). The (127mm/5in) woofer has a cone made of natural cellulose, the white colour of which is rather distinctive. A very similar driver performs midrange duties in the larger Esprit speakers. Aspects of its design including its cone profile, suspension and dust cap were influenced by work undertaken for the Triangle's luxury Magellan models.

What makes the Titus EZ really stand out though is its titanium-domed 'TZ2500B' tweeter – again, you'll find it elsewhere in the Titus range. A spin-off from the company's esoteric Signature project, this mirror-finished 25mm/1in. driver incorporates a phase plug and horn to aid treble dispersion – to stunning visual effect. You'll be proud to show off this trumpet-like affair by leaving off the grille – which attaches to the front of the speaker magnetically. The phase plug is claimed to reduce "directivity, providing almost the same sound level throughout the room". Driving the tweeter is a "compact engine with high magnetic power...using a neodymium ring combined with an absorption chamber". All drivers are made by, and exclusive to, Triangle. They're designed in France, but – like so much else nowadays – are made in China.

Around the back of the 6kg Titus EZ are the terminals, which – like the drivers they feed via a crossover network – are distinctive in appearance. There is however only one pair of these robust brushed aluminium-finished connectors, which will accept bare wire or 4mm banana plugs. In other words, you won't be able to bi-wire these babies. They can handle 60V, have a claimed efficiency of 90dB

(1m/IW) and are of nominal 8 Ohm impedance. Above the terminals is the 40mm flared-exit port; as a bass-reflex speaker, Triangle makes specific recommendations for installation so that you don't get 'nasties' like superficially-impressive 'boomy' bass with compromised imaging.

The Titus EZ can be placed on a stand (rubber pads are fitted to the

base), located on a bookshelf or – when being used as a surround speaker – wall-mounted. Triangle recommend that each speaker is positioned at least two metres from the listening position – to achieve a "good stereo effect", your speakers should be at least two metres apart. Not a problem, surely, even in shrinking British listening rooms! Corner installation should be avoided, and the Titus EZ should be at least half a metre away from side and back walls. As per usual, experimentation is recommended.

(1m/IW) and are of nominal 8 Ohm impedance. Above the terminals is the 40mm flared-exit port; as a bass-reflex speaker, Triangle makes specific recommendations for installation so that you don't get 'nasties' like superficially-impressive 'boomy' bass with compromised imaging. The Titus EZ can be placed on a stand (rubber pads are fitted to the

"potent orchestral and choral forces were kept in proportion; fine imaging properties ensured that positions of performers could be accurately-determined"

base), located on a bookshelf or – when being used as a surround speaker – wall-mounted. Triangle recommend that each speaker is positioned at least two metres from the listening position – to achieve a "good stereo effect", your speakers should be at least two metres apart. Not a problem, surely, even in shrinking British listening rooms! Corner installation should be avoided, and the Titus EZ should be at least half a metre away from side and back walls. As per usual, experimentation is recommended.



Defining the performance of the Titus EZ is the titanium-domed 'TZ2500B' tweeter, used elsewhere in the Titus range. A spin-off from the company's esoteric Signature project, this mirror-finished 1in/25.4mm driver incorporates a phase plug and horn.

SOUND QUALITY

I tried the Titus EZ in a small-ish (12' 10') and averagely-furnished room, my main amplifier here being the Densen B-150+ integrated – which is also reviewed in this issue. Performing source duties was my familiar Cambridge CXN streamer, fed a diet of CD-derived and hi-res material stored both locally and on a NAS. Triangle's setup instructions were followed, but I achieved the best stereo image with the 'speakers 'toed in' very slightly (5 - 10 degrees or so) towards the listening position. The grilles were removed; keeping them on makes a slight (but

insignificant) difference. But then again, I don't have small children to worry about... Initial impressions were disappointing. Treble seemed 'glassy' and uncommunicative, while speech was impaired by an obnoxious 'cuppy' colouration. Clearly, these speakers were a factory-fresh pair; over time, their true qualities began to emerge.

If my experiences are anything to go by, a pair of Titus EZs needs at least 50 hours of use before they're able to give their best. No amount of burn-in, though, is going to make a small speaker like this deliver large amounts of low-frequency information; those with bass-heavy musical tastes will need a subwoofer to complement the strengths of the Titus EZ. And strengths there are, as Kraftwerk's Man-Machine album (CD FLAC rip) proves. Yes, the synth bass of the title track lacked impact and percussive 'slam' was missing. But imaging was superb and plenty

MUSICAL FIDELITY



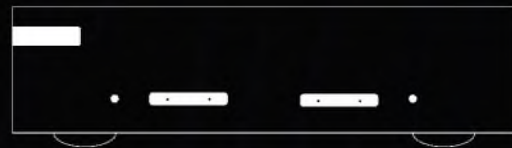
The **M6 PRE** and **M6 PRX** is a fully balanced audiophile system; beginning to end. With a plethora of input options and masses of power to suit any listening environment, this M6 partnership is the epitome of Musical Fidelity design; superlative technical performance, great flexibility, excellent build quality, beautiful visuals and excellent value for money.

M6 PRE



- Fully balanced Class A pre-amplifier
- Universal connectivity: line, phono, digital
- Line inputs: 2 pairs XLR & 4 pairs RCA
- Home theater bypass input
- Phono input (MM & MC)
- 24/96 USB-B input (async.) for computer audio
- Pre-amp outputs (XLR & RCA)
- Fixed line out (RCA)
- Black or silver finish

M6 PRX



- Fully balanced dual mono construction
- 2x 230 watts rated power output per channel
- Extremely low wide band distortion levels
- Circuit layout optimises noise levels
- Choke regulated power supplies
- 4 pairs speaker output connectors (banana)
- Inputs: XLR & RCA (switchable)
- Loop output connection (RCA)
- Black or silver finish

of detail is in the offing; the snare rolls I heard as clear as day. The synth work on Neon Lights also succeeded, while the harsh upper-midrange 'edge' that characterise the choral sounds of the Orchestron (a primitive lo-fi analogue sampler, based on an optical disc) wasn't exaggerated – as it is with some speakers.

Next to the driving groove of Joe Jackson's 'Stepping Out' (CD FLAC rip), that the Titus EZ revealed to be a far more complex composition than initial acquaintance suggests. The percussion, for which a drum-machine is primarily-responsible, was pacy and well-timed – and what bass I heard was firm and solid. I could also easily make out the Hammond organ that constitutes part of the melody. It may have been back in the mix, certainly when compared to the piano hook, but it was easily discernible nevertheless. A slight 'hollowness' to Jackson's vocal had disappeared by the time I played the track again a few days later. Speech became more natural-sounding, too.

These speakers also did justice to the wide scope of Steve Hackett's guitar playing in his 1975 solo album Voyage of the Acolyte (CD FLAC rip); I found them to be an immersive experience. The

closing movement of the classically-prog epic Shadow of the Hierophant, which slowly builds up from a simple bell-driven melody, had timbre conveyed accurately by the Titus EZs.

Triangle's little speakers coped remarkably well with music of even larger scale. The dynamic swings of Britten's War Requiem (Noseda/LSO/Eltham College Choir/ London Symphony Chorus, 24-bit/48kHz) failed to beat the Titus EZs. I also found that the potent orchestral and choral forces were kept in proportion, while the speakers' fine imaging properties ensured that the positions of performers – the choristers and brasses, for example – could be accurately-determined.

CONCLUSION

What little gems these speakers proved to be. The Triangle Esprit Titus EZ won't cope with large

amounts of power – small rooms only, folks! – can't be bi-wired and need a subwoofer if bass is important to your musical tastes. But they are very musical and communicative. I enjoyed them immensely.



The Titus EZ is a bass-reflex speaker, with port at rear. You can also see the high-quality input terminals – as 'originally Triangle' as the drive units...

MEASURED PERFORMANCE

Frequency response of Triangle's small Esprit Titus Ez was reasonably even output across the audio band, if with some emphasis below 1kHz to give presence to the lower midband, adding body and warmth to the sound. The tweeter comes in above 2.5kHz our impedance analysis shows, extending output up to 20kHz – without emphasis. As a result the Ez will not sound bright or sharp like so many others nowadays; it is accurate rather than enhanced. The grille was acoustically transparent, making little difference (-0.5dB or so) to treble level. With output strong around 4kHz there will be good delivery of detail.

These results were reasonably consistent on and off axis, horizontally and vertically, due to good phase matching between the drivers – making for a consistent sound irrespective of listening position.

Bass from the rear-ported enclosure reaches down to 60Hz – reasonably low – before falling away

rapidly. The port is tuned to 70Hz and aids output down to 50Hz. It is sharply tuned so will add some resonant heft to the sound, making for a lively low end, but subsonics are absent, as expected from a small enclosure. It should sound fast and lively at bass frequencies but not heavy, this suiting close to rear wall placement in a small-ish room below 5m/15ft long.

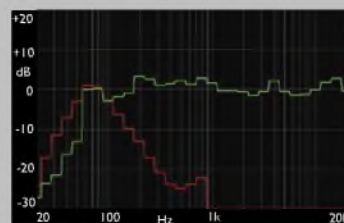
Sensitivity was high for a small loudspeaker, measuring 87dB sound pressure level (SPL) – loud – from one nominal Watt of input (2.8V). A low dcr bass unit (3 Ohms) and overall impedance of 5 Ohms, measured using pink noise, contribute to this, the 'speaker drawing current from an amplifier. Good quality hi-fi amplifiers can handle this easily enough however. Power outputs of 60 Watts or more will suffice so amplifiers with high power specs are unnecessary for very high volume.

The small Esprit Titus Ez measured well all round. It will sound detailed yet

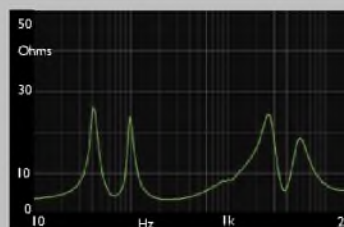
smooth, without sharp treble and likely with fast, lively bass. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



TRIANGLE ESPRIT TITUS EZ £620



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

If you don't have much space, give the Titus EZ a listen. You won't regret it!

FOR

- detailed and musical
- superb stereo imaging
- very stylish

AGAINST

- need long burn in
- little low bass
- no provision for bi-wiring

Elite Audio
+44 (0)208 836 3524
www.eliteaudiouk.com



Wherever you want to listen, Focal has a headphone that delivers your music with precision and purity. Our 40 years of innovation, development and manufacturing of high-end drivers and loudspeakers are distilled into the range



ELEGIA



ELEAR



CLEAR



STELLIA



**UTOPIA
ARCHE**

Comprised of three open-back models, two closed-back models, and our newly released 'Arche' DAC and headphone amplifier, Focal now offer a personal audio system to cater for all levels of serious listening.

Experience the full range at the following retailers

AV Online - Rochdale | **Hifonix** - Sutton Coldfield | **Audio Affair** - Birmingham
Hifi Lounge - Bedford | **The Audiobarn** - Harlow | **KJ West One** - Marylebone
Audio Sanctuary - New Malden | **Hifi Headphones** - Shoreham-by-sea

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

Style with substance

Martin Pipe finds a tiny – but surprisingly-musical – pair of speakers from B&O.

Mention Bang and Olufsen, and more than a few audiophiles will sneer. Style over substance...pretty life-style systems squirting out peer-approved background music into yuppy apartments. You can buy real hi-fi for a lot less, they'll smugly tell all within earshot. What they forget is that the Danish firm was a real hi-fi concern – only one that happened to pay just as much attention to design and usability as it did performance. For example it produced one of the world's best linear-tracking turntables – the Beogram 4000, which can still turn heads (as well as records) today – before the Japanese made them fashionable.

Loudspeakers were an important part of the B&O story. The firm even went to the trouble of building an anechoic chamber at its Struer base, to test prototypes; this facility was still operational when I visited the plant in 2006.

In the early 1980s most domestic loudspeakers were passive boxes containing a couple of drive units fed from a crossover, intended for use with external amplifiers. Among B&O's contributions at the time was a range of small 'bookshelf' speakers – the Beovox C30, C40 and C75 built into enclosures extruded from aluminium, unusual when all else were wood, but with which the firm had become familiar.

The C-series speakers are of linear-phase design – fashionable in the late 1970s, when these speakers were conceived. In basic terms the drive units are offset relative to each other on the baffle – the higher the frequency, the further back they are positioned. Their

respective sound waves arrive at the listening position at the same time, i.e. in-phase, with benefits for imaging. Distinctively-styled by Jacob Jensen and electro-acoustically engineered by Ragnar Lian, the C-series cabinets were claimed to employ a variation of the transmission-line concept – the 'log line', culminating in a rear grille – to ensure an acceptable bass-response from speakers so tiny. Perhaps hardly surprisingly, the first B&O C-series speakers won a Danish

'ID' (Industrial Design) Award in 1978.

Biggest of this Beovox bunch is the C75 (nominally 75 Watts), a 32cm-high speaker with two 10cm bass/mid units flanking a 2.5cm soft-dome tweeter. Smallest is the 30Watt C30, the 3.7-litre enclosure of which manages to host a 10cm woofer and 2.5cm tweeter. In the middle is the C40, the focus of this article.

Selling for £150 a pair in 1982, the 'book-sized' C40 also relies on a 10cm paper-coned woofer



Hi-Res.grade Network Audio Components

fidata

Network Audio Server

The ultimate in audio quality, from a brand that lives up to the meaning of its name : "reliability"

Today's high-resolution audio files deliver quality that approaches that of master recordings by incorporating an enormous amount of data. With the debut of network audio, consumers quickly have become familiar with the immersive experience made possible by that level of quality. Introducing fidata, a family of network audio components that lives up to the meaning of its name: "reliability."

Welcome to the world of ultimate sound.



HFAS1-XS20U

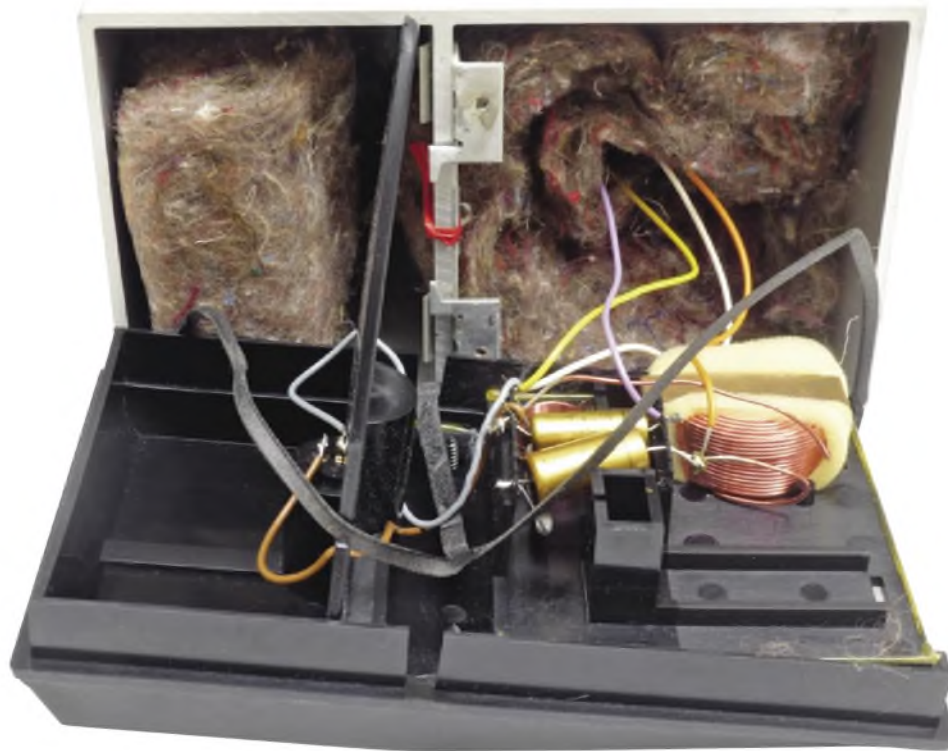


HFAS1-S10U

MADE IN JAPAN

www.selectaudio.co.uk Tel +44 (0)1900 601954

selectaudio[®]
exquisite audio products



The two sections (bass and treble) of the extruded-aluminium cabinet are clearly visible, as are the acoustic wadding and cross-over components. The plastic rear panel, which screws into the cabinet, incorporates the DIN plug and (presumably!) the acoustic 'log line' B&O claimed to use.

and 2.5cm dome tweeter – the same ones specified for the C30, according to the service manual, but in a slightly-larger (4.4 litre; 12x20.5x20.5cm) cabinet. As with other C-series speakers, the C40 is reassuringly-weighty at 3.5 kg apiece.

attached to the inside of the panel. As the interior photo shows, the bass and treble speakers of the C40 are in separate compartments – there's no sign of any transmission-line arrangement unless it has somehow been incorporated into the rather

but they can perform exceptionally well within the limitations of their size. You can't thwart the laws of physics, and so there's no deep bass to speak of. But the treble and midrange more than make up for it; the C40s revealed themselves to be incredibly-communicative little speakers, when fed by a Marantz PM-66SE-Ki (as featured in last month's Olde Worlde) and Cambridge CXN v2 streamer. Playing Opus 4 by Charles Mingus, I was taken back by the stand-out detail and clarity-bestowed upon Ronald Hampton's trumpet, as well as the tenor-sax and flute contributions of George Adams. Sure, Mingus' bass seem to have taken a step back in the mix, but I could nevertheless make out the intricacies

"These aspirational items gave way to data-linked multi-room audio systems"

The crossover network that feeds its drivers connects to the outside world via a male 2-pin DIN plug; unless you're prepared to make modifications, you'll need to find inline 2-pin DIN sockets to connect these 40W beasts to your amplifier.

The C40's two angled front-panel grilles incorporate lugs that snugly-mate with corresponding slots in the enclosures, holding them securely in position – no rattles here! Remove the tweeter grille, and you'll find a piece of sculpted high-density foam. Described as a 'gasket', I can't help thinking that its job is to act as some kind of treble diffuser. Around the back is a gasket-sealed black plastic moulding that features the aforementioned grille and DIN connector. The components of the C40's very simple crossover (a couple of capacitors and an inductor) are

shallow plastic moulding. Unusually, the tweeter is located at the bottom of the C40!

Unconventional the C40s may be,



The paper-coned 10cm woofer was deployed across the C-series by Bang and Olufsen. As one might expect from a speaker this size, bass output is restricted. A subwoofer is best for most types of music.



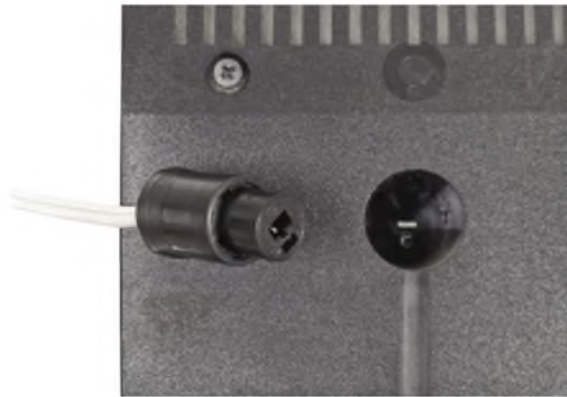
MARTIN LOGAN[®]

Majestic electrostatics and
much, much, much more.

www.martin-logan.co.uk

PMC[®]
DISTRIBUTION UK

The C40 relies on the 2-pin DIN connector so beloved of European hi-fi manufacturers in the 1970s. The plug's pins have been moulded into a circular rear-panel recess, reducing options when it comes to getting signals into the speaker. You will need in-line 2-pin DIN sockets of the sort once used for making speaker extension cables; thankfully, they are readily-available online for a couple of pounds or so each.



The C40 has a plastic rear-panel with DIN input connector, and the grille of the log-line's vent. Bang and Olufsen designed it specifically for small rooms.

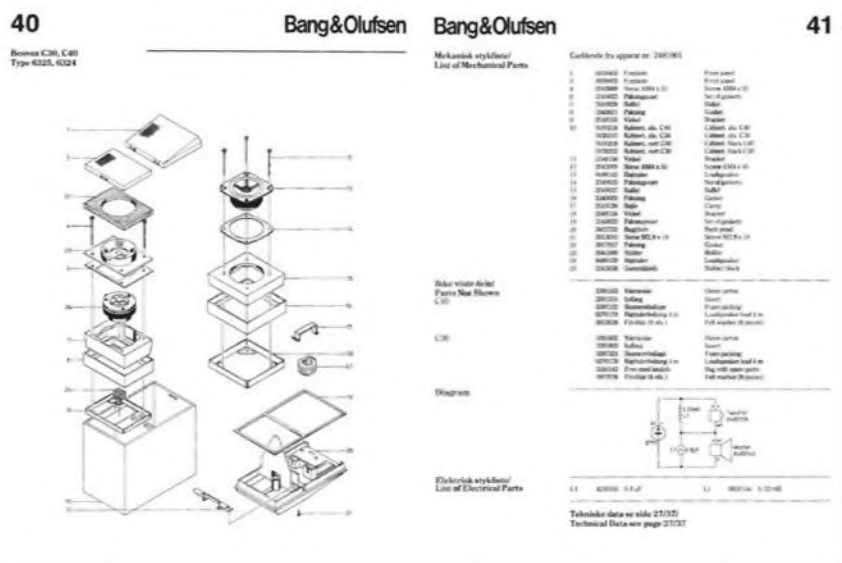
and subtleties in his playing. The lack of low-end weight could, of course, be addressed with the use of a decent subwoofer.

Another strength is the stereo imaging, which is palpable on both the Mingus album and Radiohead's A Moon Shaped Pool; the C40's linear-phase baffles and treble-diffusers seem to be working some magic! The rhythmic strings that propel Burn the Witch retained their insistence and urgency, while the lush ones of Decks Dark were easily definable. The only downsides, lack of weight apart, are tendency towards brightness and a slight 'chestiness' to vocals – especially spoken word (Radio 4, et al). But neither shortcomings impaired the C40's ability to make music enjoyable.

I chanced upon my C40s at a car boot sale – "quality, mate, feel how heavy they are". Beer-money changed hands. I was very lucky;

some C-series speakers suffer – like other makes and models, including the Pioneers featured a couple of months back – from the problem of 'rotting foam' surrounds. My woofers were discovered (whew!) to have rubber surrounds, so either they had been replaced at some point, or B&O changed to a different supplier of drive units during the C40's production run. DiY 'refoaming' kits for these speakers are available online, should you need them, as are in-line 2-pin DIN sockets if you

can't find any in the junkbox. Some C-series models can be 'upcycled' with an internally-fitting board into 'smart' active speakers. Unfortunately, this £150 'Beocreate' product isn't listed as being compatible with the C40. Even so, there's still much in favour of these babies – which are not as rare in the UK as you might expect; I've seen pairs selling on eBay for anywhere between £20 and £100, depending on condition. With an active subwoofer, they'll excel at reproducing music in small rooms.





Klipsch

REFERENCE

next generation

REFERENCE™

series

AVAILABLE NOW
FROM JUST
£220



90° X 90° Tractrix Horn



Spun Copper IMG woofer



High Quality Cabinet Design

Klipsch's exclusive Tractrix® horn technology delivers the power, detail and emotion of the live music experience with the cleanest, most natural sound possible.

Injection Molded Graphite (IMG) woofer cones are exceptionally light while being extremely rigid - providing remarkable low frequency response, with minimal cone breakup and distortion.

The Reference Base range features a beautiful durable build, including scratch-resistant ebony wood grain vinyl, reinforced MDF and exposed fasteners for an industrial aesthetic.



Distributed by Henley Audio

T: +44 (0) 1235 511 166 | E: sales@henleyaudio.co.uk | W: www.henleyaudio.co.uk | [f](https://www.facebook.com/HenleyAudioUK): HenleyAudioUK | [y](https://www.youtube.com/HenleyAudio): HenleyAudio



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 MLIII 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 finessed 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
Breath-taking 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. music master Audio Research. Breath-taking, 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 ORKAN VIII AKTIVS £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.

ELECTROCOMPANIE 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.



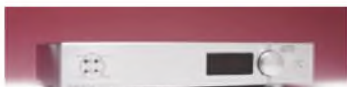
ROKSAN KANDY K2 £900
A charmingly musical performer at the price - this is a surprisingly sophisticated CD player for the money.

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 2QUTE 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 convertor with great sound at a great price. Cuts upper treble, though.

NAIM DAC £2,400
Superb high-end digital convertor 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 taut, 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

ASTEEL&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.

LOTOO 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 sonics 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.



RIVER 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.



📍 No. 1 Spencer Street The Jewellery Quarter Birmingham B18 6DD United Kingdom
 🕒 Monday - Saturday 10:00 to 17:30 ☎ 0121-448 84 84 ✉ sales@hardtfindhifi.com

Next Day Delivery Available Fast worldwide shipping with tracking provided	McIntosh Reference Dealer The majority of the McIntosh range is on demo	Vinyl, CD, SACD & MQA CDs In-Store Over 1 million records in stock
--	---	--

**Integrated Turntable System
 McIntosh MT100** ON DEMO

- Turntable, vacuum tube preamplifier and amplifier all in one
- Includes Bluetooth and auxiliary inputs
- Just add speakers

£7,495 36 Months Warranty JUST LAUNCHED



McIntosh

**Belt Drive Turntable
 McIntosh MT10** AVAILABLE TO ORDER

- Illuminated speed meter
- Inc. moving coil cartridge
- Includes dust cover

£13,700 36 Months Warranty



McIntosh

**Stereo Integrated Amplifier
 McIntosh MA252** ON DEMO

- 160 watts per channel
- Hybrid design: vacuum tube preamp and solid state power amp

£4,500 36 Months Warranty



McIntosh

**Stereo Integrated Amplifier
 McIntosh MA9000** ON DEMO

- 300 watts per channel
- 8-band tone control
- DA1 digital audio module
- MA7200 also available

£12,995 36 Months Warranty



McIntosh

**2-Channel Solid State Amplifier
 McIntosh MC312** ON DEMO

- 300 watts x 2 channels
- 27% increase in dynamic headroom compared to previous model
- McIntosh Autoformers™

£9,995 36 Months Warranty JUST LAUNCHED



McIntosh

Only 1 available in the UK of 70 available Worldwide 70th Anniversary

**2-Channel Vacuum Tube Amplifier
 McIntosh MC2152** JUST LAUNCHED



- Commemorative system marked with matching serial numbers
- 150 watts x 2 channels
- (8) KT88, (4) 12AX7A and (4) 12AT7 vacuum tubes

£25,000 36 Months Warranty

**2-Channel Vacuum Tube Preamplifier
 McIntosh C70**



- (5) 12AX7A and (1) 12AT7 vacuum tubes
- MM & MC phono inputs
- All analog design and a retro look
- Standard editions also available

Includes McIntosh History Book that contains a certificate of authentication

**Stereo Vacuum Tube Amplifier
 McIntosh MC275 MK VI** ON DEMO

- 75 watts per channel @ 2, 4 or 8 Ω
- Vacuum tube design
- Legendary design now in Mark VI form
- Bridgeable to 150 watt monoblock

£7,100 36 Months Warranty



McIntosh

**Monoblock Solid State Amplifier
 McIntosh MC611** ON DEMO

- 600 watt quad balanced
- Monogrammed heatsink
- 2, 4 and 8 Ω outputs
- 55% increase in dynamic headroom compared to previous model

£19,995 /pair 36 Months Warranty



McIntosh

**Monoblock Vacuum Tube Amplifier
 McIntosh MC2301** AVAILABLE TO ORDER

- 300 Watt Quad Balanced Monoblock
- Valve powered
- Unity Coupled Circuit output transformer
- Distortion free even at high levels
- Sentry Monitor short-circuit protection

£29,800 /pair 36 Months Warranty



McIntosh

FREE VINYL RECORDING WORKSHOPS IN-STORE



HTF Vinyl Recording Software

- The fastest and most efficient way to digitise your vinyl
- Convert to WAV, MP3, WMA, AAC/MP4 simultaneously
- Enter track meta-data during recording, including album artwork
- Record a full side of an album unattended with auto track split
- 192kHz 24 Bit
- Free training

Dozens Of Features Windows

£25 /v.2.3

ON DEMO

Mytek Brooklyn Bridge

JUST LAUNCHED

- WiFi Streamer / DAC / Preamp all-in-one
- Reference headphone & phono stage
- Includes remote control
- Also available in silver



£2,595

24 Months Warranty



CALL US TO BOOK A DEMO TODAY

Technics Direct Drive Turntable SL-1000R / SP-10R

- Coreless direct drive
- Separate control unit
- Probably the best DD turntables in the world



SL-1000R
£13,995

SP-10R
£7,999

24 Months Warranty
Technics

AVAILABLE TO ORDER

Technics Direct Drive Turntable SL-1200G / 1200GR / 1210GR

- The legendary turntable reborn
- Coreless direct drive
- Free Ortofon 2M blue cartridge



SL-1200G
£2,649

SL-1200GR
£1,299

SL-1210GR
£1,299

24 Months Warranty Technics

CALL US TO BOOK A DEMO TODAY

Mytek Manhattan & Brooklyn DACs

- In our opinion, the best digital-to-analogue converters on the market



Manhattan DAC II
£4,995

Brooklyn DAC+
£1,749

Brooklyn ADC
£1,599

24 Months Warranty



ON DEMO

SME Turntable Model 20/3 + Series V Arm

- Gold detailing
- Probably the best belt drive turntable in the world at this price point



£15,450

24 Months Warranty



JUST LAUNCHED

ON DEMO

SME Turntable Synergy + Series IV Arm

- Built-in NAGRA phono stage
- Ortofon's 'exclusive series' MC Windfeld Ti cartridge
- Internal crystal cables



£14,950

24 Months Warranty



ON DEMO

SME Turntable Model 10 Ltd Black

JUST LAUNCHED

- Limited edition of 30 pieces
- Free Ortofon Cadenza black cartridge worth £1,825
- Includes M10 Tonearm



£6,195

24 Months Warranty



ON DEMO

JBL Passive Loudspeakers L100 Classic

JUST LAUNCHED



- Classic 70s look
- Frequency response 40Hz – 40kHz
- Vintage Quadrex foam grille
- JBL JS-120 floor stands available at £325.00

£3,995 /pair

36 Months Warranty



ON DEMO

Avantgarde Speakers UNO XD

- 2-way horns system speakers
- 18 Ohm high-impedance voice coil design, efficiency of 107 dB
- Active crossover programmable by built-in DSP



£24,000 /pair

36 Months Warranty



ON DEMO

Avantgarde Speakers DUO XD

- 2-way horns system speakers
- Powerful SUB231 XD subwoofer module
- Various colour combinations available
- Why not book an in-store demo today?



£31,000 /pair

36 Months Warranty



ON DEMO

Gold Note Belt Drive Turntable Pianosa

- Extra rigid & dampened
- High precision platter
- Available in black, white or walnut



£2,227

24 Months Warranty



ON DEMO

SME Tonearms Series 309



£2,450

Series IV

£3,550

Series V

£5,200

Series V-12

£7,550



ON DEMO

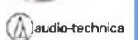
Audio-Technica Tonearm Lifter AT-6006R

- Automatically lifts tonearm before runout extending the life of your stylus
- Universal, works with any turntable



£112

24 Months Warranty



ON DEMO

Audio-Technica Cartridges AT-ART1000

- Moving Coil
- Special line contact stylus

Available in-store only



£4,450

24 Months Warranty



ON DEMO

Audio-Technica Cartridges AT-ART9

- Flagship magnetic core MC type cartridge
- 15 Hz – 50kHz
- Special line contact stylus



£899

24 Months Warranty



BOTH UNITS ON DEMO IN-STORE

Phono Stage PH-10



Power Supply PSU-10



- 2 separate inputs
- 6 EQ curves
- 4 GAIN options
- For use with MM & MC cartridges

- Worldwide voltage
- Optional external power supply for Gold Note PH-10

PH-10 & PSU-10 also available in silver

£1,136

24 Months Warranty

£864

ON DEMO

Shelter Cartridges Model 9000

- Moving coil
- Elliptical stylus



£2,950

12 Months Warranty



ON DEMO

Audio Technica Headphones ATH-ANC100BT

- Wireless In-ear Noise-Cancelling



£89

24 Months Warranty





AMERICA

Classic Album Collection
Caroline

This year marks America's 49th anniversary so you might think that this box set is slightly premature – or are they launching an even larger box set next year, perhaps? Gerry Beckley and Dewey Bunnell plus Dan Peek formed the band in 1970. Their runaway hit from those early days was the superb 'A Horse With No Name'.

Fame and fortune followed as did a 1972 Grammy Award for Best New Artist. Even better, 1974 saw the group working with big league producers, Beatles emeritus no less in the form of producer George Martin and engineer Geoff Emerick, with whom they recorded seven albums and several Top Ten hits.

This box set begins in 1979, the year that Peek left the group, turning it into a duo, in effect.

I have to add that the title of this collection is a little contentious. Three of the band's

first four albums, from the early seventies, were the true classics, methinks. Classics, that is, in relation to the band's other output. Nevertheless, the box set provides a host of interesting and admirable albums ('Admirable Album Collection' doesn't really scan though, does it?). It features 'The Capitol Years' and runs over six CDs, spanning 1979–1985.

A booklet features comments from the band on the albums. And those albums are? 'Silent Letter' (1979), 'Alibi' (1980), 'View from The Ground' (1982), 'Your Move' (1983), 'Perspective' (1984) and 'In Concert' (1985).

The mastering for each is very nice. There's a slight compressive feel during high frequency output but it's pretty low key stuff.

You'll hear a broad and spacious soundstage with a balanced and neutral presentation with good instrumental separation which means that the ear picks up plenty of detail.

AUDIOPHILE CD



SAMSON

Bright Lights: The Albums 1979-1981
HNE

A concentrated biff of heavy rock from this New Wave of British Heavy Metal (NWOBHM) band in a set that looks at the turbulent albums from 1979-1981 including: 'Survivors' (1979) plus two bonus tracks; 'Head On' (1980) plus three bonus tracks; 'Head On: Tony Platt Alternative Mix' (1980 – the first time it has appeared on CD – plus a bonus track); 'Shock Tactics' (1981) plus two bonus tracks and 'Live at Reading' (1981) plus three bonus tracks.

It's a bit complicated but (now Iron Maiden) vocalist Bruce Dickinson's image is seen on the sleeve of 'Survivors' but he wasn't in Samson when that LP was recorded: Paul Samson sang instead. Dickinson then sang lead on 'Head On' and finally 'Shock Tactics'. Then Dickinson defected to Iron Maiden. Nicky Moore took over from that point. Dickinson is heard

on the 'Reading' album, though. As you listen to that album, imagine Iron Maiden scouts watching and listening in the audience as he sings, plotting to tempt him over to Iron Maiden. Oh, the drama.

As for 'Head On: Tony Platt Alternative Mix'? A tinkerer's mix. You can actually hear him moving the faders, he can't keep his hands off this music so it becomes 'Head On, Starring Tony Platt & Featuring Samson'. Right from the off you hear the music suffering from a damping, rolled off upper midrange/treble. Then Platt opens the sonic doors and brings it all back again as he lifts up the guitars around 1:22 or so. Clunky. The original mix is the coherent option.

As for general mastering? There is a slight sheen of compression here which is noticeable during screeching guitar solos at high volumes but nothing to cause major issues. On the whole, the mastering is fairly balanced.

One of the UK's very few, true rock'n'roll stars. The real deal. Subtitled 'A Lifetime in Music 1957-2009: His Hits and Rarities' (RPM), this 4CD box set includes 63 A-sides and B-sides with six bonus tracks off that lot, then Radio Luxembourg appearances from 1959 plus 10 bonus tracks. The final CD is packed with 32 previously unissued demo recordings (those that were not destroyed in a flood). These include the rare Wilde Three tracks plus unreleased Wildcats tracks. You get studio chat, false starts...the lot. It's quite a collection!

Speaking to me about the Wildcats in an earlier interview, Wilde said, "I chose the band. They came over for auditions. The early band were OK, they were all I could get at that time. The earliest guitarist was more of a jazz player. That wasn't me at all but I had to put up with that. Later, I found players such as Brian Bennett and Brian "Licorice" Locking, who eventually

joined The Shadows and Big Jim Sullivan, a genius guitarist. They were great".

For mastering? The single tracks have been made to be heard through the cheap radios of the time so compression appears here but RPM has calmed it sufficiently to make the music generally listenable. It remains a little lacking in broad dynamics (high volume vocal and guitar crescendos can be edgy, though). Again, this is the music production 'of the time', so be patient.

His Radio Luxembourg tracks are similarly thin and edgy but full of energy and passion with good restorative work via RPM.

The rarities vary depending on the condition of the original acetates but the soundstage is generally broad if, again, a little compressed. On the whole, the rarities are highly entertaining.

All in all, a brilliant CD box set, packed with treasure that fans will lap up.



MARTY WILDE

Marty
RPM

AUDIOPHILE CD

The story of this group is a bit Moody Blues-like. That is, the early prog-folk incarnation featured ex-Yardbirds members Keith Relf (with sister Jane on vocals) and Jim McCarty. After 1971, the group featured Jon Camp, John Tout, and Terry Sullivan with Annie Haslam, pushing the group's ambitions several rungs higher.

Now re-mastered and presented as an expanded 3CD set, 'Novella' is divisive. Released in 1977, the music here has come from the original master tapes and features a previously unreleased promotional single edit of Midas Man and a new-to-CD single edit of Can You Hear Me along with the entire performance with the Royal Philharmonic Orchestra at the Royal Albert Hall in October 1977.

Featuring Haslam, Michael Dunford (acoustic and electric guitars), Tout (keyboards, vocals),

Camp (bass, acoustic and electric guitars, vocals) and Sullivan (drums, percussion) even fans can't really agree on this album, hence its divisive nature. Some say that it lacks ambition and remains boring, others see the album as classic Renaissance.

An expanded CD box set release like this gives the album a chance to be viewed as a separate and individual piece of work. The problem with 'Novella' is that it has been too often reviewed in context with other works. As if they lent a bias to it. It has been too often judged against other music instead of being judged for what is – on its own merits.

On that basis, the Novella is a pastoral piece of prog. It sometimes has an ambience all of its own with neo-classical overtones. It might lack a bag of killer hooks, being one to laze and relax to – let it wash over you. The mastering is excellent, incidentally.



RENAISSANCE

Novella
Esoteric

Bring all your music to *life*

VEGA G1 STREAMING DAC

'The Vega G1 is a hard act to beat - put it with a decent server and it will deliver results that will revise your opinion of what can be done with digital audio.'

JASON KENNEDY, THE EAR

'Bloody hell ... this thing's good!'

ALAN SIRCOM, HIFI +

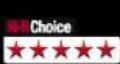


Built around the idea that true hifi should be accessible to everyone, **AURALIC** today enjoys a worldwide reputation for producing innovative digital and analogue components of the highest quality.

We build devices which further the exploration of digital streaming and discovery of new music. Combining progressive technologies that deliver on the promise of modern digital formats with premium analogue circuitry and hardware rooted in classic designs, **AURALIC** is always creating new ways to bring all your music to life.

For your nearest authorised dealer please visit auralic.com

AURALIC PRESS AWARDS



"Why do we need a new socket? A question best not asked;"



Noel Keyword

Wrong again. I asked for a Thunderbolt cable in an Apple Store because my new MacMini 2018 – used as a hi-fi test mule – proudly trumpets the fact it has Thunderbolt 3.1 (don't ask). The cable didn't fit. The Apple in-shore 'genius' assistant looked sheepish about not realising their new Mac sends Thunderbolt through a USB Type C socket, not a Thunderbolt socket. Makes sense doesn't it.

The world of USB is getting ever more complex and the new Type C connector is coming our way in hi-fi products. If Apple decide to use it in favour of a dedicated Thunderbolt socket in their latest 2018 MacMini then get ready to grab all your microUSB and miniUSB cables and junk them.

I think I am right in saying all trad. USB cables are obsolescent, due for replacement by Type C connector cables. Take a deep breath!

USB as we have known it is astonishingly simple – and that was its hidden merit. Cut open a USB cable and there's almost nothing there. A few measly wires, thin and not up to much it would seem. Totally unlike those old parallel printer cables of the past with giant multi-pin connectors and a wire per connector, meaning a whole stack of them – making for a thick and inflexible cable.

USB swept those old parallel cables away, bringing in the delight of simplicity. Simple means small, light and cheap, so we all have them snaking around the desk and the hi-fi as digital interconnects. What's more, audio suits USB, getting down those measly wires with ease, so no problem sending hi-res audio like 24/192 PCM down a USB cable.

I've got an Audiolab M-DAC+

sitting in front of me as I type away and it's connected – or was – to a MacMini via USB 2. The Mac saw the Audiolab and all other audio devices with slick ease. My old MacMini with obsolescent USB 2 was easily able to send 384kHz sample rate PCM to the M-DAC+. I did not do this because there's no point; 96kHz is the maximum sample rate I use, hearing no improvement with higher sample rates.

Old USB 2 suited audio fine. Audio data rates are relatively low compared to what computers are capable of handling, 24/96 hi-res having a data rate of 4.5Mbits/s – easily within the abilities of USB 2, which is why it works without issues. My Audirvana+ player software will also package in DSD, so that can be sent too. Heaven!

So one measly little USB 2 cable is fully able to link computer to DAC and send over music in any form at any quality level. Do we need more? No, not for audio; USB 2's maximum data rate of 480 Mbits/s is way above that of music files. However, computers now need to be able to stream hi-res video that is far more demanding. Disc data transfer rates can also be slow with USB 2 when transferring lots of data, especially DSD. So old USB 2 was too slow for some and is now being replaced by new, faster USB 3.

But here's a confusion. New faster USB 3 (now up to 3.2) isn't necessarily related to the new USB Type C socket. Last month I was surprised to see old USB 2 being piped through a new Type C socket in Pro-Ject's headphone DAC and as I mentioned earlier Apple are now running Thunderbolt through a Type C socket.

It gets worse. New USB 3 can be run through an old USB Type A socket purposed for USB 2. When this is done the socket is coloured

blue. That means you get faster USB 3 speeds from an old socket.

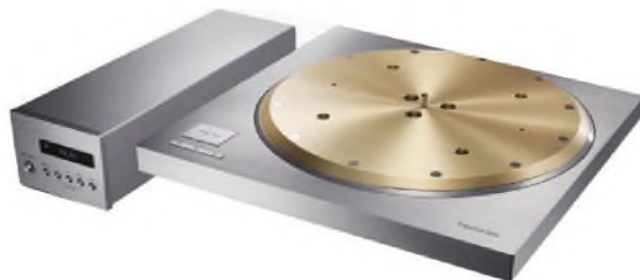
Raising the question – why do we need a new socket then? This is a question best not asked; I'll keep it simple. There are two reasons: the socket and the protocol.

The socket itself is small, reversible so it can be plugged in either way around, slim to fit slim devices. Type C is an easy socket to use, obsoleting all others. That's why my Thunderbolt cable, with its Thunderbolt plug was obsolete before I even bought it. I should have known! But this mistake is a warning. Look out for cables with the USB Type C plug since it will be replacing all others.

Whilst the new Type C socket can be used for just about any purpose, including old USB 2, it is able to handle full-on the new USB 3 protocol as well, and this is faster and more complex. Where the USB 2 cables we all use have two measly wires twisted together in what is known as a twisted pair, a full-fat USB 3 cable with Type C connectors at either end has two twisted pairs, plus a lot more. In all there are 24 wires Wikipedia says, but my Type C plugs differ to their diagram with what appear to be earth priority pins, side pins and twenty main pins in my two thick cables, but fewer pins in a slimmer cable from Apple (£19.00) that is almost certainly low speed half-duplex. If you want a full speed cable from Apple they want £39 no less. Enter the idea of different speed cables.

I pray the new style USB Type C plug and associated cables banish the confusion of plugs we currently suffer. It will make connecting up today's digital audio products a plug-'n-play doddle. So far I report complete success. But somehow I wonder about this; my fears linger. Don't know why. ●

THE VINYL REVOLUTION



The EVO and the new EVOke Now you have a choice of any SL-1200! The new EVOke has world beating performance figures that are comparable with the world's most expensive turntables. The ability to fit any arm or cartridge to any SL-1200 new or old, means you can now have the EVO that you want at the price you want.

The EVO was used by Hi-Fi World to evaluate the Beatles In Mono records and is now used as their everyday reference. The EVO comes fitted with a tonearm of your choice and a cartridge of your choice.

We have worked with direct drive turntables and moving coil cartridges for nearly 40 years. We can supply completely new units with 6 year guarantees, used ones with 5 year guarantees, or we can convert your own.

Technics SP-10R & SL-1000R Many combinations available
Hi Fi World said:

This is a spinner of vinyl for the serious, where you just want to punch a button and get on with it. It offers a degree of unarguable perfection for professional studios and anyone working with vinyl. If you want such unerring focus on the basics of playing LP it's time to check the piggy bank.

Hi Fi News said:

Any great turntable gives you a certain frisson when you hear it. It's that old 'shivers down the spine' feeling, a sense of being let into a world to which you had previously not been privy. This is a remarkable turntable, and arguably the apex of vinyl playback. It's difficult to see how the SP-10R motor unit can be improved upon. It is a definitive statement of engineering prowess, and marks the return of direct drive to the top tier of turntables.

Miyajima - Stereo - Mono - Denon DL-103 - Audio Technica AT33 & OC9

Turntables & Tonearms - Technics SL-1200 & SP-10R - 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



HANA EL & EH
Low (EL) and High (EH)
output Moving Coil models



HANA SL & SH
Low (SL) and High (SH)
output Moving Coil models

HANA ML&MH



NEW
M Series
Deluxe Models

High output
moving coil
is for use with
a MM phono
stage.

'... the Hana's give you more than a glimpse of what the true masters have to offer, without the financial outlay. And yet, at no time does this sound like scraps from the very top table. The Hana ML in particular and the MH trailing close behind are every inch high-end super cartridges, only without the high prices. As it stands, this is the best £3,000-£4,000 cartridge you can buy... for £995.00'

HI>FI+ ISSUE 172 REVIEW, HANA ML/MH

AIRaudio

Telephone: 01491 629 629 or for dealer list, visit: www.airaudio.co.uk/dealers/

"a place and a rare chance to hear an artist often at the top of their game"



Paul Rigby

I'm currently reading a biography of Lew Wasserman by Dennis McDougal (Da Capo) called 'The Last Mogul'. He was a top flight Hollywood agent for some of the biggest actor names in the business. With his partner Jules Stein, he was also part owner of the (then) major record label and entertainment organisation, MCA (now subsumed into Universal and no longer an entity). The book is full of fascinating events, research and enlightening facts which uncover many a dirty dealing – it's highly recommended.

What this book did (as all history books do) was to remind me of the brevity of our memories. History pricks our assumptions. It is also revelatory because it presents us with the reality. It removes the legend and the myth and clears often muddled collective memories.

Back in the days when MCA began in 1924, it started life as a band booking agency. It would become a true power in this field, bringing in vast amounts of cash and tying star names to its roster, often under very restricted conditions. "They make me so mad I could cut their throats but I've got to play ball with them", a frustrated Tommy Dorsey once said.

One of the reasons MCA was so successful was because of radio. Before MCA was so named and when Jules Stein was running the booking agency under his own name, a major event occurred. On 27 October 1920 Westinghouse Electric established Pittsburgh KDKA, the first commercial radio station in the USA. Three years later, every major city in the USA would have its own radio station. In Stein's case, he first heard bands playing out of the radio via WDAF in Kansas City, Missouri. Crystal sets were the big sellers at that time.

The problem for newly established radio stations was content. How to get cheap, round the clock programming?

One low cost way of doing this was to find a night club that featured a quality sounding band or, even better, a rotation of top bands. The radio station would install its equipment there, prop a microphone in front of the band and bingo – instant radio programme. This is why Jules Stein first booked his first band. It was how MCA as a corporate entity laid roots for its illustrious future.

It also became a habit.

I'm a big fan of the old radio programmes, Old Time Radio (OTR) is how it's labelled to devotees and it's packed with music rarities. All of the old time greats appeared on radio because radio was the principle communication medium of the time. If you were not on the radio back in the late twenties, thirties and forties, then your career was going nowhere.

Hence, I have programmes featuring Bing Crosby and Frank Sinatra, Benny Goodman and Duke Ellington and more. Some are staged programmes, others are recorded live events.

One of the popular locations for these events – late on the scene but popular nevertheless – was New York's club, Birdland. A haven for jazz fans, it could pack in 500 people and a full orchestra. Many jazz greats recorded live albums there, the Hollywood glitterati liked to be seen there and radio programmes were broadcast from there.

Jazz artists would value the dates at clubs like Birdland because they could learn the ropes and then later hone their stagecraft.

I have a few new CDs of those events here from the Jazz-A-Nova imprint of Floating World.

Specifically Charlie Parker ('Live at Birdland & The Hi-Hat Club', Bill Evans Trio ('Live at Birdland') and a young Sarah Vaughan ('Birdland') featuring dates that ranged from 1950 to 1960.

The booklet accompanying the Sarah Vaughan CD, for example, mentions a Billboard feature that comments: "Sarah Vaughan will be heard over the national ABC network next week direct from Birdland."

Often, these performances had a vitality all their own because of the live arena, the artists were often heard at their prime and the added infusion of a radio broadcast concentrated the mind wonderfully. So these radio recordings commonly have a keen edge. For Vaughan's CD, her performances range over three dates at the club: 22 March 1952, 23 August 1952 and 5 September 1952.

Of course, in sonic terms, broadcasts like these have compromises. Not only because they were live events – an issue at the best of times – but because the broadcasts were often recorded from a radio source which had fifty seven varieties of sound problems.

What these recordings do provide though is a unique time and a place and a rare chance to hear an artist often at the top of their game. In these particular cases, the sound is not bad at all. Imperfect, to say the least, yet with modern processing perfectly listenable.

More than that, these recordings offer a unique atmosphere from the location and a window back into a unique occasion. There's also that immediacy that you would only hear with a live performance. Not only are these CD recordings valuable historical documents, they provide an insight into the natural world of the performing artist. ●

The **VINYL** **ADVENTURE**



**Purveyors of audiophile quality vinyl
& accessories**



DS Audio DS E1

01484 538438
www.thevinyladventure.com

"CD-4 was cutting-edge LP technology. It can now be processed in software"



Martin Pipe

Back in June 2015, we examined the intriguing 'Stereo Sauce' program for Macs. A flexible set of audio-processing tools, it's the brainchild of Pspatial Audio – otherwise known as Richard Brice (an ex-BBC man and one-time contributor to Hi-Fi World) and software engineer Alastair MacMaster.

Features include RIAA decoding from 'flat' (not RIAA-equalised) needle-drops, stereo-image enhancement, noise-reduction, removing needle-scratches from shellac 78s, cancelling tracking distortion and surround-sound upmixing. Load the audio files that need attention, select the desired processing with pull-down menus and the program crunches through the queue. Its output is one or more processed files, with filenames derived from the original(s). Easy!

Over the past four years, this veritable toolkit (<https://bit.ly/2Z9PVXV>) has evolved to include even more functionality - and to reflect this growing sophistication, its name has changed to 'Stereo Lab'. Four versions, trading price against flexibility, are available. The most expensive Audiophile sells for just £70. One of the features exclusive to this version (and its cheaper present-day equivalent) is effective software-decoding of SQ and QS 'matrix' quadrasonic material – an interest of mine.

Much music was released in these mutually-incompatible formats during the 1970s. In the UK, EMI issued 'single-inventory' classical-music SQ LPs until the end of that decade. You'll frequently encounter them at record fairs, and even charity shops - look for the 'SQ' logo, and the words 'stereo/quadrasonic' on the back of the sleeve. Stereo Lab outputs

a 5.1 WAV file that you can lossily-compress to FLAC understandable to modern AVRs. Those – like myself – partnering vintage quad gear with a 5.1 disc player can convert the output into DTS-CDs or even DVD-As.

Chancing upon the Pspatial website, I discovered that it now supports the 'discrete' CD-4 format (also labelled 'Quadradisc'). In the early 1970s, CD-4 was cutting-edge analogue technology. This can now be processed in software. Quite an achievement and Stereo Lab's authoring team deserve credit for the work. Brice told me that working out ANRS was "the most complicated part".

Your turntable ('crystal-locked direct-drives' are recommended by Pspatial) must have a cartridge with 50kHz upper response and Shibata-style 'line-contact' stylus. My Technics SL1200 MkIII and Audio-Technica AT-440MLb fitted the bill. You will also need a 'flat' preamp with 50dB or so of gain, feeding a capture device (I used a Tascam portable unit) capable of recording at 24-bit resolution with 96kHz sampling rate. The latter is necessary to capture the ultrasonic CD-4 information. Anything else will be rejected by Stereo Lab's two CD-4 decoding modes - a 'straight' emulation of the 'classic' JVC 4DD-5 decoder, and a 'high quality' setting that uses "the power of Ambisonics" to facilitate decoded CD-4 playback on home-cinema systems with ITU-R BS775 5.1 speaker layout. Both offer declipping.

Using a simple preamp knocked together for the job (Pspatial's hardware associate Phaerdrus Audio can supply ready-built hardware), I captured some CD-4 LPs – early MFSL effort Sound In Motion, and Arlo Guthrie's Last of the Brooklyn Cowboys – and ran them through

Stereo Lab in JVC mode with default settings.

Using Audacity I then extracted the four 'active' channels from the 5.1 WAV file in 44.1kHz/16-bit form and turned them into a DTS CD. Heard through a Pioneer universal disc player and QX-949 receiver feeding a quartet of Wharfedale Diamonds, the results were very encouraging. What I heard is as good as, if not better, than vintage hardware decoders - which rely on obsolete and now-unobtainable chips.

During the process of reviewing Stereo Lab I came across some recordings of 1970s BBC broadcasts encoded in the Matrix-H quad format. Support for this is now part of the Stereo Lab Audiophile repertoire...

There are plans to add even more features! One is correction for the cyclic wow caused by records with an off-centre hole (shades of Nakamichi's legendary TX-1000 'computing' turntable). Aware that Brice cracked the problem of emulating CD-4's ANRS (JVC's attempt at Dolby) in DSP, I expressed a desire that he might support other noise-reduction systems, thereby making the software as useful for tape users as it is for record fans. Tape EQ curves are planned I was told – but wouldn't it be great to see accurate software implementations of dbx, Super-D, adcs, MXR and High-Com...as well as the various Dolbys. How many of us have tapes encoded with noise-reduction systems like these, but can't remember what fate met the hardware? I have Dolby A master tapes that I'd like to play properly, in the absence of 'physical' decoders. How about it, guys? Stereo Lab is certainly a powerful and fascinating piece of software, worth checking out. ●

Black Rhodium



All cables obey the
Laws of Physics.
Some just sound
infinitely better.

Bespoke high end audio cables hand made in the U.K
www.BlackRhodium.co.uk

"The drivers were sticky, like the cone and suspension were breaking down somehow"



Dave Tutt

How do you feel about transmission line speakers? I remember going on one of my first trips to Tottenham Court Road when I was about 14 and visiting Lasky's. The sound that I heard on the first floor of the shop set me off on a hunt for something that could match that from a pair of IMF Studio Monitors they demo'd. It was so much better than anything else I had heard at the time it seemed these 'speakers were going to be the only one worth buying for a considerable time into the future!

There was bass. Not the sort of bass that came out of the music system that was popular with people that I knew, from radiograms and the like. This bass went deep and clean. And so much midrange detail and treble that wasn't just the sound of an LP cartridge mistracking and scratchy noise. I hadn't heard anything like it at the time.

The date of my visit would have been somewhere around 1973/4 and of course at that time there was no internet, so no means of discovering what was inside the box. There was very little in the way of books anywhere to explain what was going on and even if there had been, it would have been a research document and impossible to find out in the sticks of Kent.

Indeed, information on transmission lines might have been impossible even at the British Library without knowing exactly what you were looking for. If I had just asked about transmission lines I would have probably found books about carrying electrical power over long distances, or electrical transmission lines in transmitters and receivers. Not helpful in my instance – loudspeakers and the

National Grid don't go together!

Wind forward 46 years and hey! What arrives at my door but a pair of Castle Chester TL 'speakers: transmission lines. Now according to the on-line reviews and comments these don't really have the bass that would be expected from a transmission line but then the stiffness of the suspension of the main driver tells me it was never intended to go particularly low. The Chester used a small 6 inch drive unit, so you would hope that the transmission line might do far more work than the driver at the bottom end.

The bass that was there was clean, not boomy or in any way affected by a cabinet colouration so a few tests were required. But first I did a soak test to loosen things up. I didn't know when these 'speakers were last used but they may have sat around for 5 years or more, so what would they be like once run in again – or should I expect to look for another bass driver?

The drivers were sticky, like the cone and suspension were breaking down somehow. However, running them every day for 6-8 hours over a couple of weeks made a difference – but they remained bland and lifeless. Very much a midrange forward sound needing the amp's tone controls to liven up.

First test was a comparison with the Mission 700s that I have in my childhood bedroom at my mum's. With the modifications to the 700s that I made some time ago the Missions are not exactly reticent as far as bass is concerned – but they are not all that extended either given the drivers bottom limit of 40Hz, set by the oversize box I suspect.

The Castles were significantly weaker in the bottom end in a

direct comparison. Their old bass midrange drivers are aging slightly differently too, no longer being a true pair I heard.

In the end I opted to fit a pair of new drivers to the Castles that were something of an upgrade. These speakers needed some get up and go. I picked Peerless Tymphany SDS 160F25 drivers – but the fit was rather more difficult than I had hoped. It will be improved as time goes by! The originals had huge magnets, the Tymphany ones being rather smaller – but the specification would suggest a better performance.

Well, when I first powered up the system I was a little disappointed, but knowing how new drivers take at least 2 hours to run in I left them on and got on with some jobs. Returning was something of a revelation. For a start the tone controls set for the old drivers needed to be put back to neutral.

Switching to CD and playing a few tracks that had disappointed me previously I tried Marian Hill and 'Down' which had now developed tight and tuneful bass that went down properly. 'Do you believe in us' by Jon Secada had a crisper, more tuneful bass line that actually sat properly in the mix. The same was true of 'Trans Island Skyway' by Donald Fagen, where the bass is so important; it now stopped and started cleanly and its harmonic structure was accurate.

I wonder if other owners of the Castle Chesters would appreciate them more if they did this change? £40 a pair seems very reasonable for the Peerless Tymphany SDS 160F25 drivers, considering how good they sound. The Chesters now need the bigger listening room! Transmission line loudspeakers still fascinate me. ●

HI-FI SERVICE & REPAIR
Dave Tutt
 +44 (0)7759 105932
 dave_london@hotmail.com
 www.tutt-technology.co.uk



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

Tellurium Q®



Winner of the Queens Award for Enterprise

telluriumq.com +44 (0) 1458 251 997

N again!

We reviewed Audiolab's 6000N budget streamer last month. Audiolab think it's better than we said! Here are the issues, explained by Noel Keywood.



Audiolab tell us our review of their 6000N internet server published last month (September 2019 issue) did not convey its full abilities. And they are right! But perhaps not – since what we published was correct. Here's another look, raising many digital issues, most related to the Play-Fi app it uses.

To recap, Audiolab's 6000N is a budget (£449) internet streamer that comes with a wide range of internet music streaming services, including free Spotify and CD quality (paid for) Tidal, handled by the DTS Play-Fi app. With an on-board high quality digital-to-audio convertor (DAC) chip from ESS, the ESS ES9018K2M, it potentially offers very high quality – but in last month's review we had reservations. Reviewer Jason Kennedy, who has heard a lot of 'net streamers, wasn't impressed by its sound and our lab measurements showed limitations when measured

with a Windows 10 based DNLA network server. Audiolab tell us they feel the 6000N is better than we portrayed it – so is it?

The 6000N gave mediocre quality from a DLNA server (slightly better than CD) when originally tested, but very good results, in keeping with Audiolab's claims, when running hi-res (24/48) test files from an iPhone. The 6000N is not purposed for playback from files stored on an iPhone so these results were not published; it was reviewed from wired servers by Jason.

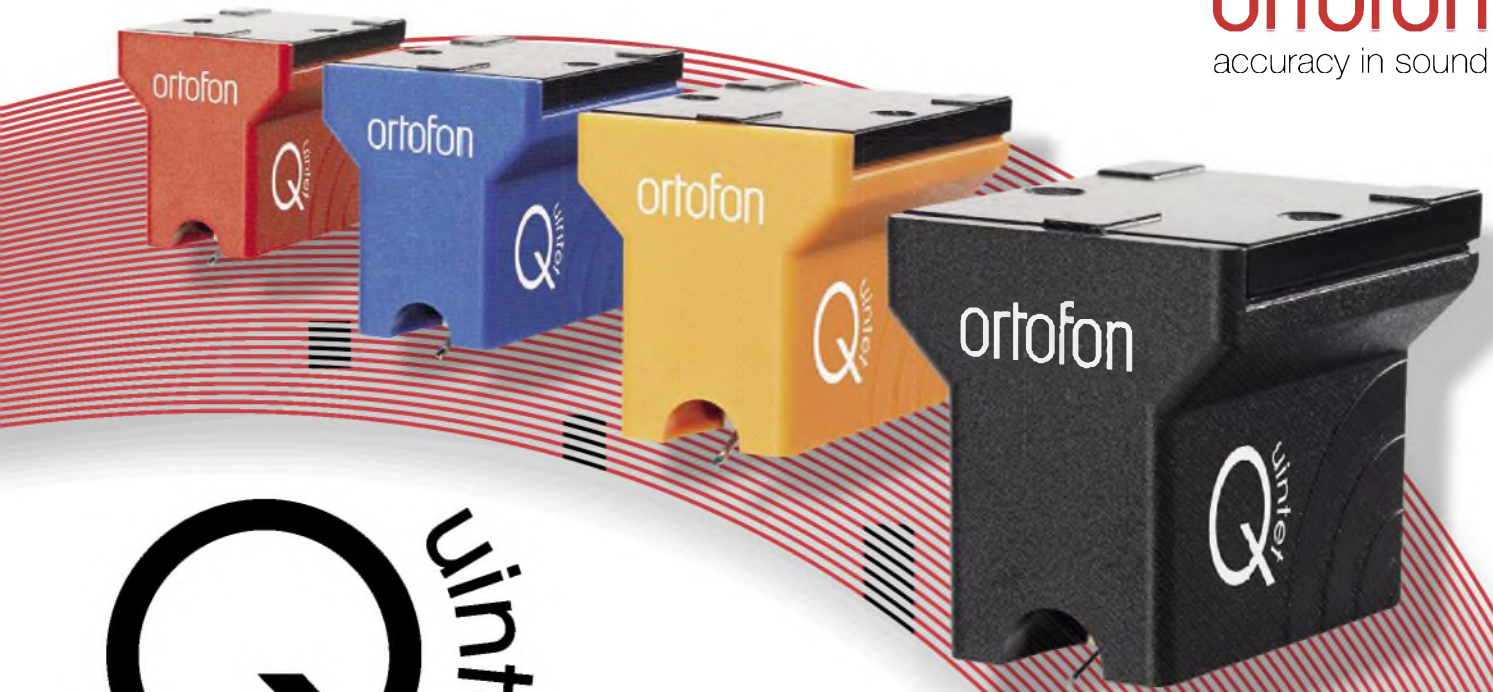
Why mention iPhone? Because if playback from iPhone music files (24/48) show good results then in theory at least performance from internet music servers should be similar. But they were not under our test conditions. Why? What was going on?

After much re-testing, the unusual conditions imposed by Play-Fi, set by the way it works, became clear. Unlike conventional streamers,

such as Naim's NDX 2 in this issue, Play-Fi routes music through the 'phone (or tablet). Turn the phone off and the music stops, unlike the Naim and most other streamers where digital audio is delivered direct by wired ethernet, the phone only acting as a control device; turn the phone off and the music continues.

Because of this unusual way of working Play-Fi performance is affected by data rate and transmission conditions through the phone and its wi-fi link, a source of both complexity and variability. Suddenly, both phone and the internet router's wi-fi link become an issue and, indeed, Audiolab still feel this is an issue, asking us to use an Android phone instead of an iPhone! But if performance is phone dependent – which it may be – then the system has problems.

Bringing me to the second main issue: listening modes. Play-Fi has two, standard mode that runs by default and Critical Listening mode that must

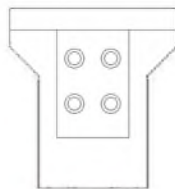
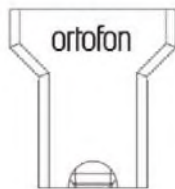


MODERN CLASSICS

Since 1948 Ortofon have introduced nearly 100 different moving coil pick-up cartridges to the hi-fi market. This proud heritage shines brightly in our 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.

Quintet cartridge design



Quintet Black S
May 2014



Quintet Blue
December 2014



Quintet Black S
July 2017



Quintet Blue
July 2019

be selected when establishing a zone. But why are two modes needed? Standard mode, as I'll call it, gives slightly lower than CD quality (95dB dynamic range) but with it the app is fast and responsive. Also it plays all files. With an iPhone 6S Plus sited within 6ft of router and Audiolab 6000N, Play-Fi in standard mode streamed all files from our Melco N10/100 server, including 24/192 test files. Its response to play commands was acceptably fast. No problems then, but not hi-res quality.

With Critical Listening mode, for top quality (118dB dynamic range), all this changed. CD files and 24/48 hi-res files played, most 24/96 music files played but with some hesitance – I had to repeatedly select and wait for play to start. When the files ran, however, they gave full hi-res sound quality, measurement showed. Some 24/96 test files, those with high data rate (white noise), all but refused to play and 24/192 files would not play at all. So Critical Listening mode works up to 24/96, but only just. This appears to be phone/wi-fi critical. Audiolab tell us they can play 24/192 in Critical Mode, using a Samsung phone. We could not.

Play-Fi is not a system optimised for hi-res audio. In standard mode it plays everything; in Critical listening mode it will play hi-res – but with hesitation. When it does play, you do get fine sound. In standard mode you get quality slightly below that of CD.

SOUND QUALITY

For this re-test the 6000N was connected into our network, playing files from a Melco N10/100 server. Chord Company Epic cables delivered its output to a Creek Evolution 100A amplifier driving our reference Martin Logan ESL-X hybrid electrostatic loudspeakers. Loudspeaker cables were Chord Company Signature Reference and mains power delivered by an Isotek Evo 3 Mosaic Genesis re-generator to eliminate influence of mains distortion (3% in London).

In this set-up Audiolab's 6000N in Critical Listening mode very obviously delivered the smooth and deep sound that ESS Sabre32 series DACs are known for. There was a sense of background silence that brought focus to Mercedes Sosa singing Misa Criolla, the choir laid out behind in deep space (CD). With rougher Rock, like Tom Petty's Refugee (24/96), the 6000N projected both the power and pace

of the track whilst keeping the edginess at bay – another classic property of ESS Sabre32 DACs. It made for an enjoyable listen. Running through a selection of uncompressed CD tracks and hi-res the 6000N showed it was indeed capable of delivering true hi-res. sound quality, within our preened set-up.

What it offers in more general conditions is less easy to pin down and standard listening mode reins performance back to slightly less than CD quality.

CONCLUSION

Audiolab's 6000N is based on the DTS Play-fi app that offers access to a wide variety of internet music streaming services such as Spotify, Tidal and Qobuz. It can also access music libraries on a network attached storage (NAS) drive, PC (Windows) based DNLA server or iPhone/Android phone/player.

Running from our Melco N10/100 network drive it delivered fine sound quality in Critical Listening mode, that's for sure. Standard mode was unimpressive.

The need to run all music

through the phone is a crucial limiting factor with Play-Fi. In long discussions with Audiolab about this they tell me DTS are working on a Play-Fi system that avoids sending music through the phone, so at this point the 6000N is a streamer that best works with external commercial music providers, revealing the quality of their files through its on-board ESS ES9018K2M DAC – impressive for the price.

The 6000N will also give ESS quality from CD and 24/48 files you might have on a NAS drive. With 24/96 files your phone and its wi-fi link start to creep into the picture; in my case 24/96 files played but I struggled at times. Low data rate files (jazz) always played, intense Rock and high data rate test files were erratic.

Good value then, considering its very low price and top quality ESS ES9018K2M DAC, that will give fine sound quality from internet music providers. I see no problems here. It is only with a local music server (NAS drive), life with hi-res gets difficult I found – but Audiolab disagree. Time to ditch the iPhone and get a Samsung perhaps.

MEASURED PERFORMANCE

Frequency response of Audiolab 6000N reached 16kHz (-1dB) at all sample rates up to 192kHz using standard listening mode. This gives it a bandwidth slightly lower than that of CD (21kHz).

Set to Critical Listening mode it has a wider analogue bandwidth of 34kHz from a 24/96 server test file (shown here), but would not read a 24/192kHz test file – likely a sample rate limitation.

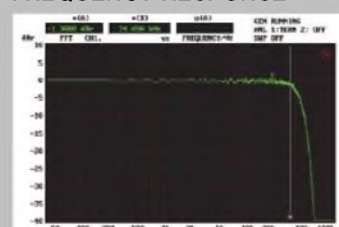
With a Melco N10/100 server system (and iPhone), in standard listening mode distortion measured a high 0.36%, infected by noise – unimpressive. In Critical Listening mode it fell to a very low 0.02% (shown here), as expected from an ESS Sabre32 DAC – impressive.

In standard mode EIAJ Dynamic Range was a low 95dB, In Critical Listening mode it rose to a very high 118dB, again as hoped for from an ESS DAC and up with the best DACs on the market.

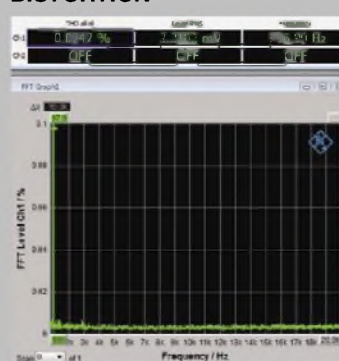
In standard mode the 6000N gives slightly worse than CD performance figures. Set to Critical Listening mode it was able to deliver a very high standard of performance from a wired ethernet server and iPhone, but would not play 192kHz sample rate files. **NK**

	Standard / Critical
Frequency response (24/96)	4Hz-16kHz / 34kHz
Distortion (-60dB)	0.36% / 0.02%
Separation	99dB
Dynamic range	95dB / 118dB
Noise	-93dB / -116B
Output	2.1V

FREQUENCY RESPONSE



DISTORTION



AUDIOLAB 6000N PLAY £449



EXCELLENT - extremely capable

VALUE - keenly priced

VERDICT

A lot of streamer for the money, and a good budget solution. But with problems.

FOR

- good sound from on-line servers
- good sound from CD
- good sound from 24/48

AGAINST

- 'phone dependent
- erratic in Critical Mode
- slow changing tracks in Critical mode

Audiolab
+44 (0) 1480 447700
www.audiolab.co.uk

vinyl section

contents

OCTOBER 2019

www.hi-fiworld.co.uk

PRO-JECT X1 80

Newly upgraded budget audiophile turntable. Noel Keywood spins vinyl.

AUDIO TECHNICA OC9X CARTRIDGES 84

Affordable moving coil cartridges with advanced styli, reviewed by Noel Keywood.

AUDIO TECHNICA TIPS 89

What lies behind Audio Technica's latest tip shapes. Noel Keywood explains.

AUDIOPHILE BOOK 93

Paul Rigby reads *Crossover the Edge*, by Alexandros Anesiadis.



news

PINK FLOYD

The 25th anniversary of 'The Division Bell' (the final LP created by the triumvirate of David Gilmour, Nick Mason and Richard Wright) has spawned a reissue on blue vinyl with the songs presented in full (as opposed to the earlier edited version), this time over two discs that sit within a gatefold sleeve. This edition uses the 2014 remaster.



MUSIC ON VINYL

An intriguing bunch from this prolific label includes ex-Fleetwood Mac man, Peter Green's 'Whatcha Gonna Do?' (1981). Capable but possibly lacking in the Green magic of old.

US-based punks, Wipers' 'Follow Blind' (1987) was not groundbreaking. Fine. Decent. OK. Nevertheless, this is a solid LP that fans will lap up.

A good entry point into his oeuvre, that's 'Back in Your Life' (1979) from Jonathan Richman and the Modern Lovers.

Also look out for 'Greatest Jamaican Beat' on orange vinyl featuring The Jamaicans, The Paragons and Phyllis Dillon.

DOLLAR BRAND

...or Abdullah Ibrahim and a new release, 'The Balance' (Gearbox; www.gearboxrecords.com).

The 84 year old piano artist is back with a smooth, laid back, cool, introspective, easy going, thoughtful account that offers more American jazz than the folk of his South African homeland this time. Playful with space and time, Abdullah Ibrahim is at one with his muse.



YES?

Not quite. John Davison is the lead singer and the rest form a 'Best of' of previous line-ups. Which is apt because this is a 4LP set called 'Yes 50 Live' (Rhino) that features Tony Kaye and Patrick Moraz as guests over thirteen tracks, highlighting the US tour during 2018. In its haphazard, splintered form, is Yes a functioning band any more? Debatable.

MODERN HARMONIC

Three from this US-based audiophile label (modernharmonic.com) includes two 1976 albums from the rocking girl group, The Runaways: 'Queens of Noise' and the band's self-titled LP.



The group were uncompromising, honest, in yer face and – at the time – shockingly open about sex and having a good time. Aggressive, the band pulled no punches. Neither of these albums were exactly roaring successes but that's only because radio programmers were scared out of their cardigans so didn't play their music. Innovative and ground-breaking.

Also look out for Eddy Senay's excellent second LP release, the laid-back funk instrumentals of 'Step by Step' (1972) with keyboardist/arranger Rudy Robinson and Funk Brothers percussionist Eddie "Bongo" Brown.





MUNSTER

On its Vampi imprint is Maxayn's 1972 self-titled R&B album originally released on Capricorn. A four-piece fronted by vocalist, Maxayn Lewis (a former Ikette, no less). A great live act, never broke commercially and cruelly forgotten. Well worth checking out.

Also look out for Os Seis Em Ponto, a 1964 self-titled LP of gentle bossa/jazz with a real hip-swinging groove kick.

Also, the Afro-Peruvian música criolla outing that spawned 'Peru Negro' in 1973. Infused with Flamenco, methinks.



BANDCAMP BEAUTIES

New from Dona Onete (donaonete.bandcamp.com) 'Rebujo' combines carimbós, cumbia, brega, samba, unlimited reserves of good-time, high energy vibes and her own vocal gravel.

Stubbleman's (aka Belgian, Pascal Gabriel) debut, 'Mountains and Plains' (stubbleman.bandcamp.com) is a LP of broad piano strokes, ambience, electronic tones, reverb tails, field recordings and space. Atmospheric and rather lovely.

Ebo Taylor's 'Palaver' (ebotaylor.bandcamp.com) sees the Ghanaian guitarist offering a slice of afro-funk, newly issued after being found on a dusty shelf from 1980. A great groove.



...AND FINALLY

On Leaf (www.theleaflabel.com) is Sarathy Korwar's 'More Arriving', a combination of Indian-language rap, jazz and funk. Offers a raw, tribal, urban but above all lyrical outing.

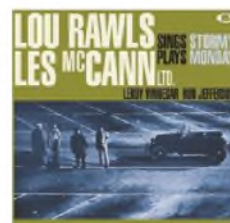
Morganway's (morganway.co.uk) self-titled folk rock album offers self-conscious, commercial power pop overtones and fudge-flavoured ballads that look to blast, chord by chord, into the charts in a Fleetwood Mac kinda way.

From Bear Family (www.bear-family.com) is Lou Rawls superb blues/jazz 1962 debut LP, accompanied by Les McCann's trio. 'Stormy Monday' is a storming release.

'Sigma' (thealarm.com) is eighties' rockers, The Alarm's life-affirming statement to positivity as both the lead singer and his wife recover from nasty cancer attacks. Despite being a bit too U2, at times, the album should be supported for its strength, determination and passion.

From Third Man (thirdmanrecords.com) is Jack White's The Raconteurs' 'Help Us Stranger'. A straight-ahead, crafted, old fashioned rock album that's full of great songs and musicianship.

Two from Peaceville (www.peaceville.com) includes doom metal artists, My Dying Bride's 'Towards The Sinister' is the band's initial muddy/grungy 1990 demo recording, over four tracks plus Cancer's 'Ballcutter', a new five-track EP of old and true, gore-festing, death metal. Unsettling.



SILVA SCREEN

Ahhh, the slim, super model-esque assassin in leathers, eh? A contrast in irony as an ex-killer's past catches up with her. Taken from the Cannes film sensation, 'The Villainess', this gatefold edition double album features the music of Ja Wan Koo featuring Korean folk flavours with modern deep bass, punchy percussion and mood. Lots of mood. There's Vangelis in there.



X1 Excellence

Pro-Ject's latest X1 budget turntable package will appeal to enthusiasts thinks Noel Keywood.



The Pro-Ject X1 turntable package I'm reviewing here is over twenty years old Pro-Ject say, but has been continually updated. Some parts show their age, yet under the skin this budget turntable package has become surprisingly sophisticated, approaching Direct Drive, as I'll explain later. With the X1 in latest form, as tested here, you get turntable, arm and cartridge for £699 all-in, but no phono stage.

This is basically a two-speed turntable, 33 and 45rpm, with an unusual 78rpm option that needs a

belt change – so for occasional use. Pro-Ject (Austria) largely make their own parts, including the carbon fibre/aluminium arm of the X1 – no Rega here – and the solid MDF plinth with hinged acrylic dust cover. Ours had a gloss black finish and felt sturdy, weighing 7kgs.

Lacking a suspension system the X1 needs a strong shelf or such like for support, dimensions of 415mm wide and 355mm deep meaning a deep shelf too – as always with turntables since the platter alone is 12in deep. Although 125mm high with lid closed, with it open 40cm clearance is needed, within a shelving system for example. The lid moves on friction hinges without counter-balance, unlike slicker mechanisms found in Thorens and Audio Technica turntables. Pro-Ject say acrylic dust covers add colouration and are best removed, in justification. There are three height adjustable feet to ensure the unit sits level.

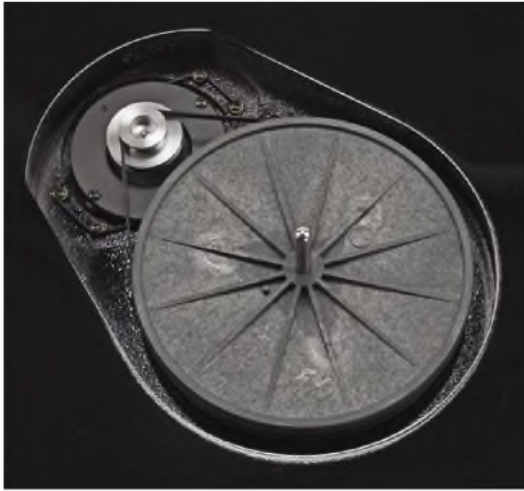
Mains power comes from an external wall-wart supply that delivers 15V (800mA) through a slim lead 1 metre long; the turntable has no mains earth so hum from a potential earth loop is eliminated

– a common and effective solution to this issue with turntables.

The 15V switch-mode supply feeds an internal electronic motor control board that brings benefits. Choosing 33rpm or 45rpm is made easy by two small push buttons on the plinth, each accompanied by a blue LED that winks until speed lock – simple and quick. If you want 78rpm the platter must be lifted off and another (supplied) belt used on a larger pulley diameter – not so easy.

But 78rpm is a side issue: electronic motor control can offer rock solid speed stability with 33s and 45s – and it does here. Measurement showed the X1 held speed with Direct Drive precision – good going for an old design, except that beneath the skin it is not now an old design, Pro-Ject having installed a modern precision motor and control board. Instead of the watery tone stability of belt drive, caused by speed wander, the X1 holds speed with a precision few belt drive turntables can match.

This demands a finely machined main bearing without play and precession. Here Pro-Ject use a stainless steel shaft in a phosphor bronze sleeve, machined so close



The platter support hub with flat ground belt threaded around the motor pulley. Rather than stretch the belt to fit the large 78rpm diameter Pro-Ject supply a longer belt.

the platter takes time to sink into the bearing. A flat, precision-ground rubber belt and concentric hub contribute to this turntable's unusual speed stability.

The sound of a turntable – its 'colour' – is affected by the platter and here Pro-Ject employ a clear acrylic platter 20mm thick and 1.5kgs in weight, covered by a thin felt mat. Of all the platter materials, acrylic gives the best sound in my experience – neutral in that it lacks the zing of metal platters but has more depth, complementing the sound of a vinyl disc.

The arm is constructed from carbon fibre and aluminium, looks good but is where the XI is less impressive. It's one-piece – no removable head shell. The finger

lift is flat – not curved upward to fit over a finger – and it slid out of my grasp. I prefer to manually cue an arm rather than use a lift/lower mechanism and here I found the Pro-Ject arm difficult.

The arm's bias mechanism comprises a weight on a thread, passing over a stiff wire support loop – and getting this set up was a rigmarole of adjustment to ensure it all worked properly; I had to loosen the cross-head screw clamping the wire and fiddle it into position. Arms today have easier bias adjustment mechanisms; the arm shows its age here. The arm cradle isn't so slick either, moving on its carrier in our review sample.

Down force is applied by a calibrated counterweight; arm height is adjustable to alter vertical tracking angle (VTA) and there is even azimuth adjustment to ensure a cartridge sits upright – fine tuning options that appeal to enthusiasts.

The Pick IT S2 cartridge fitted is a basic moving magnet (MM) type from Ortofon from their 2M series, likely a variant of the 2M Silver, with

elliptical stylus and quoted 1.8gm tracking force. At this downforce though, tracking was mediocre, the low 50µm band of Clearaudio's tracking test disc just being cleared. Budget MMs like Audio Technica's VM95 series manage better nowadays.

Being a specialist design aimed at enthusiasts, the XI requires a lot of fiddly set-up. But once done it is reasonably easy to use, silent in operation and hum free, if not slick to use.



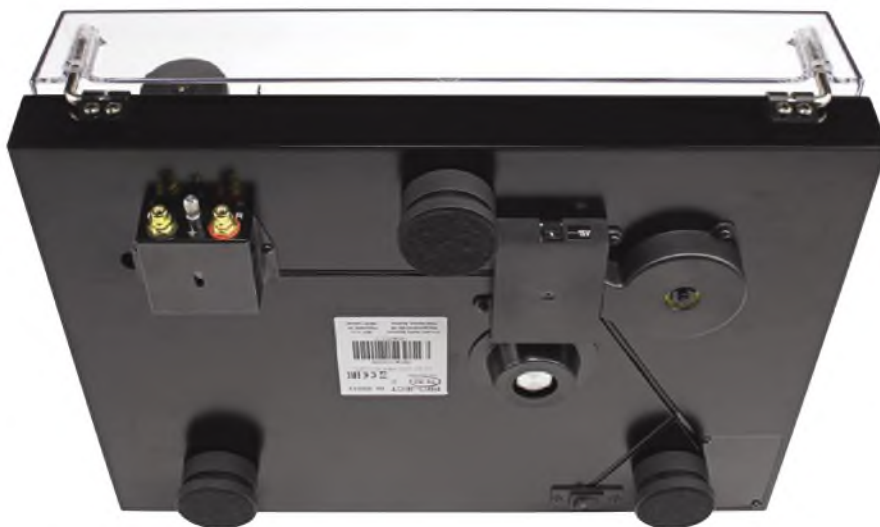
The anti-skate bias system uses a traditional weight-on-thread mechanism. The wire support arm requires careful user adjustment.

SOUND QUALITY

The XI was connected to our Icon Audio PS3 Mk2 phono stage with volume control, feeding a Creek Evolution 100A amplifier's direct input (no volume control). Chord Company Signature Reference loudspeaker cables linked the Creek to our Martin Logan ESL-X hybrid electrostatic loudspeakers. I also used an Isotek Evo 3 Mosaic Genesis regenerated mains supply.

Much as expected from measurement the XI had a forward, revealing and explicit sound – think tight timing and fast leading edges to drums and percussion, making for a focussed and pacy presentation. What it did not have was vinyl warmth, nor any sense of being laconic. Eleanor McEvoy singing *Did I Hurt You*, from *Yola* (180gm vinyl), was forward on the sound stage, sibilants being emphasised to hiss at me. It was a revealing performance if dry in nature.

I got a good handle on timing, propulsion and general low end ability with Dire Straits *So Far Away* (Mobile Fidelity, 180gm,



Rear dust cover friction hinges, three height adjustable feet, motor with control board and, at left here, gold plated phono socket outputs, with earth terminal. An external power supply delivers 15V d.c. in.

The Pro-Ject Pick IT S2 MM cartridge fitted, based on Ortofon's 2M series. Also shown are the flat headshell, lacking strengthening ribs, and flat finger lift.

45rpm remaster) where the bass line was deliciously grippy and clear. Again the X1 was dry and tight at low frequencies but it had assured – even relentless – pace. Plenty of enjoyment here for vinylistas who like their Rock.

Our Fleetwood Mac Rumours re-master is not the greatest slab of 180gm vinyl – most digital versions sound better – and here the budget cartridge of the X1 made Rumours sound a little harsh and raucous by emphasising its problems, something a softer sounding classically warm MM cartridge would not do.

At this point, after many LPs, I removed the stylus assembly, plugging in the stylus of our Ortofon 2M Black with its Shibata tip. This pulled the sound stage back, lessened the glare and introduced

more textural density and insight, instruments taking on richer form with greater fine detailing.

Conclusion here is that the X1 cartridge stylus is best replaced to hear what the rest of the package is capable of, since the cartridge body will physically accept Ortofon 2M stylus assemblies ranging from Red to Black. However, Ortofon say their OEM Silver cartridge – which the Pick IT S2 appears to be – is only interchangeable with Red and Blue styli, so this is the apparent limit without a cartridge upgrade. I tried to remove the cartridge completely but the tiny connectors were so tight the first broke – I had to abandon this idea. Fitting a better cartridge proved beyond me with the X1.

CONCLUSION

Pro-Ject's X1 turntable package was a mixed bag. The plinth, platter and motor drive were superb. The fitted arm less impressive. The cartridge has an upfront presentation that is not vinyl-like but may appeal to those who want a sound close to that of CD. A cartridge upgrade would work wonders I feel, injecting some vinyl warmth and less challenging delivery from imperfect LPs.



Speed selection buttons, 33rpm and 45rpm, plus blue speed lock LEDs.

MEASURED PERFORMANCE

The 3150Hz test record tone of DIN 45 452 varied from 3146Hz to 3148Hz over a three day run in – impressive. Such low variation in basic speed translates into low Wow & Flutter figures, the X1 getting close to Direct Drive with 0.06% W&F total (weighted). Its electronically controlled motor, flat precision ground belt and excellent main bearing with little play (and precession) resulted in unusually low measured speed instability.

The arm has a pronounced main bending mode at 225Hz, analysis with a Bruel&Kjaer accelerometer attached to the headshell showed. This was even visible as a blip in cartridge frequency response. Above this resonances were small and narrow, containing little energy. The arm is lively and will have some colour.

Pro-Ject's Pick IT S2 MM cartridge had strongly rising output at high frequencies, measuring +2dB at 10kHz, and will sound bright as a result. Traditional MMs are -2dB at 10kHz

(why they sound warm) so the X1 will give a different presentation, with more detail but a sharp sound. Tracking on Clearaudio's tracking test disc was mediocre at 1.8gms downforce, with 50µm the limit, where 70µm is possible for a budget MM. Sufficient for most LPs – but hot cuts may buzz.

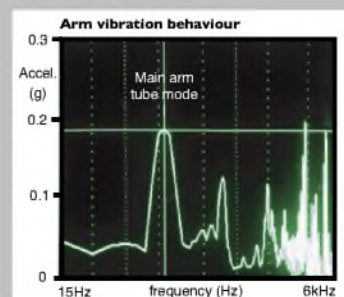
Speed stability was excellent, the arm and cartridge both had measurable limitations. **NK**

Speed error	-0.1%
Wow	0.08%
Flutter	0.04%
Wow & Flutter (DIN wtd)	0.06%

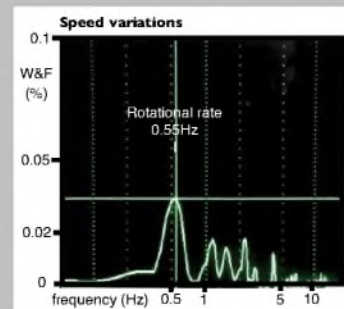
Pick IT S2 MM CARTRIDGE



ARM VIBRATION



SPEED STABILITY (W&F)



PRO-JECT X1 £699



EXCELLENT - extremely capable

VALUE - keenly priced

VERDICT

A fine turntable compromised by a mediocre arm and cartridge.

FOR

- tweakable
- speed stability
- no hum

AGAINST

- difficult to set up and use
- mediocre arm
- bright cartridge

Henley Audio
+44 (0)1235 511166
www.henleyaudio.co.uk

X Factor

Audio Technica's latest OC9X series moving coil cartridges, reviewed by Noel Keywood.

Audio Technica's AT-OC9 moving coil cartridge has been with us since 1987, during which time it has gone through a variety of improvements to stay competitive. This budget flagship has always been popular, but it recently got an upgrade in line with the company's new policy of providing stylus choice. The three newly announced OC9X series models I'm reviewing here – suffixed ML, SH and SL – range in price from £480 to £660. It's hardly a king's ransom

nowadays for a quality moving coil (MC) cartridge where good ones like the Ortofon Cadenza Bronze we use cost over £1000.

The outgoing OC9 III had a boron rod cantilever and Super Line contact stylus – an advanced spec for a cartridge priced at £480. But Audio Technica have been comprehensively re-working its large range of pickup cartridges; I reviewed the new VM700 moving magnet (MM) series in our December 2017 issue and the VM95 (budget MM) series in our January 2019 issue – and both

ranges delivered superb results.

Now it is the turn of the moving coils (MC) to receive stylus attention. In the new OC9X series you can get an OC9X EB with bonded (on a rondel) elliptical stylus and aluminium cantilever for just £280 – they start cheap. Above it lies the EN (£300) with nude elliptical stylus on aluminium cantilever that, because it lacks a rondel, tracks high frequencies better but is less resistant to dust and fluff on the LP surface.

Then come the trio I am



reviewing here, comprising the OC9X ML (£480) with MicroLinear stylus on a boron rod cantilever that, it appears, replaces the outgoing OC9 III. It has a red body.

Above the ML comes the OC9X SH (£570) with Shibata profile stylus and brown body. This profile was developed long ago (1970s) for CD-4, a system providing surround-sound from LP. The stylus had to read a sub-carrier at 30kHz with sidebands to 45kHz – quite a feat. It required multiple grinds to achieve the right shape, using a mechanical grinding process. Inevitably, this made a Shibata stylus more expensive and when CD-4 faded away with the arrival of CD it went too, only to be revived recently as demand for premium LP replay emerged.

Nowadays laser forming has come onto the scene, enabling new tip profiles to be created that were impossible with mechanical grinding processes. Enter the premium OC9X SL (£660) with Special Line contact stylus on boron rod

"rim shots from the drum kit whistled through the room like bullets"

cantilever; the SL has a black body.

I believe I am right in saying Ortofon use a similar process with their top tips but both companies are tight lipped about it. These are advanced techniques that they'd rather not reveal – or even hint at it seems.

That explains the basic thinking behind these tips, which otherwise is a little baffling. How do you choose between five different but similar models, based upon stylus profile? What benefit does each profile offer? Best I explain straight away rather than leave it to later.

A groove is cut by a chisel shaped cutter and should ideally be traced by a tip with similar profile. A conical diamond is simple to grind and cheap, but doesn't read the groove wiggles well. Grinding two faces makes for an elliptical shape that fits better, giving less diffuse sounding treble. Grinding more extensively gives MicroLinear, where the line of contact is long and narrow, for better focus. Shibata brings not only that sense of focus but more inner detail, especially

on inner grooves. And finally the new breed of laser cut tips, including Audio Technica's Special Line profile, sound even more focussed and intense in treble detail.

Tip shape affects mainly high treble insight and focus, and the amount of detail retrieved. It doesn't affect bass quality, nor a cartridge's 'colour' that comes from cantilever material and shape, or clarity that is affected by the generator. So you could – perhaps should – shrug your shoulders here and say "why bother?".

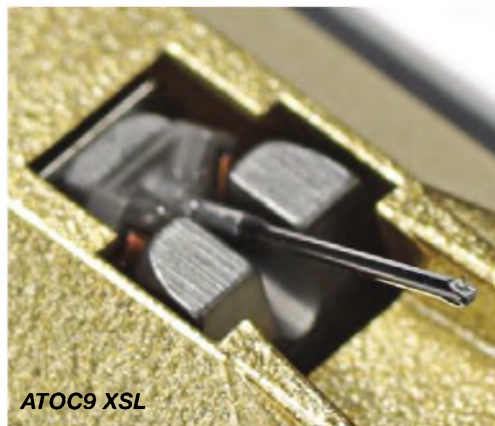
I find long-contact shapes like Audio Technica's MicroLinear pretty good – and suspect good enough for most. But then again after long listening through the highly revealing XStat electrostatic panels of our

Martin Logan ESL-X loudspeakers there's no doubt that Shibata and Special Line contact profiles are better, but you need a keen ear plus an appreciation of what they bring. Think less blurred violins, more insight into cymbals and triangles and a richer tapestry of fine detail.

That is to explain what lies behind the different stylus



A range of M2.6 screws are supplied; they are gold plated and fit tapped holes in the body. Nuts are not needed.



Our close-up shot shows the rectangular shank of Audio Technica's Super Line (SL) contact tip, and also the black boron rod cantilever.

shapes – but there's much more to Audio Technica's new OC9X series cartridges of course. All have aluminium bodies for light weight and strength. And for ease of fitting all three have M2.6 tapped and open-ended screw holes in the body, so even long screws can be used. Screws supplied are 5mm, 8mm, 10mm and 12mm long (gold plated), plus two washers to avoid headshell graunch marks. That covers all headshell thicknesses – and fitting is easy with this arrangement – no nuts to fiddle with and search for on the floor when they go walkabout. Which they will do since they have a mind of their own.

Weight of 7.6gms suits all arms – no problems with arm balancing or compatibility. The connecting pins are colour coded and I connected up all three easily enough.

There is always a snag somewhere and here it was with Audio Technica's packaging. Removing cartridge with protective cover from tight foam packing was difficult – near impossible – without threatening the delicate stylus assembly. I gingerly eased each one out with a jeweller's screwdriver, knowing how easy/expensive it is to destroy an MC. Not done it yet – but suffer the nightmares! The OC9X units are a dealer fit unless you are supremely confident about your ability to handle them.

Where the inexpensive EB and EN suffixed OC9X units have an aluminium tube cantilever, the trio here have a stiff but light boron rod. Together with small styli and compliant damped hinge



they tracked with supreme ability measurement showed; mistracking is not an issue. Recommended tracking force is 2gms, with a quoted range of 1.8gms-2.2gms. The small signal coils are 12 Ohms and suit the conventional load for MCs of 100 Ohms in an accompanying preamplifier, so again no compatibility issues. Output is low but not very low – suitable for modern low noise MC phono stages.

SOUND QUALITY

The three cartridges were fitted in turn to an SME 309 arm in a Timestep Evo modified Technics SL-1210 Mk2 turntable feeding an Icon Audio PS3 Mk2 valve phono stage with MC input transformers for ultra-low noise. It fed a Creek Evolution 100A transistor amplifier, afterward an Icon Audio Stereo 30SE single-ended valve amplifier, driving Martin Logan ESL-X hybrid electrostatic loudspeakers



Audio Technica's diagram of the MicroLinear stylus, illustrating its profile with long edge contact.

Ortofon's Cadenza Bronze (£1300) with its deep sound stage and rock solid bass.

The SL came across much as expected, having tremendous transient speed and a wealth of filigree detail from the stylus. These

assault! Impressive the Direct Cut certainly was with trumpets blaring vividly and rim shots from the drum kit whistling through the room like bullets. Whoa! Audio Technica's SL stylus is like this, providing intense insight, with pin sharp focus to stereo images. However, the OC9X retains its dry composure and forward midband projection, characteristics of the outgoing OC9 III, on top of which the SL stylus adds turbocharged speed and detail delivery. To which I wave a white flag.

Fitting the SH Shibata brought a sound that better suits me. With this tip the sound fleshed out and became more balanced. Yet there was still tremendous focus, with crisp images. Neil Young's After the Goldrush – the track from our re-mastered LP – put his bare solo vocal right out into the room in vivid form, yet there was more body and balance here than with the SL. I heard the same with Hugh Masekela's Uptownship, from Analogue Productions (180gm), his trumpet having a little less blare but more body.

Moving to the least expensive ML after the SL and SH was a little



Audio Technica's diagram of the 1970s Shibata (SH) stylus, illustrating its profile with multiple face grinds. Use this for CD-4 LPs!

through Chord Company Signature Reference cables. The system was mains powered by an Isotek Evo3 Mosaic Genesis regenerated supply to eliminate the influence of local (London) mains distortion.

I've heard the differences between Audio Technica's styli before, when reviewing their VM700 and VM95 series moving magnets, so knew what to expect. And the outgoing OC9 in its many forms over the years has always been impressive: think an even sound with clean bass and very detailed treble, technically correct if not beguiling. At the price though – unarguably good and popular as a result.

I started at the top with the OC9X SL, in my mind wanting to see if I was then worried by the lesser SH and ML. My go-to benchmark for moving coil sound is



tips are a lot to take – and with In The Mood, from the Syd Lawrence Orchestra (Chasing the Dragon audiophile LPs) I preferred the softer sounding 30ips master tape to the Direct Cut LP, just to lessen the



Audio Technica's diagram of the Super Line (SL) contact stylus, that is formed with a laser for complex geometry.



disappointing. At the top end the sound became warmer and a tad diffuse. My attention drawn away from the treble I started to pick up on bass lines and here the OC9X is dry, composed but not forward. Spinning bass heavy 12in 45rpm disco singles like Billy Ocean's Get Outta my Dreams, Get into my Car (superb video on YouTube!) showed fine temporal definition but the driving bass was not fulsome.

It was Marianne Thorsen playing Mozart violin concertos on our 180gm LP from 2L of Norway that proved the clincher. With the lowest cost ML stylus there was some diffusion in the sound of the Trondheim soloists' violins; with the SH they came into sharp focus and sounded full bodied; with the SL there was greater insight but a degree of high-end emphasis I found distractional.

I started out with our Creek Evolution 100A amplifier as a solid-state benchmark with clean, smooth sound, good dimensionality and strong bass, feeling this would suit the OC9. But stage depth seemed

curtailed so I switched to our Icon Audio Stereo 30SE valve amplifier to tease out a little more in this area. All three cartridges were vividly clear and projectional, evenly balanced as well – but lacking the walk around stage depth of more expensive MCs.

The boron cantilever, like that of our Ortofon A95, is fast and analytical but a bit hard of tone even with our single-ended Stereo 30SE valve amplifier. Boron cantilevers have a surgical quality that I find unattractive. For speed ruby/sapphire and vapour deposited diamond are better – but then the OC9X series are relatively inexpensive as moving coils go, and not in this territory.

CONCLUSION

Like the outgoing OC9 III, Audio Technica's new OC9X range of moving coil cartridges in the form of the boron cantilevered ML, SH and SL deliver moving coil levels of clarity and resolution. Of the three



Rear gold plated signal pins are colour coded: red (+) and green (-) Right channel; white (+) and blue (-) Left channel.

the Shibata tipped SH would be my choice, if I was forced to pick one.

All deliver a fast, tight sound with dry bass, tremendous midrange clarity and a sense of image focus (SH and SL) difficult to better elsewhere, if with good but not exceptional stage depth. At the price though the SH in particular is a hard act to beat.

MEASURED PERFORMANCE

The AT-OC9X ML (red), SH (brown) and SL (black) – ascending price order – were very similar, surprisingly even in what their three differing stylus shapes achieved in terms of frequency response. With JVC TRS-1007 – an industry standard test disc – all measured ruler flat from 20Hz to 8kHz before a slight +2dB plateau lift above this frequency to 20kHz. That makes the OC9X tonally accurate to digital standards over most of the audio band, with a small lift to balance the progressive loss that comes from usage and wear. Of the three styli, the most expensive SL was clearly smoother in its output than ML or SH so its Special Line contact tip does better retrieve high frequency information.

There was little loss on inner grooves (short mechanical wavelengths) with all three styli flat to 16kHz – impressive. There will be no change in tonal balance on inner grooves as a result.

Tracking was superb, all stable in the top 90µm cut of CBS STR-112 test disc (300Hz) where compliance matters, and all also stable in the top torture track of B&K QR2010 test disc few cartridges manage – and where tip mass matters.

Channel separation averaged out at 30dB and output averaged out at 0.44mV (3.54cms/sec), both reasonable figures. Output is not high but sufficient for

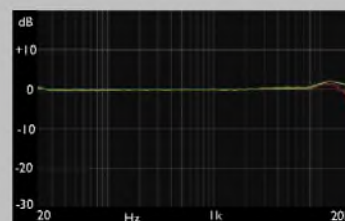
modern MC phono stages.

Audio Technica have made obvious effort to get vertical tracking angle (VTA) right, in order to minimise distortion. The ideal is 22degrees and this was the figure achieved with DIN 45 542 test disc. Overall, distortion was low as a result, measuring 0.9% from the least expensive ML to 1.6% from the most expensive SL. That puts the average at a low 1.3%, making the AT-OC9X series a low distortion design.

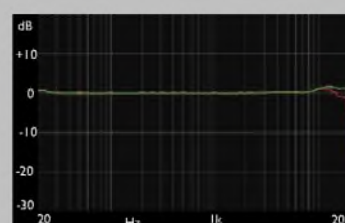
The new OC9X MC cartridges from Audio Technica have been tightly engineered to be consistent; measurement shows little variation between them compared to AT's MM cartridges. At an absolute level they all offer superb performance in measured terms – in keeping with top MC quality. **NK**

Tracking force	2gms
Weight	7.6gms
Vertical tracking angle	22degrees
Frequency response	20Hz-20kHz
Channel separation	30dB
Tracking ability (300Hz)	
lateral	90µm
vertical	45µm
lateral (1kHz)	25cms/sec.
Distortion (45µm)	
lateral	0.8%
vertical	1.8%
Output (3.45cms/sec rms)	0.45mV

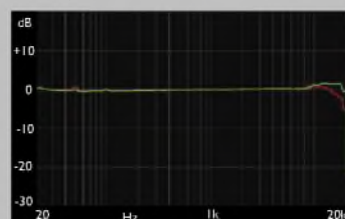
AT-OC9X ML FREQUENCY RESPONSE



AT-OC9X SH FREQUENCY RESPONSE



AT-OC9X SL FREQUENCY RESPONSE



AUDIO TECHNICA AT OC9X SERIES.



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Highly revealing and with tremendous focus, if dry in tonal balance.

FOR

- clean, open sound
- easy to fit
- superb tracking

AGAINST

- limited stage depth
- packaging

Audio-Technica Ltd (UK)
+44 (0) 113 277 1441
<https://eu.audio-technica.com>

Dial A Dealer Directory

directory of Hi-Fi Dealers
throughout the UK and Ireland.

divine audio

AnalogueWorks
Creek Audio
Croft Acoustics
Graham Audio
Jelco Tonearms
Neat Acoustics
Omega Loudspeakers
Rogue Audio
Supra Cables

www.divineaudio.co.uk
07918 728860 tim@divineaudio.co.uk

Refreshingly different



01865 790 879
www.oxfordaudio.co.uk

Cantay House, Park End Street, Oxford, OX1 1JD

9 High Street, Hampton Wick,
Kingston upon Thames, Surrey KT1 4DA

Open: Tuesday - Saturday 10am - 6pm

0208 943 3530

In/fidelity

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

iBasso Audio DX220



5.0 inch 1080P Sharp Full Screen/Dual
ES9028PRO/On Cell Touch Panel/Octa
Core CPU/Android 8.1 OS/MQA/
XMOS USB-DAC/Femtosecond
Oscillators/Quick Charge/Replaceable
AMP Card

Available to order from AMP3.

Hi-Fi World readers: 5% off the DX220

using voucher code

HIFIDX220 at amp3.co.uk

DESIGNED & HANDMADE IN SCOTLAND

Precision audio
engineering.

ATLAS
the performance connection
atlascables.com

TO ADVERTISE HERE
PLEASE CALL
JOANNA HOLMES ON
+44 (0) 7958 602347
OR EMAIL:
joanna@hi-fiworld.co.uk

Tip Talk

MicroLinear, Shibata or Special Line contact? Noel Keywood explains the differences.

Grinding diamonds to have a specific and complex tip shape to accurately trace a groove is fascinating. It is also becoming an issue with today's pickup cartridges, a differentiating factor Audio Technica has drawn attention to by re-aligning their cartridge ranges to assemble them in order of tip quality. I'll try to explain here, within the limitation set by Audio Technica who themselves who are also struggling with the issue, their info suggests!

First, the stylus tips of the three OC9X series cartridges reviewed in this issue: the MicroLinear tipped OC9X ML (£480), the Shibata tipped OC9X SH (£570) and at top the Super Line contact OC9X SL (£660).

Audio Technica say that MicroLine is their Trade Mark name

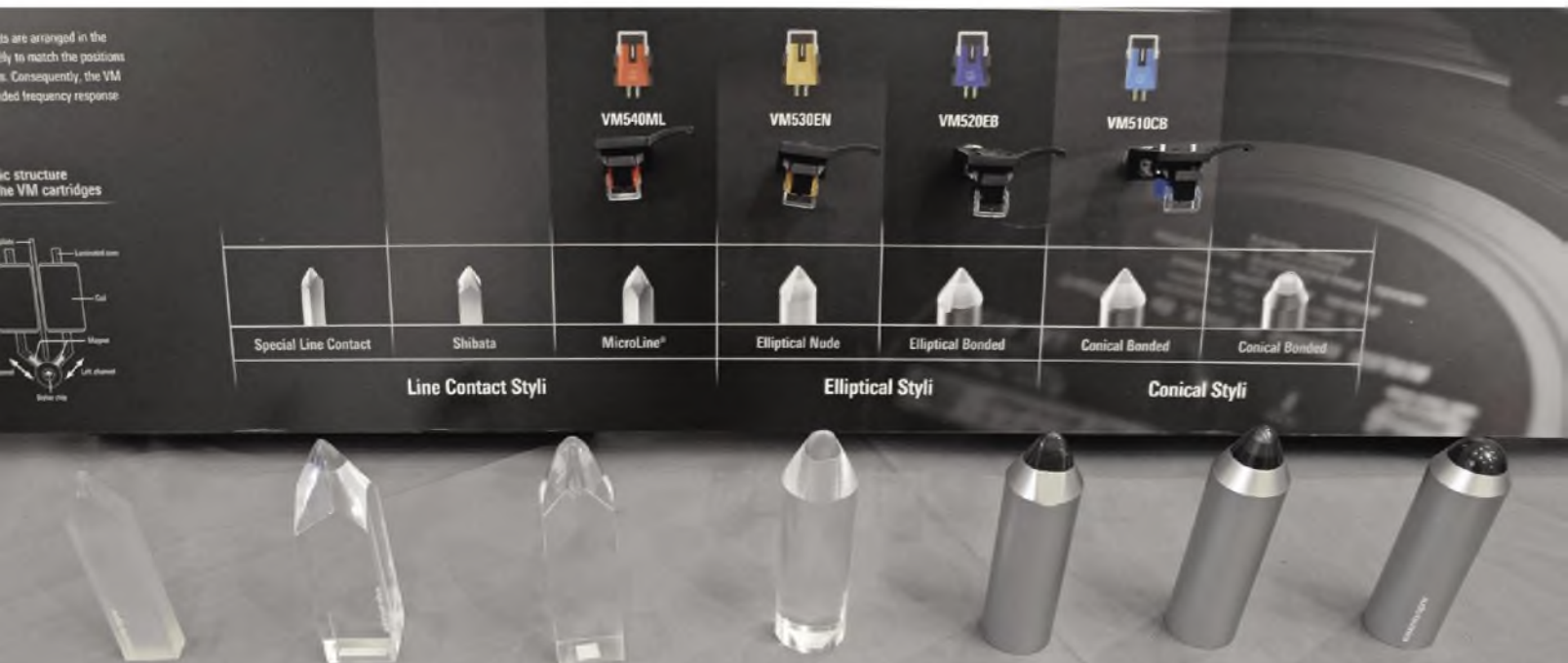
for a MicroLinear ridge-shaped long-contact stylus, a shape that was used in the earlier OC9 ML/II. Pricing suggests Audio Technica consider this stylus inferior to those of SH and SL models, since all other parts are identical.

Also, when the old OC9 ML/II was improved to the OC9 III it was given a Super Line contact stylus, this shape tops AT's charts. However, the head scratcher here is that according to Audio Technica's chart published in their 2017 on-line product catalogue (downloadable pdf) the MicroLinear stylus is technically the best, having the narrowest (0.12 mil) and longest contact face of all three shapes. That means it best traces high frequencies, especially on inner grooves of an LP. They also give it a very high D1/D2 ratio of 6, chart notes suggesting this is a crucial measure.

So why have they now decided it is inferior? My suspicion is a long line of contact may look good on paper but is impractical in real life, being too sensitive to groove modulation slant angle – an issue Benjamin Bauer of CBS Labs wrote about long ago, when LP was king. He explained that a lacquer was cut by a heated stylus and the resulting groove modulations sprang back to imprecise angle; cutting an LP lacquer is not a precise process. This would make the MicroLinear a poor general match to real-life LPs – that vary widely in modulation slant angle.

Although Audio Technica's diagramming shows ML as best, their figures and pricing show it as worst of the three stylus tip shapes in this range – see our caption explanation to the diagram. Their decision is likely based upon listening to real life LPs and customer feedback, rather

Audio Technica's display of tips, ground in clear acrylic, can be seen at shows.

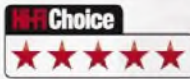


TITAN AUDIO

Paul Rigby



DEEPLY GROOVY
9/10



In association with:



www.titanaudio.co.uk

IAN HARRISON HI-FI SALE!

HIFI AT DISCOUNT PRICES. FREE NATIONWIDE DELIVERY
Email: ian.harrison@mercian.myzen.co.uk

SPECIAL OFFERS!! SALE! UP TO 40% OFF!!

CARTRIDGES UP TO 30% OFF PHONOSTAGES UP TO 25% OFF TURNTABLES & TONEARMS UP TO 25% OFF CABLES UP TO 40% OFF

VAN DEN HUL MC10S £775, ORTOFON CADENZA BLUE £950, ORTOFON QUINTET BLUE £299

TONEARMS	CARTRIDGES	PHONOSTAGES	TURNTABLES
AMG CARTRIDGE MAN GRAHAM HADCOCK HELIUS MICHELL MOERCH MOTH ORIGIN LIVE ORTOFON PRO-JECT REED ROKSAN SUMIKO	AIR TIGHT BENZ MICRO CARTRIDGE MAN DECCA LONDON EMT GOLDRING GRADO HANA IKEDA KOETSU MY SONIC NAGAOKA ORTOFON SOUNDSMITH TECHDAS VAN DEN HUL ZYX	EAR YOSHINO GRAHAM SLEE ICON AUDIO LEHMANN MUSICAL SURROUNDINGS PARASOUND PRO-JECT PURE SOUND QUAD ROTHWELL TOM EVANS TRICHORD WHEST AUDIO	ACOUSTIC SIGNATURE ACOUSTIC SOLID AMAZON AUDIO INSPIRE LUXMAN MICHELL MUSIC HALL PRO-JECT REED ROKSAN SRM TECH THORENS
HEADPHONE AMPS	SPEAKERS	CABLES	HIFI FURNITURE
CREEK FIDELITY AUDIO GRAHAM SLEE ICON AUDIO LEHMANN PRO-JECT SUGDEN	ACAPPELLA CABASSE EPOS HARBETH ICON AUDIO OPERA AUDIO O. ACOUSTICS QUAD TAYLOR ACOUSTICS	BLACK RHODIUM DXOS KUBALA-SOSNA PEERLESS PRO-JECT QED SUPRA TRANSPARENT WIREWORLD ZENSATI	ALPHASON ATACAMA CUSTOM DESIGN HI FI RACKS MUNARI MUSIC TOOLS NORSTONE QUADRASPIRE SOUNDSTYLE TRACK AUDIO
AMPLIFIERS	CD PLAYERS	RECORD CLEANING	HEADPHONES
CREEK EAR/YOSHINO ICON AUDIO QUAD SUGDEN TOM EVANS VALVET	CREEK EAR/YOSHINO ICON AUDIO QUAD SUGDEN	PROJECT MOTH WIRELESS BLUESOUND	AUDEZE BEYER ERGO GRADO SENNHEISER ULTRASONE

ACCESSORIES
DIGITAL STYLUS GAUGES, RECORD CLEANING MACHINES, CLEANERS, AUDIO CASSETTES

* 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 HIFI PRODUCTS & ACCESSORIES SINCE 1986 MAIL ORDER ONLY FROM: IAN HARRISON, 7 MILL HILL, REPTON, DERBY, DE65 6GQ.
TEL: 01283 702875. 9am - 9pm INCLUDING SUNDAYS.

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

Stylus sizes Stylus shape	0,6mil Conical	0,2 x 0,7mil Elliptical	0,3 x 0,7mil Elliptical	2,2 x 0,12mil MicroLine^a	2,7 x 0,26mil Shibata	1,5 x 0,28mil Special Line Contact
Stylus front view						
Stylus horizontal cross-section						
Audio-Technica moving coil cartridges				AT-OC9X ML AT-OC9ML/II	AT-OC9X SH	AT-OC9X SL AT-OC9/III
Dimensions (see horizontal cross section)	R=0,6mil	R=0,7mil r=0,2mil	R=0,7mil r=0,3mil	R=2,2mil r=0,12mil	R=2,7mil r=0,26mil	R=1,5mil r=0,28mil
Contact surface on record groove (stylus side view)						
Approximative contact dimensions ratio	D1/D2=1	D1/D2=1,85	D1/D2=1,60	D1/D2=2,25 8	D1/D2=3 3.6	D1/D2=6 4.2

AUDIO TECHNICA'S NOTES

(1) D2 represents the contact dimension at the horizontal plane while D1 shows the contact dimension at the vertical plane. These two dimensions indicate the contact area between the record groove walls and the stylus tip. D2 must be as small as possible to track small groove variations (high frequency). The total contact area should as large as possible to minimize record wear and maximize accurate reproduction. The larger the area, the smaller pressure from the cartridge on the record; as opposed to the smaller the area, the more pressure is applied on a specific point of the groove, leading to record wear.

We can see from the above table that the Line Contact and Micro linear shapes offers a smaller horizontal contact area leading to superior precision and high frequency transcription, while offering a larger contact area than conical and elliptical styli due to taller a vertical contact area minimizing record wear.

Above is Audio Technica's tip shape diagram (2017), repurposed to show the new OC9X line-contact shapes reviewed here. The quoted stylus dimensions in the diagram accord with those published for each cartridge but the D1/D2 ratios used to establish 'quality' are obviously wrong. Based on the diagram, the actual D1/D2 ratios calculated by us are in bold type at bottom.

than a theoretical view. The ML looks best and one of their product pdfs I have even puts it in top place – but AT have changed their mind it appears.

Sitting above the OC9X ML is the SH with Shibata stylus. This stylus shape has a long history and is of known ability, being able to trace up to 45kHz. Audio Technica's figures and diagrams don't look so good for the Shibata – of the three line contact tips in the new OC9X range it is the worst in terms of D1/D2! The Shibata is a profile devised in 1970s Japan by professor Shibata and this tip consistently gives very good sound in my experience in their VM95, VM700 and now OC9X ranges.

Top of the OC9X range is the SL with its Super Line contact stylus. This, according to Audio Technica's data has the widest contact radius of all (0.28mil), so is least able to read high frequencies, but measurement shows otherwise: in keeping with its price it was best able to read high frequencies. Another head scratcher!

In use the SL stands apart as a specialist tip for those that want to hear every little fine detail, projected strongly to be very apparent. Figures and diagrams apart it works very well, but is a bit extremist. It may sit lower in the groove, because of its smaller quoted major radius, reading info that other cartridges do not – hence the different sound.

Is it best to use a narrow edge tip without extended line contact, allowing it to cope with a wide range of modulation slant angles? This is the Shibata. According to Audio Technica's data the least expensive ML is better and the more expensive SL worse – a situation even they seem to be confused by. In my experience, across a wide range of modern LPs Shibata is the best – perhaps the best compromise.

Tip profile is a fascinating subject and looks to be getting more so as modern laser forming techniques bring in new shapes that allow LP to be traced more accurately. At an absolute level,

with the universally accepted JVC TRS-1007 test disc we use, there was little difference between Audio Technica's three tips in the new OC9X series of moving coils, our measurements show, yet there seems to be more to it. This is one test disc and LPs vary widely, so whilst it accurately shows what these cartridges are capable of, in real life they have to track LPs that are likely not similarly aligned in modulation slant angle.

To assemble the stylus data for the OC9X cartridges measured here I have used Audio Technica's 2017 model range stylus chart that shows their tip shapes and dimensions so you can see the differences – and confusions!

The complex tip shape needed to accurately trace an LP groove is an issue that's going to run as modern designs get ever more sophisticated yet have to deal with LPs old and new. Meanwhile Audio Technica's new tip shapes give users many options – and a bit to think about!

Enjoy the Music.com[®]

Reviews

News

Show Reports

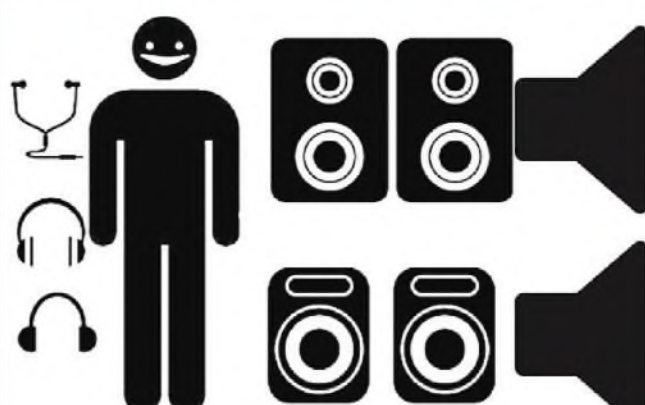
And More...



Single



In A Relationship



It's Complicated



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



Peak HiFi

DEMONSTRATIONS

Available by appointment 7 days a week

PART EXCHANGE WELCOME



Audio Desk Systeme • Black Rhodium • Dynavector • Exposure • Glanz • Hana • Koetsu • Martin Logan • Michell Engineering • Musical Fidelity
Neat Acoustics • Oracle Audio • Ortefon • PMC • Project Audio • Siltech • SMD Acoustics • SME • Stirling Broadcast • Sugden Audio • Unison Research

www.peakhifi.co.uk

Tel: 01226 761832

Mob: 07801 821791

sales@peakhifi.co.uk

Core knowledge

Paul Rigby reviews a book covering hardcore and much else.

CROSSOVER THE EDGE Where Hardcore, Punk and Metal Collide

Author: Alexandros Anesiadis

Publisher: Cherry Red Books

Price: £16.99

I've always been a big fan of the legendary and much missed BBC Radio 1 DJ, John Peel. I retain a wealth of old shows which I listen to on a regular basis. Much of my core music knowledge was derived from these shows. Partly because Peel introduced me to music I would never have normally sampled.

Peel was on air from the sixties to the Noughties which means that you can trace the changing face of popular and underground music as his show progressed. It's fascinating to hear trends emerging, morphing and disappearing as the Peel programmes unwound.

One of those trends occurred during the eighties when, after the flowering of punk and the dip of post punk and minimal synth, but around the same time of jangly guitar bands and when indie really was indie, there emerged a raucous, energetic, passionate and downright aggressive strain of music that somehow took over the punk torch while giving hard rock an injection of chaos. This was known by many names such as hardcore or speedcore or, as this book has it, crossover.

In my case, I was listening to Peel play the likes of Corrosion of Conformity, Crumbsuckers and Suicidal Tendencies. They – along with early rap recordings – provided a sort of sonic balance to the sometimes restrained, cultured and

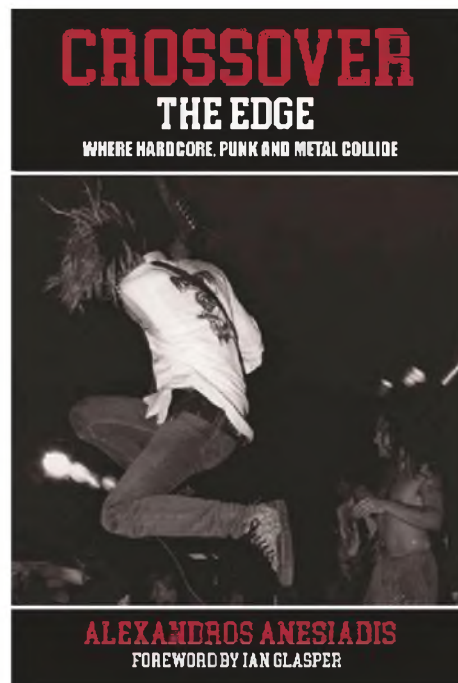
crafted indie and electro sounds emanating from the industry ether, at the time. Crossover was all about energy and emotion. This music was hard and fast and also featured bands such as Raw Power, Rumble Militia, Lobotomia, Overkill L.A., Mentors, Void and Amebix.

The 552 pages of closely typed text in this book packs in a swathe of information that, after a brief introduction and background, takes the music scene by location. That means the eastern side of the USA, then middle America, the west of the same, Canada, the UK and the rest of the world. Without each location section, the groups from the area are listed and feature one at a time. Hence, the structure of the book is formal yet easy to use and follow.

So let's take on example, Lethal Aggression. Band interviews reveal the member's background, how the group began and its first musical ventures, recordings, musical philosophies, career map, anecdotes from the same, plus an At a Glance section of recommended recordings. Rare band images, posters and flyers are included too.

What I like about the book is that the author also brings in bands that might not be strictly seen as crossover but fans of the same might find appealing.

A final mopping up chapter is also of great value on a country by country basis. Groups who may have



featured crossover-type tracks within their repertoire, bands who might have only ventured no further than a demo stage in terms of their stilted careers or others that possibly had an influence on the crossover genre as a whole.

In this tome, there is a determination to be thorough. The author really applies his passion to this book and never does things by halves. His dedication to the cause is both admirable and impressive. You even get a batch of lists right at the end of the book providing the Top 50 crossover records, top influential records and top demos. There's also an Afterword in which Anesiadis attempts to tie the entire scene together and make sense of it.

This book is evidence of dedication. It's a mighty piece of work. I take my hat off to Anesiadis for committing the time and the leg work in producing such a worthy book that will be seen as a serious reference work on the genre for many years to come.

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 NW10 5AP. Sorry, we cannot accept adverts over the telephone. The Publisher reserves the right to judge submissions.

TARGET TWO shelf turntable stand, £45. Audiophile magazines, 30 plus. Offers. JVC QL7, 1970's direct drive turntable, £500. Pioneer A503 amplifier, £65. DBX 224 tape disc decoder, £40. Tel: 01708 457 691

NAIM SUPERNAIT 2 amplifier. Naim CD5 XS CD player, Two Hi-Cap2 power supplies. Just over one year old. Plus Spondor A6R oak speakers. All excellent sound. Buyer collect. £4500. Tel: David 07779 418 096

MY ADDICTED collection of quality, fully restored vintage audio separates. Ring for a list. Pleased to demo and have constructive chats. Lots of well kept vinyl LP's too! Disabled, so hope buyers collect. Tel: Brian 01773 831 830 after mid-day. (Mid Derbyshire)

EAR 834L line pre-amp by Tim de Paravicini. Excellent and well looked after condition. £650 ono. Tel: 07505 057 414 or Email: zylandaroya@yahoo.com

WANTED:TOP quality Hi Fi seperates and complete systems, Naim, Linn, Cyrus, PMC, Audio Research etc, fast, friendly response and willing to travel/pay cash. Tel: 0781 5892458 or Email: pogsonp@aol.com

POWER INSPIRED mains regenerator. AG 1500 as enthusiastically reviewed by Noel Keywood, HFW September 2018. Boxed. £425. Tel: Mike 01244 319 265 or Email: m.blainl@btinternet.com

HI-FI CLEAROUT. Denon DVD 2900. Will not play CD's, plays DVD's ok. Marantz CD 63, temperamental, Sony tuner ST-SE500, Denon TU-260L, Toshiba ST-S33L, Marantz ST-48. £50 the lot. Tel: 07555 263 931

LINN LP12, Ittok LV2. Hercules. New Cirkus bearing with 'Majik' sub chassis and armboard. New motor, spare new unused belt. Fluted Afrosia plinth with lid. Collection only. £1850 ono. Tel: 01691 610 589

UPGRADED TECHNICS 1210 Mk2 Trichord Dino Plus external power supply Rega 250 tone-arm Deco Audio End stub/counterweight New Origin Live armboard Iconic lid £900 Tel: 07717454591 or Email: herefordturntables@gmail.com (Hereford)

KUZMA STABI and Stogi tonearm with VDH MC One special with out-board power supply unit. In mint condition very little use. Can demo . Collection only. £2400 ovno. New cost £4900. Tel: Andy 07724 197739.

LEAK TROUGHLINE and Hi-Fi world valve decoder set up by Tim de Paravicini less than a year ago, one of the finest tuners anywhere! £700. Tel: 07940 507215 or Email: rtodes@gmail.com

ISOTEK MULTI-WAY Gemini Orion mains distribution box 4 Plug outlets original box & manual Block as new, one owner only. Asking £120. Tel: John 01483472650 (Woking, Surrey)

CANADIAN GUTWIRE Synchrony 3 metre length speaker cables. Superb - totally new condition. £700. (Synchrony Interconnects available separately). Tel: 07787 574784 or Email: stephen.adolphus@gmail.com.

EPOS ELAN 30 cherrywood veneer floorstanding speakers excellent sound and condition £475, also Wharfedale Powercube gloss black SPC-10 subwoofer excellent condition £175. Tel: 01983249612 or Email: johnanddelicia@gmail.com

WHARFEDALE DENTON 80th Anniversary Speakers, Walnut. One year old, mint condition, with box and manual. £200. Buyer collects please. Tel: David on 01268774416. (South-East Essex.)

NAIM AUDIO Headline 2/NAPSC headphone amplifier/power supply in good working condition with RCA cable connections. No boxes with the odd small scratch (£700) £275. Audioquest Nighthawk headphones (£500) £240. Grado GS1000i (£995) £330. Sony MDR Z7 (£550), £240. All headphones in excellent condition and boxed in original packaging. Tel/text Richard (07772) 711432 or Email richard.schofield@kcl.ac.uk.

YAMAHA CD-S2100 and A-S2100 for sale Black beauties in excellent condition Remotes, manuals and original boxes £850 and £1100 separately, £1800 for both. Tel: 07811297322 or Email: geoffrey.wilton@gmail.com.

GARRARD 401 chassis, no plinth. In good condition all round and full working order. Prefer buyer to collect or arrange collection, but can post at cost if needed. £500 no offers / no timewasters / no paypal. Call 0207 499 8729 (Cams)

NEAT MOTIVE I loudspeakers Cherrywood. Excellent speakers, condition and sound bargain, Only £475! Tel: Evan 07957384795 (London)

CYRUS PRE X and PSX R power supply combo. Both superb condition, pretty much unmarked with instruction manual. Two Cyrus boxes included. Both from smoke and pet free house. Amazing sounding high quality pre-amplifier with added upgrade of the dedicated power supply unit. Sound is detailed, crisp and incredibly musical from this high end and highly regarded pre-amp. Reason for sale is due to a new DAC/PRE that I have purchased. Absolute bargain... £275. for the two. No offers and sorry but will not split. Could deliver within 25 miles of Staffordshire for nominal fee. Tel: Dave on 07884 430988 (North Staffs)

CEC PH53 Class A phono stage. In mint condition with balanced inputs. Boxed. £300. New £650. Tel: Andy 07731 621429.

PRE POWER Amps, mm/mc phono pre-amp, CD Valve Player, Head Phone Amp, Monitor Audio BX6 Speakers, Mitchell Gyrodec Audio Mods Arm Benz Ace m/c. Email: davidgoyns@gmail.com for more details

WANTED: ORIGINAL box and inserts. For a late model FM66. Does anyone in the Hi-Fi community have one available. For small price. Tel: Keith 07919061178 or Email: keijab@googlemail.com

CLASSIC AUDIO Research SP6A valve pre-amp (not hybrid) with added remote volume. £550 also Meridian rare black 101b pre, 104 tuner, 105 (2x mono amps each with power supply) so stacked 3 high in pairs £650. Southport 01704 628968 or 07968769595

MODDED LENCO GL75, Jelco tonearm and cable, asking £400, can send pictures. Grado RS1 headphones £375, TelluriumQ Black one metre interconnect £125, Meridian 504 FM tuner £250. Tel: Tim 01353665059

LIVING VOICE IBX-RW speakers in Santos rosewood finish. The speakers are in excellent condition welcome to demo them. Costs new £9000. On offer for £4000 ovno. Contact Andy on 07731 621429.

ATC SIA2-150 integrated amplifier for sale. Excellent condition. Less than 2 years old. All original packaging. £2,600 ono. Tel: 07976832413. Email: michaelkalinowski1805@yahoo.com (Enfield, London)

ROTHWELL AUDIO MCL Moving Coil Step-up Transformer. £320. Primare i30 Amp, black. Serial. 937627. £750. Tel: 0208 464 9055 or Email: billmilla@virginmedia.com

KEF 104aB Reference Series speakers with stands. Good condition. Collect only, Horsham area. £85. Tel: 01403 752787 or Email: j.s.johnson@btinternet.com

WANTED. BOXED with owners manual. Does any enthusiast have for sale a Nakamichi ST7E tuner. In chi With original box and manual. Fair price paid. Tel: Keith. 07919061178. keijab@googlemail.com.

AUDIOJUMBLE 2019. Next event: Sunday 6th October 2019. The Angel Leisure Centre, Tonbridge, Kent TN9 1SF www.audiojumble.co.uk

CLASSIC CONTACTS

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all these companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

GT AUDIO (Graham Tricker, Bucks) Classic tuners, radios and amplifiers restored, repaired. Tel: 01895 833099 Mob: 07960 962579 www.gtaudio.com

TECHNICAL AND GENERAL (East Sussex) Turntable parts - wide range of spares and accessories, plus arms and cartridges. Tel: 01892 654534

CARTRIDGE MAN (Len Gregory, London) Specialist cartridge re-tipping service and repairs. High quality special cartridges. Tel: 020 8688 6565 Email: thecartridgeman@talktalk.net www.thecartridgeman.com

Dr MARTIN BASTIN (Shropshire) Garrard 301/401 restoration, renovation and service. Special plinths; rumble cures, etc. Tel: 01584 823446

CLASSIC NAKAMICHI (Paul Wilkins, Worthing, West Sussex). Restore, Repair & Service Nakamichi Cassette Decks. Tel: 01903 695695 Email: paul@bowersandwilkins.co.uk www.bowersandwilkins.co.uk

ARKLESS ELECTRONICS (Northumberland) Specialist in repairs, restoration and modifications to all amplifiers, valve or solid state, ancient and modern. Tel.: 01670 530674 Email: info@arklesselectronics.com www.arklesselectronics.com

CLASSIQUE SOUNDS (Paul Greenfield, Leicester) ESL-57s restored, rebuilt, fully renovated or improved. Leak, Quad valves amps etc. Tel: 0845 123 5137/ Mob: 0116 2835821 Email: classique_sounds@yahoo.co.uk www.flashbacksales.co.uk/classique

ATV AUDIO (Henry Dulat, Surrey) Repairs, restorations and upgrades to valve and transistor amps and all analogue audio including Revox. Tel: 01372 456921 Mobile: 07730 134973

REVOX (Brian Reeves, Cheshire) Revox tape recorder spares, service and repair. Accessories also available. Tel: 0161 499 2349 Email: brian@revoxservice.co.uk www.revox.freeuk.com

ONE THING (Coventry) Specialist in electrostatic panel manufacture and repair. Can refurbish ESL 57s and 63s as well as Leak Troughlines and Quad IIs. Email: one.thing@ntlworld.com www.onethingaudio.com

EXPERT STYLUS COMPANY (Wyndham Hodgson, Surrey) Stylus replacement service for all types of cartridge. Including precise profiling for 78s. Tel 01372 276604 Email: w.hodgson@btclick.com

OCTAVE AUDIO WOODWORKING (Bristol) Unit 2, 16 Midland Street, St Phillips. Bristol. Tel: 0117 925 6015 www.octave-aw.co.uk

WEMBLEY LOUDSPEAKER (Paul MacCallam, London) Comprehensive loudspeaker servicing. Tel: 020 8 743 4567 Email: paul@wembleyloudspeaker.co.uk www.wembleyloudspeaker.com

LORICRAFT AUDIO (Terry O'Sullivan, Bucks) Garrard 301/401 and their own 501 repair, spares and service. Tel: 01488 72267 www.garrard501.com

QUAD ELECTROACOUSTICS (Cams) Quad's service department, able to repair almost all Quad products, from the very first. (Also Audiolab, Mission & Wharfedale). Tel: 0845 4580011 www.quad-hifi.co.uk

SOWTER TRANSFORMERS (Brian Sowter, Ipswich) Large range of audio transformers for valve amps, cartridges, line drive, interstage plus all associated services. Tel: 01473 252794 www.sowter.co.uk

LOCKWOOD AUDIO (London) Tannoy loudspeaker parts, restoration and repair. Also Epos and TDL loudspeakers. Tel: 020 8 864 8008 www.lockwoodaudio.co.uk

CONVERSION OF VINYL/78/DVD/LASERDISC AND CD COLLECTIONS TO DIGITAL FILES (Martin Pipe, Southend-On-Sea) Migrate music and film collections to today's servers and personal players. Tel: 07802 200660 tektalkuk@virginmedia.com www.tekttalk.co.uk

NEXT MONTH NOVEMBER 2019 ISSUE

CHORD ELECTRONICS HUEI PHONOSTAGE

Next month we have Chord Electronics' latest novel treat, the Huei phono stage. Not many phono stages boast a traditional “rumble” filter – but Huei has one marked plain and clear, in illuminated glory. Add in brightly illuminated, colour Gain and Impedance selectors – “polychromatic control spheres” – plus ability to match moving magnet (MM) or moving coil (MC) cartridges, this new ultra low noise phono stage looks intriguing. Will it match their claims? Don't miss our expert review with measurement in the forthcoming November 2019 issue.

Also, we hope to bring you –
PARASOUND P6 PRE AMP AND A23+ POWER AMP.
PIEGA PREMIUM WIRELESS 501 'SPEAKERS
NAD C658 DAC/PRE-AMP/BLUOS STREAMER
PSB ALPHA T20 LOUDSPEAKERS
NAIM MUSO 2ND GENERATION SYSTEM
...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 NOVEMBER 2019 ISSUE OF HI-FI WORLD ON SALE SEPTEMBER 27TH 2019, OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: SEE PAGE 24

ADVERTISERS INDEX

Absolute Sounds 0BC
 Advance MP3 Players 88
 Air Audio 68
 Atlas 88
 Auralic 66
 Billy Vee 92
 Black Rhodium 72
 Cadence Audio IBC
 Chord Electronics 14
 Criterion 90
 Divine Audio 88
 EnjoyTheMusic 92
 Hard To Find Hi-Fi 62,63
 Henley Audio 18,28,46,54,76
 Ian Harrison 90
 Icon Audio 6
 Infidelity 88
 Jordan Acoustics 32,33
 KEF 20
 Martin Logan 52
 MCRU 70
 Oxford Audio 88
 Peak Hi-Fi 92
 S.C.V 48
 Select Audio 50
 Sound Hi-Fi 68
 Spendor 16
 Tellurium Q 74
 The Chord Company IFC
 Titan Audio 90

FREE READER CLASSIFIED ADS ORDER FORM

STOP PRESS

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

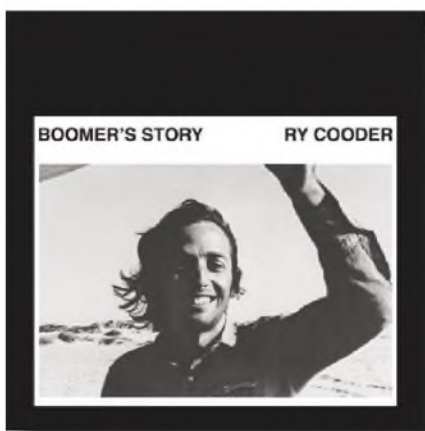
Name: _____
 Address: _____

 Post Code: _____
 Daytime Tel: _____

FREE READER CLASSIFIED ADVERTS COPY DEADLINES
 DECEMBER 2019 - 11TH OCTOBER
 JANUARY 2020 - 8TH NOVEMBER

RY COODER

BOOMER'S STORY MUSIC ON VINYL



"There is history here but also fantastic guitar technique"

"Rock as it is known today just doesn't interest me at all," said Cooder to The Guardian in 2011. "I hate commercial music. If I hear that money in it, all that winking and nodding... It kills me."

He looks for authenticity, you see. Ry Cooder's hunger for musical knowledge means that, in addition to being able to play just about any chord-structured instrument on the planet, he has tackled a whole host of musical styles from rock'n'roll, blues, reggae, Tex-Mex, Hawaiian, Dixieland jazz, country, folk, R&B, gospel and vaudeville. Apart from having six Grammys on his mantelpiece, he was partially responsible for bringing together the Cuban legends known as the Buena Vista Social Club to public fame while recording with a host of legends from other cultures including Ali Farka Toure and Vishwa Mohan Bhatt.

So he is often labelled with the professorial term, musicologist. A term he dislikes. "That's just idiocy to me. That's so facile and just tossed away by people who just don't understand. Real musicologists are scholars who study and understand certain things academically and they do the research and they know what they know. But musicians don't approach things that way; you approach it from the ability to intuit things, that's what playing an instrument is. Some people have the intellectual ability to grasp Beethoven which I could never do. But we musicians do this out of feeling and some kind of quest and that has got nothing to do with scholarship and study".

You can appreciate why the term is often attributed to Cooder, nevertheless.

Released in 1972, originally on Warner Bros., Cooder's third album release, 'Boomer's Story', was another delve into America's past. So expect to see songs such as 'Ax Sweet Mama' written by blues legend Sleepy John Estes (the man with an expressive blues voice) and 'Cherry Ball Blues' from Skip James (a top quality guitarist with an innovative tuning technique), but also a fine instrumental version of The Dark End of the Street from songwriter Dan Penn (a talented Southern Soul artist).

Lawrence Wilson's 'Crow Black Chicken' wanders all the way back to the twenties in terms of vintage

'Rally 'Round the Flag', replete with patriotic, warring lyrics is here lent a tired, dark, weary delivery along with a Randy Newman piano. There is very little verve or vitriol here. Little blood-lust. Little enthusiasm.

There is history here but also fantastic guitar technique and while the Cooder vocals might not be his strong suit his interpretive abilities more than make up for that.

More than that, what truly shines through is his natural talent and feel for what he does. It gives him authenticity which means that you forgive any small technical foibles (that voice, for example) because you know that he's giving his all.

"People tried to teach me to read the page and understand theory" he once said. "I couldn't do it. I couldn't be taught. I think there was something about me that resisted being taught anything. I didn't like school, I didn't like the teachers, I didn't like the whole set-up. I wanted to do it myself. So I found that I could. The only thing is – it takes longer. If you're going to go on your own, it's going to take you awhile".

"You could say that this time thing is what gives music its quality. Depth, if you like. Now? The urge for immediate success - always with one eye on the bottom line - often removes something from music".

A purity perhaps? Realism? An individuality? Cooder is of that opinion. "I think, maybe, because everything happens too fast, that you don't build a craft, you don't build artistry in yourself. And you don't listen. If you don't listen to music, all music, I don't see how you know. It's like a child learning to talk without having heard people speaking. What are you gonna do, start talking in abbreviations, like texting? And that's exactly what's happening. If you don't read books and you don't understand experience, how the hell can you write about it and sing about it? Or you're just going to end up writing about yourself. Then it's like everybody's in a closet with themselves and it's very limited".

PR



A Legend in the Making

Vantage™

New Product

Vantage™ is a compact 3-way loudspeaker incorporating 7 key technologies, along with the same materials & precision production methods utilised in the flagship, Sonja™ XV.

This results in a transducer which widens the opportunity for discerning music lovers to enjoy the sonic hallmarks of YG Acoustics™.

Distributed in the UK by



For your nearest UK dealer please
call Padood on +44 (0) 1223 653199
or visit www.padood.com



Carmel™ 2
Pure Clarity



Hailey™ 2 Series
Pure Harmony



Sonja™ 2 Series
Pure Seduction



Sonja™ XV Series
Pure Seduction

La Bella Figura

T H E S O N E T T O R A N G E



Over 30 years ago, Sonus faber revolutionised loudspeaker design.

By applying Italian style to the laws of physics, addressing both the visual and the sonic concerns, the company demonstrated that speakers need not come in prosaic, dull boxes. The entire industry owes thanks to this pioneering brand.

Sonus faber's legacy not only remains intact, but embraces the introduction of the Sonetto range. Entirely designed and constructed in Northern Italy in their purpose-built atelier, Sonetto speakers convey the design language of the founder, thus confirming that the sound and the cabinetry match each other for elegance.

Once again, Sonus faber redefines the musical experience.

 **absolute sounds ltd.**

International Distributors & Consultants of Specialised Hi-End Audio & Video Systems

58 Durham Road, London, SW20 0TW ☎ +44 (0)20 89 71 39 09

absolutesounds.com info@absolutesounds.com

For Your Nearest Dealer Please Contact Absolute Sounds

Sonus faber®