

# HI-FI WORLD

JUNE 2017

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Hi-Fi World October 2016



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Chord Shawline Analogue  
Hi-Fi Choice July 2016

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[www.chord.co.uk](http://www.chord.co.uk)

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## WRITERS

Paul Rigby, Jon Myles, Martin Pipe



**R**eaders have asked us to review the confusing new flood of budget record decks now hitting the market. That, I thought, could be a problem, if they damage both invaluable test records as well as the music LPs we use for review purposes. Happily, budget pickup cartridges in particular have improved over the years, to a point where they track well and don't damage records. This has allowed budget decks from Pro-Ject, Audio Technica and Reloop we've tested to date to deliver superb results. Now Lenco have pitched into the market

with their L-3808 Direct Drive turntable package we feature this month on p83. It shows just how competitive the vinyl market is becoming. Ironic that in its revival the LP is performing better than it ever has done in the past.

Music streaming is now eclipsing all else. You can hear as much as you want – and anything you want – for a small monthly fee. Yet listening like this is even more retro than playing LP. Before recorded sound (circa 1880) you'd throw a few coins at a traveling musician to hear his worth – and streaming is much the same. Hear it, pay for it – and then it is gone, only remaining in your memory, possibly to haunt you. You may be wanting to pay again then.

Such easy appreciation isn't now so simple. You have to get your network and comms sorted first, then get a streamer. When you've done this the world of music is yours to enjoy, providing you've got all your addresses right on the sub-net! No travelling musicians here; you're dealing with networks instead. Read about trials, tribulations and solutions to streaming in our Letters pages, starting p28.

Measuring the mains is a dangerous thing to do, but we have had to face this issue and what we are finding is interesting – perhaps alarming. The waveform is very distorted and this will find its way into the hi-fi through mains transformer leakage generating ground current noise. It suggests we will get better sound from cleaner mains and that's exactly what the IsoTek Evo3 mains regenerator offers – see our review on p51. It's a fascinating adjunct to the hi-fi.

The world of hi-fi gets ever more complex and expansive as decades roll by, new technologies arrive whilst old ones remain and are honed. I hope you find our coverage of old and new interesting.

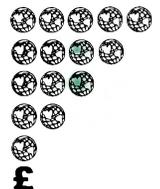
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*Editor*



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## verdicts



**OUTSTANDING**

**EXCELLENT**

**GOOD**

**MEDIOCRE**

**POOR**

**VALUE**

amongst the best  
extremely capable  
worth auditioning  
unremarkable  
flawed  
keenly priced

## testing (see [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) for full explanations of all our tests)

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

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

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

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



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# Bowers & Wilkins

## Designed for listening

The new CM Series loudspeakers are undoubtedly beautiful, capable of gracing any room with their clean lines and high-quality finishes. But as with all Bowers & Wilkins loudspeakers form must follow function, and thanks to our Decoupled Double Domes and tweeter-on-top technology you won't believe how beautiful your music can sound.

[bowers-wilkins.com](http://bowers-wilkins.com)



Decoupled Double Dome tweeter



email:news@hi-fiworld.co.uk

# news



## NAD C 338 HYBRID DIGITAL

NAD Electronics has announced the new Class D, C 338 HybridDigital Integrated – its first amplifier to feature Chromecast built-in for music streaming.

With Chromecast, the C 338 allows you to stream and listen to music, podcasts and playlists from many popular apps. You tap the cast button on an iPhone, iPad, Android phone or tablet, Mac or Windows laptop or Chromebook to stream music directly to the C 338. The C 338 can also be voice-activated, powered by the Google Assistant, to play music via Chromecast with a Google Home speaker or the Google Pixel phone.

With Bluetooth also natively integrated, the C 338 can wirelessly connect to any smartphone, tablet or Bluetooth-enabled device within range. It also serves as an UPnP Client for network streaming from a local NAS library. The C 338 works with the NAD Remote App, available from the Apple App Store or Google Play Store.

Using HybridDigital technology, the amplifier delivers 50 Watts per channel. The preamp stage features a solid-state volume control with 0.5dB steps. The onboard DAC uses eight DAC channels configured in a dual-differential array.

An MM Phono stage, headphone amplifier, TV audio input and bass EQ is included too. The price is £599.

For more information visit [www.nadelectronics.com](http://www.nadelectronics.com)



## PLANALOGUE TURNTABLE

Planalogue is a new company based in Oxford and has just released its first turntable - the Prelude designed by founder Peter Laitt. It is based on years of design experience and sells direct to the customer for £2295 less arm and cartridge.

The plinth is a constrained layer acrylic/birch-ply bonded structure with an internal pattern to reduce sound colourations.

The motor pod sites the AC motor and features a heavyweight structure adding stability and damping to unwanted motor vibrations. Inside, de-coupling principles are used to mount the motor and reduce vibration further. An off-board motor controller ensures smooth, stable speed with electronic switching for 33.33 and 45 rpm.

A belt driven acrylic platter sits above a large diameter stainless steel bearing spindle within a brass housing. Bearing end thrust is controlled by Delrin components especially designed for low noise. The armboard is dual material design while the tonearm mounts into a separate arm plate. Many arm types and length can be accommodated. Decoupling techniques are used throughout the design.

A record stabiliser made from Aluminium billet and Delrin improves the interface between vinyl and platter.

The deck is available with a range of arms, cartridges and accessories from the website. [www.planalogue.com](http://www.planalogue.com) or telephone +44 (0)1865 69 30 32.

Alternatively e-mail Peter at [peter.laitt@planalogue.com](mailto:peter.laitt@planalogue.com) for further information.

## YAMAHA'S ENTRY-LEVEL MULTI-CHANNEL RECEIVERS

Yamaha's new RX-V383 and RX-V483 feature Dolby Vision and 4K Ultra-HD as well as compatibility with Dolby True HD, DTS-HD and other high-res audio formats.

Numerous featured connections include the newest generation of HDMI and Bluetooth.

Yamaha MusicCast delivers multi-room functionality (RX-V483). All connected sources are available to every device in the MusicCast network. At the same time, all signals connected to MusicCast can be played back by the RX-V483. Audio content can also be streamed wirelessly via Wi-Fi from the internet or a computer. The Yamaha MusicCast app for iOS and Android offers control for all sources, rooms and devices.

To connect the sources, four HDMI inputs of the latest generation are available.

The RX-V483 is also compatible with DSD 2.8MHz/5.6MHz and can play back FLAC and WAV with 24bit/192kHz while including low-jitter circuitry and a discrete amp configuration. The RX-V483 also features the Extra Bass function.

To learn more visit [uk.yamaha.com/en](http://uk.yamaha.com/en) or call 01908 366700.



## T+A MP 3100 HV

T+A elektroakustik has introduced a new high-end multi-source digital audio player with SACD drive.

The MP 3100 HV is a multi-media player, featuring a completely new, modern SACD disc mechanism incorporating the latest decoder technology, whilst promising fast access times and error correction.

Also included is T+A's high-res streaming board plus access to various music services (Tidal, Qobuz and Deezer), Internet radio, home network via LAN and WLAN, USB Master Mode and HD streaming from network servers.

The MP 3100 HV tuner offers FM, FM-HD and DAB+ capability whilst a Bluetooth streaming module enables wireless playback from mobile devices.

The MP 3100 HV will be available in the UK from the middle of April 2017 with a price of £12,690. For further T+A information visit [www.ta-hifi.de](http://www.ta-hifi.de)



## AVID AMPLIFIERS

Three new amplifier products are on the way from the UK hi-fi outfit Avid. The Celsus pre-amplifier incorporates a phono amplifier within a fully balanced design and offers the same flexibility found in the company's Reference Pre-Amplifier.

For example, there's the ability to simultaneously connect two phono cartridges and an additional four line level inputs.

The ALPS RK50 volume control used in the Reference Pre-Amplifier is retained and a separate PSU is included.

The matching Celsus stereo power amplifier has a direct lineage to the Reference Stereo amplifier design. Completing the line up is the Sigsum Integrated Amplifier. With its built-in phono-stage and four line level inputs, this unit also retains the same ALPS RK50 volume control. Prices are yet to be confirmed. To learn more call 01480 869900 or click [www.avidhifi.com](http://www.avidhifi.com)



## ATLAS CABLES LAUNCH EOS MODULAR 4.0

Atlas Cables has announced the launch of the 6-way EOS Modular 4.0 power distribution unit.

The EOS Modular 4.0's power output sockets can be individually specified by the customer to be filtered (normally those which carry low-voltage and sensitive signals such as turntables, streamers, DACs and pre-amps) or unfiltered (power amplifiers have dynamic power needs and many can be constrained when filters are applied). With EOS Modular 4.0, users can specify which sockets are filtered and which are not.

Internally wired with Atlas EOS 4 dd PTFE power cable, matched power transmission between individual socket outlets and the incoming mains supply occurs with Atlas EOS 4dd screened power cable from the wall socket. Housed in a steel RF enclosure, the filtering circuit board is of heavy-duty design with gold-plated connections.

The Atlas Cables EOS Modular 4.0 mains unit is available now and can be specified as six unfiltered or three filtered plus three unfiltered outlets. A ground binding post is fitted to all models. Prices range from £625.

To learn more telephone 01563 572666 or log-on to [www.atlascables.com](http://www.atlascables.com)



## TIVOLI AUDIO MODEL ONE DIGITAL

Encased in a 'furniture grade' wood cabinet in a choice of black, white and walnut colours and finished with Gabriel fabric grill, the Tivoli Model One Digital radio offers DAB and FM radio as well as Bluetooth and Wi-Fi streaming controlled by a wireless app.

The app allows the sharing of Spotify Connect, Deezer, Tidal and TuneIn playlists and selections, as well as local audio content on phones, tablets and NAS music libraries. Select Bluetooth to receive audio from a paired device or the Aux input to use the Model One Digital as a standalone speaker for a wired audio source (or send audio to others via Bluetooth).

The app's multi-room control functionality allows simultaneous audio playback of multiple songs to various speakers if connected with additional ART collection products. Spanning 11.5cm x 22.2cm x 14cm and weighing in at 1.55kg the Model One Digital is priced at £279.

The Tivoli ART CUBE wireless network enabled active speaker is £189 while the Tivoli ART ORB wireless network enabled active speaker is £229.

For more information call 0800 0096213 or [sales@sounddesigndistribution.co.uk](mailto:sales@sounddesigndistribution.co.uk).



## ONKYO TX-NR676E NETWORK A/V RECEIVER

The 160W TX-NR676E features a host of features and connectivity options, all based upon Dynamic Audio Amplification to produce high current.

You'll find six rear HDCP 2.2-compliant HDMI inputs supporting pass-through of Dolby Vision, HDR10, BT.2020 and 4K/60p, while front HDMI input and HDMI Sub Out terminals are added.

Music lovers can listen to their favourite songs with Onkyo Controller for iPad, iPhone, iPod touch and Android. The app manages multi-room distribution of streaming services, internet radio and network files as well as music from CD players and turntables connected via analogue audio inputs, from the receiver to Onkyo NCP-302 wireless speakers over FireConnect powered by Blackfire.

The TX-NR676E comes with Chromecast built-in. Furthermore, DTS Play-Fi enables quick casting from supported apps and devices for playback on the TX-NR676E. On-demand music and internet radio services include Spotify, Tidal, Deezer and Tuneln.

The Onkyo controller also allows users to select albums and songs from network-attached music libraries, play music stored on USB memory devices or select a source to share to speakers in another room.

Price is £600. For further information visit [www.uk.onkyo.com](http://www.uk.onkyo.com)



## DENSEN RELEASES ITS FIRST STREAMER: THE CAST AMP

Danish manufacturer Densen has launched their brand-new CAST AMP Streamer, the first in their brand-new Dino range of products.

The CAST AMP is the first product from Densen to allow streaming. By using Google Cast Audio technology, users will be able to stream music directly from services such as Tidal. The component can also be used with Google Home to implement multi-room listening.

Densen has carefully selected and crafted each aspect of the CAST AMP to ensure that it operates at its highest possible level. A specially shaped, pure aluminium cabinet encases the external Wi-Fi Source along with a high-end DAC that has been manufactured with the backing of over 20 years of experience.

The most interesting and unique feature of the CAST AMP is the internal power amplifier. This is a scaled-down version of the upcoming B-390 power amplifier (set to be released in late 2017) that has been 15 years in the making. The delivery of the CAST AMP is 2 x 60 W in 8 ohm and 2 x 120W in 4 ohm. As such, the component can also be used as a standalone power amp with a 5V trigger.

Densen's CAST AMP uses already pre-established streaming software to ensure that no issues are created between Densen created software and Google Cast. Densen have said that this can often be an issue with streamers created by other manufacturers, where software updates can sometimes clash. The non-magnetic casing adds to the CAST AMP's benefits and decreases magnetic distortion. The aluminium casing also creates a heatsink, ensuring that the CAST AMP does not overheat.

It is available for order now from Elite Audio and retails at £2,895. Visit [www.eliteaudiouk.com](http://www.eliteaudiouk.com) or call 0203 397 1119.



## NEW STUDIO AV LISTENING ROOM

Specialist retailer Studio AV has opened a new bespoke demonstration facility in Chobham in Surrey - just 10 minutes drive from junction 3 of the M3. The new premises have been especially designed to provide the perfect listening environment for hi-fi and home cinema equipment.

Studio AV stocks some of the best-respected hi-fi brands including Focal, Naim, Melco, Arcam, Estelon, Tellurium Q, Pro-ject, VTL plus a host of others.

To book an appointment telephone 01753 863300 or e-mail [sales@studioav.co.uk](mailto:sales@studioav.co.uk).

## CHORD SHAWCAN HEADPHONE CABLE

The Chord Company has launched the ShawCan headphone upgrade cables, the first ever headphone product from the outfit. A variety of ShawCan cable terminations are available: 6.3mm stereo to 3.5mm stereo; 6.3mm to Lemo (Focal Utopia); 6.3mm to Sennheiser HD800/HD800s); 6.3mm to MrSpeaker connector (Ether range and AEON Range); 6.3mm to 2-pin (for IEMs) and 6.3mm to 2x 3.5mm mono. ShawCan features silver-plated conductors with PTFE insulation. The shield is a composite design that doesn't just shield but helps to minimise unwanted mechanical noise.

The conductors are enclosed in a black outer jacket that is more than just a braid to tidy the conductors: the jacket is actually designed to further reduce mechanical noise. The Chord Company has also been able to adapt its Super ARAY conductor geometry to work with a headphone cable. ShawCan is available now in 1.5m lengths as standard - custom lengths are also available to order.

To learn more call 01980 625700 or click on [www.chord.co.uk](http://www.chord.co.uk)



# SME

## MODEL 15



## Experience a New Dimension in Sound

The Model 15 could be described as "the ultimate in recovery vehicles", allowing the cartridge to retrieve the last nth of recorded material whether digital or analogue, from the vinyl disc and thus approaches the ultimate in perfection.

Receiving its inspiration from the superb Model 10 precision turntable the Model 15 seeks to emulate the excellence of our Models 20/3 & 30/2 turntable whilst retaining the more compact footprint preferred by many of our enthusiasts.

The Model 15 has been designed with the same attention to detail combined with simplicity of operation that has come to be expected from all SME products. Its superb performance together with laid back styling make it a glamorous addition to your sound system that will astound and amaze listeners for many years to come.

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# Quad Play

**A ribbon tweeter allied to Kevlar midrange and bass units give Quad's new Z3 floorstanders a distinctive sound, finds Noel Keywood.**

**A**s we see ever more loudspeakers fitted with ribbon tweeters that deliver sharply clean, smooth and accurate treble, Quad remind us that their first loudspeaker, the Corner Ribbon, had a ribbon tweeter. OK, company founder Peter Walker soon gave up on the idea and developed the electrostatic instead, but he still seems astute in choosing to use a ribbon. They are impressive to hear and the new Quad Z3 floorstanding loudspeaker returns to the idea.

The Z3 is a classic floorstander, measuring 965mm high, 267mm wide and 340mm deep – room friendly dimensions. Quad are about the traditional British

home and the Z3s fit into this niche nicely, our samples being finished in a lovely deep gloss, lacquered rosewood veneer. The gentle curves of the cabinet remove the hard-edged boxy appearance of typical floorstanders and this theme is continued to the base plinth that is ovoid in shape and has four adjustable spiked feet; the front two were extended to tilt the cabinet backward, so firing slightly up at me sitting 12ft away. Ribbon tweeters have great lateral dispersion but don't fire up or down much, so best to get midrange and ribbon firing to ear height with these speakers. Weighing 23kgs on our scales the Z3s are quite heavy.

This beaming of a ribbon means less sound bounces off floor and ceiling. Is this good or bad? The answer is – it depends. You get a sharply defined soundstage between the loudspeakers but lack of ceiling bounce means less of the halo height effect between 'speakers that a dome produces. You exchange airiness for focus and I'd call the effects "different" rather than better or worse.

# Tellurium Q®

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



## Introducing our new Black II Speaker Cable

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

John Myles, HiFi World

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

Jeff Dorgay, Tone Audio

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

Mono & Stereo



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In addition to the ribbon tweeter, there is a 150mm woven Kevlar midrange unit and two 175mm Kevlar bass units. The latter are loaded by a very effective rear chamber with a damped port that exits the rear of the cabinet just above the plinth. This completely removes the usual bouncy nature of tuned port bass, giving a more even and controlled quality. Quad quote amplifier power as 60-250 Watts but high sensitivity means 40 Watts will be sufficient to go loud.

**SOUND QUALITY**

When I first heard the Z3s, I thought "they need running in". Hard and edgy was the delivery, but I've heard the same from 3&W's Kevlar drive units and after long run-in they became sweet and open. At 60 hours run-in the Z3s had become far easier, but they needed another 48 hours of heavy run-in to settle. Without manufacturer guidance on this it is difficult to know quite when a loudspeaker is run-in. Paper cones need 20-40hrs, Kevlars much more, around 80 hours minimum in my experience. Our Z3s got over 100 hours.

Sitting 12ft away, my ears 115 cms above the floor on a normal chair I was way above the Z3's midrange unit 70 cms from the floor so the speakers needed tilting back. There wasn't enough adjustment range to get optimal alignment I found. I had to remove Quad's rear spikes and fit shorter ones from our stock box to get enough tilt.

With this sorted I tried a variety of different power amps and ended up with our McIntosh MC-152. The MC-152 is powerful, dry, grippy and enormously detailed. It showed just how much detail the Z3s could deliver – and it was vast. Interestingly, the McIntosh has 8, 4 and 2 Ohm outputs and I had to use 8 Ohm to get less bass damping – yes, less damping – until the speakers had run in, then 4 Ohms suited best. The Z3s have an even bass balance our measurements show, but normal domestic listening rooms will add to this through 'room gain'.

The ribbon of the Z3 is very well integrated with the midrange unit, mainly because it is a big ribbon that goes lower than small ones, crossover taking place at 2.5kHz. The upper midrange/low treble of the Z3 is fast and incisive. Close miked guitar strings ripped into me and detail came from a shotgun. The fast guitar picking in Fleetwood Mac's

'Never Going Back' (24/96) had eye-popping presence, for example, and so did the violin of Nigel Kennedy playing Massenet's 'Meditation'. It was intensely lit but a tad hard in string quality. There is a slight lift in output from the tweeter and this was discernible, making high treble prominent.

All the same, I often found myself winding volume up as the Z3s are clean and like to go loud, 15 Watts average and peaks of 50 Watts flicking up on the MC-152's output meters, when playing clean hi-res recordings or transcriptions. It was when playing loud that the controlled nature the Z3's bass became most obvious, bass guitar and drums in Skunk Anansie's 'Hedonism' punching out into the room without any softness of delivery. There was a smidgen of boxiness, possibly attributable to an effect in the 500Hz-1kHz region picked up in measurement. Skin's vocals were clear as a bell – and

the band had both body and presence.

Similarly, with Renee Fleming had singing 'O Mio Babbino Caro' there was air and space painted into the picture by the Z3's deep mining of low level information. The big ribbon hard etches images to Mount Rushmore solidity. Overall, the Z3s had a dark tonality to them that is likely to appeal to Quad aficionados.

**CONCLUSION**

Quad's long ribbon tweeter sets the sonic stage in these loudspeakers: think ultra-fast and intensely detailed. Backed up by low colouration Kevlar cone units the Z3s came across as full-bodied yet vivid in the treble. Not much will get past them in any showroom demo.



*The rear damped port just above the plinth gives even and controlled bass.*

**MEASURED PERFORMANCE**

The Quad Z3 has slightly rising treble when measured on and off axis, the consistency being due to the wide dispersion of a ribbon tweeter. Treble will be firmly stated as result. The ribbon drive unit plays a larger role in sound quality than many since it works from a low 2.5kHz upward our impedance trace shows.

This apart, the frequency response analysis displays a smooth and even characteristic (microphone 30 degrees off-axis) right across the audio band, even in the oft-variable 200Hz region where floor and ceiling reflections come into play. This suggests low colouration,

since undulations, dips and peaks are caused by local resonances that colour the sound.

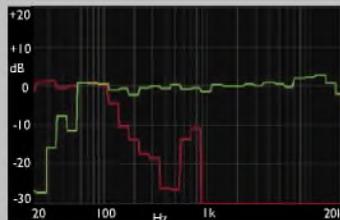
The Z3's bass performance is unusually smooth and peak free also, cutting off sharply below 55Hz. The port takes over below this (red trace) and here the Z3 gets interesting. Unlike most ported loudspeakers the port is non-resonant; instead of being a narrow peak it is a wide and flat in output, applying broad damping to the bass cones. Output stretches flat down to 20Hz, so there will be some contribution right down to subsonic frequencies, although sound power from the port is low so the Z3 will not shake a room. Bass quality will be very good, likely with good note separation.

Sensitivity was very high at 91dB Sound Pressure Level (loud) from one nominal Watt (2.8V) of input. An amplifier of 40 Watts is sufficient to produce high volume even in a large room, whilst 10-20 Watts is enough for strong volume in a normal room. Impedance measured 6 Ohms and our analysis shows an almost flat, resistive characteristic, the bass port exerting wide influence around 35Hz, leaving small residual peaks either side. The Z3 will be an amenable load for any amplifier, valve or transistor.

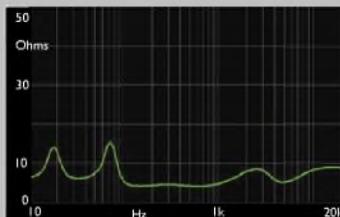
The Quad Z3 is accurate, apart from steadily rising treble from the big ribbon tweeter. Bass is well damped. It needs little power and suits amplifiers too. **NK**

**FREQUENCY RESPONSE**

*Green - driver output  
Red - port output*



**IMPEDANCE**



**QUAD Z3 £2,499.95**



**EXCELLENT - extremely capable.**

**VERDICT**

Quad's ribbon tweeter is fast and detailed and with low colouration from the Kevlar bass and midrange units the Z3 gives a full-bodied sound.

**FOR**

- even and accurate
- quality of finish
- intensely detailed
- very fast

**AGAINST**

- hard treble quality
- some boxiness
- exaggerate distortion

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# New Ovation

**A hand built pre-amp, power amplifier combination from new UK company Ovation High Fidelity is well worth investigating, says Jon Myles.**

**N**ew British hi-fi companies don't come around all that often so it is always heartening when a fresh name emerges. It's even more gratifying when the firm involved commits to manufacturing in the UK.

That's the case with Ovation High Fidelity which is headed by designer Andrew Russell. It hand builds the products at the company base at Thetford, Norfolk.

Andrew has spent many years constructing his own amplifiers and trying out various circuits - but this is his first foray into producing them commercially.

At the moment there's just two components - the 1701 stereo power amplifier and the partnering 1501 pre-amp on review here - although

there are plans in the pipeline for another, larger power amplifier and a phono stage.

The 1701 is a class A/B design rated at 100 Watts per channel and uses current mode topology which Andrew believes offers the best performance. The output stage features six matched transistors per channel while the linear power supply is based on a 500 Watt transformer which is hand wound in England. There's both single-ended and balanced inputs on the rear, selected by a small switch, while the high-quality WBT-style shrouded 'speaker binding posts will accept both 4mm banana plugs or 6mm spades.

Measuring 110mm x 450mm x 350mm (H/W/D) and weighing in at 15kgs it's a handsomely built unit with a thick aluminium front

panel, solid heatsinks on either side and a good all-round standard of construction. The front features a single, small power button beneath which is an LED to indicate operation.

The matching 1501 pre-amplifier - measures 110mm x 450mm x 325mm (H/W/D) - again boasts a well-built metal case and a thick aluminium fascia. It features five line inputs, moving magnet phono stage with selectable rumble filter, a buffered tape loop for recording on legacy tape decks or DAT machines plus a headphone amplifier section.

On the rear there's both balanced and single-ended outputs while the front features chunky, silver rotary controls for input selection and volume - although the latter two can also be controlled through the





**The neat internal layout of the Ovation 1501 pre-amp featuring low noise gain devices (top) plus a full selection of inputs.**

basic but fully-functioned remote.

Inside, all signal selection and muting is accomplished through the use of small signal relays which Ovation says are rated for 1 million operations. The silver-palladium and gold-plated relay contact assemblies are fully sealed to avoid atmospheric contamination.

Priced at £2264 for the 1501 pre-amp and £3065 for the 1701 power amplifier the two units certainly look good together, with a quality fit and feel to all switches and casework. Ovation also offers a five-year warranty on parts and labour and – as the products are only available on-line at present – there’s a no-quibble 30-day money back guarantee for customers not totally satisfied.

**SOUND QUALITY**

After a brief period working out some initial wiring difficulties (see Measured Performance for full details) the Ovations were paired together and hooked up via their balanced connections feeding a pair of Quad’s new Z3 floorstanding loudspeakers. And they quickly impressed with a confident, authoritative presentation.

Echo And The Bunnyman’s ‘The Cutter’ via CD is a track whose choruses cut in with massive punch and demand an amplifier with power and the ability to highlight transients to get the dramatic effect just right. The 105 and 107 proved up to the

task. Ian McCulloch’s distinctive voice was richly-etched and when the full band’s power kicked-in on those choruses the bass was firm and well-defined, Will Sergeant’s chiming guitar having presence and leading edge bite so the chord changes could be easily tracked.

Moving on to David Byrne and Brian Eno’s ‘My Life In The Bush Of

Roth’s compositions where there was a fleet-footed nature that propelled the staccato sections of the strings with energy and urgency, whilst still retaining the resonance of the instruments.

Considering the pair separately, there was no doubt the power amplifier is the star of the show. Removing the pre-amp and connecting the 1701 direct from an Oppo BDP-105D CD player with its own volume control there was a cleaner sound to the layered guitars on The Clash’s ‘Safe European Home’ with greater separation between them. Julee Cruise’s dream-pop vocals on ‘Falling’ also had more air and space and were deliciously rendered through the Quad Z3’s large ribbon tweeter.

Not that the pre-amp was doing anything wrong but the power amplifier obviously benefitted from being driven directly from the source without that extra layer of op-amp electronics between them.

Bringing the pre-amp back into service I finally switched to a pair of Martin Logan electrostatics connected with Tellurium Q’s revealing Black II ‘speaker cable (see review this issue). This showed the



**Line-level inputs plus an MM phono stage and both balanced XLR and RCA outs make the Ovation pre-amplifier capable of slotting into most systems.**

Ghosts’ with its complex rhythms and sampled vocals, detail was exceptionally good. With ‘America Is Waiting’, for example, the contrast between the samples and acoustic bass line was stark (as it should be) yet did not detract from the flow of track.

That said, there wasn’t quite the same punch as something like a Naim Supernait 2 or McIntosh MC-152. Instead the Ovations have a lighter touch to them, a little less darker but with a sweeter tonality that many listeners will undoubtedly take to.

This came through especially well on The Allegri Quartet’s recording of Alec

Ovations were capable of providing a massive soundstage, Dave Brubeck Quartet’s ‘Take Five’ filling Hi-Fi World’s large listening room. Images were also anchored firmly in place – the piano hard right with drums punching from the left. The percussion was also hard and right with a hefty thump to the kick-drum. Pushing the volume higher the Ovation power amp had no trouble handling the demands of the Martin Logans, the sound never becoming harsh or collapsing in on itself even at the loudest levels.



Changing the input to the

phono stage the quality of the production on Mark Knopfler's 'Kill To Get Crimson' was evident. Here, the leading edge of guitar notes was bright and true but never too harsh while the subtle rhythm section was projected tight between the loudspeakers. You can get more detail and vibrancy with some standalone phono amps but you'd be paying some £500 and above to achieve it.

All of which makes the Ovations a tempting proposition at £5329 for the pair. Excellent build allied to a smooth, detailed and rhythmic sound plus all the inputs you could need translate into a welcome new addition to the hi-fi market.

**CONCLUSION**

It may be a new entrant to the hi-fi market but the Ovation pre-amp and power amplifier combination have the makings of something special. The 1701 power amplifier, especially, has a sweetness of tone and detailed presentation that make it a delight to listen to.



*The 500 Watt transformer of the power amplifier is hand wound in England while there are six matched output transistors per channel.*



*The rear of the 1701 power amplifier has both unbalanced RCA and balanced XLR inputs - selected by a small switch.*

**MEASURED PERFORMANCE**

The Ovation 1701 power amplifier produced 112 Watts into 8 Ohms and 196 Watts into 4 Ohms, enough to drive any loudspeaker extremely loud in any room. It is a very wideband design running flat from 1Hz to just beyond 100kHz. Distortion was negligible at all power levels – low and high – the worst case being just 0.02% second harmonic at 10kHz, 1 Watt output. Crossover distortion was absent, so the 1701 will sound clean, clear and have a light patina, rather than a dark or warm sound.

Input sensitivity via both XLR balanced and Phono socket unbalanced input was very low, 1.6V needed for full output where the usual value is 1V.

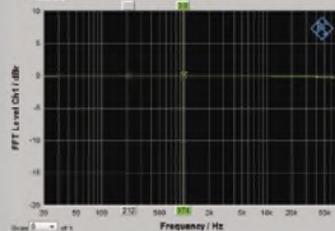
The 1501 preamp has no gain (x0.9) from its unbalanced phono socket line inputs (CD, tuner, aux) to its unbalanced phono socket outputs, acting only as a volume control. Via its XLR output gain measured x2. While this is acceptable for silver disc players it isn't enough for lower output sources such as legacy tuners (300mV), or low gain external phono stages (100mV), since they will not be able to drive the 1701 power amplifier to full output.

Our review sample had its channels mis-wired, XLR Left output being

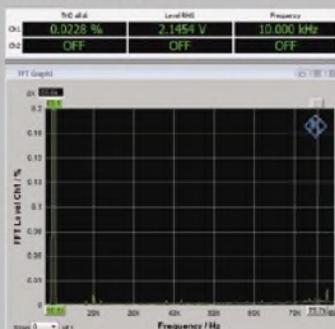
connected to the Right CD/Tuner/Aux inputs. The Phono stage was also mis-wired, Left input going to Right line output. A little more concentration is needed here.

The Phono stage (MM) had x159

**FREQUENCY RESPONSE**



**DISTORTION**



gain via phono output and x317 XLR output – normal values but barely enough to drive the power amplifier to full output at full volume, because of power amplifier insensitivity. Overload was high at 50mV and equalisation accurate. The 'Rumble Filter' introduced bass lift and steep cut-off below 40Hz. It will eliminate loudspeaker cone flap, caused by disc warps, very well (rumble isn't an issue nowadays) and also deep-bass weight.

The 1701 power amplifier measured well, but it has very low input sensitivity and needs a high gain preamp. The 1501 has insufficient gain, except for silver disc players and its own MM phono stage (via XLR out). The preamp needs more thought. NK

**OVATION 1701 POWER AMP**

Power	112watts
Frequency response	1Hz-100kHz
Separation	98dB
Noise	-104dB
Distortion	0.02%
Sensitivity	1.6V

**OVATION 1501 PRE AMP**

Gain (Line, XLR)	x0.9, x2
Phono	x159, x317
Overload	50mV

**OVATION 1501/1701 £2264/£3065**



**EXCELLENT - extremely capable**

**VERDICT**

A fully featured pre-power combination with power enough to drive almost any loudspeaker and a sweet, detailed sound.

**FOR**

- build quality
- detail
- MM phono stage

**AGAINST**

- power amplifier outshines the pre-amp
- mis-wired preamp
- low gain

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Best Floorstanding Speaker, AVTech Media Awards

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Quad Z-4 – Hi-Fi News



## Z Series



As compelling to the eye as they are to the ear, Quad’s lavishly lacquered Z Series speakers are a music lover’s delight. A bespoke ribbon treble unit conveys beguiling clarity and definition, combining with advanced Kevlar bass/mid drivers, low-coloration enclosures and a dual-chamber acoustic filter bass reflex system to deliver the perfect embodiment of the natural sonic realism that is the hallmark of Quad.

***“One of the best speakers Quad has ever made”***

Quad Z-3 – Hi-Fi Choice



Z-1



Z-2



Z-3



Z-4

# Going by the book

Martin Pipe tries out a distinctive and versatile – if rather expensive – DAC/headphone amplifier from Lindemann.

**T**he base level Musicbook DSD 10 that I review here is a headphone amplifier with DAC, Bluetooth and asynchronous USB (with DSD-over-PCM, or 'DoP'). The name derives from the compact book-like dimensions of the unit. It has a meticulously machined aluminium case with a large amber OLED display and distinctive top-mounted multifunctional 'edgwheel'. There are two optical digital inputs, two coaxial digital inputs, an asynchronous Class 2 USB port and a Bluetooth aerial in addition to an IEC mains inlet (no external power-supply clutter here!).

Phono socketed analogue outputs are fitted (unbalanced), balanced XLRs and a (front-mounted) 6.3mm headphone socket. The icing on the cake is a pair of analogue inputs, that allows the Musicbook to be used as the link between sources, and active speakers or amplification that follow. They are line-level, though, meaning that vinyl-lovers will need a phono stage. The Musicbook 10 (and, for that matter, its brethren) don't convert an incoming analogue source into digital. Everything's kept analogue – relays route the desired

source to the output buffer amplifiers via a MUSES 72320 chip – described by Norbert Lindemann as "the finest analogue volume control on the market".

Volume can be controlled (in 100 steps) and inputs selected via the edgwheel. Simply rotating it changes volume; if the wheel is pressed downwards while doing so, it allows you to cycle through sources. You can also carry out such operations from the remote, an elegant device that – unusually – is powered by an internal lithium-ion battery. It can be charged from your computer via the supplied USB cable. It can be used to configure other functions like renaming inputs, changing display brightness, adjusting stereo balance and output/headphone voltage range, 'fixing' the line output (i.e. the volume control is only active for headphones), 'skipping' unused inputs, Bluetooth pairing, selecting digital-filter characteristics and engaging a mode that re-samples PCM from one of the digital inputs to DSD128 or 256. The latter is enabled by default, reinforcing Lindemann's faith in DSD.

The manual covers several models, giving the impression that an app (Android or iOS) will allow all Musicbooks to be controlled from smart devices. But this is only true of the 20 and 25 models – device control is available over a network connection, but not Bluetooth. In other words you'll need that remote to configure the Musicbook 10 DSD; Bluetooth is used purely for audio (note, in passing, that apt-X is supported).

Norbert Lindemann told me: "Any input signal can be converted into DSD128/256 (depending on the sample rate), with a new sample rate converter from AKM (the AK4137). It offers 32-bit performance, and 180dB of dynamic range. The signal is then simply filtered in the DACs, to get an analogue signal – no further processing is applied".

"To perform digital-to-analogue conversion, we use (AKM) AK4490s in dual-differential mono mode".

## SOUND QUALITY

For the listening tests, the Musicbook DSD 10 fed an Arcam A49 integrated amplifier and Quadral Aurum Wotan VIII speakers. Sources included a



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L I S T E N   B E Y O N D

Windows 7 PC and Cambridge CXN streamer, both of which could draw on losslessly-compressed (FLAC) CD rips and hi-res (PCM and DSD) content stored both locally and on a NAS. Windows users need to download a driver from the Lindemann website. To get the best from PC playback and enjoy the benefits of DoP, you then need to set up your player software – in my case, Foobar 2000 – by installing and configuring the appropriate plugins. Audio is then passed 'natively' over the USB link to the DAC. The Musicbook 10's front-panel display is very helpful here, as it informs you about the incoming signal. If you're playing a DSD file, and 'PCM ...' is displayed, then you know that further work is required.

I first tried routing the CXN streamer's analogue phono outputs through the Musicbook and compared the resulting audio with a direct connection to the Arcam. There was no perceptible difference and so clearly Lindemann have got things right.

Headphone listening – plugging in a pair mutes the line outputs – also fared well, my Oppo PM3s being amply-driven with a full-bodied, smooth and detailed presentation with natural stereo separation. And at high listening levels, 'grittiness' is kept at bay; not even bass-heavy tracks like Pye Corner Audio's Sleep Games could throw it. Indeed, the output is so effective that the lack of an ability to work with balanced phones is not necessarily a limitation.

Bluetooth (compressed via apt-x) performed beyond expectations. The Krautrock instrumental textures and insistent motorik rhythm of Neu's E-Musik – a FLAC CD rip stored on my Samsung smartphone – emerged largely intact. But there's a slight coarseness and veiling that disappear when the same track is introduced via more conventional means.

Which brings me to uncompressed digital sources – starting with a 24/96 HDTracks download of Rimsky-Korsakov's Snow Maiden (Minnesota Orchestra/Eiji Oue). Its Dance of the Tumblers was portrayed with vitality and exuberance – a joy to listen to, the Musicbook DSD 10 taking the piece's dynamic swings within its stride.

CD-sourced material, like Radiohead's A Moon Shaped Pool, also fared well. Album-opener Burn The Witch's strings-driven urgency comes across well, as does Thom Yorke's

unique contribution and the treated vocal that contributes to the bassline. A lot's going on here, but there's little clutter to speak of. The digital filter (PCM sources only) can make a slight difference as regards fast percussive sounds – thankfully, the ribbon tweeters of the Wotans are very revealing. Upsampling PCM to DSD (hi-res PCM is an alternative) can make subtle differences to musical presentation. I found that percussive and treble-heavy instruments disappeared further back into the mix.

Robert Len's latest contemporary-jazz outing Hope is a DSD 128 recording, the stripped-back performance captured with audiophile sensibilities by 2xHD. And here it sounds phenomenal – I could almost picture Len's embouchure as he plays his flugelhorn, such is the detailing and cleanliness available. A real sense of space is imparted. I was engrossed in the music; this, surely, is what high-fidelity is about? And with a test 'favourite' of mine, an analogue tape-originated Blue Coast DSD64 of Keith Greeninger and Dayan Kai's guitars-and-vocals 'Looking For A Home', I could almost sense the



**Lindemann has provided all of the inputs and outputs you'll need for practical enjoyment of most music collections – four digital inputs (two of which are optical) that can handle 16 and 24-bit signals, two analogue inputs, Bluetooth (represented by the aerial!) and Class 2 USB. Output is simultaneously available in balanced (XLR) and unbalanced (phono) form. The latter are muted automatically when headphones are plugged into the front-panel socket.**

players in the room – the true-to-life resolution of breathing noises, string chatter and even the brush of clothing against instruments that help to convince. Lindemann's extensive DSD experience has evidently paid off.

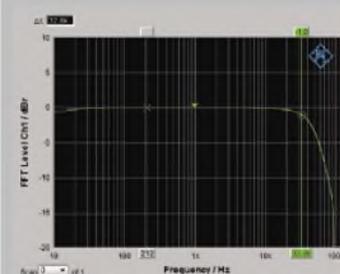
### CONCLUSION

The Musicbook 10 DSD is undoubtedly an excellent and versatile unit, and is one of the better-sounding units I've tried as far as DSD is concerned. But while PCM is handled very well in musical terms, in my view some of its rivals can extract a little more of the finer details.

### MEASURED PERFORMANCE

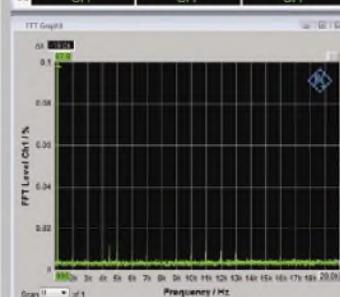
Frequency response of the Lindemann Music Book 10 digital section, with a 192kHz sample rate input, measured flat to 33kHz before a slow roll off to 96kHz, our analysis shows. This will give a well

#### FREQUENCY RESPONSE



#### DISTORTION

THD @ 0dB	Level (mV)	Frequency (Hz)
0.0364 %	7.9191 mV	997.00 Hz
OFF	OFF	OFF



damped and smooth sound, likely clean in the time domain.

The balanced and unbalanced output had a good but now unexceptional 117dB, dynamic range.

Distortion measured 0.0047% at full output (0dB) and 0.035% at -60dB with 24bit, and 0.22% with 16bit – good figures. Our distortion analysis shows there are some distortion products, these also limiting dynamic range.

The preamplifier stage has no gain via the phono outputs, acting only as a volume control, but a gain of x2 is available through the XLR outputs, with maximums of 8V and 15V respectively. Bandwidth was wide and noise low.

The Lindemann Music Book 10 measured well although it is around 8dB behind the best (ESS Sabre32) DACs currently on the market in terms of crucial dynamic range. **NK**

Frequency response	4Hz-33Hz
Separation	101dB
Noise	-116dB
Distortion	0.035%
Dynamic range (24bit, XLR)	117dB
Output (XLR, Phono)	8, 4V

### LINDEMANN AUDIO MUSICBOOK 10 DSD, £3000



**OUTSTANDING - amongst the best**

#### VERDICT

A worthwhile upgrade of a highly-regarded product, the Musicbook 10 DSD combines a strong performance with distinctive aesthetics

#### FOR

- revealing and musical delivery – especially with DSD
- practical and elegant design
- flexible configuration

#### AGAINST

- remote is essential for configuration
- no upgrade path provided
- stiff competition from lower-priced units

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### Description

Hi-Fi World brings you the best in hi-fi...from around the world:

- We listen and measure products in depth, at our London offices.
- Expert opinion from a team of renowned writers, musicians and engineers.
- International standard measurements using Rohde & Schwarz test equipment...

### Information

Developer	audio web publishing ltd
Category	Entertainment
Updated	7 Dec. 2014
Version	1.0
Size	9 MB
Rating	Rated 4+
Family Sharing	Yes
Compatibility	Requires iOS 5.0 or later. Compatible with iPhone, iPad, and iPod touch.
Languages	English

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### QUESTIONS

**[1] What colour is HI?**

- [a] pink
- [b] mauve
- [c] lime green
- [d] black

**[2] Is the optical input -**

- [a] flash light
- [b] Aldis light
- [c] TOSLINK
- [d] candle light

**[3] What band does it use?**

- [a] big band
- [b] elastic band
- [c] 5.8GHz band
- [d] brass band

**[4] Amplifier power is -**

- [a] 50 Watts
- [b] 3 milliWatts
- [c] 5 MegaWatts
- [d] 6 picoWatts

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FROM KEN ISHIWATA



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Visit our website at [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) or send your emails to [letters@hi-fiworld.co.uk](mailto:letters@hi-fiworld.co.uk). Letter of the month wins a pair of Quadral Merin loudspeakers.

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

## LETTER OF THE MONTH PRIZE



**QUADRAL BREEZE 2**

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For more advice see Letters from earlier issues at [www.hi-fiworld.co.uk/letters](http://www.hi-fiworld.co.uk/letters)

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## Letter of the Month

### STREAM SCREAM

I'm writing to tell you why Jon Myles' article on pages 63-65 of the April issue has left me still unsure how to get streamed music from my computer through to the hi-fi loudspeakers. It certainly showed how difficult it can be for someone who knows a lot about a subject to appreciate how little others understand it.

What I most want to do is to download and listen to some hi-res music. I think I just about understand the difference between streaming and downloading, and from the box at the foot of page 65 it appears I will have to use Qobuz. But whether it's downloading or streaming, to listen to hi-res files I need to get them into the hi-fi system.

The computer and the hi-fi are over 30 feet apart with two solid walls between them. Jon refers to Google's Chromecast Audio as a basic device that plugs into a hi-fi with your phone/tablet/computer acting as the control point. But he doesn't make clear whether this device picks up a wireless signal from the computer. I suppose it must do, but it would help if that point was made clear.

You'll probably find this hard to believe, but I don't have a smartphone:



**Cambridge CXN – "is that a network player or a digital source?" asks Tony Williams.**

my mobile phone just makes phone calls and I've no idea how one would control anything.

I do have a tablet, and obviously it would be useful to be able to do the controlling in the same room as the music was playing. But I'm also unsure exactly what functions a phone/tablet/computer would control, or how it would know how to do so.

If I want to listen to hi-res music I guess something more advanced than Chromecast Audio would be advisable, and Jon refers to dedicated streamers. On pages 78 and 79 you list the

Network Players and Digital Sources that you consider to be the best quality. Are these dedicated streamers? The majority of them cost over £1000. Some of them clearly include abilities like playing CDs that I'm not looking for.

On page 63 there's a picture of the Cambridge CXN for adding streaming capability to a system, and I've seen that favourably reviewed elsewhere. Is that a network player or a digital source? Would it pick up a wireless signal from my computer?

There are two further questions that the article didn't address. One is

whether these streamers contain the DAC that the article advises I'd need to by-pass the computer's internal sound card.

The second is where I would store a downloaded hi res file – on the computer, or in the streamer?

Jon's article was probably useful for someone who knows almost all that it contains already, and is just looking for confirmation. But as you can see, for me it just increases the number of unanswered questions. I need something much more detailed that goes step by step through the process, defines exactly what the necessary equipment is and what it does, and does not assume that I have any knowledge of the subject to start with.

**Tony Williams**

Hi Tony. The article was about adding streaming services such as Tidal, Spotify and Qobuz to an existing set-up – and the easiest way to do it. All of these give you access to millions of tracks for a monthly subscription but neither are hi-res (Tidal and Qobuz being CD quality, Spotify below that) and nor will they give you the ability to download files and retain them. You cannot save files from streaming services (Tidal etc). That's the whole point – you listen and it's gone.

A downloaded file sits on your computer or a Network Attached Storage (NAS) drive, so you can play it any time, now or in the future.

You need a means of transferring these files to your hi-fi which is where a streaming box such as the Cambridge CXN comes in. It will connect to your wi-fi and search and connect to your computer containing downloaded music.

The music isn't stored on the CXN; it finds stored music, on your computer for example, and sends it to the hi-fi, being a source for your digital music collection. As it contains a DAC, to convert digital to analogue, you can simply connect the CXN to an amplifier and it will allow you to play back any high-resolution downloads you have bought.

For control of the CXN, as you have a tablet there is a free app available that you download to your tablet. It then communicates via wi-fi to the CXN. It will let you adjust volume, choose tracks and see artwork for whatever you have downloaded.

At £800 the CXN is an excellent buy but there are others

worth looking at. I've seen the Pioneer N50A, for example, on offer for around £349 from a major hi-fi chain. If you add a NAS drive such as a WD My Cloud at £129 you will add the ability to have hi-res files played through your hi-fi at a reasonable cost. **JM**

## 24 BIT CD

Just recently I spent a considerable amount of time transferring my CDs to 24bit/192k FLAC format. I have stored them on a Synology DS216j NAS and use an Onkyo C-N7050, with a wired connection (via a Powerline network system) to stream the files out through my hi-fi.

All was setup and seemed to work fine but I have come across a weird anomaly that I am having a problem trying to sort out and thought you may have some insight to help me? If I copy these FLAC files from the NAS drive onto my Fiio X3 II player and output via an Audiolab M-DAC, they play really nicely and the Fiio shows that they are 24bit/192k files. But if I stream via the Onkyo and output through the M-DAC, the M-DAC shows 16bit/192k? I have read the manuals for the Onkyo and emailed their support dept and they have confirmed that the C-N7050 will receive 24bit/192k OK and can output it digitally (and also stated that the Onkyo is not capable of transcoding to a lower bit rate).

I then checked the Powerline network equipment and that again can't adjust the bit rate either. For an extra bit of information, when I use the V-Tuner and choose a station like "101 Smooth Jazz", the M-DAC shows 23bit data (23bit is a bit odd but it's still better than 16bit!) This confirms to me that the network connection via the Router will support over 16bit!

So that leads me to the Synology NAS I went through all the settings and confirmed I did not have any

transcoding enabled. I then emailed Synology, who asked me to run a debug and send it to them but they say they cannot see anything wrong either.

So basically, I am stumped, the only thing I can think of doing next is to setup some streaming software on my laptop (If you know of any free Windows 10 software I could test with I would be grateful) and try to access the files from the Onkyo but over the same network connections, thus testing everything but without involving the NAS. If this works it has got to be the NAS? As far as I can see at the moment, the only device capable of transcoding the data to 16bit is the NAS? If you have any other ideas please shout as it is beginning to drive me nuts!

Thanks

**Andrew Burtchaell**

Hi Andrew. The bit rate of 192kHz is being maintained, but the bit depth is not. The M-DAC says 16bit from your Onkyo and a very suspicious 23bit from an internet radio station that is almost certainly compressed 16bit (MP3, AAC etc).

This is not a transcoding issue, but one of resolving bit depth and I believe the M-DAC is defaulting to 16bit in absence of data. I suspect the Powerline network is a cause of your problems and suggest you bypass it, connecting the M-DAC direct to the Onkyo and then see what happens. My guess is that all will work properly.

But why have you converted CD to 24/192? This does not improve quality, it only makes file sizes much larger and correspondingly increases data rate. **NK**

Andrew, your transferred files will certainly not be 24bit – as CD only contains 16bits of information. Also, as far as I am aware, 101 Smooth



**Onkyo C-N7050. "when I use the V-Tuner and choose a station like "101 Smooth Jazz", the M-DAC shows 23bit data" says Andrew Burtchaell. "it's a bit odd".**

Jazz transmits AAC at 128kbps; this will not be so the 23bit.

As Noel says, this doesn't seem to be a transcoding issue. The Synology NAS drive will definitely not reduce bit rate unless you ask it to in the software settings so I'd also look towards the Powerline. **JM**

### CABLES AND ROUTERS

I was very interested to read of Paul Goodwin's woes in the April Letter of the Month column because I encountered similarly unpredictable connections for a time. However, unlike for Paul, my hi-fi dealer found a solution that restored stability to a multi-zone system that might be of interest to your readership.

My foray into digital streaming began with my initiation into Meridian-based storage and the acquisition of a Control 10 (later upgraded to a Control 15) Network Player into a single zone Twinstore server in 2009. At that stage, it fed a Meridian G92 DVD player/processor with the outgoing analogue signal servicing a muscular Chord SPM 2400 amplifier into a pair of Spondor ST speakers.

It took two years to rip a CD collection of some 2000 discs, a real labour of love, but this set-up produced a hugely engaging and detailed sound stage that I enjoyed for many years. Fast-forward some eight years and the completion of a digital upgrade path with an 861 processor into a pair of Meridian 5200SE active speakers when I looked at the possibility of sending the Control 15 ripped FLAC files to other parts of my house. By this stage, I acquired a QNAP NAS which seemed more stable (and much cheaper!) than the original Twinstore server.

My dabbling with multi-zone technology began with a long run of Ethernet data cable from my main listening room around the back of the house to a kitchen/dining area on the far side. The signal fed a Meridian Media Source 200 Audio End Point into a Devialet 180 DAC/Amplifier and a pair of Spondor S315R2 speakers; not a bad secondary system!

At the same time, for two other zones, I took the same route as Paul and sent the Meridian source signal though the mains to a couple of Meridian F80 one-box music systems via two more Media Source 200 End Points. As with Paul's experiences, the first results were very promising and I enjoyed pumping my music round four separate parts of my house. Then it suddenly all went pear-shaped with



**"A DrayTek Vigor 2860 Router solved all the previous signal dropouts, restoring complete zone stability and my music around the whole house" says Graham Giggs.**

zones dropping out or disappearing completely at random except for the main system and the hard-wired link to the kitchen/dining area.

Further help was at hand from my dealer who pinpointed the likely problem to my Plusnet router. Indeed Meridian's own Soolos troubleshooting guide suggested that connectivity issues were almost always traced back to the free router supplied for digital traffic. My long-suffering supplier at St Martins Hi-Fi in Norwich suggested we try and he did configure a DrayTek Vigor 2860 Router. At a stroke, this solved all the previous signal dropouts, restoring complete zone stability and my music around the whole house. Hurrah!

So in conclusion, I would suggest that wired data Ethernet cabling should be used wherever possible for the highest and most reliable sound quality transfer (as that link never failed me at any stage); even long cable runs seem to be trouble-free.

The free telecom supplied router must be upgraded if you send your



**"Latest generation hi-fi Ethernet cables with superior termination, from the likes of Chord, offer considerably enhanced sound quality to my ears" says Graham Giggs.**

music over the mains; an industrial strength router does deliver the required system stability and improved sound quality in my experience.

The latest generation of hi-fi dedicated Ethernet cables with superior termination (from the likes of Chord) offers considerably enhanced sound quality to my ears compared with the standard RJ45 terminated CAT cables that even Meridian thought fit for purpose.

Who said digital sound was just a series of zeros and ones?

Yours

**Graham Giggs  
Cambridgeshire.**

Hi Graham. You are spot-on with your observations. The free routers supplied with most broadband suppliers are often not the most robust and can tend to suffer if there is heavy traffic being passed through. Streaming high-resolution music – especially anything above 24bit/96kHz – can often create problems as it takes up bandwidth. There are two solutions – look to go wired via ethernet cabling or invest in a more robust router. **JM**

### USE A SUBNET

I can sympathise with Paul Goodwin's experiences with his digital music system and its seeming unreliability (letter of the month April edition) as I had a similar experience when I first made the move to digital music. His frustration is tangible and it really should not be like that, should it? Perhaps given I now enjoy a reliable setup I can pass on some tips and advice that Paul and others may find useful?

I had two issues with my set up, which is based around a Linn Sneaky DS. The first was my own fault trying to save some cash by avoiding the purchase of a NAS and trying to run a media server on my PC, connecting the DS to the PC via home plugs. Bad idea, the best I could ever achieve was to stream MP3s. Anything hi-resolution was a nonstarter. Having sorted that out by biting the bullet and purchasing the necessary hardware I still had issues similar to Paul in that things kept disappearing. Mainly the Sneaky DS!

If I turned the router off to save power the only way the router would see the DS again is if I powered off the DS. Very inconvenient since there isn't an on/off button and so required unplugging from the mains to restart. It turns out there was a bug in the early versions of the Davaar firmware partially fixed by Linn in an update

that had the DS make an attempt at requesting a new IP address once a day. Unfortunately if it did that while you were playing music the playlist vanished and everything went quiet. Linn have since improved on this as well so the first bit of advice is check for new firmware/software updates. Good manufacturers like Linn will support their products well and fix issues like this.

Even with updated firmware I still had issues. I could see the DS listed in the routers IP address table but I'd regularly end up with a situation where none of the control points I used at the time (Kinsky and Plug Player) could access it. This was fixed when I adopted the recommended network configuration. So the second bit of advice is don't do as I did and try and cut corners on the network configuration but to follow the network configuration recommended by

the cable router to the ISP router, for example via home plugs.

With Netgear routers when you connect one to another like this the cable router will recognise it is on a network and will allocate devices attached to it a different range of IP addresses. On my system the DS and NAS have IP addresses starting with a 10 whereas on the ISP network connected devices all have IP addresses that start with 192. So no conflicts. What you have created here is technically known as a Subnet. The cable router will also have a 192 address on the ISP network and it is this address you need to use with your file transfer program to send music to the NAS so it is best to make it fixed IP address so you know what it is.

On the NAS you need to open up IP port 22, the secure file transfer port (on a QNAP NAS like mine, Network

listen to music I just turn the amplifier on, open the Bubble DS software which I use to control my Sneaky DS, everything wakes up and I simply play music which is exactly how it should be.

Even though I have worked in computer software since 1981 and know my way around a network that is my day job and like Paul I just want my music system to work seamlessly, which it now does. I would recommend anyone to adopt a similar configuration to mine.

If you purchase a Linn system a Linn dealer ought to set this kind of network up for you, or at least advise you how to do it, but for other systems where you are left to your own devices I hope this will be of help.

Details of how to set up things like fixed IP addresses and port forwarding will be found in your router's manual, or just search for instructions on the Internet.

Regards,

**David Oddie**

Thanks David. Your knowledge of IP addresses on a network shows through and we are all going to have to see our hi-fi as part of a subnet in future. Oh dear! **NK**



**Linn Sneaky DS is run on a dedicated hi-fi sub-net. "this is something anyone who wants to run a network based music system should do" says David Oddie.**

your manufacturer.

For my Sneaky DS this involves running what is a dedicated and separate network for the music system. That is separate your music system network from your normal home network you use to connect to your ISP by purchasing another router to connect your streamer and NAS to. I think this is something anyone who wants to run a network based music system should do, not just Linn users. There won't be any IP address conflicts or interference with your music system.

You will still want to connect your PC/laptop to your music network to upload music to the NAS and if you can connect your PC/laptop to the music network then that is fine, but if like me your desktop PC is connected to your ISP network in another room you will need to connect the two networks together. This will still leave your music network sufficiently isolated. To do this you need to buy a Wireless Ethernet router (often referred to a cable router) for your music network. It does not have to be an expensive router. I use a £30 Netgear one and you need to connect

Services > Telnet / SSH Allow SSH port 22 enable SFTP) and on the cable router configure what is known as port forwarding to direct traffic destined for port 22 to go to the IP address of the NAS on the music subnet.

Back on your PC you then put the 192 address of the cable router into the file transfer program (e.g. Filezilla) and when you issue the connect command it will connect directly to your NAS and you can drag and drop files from the PC to the NAS. Brilliant!

You can also connect your phone/tablet to the wireless network of the cable router to control your streamer and you will still be able to connect to the Internet so there is no need to keep changing the wireless configuration of your phone/tablet.

This may all sound very complicated but it isn't that difficult and it is a one off job. Once you have isolated your music network in this way you are far less likely to experience problems. I now leave my cable router switched on all the time, the Sneaky in standby, my control points connected to the cable routers wireless network and if I want to

## INNER GROOVE ISSUE

I read with interest the letter from Andrew Burtchaell, and your response, published on pages 33/34 in the 2017 May edition of Hi-Fi World. The issue raised by Andrew is one I've struggled with for many a year – until recently. My issue was, primarily, inner groove distortion, and also distortion at other radiuses across the record grooves.

My record playing system is a Garrard 301 turntable, SME Series IV and over the years various cartridges including Audio Technica MLX 150 (micro-ridge stylus), Goldring G800 with Northwest Analogue ruby cantilever + Fritz Geiger S stylus, Denon dl-301 and



**Ortofon Quintet Black budget moving coil cartridge. "Absolutely no – and I mean no – inner groove distortion" says Mark Gaudet.**

Denon dl-103. Despite all being set-up fastidiously by using the Hi-Fi News set-up disc, and tracking said record up to and including the torture track, I could not alleviate the dreaded inner-groove distortion.

From time to time I would console myself with the fact that the problem was due to the condition of many of my records, which dated back to University days or earlier, and that the turntable/arm/cartridge combo was fine. The issue must be groove damage, right? It was easy to understand that the cheaper cartridges I could afford in my youth with spherical or elliptical styli were to blame.

However, the issue always nagged me, and I couldn't accept that the issue was also present with some brand new audiophile pressings. So, I thought the only solution was to increase tonearm length in an attempt to reduce tracking distortion.

I bought a Jelco SA 750L, and set about commissioning a new plinth to accommodate the Jelco. Somewhere in the middle of this process I was perusing Canuck Audio Mart (the web-site for buying and selling used hi-fi equipment here in Canada), when I came across a little used Ortofon Quintet Black at half new price. I thought I'd give the current turntable set-up one last whirl I am so glad I did. The result was just perfect: absolutely no – and I mean no – inner groove distortion. No tracking issues what-so-ever. Even with 35 year old records. Some scratches, yes, but no distortion

The question in my mind is why is everything now hunky-dory? Is it that the rectilinear shape of the Quintet has allowed me to set-up this cartridge better than any other? Or is it that this cartridge is inherently a better tracker than all of those that I previously tried? Or is it that the SME IV / Quintet combination works so much better than the cartridges previously experienced?

In any case, I caution against putting tracking ills down to groove damage, and encourage Andrew and others to keep trying different tonearm/cartridge combinations until you reach audio nirvana. And if you don't reach your destination, just enjoy the ride! All the best,

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

Hi Mark. Thanks for your experiences, I am sure they will help. I would not like to hazard a guess as to why the Ortofon achieved

what the others did not, since Audio Technica and Denon know what they are doing. However, Ortofon 'Black' cartridges are their best effort and use a Shibata stylus. This does seem to make all the difference, their 2M Black MM for example being better than budget moving coil types. And as you say, the parallel sided body aids alignment in the headshell, that makes a big difference on inner grooves where mechanical wavelengths are short. **NK**

### SPINNING DIGITAL

I used to be a dedicated vinyl enthusiast and was always of the opinion that vinyl outclassed CD. However, having just acquired an Audiolab M-DAC+, I am not so sure. Some of the CDs I played through it sound extraordinarily good. This was tried on two completely different systems, one being an integrated Naim amp and CD, the other a Naim Pre/power amp and identical Naim CD5 XS.

The additional ambience and decay of music, the attack and realism of percussion, the well-balanced and controlled bass. Rick Wakeman's new

The dilemma for me is whether I concentrate on digital music, or vinyl. Indeed, there is room for both, and even FM until they switch that off. For newcomers to vinyl, there is the choice between having a plug in and play system, attractive for its simplicity, as compared with choosing separate turntable, cartridge, arm, cables and aligning them with various tools and gauges, which can take time. I pride myself in how quickly I can set up a new cartridge and align it, but that has taken a lot of experience over the years to achieve that level of competence.

I have had some good experiences on both second-hand and new vinyl, but most of us have had a duff copy at some time. A friend told me that he had started back buying vinyl again, and had ended up with buying a brand new 'Dark side of the moon' copy, which was full of surface noise, sounded awful on his Rega deck, and has put him off. I told him to persevere.

I think I had two or three copies of a new Beach Boys 20/20 album many years ago, which kept on having to be returned to the record dealer, due to appalling surface noise and quality



**Audiolab M-DAC+. "Some of the CDs I played through it sound extraordinarily good" says Ron Koorm.**

CD, Piano Portraits, sounds as if he is playing his piano in my lounge, it's that good. That's not to say all CDs sound this good through the DAC. Some just sound, well, boring and flat

Comparing vinyl, one has to put up with a small degree of surface noise, although on my system and with most records, it is pretty unobtrusive, and a lot to do with the cartridge, alignment and condition of vinyl record. The dynamic range is excellent on a good vinyl system, and miles different to one of the cheap all-in-one players that are so popular. But the dynamic range of the Audiolab DAC is superior, and that's not counting the balanced connections, even better still

control, being played on a Goldring GL75 deck with Shure M75 cartridge.

It has to be appreciated, as you have stated previously, that vinyl records are the end result of a complex process, where lots can go wrong in the manufacture or packaging. But when it works, it works extremely well.

I am acquiring several vinyl copies of digitally remastered versions second hand, (eg Andre Previn on HMV - Gershwin), and there is a noticeable improvement of dynamic range and impact, but it is merging digital with vinyl, and some purists may not see that as being true to analogue vinyl.

I wonder if there can be the equivalent of the DAC for vinyl, where it

extracts even more from the record than we can currently hear? Or is it just the cartridge and preamp which we should be concentrating on? Which is the most important in the chain of audio quality in your view?

It's no good - have to switch on my DAC again for another addictive session...

**Ron Koorm**

### PHILIPS, SONY - AND HITACHI

On the analogue versus digital debate, back in the eighties, I owned what I considered to be an excellent analogue system. A Pink Triangle turntable (the original with pink platter and lid), Linn Ittok arm and, if memory serves, a Koetsu cartridge. This was fed into a Musical Fidelity MVT pre-amp to an A370 power amp (great for keeping your take-away warm) to a pair of Yamaha NS1000M speakers via some Van Den Hul cable. Oh, and my LPs were ripped for mobile use by a Nakamichi ZX7.

All very satisfactory, so why did I abandon LPs? Well as your reader Martin Taylor suggests, the quality of pressings became increasingly poor, to the point where it wasn't unusual to go through six LPs before finding a decent copy. Faults included off-centre hole, warping, visible scratches and surface noise. So when CD came along I happily embraced the technology.

Incidentally, whenever magazines talk about the birth of CD, the two mainstays from Sony and Philips are always mentioned. I didn't like the sound of either of these: the Sony was too bright and aggressive and the Philips too laid back and lacking high frequencies. My choice was the seldom-mentioned but released at the same time, Hitachi DA1000. This seemed (in my system at least) to bridge the gap between the other two and was closer to analogue reproduction.

The DA1000 was unusual in that it had a loading drawer that hinged down from the front panel, pushing the CD up on two arms. As a CD loaded, the arms withdrew and the disc sank into the machine. Perhaps you could find a working one and give it a review? Kind regards

**Chris Moxham**  
**Bristol**

Hi Chris. The Hitachi DA1000 was big in Japan and sold under various brand names. Hitachi were a force to be reckoned with in audio at that time, making not just the equipment but the silicon chips inside too. If we come across one we will certainly



**Hitachi DA1000, an early CD player that was better than Sony or Philips, says Chris Moxham.**

review it as an Olde Worlde item.

Vinyl will forever be variable and – I suppose – frustrating because of it. But at the same time it can also be wonderful and worth the effort. Modern LPs are much better than those of yore, as a generalisation. With record decks down to silly prices, yet performance getting ever better – see the Lenco L-3808 this month – it is easy to get back to LP, alongside digital. I still buy LPs and they still make me happy! **NK**

### PREAMP & HEADPHONES

Is it possible to drive headphones (Focal Elear) directly from the outputs on my pre-amp? I have an Audio Note M6 pre-amp. There is no tape out or line out. The only outputs are two sets of RCAs for connection to power amps. The M6 has a good quality phono-stage built in and I'm looking for a way to drive the headphones directly from the pre-amp. I have tried connecting a stand-alone headphone amp directly to the output but the quality of sound is not too good. In effect the signal is then going through two preamps and two volume controls.

Is there a way to connect the headphones directly to the pre-amp outputs or would this cause damage to the pre-amp?

Best regards,

**Zap**

Hi Zap. Focal rate the Elears at 80 Ohms impedance and the Audio Note M6 pre-amp. is rated as 600 Ohms output impedance (via transformers). Technically, they don't match and I would suspect the Audionote is designed to work with a 5-10 kOhm load. All the same, the Elears won't affect d.c. working conditions in the M6 and won't draw much current either, so I suspect the combo will work. You won't damage the M6 doing this since headphones draw just milliWatts. I would try it and see. **NK**

### MOVING FORWARD

I have a Garrard 401 with an SME 3012 arm, which I have decided I would like to update. I intend to replace the current SME 2000 plinth and have the 401 serviced.

I have also decided to replace the current Shure M75ED Type2 cartridge. Unfortunately I have become confused about cartridge compliance with the 3012 arm. I originally was thinking of a cartridge like an Ortofon Quintet Black, however am now not sure if that would be compliant with the arm. The Ortofon website suggests it should be, but forums have suggested maybe that it is not.

On forums most people seem to suggest Denon DL103 or Ortofon SPU cartridges. However I am concerned that the Denon would not be much of an improvement over the Shure, and have read that the SPU cartridges are very classical leaning; I am also put off by the 4gm tracking weight.

I would be grateful if you could suggest cartridges that would be compliant with the 3012.



**Focal Elears: "can I run them from an Audionote M6 preamp?" asks Zap.**



**Ortofon's 2M Black MM cartridge is both light and compliant. It suits a vintage SME3012 arm – good choice for Wayne Frostik.**

*My phono amp is an Icon Audio PS3 MKII MM/MC, and I am happy with either a MM or MC cartridge. I mostly listen to, what I call, alternative rock (Deerhoof, Animal Collective, Woods, Motorpsycho), Free Jazz (Sun Ra, The Thing), a little bit of modern classical (Schoenberg, Stockhausen) and early electronic (Daphne Oram). I feel I probably need a good all-round cartridge.*

*The rest of my system will be the PS3 MKII, Albarry M408 mono blocks and Monitor Audio REF 700 PMC speakers. I do intend to replace the Albarry mono blocks with Icon ones in the next couple of years. My budget is up to about £600*

*Thanks and regards*  
**Wayne Frostik**

Hi Wayne. The SME3012 is a lightweight, low mass arm that is best fitted with a compliant cartridge of low-ish body weight. That's what it was designed for. Old and even new moving coils are not ideal. The cartridge that suits your requirements all round is an Ortofon 2M Black MM at £450 or so. It is light, very compliant, has a superb stylus and sound, and falls within your budget. You'll be shocked at how much better modern cartridges sound compared to the venerable Shure M75ED.

When you can, upgrade the arm to an SME312S and then buy a decent moving coil cartridge.

By the way, try and restore the SME to original form if you can (headshell etc) because it is now a sought after classic. **NK**

### OIL THE SOUND

*I have owned a pair of ProAc Tablette speakers since they were released back in the early eighties. They have become rather neglected and uncared for over the years, with small specks of white emulsion from recent ceiling*

*decoration covering their natural wood veneers. At the back of my mind I was secretly preparing them for sale, as the sound emanating from their grilles had become rather dry and brittle at high frequencies.*

*Trouble is, old friends tend to sense when their days are numbered and they try and mend their ways. By chance I found a bottle of teak oil in the garage and decided to spruce them up prior to sale with a couple of table spoonfuls of oil applied to the enclosures with a kitchen towel. I then decided to give them one last blast before purchasing a bigger floor stander. All I can say is that their sound had been totally transformed, with greater power and even real bass coming from the woofer, and silky highs coming from the tweeters. I could even listen to my Bruckner symphonies on vinyl without grimacing.*

*Are my speakers playing mind games with me or is there some physics at play here? Is the teak oil strengthening the fibres in the wood and pulling the enclosure into a stronger, tighter box? Maybe you or your readers could enlighten me on this process. All I can say is that as a result I have decided to postpone this upgrade indefinitely and I am intending to settle down and become reacquainted with some badly neglected friends.*

*Best regards,*

**Jon Ledger**

### FOAM IN THE HOME

*Critical audiophiles can engage in some aspects of room treatment without having to rebuild the house. One factor is the placement of acoustic foam blocks at strategic points or even covering whole walls. These were a little costly and only available through studio supply sources. However, they are now available on line at very affordable prices (some of them from China), which makes experimentation a realistic proposition. Produced in a range of colours and*

*– when mounted on a backboard with a framed edge – they look quite attractive with their sculpted surfaces. A few backboard panels can be deployed at strategic positions to tame reflections or room nodes.*

*Foam blocks can also be particularly effective when placed behind loudspeakers in order to focus the sound. I have such set-up in my study where there is no alternative but to use bookshelf speakers on a wall mounted shelf, with space between them.*

*Carefully placing acoustic foam blocks behind the loudspeakers and along the whole length of the shelf has made an interesting difference to the sound. The loudspeakers in question are Monitor Audio rear ported reflex designs which, without the supplied foam bungs fitted, produce a hump in the bass response, due to proximity with the wall, which muddies the overall sound. Fitting the port bungs reduces the hump but introduces other, unwanted effects. However, with the acoustic foam blocks fitted snugly between the shelves, the hump has gone, stereo imaging has improved dramatically and the sound is much cleaner overall.*

*In fact, the improvement is significant beyond expectations and represents a particularly cost effective upgrade.*

*Even the best loudspeakers interact with the listening room, which is why listening in a showroom can only provide an approximation of a given design's sonic signature. Having got them home, the combination of loudspeaker and room can be tweaked accordingly using foam blocks. In some rooms, they may even be considered an artistic feature. Surely worth a try.*

**Mark Douglas**



**Applying Teak Oil to ProAc Tablette speakers brought them back to life, says Jon Ledger.**

# Stream Supreme

**Auralic's Aries wireless streaming bridge blends ease of use with reference quality sound, says Jon Myles.**

**S**ometimes a company's products sneak up on you over a period of time. Take Auralic, for example. Yes, I'd heard of their innovative streaming devices and had my interest piqued but never quite managed to get around to requesting one.

But then they began popping up in more and more systems being used at hi-fi shows and for product launches – partnered with the likes of Naim, Linn, McIntosh and other respected brands. What's more, the sound being produced was pretty engaging.

So it was obviously time to end the wait – hence the arrival of the Auralic Aries wireless streaming bridge in the office.

Which immediately begs the question: what exactly is it? And the answer is it is a way of adding high-quality streaming capabilities to your existing system for the relatively wallet-friendly price of £1495. Simply attach the Aries to a digital-to-analogue convertor

or a DAC-equipped amplifier via its AES/EBU, coaxial or Toslink outputs and it will replay music at up to 24bit/192kHz resolution from computers, NAS drives or other DLNA, UPnP compatible servers in the house. Alternatively, there's a USB input and output which will accept up to 32bit/384kHz files (if you happen to have any) plus DSD64, 128 and 256.

What's more the unit will also give its owner access to internet radio as well as the ability to stream CD-quality content from the likes of Tidal and Qobuz. Apple AirPlay is also built in.

Hence the term wireless streaming bridge; the Aries in essence acts a gateway between all your stored digital files or streaming services and the hi-fi, which must have digital-to-analogue conversion as no DAC is built in. Control is via the supplied remote or, more conveniently, the free Lightning DS app (iPad and iPhone only at present) which delivers album artwork, playlists and other features.

The unit itself is divided into two parts – the bridge itself which is a slim box measuring 2.7" x 9.8" x 7.8" (H/W/D) with curved plastic casing and a three-inch OLED display at the front with an accompanying off-board power supply. The latter deserves special mention - this is no off-the-shelf switch-mode unit but a carefully crafted linear PSU featuring Auralic's own Purer-Power technology which utilises filtering circuits in the form of large storage capacitors as well as high-speed, low-noise, low-impedance, multi-stage regulators.

Inside the main unit are two FemtoClocks (one for the USB, the other for all other digital outputs) plus dual-band Wi-Fi connection and there's also the option to go wired via an RJ45 connection on the rear. Auralic says the whole concept is designed to deliver an extremely low-noise, low-jitter input to the





*Inside the Auralic uses two FemtoClocks (one for USB, a second for all other inputs) to reduce jitter.*

featured search function also makes seeking out specific content simple.

So while the Aries boasts some impressive technology, initial set-up and operation should be no problem for even the most computer-phobic of users.

**SOUND QUALITY**

The Chord 2Qute DAC can be ruthlessly revealing of sources and so is an ideal reviewing tool. Plug in an inferior source and you'll soon realise it.

Not with the Aries, though. From the first notes of Daft Punk's 'Random Access Memories' (Studio Masters Edition - 24bit/88kHz) I was struck by just how detailed, crystal-clear and thoroughly engaging the sound was.

There's an exceptionally low noise floor which means instruments

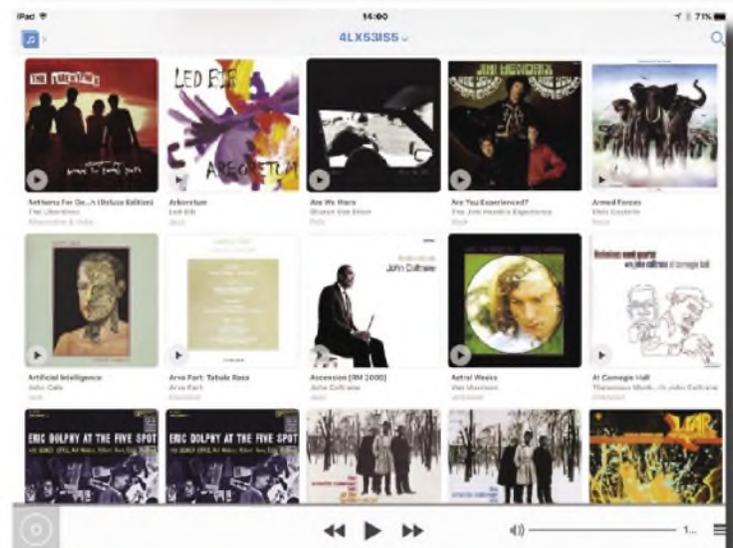
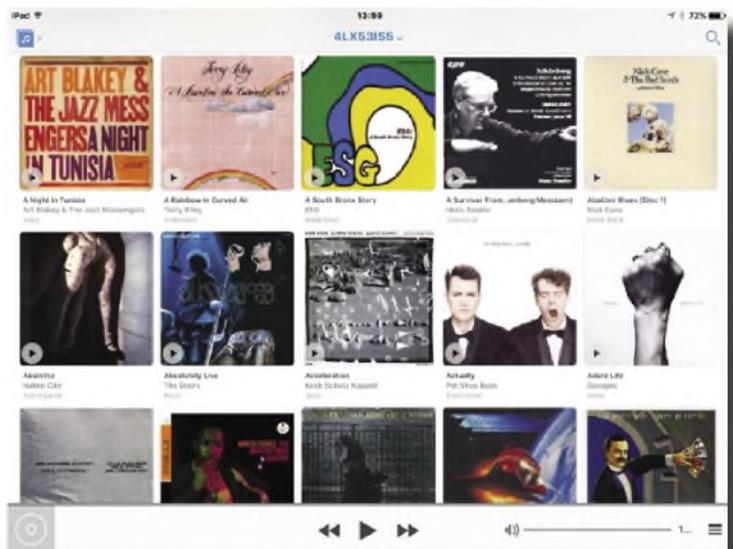
DAC of your choice, coupled with an easy to use interface.

**SET-UP**

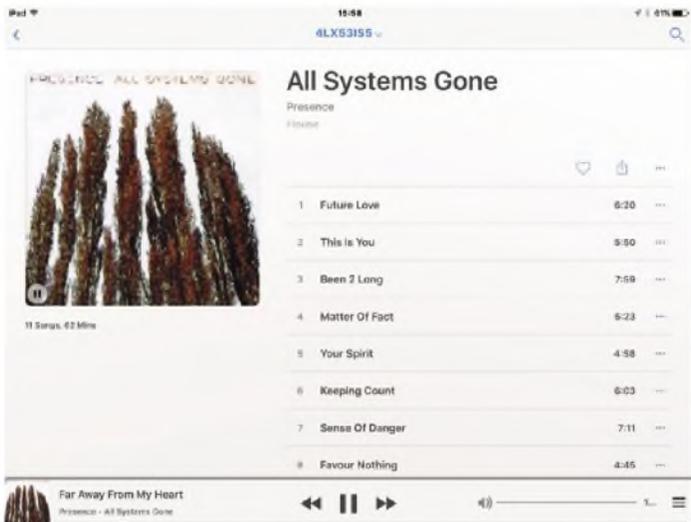
Credit to Auralic for making the Aries and its Lightning DS interface a pain-free set-up experience. I downloaded the app to an iPad, connected the unit to Chord's excellent 2Qute DAC via a QED Reference Optical Toslink cable and was up and running via a Naim Supernait 2 amplifier in minutes. The app found my digital files on both NAS drive and computers and indexed them with artwork, genre and other metadata in less than two minutes – impressive speed for 1300 albums' worth of data. Switching between tracks was also impressively speedy while accessing the likes of Tidal and Qobuz merely involved typing in my name and password once, after which it is automatically remembered.

Throughout the review period I tried the Aries on both wired and wireless connections and never experienced any dropouts even when streaming 24bit/192kHz files via the latter – something which is not always a given.

The Lightning app has specific display screens for the various functions on offer – be it Library mode when playing from digital sources such as NAS drives or computers, Streaming for the likes of Tidal or Qobuz, AirPlay from enabled devices or internet radio. A fully-



*Auralic's Lightning app brings up full album artwork for all music on your network.*



**The Lightning app for iPhones and iPads makes browsing through albums and selecting tracks quick and easy.**

take on extra vibrancy. Listening to the guitar part on 'Giorgio By Moroder' the notes had added bite at the start, but also their decay lasted a little bit longer which translates into a sense of hearing a real instrument at work.

Playing music heavy with ambient and spatial atmosphere such as Kraftwerk's live opus 'Minimum-Maximum' it delivered expansive, three-dimensional musical images. Through a pair of Neat's little Iota Alpha floorstanders – no slouches in producing a panoramic soundstage – the music extended further into the room with a wider spread left to right. Lack of jitter also meant timing was excellent with a crystalline quality to Kraftwerk's electronic melodies.

The ambience of venues also comes through. I could hear the

differing acoustics of the various halls where the recordings were made.

This is ideal for lovers of classical music as it's easy to accurately place the position of the instruments even with the largest of orchestras. On a DSD recording of Rimsky-Korsakov's 'Scheherazade' (Fritz Reiner/Chicago Symphony Orchestra) the solo violin part had tremendous resonance and body while the woodwinds were suitably full-bodied.

I was continually impressed at how the Aries managed to pick

musical pieces apart so I could distinctly hear each individual instrument – but without sounding clinical. Instead it retained the energy and excitement of even the fiercest tracks I threw at it. On Jesus And Mary Chain's 'Never Understand', for instance, the feedback was no longer simply a sonic squall but became a rising and falling melodic line that propelled the song along with



**The off-board linear power supply features Auralic's own Purer-Power technology with large capacitors to filter out mains-borne interference.**

fearsome intensity.

This ability to present a clear, detailed reproduction of the music came through on any genre I played through the Aries – be it pop, rock, classical, chamber or whatever. And, of course, the better the file quality and DAC you choose to run it with the more impressive that performance becomes.

**CONCLUSION**

As digital devices go, the Auralic Aries has to be considered one of the best on the market at the moment. Plugged into my system it took the streaming experience to another level – with more detail, more depth and more clarity to everything I played. If you want to hear your stored files at their best, (whatever the resolution) I'd say it's almost an essential purchase.



**Digital outputs are AES/EBU, optical and co-axial as well as USB for file sizes up to 32bit/384kHz as well as DSD.**

**AURALIC ARIES £1495**



**OUTSTANDING - amongst the best**

**VALUE - keenly priced**

**VERDICT**

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**FOR**

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### ELSDON-WONFOR AUDIO MC-V POWER CABLE £315 (1.5M)

These new power cables feature the result of research into noise cancelling/rejection. The company stated that it wanted the cable to remove as much common-mode noise as possible from the signal and ensure that the cable itself does not generate any RFI, while making it as immune as possible to external noise. Has it done so?

Testing the cable on my Icon Audio PS3 phono amplifier with

Gene Clark's 'The Way I Am' from the new Sierra LP 'Lost Studio Sessions 1964-1982', I was happy to report remarkably low noise that positioned Clark in a spacious arena. In fact, Clark appeared to be sitting in a room that, apart from his own performance, was quiet and peaceful. You could get a sense of this during slight pauses in the performance such as the sense of clarity that this cable was able to present.

It also allowed more information to spring forth, giving the guitar a

pleasingly resonant edge that allowed the string reverbs to travel further while tiny and previously unheard string bends, pulls and squeaks were now easily accessible to the ear.

Turning to CD and Kreidler's 'European Song', a new electronica album on Bureau B, the low noise aspect of the cable was present once more but so too was the tremendous bass output. The low noise enabled the lower frequencies to add extra focus and weight, giving the bass real heft and a sense of power and weight. Such was the admirable focus, though, that the bass never masked the more delicate synth runs living in the midrange and treble. The bass never bloomed, either, remaining precise and characterful.

Offering a performance that troubles much higher priced competitors, this low noise design offers focus, transparency and clarity that affords music a natural flow. **PR**

[[www.elsdonwonforaudio.com](http://www.elsdonwonforaudio.com)]

# SOUNDBITES



### QED REFERENCE AUDIO 40 £94.95

Upgrading from budget interconnects in a system is always a good move – and that's where QED's Reference Audio 40 is aimed.

Priced at £94.95 it won't break the bank but should have sonic benefits that make the move worthwhile.

It uses silver-plated copper conductors with different diameters alongside a foamed polyethylene

dielectric which is said to drastically reduce the amount of signal lost to cable capacitance.

QED also fits its own special plugs which have an outer locking cylinder which you screw forward when inserting before screwing back to provide a tight, secure fit. Once done there's little

chance of them coming loose.

In terms of build the QEDs are excellent – the plugs are solid while the cable itself is chunky but flexible enough to fit into tight spaces behind components even when close to a wall.

### SOUND QUALITY

Used between my Naim NDX streamer and Supernait 2 integrated amplifier Reference Audio 40 provided excellent resolution. Bass notes on New Order's 'Bizarre Love Triangle'

were full and rounded while Bernard Sumner's vocals were suitably plaintive.

There is added depth and dimension compared to standard interconnects. Nick Cave's 'The Ship Song', for example, had a vast soundstage – seemingly pushing further into the room and moving further left and right from the edges of the loudspeakers.

On Lady Gaga's 'Monster' the descending keyboard is sharply defined showing just how much detail these interconnects can reveal. Time smear was also absent, so fast-paced tracks such as this bounced along with vigour.

With the gentler music of Messiaen's 'Quartet For The End Of Time' the violin parts proved vivid, enabling me to hear the sound of bow on string. There was a supreme even-handedness to how these cables handled every element of the sonic spectrum; they come highly recommended. **JM**

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# Elite Elears

**French audio experts Focal expands its range of headphones with the new over-ear Elear model.**

**Jon Myles dons a pair.**

**B**est known for their range of loudspeakers, Focal are a relatively new entrant into the headphone market - first starting off with the Spirit One model just five years ago.

Priced at £200 they proved a huge success and since then the company has invested much time, effort and resources into expanding the range.

Alongside the Spirit they now have the in-ear Sphears, the over-ear Listens – both primarily designed for being used while out and about – and now the more sophisticated Elears which aim to replicate the sound of the company's loudspeakers in a smaller package.

They sit one rung below the flagship Utopia 'phones and cost £799. Hand built in Focal's St Etienne headquarters, the Elears are an open-backed design featuring a 40mm aluminium/magnesium full-range driver – meaning there's no crossover involved. The headband is also formed from aluminium with a leather cushioning while the supplied balanced cable is a handy 9ft in length. There are standard 3.5mm terminations going into both earcups so if you fancy a cable upgrade it is easy to do.

The padding on the earcups themselves is a 20mm thick memory foam cushion – meaning the 'phone's drivers sit slightly further away from the ears than some other designs. They tip the scales at 450g but the construction of the headband and foam pads translate into a comfortable fit with that weight evenly spread over the head. During testing I clocked up one four-hour listening session without any fatigue setting in.

## SOUND QUALITY

After a 48-hour break-in period I pressed the Elears into service via

Naim's DAC VI and HeadAmp's GS-X MKII headphone amplifier.

Focal claim a frequency response of 5Hz to 23kHz from their driver and the low-end response would seem to bear this out. With Massive Attack's 'Group 4' the complex bass lines were tight and never muddy or bloated. There's a real kick to the sound here plus good extension in the treble.

They are not quite as warm in the midband as my set of Oppo PM-2 planar magnetics (£699), but compensate for this with greater detail and a more up-front sound – but not one veered into harshness or an overly-brash presentation.

Also impressive was the sense of spaciousness evident. The relatively large foam cushions opened up the soundstage in a way that made the Elears an immersive experience. Playing Bruce Springsteen's 'Born To Run' the cinematic scale of the track came over wonderfully, Clarence

Clemons' epic saxophone solo simply soaring. Unlike some headphones which can compress this track the Focal's replayed it in full grandeur.

They were adept at revealing the differences between partnering equipment, highlighting the smooth, detailed nature of the GS-MXII compared to the Naim's punchier, more driving nature. On both, though, the Elears never failed to impress.

## CONCLUSION

Focal have engineered a fine set of headphones with these Elears. Build quality is exemplary and more than justifies the £799 price with a comfort and fit few others can match. The sound possesses detail and drive with a punchy bass and clean treble. March them with a good headphone amplifier and you'll be listening for hours.



### FOCAL ELEAR £799



**OUTSTANDING - amongst the best.**

#### VERDICT

Great build quality and an engaging sound make the Focal Elear headphones amongst the best at their price. Highly recommended.

#### FOR

- firm bass
- clean treble
- detail
- comfort

#### AGAINST

- not the warmest sounding

Focal  
www.focal.com



# 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 R3303 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 univalued. 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  
Breathhtaking 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** £1,200  
All valve MM phono stage with MC transformer option, graced by big, spacious and relaxed sound.



**IFI IPHONO** £350  
Multi EQ phonostage from British manufacturer that punches well above its weight. Substantial bass and open midband.



**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 phonostage 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 phonostage that sonically punches well above its weight.

**PREAMPLIFIERS**  
**ICON AUDIO LA-4 MKIII** £1,300  
Uses early 6SN7 triodes for liquid sound. Has plenty of gain and a remote control into the bargain



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

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



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



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



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

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



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

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



**ICON AUDIO STEREO 60 MKIII** £1,700  
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** £5,500  
With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.



**ICON AUDIO MB81** £10,000  
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 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 converter with a probing, punchy and forensically-detailed sound.



**TEAC UD-501** £699  
Feature-packed DAC with benefit of DSD playback. Superb sound means little to touch it at the price.



**RESONESSENCE INVICTA MIRUS** £4,499  
One of the most highly spec'd DACs available, with a smooth yet enthralling presentation. Few approach it.



**NETWORK PLAYERS**

**CHORD DSX100** £7,500  
Chord's proprietary DAC circuit shines in their top-of-the-range streamer. Hear-through clarity with a sound rich in detail, dynamics and soundstage.



**CAMBRIDGE AUDIO NP30** £399  
Budget offering from Cambridge offers a great introduction to network streaming.

**CYRUS STREAM X** £1,400  
Gorgeous sound quality even from compressed digital music. New control app makes everyday operation a doddle.



**CONVERT TECHNOLOGIES PLATO** £2999.00  
A network player with amplifier that does it all, including turn LP to hi-resolution digital, and add cover artwork from the 'net.



**NAIM NDX** £2,995  
Clean, incisive and very detailed sound with Naim's traditional pace and timing make this one of the best network music players around.

**NAIM ND5XS** £2,175  
Great sound quality with traditional Naim heft. A wonderful DAC with full 24/192 handling. Only the display could be better.

**NAIM NAC-N172 XS** £1,650

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



**PRO-JECT STREAM BOX RS** £1,095

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

**QUAD PLATINUM DMP** £2,500

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



**DIGITAL SOURCES**

**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.



**IRIVER IBA-50** £69

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

**CABLES**

**BLACK RHODIUM TWIST** £71/3M

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



**MAINS CABLES R US NO.27** £95

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



**CHORD SIGNATURE REFERENCE** £900

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



**TELLURIUM Q BLACK** 280/3M

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

**TELLURIUM Q SILVER DIAMOND** £804/M

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



**HEADPHONES**

**AUDEZE LCD-3** £1,725

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



**B&W P3** £170

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

**JAYS V-JAYS** £49

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



**NOBLE K10 INC. FITTING** £1,279

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



**OPPO PM-1** £950

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



**SENNHEISER HD700** £599

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



**YAMAHA HPH-MT220** £150

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



**reLOOP**®

# TURN 3

PREMIUM ANALOGUE HI-FI-TURNTABLE WITH DIGITAL USB-AUDIO INTERFACE

- Pre-installed Ortofon 2M Red cartridge
- Headshell connection provides added flexibility
- High-quality built-in Phono Stage
- USB output for recording your vinyl
- Low-vibration DC motor
- Integrated motor control with large speed selector (33, 45 and 78 RPM)
- Aluminium platter with rubber damping
- Adjustable anti-skating



USB output for recording your vinyl



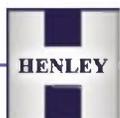
High Fidelity Construction



Large Speed Selector



Pre-installed Ortofon 2M Red cartridge



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# Clean power

**Isotek's Evo3 Mosaic mains regenerator is aimed at improving the power supply to your components to bring better sound. Noel Keywood is impressed with the results.**

**T**he Isotek Evo3 Mosaic Genesis power supply is not a mains conditioner – and just as well. In North West London, where I measured and reviewed it the mains waveform is heavily distorted – something a conditioner cannot improve. Instead, this unit is a regenerator, producing an entirely new mains supply inside that is low in distortion, and both voltage and frequency stable, no matter what

the outside conditions. This particular model is priced at £4500 and is aimed at high-end systems. It might seem a lot to pay, but there's quite a lot going on inside the shiny aluminium casework. And its measured performance was outstanding.

Isotek call it "hybrid" because it has two parts, a regenerator section delivering 150 Watts of power and a high-current conditioner section that filters out high frequency noise but doesn't regenerate, purposed for

amplifiers or power amplifiers that draw more than 150 Watts. The rear panel carries three UK 13A socket outlets delivering regenerated power and two delivering up to 10A filtered but un-regenerated. The front has a display panel showing mains input/output condition so it is meant to be seen, hence compact dimensions of 225mm x 225mm, with a depth of 470mm. Weighing 20kgs the unit is quite heavy but it is very well made and finished.



Above the central power-on button lies an attractive display panel that lights with bright blue numerals visible from a distance. Below sit three small buttons. The centre button turns the display on or off, the left button sets it to read input conditions – the quality of the mains going in – and the right button sets it to read output conditions – what is going to the hi-fi. It reads one or the other, not both. I was surprised to find it measures distortion – and accurately too. This is not an easy thing to do. It also displays voltage and power consumption. A frustration here was the fact that it doesn't read in real time (i.e. continuously). It makes a reading at switch on or when polled by pressing a button, so as I switched units on or off in the system the power reading remained unchanged – and wrong.



**A complex interior with large heatsink of the 150 Watt high voltage amplifier dominating.**

0.07% distortion, a very low value. That's what a regenerator can do. It was just a pity that these things are, in effect, high voltage power amplifiers fed from a clean, stable 50Hz sine wave source so to feed a hi-fi power amplifier they must not be just as big, but a lot bigger – 500 Watts or more – than any power amplifier they feed. Meaning big, heavy and even more expensive – something for the basement.

I connected up our Timestep Evo Technics SL-1210 Mk2 turntable linear power supply, Oppo BD-105D Universal (CD) player (linear power supply), Martin Logan ESL-X hybrid

Last month I measured 3% mains distortion, caused by heavy clipping, in one part of North West London, when reviewing Longdog Audio's Garrard 401 turntable regenerator power supply. This month I measured exactly the same condition some miles away where the mains supply, I would have thought, comes from a different station or substation. The waveform clipping is, I suspect, caused by voltage regulation so may be common across the UK. Only a regenerator can eliminate the issue.

Although power supplies within hi-fi products are immune to mains clipping and distortion, leakage currents in their mains transformers pass it to ground where it is picked up by the circuits and this, it would seem, has audible impact. Turntables with synchronous a.c. motors are not immune and nor is my Garrard 401 that is voltage sensitive.

Switching on the Isotek, its measurements of frequency, voltage, distortion and power (output) were absolutely right – assuring. Mains input read 242V and its output read 232V. I was disturbed by the amount of distortion because I assumed this was due to some local problem close to my home, but obviously it is not, since our offices some miles away suffer equally. It was nice to see then, the output waveform measuring



**At top, the regenerated output sockets, and below high current filtered but unregenerated outputs for power amplifiers. This is a UK version fitted with UK type mains sockets. Other versions are available.**

electrostatic loudspeakers (polarising supplies) and Icon Audio PS3 valve phono stage. That little lot drew 87 Watts of the 150 available, so the Mosaic was in its comfort zone. A McIntosh MC-152 power amplifier was connected to a high current outlet.



**Mains input distortion of 4.58% (top) and mains output distortion of 0.07% (bottom). These were our conditions; both values can vary.**



**The supplied mains input power lead, fitted with a large, high current three-pin connector.**

**SOUND QUALITY**

What the Isotek did for sound quality was fascinating and beyond my experience of other mains filters and supplies. It was also quite profound. Treble gained a silky smoothness, the background cleared to reveal fine detail through gentle resolution, not through forcefulness, the timbral palette broadened considerably and a sense of deep yet silky resolution prevailed. I was beyond impressed;

I was almost mesmerised at times. In particular, spinning LP – a new 180gm pressing of Neil Young's 'After The Goldrush' (taken straight from the analogue masters) – his strummed acoustic guitar on Tell Me Why expanded in its timbral richness and the depth in which the system could reveal this quality. There was massive air and space, echoes ringing off into left and right speakers, Neil Young sounding more intensely plaintive than ever and – finally but perhaps most importantly – a deep silky smoothness and quiet that let the whole performance flow out naturally in a very analogue manner; there was no jitteriness in the sound. It was smooth, deep in stage depth and assured in rendition. The system suddenly jumped ahead in terms of sophistication, making it easier and more relaxing to listen.

These same effects were even more apparent with CD and – strange to say perhaps – CD became less like CD. By this I mean harshness was brought down, low level resolution (where CD is poor) increased and timbral resolution massively increased, so the piano in Josefine Cronholm's In Your Wild Garden had more a more imposing presence due to stronger resolution of its qualities, timbral and dynamic. It grew, just like Neil Young's guitar, to

having a gripping presence, fulsome and dynamically adept.

Willy DeVille singing Spanish Harlem similarly took stronger form in front of me and I could hear more of this live performance, yet again it was all smoother more svelte and sophisticated, with a deep sense of

background atmosphere.

The Isotek improved every aspect of the system in which I used it, sharpness and laceration receding. It brought in a silky quality, accompanied by deep insight and genuinely strong dynamics, possessing a relaxing delivery at the same time. We even felt the Martin Logan loudspeakers sounded better integrated between bass bin and electrostatic panel. Some of the improvements bordered on weird!

**CONCLUSION**

Yes, it is expensive, but the Evo3 Mosaic Genesis power supply performed extraordinary feats. It was almost worrying. Measurement showed our (London's!) mains supply is heavily distorted and the Isotek eliminated this issue completely, where a filtered supply cannot. The depth of improvement it brought to our system was extraordinary. This is a product that supports the system you paid for and I found it revelatory in every sense.

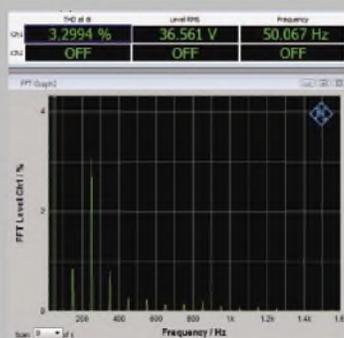
**MEASURED PERFORMANCE**

The Isotek Evo3 Mosaic Genesis regenerated mains power supply delivered 232V out as standard. Since 230V is a target European voltage and common around the world this is a sensible figure for a UK/EU unit.

The UK mains has a stipulated maximum range of 253V - 216V, some homes getting down to 210V or so at the

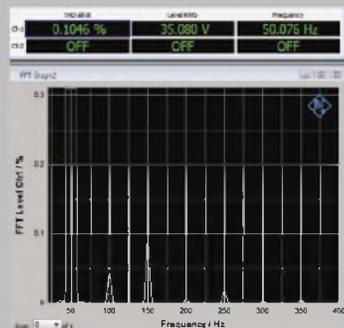
end of a long and loaded (countryside) supply line. The unit maintained 232V out from 280V input (it didn't blow up) down to 165V input within 0.3% variation – an impressive result. At 200V input, output was still within -0.2% of a 240V input, so it maintains output near perfectly whatever the mains does. The front panel display of input and output voltage was accurate too.

**DISTORTION - MAINS INPUT**



With a mains input of 242V, heavily distorted by peak clipping (London, North Kensington) that produced 3.5% distortion with harmonics up to 1kHz, as our analysis shows, the regenerated output measured a very low 0.1%, the Isotek display recording 0.07% – close enough to our measured figure from a Rohde&Schwarz UPV analyser.

**DISTORTION - OUTPUT**



Reducing mains distortion from 3.5% to 0.1% is impressive; the Evo3 also altered the distortion pattern from a splay of harmonics up to 1kHz into low order second and third harmonics; it cleans up well.

Output frequency measured 50.076Hz and held steady at that figure. This helps toward maintaining speed stability in frequency synchronous turntable motors of belt drive turntables.

Under measurement the Evo3 Mosaic held mains voltage steady under all possible circumstances, cleared distortion and locked frequency – impressive. NK

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# Something in the Aire

**Martin Pipe remembers the headphones that started a lightweight listening revolution**

**H**ard to believe now, but in the late 1960s most headphones were heavy (15 to 20 ounces, which equates to around half a kilogram) and cumbersome brutes that cupped your ears. Today, these live on – in greatly improved form – as ‘circumaural’ designs. They were derived, as was much other early hi-fi gear, from equipment designed for professional use. Here, acoustic isolation from the outside world was important. After all if you were a military radio-operator, a disc-jockey or happened to be mixing sound for broadcast or a recording session, you wanted to eliminate as many distractions as possible when monitoring the audio. The efficient ‘seal’ of circumaural



headphones worked the other way too, ensuring that other human beings didn't have to put up with the faint ‘tzzz...tzzz’ caused by unwanted sound leakage – a good selling point if your partner wanted to read a book without being disturbed.

But as far as domestic use is concerned, that was the only practical advantage of the average ‘cans’ available 50 years ago. Those ‘ear-clamps’ weren't comfortable to wear for extended listening periods, and the accumulation of sweat was frequently a problem too. The basic advantages of headphones for hi-fi

listening were however appreciated widely. No need to worry about the room-acoustics that compromised conventional speaker-based listening,



or subjecting the neighbours to your particular tastes in music. The stereo image was usually more tangible, if a little exaggerated. And if you lived in a bedsit, there just wasn't the room for big speaker boxes!

So when in 1968 German firm Sennheiser, at that time, better-known to recording hobbyists and audio professionals for its microphones, launched a revolutionary lightweight – a mere five ounces, or 142 grams – alternative, its success was almost guaranteed. The ‘Open Aire’ HD414 was, I was told by Sennheiser's audiophile portfolio manager Axel Grell, adapted from a combined handheld dictating microphone/speakerphone that the company was developing. One member of Sennheiser's engineering team, whose name is alas lost in time, happened to be a dedicated music enthusiast. He appreciated that these ‘microphones’ were capable of excellent audio performance, and had the brainwave of bridging two of them with a steel headband. Hey presto! A pair of headphones...

However, the pressure on the

ears was too high for consumer comfort. To address this, the engineer placed some foam between the ‘microphones’ and the ear. The result was much more acceptable and, into the bargain, improved reproduction. The ‘open aire’ headphone principle was born!

To achieve its lightness, the HD414's body – the headband, and the two cups that host each transducer – was fashioned from lightweight but strong plastic. Thankfully the band, which can be easily adjusted (with ‘click-stops’) to accommodate different sizes of head, provides a degree of flexibility. Also keeping the weight low were the transducers, which employ efficient low-mass Alnico magnets. Between these and your ears are soft foam



*The transducers of the HD414 Classic have a 52-ohm impedance – better-suited to modern gear than the original's 2 kilohms. Each transducer's 13mm voice coil interacts with a neodymium magnet to move its 32mm diaphragm.*





**The rather odd connectors on the left are DIN headphone plugs (the lower item is an adaptor for regular 6.3mm sockets). Sennheiser persisted with this obscure connector, which was present only on some European gear, for several years.**

pads that, according to Grell, form an integral part of the acoustic design. They rest on the auricles as opposed to enclosing them; for this reason, the HD414 is referred to as a 'supra-aural' design.

An electrical characteristic of the original office headset made its way to Sennheiser's new baby. Today, most hi-fi headphones have an impedance of 50 ohms or so. And in the late 1960s, the vast majority were 400 ohms or lower. The original HD414 departed from such practice. Its 18mm voice coils, coupled to 28mm diaphragms to form the first model's transducers, were 2000 ohms. Why? "This impedance was chosen for the dictation system forming the basis of the HD414", Grell explained, "so that the headphones could be driven directly from the playback machine's tubed amplifiers without the need for an expensive and bulky output transformer".

And the implications of such characteristics for hi-fi use? High-impedance phones don't draw much current, but for best results require a wide voltage swing (the original HD414 would, if tried, sound rather quiet with much battery-powered portable audio gear). Interestingly, the version sold in Europe/UK was supplied with a headphone adaptor that plugged into your amplifier via DIN speaker plugs. This attenuator/matching box 'duplicated' the speaker outlets, and provided a 'bypass' facility for switching between your headphones and speaker listening. The US version had a more conventional 6.3mm jack plug; American gear, it would seem, was more likely to incorporate headphone sockets back then...

One assumes that the signal voltage available on such headphone

sockets was of a sufficient magnitude to satisfy HD414 listeners Stateside – and everywhere else, for that matter – because the headphone became a big-seller internationally. Of course, the sound quality was crucial – and people liked the uncoloured, musical and detailed presentation the HD414s were capable of. By the mid-1970s, over a million of them had been snapped up. Here in the UK, the original HD414 sold for £11.15s (less than half the price of the £26 HD110) which equates to just over £200 of today's money. Although the HD414 was ultimately responsible for the black casework and bright yellow earpads that were to characterise Sennheiser

headphones for many years to come, that first-generation 1968 model was finished in light grey with blue foam earpads that, as with those that followed, could be removed for washing.

Many of the aforementioned million would however have been the second-generation model, which debuted in 1970. Produced in this form for around ten years, the HD414x introduced that iconic Sennheiser black-and-yellow finish. The firm was to build a new German factory in Burgdorf, 20 kilometres east of Hanover, to satisfy worldwide demand for the HD414x and its successors. Although it retained the original version's 2000-ohm impedance, the HD414x's voice-coil was smaller (13mm diameter) and coupled to a larger (32mm) diaphragm. The latter improved the bass response, addressing a not-unfounded criticism of the original model.

The redesign, which took the HD414 further away from its dictation roots, also facilitated a reduction in production cost. Yet for all these internal and external changes Sennheiser pegged the weight to the original's five ounces. In the US and Japan, 6.3mm phone jacks may have been the order of the day. The cables of European

and UK versions (as before, three metres), though, were terminated in the DIN headphone plug that Sennheiser headphones were to retain well into the 1980s – note that a 6.3mm adaptor was supplied for non-Continental gear. The effects of inflation (and decimalisation) helped to ensure that a pair of HD414x 'phones would set you back £18.80 in 1976.

1980 saw a third revision, still referred to as the HD414x. Selling on these shores for between £14.95 and £21.90 (1981 prices) depending on retailer, this restyled version retained the yellow/black colour-scheme but the 13mm voice



**The flyer that launched the 'open aire' HD414 back in 1968. It looked rather different to the versions that were to follow, with its light grey casework and blue foam earpads.**

coil now had a lower (600-ohm) impedance. Interestingly, it was subsequently joined by a 50-ohm version for audiology applications - the HD414-3 - in 1983. Efficiency was improved through the use of a different material (neodymium) that also contributed to a lower weight (an Italian Sennheiser catalogue states this as a mere 73 grams). The DIN plug and adaptor persisted, though. By the time this version of the HD414 was discontinued in the mid-1980s, a total of more than ten million had been sold! To this day, the HD414 is the biggest-selling product of its type.

Sennheiser patented its 'open-aire' headphone design in the late

1960s, and this brings us to another offshoot of dictation technology – Sony’s Walkman personal cassette player. The Japanese giant licensed these Sennheiser patents for a couple of years before actually producing a pair of lightweight open headphones – which would have been an ideal partner for its revolutionary product. They merely did so, a Sennheiser spokesperson explained, to prevent anything from getting in the way of the upcoming Walkman launch; I asked Sony for its side of this story, but it refused to comment. The HD414s did however stimulate productivity of a more responsive nature – at the other end of the recording chain. Many mixing engineers had been switching to them on account of their long-term comfort – as well as their sonic qualities.



**One of the great features about Sennheiser headphones is that they were among the first to offer ‘plug-in’ cords. If the proprietary cable is damaged, or goes intermittent due to an internal fracture, it can be replaced – a cost-effective alternative to junking the ‘phones altogether.**

In the mid-1980s, the HD414SL was launched. This contemporarily-styled ‘SlimLine’ model was alas a 414 in name only - Grell described these £28 (1985) 600-ohm ‘phones as “acoustically less-refined” than the ‘classic’ models. By this time, though, the Sennheiser range had expanded greatly – it can be argued that ‘cans like the HD480 were the 414’s true successors. Yet for all this the originals managed to hold out into the mid-nineties – albeit briefly. The HD414 ‘Classic’ was launched in 1995 to mark Sennheiser’s 50th birthday. That the HD414s were chosen to mark this milestone is a reflection of how important they were to Sennheiser. Or, as Grell put it: “The HD 414 family contributed tremen-

dously to Sennheiser’s corporate success. Their introduction marked not only the launch of the world’s first open headphones, but also Sennheiser’s entry into the global consumer electronics market. They put Sennheiser on the map globally as a consumer electronics brand!”

The HD414 ‘Classics’, 50,000 of which were produced (and quickly sold), can be identified by the printing of Fritz Sennheiser’s signature on the headband in gold. They boast the trappings of mid-Nineties design and technology - 52-ohm impedance (better suited to Walkmen, and the personal CD players then in

vogue), a replaceable 3m OFC cord, neodymium magnets, 80-gram weight and 3.5mm plug (with 6.3mm adaptor). But sadly nothing has been heard or seen of the line since. 2018 marks the 50th birthday of the HD414, and it’s natural to wonder if Sennheiser will mark this half-century with some kind of revision. The firm remains tight-lipped about such plans, but I would be very surprised if the HD414 is not celebrated in some way next year. Today, headphones are fashionable as a lifestyle accessory – their current global sales figures would have been unfathomable in 1968 - and the HD414’s successors can be seen just about everywhere.

Not having a pair of the original HD414s to hand, I tried the 1995 golden-jubilee ‘Classic’ models – which are claimed to be close to the original in audio terms. Even with the headband properly adjusted, they’re a light fit. That’s why you can wear them for hours at a time without discomfort. But as a side-effect there’s a tendency for them to slip off when on the move. These aren’t phones for gym hunnies.

In compatibility terms, the only equipment that gave me anything near a problem was one of the later Sony Walkmen powered by a single AA cell (Minidisc personals would be similarly-afflicted). The volume needed to be maxed out to get anywhere near acceptable levels. Their sound is crystal clear, and I was

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**Thanks to the low weight and comfort, the HD414s became popular with professional users. In this 1970s US music-press ad for synthesiser pioneer Moog, a pair of these iconic ‘phones is clearly visible.**

surprised how much insight into the music they could offer. Bob Dylan’s acoustic guitar, on his eponymous first album, bristled with vitality. Meanwhile the Divine Madness compilation revealed that the Nutty Boys were more than pop funsters – they were damned fine musicians too! They do err on the side of brightness, though; this affected the presentation of electronic percussion (Autechre’s Incunabula). And, for that matter, the Madness brass section and Dylan’s harmonica...

The ‘414s are not headphones for bass-monsters. Although what you get from them sounds great in detail terms. But I’d rather have the 414 low-end, such that it is, than the exaggerated and overblown bass that modern ‘phones strive for.

If you stumble across a pair second-hand cheap, then, they’re definitely worthy of investigation. Cables and earpads can be replaced – but finding new transducers might be a little more difficult. Check for distortion that may be caused by voice coils rubbing against the magnet’s pole pieces – the after-effects of overdriving, or poor handling. One or both channels being dead might point to open-circuit cables – or burnt-out voice-coils. Get a pair that works, though, and you’re in for a comfortable listening treat as well as a piece of headphone history. After all, 10 million listeners can’t be wrong...



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101 STRINGS

Astro Sounds from Beyond the Year 2000  
Modern Harmonic

Looking at the sleeve art of this album, you might assume that it's one of those one-off concept pieces released to exploit a theme, idea or fad.

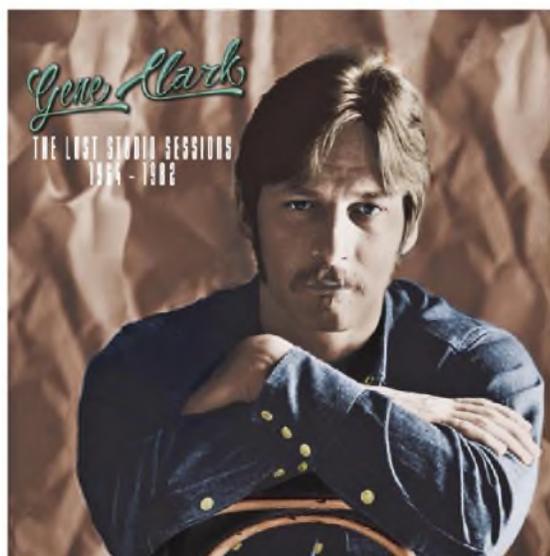
Not quite, the 'band', the 101 Strings Orchestra, was a concept created by Dick L. Miller for release on his own Somerset label (later sold to the Allshire label). Miller wanted his own Mantovani-esque outfit but rather than employ an orchestra of fixed personnel, he roamed Europe and employed a variety of musicians for one particular job, then they would play under his 101 Strings brand name. Once completed, he moved onto a different job, different tone, with different employees recruited for another album. In this way, the 101 Strings Orchestra name has produced many hundreds of recordings since the mid-fifties.

Specialising in loungecore or easy listening, the orchestra's lush

noises were always centred around a central subject. Hence the futuristic tone of this piece.

The psychedelic direction of this album was unusual, particularly in its arrangement. Featuring the creativity of the arranger Monty Kelly and boasting Jerry Cole on guitar (yes, that Cole, the man who was a session man for Phil Spector and who had worked with The Beach Boys and The Byrds) the music itself had apparently already appeared elsewhere via another psychedelic group so this stuff was not original. The electronic effects and strings were retained and mixed with other organic sounds such as the fuzz guitar from hell and a particularly whacked-out Hammond organ that Booker T. would have been proud of. In short, these crazy psychedelic rock noises filled the cracks opened by the orchestral arrangement resulting in a bizarre marriage between Bert Kaempfert and Jimi Hendrix through a kaleidoscope!

AUDIOPHILE VINYL



GENE CLARK

The Lost Studio Sessions 1964-1982  
Sierra

Clark, a simple and rather shy man, was an original member of The Byrds but his influence on music was wider and more important than that fact.

This new, limited-edition, twenty-four track release includes a download code adding six bonus tracks deriving from the original analogue master studio recording sessions held in Los Angeles between 1964 and 1982.

John Dalgatto, founder and president of Sierra stated that "I first discovered some of these studio recordings while I was a disc mastering engineer in the early to mid-70s. Others, dating as far back as 1964, came from former recording engineers"

The songs here range from solo works with guitar pieces, where Clark is pure of voice and heavy on emotion, to material recorded just before he joined The Byrds (1964) and a year after he

left (1967) with two from what's known as the 'Hugh Masekela Sessions' and from an aborted LP project from 1972.

Finally, you'll hear the 'Nyteflyte' sessions from 1982 when Clark teamed up with Chris Hillman, Michael Clarke plus Herb Pedersen and Al Perkins.

Presented as a DMM, Abbey Road-pressed double album in a gatefold sleeve, the mastering is excellent with a final sound quality superior to the CD version. For example, on the first track, the ear detects delicate vocal reverb, not as easily 'visible' on the CD edition.

With low recording levels and no compression, gain can be raised to access additional detail. Considering this is a rarities package and not a new studio release, the recording quality is doubly impressive. Like Clark and Byrds-related music? Buy it - it's essential. Contact: [sierrarecords.guestores.com](http://sierrarecords.guestores.com)

Who would have thought that Suede would get back together after all this time? But 2013's excellent 'Bloodsports' was followed up by the even better album 'Night Thoughts'. So the band is on a roll. Which signals that the time is right for lead singer Brett Anderson to look again at his own solo efforts and the four albums that he created. Those albums were issued on a pretty regular basis.

First up was 'Brett Anderson' (2007) which saw the wild, gothically connupt romantic figure calm right down. It's all about Anderson growing up, becoming more introspective, examining the detail and throttling back. And it works.

'Wilderness' appeared a year later but the style is drastically different: partly because it was written and completed pretty quickly. In fact, Anderson only took a week to write it. There is the raw

essence of the early Suede in this release.

'Slow Attack' (2009) is far more layered, textured and rich in presentation and is full of atmosphere and ambience. Never in your face, it is far more forthcoming in terms of the listener because of that.

The final album available in this set, 'Black Rainbows' (2011), is a more rocking project but only takes the raucousness so far and never goes all out. The changing tempos and textures do make for a more melodically interesting album, though.

The thing is, none of these albums were originally available on vinyl. That has now changed. In fact, all are now issued as a single collection and available within a rigid slipcase. There is one wrinkle connected to this box set and that's an exclusive Amazon edition which contains a 12" x 12" framable print signed by Brett Anderson and limited to 500 copies.



## BRETT ANDERSON

Collected Solo Work  
Demon

# AUDIOPHILE VINYL

If you had a casual relationship with the legendary early days of the 4AD label you may have missed one of the label's earliest signings – Colourbox. They were a band that took sampling seriously, a comparative rarity at that time. The music combined soul-like R&B-esque presentation as well as slices of dub and industrial creations. Their achievements would peak with their work on the 'M/A/R/R/S' track 'Pump Up the Volume' which keyed into the then underground dance movement.

To coincide with fine art photographer and Turner prize winner Wolfgang Tillmans' first major exhibition at the Tate Modern in London, this double album celebration of Colourbox has been released as a limited-edition.

The sixteen tracks that span the four vinyl sides were actually chosen by Tillman, who was an early fan of the group. The idea was

to play the songs on a loop at a conceptual playback listening space at Tillmans' Berlin gallery that would feature both lyrics and samples on the walls and where copies of the records sat alongside original session tape reels. A limited number of CDs featuring those exhibition tracks were made available at this 2014 exhibition.

Tillman commented that "The band worked in a seeming contrast of pure artistic research in the studio and an anti-intellectual stance towards the outside world."

This new edition, which is a work of analogue art in itself, incorporates a new variation of the Tillmans-designed CD sleeve. Nicely mastered, the compilation includes the 7" versions of 'Baby I Love You So' and 'The Moon is Blue'. In addition, a 24bit/96kHz hi-res version is available.

This edition can only be purchased via <http://4ad.com> or London's Tate Modern.



## COLOURBOX

Music of the Band (1982-1987)  
4AD

# Gold Standard

French firm Devialet's Gold Phantom active loudspeakers combine unusual looks with stunning sound.

Devialet first attracted serious hi-fi attention with its sleek, silver, luxurious-looking amplifiers. They employed something called ADH (Analogue Digital Hybrid) technology which connected a small, high-voltage class-A amplifier directly to the speaker with a parallel class-D stage providing the necessary current.

While the theory wasn't entirely new (many observers referenced Peter Walker and Quad's current-dumping circuit as a close cousin in terms of topology) its implementation was strikingly different in terms of detail and significantly more complex meaning the Devialet was unlike any other amplifier around.

A slew of glowing reviews and awards followed. But Devialet's engineers weren't content to rest on their laurels and decided they'd next turn their attention to loudspeakers.

Hence the Phantom – an active wireless loudspeaker which is again assuredly unlike any other around both in terms of looks and

operation. The Gold Phantom on review here is the top of the range – costing £2,190 per loudspeaker with an optional Treepod stand (see picture) available for £259 each.

That individual price is important as the Phantoms can be used individually, as a pair or even with as many as 24 in different zones around the house for multi-room operation. For the latter options it's recommended to add Devialet's Dialog hub (£249) which provides for easier set-up, adds a digital optical input and provides simple management of music streaming services such as Deezer, Qobuz and Tidal.

Looks-wise the Phantom is ovoid in shape – stylish and striking. The side panels feature 22-carat gold plated covers while each one weighs a hefty 11.4kg. The cabinet is hermetically sealed to withstand the 4500 Watts of power provided by the internal ADH2 amplifier section which is claimed to be good for a very high 108dB sound pressure level at one metre. In addition to the side-firing woofers there's a

forward-facing titanium-domed tweeter hidden behind a patterned grille, surrounded by an annular midrange driver.

The proprietary DAC will accept file sizes of up to 24bit/192kHz while there's also Bluetooth, Apple AirPlay and Spotify Connect compatibility. Control is provided by Devialet's Spark app which is available for Android, iOS, Windows and Mac OSX tablets, computers and smartphones. Like most applications of this sort it will enable you to see all files on your network with artwork, create playlists, access internet radio and streaming services and create various zones if you are using Phantoms in different zones.

Despite the complexity of the engineering involved in the Phantom, set-up and operation is simple with the Spark app. For this review I used a pair set up for traditional stereo operation (one dedicated left channel, one right) fed wirelessly with high-resolution material as well as being connected to an Oppo BDP-105D via an optical feed to the



**Dialog hub** There is no analogue input and no inputs on the speakers themselves. Each one has a mains connection.

From unboxing to plugging in, connecting to the app and listening to music took just 30 minutes. It was then just a matter of determining placement – and it was quickly obvious that firing straight down the room was the optimum position for the smoothest response.

**SOUND QUALITY**

Looking at my listening notes a few words keep cropping up repeatedly; namely clean, controlled, powerful.

Starting with Joy Division's 'She's Lost Control' (24/96) the stark opening cymbal crack shimmered – and then Peter Hook's melodic bass line kicked in exhibiting a definition and absence of overhang I wasn't expecting. The low-end grip is exceptional so bottom octaves stop and start with tremendous clarity



**The Dialog hub wirelessly connects between two and twenty-four Gold Phantoms.**

with no evidence of the cabinet adding its own unwanted vibration to the sound.

To test this fully I queued up James Blake's 'Limit To Your Love' – a track that has swathes of sub-sonic information that can prove torturous for even many large floorstanders. Sitting eight feet away from the Phantoms those sub-sonics punched me in the stomach in a visceral manner. This is how the track is meant to sound but no other loudspeaker at this size or, indeed, price has ever managed to do it for me.

The only worry was that, when turning up the sound the side-firing woofers vibrated somewhat alarmingly so that if this was a traditional loudspeaker I'd be leaping up to reduce the volume to prevent damage. But there's nothing to worry about – this is what they're supposed to do and how they function (See

Measured Performance for a full explanation).

Away from that bass response (impressive as it is) the overall voicing of these Gold Phantoms is commendably even.

With a 24bit/192kHz file of Leonard Cohen's 'Hallelujah' the pitch and tone of his voice were played with total accuracy, enabling me to even hear his small intakes of breath between lines of the song.

As an experiment, I also tried using one Gold Phantom placed centrally in the room. Yes, it lost the stereo imaging and large soundstage that two provided but the overall performance was still impressive with that clean, tight, vibrant sound coming through again.

As such I could well imagine some people opting for a single Phantom in some smaller rooms and then going for a pair in larger listening spaces.

That's the flexibility this design offers and why as a package it works so well. You have an amplifier and

loudspeaker in one elegantly engineered combination whose good looks are paired with even better sound.

**CONCLUSION**

Devialet has produced something truly different with the Gold Phantom. In terms of dynamics there's little to touch it at the price but it also sounds refined and authoritative with the flexibility to be set-up wherever you fancy in the home. It really is a ground breaking product.



**The optional Treepod stand costs £249 and provides a firm base for the Gold Phantom 'speaker.**

**MEASURED PERFORMANCE**

The Gold Phantom is conceptualised as a pulsating sphere – think of a football pulsating to produce sound, albeit in larger form. The idea is to produce sound from a 'point source', something Peter Walker, founder of Quad, pursued a long time ago.

Point sources like the Gold Phantom produce focussed images and can be impressive, but making them work in physical form is challenging. Devialet have placed an annular midrange around the central tweeter, underpinned by a bass unit at either side comprising hemispherical drivers, forming an almost

spherical case.

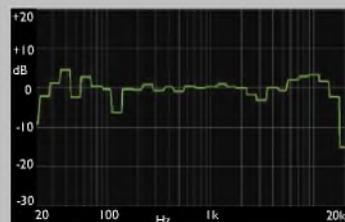
Our third octave analysis of pink noise, when on the low Devialet stand (top), shows smooth frequency response across the audio spectrum, from 70Hz to 6kHz. There's some treble lift on-axis of +2dB or so above 6kHz, but slightly off axis the Gold Phantoms measure flat so they are designed to fire straight down a room and not directly at listeners, at least for a truly flat and tonally accurate sound balance. Pointing them inward gives stronger treble, but only by a small amount, so these speakers will not sound dull, but nor obviously bright.

Bass ran flat to 30Hz when measured high above the floor to eliminate floor enhancement (bottom). Our published response of the speakers placed on the optional stands shows a small amount of bass lift – just enough to ensure obvious but not boomy bass. Although small, the Gold Phantoms run low all the same, producing strong beep bass, reaching right down to sub-sonics in the 20Hz-30Hz region. In spite of their small size then, bass will be strong, obvious and run deep.

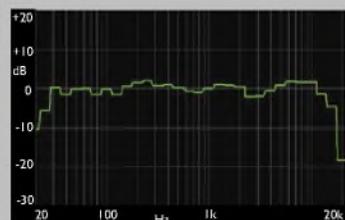
The Gold Phantoms are interesting in concept and have been heavily engineered to produce an accurate and effective final result, measurement shows. Although small, they will sound powerful, clean, detailed – and very focussed. **NK**

**FREQUENCY RESPONSE**

**On low Devialet stand**



**On high stand**



**DEVIALET GOLD PHANTOM £2190**



**OUTSTANDING - amongst the best.**

**VERDICT**

Innovative design combined with superb sound makes the Gold Phantom a standout loudspeaker/DAC/amplifier combination.

**FOR**

- dynamics
- ease of use
- flexibility
- bass response

**AGAINST**

- no analogue input

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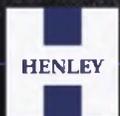
## CADENZA

The Cadenza Series represents another example of Ortofon's constant push toward technological perfection. By taking key design characteristics from previous market leaders, such as the MC Jubilee and the Kontrapunkt Series, Ortofon have developed Cadenza to elevate any decent Hi-Fi system to a whole new level.

The range consists of five different models, including a Mono version, but they all adhere to Ortofon's core principles of accurate information retrieval and phenomenal sound performance.



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# "The Lenco L-3808 is priced so low and works so well it is difficult to comprehend"



Noel Keywood

"It's a rip off" – a common enough comment, one that popped up yet again recently at the Bristol Show over the pricing of portable high-resolution digital audio players. Whilst xDuo of China seems able to spit these out for £100 or so, sold through Amazon, Astell&Kern (Korea) who kicked off the idea now want £500 or so for their lowest priced player, the AK100 MkII, and there are plenty of DAPs around that cost £1500 or thereabouts. These are alarming price differences for items that look similar and do much the same job, convincing all those who want cheap that expensive is a rip off.

Now the same situation is arising with Olde Worlde record decks. Super hi-tech digital portables I can shuffle off as 'Far East mass produced techno', much like a smartphone. But the record deck? It's so archaic – can a robot really build something like this for peanuts? More likely it would blow up at the thought.

Or so I thought. Both the Dual MTR-75 I reviewed last month and the Lenco L-3808 I review this month are built in China and priced so low it is impossible to believe they could be made at all. They turn everything else into a "rip off" in effect.

Er – that means my Garrard 401 was a rip off, when I bought it in pre-history (1974) at a very high price – before robotic manufacture perfected by Japan and now used by the Chinese to lower cost to almost-zero could be conceived of. This rip off thing gets complicated! But let's get back to the issue of seemingly over-priced portable players.

Look at the pricing first. Products go onto Amazon because it makes them available globally, at a low 15% mark-up it is said, so a £100 Chinese

player Amazon will buy in at £87. This is not the component cost: it includes all costs of making the item: salaries, factory rent, all forms of taxation, marketing etc, etc. The hardware component cost is difficult to tease out but it will be around 30% at most, meaning £29 or so for the bits.

A parts bill (BOM or Bill of Materials) this low is inconceivable to me; I used to struggle with getting the BOM down to £120 or so with a simple valve amplifier – and that was not including valves! OK, building a valve amplifier, with large, welded steel chassis fitted with at least three large and expensive hand-wound transformers is like building a battleship against the speedboat that is a modern portable player.

But the portable player has its own particular issues. It uses arrays of chips – some of which don't come cheap, even in China. Then there is the screen, casework and battery, again none of which are cheap. It has software development costs too.

I have no idea how any company anywhere in the world can build a modern high-technology portable player for £29 in parts. It has to be assembled by robots because to be small and light, tiny surface mount components are used. But that also means it will be assembled out of house by a company that specialises in robotic manufacture – not cheap.

It's here that journalists commonly invoke the benefits of scale: build enough of 'em for China's billions (blah, blah) and they come out costing pennies. But it isn't that simple in practice; there are always ongoing background costs, plus the fact that bulk component prices may be low, but not nothing.

My suspicion here is that the super-cheap players are loss leaders, an assured way to get into a lucrative global market fast. You pay your way

in, in effect, using up-front capital – it's an investment. Like all things audio, DAPs are not culturally specific: they sell globally to anyone, from a rich Shanghai urbanite to a lonely Patagonian sheep herder. So a Shenzhen Yuan can have global impact and reap the rewards, especially through Amazon and eBay who make their money through shipping goods.

Once the up-front capital funding low prices has been consumed however, the price then has to go up – substantially. And that appears to be what we are seeing. Huge price differences and sudden price jumps, especially when customer service gets factored in – as it will have to be as sales grow. I know from my own experience this is an imponderable at start up but can become a big issue, especially nowadays with strenuous forum complaint and consumer protection laws.

China now appears willing and able to draw the old analogue record deck into this production system. The Lenco L-3808 I review in this issue is priced so low and works so well it is difficult to comprehend or explain.

This is supposedly the benefit of raw capitalism – super low prices. But if you have pockets deep enough you can grab market share, bankrupt your rivals and then enjoy monopoly – at which point prices skyrocket because they have to – not because the boss wants a Roller.

With so much investment capital washing around now, there's no wonga shortage.

So I would caution about the notion of everything being a "rip-off". Super low prices look good in the short term but the long term consequences are less attractive.

And my Garrard was never a rip off. It was a quality item made in Britain to last, that is what it has done and, ironically, that is what the Chinese value today. ●



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# Back in Black

Tellurium Q has updated its award-winning Black cable – and made it even better, says Jon Myles.



**T**ellurium Q may be a relatively young company but it has forged an impressive reputation for constructing high-quality audio cables during its eight years of operation.

One main area of its focus has been engineering as clean and phase neutral a path for electronic signals passing through loudspeaker cables and interconnects as possible.

If implemented correctly, this should give a more transparent, focussed sound with less smear and the reduction in perceived timing of musical pieces it brings.

It's an approach that works. I use Tellurium Q's Silver Diamond cables in my main system and they are capable of bringing the best out of the most revealing speakers and amplifiers.

But the product that first brought the Somerset-based outfit to the attention of hi-fi aficionados was its Black loudspeaker cable which debuted back at the start of this decade.

"Strings contain texture, bass has a real heft and vocals sound more relaxed and secure in their presentation" we commented on first hearing them (Hi-Fi World August 2010 issue).

So when Tellurium Q's managing director and designer Geoff Merrigan told us there was an updated version

– the Black II – we couldn't wait to get our hands on it.

As ever with Tellurium Q there was little (well, actually, no) information provided on the materials or geometry of the cables themselves. It's a matter of unboxing, plugging them in and listening.

In shape they are a thin ribbon design with excellent flexibility and fitted with Z plugs. The price is £54 per metre so a 3m set comes in at £324.

## SOUND QUALITY

Alongside the Black IIs I also received a set of the original cable for comparison – and the step-change in performance is apparent.

Improved tonality was the first thing that struck me, especially with acoustic instruments. Keith Jarrett's piano on 'The Carnegie Hall Concert' had more body and weight to it with a rich, resonant presentation. Here was the sound of a real instrument playing.

While the original Black cable was good this new version takes all its qualities and builds on them with a sense that it is letting even more of the musical information through.

Timing, especially, seemed better and more focussed with a total

absence of smear or haze around instruments. With a slice of classic electronica such as Kraftwerk's 'The Model' the flip-flopping bass line had a rock-solid beat to it but wasn't overly dominant, allowing the intersecting synth lines above to shine through.

There was a feeling the Black II cables were imposing very little of their own character on the music but just allowing the signal to pass to the speakers unimpeded.

Of course, no cable can be totally neutral and these are not quite as transparent as the Silver Diamonds, being a little darker in tone. But that doesn't mean they are veiled – female vocals such as Diana Krall's coming over with superb air and emotion.

In fact, they excel throughout the frequency spectrum – relaying powerful bass when it's on the record and soaring saxophone lines when they are there.

## CONCLUSION

An update to an already outstanding loudspeaker cable, the new Black II cables improve on the originals to a remarkable degree. Highly recommended.

**TELLURIUM Q  
BLACK II £324 (3M  
PAIR)**



**OUTSTANDING - amongst  
the best.**

**VALUE - keenly priced.**

### VERDICT

Clean, open and free of any smear, the Black II cables make music breathe. A worthwhile upgrade to any system.

### FOR

- outstandingly open
- clean highs
- powerful bass

### AGAINST

- nothing

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# "Ian Dury's doctors told him to stop singing live. Luckily he ignored the advice"



Paul Rigby

**O**h to be under-appreciated. You may very well know the feeling. You know you're good or, at least, have something to offer. Something of use and something positive. But it comes to naught, is not noticed or is overlooked. There is nothing so demoralising and frustrating. Sometimes there's a good reason for it, other times it seems that the fates are working against you.

For music, the word 'fair' is little used. A shout in the wind. In fact, if you Google 'under-appreciated bands' you'll be presented with several lists over multiple pages detailing a wide variety of names.

I offer, as evidence, Exhibit A. That is Kilburn and The High Roads. The group was set-up by a certain Ian Dury who was working as a lecturer at the Canterbury College of Art in 1970 when he put the band together, consisting of several of his own art students.

It's a bit of a novelty, though. Isn't it supposed to be rebellious students who turn up for two classes per term and cause mayhem when they do attend class who become the pop stars and the rock gods? It's not supposed to be the teacher who says, "Oi! Lets start a band".

Under-appreciated? Here's Alan Robinson on his first view of the band at a live concert at the Odeon Cinema in Newcastle, "Firstly the drummer was assisted to his place on crutches and ensconced behind his kit. The bass player was well over six feet tall and wore a billowing white Zoot suit".

"The bearded keyboard player wore a flat cap and white muffer and looked a little like Harold Steptoe having a rattle on a Shepherd's Bush pub 'Joanna'. The guitarist looked a callow youth and a

rather Bohemian-looking sax player seemed to be wearing purple tights tucked into wellington boots".

"Then Ian Dury limped on, one leg in a caliper...they looked like they had been assembled from spare parts". Hardly Wham!, Kajagoogoo or Duran Duran then in terms of their physical presence.

The band recorded an album on the small imprint called Raft until the parent company Warner Bros killed it dead and then sat on and refused to release the album the group were working on at the time (until Ian Dury became a star, that is - odd that).

Then the band signed with Dawn (the Pye imprint). The group released 'Handsome' (out now via Cherry Red as a 2CD extended edition) but it was too late – they'd run out of momentum. The Kilburns broke up and Ian Dury's doctors told him, in the interests of his health, to stop singing live. Luckily for us listeners he ignored the advice.

Instead Dury kept on going, of course, and not only became an artist and rock star but a bonafide National Treasure. Bless his cotton socks.

On the same Stiff label that Dury would later occupy was Any Trouble. "Who?" Well, exactly.

Any Trouble was fronted by an Elvis Costello look-a-like, Clive Gregson (another teacher – what is it with teachers?) Pushed by legendary BBC DJ John Peel and signed to Stiff (see 'The Complete Stiff Recordings 1980-1981' on Cherry Red), the band should have been New Wave stars but, instead, were dropped by their label while touring the USA. Nice. Especially as they had to make their own way back home at their own expense.

The band broke up but, then were signed by EMI. Again, they really should have been stars.

Gregson saw the writing on the wall this time and, before EMI canned them, managed to talk the label into supporting a large and sprawling double album as a last hurrah. Canny.

The album was well received by the critics but failed to sell. Gregson later appeared as a solo artist. Still brilliant. Still under-appreciated. His journey continues as the band have now reformed. One day. One day.

Pure Hell. Well, an under-appreciated band just had to have a name like that. The first black punk band, no less, Pure Hell were a US outfit who flowered in 1974 within the raw, early energies of US-based punk.

They were up there with the MC5, Dead Boys, friends of the New York Dolls and support band to The Sex Pistols but their manager – who helped to produce their first album – fell out with the band rather seriously. So seriously, in fact, that he refused to release their debut LP.

Despite a well received single release, this 'canned' LP effectively ended the band's career as the group split (you can hear the band on 'Noise Addiction' CD/DVD, via Welfare Records, featuring the previously unreleased album and more).

The band would get back together in the 90s and release a new album produced none other than the late, great Lemmy Kilmister called 'Black Box'.

The moral of the tale? Sometimes, 'sticking at it' is what is required.

It might sound glib, insincere and even clichéd but, most of the time, all you have to do is to believe in yourself. Keep going. No matter what. Sooner or later 'it' – whatever the 'it' is that you are aiming for – will happen. Because, if you don't believe it will... ●

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“I can now sit in the garden and listen to thousands of tracks streamed from a NAS drive”



Jon Myles

Sales of CD players are on a downward spiral in the UK, full-size radio tuners have all but disappeared (driven out by DAB and the rise of internet stations) and while record players and vinyl may be making a comeback the market is starting from an extremely low base after years of decline.

But it's not all doom and gloom. There are two sectors of the current hi-fi market that are reporting an exponential rise in sales – namely headphones and portable high-resolution digital audio players (DAPs).

Anyone who attended the recent Headroom show at Metropolis Studios in the London borough of Chiswick cannot have failed to be impressed by the number of new 'phones and DAPs on display, as well as the knowledge and enthusiasm displayed by those who attended.

Perhaps it's no coincidence then, that manufacturers within both product categories are amongst the most innovative at the moment in terms of producing improved, updated and easier to use equipment, and that more and more companies are entering this side of the market.

At a recent visit to Focal in the French town of St Etienne, for example, I was told how the venerable company had gone from producing exactly no headphones at all five years ago to selling more than 100,000 of its first foray into over-ears with the Spirit One in 2012. It now sells six different models including one – the Utopia – which took four years to develop. They will soon be launching a series of new 'phones incorporating some interesting developments (watch this space for more details soon). The company has even invested a significant sum on a dedicated production line at its base to hand

build the higher-end models.

Add in the likes of specialist American manufacturers such as Noble Audio with their reference multiple driver designs – ten per side in the case of the range-topping K10 – and it's obvious headphones have gone from a niche product to a lucrative, mass market one.

This upsurge in activity was undoubtedly driven by the success of the first the iPod and then smartphones as people realised you could extract better sound from them by replacing the supplied (and often dreadful sounding) earbuds with better, more expensive 'phones.

Now dedicated audiophiles are turning in greater numbers to DAPs instead of iPods or smart phones as the method of choice for holding digital music collections – mainly because of their ability to play high-resolution material. And it's in the DAP market that perhaps the greatest improvements in performance are being made.

At the middle to higher end of the price spectrum many manufacturers are employing sonically superior DAC chips such as the Sabre from Silicon Valley-based ESS Technology which can decode file sizes up to 32bit/384kHz as well as DSD.

Perhaps more excitingly, the functionality of DAPs is being improved at a rapid pace. They now increasingly feature Wi-Fi capability as well as full touch screen operation, as found in mobile 'phones, whilst Google's Android operating system is used for the user interface.

I'll admit I'm no great fan of Android, finding its various confectionary-named versions (KitKat, Lollipop, Marshmallow, Nougat etc.) and their various drill-down sub-menus less than intuitive. But as there are more than 1.5 billion active Android devices around the world it's

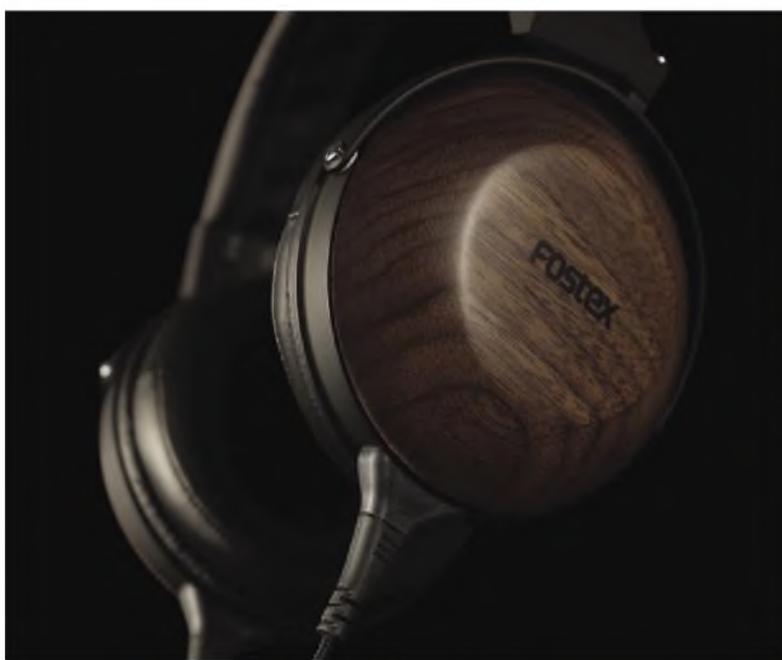
clear I'm in something of a minority.

However, its use in DAPs allows users to install all forms of music processing apps should they so desire, as well as enabling the reception of streaming music services such as Tidal and Spotify, giving access to millions of tracks without having to store them.

Another innovation gaining ground is the incorporation of DLNA file system search, Astell&Kern, FiiO and Sony to name but three offering it in some of their range. The implementation is still a little crude in some cases but it's a sure bet that it will become much more refined in a pretty short space of time as new software updates are released.

This feature opens up a number of intriguing prospects. I can now lie in bed upstairs or sit out in the garden on a nice day with my new FiiO DAP and listen to thousands of tracks streamed from a NAS drive downstairs, as well as sending the FiiO's digital content to other DLNA-equipped devices throughout the house. With a good pair of headphones I'm getting better than CD quality sound from a pocket sized device. That's not something you can do with an iPod.

What the next development will be is hard to say but you can be certain there'll be something around the corner in the near future. It's salutary to remember that the first Astell&Kern DAP – the AK100 – was released just four years ago with a 2.4" screen, no DSD decoding and a maximum file size of 24bit/192kHz. The company's latest high-end AK380 model boasts a dual DAC, can do native DSD as well as 32bit/384kHz files and has a balanced output to boot. That's pretty impressive progress in less than five years and one of the main reasons this area of the hi-fi market is booming. Long may it continue. ●



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# "I was surprised how much better 8-tracks sounded through the Sony's electronics than through the BSR's"



Martin Pipe

I recently came across a cheap 1970s stereo/quadrasonic 8-track player. In a terrible state, it was fit only for parts. Yet the playback head – which has four individual sections, rather than the two of a stereo unit – was in excellent condition. Could I put this head to good use? I had an idea in keeping with the traditions of hi-fi experimentation, and the desire to squeeze the most of a format that many deride for its sound quality (and practical limitations).

First step was to retrieve a BSR 8-track player from storage. This simple but robustly-built midi-sized machine enabled the proud owner's 'in-car' cart collection to be enjoyed at home too. Inside the British-built player I found a substantial AC motor coupled by belt to a sizeable flywheel, and a decent (Nortronics) stereo head in a solenoid-shifted diecast housing feeding a simple transistor preamp.

I removed the preamp, and replaced the Nortronics head with my quad one. I then brought the head connections, via fine-gauge screened cable, to sockets mounted on the BSR's rear. Also in storage, I (re)discovered a top-loading 'piano-key' Sony TC135 cassette deck that dated back to my 1980s DJing days. Might I be able to use this as a source of replacement electronics, feeding it from my 8-track head instead of its own?

I couldn't find the 8-track format's specific equalisation parameters, so I used the 9.5cm reel-to-reel ones as a guide. The time-constants here are 140µs (IEC) and 90µs (NAB). As 8-track was conceived in the US, I assumed 90µs was most likely. However cassette decks like the Sony cover 120µs (ferric) and 70µs (chrome), close to both. My Sony also has Dolby B, which was rare on 8-track decks. The 'hybrid' would thus correctly-play later pre-recorded 8-

tracks; I have Dolbyed Bob Marley and Mike Oldfield 8-track albums.

Specs for the Sony cassette record/playback or 8-track heads were unavailable, necessitating guesswork (and luck)! I disconnected the Sony's heads from the deck's circuit board, replacing its screened leads with longer ones terminated in suitable plugs. I then modified the Sony transport to disengage muting, thereby enabling playback without its motor running. Mercifully, the TC135 service manual was found online.

After making internal adjustments to playback-level and equalisation, I was surprised how much better 8-tracks sounded through the Sony's electronics than through the BSR's. Hiss was less intrusive and more finesse, from pre-recorded tapes and ones I recorded myself with an Akai deck decades ago, was evident. I found that pitch stability was a function of the cartridge; some are much better than others! When all is well, the results are comparable with a good budget cassette deck.

I then managed to locate a second TC135, which was dedicated to the remaining sections – the ones used for the rear channels of a QB. Quad, as well as stereo, was now within my grasp! I transferred some QB carts to digital with this concoction and a 4-channel recorder. Comparing these transfers to ones I made with a JVC QB player, I found that my later 'hybrid' efforts were audibly-superior.

Is recording an option? Quad 8-track recorders, made by Akai and Technics, were expensive; few were sold. Might I be able to use my pair of Sonys to record in stereo or quad, holding down the 'protect' lever in the cassette well while pressing the record button? The answer, surprisingly, is yes! An added bonus is that stereo and quad tapes alike can benefit from Dolby B.

To avoid audible 'beating' between

unsynchronised oscillators I took the recording bias from the 'front' deck, via coax, to the 'rear'. I adjusted the bias for each channel, monitoring the signals on a 'scope'; for successful recording, all four trimmers had to be turned to their end-stops. With a signal generator, blank tape and much experimentation, I calibrated the TC135 record-level presets for their new role.

I was pleasantly surprised with the results. The acid test was to make a recording from a DVD-A player loaded with the Alan Parsons quad mix of *Dark Side Of The Moon*. Using a new-old-stock 80-minute (40, if you're quad!) Memorex cartridge, what I heard sounded just as good as a commercial pre-recorded tape. The tape also played well in my JVC, which can be manually-switched between 2- and 4-channel modes.

A later Sharp player relies on a recess, exclusive to QBs, to switch between stereo and quad. This isn't present on blanks, and so the unit tries to play in stereo! I can imagine that owners of QB recorders had similar compatibility issues with some quad in-car gear; a Pioneer player I have automatically-switches in this way. Did '70s listeners file recesses, put blank tape into a QB shell or modify players for manual switching?

They certainly didn't have to snatch the cartridge from their recorders at the end of the second program, to prevent existing programs from being partially over-recorded – not a problem with gear designed for the job. And because my lash-up lacks an erase head, a bulk-eraser is required to 'wipe' tapes before re-recording.

Even so, I'm quite proud that I'm able to make my own QB tapes. Owners of vintage vehicles, who want to hear multichannel albums on their equally-vintage quad in-car audio, get in touch! (letters@hi-fiworld.co.uk) ●

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

# WORLD CLASSICS

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

## TURNTABLES

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



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

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

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

**REGA P3-24** 2008 £405  
Seminal affordable audiophile deck with fine bundled tonearm. Tweakable, and really sings with optional £150 outward 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 expansive.

**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.

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

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

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

**MICHELL GYRODEC** 1981 £599  
Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved. Clean, solid and architectural sound.

**TOWNSHEND ROCK** 1979 £ N/A  
Novel machine has extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

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



**REGA PLANAR 3** 1978 £79  
Brilliantly simple but clean and musical performer, complete with Accs-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. Scarcely complicated and with no spares support - buy with caution!

**TRIO LO-70** 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 PL120** 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 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 'S' 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 £15.65  
Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today.

**GARRARD 301/401** 1953 £19  
Tremendously strong and articulate with only a veiled treble to let it down.



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

**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 TECHNOARM A** 2003 £442  
Clever reworking of the Rega theme, using blasting, drilling and rewiring!

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

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

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



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

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

**TECHNICS EPA-501** 1979 £ N/A  
Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

**LINN ITTOK LVII** 1978 £253  
Japanese design to Linn specs made for a musical, rhythmic sound with real dynamics. The final LVII 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-B 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 masterclass.

**AUDIOLAB 8000S** 2006 £400  
In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound.

**MCINTOSH MA6800** 1995 £3735  
Effortlessly sweet, strong and powerful with seminal styling to match.

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

**EXPOSURE VII/III** 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, TL12 PLUS** 1949 £28  
Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical. Deeply impressive in fine fettle.

## PRE AMPLIFIERS

**AUDIOLAB 8000C** 1991 £499  
Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.



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

**CONRAD JOHNSON MOTIV MC-8** 1986 £2,500  
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a 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-fil

**QUAD 22** 1958 £25  
The partner to the much vaunted Quad II mono-blocks - cloudy and vague sound means it's for anacrophiles only.

**LOUDSPEAKERS**

**WHARFEDALE DIAMOND 10.3** 2010 £290  
Great small standmounters for audiophiles on a budget; dry punchy sound with impressive sound-staging at the price.



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

**USHER BE-10** 2009 £10,500  
Clever high end moving coil design with immense speed and dizzying clarity allied to epic punch. Needs the best ancillaries to fly, though...



**SPENDOR A5** 2009 £1,695  
Multi-talented floorstanders with generous scale and punch and Spendor's classic mid-range detail. Deliver a sound that thoroughly engages whatever you care to play.

**MONITOR AUDIO PL100** 2008 £2,300  
The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble.



**MARTIN LOGAN SOURCE** 2008 £1,600  
Brilliant entry level electrostatics, giving a taste of loudspeaker esoterica for the price of most moving coil boxes. Tremendous clarity, evenness and delicacy, although not the world's most powerful sound.

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

**ISOPHON GALILEO** 2007 £2,100  
Big standmounters that really grip the music and offer quite startling dynamics and grip.

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

**MOWGAN ALIIDIN MARON** 2007 £3,995  
Massively capable loudspeakers that offer dynamics, scale and clarity in an elegantly simple package. Wide range of finishes, too.

**B&O BEOLAB 9** 2007 £5,000  
Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.



**ISOPHON CASSIANO** 2007 £12,900  
Drive units featuring exotic materials allied to superlative build quality result in an immensely capable loudspeaker. Not an easy load to drive, however.

**B&W 686** 2007 £299  
Baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

**QUAD ESL-2905** 2006 £5,995  
The old 989 with all the bugs taken out, this gives a brilliantly neutral and open sound like only a top electrostatic can; still not a natural rock loudspeaker, though.

**B&W 801D** 2006 £10,500  
In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.



**REVOLVER CYGNIS** 2006 £5,999  
Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

**USHER BE-718** 2007 £1,600  
Beryllium tweeters work superbly allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

**USHER S-520** 2006 £350  
Astonishingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.

**ACOUSTIC ENERGY AE1 CLASSIC** 2006 £845  
Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.



**MISSION X-SPACE** 1999 £499  
The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!

**MISSION 752** 1995 £495  
Cracking Henry Azima-designed floorstanders combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

**TANNOY WESTMINSTER** 1985 £4500  
Folded horn monsters which sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others.



**CELESTION SL6** 1984 £350  
Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit 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...

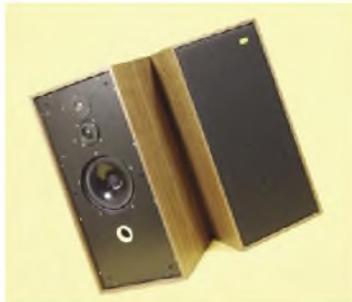
**YAMAHA NS1000** 1977 £532  
High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cans equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



**JR 149** 1977 £120  
Cylindrical speaker was ignored for decades but now back in fashion! Based on classic KEF T27/B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but has clarity and imaging.

**KEF R105** 1977 £785  
Three way Bextrene-based floorstander gave a truly wideband listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace.

**SPENDOR BC1** 1976 £240  
Celestion HF1300 tweeter meets bespoke Spendor Bextrene mid-bass unit. The result is a beautifully warm yet focussed sound. A little bass bloom necessitates careful low-stand mounting.



**IMF TLS80** 1976 £550  
Warm and powerful 1970s behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms not a forte.

**HH ELECTRONICS TPA-50D AMPLIFIERS** 1973 £110  
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

**BBC LS3/5A** 1972 £88  
Extremely low colouration design is amazing in some respects – articulation, stage depth, clarity – and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence.

**LEAK SANDWICH** 1961 £39 EACH  
Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.

**QUAD ESL57** 1956 £45 EACH  
Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.

## SYSTEMS

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



**NAIM UNITIQUE** 2010 £995  
Great little half width one-box system with truly impressive sound allied to a wealth of source options.

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

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

**SHANLING MC-30** 2007 £650  
Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and 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.



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

**ARCAM SOLO NEO** 2006 £1,100  
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

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



## TUNERS

**ARCAM FMJ T32** 2009 £600  
Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.



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

**MYRYAD MXT4000** 2005 £1,000  
Sumptuous sound and top-notch build quality make for a tempting AM/FM package. Warm and richly detailed on good-quality music broadcasts.

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

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

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



**NAD 4040** 1979 £79  
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica.

**MARANTZ ST-8** 1978 £353  
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.

**YAMAHA CT7000** 1977 £444  
Combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

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



**ROGERS T75** 1977 £125  
Superb mid-price British audiophile design, complete with understated black fascia. Smooth and sweet with fine dimensionality.

**SANSUI TU-9900** 1976 £300  
A flagship Japanese tuner. It boasts superlative RF performance and an extremely smooth and 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 liquid 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-DSF Type B 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-B 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 Phillips 16x4 chipset with serious attention to power supplies equalising sound

**MARANTZ CD73** 1983 £700  
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 OAC - super musical



**MERIDIAN 207** 1988 £995  
Beautifully built two-box with pre-amp stage. Very musical although not as refined as modern Bistream gear. No digital output

**SONY CDP-R1/DAS-R1** 1987 £3,000  
Sony's first two-boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties

**CAMBRIDGE AUDIO CD1** 1986 £1500  
Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.



**MERIDIAN MCD** 1984 £600  
The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.

**SONY CDP-701ES** 1984 £890  
Sony's first bespoke audiophile machine used a 16x2 DAC to provide a clinically incisive sound, supreme build quality allied to the pure unadulterated luxury of a paperback-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/play head better than most Naks. Result, sublime.

**PIONEER CTF-950** 1978 £400  
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless

**YAMAHA TC-800GL** 1977 £179  
Early classic with ski-slope styling. Middling sonics by modern standards, but cool nonetheless!

**SONY TC-377** 1972 £N/A  
A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

**REVOX A77** 1968 £145  
The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days

COMPACT DISC TRANSPORTS

**ESOTERIC 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

# vinyl section

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[www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk)

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Noel Keywood presents a complete guide to setting up a modern turntable.

# news

## GEARBOX AT RSD

A Record Store Day release from Gearbox ([www.gearboxrecords.com](http://www.gearboxrecords.com)) is a 7" cut of 'Hello Mr Schimmel' (1990) featuring 'The Schimmel Impromptu' on the A-side with a twelve minute 'Sun Ra Interview with Jez Nelson' on the flip. Audiophile fans will be

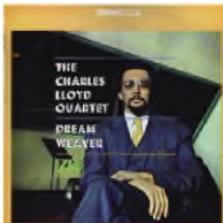


interested to hear that this 7" was cut on a Haeco Scully lathe with a Westrex 3D11A cutting head, Telefunken U73B valve limiter and RA1700 valve amplifiers and was monitored via Audio Note equipment.

## PURE PLEASURE

On The Zodiac's 'Cosmic Sounds' ([www.purepleasurerecords.com](http://www.purepleasurerecords.com)), originally issued on Elektra in 1967, is a psychedelic examination of the signs of the zodiac. Jacques Wilson supplies the text for spaced-out narrator Cyrus Faryar. The backing band features Wrecking Crew and other session names including Hal Blaine, Carol Kaye, Emil Richards and Bud Shank. Mort Garson provides the soundtrack-esque feel to the LP. It's a relic – but a groovy, lounge-soaked relic.

Also look out for the Charles Lloyd Quartet's superb 'Dream Weaver' (1966) featuring Keith Jarrett, Cecil McBee and Jack DeJohnette, proving that the stupendous, contemporary live concerts that this group played could be translated into the studio. Playing with varying world influences as well as time signatures, this LP was and is a corker.



## LADY DAYS

From Music on Vinyl ([www.musiconvinyl.com](http://www.musiconvinyl.com)) is Sarah McLachlan's superb 'Solace' (1991). Great songs, great performances, smart and bright lyrics. Astounding.

Aimee Mann's 'Mental Illness' (*SuperEgo*; [aimeemann.com](http://aimeemann.com)) on limited-edition pink vinyl is an involved examination of all kinds of odd behaviour, quirks, fancies and hallucinations. Slow tempo fare, a crafted album.

Also look out for Carole King's 'Simple Things' (1977). She tries but the LP lacks focus. It does feature 'Hard Rock Cafe'. Also reissued is 'Touch The Sky' (1979) which was not much better. The songs lack depth and quality; King is coasting here.



## A ROCK SLICE

From Telepathy is 'Tempest' (*Golden Antenna*; [goldenantenna.com](http://goldenantenna.com)) an instrumental double album gatefold of doom, post-metal vibes that beat you down relentlessly, until your head is flush with the pavement. It's also excellent air guitar fodder.

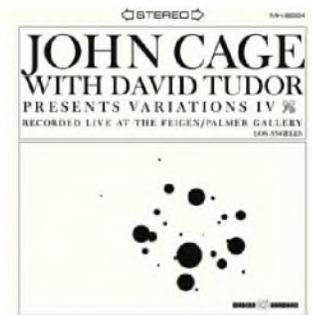
As a contrast, Richard Barbieri (ex-Japan and Porcupine Tree keyboard player) has released 'planets+persona' (*Kscope*; [www.kscopemusic.com](http://www.kscopemusic.com)). Intricate ambience combined with multi-layered electronica plus beats provides a sonic melange of appealing complexity.



## MODERN HARMONIC

An imprint of US-based audiophile label Sundazed, Modern Harmonic ([www.modernharmonic.com](http://www.modernharmonic.com)) offers slightly 'different' records, including Sun Ra and his Arkestra's 'Thunder of the Gods', including a previously unreleased live version of 'Calling Planet Earth' (1971) and previously unissued mono versions of 'Moonshots Across the Sky' (1956) and the title track.

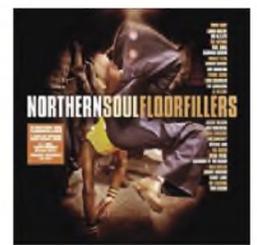
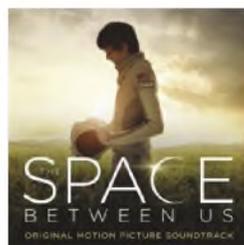
Also look out for John Cage's avant-garde 'Variations IV Vol II' (1965) featuring David Tudor with restored artwork and clear vinyl.



## FRUITS de MER

Two unusual new releases from this unusual record label ([www.fruitsdemerrecords.com](http://www.fruitsdemerrecords.com)) include tracks from prog/Canterbury/art rock outfit Egg's first album (1970) recreated by Polish multi-instrumentalist Kris Gietkowski. Limited to just 100 copies, on clear and yellow (poached egg) vinyl the jazz fusion and classic infused variations are ever present.

Us And Them's 'Fading Within the Dwindling Sun' is a 5-track 10in (the label's first) of folkly vibes. All should be familiar to Sandy Denny fans (who wrote three of the five, Richard Thompson wrote another with the fifth being a traditional cut). It offers a smooth, relaxed and low registered vocal delivery off an easy guitar accompaniment.



## ...AND FINALLY

Two new 'At The Movies' soundtracks, limited to 500 numbered copies, from Music on Vinyl, include 'Passengers' via Thomas Newman, a double album gatefold on green vinyl, plus 'The Space Between Us' via Andrew Lockington, a double album gatefold on gold vinyl.

Also from Music on Vinyl is Raymond Scott's 'Manhattan Research Inc.'. Early electronic music experiments utilised to create advertising jingles to musique concrete and work co-produced with Muppet man Jim Henson. Very Joe Meek.

Another soundtrack, this time the 25th anniversary edition of 'Singles' (Epic) featuring Pearl Jam, Mudhoney, Alice in Chains with some tracks previously unreleased.

Not a soundtrack but certainly a compilation, 'Northern Soul Floorfillers' (*Demon*; [www.demonmusicgroup.co.uk](http://www.demonmusicgroup.co.uk)) is a double album gatefold featuring the likes of Dobie Gray, Gloria Edwards, Billy Butler and Barbara Acklin.

Taking a quick left turn and early synth-based music from Luc Ferrari's 'Heterozygote' (1963-1964) and 'Petite Symphonie' (1973-1974) via GRM ([editionsmegeo.com](http://editionsmegeo.com)). They combine the warmly organic with the coldly haunting.

From the UK hardcore outfit Blood Youth is the new release 'Beyond Repair' (Rude; [ruderecords.com](http://ruderecords.com)) mixing a high-intensity vocal delivery with a contrastingly melodic chorus to simultaneously sooth and scour your soul.

Fairport Convention's latest '@50' (*Matty Groves*; [www.fairportconvention.com](http://www.fairportconvention.com)) combines new songs and old favourites. Includes guest spot by Robert Plant and Pentangle's Jacqui McShee.

Check out Dave Brubeck Quartet's 'Newport 1958' (Vinyl Lovers; [www.discovery-records.com](http://www.discovery-records.com)). Elsewhere it's subtitled 'Plays Ellington'. A beautiful tribute, 'Perdido' and 'Jump for Joy' being highlights.

Finally, Wilson's 'I Go Missing in My Sleep' (*Dalliance*; [dalliancerecordings.com](http://dalliancerecordings.com)). Swirly, dreamlike female vocals fronting reduced, subtle, beats-ridden, spacious arrangements.





# Turn the table

**Thought Direct Drive was expensive? Lenco turn the tables with their mew L-3808, Noel Keywood finds.**

**A** Direct Drive turntable for £200? Pass the smelling salts. This means it is made in China – by machines. Or people posing as machines. But whilst it is easy to sneer at complexity reduced to junk status through Chinese factories it remains a sobering fact that a lot of it has been well designed and cleverly manufactured. Lenco's L-3808 uber-budget Direct Drive fits this description. Plasticity in places it might be, and a tad amateur too, but it turned in the figures and did the job.

With its strobe light, pop up cue light and slide control speed adjuster, the L-3808 is stylistically similar to the famous and revered Technics SL-1210 Mk2 Direct Drive from the 1970s. It also looks quite snazzy in action; ours sat on a rack above the Blue Aura V3 reviewed in this issue and

correct pitch. And if you don't like that pitch you can adjust it with the slider – a trick aimed at DJs who get mention in the handbook.

The shiny white plinth is a complex plastic moulding that

resonated when I tapped it with a finger – not ideal. Hi-fi record decks need solid, non-resonant plinths but – hey ho – what can we expect at the price? The upside is an all-up weight of just 5.4kgs – very light. That includes a nice hinged acrylic dust cover – something you pay extra for elsewhere. This means the Lenco is easy to position and move, and does

people in the office remarked they looked good together. For a peanuts price you get all this.

With the speed adjustment slider set at its centre detent the L-3808 offers a nicely accurate 33 or 45rpm, measurement showed, from an 8 pole, 2 phase motor. It isn't quartz-locked so there's a smidgeon of wander, but nothing compared to belt drives; this is a turntable that holds





**The bayonet fixing detachable headshell comes fitted with an Audio Technica AT3600 moving magnet (MM) cartridge that tracks at 2-2.5gms.**

not need an especially strong shelf. Closing the cover hard will make the stylus jump; care must be used. The feet are non-adjustable.

I'm fairly impervious to foibles like pieces of bent wire and fishing line being used in European decks to apply bias and such like, but the limp arm of L-3808 was more jarring. In its rest, the arm slants alarmingly downward toward the plinth surface. Its rest is too low – no big deal, but inept design work, or expediency.

With arm on LP it still tilted down. Looking closely, part of this is genuine down-tilt of the arm tube, and part visual effect from a downward tilting upper face on the head shell. This needs sorting so the arm tube and head shell are truly parallel to the surface of the LP.

shelf OEM item, and not a dedicated design like the Dual MTR-75 I reviewed recently – that likely comes from the same factory. The Lenco's lift/lower mechanism worked well enough all the same, this being an all-manual turntable, so when an

LP finishes playing it must be manually cued up, or lifted using the headshell finger-lift for those dextrous enough.

The arm has a standard bayonet fixing detachable headshell, so it can be changed/ upgraded. It comes fitted with an unidentified Audio Technica cartridge (MM) that needs 2gms tracking force the manual says. It looks like the ubiquitous AT3600 to me, that comes with a conical stylus and tracks at up to 2.5gms.

An on-board phono stage is fitted, so the turntable can be connected to any amplifier's line input (CD, Tuner, Aux etc); an external phono stage is unnecessary. It can be switched out to allow use of an external stage however. And as if all this was not

amplifiers. It matches MM cartridges only of course. The Analogue-to-Digital Convertor (ADC) inside is necessarily a budget chip that gives 16bit resolution at 44.1kHz (CD) or 48kHz sample rate – so you don't get hi-res at this price!

There is no external power supply, nor a mains earth, as the casework is plastic; earthing is through the phono leads; there is not even a separate earth connection – all clever and well worked out because it avoids earth loops, ensuring the turntable is hum free. A captive two core mains cable is



**A stroboscope shines against platter markings to indicate speed. The marks appear stationary when speed is correct.**

terminated in a UK 13A plug – no wall warts here.

Set up was simple and standard, even bias is applied by a dial, not a weight on thread.

**SOUND QUALITY**

Although the L-3808's Direct Drive motor, aluminium platter and bearings are all budget there was no rumble or drone: when the stylus hit the groove all I heard was vinyl noise.

Initially, I ran the deck connected directly through its phono stage to a Music First Audio magnetic preamplifier connected to our McIntosh MC-152 power amplifier driving Martin Logan ESL-X hybrid electrostatic loudspeakers and this set-up worked but lacked gain, as measurement had warned. The internal phono stage did drive our Icon Audio Stereo 30SE however and I used it like this for most of the time.

The turntable has a very steady and assured quality and a certain form of simple purity to its sound: I was more than impressed to hear Kate Bush 'King of the Mountain' (180gm) glide past with a steady confidence absent with belt drives.



**The rear carries analogue phono socket outputs, that can be switched from direct (Phono) to Line output, using a small slide switch. Digital output (16bit, 44.1 or 48kHz) is via USB.**

All the same, technically it is no big disaster, raising Vertical Tracking Angle a little, which adds a tad to distortion.

More irritating was the close proximity of the arm lift/lower lever to the arm holder's securing clip. China has no history of LP usage and it showed here. But then again Lenco could have intervened to improve the whole arm rest structure, but I suspect the L-3808 is an off-the-

enough, there is a USB digital output, together with a CD carrying Audacity, the free music editing software, to enable the digital recording process.

Measurement showed the Lenco phono module is almost identical to that in Audio Technica, Reeloc and Dual turntables I have reviewed; it is a specialised module being bought in. Gain is low so volume will have to be turned up on accompanying



**The platter sits on a tapered motor spindle, so it is easily removed.**

Yet again I noticed that the warp filter of the phono module gave tight, fast bass, totally lacking softness or wallow. In total, the L-3808 offered quite extraordinary results; I was almost depressed that a £200 plastic special could sound so good!

OK, when I put on finely recorded LPs like Mozart Symphonies No25 & 35 (Decca, Pro-ject re-release on 180gm vinyl), violins were soft and a bit blurred by the conical stylus of the AT3600, but this is easily upgraded, the arm being good enough to take better.

With meaty rock like Billy Ocean's 12in, 45rpm single Get Outta My Dreams, Get into my Car the

it has dynamic contrasts any CD player would die for, plus a silky smoothness that makes listening a delight.

I did in the end switch out the internal phono stage, hook up an Icon Audio P53 valve phono stage and insert a headshell fitted with a Goldring 1012GX and suddenly there was more insight, detail and greater stage depth – as you might expect. All the same, the internal stage is very good, even if it is low on gain and needing a preamp.

Recording via USB inevitably gave a slightly coarsened sound with the peculiar mechanical hardness of mediocre 16bit but I suspect few people would notice. You don't get hi-res at this price.

**CONCLUSION**

For just £200 the Lenco L-3808 turntable package gave superb results. It could be forgiven small sins, but



**A pop up cue light is for DJs working in low light.**

there really weren't any. The arm and its rest need better alignment, but this little affects sound quality. It's a dynamite starter package for anyone wanting to get back into vinyl.

**MEASURED PERFORMANCE**

The L-3808 held steady and correct speed under test, the needle of our Wow & Flutter meter (Kenwood FL-180A) staying closely to a low 0.15% wow (DIN, unweighted) value, without the large swings seen in belt drive turntables. Our spectrum analysis shows variation lay at basic rotational frequency 0.55Hz (33rpm) as usual, accompanied by a few small motor cogging components seen as peaks at 2.2Hz and 8.8Hz.

With DIN weighting total wow and flutter measured 0.08% – a low value, if

not quite a match for Technics Direct Drives (0.06%). In use the L-3808 will have correct and steady pitch, sounding less 'watery' than belt drives, but this is quite a subtle effect.

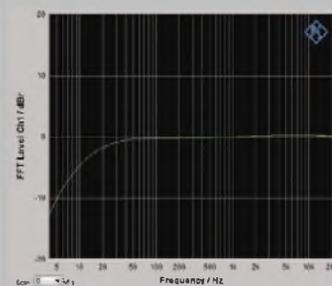
The internal phono stage that provides Line output had a low gain of x60 (35dB) at 1kHz, giving 600mV from 10mV input. This is just enough to drive insensitive amplifiers (400mV) to full output, with volume turned up. The overload ceiling was sufficient at 38mV.

Frequency response (equalisation accuracy) was correct, our analysis shows, a warp filter rolling off gain below 50 Hz. This suppresses cone flap caused by LP warps, but it removes deep bass. Noise measured a low -71dB IEC A weighted, a respectable figure.

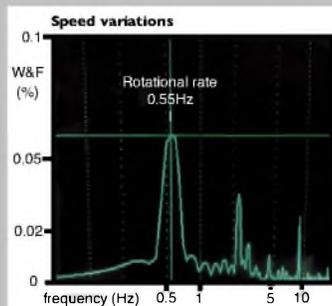
The USB digital output reached digital maximum (0dB) at the limit of the Audio Technica AT3600 cartridge's tracking ability, equivalent to 17mV in.

The L-3808 had superb speed accuracy and stability. The internal phono stage and USB digital converter were also very good, as budget items. The L-3808 measured well in all areas and was impressive by any standard – especially so at the price. **NK**

**FREQUENCY RESPONSE**



**WOW & FLUTTER**



**Speed error** +0.1%

**Wow** 0.15%  
**Flutter** 0.05%  
**Total W&F weighted** 0.08%

**LENCO L-3808**  
**£199.99**



**OUTSTANDING - amongst the best.**

**VALUE - keenly priced.**

**VERDICT**

Top quality results at a ridiculously low price from a budget Direct Drive that works like crazy.

**FOR**

- easy to set up and use
- accurate and rock steady speed
- relaxing yet dynamic sound

**AGAINST**

- resonant plinth
- poor arm rest
- arm droop

www.lenco.uk



**The cue lever is too close to the arm rest clip.**

turntable had superb grip on timing, the synth beat and sound effects delivered with metronomic precision and total, dynamic assurity – I just wanted to turn the volume up!

The Audio Technica AT3600 cartridge may be super-cheap but it is still well honed in its sound, delivering vinyl smoothness in bucket loads. It doesn't have the analysis or bite of more expensive designs, nor fine high-end detail, but

Bluesound Pownode 2  
Integrated Amplifier



# 50 YEARS OF audio-T

www.audio-t.co.uk

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# SOUND & VISION

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# Vision on!

In the latest in his on-going series on music-related books Paul Rigby reviews a tome looking at how TV has treated rock and pop music over the years.

**ROCK & POP ON BRITISH TV**  
Omnibus Press  
Price: £20

Unlike many other books which have filled this column, this particular publication is not a reference book in the classic sense but a long-form publication to be read from cover to cover. It's inclusion is warranted, though because of the sheer niche aspect of its subject matter. One that needed addressing because of the cultural importance of TV on the lives of ageing music fans, the exploratory and often experimental nature of early music television and the important musical events that often took place within these TV strictures.

Depending on your age and memory, a lot of the featured programmes with this book will spark memories and trigger an inward smile.

You can see part of the list on the front cover image on this page but what about 'Juke Box Jury'? What about 'The White Room'? And even 'Cheggers Plays Pop'?

And then there were the presenters, connected by a tune-filled umbilical 'chord'. David Jacobs on 'Juke Box Jury', Bob Harris on 'The Old Grey Whistle Test' and the wonderful Ayshea on 'Lift Off'.

The TV productions are catered for on a decade-by-decade basis within this book while each programme features history and anecdotes to provide a connected

history that flows easily.

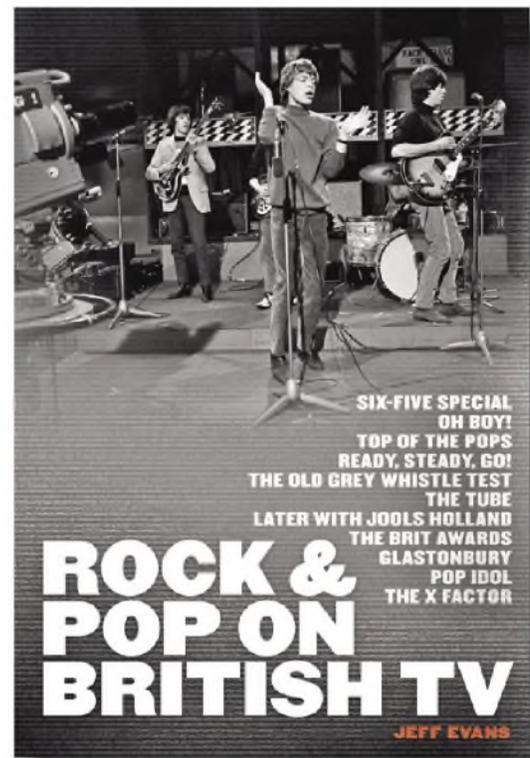
Despite its family viewing label, it seemed that music-based TV also gloried in emphasising the 'generation gap'. On Jack Good's 'Six-Five Special', for example, Pete Murray fronted the first few minutes of the first show with the words, "Hi there. Welcome to the 'Six-Five Special'. We've got almost a hundred cats jumping here, some real cool characters to give us the gas, so just get with it and have yourself a ball".

The shocked response from the Guardian, described the scene with, "open mouths, staring eyes, unkempt girls, loutish youths, drummers, singers and pianists white and coloured, bawling and shouting, jumping on the piano."

Oh, the horror! While the public reaction thought the show, "quite intolerably noisy".

There's plenty of insight for later shows here. The chapter on the innovative programme that was Channel 4's 'The Tube', which ran from 1982 to 1987, includes some intriguing nuggets. For example, were you aware that Boy George was slated as a full-time presenter? His singing career got in the way, though.

Quite apart from the navel-gazing, there is much in this book that shows how TV became part of music history. Yes, The Jam first broke the news of their split on the first episode of The Tube but others had a



more direct influence.

Tony Wilson's 'So It Goes', for example, had a large say in bringing the sound of punk to the public consciousness. The Sex Pistols made their TV debut on this show. From 'So It Goes' Wilson would move into the industry further, founding Factory records, helping to bring us legendary names such as Joy Division, New Order and the Happy Mondays and establishing the groundbreaking Hacienda nightclub in the centre of Manchester.

The book is not afraid to feature conflicting opinion, either. Former 'Top of the Pops' producer Chris Cowey had this to say on the demise of the programme, "What the BBC has done With 'Top of the Pops' is cultural vandalism. The BBC shouldn't care about the ratings...the executives [were] chasing ratings and chasing their own careers, instead of realising that what you had in 'Top of the Pops' was a national treasure".

So, this is a fascinating tome that will key directly into the nostalgia gland but will also provide valuable new information to many music fans who were often introduced to the world of music through the TV itself.



# Setting up a record deck

Noel Keywood runs through basic turntable setup, informed by Hi-Fi World measurements.

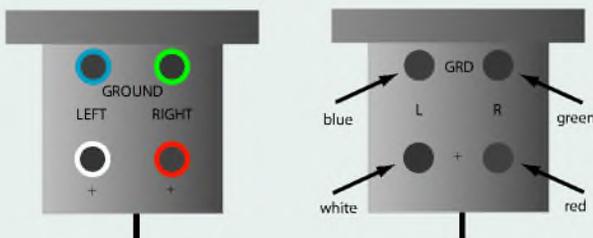
**N**ew back to vinyl? Wanting to buy a record deck and get those old LPs out and working again? Here's simple guide to help you. It covers traditional basics, with info on modern cartridges and arms that have improved in important areas that were once weak spots. Old sureties don't now hold, something this guide takes into account using information from our measurements.

Follow the set up sequence below.



*Audio Technica AT-LP5 record deck used in this feature.*

## 1) FIT THE CARTRIDGE



**Fit the coloured headshell leads to the similarly coloured pins, using small pliers or tweezers. It is easier to do this before fixing the cartridge into the headshell. Where pins are not colour coded, see our diagram for correct connection.**

Left channel. Headshells come with similarly coloured cables, making correct connection obvious.

Budget cartridges from the Far East are sometimes marked simply R (right) and L (left) with a + sign, whilst respective negatives are marked as GRD (Ground) – see the diagram. Connect the coloured headshell wires accordingly.

When attaching a cartridge using the screws supplied, fix it initially at the centre of the elongated headshell fixing apertures; it will be adjusted forward or backward later when setting Overhang. Ensure the cartridge is not skewed in the headshell as this will significantly increase distortion.

Care is needed as the fine cantilever holding the stylus (needle) is a fragile alloy tube easily bent. Either remove the stylus assembly (MM only) and put it to one side, or keep the stylus guard on when fitting and connecting up.

Ideally, use small snipe nosed pliers (Maplins, £8) to hold nuts and, especially, grip the fine electrical tags on the headshell leads. Tweezers are an alternative.

A cartridge has two small coils of wire in it, one for the right channel and one for the left. The coils are terminated at small pins at rear, commonly marked red (+), green (-) for Right channel, white (+) and blue (-) for



**When fitting and later adjusting cartridge position in the headshell, ensure it is not skewed, to minimise distortion. Set initially at centre of the elongated aperture.**



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## 2) SET DOWN FORCE

With cartridge in headshell (and headshell on arm) it is time to set tracking force. Since you must do this with the stylus guard removed, care is needed.

Set bias force to zero first, to prevent the arm swinging outward. Then balance the arm so it floats without moving up or down; this is usually done by moving the rear counterweight forward or backward.

Return the arm to its rest, secure it, set the counterweight dial to zero and screw the counterweight forward to set the cartridge's stated tracking force. Use the cartridge manufacturer's optimum figure, commonly 1.8gms nowadays for MMs and 2.2gms for MCs. Do not use a low downforce thinking it will produce less groove wear; quite the reverse, it will result in mistracking (intermittent buzzing noise), causing irreversible groove damage.

If the counterweight is calibrated this is a simple process. If it is not then the arm/turntable manufacturer's instructions will explain how down force is set, and you may need a stylus force gauge. A simple one from Shure or Ortofon will cost £25-£10 or so. Electronic gauges are also available, the Chinese Neoteck shown seemingly available from £10 or so from Amazon.



**Balance the arm so it floats, set the front dial to zero, then screw the counterweight forward.**



**The Shure SFG-21 gauge is an old favourite (£25 or so), needing no batteries. Ortofon's tiny little gauge costs just £7.50, whilst the Neoteck (China) gauge is electronic and available from £10 or so.**

## CHECKING DOWNFORCE

If you're worried about downforce buy the Clearaudio Trackability Test Record (£37) and use it to finely adjust tracking down force after the arm has been set up. This LP has the highest level cuts of any test disc on the market. Expect to clear its lower levels up to 70µm peak amplitude at 300Hz. The more downforce you use the better will be the tracking, but don't go above the manufacturer's recommended maximum, around 2gms for MMs and 2.5gms for MCs nowadays.

If you want to see groove damage caused by mistracking there are some fascinating micro-photos at <http://www.micrographia.com/project/projapps/viny/viny0000.htm>, plus a good explanation.



**The Clearaudio Trackability Test Record is superb for both trackability and bias force adjustment, carrying two sets of 6 tracks covering 50µ-100µm peak amplitude on one side. The other carries a 3150Hz speed stability test tone.**

## 3) OVERHANG (TRACKING ERROR)



There are simple, complicated and religious ways to set this. The idea is to minimise geometric tracking error and the distortion it produces. The simple way is to set 'overhang', the distance by which the cartridge stylus swings past the turntable spindle - see diagram. With a 9in arm this is 17mm or so, the exact figure being set by the arm's manufacturer to suit its geometry (headshell offset angle, tube length etc). A simple protractor printed on a card placed over the turntable spindle is commonly supplied by the turntable/arm manufacturer to set this.

If an overhang figure and/or overhang protractor is unavailable, then a general purpose alignment protractor is needed – using it is a tad more complicated. The basic idea here is to get the cartridge at a tangent to the groove on inner grooves, 3mm before the run-out groove (approx 63mm from the platter spindle centre) and, when so adjusted, it should also be at a tangent at

120mm out. Loosen the cartridge fixing screws and slide the cartridge forward or backward in the head shell until it aligns. Make sure you do not skew the cartridge in the shell; sit it on a mirror to check this or remove the head shell if you can and inspect. Cartridge skew raises distortion considerably, from 1% to 3% or so.

There's no end of religious discussion about this subject on the 'net. The best way to minimise tracking error is to use a 12in arm (as I do), or a parallel tracking turntable.



**An Ortofon alignment gauge with inner and outer alignment points.**

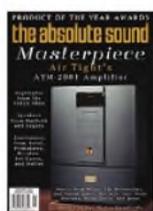
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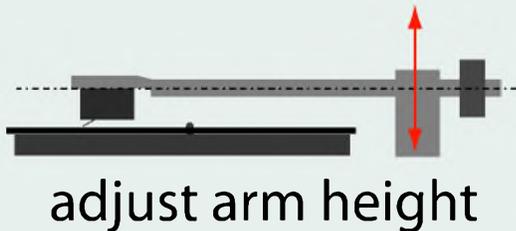
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#### 4) ARM HEIGHT

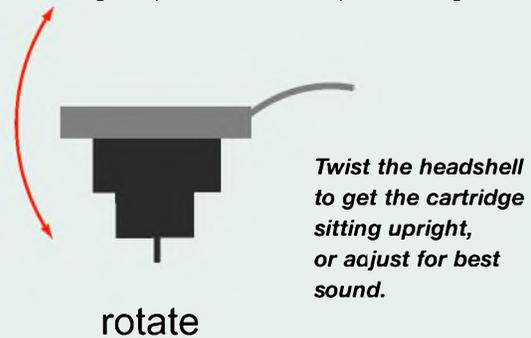
If the arm has height adjustment it should be set at this stage. The normal advice is to set the arm parallel to the disc surface, but it can be lowered a little if you want to experiment, since this compensates a little for the high vertical tracking angle (VTA) of most cartridges (30 degrees, where 22 degrees is correct). However, dropping the rear pillar alters VTA little and adversely affects stylus rake angle, so beware.



*Adjust arm height to get it parallel to an LP's surface. Lowering it reduces distortion caused by VTA error.*

#### 5) AZIMUTH

Few arms have this adjustment. The advice is to rotate the headshell to get the cartridge upright. Azimuth affects channel separation and can be adjusted to compensate for generator misalignment in the cartridge. The effect is best checked using headphones – it can be quite alarming.



#### 6) BIAS COMPENSATION

After all the above adjustments have been made, finally dial up outward bias force (anti-skate), or set the thread on the outrigger arm where a small hanging weight is used. Bias compensation centres the cantilever against an inward force caused by head shell offset and improves tracking slightly. You can use the Clearaudio Tracking Test Record to check this, by finding where mistracking starts, then setting bias so it affects both channels equally (use headphones).

*The 'anti-skate' dial here is rotated to match tracking force.*



## MAINTENANCE

Keep the stylus clean by gently brushing it from the rear forward, using a special stylus brush, occasionally with cleaning fluid (isopropyl alcohol). This removes dust and fluff and, with fluid, grease and grime.

Keep LPs clean with at least a brush to remove dust and fluff. Also, bearing in mind that LPs slowly dry out and become more crackly over 50 years or so, bag them in soft-plastic Nagaoka sleeves (get 'em at hi-fi shows) rather than the paper sleeves supplied. Just ensure you keep any printed paper sleeves for authenticity – an LP you buy now may be worth a lot in future. Store LPs upright of course, or they will warp.

Styli wear out and as they do so become dull sounding and seemingly lacking in dynamism. Modern geometries wear faster than old, crude sphericals too, I find. Expect a year or two's use before replacement is needed. With MMs you can replace the stylus yourself; with MCs it must be returned to the manufacturer, or exchanged.

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**QUAD ESL-57s/OTA-rebuild** (2004) + Rupert stands, in excellent condition. ~£1250. LEAK Stereo-20, restored 2015, includes matched pairs (almost new) cryo-treated EL84s. Sounds perfect. ~£650. Buyer collects (Oxford). Tel: 07968-158213 or email: [phila.charles@gmail.com](mailto:phila.charles@gmail.com)

**MIT ORACLE V2.1** 1.5m XLR good condition boxed £1,100 ono (RRP £4,500) Russ Andrews Classic Power Kord 1m with FuturTech ICE gold connector £60. Tel: Lee 01462 834287 (Stotfold)

**NAIM NAT 2** immaculate. Boxed. Serviced by Naim in past. £600 Can Post UK. White marble stands. 470mm high 355mm deep 270mm wide. £60 ono. East Midlands. [spinkrays@gmail.com](mailto:spinkrays@gmail.com) 07783 327 689.

**QUAD 34 & 405-2** Pre-Power Amplifier, very good condition, c/w cables. Can demonstrate. Prefer buyer collects. £310. Tel: 01275 872777 (N Somerset)

**GENELEC M040** Studio Monitors. Original owner. Excellent condition. £750 pr, 01743 344 136, Email: [denis\\_james@yahoo.com](mailto:denis_james@yahoo.com) Shropshire

**EXIMUS DPI DAC / Pre and Headphone Amplifier.** Original owner. Excellent condition. £1000, 01743 344 136, Email: [denis\\_james@yahoo.com](mailto:denis_james@yahoo.com) Shropshire

**ONE PAIR** of LFD Audio Reference Silver Screened 0.6m interconnects; unused, in original box; £470. Will post at cost. Cornwall. Tel: 01208 827253 Email: [david.guiterman@btinternet.com](mailto:david.guiterman@btinternet.com)

**PHILIPS FIDELIO XI** headphones. Mint condition. £85.00. Contact Robert on 07976 621529. Leeds

**WANTED - FAULTY** or non working Quad 44 preamp, later model with din or phono sockets. Cash paid. Contact Mike 01758 613790.

**AUDIOLA3 M-DAC** in black, £300. Immaculate. Open to sensible offer. Tel: 07535 596 822

**AUDIONOTE ANE** speakers, kit constructed, mahogany finish, with ANE stands. Internal silver wire. £1200. Oldham. Tel: Brian 0790342255 or Email: [brianpyplacz@yahoo.co.uk](mailto:brianpyplacz@yahoo.co.uk)

**YOSHINO EAR 834L** pre amplifier. Excellent condition. £650 ono. Tel: 020 7263 5702 after 7pm or 07505 057 414 anytime



## NEXT MONTH JULY 2017 ISSUE

### QUADRAL RUBIN LOUDSPEAKERS

Not yet released, next month we have Quadral's new affordable floorstanding Rubín loudspeakers lined up and ready to go for review. Priced at just over £1000, the Rubíns have titanium covered alloy coned bass and midrange units and an alloy tweeter to give a clear but fast and clean sound.

Can German engineering deliver the sort of sound British enthusiasts crave? To date their more expensive ribbon tweeter designs have produced class leading results: supremely accurate yet musically involving. Don't miss our July 2017 issue to see whether the Rubíns deliver a great sound too.

Also, we hope to bring you —

AUDIO RESEARCH LS28/VT80 PRE/POWER AMPLIFIERS  
CAYIN N3 HI-RES PLAYER  
BLACK RHODIUM CONCERTO RCA CABLE  
MCINTOSH MP1100 PHONO PRE-AMP  
QUADRAL RUBIN SPEAKERS  
FOCAL UTOPIA HEADPHONES  
SLATEAGE SOLID AUDIO SLATE PLATTER MAT  
POLK SIGNATURE S15 BOOKSHELF SPEAKER  
MELCO N1A/2 HI-RES DIGITAL DISK LIBRARY  
LENCO L90 BUDGET TURNTABLE  
NOBLE WIZARD GREEN EARBUDS  
IFI IONE NANO BLUETOOTH USB/SPDIF/DAC  
YAMAHA WXAD-10 MUSIC CAST  
...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 JULY 2017 ISSUE OF HI-FI WORLD ON SALE MAY 31ST 2017,  
OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: SEE PAGE 38**

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# BRENDA LEE

## MISS DYNAMITE

### ACE



"Her pop-rockabilly crossovers would give Lee a searing five-year period of fame during the early sixties"

She's quite a woman. Brenda Lee was one of the biggest pop stars of the early 60s but her achievements are often cruelly overlooked. Frankly, she doesn't get the credit she deserves. Her rockabilly output is full of aggression and energy, her pop-country hits were pioneering while her pure country releases were quality recordings. Her pop-rockabilly crossovers would give Lee a searing five-year period of fame during the early sixties. She even had a rocking hit accompanied by Jimmy Page on guitar with the song 'Is It True?'

Brenda Lee's first talent show occurred when she was three, she became a professional singer at the age of seven, she sang with Elvis Presley at the Grand Ole Opry on 13 December, 1957 (the man was about to enter the Army). In total Lee has sold a 100 million records worldwide...so far.

"I was discovered by Red Foley when I was ten" she said. "He helped me to get a recording contract with Decca, then I did all the TV programmes such as Steve Allen, Perry Como and Ed Sullivan without a record out, which was unusual at the time".

The Miss Dynamite moniker has followed Lee throughout her career but was first associated with her in around 1958 when she recorded the track 'Dynamite'. The song did next to no business in the USA but, fortunately for Lee, was very popular in Europe.

While she was touring, she hit the stage in England with a rather energetic and extrovert presentational style.

"I guess the way that I jumped around on stage it wasn't like most female singers of that day and they dubbed me Little Miss Dynamite" she recalled.

Lee's brush with music legends didn't restrict itself to Elvis, though.

"While I was touring over in England and then in Germany, this group were opening for me and they were called The Beatles. I remember thinking, 'Boy, these guys are great.' After each show I would ask them, 'Where are you all getting those songs?' John Lennon would say, 'Well, we write them.' I then brought back a little demo, back to my record company and a picture of the guys, when they were still

dressed like a Teddy Boy. My record company said, 'No, it'll never happen. No way.' I said, 'But if you could only hear them!' Then a year later, they came out with 'I Want Hold Your Hand'".

One of Lee's achievements is that she's the only woman to have been inducted into the Rock'n'Roll Hall of Fame and the Country Hall of Fame.

So is she a country artist or a rock singer? "I'm just a singer. If anyone had asked me, though, I would have thought that I'd have gotten into the rock 'Hall' because that's my past. That's how I got started. Yet I got into the country 'Hall' first".

Then again, one of her important hits that can also be found on this album – 'Jambalya (On The Bayou)' – was a Hank Williams song.

"My mother used to sing me his songs when I was a little girl. When I grew up a little bit and learnt who Hank Williams was then I became obsessed with his singing and his writing."

Lee raced through her version of the song, taking control of it and making it her own.

This Lee album first appeared in 1960 and featured her first big hit 'Sweet Nothin's' which hit the charts in 1959 and reached No.5.

But there are two additional songs from this LP that also did well: 'I'm Sorry' was a No.1, honest to goodness smash hit while the follow-up 'That's All You Gotta Do' also saw chart hit action.

Gaze down the track list on this CD and you'll see all three songs clumped together, one after another. Quite a trio.

All of the songs on this album are well and truly 'owned' by Lee. Which is why this breakthrough album, nicely mastered by Ace, is such a magnificent feat for someone so young at that time.

This album can be found on a 2-for-1 release alongside the earlier Lee LP 'Grandma, What Great Songs You Sang!'

There's other Lee CD releases from Ace that follow the same value format including 'This is...Brenda' with 'Emotions,' her third and fourth releases, plus 'Let Me Sing' and 'By Request', 'All The Way' and 'Sincerely' plus the single CD release, 'Queen of Rock'n'Roll' which is an overview of her entire career.

PR

Come Together  
The Beatles  
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# THE SUBLIME COLLECTION



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