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MAY 2018

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Chord Sarum T Speaker Cable  
Hi-Fi World Dec 2017

THE CHORD COMPANY



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David Tull



**W**hen I listen to loudspeakers we loved in yesteryear, I cringe. Goodmans Magum Ks impressed me at the time and Leak 2060s were even better, with their superb white plastic mid-range cone perforated with wave breaks and rear coated with a damping layer.

How do I know this? As a young man I attended a press conference explaining these new technologies held, in Leak's case, by an impressive young engineer called Alex Garner who subsequently rescued then ran Tannoy. I was so impressed!

Wharfedale, Leak and KEF went on to use technology and measurement to produce increasingly refined loudspeakers and today we benefit from their knowledge and example. But there's a problem: today's loudspeakers are less boxy, boomy and sloppy as a result but also less characterful.

Klipsch are a major US manufacturer and have probably never heard of Wharfedale, Leak or KEF, instead making what the US is unwaveringly good at – big. Yes, their disarmingly named R-28F loudspeakers we review in this issue on p10 were anything but mild and unassuming, so much as affordable powerhouses that reminded me of those glorious 1970s loudspeakers – brought up to date.

We made a boo-boo last month in saying the Novafidelity X35 uses a linear power supply when our internal shot shows it has a switch-mode. See our Letters that start on p32 for more on this one. Fascinating all the same though that switch-modes with Class D now measure well but still are treated with suspicion. Japan has an illustrious recent past in audio and companies like Yamaha now emphasise they don't use switch-mode power supplies or Class D output stages in their top products. Yesteryear still has a pull and it isn't all just nostalgia.

You could say the same about LP of course, which now seems the de-facto alternative to streaming – leaving CD dead and downloads unpopular. We seem to be increasingly using original analogue technologies or the very latest digital conveniences with little in-between. In this issue you'll see that very clearly. I hope you enjoy the mix.

**Noel Keywood**  
*Editor*



## hi-fi world

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## verdicts

- OUTSTANDING
- EXCELLENT
- GOOD
- MIEDIOCRE
- POOR
- £ VALUE

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extremely capable  
worth auditioning  
unremarkable  
flawed  
keenly priced

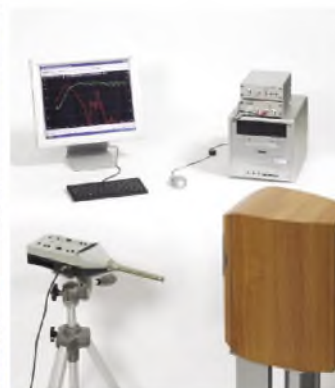
## testing (see [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) for full explanations of all our tests)

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

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

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

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



## ELECTRONIC MAGAZINE

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"...you have managed to surpass them [Silver Diamonds] in a truly grand way."



## Tellurium Q<sup>®</sup> Statement

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# news

## MCINTOSH TURNTABLE

American high-end manufacturer McIntosh has unveiled its most affordable turntable to date – the MT2 Precision.

The company says it combines the latest turntable technology with the New York giant's legendary aesthetic, design and build quality.

Priced at £4995 it features a pre-installed moving coil cartridge with an output high enough to be used with moving magnet inputs on partnering equipment. The lightweight tonearm is constructed from Duralumin while the belt-driven 25.4mm deep platter has a large mass to resist external vibrations.

The turntable should be in UK stores by May. For further details log-on to [www.mcintosh.com](http://www.mcintosh.com).



## LEEMA ELEMENTS

Welsh hi-fi specialist Leema has added a streamer to its compact Elements range.

The new Elements Streamer costs £1,095 and is based on the high-quality streaming module used in the recently launched Quasar streaming amp/DAC (£2,995) with the addition of an advanced ESS Sabre DAC.

The streamer has built-in support for a number of music services including Tidal, Deezer, Qobuz and vTuner radio. Spotify Connect is also supported, along with file playback from Dropbox and Microsoft Onedrive. Local playback from USB drives is also available. For further details go to [www.leema-acoustics.com](http://www.leema-acoustics.com).

## WHARFEDALE DESKTOP

Wharfedale's new DS-2 stereo Bluetooth speaker system is aimed at delivering hi-fi sound in miniaturised form – perfect to place on a desk, table or shelf.

Priced at just £179.95 they measure just 120mm wide and 140mm deep, stand just 190mm high and feature a 19mm silk dome tweeter and a 75mm mid/bass driver. Inside is a digital amplifier rated at 2x15W continuous power and 2x30W peak.

Bluetooth provides simple wireless pairing with smartphones, tablets, PCs and Macs, complete with support for the sonically superior aptX codec. Flexibility is further enhanced by a 3.5mm analogue stereo input and supplied cable – this is positioned on the side of the master speaker, along with the volume and pairing controls. For further details go to [www.wharfedale.co.uk](http://www.wharfedale.co.uk).



## NEW CHORD DAC

Chord Electronics used the Bristol Sound and Vision Show to debut two new products - Qutest DAC and GoFigure, the forthcoming configuration app for the Poly music streamer.

The Qutest is the replacement for 2Qute DAC and uses the same award-winning internal DAC architecture and proprietary software coding as the acclaimed Hugo 2, offering user-selectable frequency-shaping filters and input selection controls, available via two fascia-mounted spheres. It's available to order now priced £1,195.

GoFigure will be available later this year and offer dedicated control for the Chord Mojo portable DAC's Poly streaming module – something users have been asking for since its launch. Go to [www.chordelectronics.com](http://www.chordelectronics.com) for further details.

## MELCO STORAGE

Melco – the audiophile division of Japanese computer peripheral company Buffalo Technology has added two new products to its range of digital music libraries – the E100 Expansion Drive and D100 CD Drive.

These new audiophile-designed half-sized components allows Melco users to expand the storage capability of their music libraries as well as offering simple playback or import of bit-perfect CD files.

The E100 Expansion Drive costs £899 and features a 3TB hard disk and is operated by a dedicated Melco control board for maximum sound quality. The 2mm ridged aluminium half-size chassis houses both the electronics and the hard drive, with a dedicated on/off switch on the front panel. The rear panel accommodates two USB 3.0 sockets – one for connection to the main Melco library and the other to daisy-chain further E100s for additional storage capacity.

Meanwhile, the D100 CD Drive – also costing £899 – uses the latest generation of Japanese optical drives, directly mounted to the 2mm thick chassis via Melco's anti-vibration platform. The UV laser system delivers meticulous optical disc surface reading, whilst benefiting from extreme mechanical stability for bit-perfect CD import. Both are available now.



## SPOTIFY FLOATS

Spotify is preparing to float on the New York Stock Exchange.

The move comes as the company – which is celebrating its 10th birthday – reported yearly growth of 39 per cent last year with revenues of some \$5 billion for 2017. It now claims 159 million active users with 71 million of them paying subscribers. Despite that the company still reported a net loss for last year.



## KEF IN-WALL LOUDSPEAKER

KEF continues to roll out new products with the latest being the snappily-titled Ci5160REF-THX custom-installed in-wall loudspeaker.

The 'speaker is part of the Kent-based company's acclaimed Reference range and features its Uni-Q point source driver array with a 25mm vented aluminium dome tweeter situated at the exact centre of a 125mm midrange driver.

The Ci5160REF-THX also utilises a bespoke 160mm bass driver optimised for use in-wall, with a massive vented magnet assembly and a large aluminium wire voice coil driving a light, stiff and strong alloy cone.

Price is around £7500.

For further details go to [www.kef.com](http://www.kef.com).



## SENNHEISER SOUND AND VISION

Sennheiser has come up with something truly different with its latest set of headphones.

The Ambeo Smart allows users to plug it into their Apple iOS device and capture visuals and sounds which can be replayed in a binaural soundstage.

Each earpiece has a microphone embedded into it to capture sound while you record video. It works via a Lightning connector to Apple devices – but an Android version is expected later this year.

We haven't tried one yet but watch this space for a full review.



## NEW ATLAS CABLE

Scottish cable specialist Atlas has unveiled a new version of its award-winning Equator Integra interconnect cable.

The new version features an upgraded conductor core composed of Ohno Continuous Cast (OCC) 5N (99.999% pure – the highest purity available) copper technology nestled in PEF (Foamed Polyethylene) dielectric material.

The Equator Integra's double-screen construction provides maximum RFI (Radio Frequency Interference) resistance. The double screening also eradicates any interference between a source and an amplifier. For full details go to [www.atlascables.com](http://www.atlascables.com).





## CHORD'S NEW PLUG

The Chord Company has launched ChordOhmic, a new silver-plated loudspeaker plug developed from its flagship ChordMusic and Sarum T 'speaker plug.

The new silver-plated loudspeaker plugs are designed to bring both the electrical and sonic benefits of silver to speaker cables and will be available on all Chord Company cables going forward, as well as being separately available for use with other brands of cable.

The ChordOhmic plug body is constructed from high-quality ABS. The plugs themselves are machined from a high-quality brass alloy sourced from Germany. The metal contact pin (4mm banana) is machined in the UK on precision lathes more commonly employed in machining watch parts and high-tech Formula 1 components.

The silver-plated spade connectors are constructed from pure copper bar which is heavily plated with silver to give the optimum contact.

The plugs are available now priced at £40 for eight. Go to [www.chord.co.uk](http://www.chord.co.uk) for further details.



## NME CEASES PRINT

The NME is to cease its print edition after 66 years. Instead, the music magazine will be on-line only with just occasional special edition newsstand titles.

The move comes just three years after the title became a free magazine funded by advertising in a bid to halt falling circulation.

"Our move to free print has helped propel the brand to its biggest ever audience on NME.com" said Paul Cheal, UK group managing director, music, at NME publisher Time Inc UK. "We have also faced increasing production costs and a very tough print advertising market. It is in the digital space where effort and investment will focus to secure a strong future for this famous brand".

Negotiations are said to be underway with the magazine's 23 editorial staff about possible redundancies.

## HIGH END SHOW

Munich's High End Show is one of the hi-fi events of the year – and its German organisers have announced all stands have been fully booked for this year's event.

The show runs from May 10 to May 13 at the MOC in Munich. Stefan Dreischärf, Managing Director of the High End Society said: "The main strength of the High End is the fact that it combines a wide variety of different exhibitors and exhibits with the presentation of all of the latest trends and innovations for the entire audio industry. In order to continue to meet the high standards expected from a leading exhibition year after year, we examine the event on a regular basis and implement new ideas and formats. The multitude of early registrations received from exhibitors confirms that we are on the right path"



## ITUNES LP TO GO?

Apple is reportedly preparing to scrap its iTunes LP service - the bundled album format that lets users purchase and download albums with extra content.

The service was launched in 2009 and added extras such as bonus tracks, videos and liner notes.

But reports say Apple has written to music industry figures saying it will be winding down iTunes LP over the next few months with no new submissions being accepted and existing titles being progressively withdrawn.

## ENTERTAINMENT SPENDING

Consumers spent more on home entertainment last year than they did on books, magazines and newspapers.

Some £7.2 billion went on music, video and games compared to £7.1 billion on the printed word, according to figures from the Entertainment Retailers Association.

Much of the increase was put down the popularity of streaming music and TV services such as Spotify and Netflix.

Last year music streaming services served more than 68 billion streams – up by almost 42 per cent.



# A Big Sound



**The Klipsch R-28F floorstanders sound as imposing as they look, finds Jon Myles.**

If you're a hi-fi enthusiast who likes their loudspeakers to make a visual statement then no doubt you'll be looking at our pictures of Klipsch's latest R-28F floorstanders with an element of desire.

They are big, bold and undeniably impressive-looking with a pair of gold-coloured main drivers above which sits the distinctive Klipsch horn-loaded tweeter.

And yes, they are as big as they look, measuring 1067mm (42in) high, 241mm (9.5in) wide and 399mm (15.7in) deep, weighing in at just over 25.5kgs (56lbs) and featuring a large front-firing reflex port to give you the sort of bass smaller volume cabinets cannot approach.

The two 8" woofers are constructed from spun copper (hence the colour) while the 1" aluminium tweeter is housed in a proprietary Tractrix horn enclosure to enhance dispersion. Twin 'speaker binding posts at the rear allow for bi-wiring and bi-amping if required.

Unboxing them I couldn't help but be impressed at their

imposing stature. There's a full-fascia grille included but, as ever, I left this off for the review. And, frankly, the Klipschs do look better that way.

This is one imposing loudspeaker for the £800 price - you are getting a large amount of real estate and one that will make a real statement in your home. Site them in your room with the grilles off and most people would probably guess at a much higher cost - and will be just as impressed at how they sound in terms of power on the end of even modestly-priced amplifiers (see more later).

### SOUND QUALITY

I'm usually rather pedantic about placing loudspeakers to get the best from them - a few slight adjustments between toe-in or firing straight down the room, a good few hours getting them exactly right so they perform at their optimum.

The Klipschs, though, are different. The Tractrix horn on the tweeter plus the front-firing reflex port means they are remarkably easy to position. The sound quality, dispersion and detail changed little no matter how I set them up.

And that sound can be summed up in three words; big, vibrant, exciting. These loudspeakers really do punch out the sound - especially when listening to anything with scale.

Their bass output is remarkably powerful. On the end of a McIntosh MC152 power amplifier, fed by the same company's MCD350 CD/SACD player (see review this issue) via a Music First passive pre-amp - the sheer power of 'Seven Nation Army' by The White Stripes had me pinned back to the wall. It was totally exhilarating with perfect timing and the sort of sound that made me turn the volume up as loud as it could go.

The Clash's 'Bankrobber Dub' also had the same physicality to it. Superb low-end, a high-end that bounced around the listening room and a quality that kept me enthralled.

Switching to an Icon Audio Stereo 30SE valve amplifier with its lower power output the Klipsch loudspeakers still retained their scale - they will go loud from just a few Watts of power.

There are, however, one or two caveats. These loudspeakers aren't the smoothest - instead majoring on that

big, bold sound. So on the likes of 'Misguided Angel' by Cowboy Junkies Margot Timmins achingly plaintive vocals sounded a little harsh. It was as though that horn-loaded tweeter was pushing the song at me instead of letting it flow with the languid pace it deserves.

Similarly Barb Jungr's 'Man In The Long Black Coat' CD of Bob

Dylan covers sounded a little forced and lacking in the smoky, jazz club atmosphere that this recording thrives on. It's as though these loudspeakers are just waiting to rock out to show their true muscle and feel a little inhibited with gentler music.

But fed the right material they are undoubtedly impressive.

"These Klipschs are immense fun. They pound out a tune with authority and will go loud from just a few Watts"



**The rear has twin loudspeaker binding posts, giving the option of bi-wiring or bi-amping.**

Led Zeppelin's dense, dark, pounding 'When The Levee Breaks' was all thundering drums, seismic bass and wailing harmonica. It's this sort of track that the Klipschs are made for.

Fans of dance music will undoubtedly love them. I played 'The Hacienda Classics' three CD collection from start to finish and couldn't help but feel as if I was back in the famous Manchester nightclub. Black Box's 'Ride on Time' was spine-tinglingly exciting with the soaring vocals and piano enveloping the room.

The soundstage is particularly impressive, extending way beyond the 'speakers to left and right with depth and height. Undoubtedly these loudspeakers deserve a big space and so suited Hi-Fi World's large listening room well.

With Mahler's 'Symphony No 2' by the San Francisco Symphony led by Michael Tilson Thomas (24/96) the final 'Resurrection' chorus pinned me back in the listening seat.

It was extremely powerful with an orchestral scale that put me in mind of listening to the same piece in a large concert hall. Closing my eyes and sitting back I could feel the chorus washing over me.

Again, it wasn't exactly perfect - with a slight disconnect between the high-end and the mid-range. Klipsch haven't quite got the integration right here in my opinion. But I don't think that's what they

made in the UK

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were aiming at anyway. Instead these loudspeakers are aimed at people who want a big, bold sound – and that is what they provide.

Putting on my favourite bass-heavy track of James Blake's 'Limit To Your Love' the sub-sonics were impressive. Hear this through other similarly-priced 'speakers and they may sound good but won't give you the sheer punch-in-the-chest impact these 'speakers provide. Pushing the volume up on McIntosh's MC152 power amplifier, the sheer force of their bass nearly knocked me off my seat.

However, more delicate material didn't fare so well. Listening to the silky smooth vocals of Sinead O'Connor's 'Nothing Compares To U' there was hardness to the sound. The Klipschs didn't capture the breathless quality of the Irish songstress's delivery. That said, they did push her voice high and wide into

are exciting to listen to. Add in the fact that they don't need the most expensive amplifier to go about their business and cost a rather reasonable £800 and they are a bargain. I loved listening to them and would suggest you might too, if their particular sound suits you.

**CONCLUSION**

Maybe not the smoothest loudspeaker you'll ever hear but that's ameliorated by the fact that these Klipschs are immense fun. They pound out a tune with authority and will go loud from just a few Watts. Excellent with hard-charging tracks but lack a little sophistication with vocals.



*The 8in woofer unit is constructed from spun copper – explaining its colour.*



*The Klipsch tweeter is horn-loaded and includes a wave-guide to aid dispersion.*

the room - giving an expansive sound that filled the listening space.

With Nirvana's 'Nevermind' the Klipschs were more comfortable. 'Smells Like Teen Spirit' thundered - the contrast between the quiet and loud part of the track being excellently portrayed. Similarly, Elvis Costello's 'Pump It Up' sounded vibrant and exciting. Here the organ and bass line combined with an exhilarating sense of energy to send a shiver down my spine.

I could have analysed various shortcomings in the 'speakers while listening – but that would miss the point; I simply enjoyed everything I heard.

These loudspeakers may not be for everyone - but if you like what they do you will be smitten. They have powerful, well-controlled bass, will fill a large room with ease and

**MEASURED PERFORMANCE**

The R-28Fs were very sensitive, delivering a whopping 92dB sound pressure level (SPL) – very loud – from one nominal Watt (2.8V) of input, so they suit just about all amplifiers, even specialist 9 Watt valve amplifiers. At most 30-40 Watts is plenty enough for very high volume; any more will not get used. Against other loudspeakers

volume will have to be turned down.

Our frequency response analysis shows a less flat response than many, characterised by a significant -5dB dip at crossover between the horn loaded treble unit and the bass/mid-range below it. This will soften the delivery, making the R-28Fs sound less detailed than flatter modern designs, but with CD this is not always a bad thing as it ameliorates hardness. The tweeter will sound divorced however.

Bass output is strong, as usual with Klipsch loudspeakers, being +3dB above the mid-range – an audible lift. Output from the large volume cabinet reaches down to a low 30Hz, aided by the port tuned to 40Hz our impedance analysis shows. Overall impedance measured 4 Ohms when measured with pink noise and the 'speakers d.c. resistance was 3.6 Ohms, so this is a 4 Ohm design.

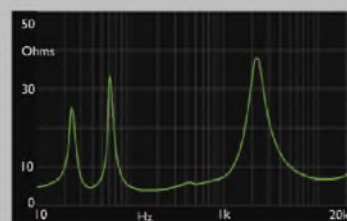
The R-28F needs little power to go loud and will sound lively and strong in its bass output, including deep bass. The tweeter will sound both obvious and divorced, due to its peaky nature and the crossover suckout. Overall, a traditional sound but a lively one. NK

**FREQUENCY RESPONSE**

*Green - driver output  
Red - port output*



**IMPEDANCE**



**KLIPSCH R-28F**  
**£800**



**OUTSTANDING - amongst the best**

**VALUE - keenly priced**

**VERDICT**

A big floorstanding loudspeaker that pulls you into the music with its sheer power. Exciting and rather addictive.

**FOR**

- bass response
- soundstage
- ease of drive

**AGAINST**

- sharp treble

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*icon Audio*



# The Stereo 60 MK III m, Our Finest Integrated Amplifier



HI-FI WORLD said:

ICON AUDIO  
STEREO 60 MKIII  
KT150



OUTSTANDING - amongst  
the best.

**VERDICT**

A lovely sound with plenty  
of power and adjustability. A  
well developed design.

*Innovative Designs  
From Icon Audio*

*designed by David Shaw*

Shown with upgraded valves and Jensen copper foil copper foil paper in oil capacitors. Includes attractive valve cover



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**4. Value for money.** We believe our overall package to offer the best value on the market.

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# SACD Heaven



**McIntosh's new silver disc spinner will get the best out of your CD/SACD collection – and at a level that can challenge even the latest high-resolution streamers. Noel Keywood explains all.**

It's rare to be faced with a CD player these days – everyone has moved on to streaming, consigning the silver disc spinner to the dust bin of our technological history. But not quite: here's a new player from McIntosh (USA) that ignores mainstream trends and just gets on with playing CD and SACD. Yes, SACD – or in other words hi-res CD. I suspect those with a large and valued SACD collection will be especially interested in McIntosh's new MCD350 CD/SACD player.

McIntosh have their own distinctive style: the MCD350 glass fronted panel lights up brightly at switch on with blue fluorescent track and time display, as well as green company name, logo and button function text. It's a nice change from the featureless black box that conveys no visual message – the typical CD player that came to represent a bland, industrialised music format. This player differs, retaining the visual engagement of products from the 1970s including protruding edge trims reminiscent of my old Leak Troughline tuner from the late 1960s.

The player's styling is trad. but eye-catching – and very much in the

company's house style of course, from which it doesn't waver. This includes fairly prodigious case dimensions quoted in US Imperial measure of 17.5in wide (445mm) to fit a 19in rack, 19in deep (483mm) and 6in high (153mm). The pressed steel case is sturdy, weight being quoted as 28lbs (12.7kgs).

What you get in this package is a fairly conventional player lacking now-common features such as an output volume control and headphone socket – so those wanting to use headphones for CD late at night perhaps must have an amplifier so equipped, ideally with remote volume control. Also absent are digital inputs allowing use as a DAC. There are no selectable filters for PCM and DSD that come as standard on modern DAC chips. But inside, this player uses a Sony SACD chip set that's known for its fine DSD (SACD) performance.

The rear panel carries unbalanced RCA phono socket outputs and balanced XLR outputs. There are optical and electrical S/PDIF digital outputs for connection to an external DAC, but this is for PCM (CD) only. There are power and data links to other McIntosh products for auto

switch-on etc and also an infra-red remote control input so the product can be built into a cabinet and still be operated remotely.

The remote control unit has all the usual functions including track skip and fast forward or reverse play for cueing. The CD or SACD layer can be optionally selected here too, but not on the fly as the player stops completely during this process and resets to start. Also playable are MP3 and WMA discs. The fluorescent display confirms that it is playing the DSD 'Multi' layer – the default set-up when the player is first turned on.

## SOUND QUALITY

I connected the MCD350 into a Music First Audio passive magnetic preamp (set to 0dB gain) via its balanced outputs, and thence onward to our McIntosh MC152 power amplifier driving Martin Logan ESL-X hybrid electrostatic loudspeakers. An Isotek Evo3 Mosaic Genesis regenerated mains supply was also used and Chord Signature loudspeaker cables.

With good source quality SACDs like Eleanor McEvoy's 'Yola' the difference between the CD and





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SACD (Multi) layer sound quality was obvious, SACD sounding smoother and more liquid in delivery with deeper silences between notes.

The CD layer came across as a tad stark and barren in comparison with what I term a “tin can” hardness to it, that I’ve especially noticed from the cheap 16bit ADCs being used in budget turntables nowadays. Most surprising however was the sheer power and yet timbrally rich nature of bass lines, kick drum at the start of ‘Isn’t it a Little Late’ having a strong and convincing thwack, unlike the usual simulacrum I’m used to. This made SACD more than a little impressive – and right up with modern hi-res PCM or even a tad more life-like.

The impressive sense of scale this player has with SACD in particular is likely due to its quality mains supply that uses an R Core transformer. It came over wonderfully with Arcadi Volodos playing Schubert’s ‘Sonata in E Major’. Intentional keyboard silences were eerie, from which short stabs at the keyboard jumped out vividly. Add in the act that his Steinway piano came over as thunderously large yet supple and subtle at the same time and this player made a stunning job of capturing the grandeur of his performance. Switching to CD it all falls back a bit to what we know, the MCD350 giving a good, solid sound with strong low frequencies.

Spinning high dynamic range uncompressed CDs made obvious the powerful bass delivered by this player. The solo bass guitar line in Josefine Cronholm’s ‘In Your Wild Garden’ had a strong presence and a dry, tight quality to it. Playing The Beatles ‘Love Me Do’ (1963) from a specialist Japanese compilation SACD the MCD350 gave a clean open soundstage and quality so good the recording could have been made yesterday; another listener remarked that Sony had the rights to Beatles music and the source could have been the analogue master tape. The McIntosh vividly conveyed this.

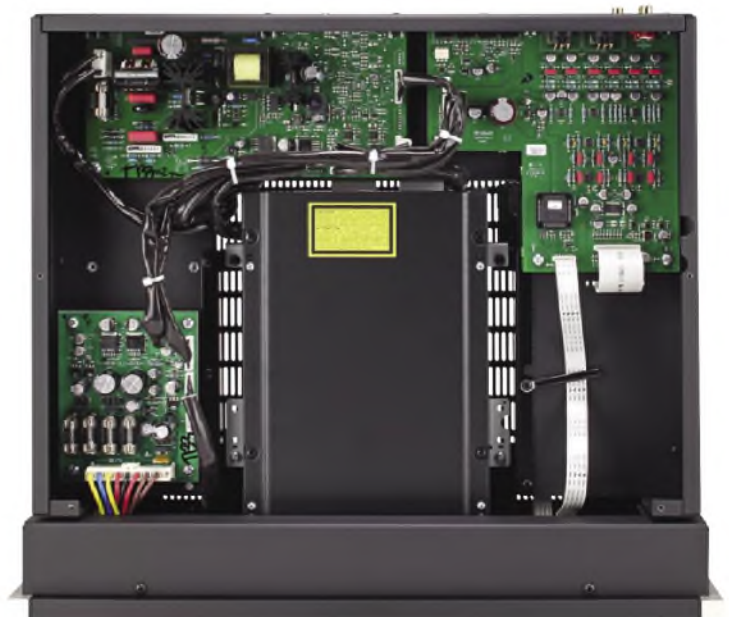
In an inevitable comparison of this player to our in-house Oppo UDP-205 I thought the Oppo would walk it – but not so. It was a tad more insightful, yet warmer and with an enclosed feeling to its soundstage. Spinning a very well recorded and produced modern SACD – Eleanor McEvoy’s ‘I’d Rather Go Blonde’ album – ‘Just for the Tourists’ came over in a sparkling clean window with natural and sonorous treble on

the MCD350 and – again – very firm and strong bass with superb resolution of timbral detail. The Oppo sounded darker and softer, as it is known to be, with poorer bass definition; I and other listeners voted for the McIntosh. Someone remarked this should be our reference player.

**CONCLUSION**

What you get with the new MCD350 from McIntosh is a top quality SACD player accompanied by a very good CD player.

This is a player for those with large SACD collections who want to hear the best from them – but it also does a fine job with CD. Distinctive styling makes it especially suited to McIntosh systems where its solid low end performance nicely matches the subjective qualities of McIntosh amplifiers. In all then, this



*The disc transport takes up much of the MCD350's top space, and it is surrounded by power and control boards. Note the many fuses at bottom left. Signal processing boards sit in a lower chamber.*

is a top-quality SACD player and a good CD player too. It’s expensive but if interested I suggest you go for a demo, since its sound won us over.

**MEASURED PERFORMANCE**

Frequency response measured flat to 21kHz with white noise, as shown, if a little less with a sweep (17kHz) or a raised cosine pulse (12kHz). Differences were not great and the MCD350 will have a subjectively even tonal balance, possibly with a mild top end if the pulse response has influence.

Dynamic range with CD measured an unexceptional 98dB where 102dB

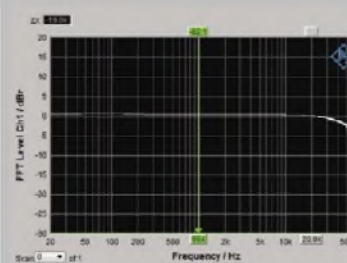
is possible, but with SACD the figure rose to a high 117dB, due to very low distortion and noise across the audio mid-band – a strength of one-bit DSD.

Distortion measured 0.26% from CD where 0.2% or so is possible, explaining the slightly low dynamic range value. From SACD the -60dB value was very low at 0.025%, comparing to the best hi-res PCM. So SACDs potentially have hi-res sound from the MCD350, well ahead of CD.

Output measured 4.3V from the balanced XLR sockets and 2.15V from the unbalanced RCA phono sockets.

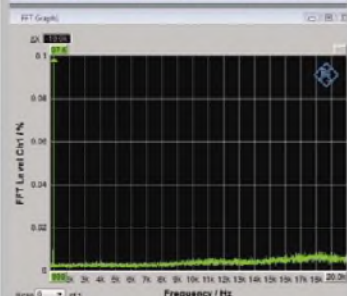
Measured performance of the CD section was unexceptional, Sony’s SACD processing chip curtailing dynamic range by 4dB with noise and distortion. SACD performance was superb, close to the best hi-res PCM standards. **NK**

**FREQUENCY RESPONSE**



**DISTORTION**

THD @ 0.1	Level @ 0.1	Frequency
0.0249 %	4.5411 mV	1000.0 Hz
OFF	OFF	OFF



<b>CD</b>	
Frequency response (-1dB)	4Hz-21kHz
Distortion (-60dB, 24bit)	0.26%
Dynamic range (EIAJ)	98dB
Noise	-97dB
Output	2.15V / 4.3V

<b>SACD</b>	
Frequency response (-1dB)	4Hz-100kHz
Distortion (-60dB, 24bit)	0.025%
Dynamic range (EIAJ)	117dB
Noise	-116dB

**McINTOSH**  
**MCD350 £6000**



**OUTSTANDING - amongst the best.**

**VERDICT**

Clean, open sound with great bass delivery – drum tight yet informative. Definitive with SACD and impressive with CD too.

**FOR**

- sound quality
- style and build quality
- balanced outputs

**AGAINST**

- no headphone socket
- no volume control
- no digital inputs

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# High Five

The new FiiO Q5 DAC/headphone amplifier can transform the sound of your smartphone or digital audio player, says Jon Myles.

**F**iiO have made their name with affordable, sweet-sounding portable digital audio players (DAPs). I respect the quality and price as I own two of their models myself – the X1 and X5.

But the company also produces a range of other products – including headphones and combined DAC/headphone amplifiers aimed at improving the sound quality from your mobile 'phone or DAP.

The latest model of the latter

is the flagship Q5 that goes head-to-head with the likes of Chord's excellent Mojo (£379), although it's slightly cheaper at £329.

Unlike the Mojo, though, with its custom-designed digital-to-analogue converter section, the FiiO uses two Japanese AK4490EN DAC chips that can handle digital files up to 32bit/384kHz as well as DSD to 256.

The body is milled from solid aluminium and includes a detachable amplifier module. The one shipped with the unit is the AM3A with both

single-ended and balanced outputs. However other modules can be bought to suit different headphones – including the AM1 which is balanced towards in-ear monitors with their rather different sound signature compared to over-ears, as well as the AM5 which has a higher power output to suit less sensitive 'phones.

It's an unusual approach but makes the Q5 adaptable and means you can mix and match to suit your tastes.

The unit itself is handsomely made, with a large volume button and the usual buttons for play/pause/skip tracks on the side. Bluetooth (including aptX) connectivity is incorporated but a high-quality cable also provides connectivity between your smartphone or DAP. There's also a lo/hi switch to change output (more of which later).

Charging is via USB and in constant use I achieved approximately 10 hours before having to power it again – quite impressive as I like to listen at loud volume!

## SOUND QUALITY

I initially paired the Q5 with my FiiO X5 via the digital cable to see if it made any difference. And, yes, it did.

Playing The Libertines 'Belly Of The Beast' through a pair of Noble K10 in-ear headphones the bass and guitars had greater presence compared to the X5 on its own. The decay of notes went on longer and vocals sounded more vibrant.

Impressive was the size of the soundstage. With a pair of AKG Y45BT headphones operating via Bluetooth on an Android 'phone there was scale and depth. These are not the most expensive headphones you can buy but they worked exceptionally well with the FiiO module. Bass on Beats Internationals 'Just Be Dub To Me' contained potent force while the upper layers of the track were well-layered, with enough definition to make me track every sample.

Overall, there was a warmth to



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**A detachable amplifier module is fitted - which can be swapped for other variants to suit different sets of headphones and power output. A clever idea.**



**Low and High gain settings are available, as well as Bass boost for open back 'phones. A combined analogue/digital (optical) Line In is fitted, plus an analogue Line-Out.**

the sound. It is not quite as analytical as the Chord Mojo. Switching between the two I couldn't help but feel that the Chord drew out more detail while the FiiO had a more easy-going nature.

Using the 'hi' setting with the AKGs gave a boost to the sound but made them come over as a little brash so I defaulted to 'lo' which worked better. It meant I had to turn the volume control up further but they still sounded smoother in this mode.

Listening to the Q5 fed by an iPhone 7 with Leonard Cohen's 'I'm Your Man' the vocals on 'Tower Of Song' sent a shiver down my spine. This track was an iTunes download and so not the highest quality but the FiiO Q5 extracted every last

bit of musical information available. Moreover it did it in an effortlessly way.

If you have higher-resolution tracks available on your smartphone or DAP then the Q5 will let you know the difference. Loading up Led Zeppelin's 'Kashmir' in standard CD format and then via 24bit/92kHz on my iPhone showed it. With CD it was good but with hi-res it was very

obviously better: the Q5 extracted the extra information with aplomb. Drums, bass, guitar and vocals all fell into space and felt real. Going back to the CD version seemed as though as everything had collapsed into itself – and there was less definition.

There was a good deal of rhythm and pace on offer too. With The Stranglers' 'No More Heroes' (24bit/96kHz) Jean-Jacques Burnel's bass powered the song along with a lovely vibrancy. Drums were crisp and powerful, rim shots coming over with a sharp crack.

Ultimately, the Q5 doesn't quite have the pristinely crystal clear quality of the Mojo - erring more on the side of a richer, softer sound. But there's nothing wrong with that I feel; preference will come down to personal taste.

**CONCLUSION**

The FiiO Q5 is an exceptionally good headphone/DAC amplifier able to raise the sound quality of connected DAPs or smartphones. It has a warm enveloping sound that works well with most headphones.



**There's a stereo 3.5mm headphone jack, plus a 2.5mm four-pole for balanced 'phones (BAL), but these are still rare and expensive.**

**MEASURED PERFORMANCE**

The Q5 headphone amplifier delivered 2V to the headphone jack when set to H (High), enough to drive most headphones to shatteringly high volume. The Line output delivered a fixed 1.9V – the same as a CD player or any silver disc player, meaning the Q5 can be substituted as a

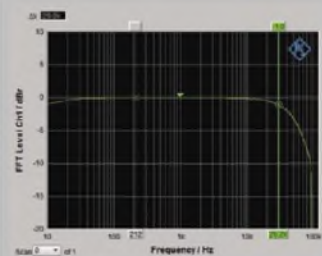
source of music.

With a 24/192 PCM digital input, frequency response via the headphone output reached 30kHz (-1dB) before rolling off to the upper theoretical limit of 96kHz, as our analysis shows. With some roll down above 10kHz obvious, the Q5 will not sound sharp, more likely easy going. The Line output gave a flatter result in-band (up to 20kHz) reaching 51kHz (-1dB).

EIAJ dynamic range measured a high 117dB from the Line output with 24bit PCM digital – well above CD at 102dB, allowing the benefit of hi-res digital to be fully conveyed. From the headphone output, with its volume control circuit, this fell to 115dB – still a good result.

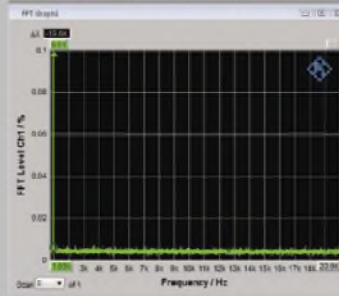
The FiiO Q5 offers excellent performance figures under measurement. It will give an easy going but pure headphone sound, with slightly more brightness and depth from Line. NK

**FREQUENCY RESPONSE**



**DISTORTION**

THD @ 1kHz	Level @ 100mV	Frequency
0.0365 %	2.1378 mV	997.00 Hz
OFF	OFF	OFF



**Frequency response** 4Hz- 30kHz

<b>Distortion (24bit, -60dB)</b>	<b>0.03%</b>
<b>Separation</b>	<b>-89dB</b>
<b>Dynamic range</b>	<b>117dB</b>
<b>Noise</b>	<b>-115dB</b>
<b>Output (headphone)</b>	<b>2V</b>
<b>Output (line)</b>	<b>1.9V</b>



**FiiO have a case for the Q5. The front holds a smartphone, the rear the Q5.**

**FiiO Q5 £329**

**£**

**OUTSTANDING - amongst the best.**

**VALUE - keenly priced.**

**VERDICT**  
Excellent DAC/headphone amplifier, solidly built and with a rich, warm sound.

**FOR**  
- smooth sound  
- build quality  
- alternative amp modules

**AGAINST**  
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**H**ere's your chance to win the intriguing Black Rhodium Stream mains cable we reviewed in our October 2017 issue. Read the review excerpt below and answer the questions.

"Black Rhodium's Stream is a high-end lead boasting a precise construction and terminated to exactly 1.7 metres. Longer lengths are available at a premium to the £450 standard cable but Black

Rhodium's main man Graham Nalty says 1.7m simply sounds the best.

Graham first showed me a prototype of the new cable at the High End Show in Munich earlier this year, but it has now finally reached production.

The company tested various different mains cables during the design of Stream and came to the conclusion that cables in multiples of 1.7m gave a greater improvement than those of slightly below or above this length – perhaps down to the fact that it aligns closely to

the quarter wavelength of the 50Hz mains frequency.

Internally Stream uses silver-plated copper conductors with a silicone rubber insulation for low dielectric loss. Increased distance between the conductors reduces the interactive magnetic field. A metal screen is employed to combat RFI while the whole cable features a thick, braided sheath and either a standard 13 amp UK or Schuko plug can be specified on order".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 11th May 2018 to:

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## QUESTIONS

**[1] Stream as standard is terminated to -**

- [a] 1.7 metres
- [b] 1.7 miles
- [c] 17 centimetres
- [d] 17 inches

**[2] Its conductors are -**

- [a] light alloy
- [b] flexible magnesium
- [c] tempered beryllium
- [d] silver plated copper

**[3] The insulation is -**

- [a] PVC
- [b] silicone rubber
- [c] PTFE
- [d] cardboard

**[4] The screen is -**

- [a] metal
- [b] plastic
- [c] paper
- [d] nylon

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# Deja vu?

Martin Pipe feels he's met Pioneer's excellent SX-N30AE network receiver somewhere before.



Elsewhere in this august journal, I write about Pioneer's impressive F-91 analogue tuner from the late 1980s. Thirty years of progress later, and a very different Pioneer brings us the SX-N30AE – which must not be confused with the original 2015-vintage SX-N30...

This stylish unit has the FM/AM analogue radio coverage of the F-91, although – 40 definable presets apart – the tuner here is lot less sophisticated. But why go to unnecessary expense? FM, after all, is on its way out. Funnily enough, the SX-N30AE doesn't support the DAB/DAB+ services that, for most radio listeners, will replace VHF/FM – unless, that is, you buy Pioneer's £40 USB dongle.

But will you need DAB? The SX-N30AE – available in silver or black – is compatible with services that were science-fiction back in 1980s, such as TuneIn Internet radio (most of the UK's conventionally-broadcast services – and much else besides – can be found here for streaming). No surprise, either, to learn that it can access subscription-based DJ-free alternatives to off-air radio like Spotify (Connect), Pandora, Deezer and Tidal.

It also supports DTS 'Play Fi' "premium whole-home wireless audio" and, for that matter, the Blackfire-developed Pioneer/Onkyo 'FlareConnect' alternative – which, confusingly, is also referred to as 'FireConnect'! Furthermore, the SX-N30AE will act as a Chromecast audio client, and can be controlled by Google Assistant (Voice control! More sci-fi turned reality). You can instruct the receiver to play music stored on PCs running Windows Media Player 12, or USB storage devices plugged into the rear or front-panel USB port.

If music is stored on a DLNA server, such as a networked Windows PC or NAS (Network Attached Storage) box, you can select tracks and stream them without too much trouble. The unit can be connected to your home network via Wi-Fi (5GHz, as well as 2.4GHz) or wired Ethernet. Rounding off the digital goodies are optical and coaxial inputs for CD/DVD transports, games consoles or TV set-top boxes (don't forget to configure their output for PCM!) and a Bluetooth facility.

I almost forgot – the SX-N30AE is an amplifier too! On offer are no fewer than six rear-panel line inputs, plus a basic (MM) phono stage.

There's also a stereo line output for additional amplifiers or recording (note, however, the lack of a tape loop), and a mono output to serve an active subwoofer. Two independently-switchable pairs of speakers can be connected, as can a pair of headphones with standard (6.3mm diameter) plug.

Although installation is easy (after making your physical connections, a 'wizard' takes you through the process of registering the SX-N30AE on your network), driving the unit involves using a remote in conjunction with a large fluorescent front-panel display. Although it can be dimmed (or turned off altogether) as needed, it is simply unable to convey much information. As a result, accessing large music collections – notably those stored on a NAS – is a chore.

I circumvented a great deal of frustration by installing the superb Pioneer 'Remote App' on my Android phone (an iOS version is also available). This makes the whole process (or tracking down the specific Internet radio station you want to listen to) much quicker and far more responsive. FireConnect/FlareConnect audio-sharing, should you own other compatible products,

also relies on the Remote App to manage your options.

I stumbled on this excellent app through a chance visit to the Play Store, rather than the instruction manual. Subsequently, I also discovered (by entering its IP address into the web browser of a PC on the same network) that the SX-N30AE boasts a web interface – although that's not mentioned in the manual either. Its look was rather familiar. Come to think of it I recall seeing a remote much like that not long ago, and the Pioneer's rear panel layout stirred something in my memory too...

To cut a long story short, the SX-N30AE has a considerable amount in common with the Onkyo TX-8150 that I reviewed in the November 2016 issue.

Fair enough, as Pioneer and Onkyo are now basically the same company. The two front panels look different, and you don't get the Onkyo's in-built DAB. But internally, they are in most respects very similar – the amplifier motherboard, mains transformer and other internal components appear to be identical. Layout is, as you'd expect from a marque of this stature, very neat.

The unpublicised web interface isn't quite as sophisticated as the Onkyo's. You can't, for example, use it to define frequently-accessed Internet radio stations as presets. Hopefully, the full potential of something that's currently used only to display current network settings and change the 'friendly' name of the unit will be realised with an imminent firmware update. No other means of achieving this useful goal is yet supported by the SX-N30AE – for now, the aforementioned 40 presets are for analogue radio only, although favourite stations can be stored as 'My Presets' in the Tuneln section of the Pioneer Remote app.

## SOUND QUALITY

I relied on Rogers G55 floorstanding speakers, plus an Internet-aware network (wired Ethernet here) with music stored on a NAS, and a Freeview digital TV set-top box. Unless there's a need to play CDs, that's all most users will need for digital. Vinyl was spun on a Pioneer turntable with Philips GP401 MM cartridge, while FM radio was fed into the SX-N30AE via a rooftop aerial. For most listening the 'direct'



**Considering the functionality on offer, the SX-N30AE's interior looks empty. Most of the advanced functions are however provided by a few chips on a small digital 'daughterboard' (which can be seen in the top-right of the picture). To reduce interference the latter has its own power supply, fed by a dedicated 'tap' on the mains transformer.**

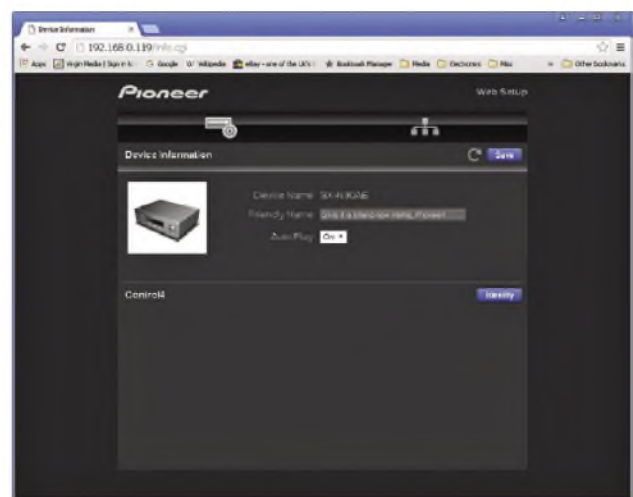
function, which bypasses the bass/treble tone controls, was engaged to minimise the risk of colouration.

The FM performance sounded spacious and clean with live concert material carried by Radio 3, a natural tonal balance being thrown into the bargain. It didn't however have quite the bass extension of the Pioneer F-91 old-timer mentioned earlier; indeed I found that, regardless of the selected source, the SX-N30AE's deepest low-end was definitely assisted by the subsequent addition of a Cambridge Audio S80 active subwoofer. Confirming what many Hi-Fi World correspondents have told us, Radio 3 is audibly superior to the digital alternative offered here.

This is because Tuneln can at present only access the 128kbps MP3 stream, which is simply inadequate for the demands of classical music – the BBC's 320kbps AAC stream should, in my view, be supported as soon as possible. This is infinitely preferable to the rather lifeless sound the MP3 version of Radio 3 gives you; even the Freeview box's radio facility (192kbps MP2) managed to wipe the floor with it! Some higher-bitrate Internet-radio services do, however, hint at the

technology's potential.

Another oddity shared with the Onkyo model is that DSD tracks (2.8MHz and 5.6MHz variants are supported) can't be streamed from a network share (in my case, a Synology RT1900ac network router with USB NAS function). To enjoy such tracks with the SX-N30AE, you have to copy them to a USB stick and play them from there. But such hassle is worth it; the open and vivid nature of reference DSD content like Greeninger and Dayan Kai's 'Looking



**The SX-N30AE has a web interface, but Pioneer hasn't bothered to draw attention to the fact. It has undoubted potential but as you can see it needs work!**

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**Six line-level inputs, two digital inputs and a phono stage. An alternative to the Ethernet port for streaming playback is 2.4/5GHz Wi-Fi, the aerial of which is clearly visible (the other aerial serves the Bluetooth radio). Two pairs of speakers and a line-level subwoofer can be connected.**

For A Home' is conveyed beautifully. Pretty darn good for a receiver/streamer at this price level.

Music in other forms (MP3, WAV, AAC and FLAC - the latter from CD-quality to 192/24 hi-res) could be streamed across the network without any such trouble – a wide range of material played, from the original series of iconic BBC sci-fi comedy Hitchhiker's Guide to the Galaxy. I used a smartphone to

select tracks, such as a 24-bit/48kHz recording of Britten's War Requiem (LISO), that demonstrated the unit's ability to excavate detail and create a believable stereo image.

Bluetooth fared reasonably well. Sure, it's no substitute for 'lossless listening' – a slight raggedness can be introduced - but it should suffice for background music at parties or casual home listening.

As with the Onkyo variant, the

SX-N30AE's bundled phono stage turned in a perceptibly 'thin' sound with the analogue-era LPs I played – among them Simon and Garfunkel's Bridge over Troubled Water (mid-70s CBS pressing) and Stravinsky's Rite of Spring (Decca/Eclipse, Ernest Ansermet/Orchestra de la Suisse Romande). Switching turntables to a Rega Planar 3/RB300/Bias improved soundstaging and definition, but that slight thinness was still evident. But let's not be too picky. Pioneer's provision is fine as an introduction to vinyl.

**CONCLUSION**

With Pioneer's SX-N30AE you don't get integrated DAB to accompany VHF/FM, but gain support for more streaming services than Onkyo's similar TX-8150. It is a receiver with a wide array of abilities and sonically sounded open and vivid. Great value then at its low price.



**The handset is fine for basic day-to-day operation. More involved tasks, among them network playback and Internet radio, are easier to drive with the free 'Pioneer Remote' app.**

**MEASURED PERFORMANCE**

Although compact and light the Pioneer SX-N30AE produced 107 Watts into 8 Ohms and 145 Watts into 4 Ohms under measurement so it is nominally a 120 Watt design, yet Pioneer conservatively quote 85 Watts.

Distortion of the amplifier (Aux in) measured a very low 0.007% at 1 Watt, at 1kHz and 10kHz, into an 8 Ohm load, the figure increasing little into a 4 Ohm load – excellent figures. Input sensitivity was very high, just 180mV being needed for full output.

Amplifier frequency response was wide at 4Hz-57kHz and the tone controls gave a nicely tailored +/-1dB shelf lift and cut with 1dB showing on the blue fluorescent display, providing subtle response change able to modify typical loudspeaker response traits.

The optical S/PDIF digital input (Game) accepted sample rates up to 192kHz, frequency response reaching 40kHz before a slow roll off to the 96kHz upper limit. Dynamic range (EIAJ) was a respectable 114dB – well above CD – with a 24bit input and distortion low at 0.04% (-60dB). With CD (16bit) distortion measured 0.22% as usual due to 16bit quantisation noise. In all then, the digital

side measured well considering price, being able to reveal the quality of 24bit hi-res digital inputs.

Phono stage (MM) equalisation was very accurate, giving perfectly flat response from 4Hz up to 20kHz. Sensitivity was a normal 4mV and overload high at 70mV, with noise a low -80dB, so Phono measured very well.

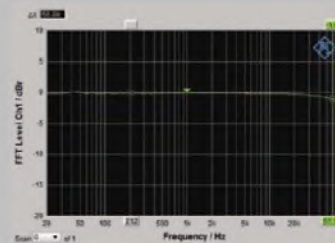
The VHF/FM tuner also gave a relatively flat response to 11kHz before a sharp roll-off to 19kHz caused by the pilot tone filter. The tuner will have a smooth and easy sound as there was no peaking. Noise (hiss) was reasonably well suppressed at -61dB, a common figure nowadays, even if Pioneer managed -74dB in their fabulous 1970s tuners (TX-9500 etc). For full quieting like this however, 63 dBµ (1mV) is required, meaning a good aerial is necessary.

The SX-N30AE measured very well in every area; it has been carefully and skillfully engineered down to the last detail. **NK**

**Power (8 Ohms) 120W**  
**Frequency response (-1dB) 4Hz-57kHz**  
**Distortion (10k, 1W, 4 Ohms) 0.007%**  
**Sensitivity 0.18V**  
**Noise -100dB**

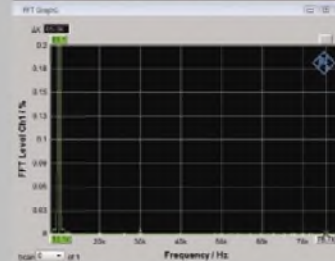
**Damping factor 45**  
**DIGITAL (24/192 PCM) Frequency response (-1dB) 4Hz-40kHz**  
**Distortion (24bit) 0.04%**  
**Dynamic Range 114dB**

**FREQUENCY RESPONSE**



**DISTORTION (10kHz, 1W)**

THD @ 10	Level [dB]	Frequency [kHz]
0.0080 %	1.0558 W	10.000 kHz
OFF	OFF	OFF



**PIONEER SX-N30AE £450**



**OUTSTANDING - amongst the best.**


**VALUE - keenly priced.**

**VERDICT**  
**Streaming, VHF and Vinyl, good sound and a low price. Excellent.**

**FOR**  
 - wide range of connections  
 - versatile online functionality  
 - enjoyably musical sound

**AGAINST**  
 - poor web interface  
 - phono stage a tad thin  
 - app needed to harness full potential

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# Mail



## LETTER OF THE MONTH PRIZE

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 Tannoy Mercury 7.2 loudspeakers.

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



Tannoy Mercury 7.2 loudspeakers

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

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

A pair of Tannoy Mercury 7.2 loudspeakers are on their way to **DAVID OSBORNE**, Letter of the Month winner in our April 2017 issue.

## Letter of the Month



Oppo's Sonica DAC can play hi-res music from a USB flash drive in most formats including FLAC and DSD64. It would suit seasoned audiophile Keith Roe.

### FIRST APPROACH

As a reasonably seasoned audiophile, I have not yet ventured too far into playing digital files, ignoring the CD player. I would like to ask an apparently simple question? Can music files be played directly from a USB flash drive plugged directly in a DAC, and if so what type, i.e. FLAC, WAV and other high resolution types? Having read your reviews of various DACs etc I'm still in the dark about the feasibility. If it can be done could you suggest a reasonably

priced DAC/DACs? Any comments would be appreciated.

Thanks  
**Keith Roe**

Hi Keith. Commonly, playing music from USB flash drive forms part of a larger package that includes a range of digital inputs and, increasingly, streaming capabilities; USB flash drive play is common on streamers.

However, one example of a DAC with USB flash drive play

I'd recommend taking a look at is Oppo's excellent Sonica DAC (£799). Or consider one of Cambridge Audio's range of DACs. An increasing number of products are also incorporating SD card slots as well as USB, which is an alternative way of storing music. **JM**

Hi Keith. Few stand-alone DACs have this but as Jon points out Oppo's Sonica is an exception. In a traditional DAC digital is streamed





The rear of Oppo's Sonica DAC carries a USB Host socket, seen below the white label, that accepts a flash drive. It also has a USB B socket for connection to a computer.

from a CD (DVD) transport through an analogue to digital convertor and thence out into the world, in "real time", meaning continuously. It takes a lot more to address the stored digital audio files on a USB flash drive and stream them through a software digital audio music player, with Play/Pause/Stop and transport controls and even a volume control. So much more in fact that USB music play is often a bought-in solution from specialist suppliers like X-MOS (Bristol, UK) who provide

### USB CONFUSION -

There's USB and USB – and they're different! You'll come across both mixed together in product descriptions.

Keith Rowe talks about reading audio files from a "USB flash drive" which is a memory storage device, technically known as "USB mass storage" and also referred to – confusingly – as an external hard drive, suggesting it has a rotating disc. Oppo say their Sonica reads "USB drives" and Cambridge Audio call them "USB Media". They're all the same.

Different, if similar, is a USB Audio connection that is used to link to a computer. This uses a protocol to talk down a cable in a bi-directional link between 'host' and 'device' as they are known. Be aware that this USB connection won't do what the other USB connection does! So if you read in a spec that USB Audio is fitted, that does not necessarily mean a USB flash drive can be used.



**Cambridge Audio's CX-N streamer has a USB flash drive socket conveniently placed on its front panel.**

both software and hardware (circuit board). With Oppo's Sonica you also get an app.

I mention all this to illustrate the fact that playing music from a USB flash drive is somewhat different to playing from silver disc (CD etc) and whilst they can be combined, commonly are not simply because it raises cost.

It does make sense to play USB flash drive derived audio through a high fidelity DAC and X-MOS offer PCM support up to 24/384, as well as DSD 64 and 128. Oppo say their Sonica is "capable of decoding audio files up to 24-bit / 192 kHz from formats such as FLAC, WAV and Apple Lossless, as well as DSD files at 64x sample rate – but a smartphone or tablet running Android or iOS is required".

So USB offers far higher quality than CD and is the way to go.

As Jon points out, these days

USB replay comes packaged in a wide variety of players and receivers. See in this month's letter 'DSD' where Dr John Hurley has purchased a Yamaha WXCS50 receiver to play DSD from USB memory. A Cambridge CX-N streamer similarly plays from "Local USB media".

I assume you have been happy to play LP and suggest you keep up to date with latest developments in this field, which is buzzing. Additionally look at buying a streaming player that has USB replay. In particular, as an analogue person you'd be well advised to head for DSD replay. It's a long way from perfect in that source material is often poor PCM or DSD processed via PCM but where analogue master tapes are sent straight to DSD and/or original DSD recordings are made (Blue Coast etc) it knocks the socks off most PCM and will better appeal to your sensibilities I believe. **NK**

### GO GARRARD

The Garrard 301 letter from Steven Moss in the April edition was a good read, as I have used a Garrard 401 for around fifty or so years and I have never used another turntable during that time. I too used to get disapproving comments from dealers when I told them I used a Garrard 401. Only one dealer in Birmingham, Five Ways High Fidelity ([www.fwhifi.co.uk](http://www.fwhifi.co.uk)) encouraged me to stay with my 401 – and I'm glad that I did!

The success of the 301 and 401 was largely due to the fact that when they were made, they were essentially 'right', unlike a certain belt drive that seems to have upgrades or modifications etc every week!

This very magazine was largely responsible for the revival of these turntables; when Noel dug his 401 out of the loft and had it looked at by Martin Bastin, it was then measured and listened to, and the rest is history!

The secret of the 301 and 401 is in the mounting of the unit. The 401 manual suggests a substantial steel plate. My 401 is mounted in a skeletal slate motor board made by Slateage ([www.slateage.com](http://www.slateage.com)) and all this sits on a Target custom made wall shelf. For company, it has an SMEV and Denon DL304 cartridge. I use Ringmat's MRA system, this consists of a Ringmat, thin rubber mat and a couple of spacers, I found that the original Garrard rubber mat sucks the life out of the discs by comparison to the Ringmat system.

As long as attention is paid to the routine maintenance as laid down

in the manuals, these turntables will continue to reward the listener with a sound which is unique to an idler drive turntable.

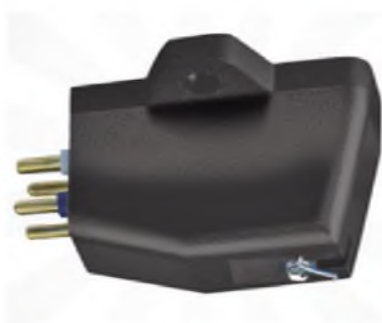
Regards

**Mike Bickley.**

**LOOKING BACK**

After many years of upgrading I feel I now have a system that can show me the good and bad points of the components I use to replay my vinyl. My vinyl solution consists of a VPI Scout turntable, Benz Micro Ace MC cartridge, Trichord Diablo phono stage, Icon Audio Stereo 40 III and Quadral Chromium 8 speakers. These are connected using Chord Chameleon interconnects and Tellurium Q Black speaker cables.

Now for quite a while I have been very happy with this setup and I think, within the reasonable costs I have spent I have a very revealing and lovely sounding system. Just recently I was going through my "spares", these are components I bought and never sold on, usually interconnects, cartridges, etc. and found a Goldring Eroica L moving coil cartridge I purchased and used when I had a Systemdek turntable and Primare amplifier from some years



**Goldring's Eroica moving coil cartridge. "It has clarity, left/right separation and a very tidy sound" says Andrew Burtchaell.**

ago. Now I wondered what it would sound like through my existing system, not expecting much to be honest and thinking I would listen for a short while and go back to my Benz Micro. So, I picked it out and went down to spend the half an hour or so fitting, balancing, lining up, etc. Once all this was done I picked out some vinyl (new & old) to see what I thought and to be honest I was very surprised. It has clarity, left/right separation and a very tidy sound. It seems to track well and is very tolerant of older, more "clicky" albums. In fact considering the price difference between the Benz Micro and Goldring Eroica it compares very favourably. It is so close I have not swapped back and am happy



**A Garrard 301 on a lovely Slateage plinth – what a classic!**  
[www.slateage.com/hifi](http://www.slateage.com/hifi)

using the Goldring.

It does make me think that we should not overlook the equipment that has been on sale by manufacturers for some time, sometimes that equipment has stayed for sale because it is just good.

This got me thinking, so I pulled out my Sony Walkman Professional and the small collection of tapes I still have (some prerecorded and some recorded from albums by me) connected it up to the tape line in on the amp and pressed play, brilliant. I mean you still know it is a tape playing but the quality is very, very good. It also allowed me to hear some music I have not heard for years, so nostalgia probably helped here too?

So all the hi-fi enthusiasts out there with equipment they thought sounded good on previous system setups but was put away may find that through their current systems these can take on a whole new life. I realize that it is impossible to test from a magazine reviewers point of view (you don't have the same equipment I use, the same room dimensions and the same furniture), but I now think synergy is a very important factor in the construction of a good hi-fi system and the components that make up that system and not just because they all received 5 star ratings from a reviewer. So, for the time being at least I will stay using my Goldring Eroica L and just enjoy the very good sounds it reproduces from my vinyl.  
**Andrew Burtchaell**

**MAINS FAILURE**

I am writing to you today to comment on what I feel is the latest iteration of the emperors new clothes, namely mains

supply products. A couple of years ago I bought a PS audio power regenerator for my system, complete with its own isolation platform. I bought some high quality, heavily screened mains leads for every component and set about connecting everything up to avoid cables running parallel or being excessively close to one another.

What were the consequences of all this time, money and effort? Absolutely no difference in presentation or quality, just a longer time for everything to power up. I tried running the power amps direct from the mains and the source equipment from the regenerator, I tried switching cables, introducing different distribution blocks, every possible permutation of connection. The only reliable difference I could make was that the power amps sounded softer and less capable when being run from the regenerator rather than direct from the wall socket.

Just to contextualise my comments, I live in the middle of a major city, I have a decent hi-fi system that I have invested about £10k on. I listen to a HD and CD player but not LP. My house, and every surrounding building is awash with Wi-Fi networks so theoretically I should have benefitted. I had bought the regenerator in the hopes that it would elevate my system without me having to move up a substantial price tier but alas it made no difference. As an experiment I swapped several hundred pounds of mains cables for regular freebie cables without any detriment to the sound. Is it possible that I have the best AC supply in country? I can't be the only person who has had these experiences.



**The Isotek EVO 3 Mosaic Genesis regenerated power supply we use in-house to good effect. Measurement showed it cuts mains distortion and eliminates noise, bringing obvious improvement to sound quality.**

*I wonder if any of your readership have come to similar conclusions?*

*Sincerely,*

**Evie Sandston**

Hi Evie. We generally get a big thumbs-up from readers over mains improvement products. Furthermore, reviewers such as Rafael Todes, who as a classical violinist (Allegri String Quartet) has a superbly tuned ear, insists on paying great attention to mains connections, so there's consensus on this. It is safe to say that most people hear a difference and also feel changes are for the better.

This is my experience too, which is why I use an Isotek Evo 3 Mosaic Genesis regenerator in order to banish the heavy mains clipping that affects our London supplies (and most others around the UK it seems). I suspect waveform clipping is a product of voltage regulating equipment that gives us a steady 245V mains suffering 3% distortion with harmonics up to 1kHz. The regenerator outputs 230V at 0.2% distortion – quite a difference – one clearly visible on our spectrum analyser.

In outline theory none of this should make any difference, because in all amplifiers the mains is converted to d.c., distortion and noise being eliminated in the process. However, there is a hidden mechanism by which a dirty mains supply still has affect, due entirely to the quality of the mains isolating transformer used and the way it is

mounted affecting leakage currents. As usual cost comes into it but also in the standard design playbook, leakage currents and their sonic impact are ignored.

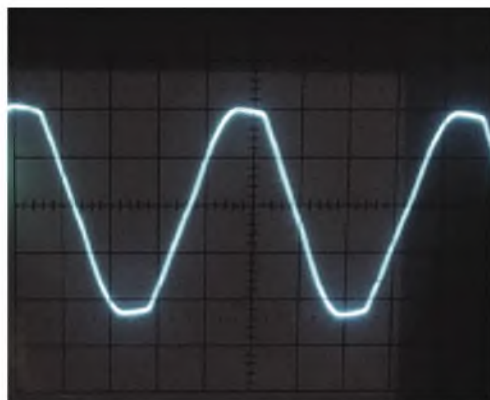
All of which is to point out that this is a subject that suffers a lot of variability between both products and situations. It is elusive and therefore treated sceptically by many engineers, especially because scepticism suits their purpose. Why order a mains transformer with expensive inter-winding screens and mu-metal casework when a cheapy will do? You may have been influenced by such thinking. I talk to a lot of design engineers and know that many are blissfully unaware of ground current mechanisms and this whole topic in general. Not all though. Douglas Self provides some coverage on his website The Amplifier Institute – see Ground Loops with its many helpful diagrams ([www.douglas-self.com/ampins/groundloops/grndloop.htm](http://www.douglas-self.com/ampins/groundloops/grndloop.htm)).

So the mains is a dirty a.c. source and there is a way in which this can affect audio quality. Why does it not in your case then? It could just be you own an amplifier with a decent mains transformer inside. It could be that you are insensitive to the sort of changes such supplies provide, which is generally to clean and clear the soundstage of slight fuzz or hash, providing greater focus. I was surprised to hear how the Isotek affected our Martin Logan ESL-X loudspeakers, knitting the XStat electrostatic

panel better into the bass unit to make for a more cohesive whole. Jon Myles remarked upon this quite independently; he heard the same phenomenon. I suspect it is XStat panel polarising power supplies, run from the Isotek, that are having influence here. Whatever, the use of a regenerated power supply makes quite a difference, bringing a sense of cleanliness, precision and cohesiveness to our system. Power amplifiers are run from its high current unregulated but filtered output.

So that's the general picture. Perhaps you are just lucky you don't need a mains regenerator – if unlucky in buying one to find out! Which is why we advise those interested to borrow one from a dealer first. Just 'phone a dealer and ask. **NK**

Hi Evie. In my experience mains regenerators and power supply cables can and do make a difference – but individual experiences vary.



**Here's what our mains looks like (North London) and we are told such a waveform is common – in the UK at least. The flat tops to the smooth sine wave are distortion, likely a result of voltage regulation.**

I know of some people who have found power regenerators have actually softened the sound of a system while for others they can bring large benefits. We use one at Hi-Fi World and once installed it made a noticeable difference to the sound. The same goes for cables – the advice always being try before you buy. If you can't hear any difference then stick with what you've got. **JM**

#### **ANOTHER CLASS**

*In his review of the Novafidelity X35, Jon Myles states that the class D amplifiers are powered by a linear power supply based around a toroidal transformer. However, the picture of the internals of*

the unit show a toroid which is clearly too small to power two 100 watt amplifiers! Also, the switched mode power supply has some fairly thick wires going to the class D modules.

Kind Regards  
**Mike Ford**  
**Bromsgrove**

**...AND AGAIN**

I cannot believe that I will be the only person to query the validity of the Novafidelity X35 review wherein it is stated (twice) that a linear power supply based around a toroidal transformer drives two Class D amplifier modules ...The internal picture on page 40 clearly shows a big switch mode supply connected by thick wiring to the Class D module. The tiny toroid presumably provides a linear supply to the analogue elements within the unit, the phono stage etc. I'm sure that if a linear supply was feeding the power amplifiers the picture would look a lot more like the interior of my Naim Uniti, where probably a quarter of the space is devoted to the toroidal transformer driving the power amplifiers. Perhaps the Class D amplifier noise performance would be better if it was powered by a linear supply?

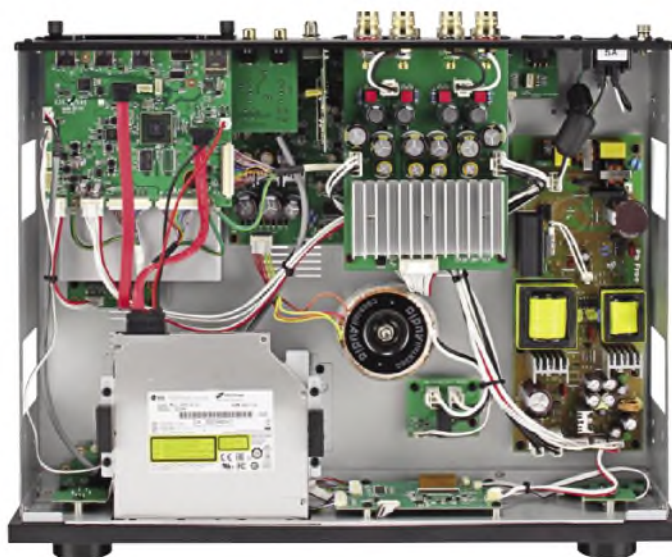
Regards,  
**Denis Holliday**

Whoops! Thanks to both of you in pointing this out. As technical editor I should have looked more closely at the picture, so please accept my apologies for this oversight. **NK**

**DSD**

Thank you for your clear and myth-busting explanation of DSD and its transmission. As someone who lives in an area covered by extremely slow broadband (less than 1 Mbps) downloading or streaming even CD quality has been such a tiresome process that I have not committed myself to it.

However with the promise of cable



**Our Novafidelity X35 internal view. That's a switch-mode supply at right, say readers, with stout wires going to a Class D output module that nestles below the gold plated loudspeaker terminals (and has a heatsink on top). Correct!**

to box fibre from Openreach and the imminent arrival of fibre to house from Gigaclear I have put a toe in the water by purchasing a Yamaha WXC50 Streamer / DAC / preamp to use with my system. This is well made and sports an AK ADC and ESS Sabre DAC – representing stonking value. It also plays from a USB memory stick. I downloaded some Linn test files in FLAC sometime ago onto my Mac (which will not of course play them) and transferred these to memory stick. They play really well through this system. Is there anything to prevent me doing the same with DSD files?

On another subject I am glad that John Myles recognises the value of minority programming on the BBC - I too heard the excellent programme he instanced. I am sorry though that he repeats many of the myths about the corporation. The licence fee at under 3 a week compares to a Sky subscription of between 22 and 80 a month (the latter for the same range

of services as the BBC provides). For 3 a week the Beeb provides access to a very wide range of television broadcast material through Freeview which is a partnership including the BBC and entirely free access to radio channels. It also, very unfairly, has been made to fund the British Governments overseas broadcasting network.

Whilst the licence fee is a regressive tax, so is National Insurance, VAT, car tax and most other licence requirements which consume much more than 3 a week. The regressive nature of the tax does not stop many poorer areas of the country sporting a forest of satellite aerials for more expensive content.

The quality of output is a matter of opinion. The BBC is required to provide a vast range of content across three TV channels and numerous radio channels including ground breaking content on BBC 4 TV, minority programming such as Jon Myles discovered, educational content in prime time (often with the OU) current affairs and much more. That it does so with flair, consistently high standards and occasional brilliance, is, whatever its faults, an indication that it represents tremendous value for money.

Of course the BBC cannot win - it always faces a lose lose agenda from critics.. If it becomes too popular it is squeezing out commercial rivals, if it loses audience share it is not value for money. All I can say is that I can find enough high quality output on BBC radio and the half dozen or so Freeview channels I actually watch or on catch up TV, not to need high cost poor value



**Yamaha's WXC50 streamer – that's the little box. The big, classically styled (1970s) amplifier is in fact a current A-S801 with ESS Sabre DAC on-board, classic MOSFET amplifier and all else. Nice!**



**Leak Delta FM tuner from 1974. It still sounds good against modern tuners, says Mike Bickley.**

subscription rivals.

So I am glad that Jon Myles is rethinking his hostility to the corporation because like the NHS it is a treasure we will miss if certain interests succeed in dismantling it - and believe me we will all be poorer.

**Dr John Hurley**

Hi John. I agree the BBC provides a good range of programmes for its cost. However, those people spending money to receive Sky, Virgin etc. still have to pay the licence fee even if they do not watch or listen to one second of BBC output. Indeed, if I only watched ITV I would still have to pay it as it is a legal requirement for anyone receiving a TV signal as it is broadcast.

As TV and radio watching and listening habits change with the likes of streaming services such as Netflix and Amazon along with internet radio and the rise of podcasts becoming more popular it seems inevitable the nature of the licence fee will have to change over the coming years. **JM**

Hi John. DSD should play perfectly well from USB memory. It does not have to be transmitted as USB Audio over a cable, so you are not faced with all the difficulties that arise if attempting this.

USB flash drives are a very good way of storing and playing DSD files, because they interface directly with the USB control circuitry and thence to a DSD DAC with no intervening electrical cable to make life awkward. With double, quad and octuple rate DSD (22.6MHz) upon us this is an attractive solution, except that file sizes will run into Gigabytes and memory stick costs soar accordingly! **NK**

### OLD TUNERS

Dave Tutt's piece in the March edition was as a good read. This article, particularly the Leak transistor amp

and tuner, resonated with me to some extent. It brought back memories for my experience with a Leak Delta FM tuner which was the successor to the one Dave mentioned in his article. I bought my tuner in the 70's and it continued to give trouble free performance. However, I thought that the recently released Audiolab 6000T tuner priced at around £600, should be an improvement over the Leak. So armed with the Leak I arranged a 'side by side' comparison with the Audiolab at a local dealer. The dealer already had the Audiolab up and running, and it was making a good sound.

Next up was my Leak. After a little bit of mickey taking from the staff, the Leak supplanted the Audiolab. The sound that the Leak produced was as good as the Audiolab, the mickey taking ceased immediately! In fact more sales assistants came in to the dem room to have a listen to the Leak! They agreed with me that the Audiolab would be a sideways move. I always knew that the Leak was a quality product, the above experience went some way to proving this.

**Mike Bickley**

Hi Mike. Yes – what a subject! At the Bristol Show this year (2018) I was told emphatically by a musician who had heard a fully restored Leak Troughline that it had no competition in terms of sound quality; he was quite shocked by what he heard from this simple old valve tuner from the 1960s. But then he had likely not tried it with a poor aerial or on a crowded waveband with lots of closely packed stations. Beyond wonderful – but with mortal problems!

As tuners became more sophisticated in their ability to cope with

such difficult outside conditions so their sound quality deteriorated, although I have to say many of the top tuners of the 1970s (Pioneer TX-9500 etc) did everything they could to cope, with wide/narrow IF filters and what have you. But then – looking at the Hitachi FT-5500 MkII that sits just above my head as I type – even these tuners got the RF right but the audio very wrong. Your Leak offers a great balance between the two.

I don't know what lies inside the Audiolab 6000T tuner but if it has a combined DAB/VHF module like Audiolab's later 8200T and so many other tuners these days (see the T+A Cala in this issue) then it uses an SDR tuner, which is an altogether different animal to all preceding VHF/FM tuner technologies and will give distinctly different sound quality. Think very clean and well balanced tonally, but a tad hard and often a bit hissy too. Here's the skinny.

Software Defined Radio uses a fast Analogue-to-Digital convertor to turn the radio signal to digital. It is then processed digitally, not through all the many analogue stages within a conventional tuner like your Leak. Generally the measured result is good, but high order distortion harmonics are produced, where they are not in an analogue tuner.

Also, sensitivity is commonly poor; although it need not be if a simple RF preamp is inserted, but this is not normally within the budget.

SDR tuners are also selective, so they are good for crowded wavebands. We have the RF test equipment to measure all this by the way.

In all then you get a very different sound, plus pretty decent RF performance and low noise,



**A modern Audiolab 8200T VHF/FM and DAB tuner – altogether different technology to old analogue tuners.**

providing a good outdoor aerial is used. All of which explains the situation you encountered and why the sales assistants and yourself found the sound obviously "different" if not "worse". In effect you were comparing digital to analogue. **NK**

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- 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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The Jamo Studio 8 series starts from just £155.00.





# Bristol Show 2018

**OK, officially it is the Bristol Sound & Vision Show, held by retailer Audio T. Most UK manufacturers attend – it's a must. And that makes it an interesting and exciting event popular for all – UK February weather permitting!**

**B**ristol's Sound&Vision Show, run by retailer Audio T, has trundled along steadily for 28 years now, long ago establishing itself as the UK's primary audio show. And so it

true enough. Yet at the same time there were plenty of new products – if no radical ones. Turntables and digital sources reigned; I spotted and listened



*The Hi-Fi World stand at the show just before the doors opened - including our Rohde&Schwarz analyser as well as FiiO's range of new products.*

was this year as manufacturers and distributors – Hi-Fi World included – arrived in their vans to be met by icy blasts from the East. Undaunted, the country's audio enthusiasts arrived Friday 23rd February, then Saturday and Sunday, making the three day event as popular as ever. A relatively stable economy free of negative trend or shock undoubtedly helps; an air of optimism pervaded the show.

All the same, this was a year of restrained progress rather than technological step-change. A few people told me at our stand there was not much new – and that was

to just one open-reel tape recorder playing copy master tapes – see our report. It gave the best sound of the show by a country mile yet UK manufacturers are still tardy in taking source quality into account when demo'ing their products, too many spinning old compressed 16bit CDs that sound 'challenged' shall I say.

An interesting start-up was Fyne Audio, behind which are ex-Tannoy employees including Dr Paul Mills, the company's distinguished designer. They were showing a range of loudspeakers in the Bristol Suite as well as upstairs in a room. Meanwhile,

Tannoy, now a part of Music Group, were exhibiting in a nearby hotel. At present they have R&D in Manchester and manufacture at their factory at Zhongshan, China I think I am right in saying, although there's talk of a new plant in Scotland.

Fyne Audio meanwhile are close to the old Tannoy plant at Coatbridge, on the outskirts of Glasgow. And guess what – they too are producing large, concentric 'point source' loudspeakers. So the UK now has two manufacturers of concentric cone loudspeakers, or three if you include KEF's slightly different Uni-Q arrangement. Interesting!



*This AVM Ovation FA8.2 modular analogue preamplifier caught my eye, with its clear acrylic casing. Unfortunately, this is a show demonstrator only, designed to capture attention – and it worked! PMC act as distributors for the German brand; the product has aluminium bodywork with a tinted top window in commercial form, with a range of plug-in cards to tailor functionality.*



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A Fyne Audio F10 loudspeaker, featuring their new 10in Isoflare point source drive unit, where a pressure loaded tweeter fires out through the centre of the bass cone. Fyne Audio told us the heavily machined alloy bass has a Tractrix flare to distribute bass energy evenly into a room.



Quad were showing their new Artera Solus receiver, but being black and in a dark room I could only capture it with flash – nasty. So here's an atmospheric if distant show shot!



Harbeth were running a colourful display and producing a good sound from their small P3ESR loudspeakers, a version of the BBC LS3/5A small studio monitor from long ago. It's still a revered design, developed by Dudley Harwood founder of Harbeth.



A finely machined and wonderfully finished Glanz tonearm from Japan, with detachable bayonet-fitting vestigial headshell, spotted beside Timestep turntable upgrades in the Bristol Suite.



Ming-Da MC368-B SE amplifier (not the MC386-B but a variant) with onion-bulb 6SN7 valves at left and right and Jinvina KT90s at rear, presumably in parallel pairs as this is a Single-Ended amplifier. The idea here is to offer useful output power from a Single-Ended design, 25-30 Watts from parallel KT90s I'd guess.



Owners of the Technics SL-1200 Mk2 turntable looking to change its tonearm will be interested in these finely machined and finished mounting plates from Ammonite. Our picture shows a silver blank, a black SME mount (left) and a Rega mount in a section of the turntable's base plate. Contact Sound Hi-Fi for more info.

## Audiodesksysteme PRO Ultrasonic Vinyl Cleaner



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Paul Rigby – The Audiophile Man, Dec 16



At the end of Saturday we held a prize draw for all those who subscribed Friday or Saturday. Dwight Stevens from Croydon, who was at the show with his family, was the happy winner of a Dual turntable and George Harrison LP box set.



Air Audio were playing STS (copy) Master Tapes, on a Teac A-3300SX open-reel recorder – delivering the best sound of the show I felt. Using open-reel as a source is becoming popular at US shows but is rare in the UK at present.



Singer Lynn Stanley flew in from LA to support the release of her 1-step LP (this refers to transfers from acetate to stamper) Potions. She insists on all-analogue recording equipment, using a high-speed 24 track recorder to lay down an original one-take studio performance. Just 100 LPs were available (the stamper wears out) so we bought one (£100) for review work.



Quadral loudspeakers from Germany were making a nice sound as always in the elegant room set up by NuNu Distribution.



PMC's twenty5 26 was one of the few loudspeakers at the show featuring a dome mid-range unit, something that distinguished Yamaha's NS-1000 of yore and is common on studio monitors today. They give a forceful and insightful midrange.



Acoustic Energy's new 300 series floorstander loudspeaker - which was sounding rather impressive. Watch out for a Hi-Fi World review soon.



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# Awards 2017

Once again Hi-Fi World's annual awards ceremony proved one of the highlights of the Bristol Sound & Vision Show. Chord Electronics, Focal, Chord Cables, Auralic and Audio Technica were all among the winners of the prestigious globes. Here's a look at what went down on the night.



Award winners and guests get ready for the presentation.



Compere Richard Stevenson shows off his physique after an extensive two-week gym session to prepare for the event.



Doug Maxwell - sales manager of The Chord Company - is delighted as he takes the award for best cable.



Colin Pratt, Sales Director at Chord Electronics, and Doug Maxwell, Sales Manager of The Chord Company, enjoy some pre-event hospitality.



Clive Atkins - Hi-fi Category Manager (UK) from Audio Technica accepts the Hi-Fi World Award for best cartridge.

# AWARDS CEREMONY



Dave Cawley from Sound Hi-Fi is proud to accept the award of best turntable for its Timestep Technics-modified EVO SL-1210 GR from Hi-Fi World editor Noel Keywood.



Andy Oattes from Focal and Mark Williams of Advanced MP3 Players discuss all things hi-fi.



Hi-Fi World's Louise Palfrey and Andy Napthine get into the spirit of the event.



Focal's Andy Oattes accepts the Hi-Fi World award for their Utopia headphone.



Joe Gormley from The Chord Company, Matt Esau of SCV and Dave and Jill Cawley from Sound Hi-Fi.



Richard Bates takes the award for best network player for the Auralic Aries.



Andy Napthine from Napthine Porter assesses exactly which bottle of water to go for.





Colin Pratt from Chord takes the award for best DAC for the Chord Hugo 2.



Hi-Fi World publisher Noel Keywood hands the award for best digital music player - the Cowon Plenue 2 - to Mark Williams of Advanced MP3 Players.



Richard Bates from Auralic, David Denyer and Lynn Stanley (singer) prepare to tuck into Hi-Fi World's selection of food.



Dan George from Dan George Communications and Chord Electronics founder John Franks discuss Hi-Fi World writer Jon Myles's new haircut. The conclusion was to find a new barber.



Hi-Fi PR specialist David Denyer attempts to make off with a chip hoping he's not been noticed!



A little get-together before the main event.  
 From left to right  
 Jens Wölfert - Audio Technica - Consumer Sales Manager (Germany)  
 Jonathan Danbury - Technics/Panasonic (UK)  
 Clive Atkins - Audio Technica - Hifi Category Manager (UK)  
 Robert Morgan-Males - Audio Technica - Director (Europe)



Ron Locke from KEF demonstrates how he taught John Travolta his dance moves for Saturday Night Fever.



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The new EB1S from relaunched British brand Arcaydis is a potent package, says Jon Myles.

# Arcaydis Is Back

It's fair to say British loudspeaker maker Arcaydis has had something of a chequered history. Formed in 1997 by engineer Richard Allen – a former designer with pro-audio company Celestion – it was somewhat ahead of its time as offering direct sales to keep prices down.

While that meant customers had to buy the products without hearing them first the original DMI 'speaker achieved good sales and reviews and was soon followed by the EB1 and EB2.

However as time went on Arcaydis struggled to fulfil its order book and had effectively ceased trading by 2013. Now, however, it is

back with a revamped model line-up, of which the EB1S is the smallest model priced at £499.

Arcaydis has been revived by brothers Robin and James Szemeti – the former having spent 15 years as an electronics engineer with the BBC before going on to run a successful software business.

The latest EBS1 follows Richard Allen's original design but has a revised crossover said to give greater soundstage depth and resolution.

It's a traditional two-way ported standmount measuring a compact 310mm x 170mm x 250mm (H/W/D). The main mid/bass driver is a 130mm paper cone unit while the tweeter is a 28mm silk dome. There's

a sturdy pair of bi-wireable 'speaker binding posts on the rear while three finishes are available – natural, black and white.

The cabinet – built in Sheffield – is an interesting construction, being a combination of various grades and thicknesses of board to try to eliminate resonances – something usually only seen in much more expensive 'speakers.

All in all it's a tidy-looking package and a firm rap with the knuckles on the side of the loudspeakers proves they are sturdily built.

And while you won't be able to hear the EB1Ss in a showroom Arcaydis does offer buyers the safety



All the *style*, with no  
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## Debut III S Audiophile

The Debut III S Audiophile takes the iconic, multi-award winning Debut design and adds advanced features to enhance the look and performance to an all-new standard.

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of a 30-day no-quibble money-back guarantee if they are not entirely satisfied.

**SOUND QUALITY**

Hooked up to T+A's Cala CDR all-in-one player (see review this issue) via Tellurium Q's Black II loudspeaker cables it's quickly obvious these little EB1S loudspeakers are able to provide a soundstage much bigger than their size would suggest.

They also have the knack of digging out plenty of musical information – more than you'd imagine from such a compact design.

With Leonard Cohen's 'First We Take Manhattan' the driving synth line was firm and solid: it charged along menacingly with no sense of overhang. Cohen's growling vocals were also perfectly pitched, every word being intelligible.

Moving on to the heavier tones of King Tubby's 'Dub Fever' via CD it's clear there's not masses of low-end on offer – the very size of the 'speaker mitigates against that - so close-to-wall positioning is recommended to maximise bass.

Placed this way the EB1Ss extracted a decent amount of clout from The Chemical Brothers' 'Block Rockin' Beats'. No, they won't match a big floorstander in the bass department but what's there is firm, solid and tuneful.

More impressive, though, is how tonally uncoloured and smooth they sound, which made even the densest tracks such as John Coltrane's 'Ascension' easy to follow. Here I could pick out the different saxophone lines of Coltrane, Pharoah Sanders and Archie Shepp which were woven together beautifully. The

piano - that can sound a little muted on small 'speakers - also had good tonality with plenty of bite and attack. This album really is a cacophony of various overlapping instruments but the EB1Ss managed to bring out all the musicality.

The mid/bass driver and tweeter are wonderfully integrated with no obvious sign of any suck-out, making everything sound smooth and detailed. Vocals especially were extremely well projected, seeming to float free of the cabinets, yet anchored solidly in the soundstage.

And, although probably best used in small(ish) rooms, the EB1Ss managed fill our large listening space with relative ease once I turned the volume up on the T+A Cala. Even at high volumes the 'speakers remained lithe and supple with great dynamic ability and a fast-paced sound. They latched onto the metronomic synth line of New Order's 'Blue Monday' with ease, positively driving the track along, while the big orchestral crescendo was delivered with a good degree of scale and authority.

Happy with all genres of music, at their price they are an excellent buy.



**The Arcaydis EB1S rear-ported cabinet benefits from near rear-wall placing to get best bass response. It works best in smaller rooms but is able to go loud on the end of an amplifier of 60 Watts or above.**

**CONCLUSION**

The revised EB1S is a compact standmount with a big, smooth sophisticated sound that draws you into the music no matter what you are playing. Give them a listen. Once you do I'll doubt you'll be taking up that money-back option.

**MEASURED PERFORMANCE**

Our frequency response analysis shows a flat characteristic from 500Hz up to 20kHz, with no crossover suckout around 3kHz and smooth treble from the fabric dome tweeter. A lift at 1kHz helps projection of vocals.

Below 500Hz output rolls down slowly but smoothly, demanding the

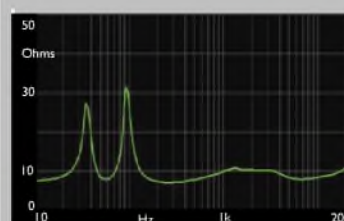
**FREQUENCY RESPONSE**

**Green - driver output**

**Red - port output**



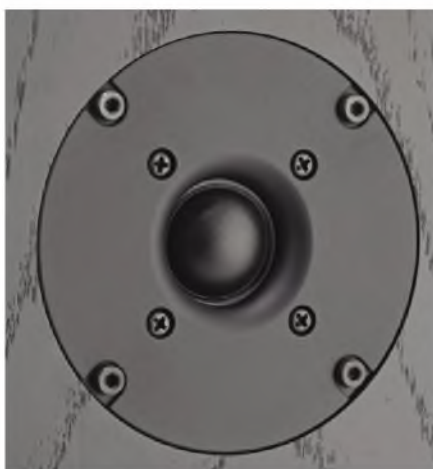
**IMPEDANCE**



EB1S be used close to a rear wall, preferably in a small-ish room where room gain will enhance low frequency output. Under these conditions the EB1S will sound dry and fast (well damped). Since it reaches down to 60Hz low bass will be apparent, but not subsonics. The port is tuned to 55Hz our impedance trace shows and provides support down to 40Hz, but no lower.

Sensitivity was average at 85dB from one nominal Watt (2.8V) of input, making amplifiers of around 60 Watts or more necessary. Overall impedance was high at 10 Ohms, explaining average sensitivity, but this also means the 'speaker doesn't draw current and is a light load that will sound much the same whatever amplifier is used.

The EB1S is both smooth and accurate. It will come over as detailed and forthright. It does, however, need to be used close to a rear wall for bass to sound in balance. It is very well suited to small-ish rooms that are prone to boom, where it will come across as better damped and tighter than most. **NK**



**The 28mm silk dome tweeter is both smooth and refined. Vocals have are especially impressive.**

**ARCAYDIS EB1S**

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# Hybrid theory

Unison Research's Unico 90 is big and beautiful in all regards, reckons Martin Pipe.

**F**or a while now, Italian hi-fi manufacturer Unison Research has produced amplifiers that enclose intriguing 'hybrid' circuitry within an elegant chassis.

The Unico 90, the smaller brother of the 150 but a heavyweight integrated nevertheless, continues this trend. Basically, it employs double-triode valves – specifically common (and affordable!) ECC81s and ECC83s, the reassuring glow of which can be seen through the top grille – for pre-amplification and output-stage driver purposes. They are used, in Class A, to provide the amplifier's voltage gain. The 'tubed' signals are then passed to the output stage that uses three pairs of HEXFET transistors per channel, to provide the current gain that an amplifier also needs to work with speakers.

This not-unfamiliar topography

presents listeners with the best of both worlds. You get the 'valve sound' – clarity, warmth and so on – without the need for the heavy (and efficiency-sapping) output transformers traditionally associated with valve output stages. Decent-sounding transformers of this sort are not cheap to make properly, and can develop faults that are costly to rectify. That Unison's design means you don't have to replace expensive output valves when they wear out is an added bonus.

Each stereo channel employs one ECC83 (actually, a Russian-made Tung-Sol 12AX7) in the input stage, thanks to its high input impedance and high voltage gain. The lower-gain ECC81s (12AT7s), of which two are used per channel, are however better-suited to the Unico 90's output driver and phase-splitting stages. That's a total of six triodes per

channel; much use of the 'totem-pole' (SRPP, or "series-regulated push-pull") circuit technique is made in order to achieve the necessary levels of drive (its high gain and low output-impedance are a virtue here). SRPP designs were, out of interest, popular during the 1990s 'valve renaissance'.

Downstream of the valves are the HEXFETs, employed in a Class A/B configuration. They are bolted to substantial heatsinks located on either side of the chassis. Feedback is used sparingly. All of this muscle is claimed to deliver a usable 100W into a nominally 8 Ohm speaker (180W into 4 ohms). As you can imagine, the power supplies are themselves rather potent. The Unico 90 is 'dual-mono', meaning that each channel gets an independent power supply. Unusually, the two toroidal mains transformers that feed them are stacked vertically rather than



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side-by-side.

The Unico 90 runs surprisingly cool. Even with no output transformers though, it still weighs in at a whopping 20kg. The appearance is unmistakably Unison, with its three-section aluminium front panel, large and silky-smooth control knobs (volume, input selection) and distinctive labelling. It's beautifully-made, too, both outside and within, having high-grade components and fibre-glass circuit boards all neatly laid-out.

Blue LEDs confirm the selected source – five in total but there's no integrated phono stage. They also indicate the valves are warming up – there's no sound for 40 seconds whilst they're flashing after the side-mounted rocker power switch has been flipped. Unison reckons that you'll get the best results ten or so minutes after switch-on. The volume control is motorised, and can – alongside source selection – be remotely-controlled with an enormous wood-encased handset with tiny buttons (it uses tiny

"It combines the sheer slam of solid-state with the innate musicality of valves to deliver a full-bodied and immersive sound"

CR2032 lithium batteries).

Around the back sits a sensible collection of terminals, all with a superb, built-to-last character. At a time when everything is packed with digital gubbins, the Unico 90 is pure analogue. A microcontroller is however used to look after protection, input-switching relays and remote control. No DACs, networking, USB or Bluetooth here. Two of the five stereo inputs are balanced XLRs, the remaining three being conventional gold-plated phonos. There's also a stereo 'bypass' input that allows the Unico 90's power amps to be fed directly.

The amp's outputs cover line-level active subwoofer (the currently-selected source unfiltered, but affected by volume control), line-level monitor (the currently-selected source, at fixed level), plus two pairs of 'speaker terminals' for each channel. Instead of being independently-selected, both sets are always

active; they're wired 'in parallel' to make the job of bi-wiring speakers easier. The Unico 90 makes no provision for headphones.

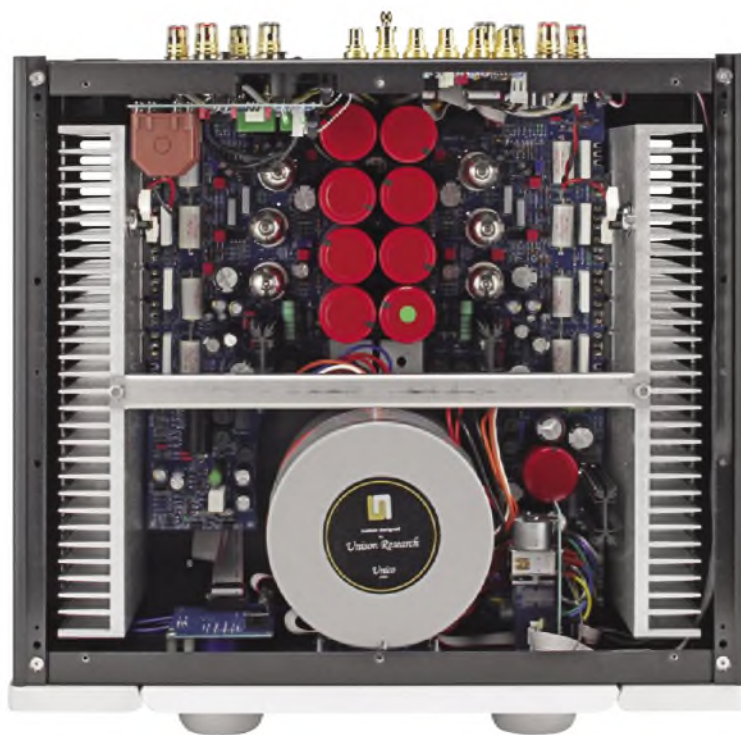
### SOUND QUALITY

My source was a Cambridge CXN streamer, which fed the Unico 90 with a selection of losslessly-compressed source material on USB or networked drives via a Chord Toby TT DAC. To turn the unit's 'hybrid power' into sound I relied on my trusty pair of Quadral Aurum Wotan VIII speakers. These are elegant floorstanders with fine ribbon tweeters that reveal plenty of 'top' detail, if it's available. The first thing you note is that, despite a spec that completely solid-state amps would sneer at (as much as 0.5% THD at 10W), is just how effortlessly gutsy the Unico 90 sounds.

The deep bassline of indytronica outfit Metronomy's brilliantly-quirkly 2008 *Nights Out* album (CD rip,

FLAC) was deliciously firm and clean even at high volume levels – and accompanied by percussion that was incisive and clear, without fatigue. Nitpicking, one might argue that despite the lack of output transformers the treble can sound just a little recessed on occasions. Boards of Canada's 'Palace Posy' (Tomorrow's Harvest, CD rip, FLAC) also demonstrated the Unico 90's natural talent for bass, rhythm and organic analogue-synth melody. In short, this amp has delightful musical panache.

Rock was also a beneficiary of the Unico 90's ability to deal with music. The swaggering yet joyous bluesy variety exemplified by Rory Gallagher's *Irish Tour '74* (FLAC rip of MFSL CD) was here bestowed with atmosphere, definition and effortless power. Gallagher's guitar and harmonica were presented in all their searing glory, whilst drums, piano and bass accompaniment lost nothing. A live album that sounded as if you were there. Isn't that what the hi-fi game is about? The explosive *Distance* (FLAC) by Ceremony (aka John Fedowitz) may be an edgy and somewhat lo-fi wall of sound, and



**High-quality components are in evidence and the printed circuit boards are quality fibreglass. At front lie the toroidal mains transformers of the dual power supplies – one for each channel – stacked vertically.**



**This distinctive remote boasts numerous buttons but most have no function with the Unico 90, only volume and input select.**



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Two Tung-Sol 12AT7 (ECC81) double triodes are used to drive the HEXFET output stage of each channel.

although not even the Unico could lay bare the musical detail it managed to put across this record's fantastic energy.

Time for something a tad more subtle – the 2009 remaster of The Beatles' Abbey Road. Ringo's unfairly-maligned drumming came across well, while Paul McCartney's bass was tuneful and well-defined, keyboards – the Hammond organ as heard in I Want You (She's So Heavy), together with the early Moog synthesiser that contributed to Here Comes The Sun and Maxwell's Silver Hammer – all emerged with their defining character intact, as did those iconic guitar parts. It was addictive; I had to tear myself away after listening to the CD twice!

Changing moods completely,



Russian-made Tung-Sol 12AX7 valves (ECC83) perform input duties, and 12AT7s (ECC81) lie in the driver stage. Also visible are red power supply smoothing capacitors, the heatsinked output HEXFETs and miniature signal relays.

Debussy's La Mer (BIS/eClassical, Singapore S.O./Lan Shui; 24-bit/88kHz FLAC) was also a compelling listen, courtesy of the Unico 90's musical chops. A personal favourite, the allegro Jeux de Vagues movement is made up of a variety of tonal colours that can be defined individually, as well as part of a beautiful musical picture that the 'speakers wrapped around my ears.

My final listen was to Cannonball Adderley's 1958 jazz classic 'Somethin' Else (remaster, FLAC).

Every nuance of Adderley's alto-sax or Miles Davis' trumpeting sounded vital here.

**CONCLUSION**

The hybrid amplifier approach adopted by Unison for its well-built Unico 90 pays dividends. It combines the sheer slam of solid-state with the innate musicality of valves to deliver a full-bodied and immersive sound. And you don't have to worry about buying expensive output valves every few years!



Two of the five stereo inputs are balanced XLRs, the remainder being unbalanced phonos. There's no phono stage but Unison makes provision for an active subwoofer, line-level output and preamp-skipping 'bypass' input. Two pairs of speaker terminals are provided for bi-wiring purposes.

**MEASURED PERFORMANCE**

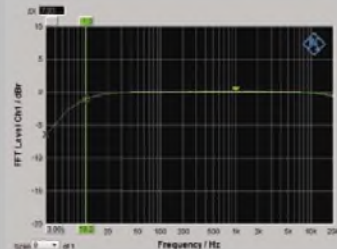
Distortion rose steadily under test and both output overload point and maximum power were not easily definable. Using a 1% distortion limit the Unico 90 delivered 90 Watts into 8 Ohms and 175 Watts into 4 Ohms, so this is nominally a 100 Watt amplifier. A low damping factor of 9 means well acoustically damped loudspeakers are best for bass control.

Distortion measured 0.13% at 1 Watt, at 1kHz and 10kHz, into an 8 Ohm load, the figure doubling to 0.25% into a 4 Ohm load, so the output stage is more load sensitive than usual. All the same these are reasonable figures, our analysis (1 Watt, 10kHz) showing innocuous sounding second harmonic dominates, high order crossover components being absent – suggesting sweet treble free of harshness.

Volume control position affected frequency response, a not unusual problem caused by capacitance across its output. At 3/4 volume the Unico 90 reached a low 15kHz (-1dB), whilst at 1/2 volume this improved to a more normal 30kHz. The amplifier will sound a tad warm with low output sources (external phono stages) but OK with high output silver disc players.

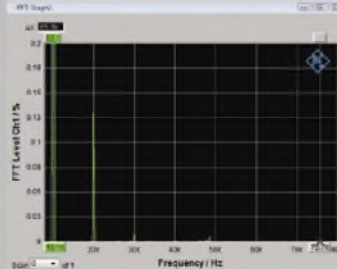
The Unico 90 is an unusual design that gives a valve-like performance. It is likely to sound very easy going and full bodied. **NK**

**FREQUENCY RESPONSE**



**DISTORTION**

THD at 1W	Level (dB)	Frequency
0.1333 %	1.0232 W	10.000 kHz
OFF	OFF	OFF



Power (8 Ohms)	100W
Frequency response (-1dB)	10Hz-30kHz
Distortion (10k, 1W, 4 Ohms)	0.13%
Sensitivity	0.6V
Noise	-99dB
Damping factor	9

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**OUTSTANDING - amongst the best.**

**VERDICT**

The Unico 90 will do justice to any genre of music you care to throw in its direction.

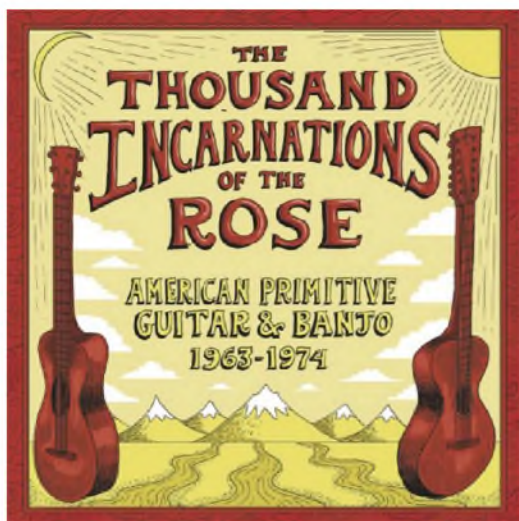
**FOR**

- smooth and musical, with effortless slam when needed
- everything you need for analogue (no phono stage)
- beautifully constructed

**AGAINST**

- no facility for tape
- slight lack of 'sparkle' occasionally perceptible
- very heavy

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**American Primitive Guitar & Banjo  
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Craft**

A very long name for a rather long, yet wonderfully conceived compilation with a targeted style and approach. This one spans two discs over a gatefold sleeve. For example, there are three tracks from John Fahey, the legendary guitar picker who had gloried in innovation and was not always understood or welcomed – but fixed your attention every time.

Another two tracks come from Fahey's disciple, Leo Kottke, another picking guitar legend – although our Leo is still with us, fortunately. Kottke can dazzle with his blurring finger work but he also has a seriously impressive, deep voice that moves into Johnny Cash territory.

Peter Walker completes the holy trio of finger pickers. He appears here on two tracks and was known for mixing international influences within his work.

Harry Taussig's work is in the

Fahey direction with a blues, folk and Americana flavouring – as is Robbie Basho and Max Ochs who also appear on this set.

Sandy Bull (a guy not a gal) was also incredibly talented, on acoustic guitar as well as banjo.

Also including Fred Gerlach, George Stavis and Billy Fair, this is a beautiful album with so much talent included, you'll need to keep it in a bucket in case it flows all over your floor.

I did fear for the mastering on this one. The instrumentation might be simple but the magnified complexity of the same demands a complete tonal revelation to work properly.

Does this new LP offer the require insight? Mostly. I wanted much more, to be honest. I wanted greater clarity and transparency and it was frustrating not to hear that. Blame my high expectations, though, there is still plenty to like here with superb performances of delicate skill and panache.

AUDIOPHILE VINYL



**KANNIBAL KOMIX**

**Kannibal Komix  
Vinilissimo**

From Germany (mostly), this band had a short two year life from 1966 to 1968 and consisted of Gerd Muller (vocals, guitar), Enrico Lombardi (vocals, guitar), Bernd Scheffler (vocals, percussion, drums) plus Jurgen Drews (vocals, guitar). Lombardi – as you might expect – was from Italy.

The album, which featured a combination of psyche, soul and pop, was released close to the band's split under the band name Die Anderen but was noticed just before the band was no more. Not least by a US filmmaker named George Moore who produced a sporadic series of German language films throughout the sixties to the seventies. He decided to use the music as the basis for his soundtrack with his creation, 'The House In White'. Later, the album was released on the US label, Colossus in 1970. It was only then that the band was known as

Kannibal Komix. The LP was also issued in Italy in this manner by Saint Martin in 1971.

If the LP has a hook, an interest for general collectors, it is the fact that it was produced by none other than Giorgio Moroder, the very same man who would innovate synth styles to produce Donna Summer's I Feel Love in 1977.

In mastering terms, don't bother searching for dynamic reach, there isn't any. The presentation is rather claustrophobic and veiled with next to no bass extension (the bass guitar appears to be played in the bathroom...with the door closed) and very little midrange insight. The music swims around the centre of the frequency spectrum. That said, there is also a nostalgic warming glow to the music, draped in sepia tones with its period-piece psyche pop, earnest and slightly Walker Brothers-like forthright style backed by harmony voices to fatten out the sound.

**A** new album from this famed singer-songwriter and a man whose 1971 LP, 'American Pie' still resonates throughout the music world. I think it resonates because of McLean's trademark knack of taking a broad subject and then applying a musing and contemplative point of view to it. That is, he tackles big subjects but then examines how they affect the individual and how they affect the inner self. His is an intensely personal approach to music. I mentioned 'American Pie' but I'm sure you also remember 'Vincent' which turned his head from music to art as well as his cross-over hit, covering Roy Orbison's 'Crying'.

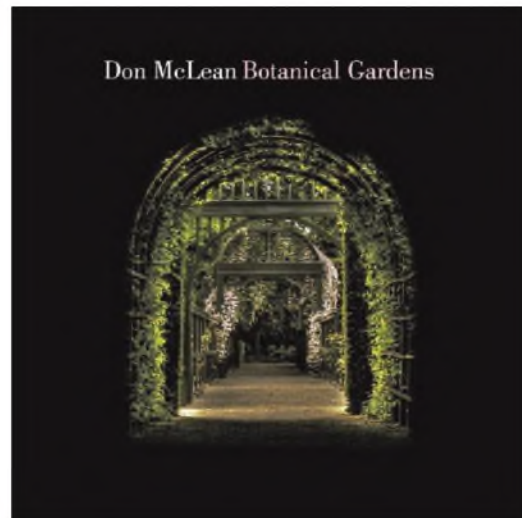
"I like lyrics that mean something to me and about subjects that interest me," he said. "I don't just write love songs or rock songs. I write many different things."

The approach to this, his

nineteenth new album, his first in eight years, can be summed up in this quote, "I don't think the story telling is dead. What I think is dead is melody. I've listened to a lot of big acts now and it seems that no matter what they do it's just a wall of sound and one chord with variations on that one chord. You can do so many things with one chord, but that's not music."

Melody is what this album is all about – as well as death and rebirth, the essence of the garden itself. A heaven on earth, in effect, as McLean has it. Which means the LP, which is often warmly nostalgic, also reflects on the man's past.

In mastering terms, despite a slice of focusing compression, the soundstage is broad and airy with a complex array of instruments plus McLean's relatively close-mic'd vocal that blends a big stage effect with intimacy. Again with the contrasts.



**DON McLEAN**

**Botanical Gardens  
BMG**

# AUDIOPHILE VINYL

**I** like Roy Harper. As a man, that is, eccentric as he is. I remember talking to him relatively recently, when a host of his LPs were issued on CD. He is a man of tradition, you won't be surprised to hear – but only because that tradition helps retain the form and structure of his art. The CD and, in this case, the vinyl record. Commenting on the digital nature of music publishing, he told me, "I'm grateful that there is physical product out on the streets that people can buy. Especially as I see how truly chaotic the digital world is: the 'love songs project', for example, has been impersonally placed online by iTunes. That album was slapped online, destroying the structure and flow we had provided for the album, where each track dynamically fit into each other."

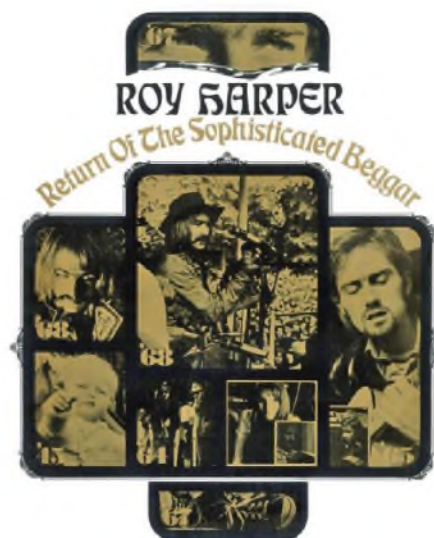
His view of this LP, then, is one of relief because the packaging is just

as important as the music.

His debut LP, 'The Sophisticated Beggar' was issued by the tiny label, Strike in 1966. Harper recognised that limitation and sought to reissue the debut in 1970. It's this LP that has been reissued here (originally on Young Blood).

With the implied contributions of Bert Jansch and John Renbourn plus Ritchie Blackmore, apparently, this supposedly simple folk album reveals more complexity as you listen. His poetical style is a joy to listen to, while fans can recognise the early evolutionary nature of the man's future career.

Music on Vinyl does it's best but the LP was created in a primitive manner and sounds like a superior bootleg. Be prepared for a rather bright suite of upper frequencies with a pinched midrange and treble with not a great deal of bass to balance the presentation.



**ROY HARPER**

**Return of the Sophisticated  
Beggar  
Music on Vinyl**

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# “the passing of Maplin removes open and easy access to electronics kits”



Noel Keywood

**M**y worst fears have come true; as I write this Maplin – Britain’s electronic store chain with 200 shops – has just entered administration. OK, we don’t have tea shops any more; tastes change and times move on. But the passing of Maplin is for me serious in that it removes easy and open access to electronics parts and kits that encourage and support people – especially young people – to take an active interest in electrical and electronic engineering. That’s bad news for jobs and for UK plc as a whole.

The Maplin I use, in London’s Bayswater area, has kits, components and tools, solder, cables and all else. But they were downstairs in the basement and I couldn’t help but notice I was often the only person down there. Little visited floor space is costly in city centres. Electronics as a hobby seems to be in decline. I recall visiting a large Maplin in Hammersmith long ago where queues of people were buying electronic components on Saturday morning. America has similarly suffered the demise of Radioshack.

“We’ve all gone on-line” is the common explanation for this apparent decline of interest, but I’m not so sure. Having started out in my early teens mail ordering components from Home Radio of Mitcham I’m accustomed to closely reading parts specs, sending the money and keeping my fingers crossed that what I’ve ordered is really what I want.

After Home Radio came Radiospares, but they were trade only; it was always faster and easier to visit Maplin with that wretched list of resistors, capacitors, 6 BA nuts and bolts, solder tags and what have you – that took hours to write out by hand. I could get the bits and

start building without interruption.

Radiospares had a larger stock, but were not an easy alternative. Now, as RS Components they do deal with the public; you do not need a registered business name and a VAT number any more. The 1990s saw every business go online, RS Components and Farnell websites ballooning to show a vast array of equipment and parts you could never find on the High Street, even though Maplin made a good stab at trying. The big money, such as £10k oscilloscopes went to them; Maplin always handled the budget stuff – often cheerful as well as cheap.

I use pro gear but still enjoy seeing what Maplin have got in from the East. I also like to use Mouser for US silicon unavailable in the UK, the power of the ‘net and cargo 747s meaning they deliver from Texas to the UK over-night – awesome for a £25 transistor!

But in spite of all this, and because of it, Maplin still had an important role. Farnell, RS and Mouser are fairly daunting and hardly the place to buy a simple kit: think Raspberry Pi computer at least. Maplin stocked an array of small Velleman and Far East sourced kits with a board, a few chips and LEDs to encourage children and teenagers to experiment – and of course parents could pick up such a kit easily as a small gift, perhaps a birthday present.

Now to the painful bit. In Hong Kong, school children are introduced very early to electronic toys in the classroom, to capture their interest in electronics, I was told by an HK University lecturer. Both analogue and digital electronic circuits can be made very simple and illustrative of purpose, so that’s what they also do within school curriculums. I understand that electronics is – as it can be – identified as a discrete

subject, not just an adjunct to ‘physics’ for example. No wonder then that electronic engineering plays a major role in Far East economies, unlike the UK where, I have been depressed to find from my own son’s experience, it is still virtually ignored, as it was when I went to school.

The passing of Maplin removes all likely contact children or their parents may have with the subject of electronics at its simplest and further corrodes the ability of young people to enter a field that is now globally dominant and getting ever more powerful in its all enveloping influence – I am thinking here Artificial Intelligence and self-driving cars of course. As I understand it, electronics engineers are much needed but such a vast subject is best tackled by a long and slow introduction, rather than a 5 year University crash course. I’ve met a few crestfallen people who decided they’d be ‘electronics engineers’ and found the subject impenetrable.

Anyone can understand how either a basic analogue or digital circuit works if it’s taught properly – and a simple hands-on kit using a plug-in circuit board is a great way of doing it. And that was the value of Maplin. They provided easy and convenient access to both analogue and digital electronics at low, low prices within quick-to-reach stores in city centres.

If Maplin are not rescued, the UK will lose not only a very well stocked toy and parts shop with a great array of batteries, memory cards and all else, but also an amenable start to a hobby and perhaps later a profession that is valued worldwide. On-line is not an alternative to Maplin and there are few if any stores that stock such a wide range and electronic toys and parts. I rue their passing. It’s a bad day for the UK. ●



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# "For The Stranglers I was standing with the hordes. A sobering experience"



Paul Rigby

I was at University at the time, in Liverpool around the early eighties. The local commercial radio station Radio City had sponsored a series of intriguing concerts strung over a few nights but in a single location, the Royal Court Theatre.

The Royal Court was a large venue approaching the size of the competing theatre across the road, the Empire, but lacking in the finer aspects of decoration.

In short, the Royal Court was scruffy. Despite the place being the location of the best concert I have ever seen – an appearance by Kraftwerk to promote their album 'Computer World'. It was stunning. I was stunned. It was that kind of evening.

So I was back, at the scene of the crime, as it were. This Radio City sponsored series of concerts would feature three bands at a time over, I think, three evenings and included outfits such as The Icicle Works, The Damned, The Housemartins and The Stranglers.

For most of my visits I sat up in the circle but for The Stranglers I was down in the pit. Standing with the hordes. It was a sobering experience.

Partly, it was the chatter and the shouting. The exhortations of some of the most horrendous and inderent insults at lead singer Hugh Cornwell in one breath and then an aside to a colleague brimming with praise and compliments.

Hence, "Oi, Cornwell! You f\*\*\*\*\* t\*\*t, s\*\*thead," with a quick turn of the head to a friend, "Great band, really looking forward to seeing them".

It was the oddest behaviour I'd ever witnessed by any fans of any musical artist. This example of harracking was not an isolated

incident either.

Neither was the shoe.

It occurred during the middle of a song, early on in the concert. I saw the empty vessel appear out of the corner of my right eye and turned in time to follow its arc as it headed, with an assassin's accuracy, towards the head of Hugh Cornwell. Hitting him square in the face, the great man paused – as you would, of course – and then stopped. He spat on the stage in disgust. No doubt after ingesting a portion of the size ten. Throwing his microphone onto the ground, he swore and stormed off.

The rest of the band continued. And then continued a hit more. Looking around, ever desperately, for vocal assistance, they played on.

Relief was heard across the venue when Cornwell marched back on stage. No doubt after some form of liquid refreshment and, who knows, maybe even medical assistance and a massage for all I know.

He picked up the microphone and sang. No more footwear was seen after that point. But, oh, the tension. The tension remained.

But, you see, when the band's bassist Jean-Jacques Burnel says the likes of this to The Guardian, you really shouldn't be surprised at all, "In 1976, we played with the Ramones. In those days, [Clash bassist] Paul Simonon had a nervous tic: he used to spit on the ground. He did this just as we came off stage at Dingwalls in London, so I thumped him and it all kicked off. We were thrown out by the bouncers and it continued in the courtyard. On one side were the Pistols, the Clash, the Ramones and a load of their journalist friends. On the other side was us, a few of our fans and me, nose to nose with Paul. Dave [Greenfield, Stranglers keyboards] had John Lydon up against

the ice-cream van",

The ice cream van belonged to the band's drummer Jet Black. The band couldn't afford a van. So they used the ice cream van, a relic of Black's former business life.

Parlophone has just released a host of Stranglers albums on CD which retains the tension and the edge that the band were famed for.

So you can find the likes of 'IV (Rattus Norvegicus)' (1977), 'No More Heroes' (1977), 'Black and White' (1978) and 'Live (X-Cert)' (1979), 'The Raven' (1979), '(The Gospel According to) The Meninblack' (1981) and 'La Folie' (1981).

Typically Stranglers, despite the inclusion of extra tracks on each CD (i.e. B-sides, live cuts, alternative mixes and edit mixes) the band call all of these 'associated recordings'. I've never seen that before. It sounds...politely confrontational. Even dismissive. As if they are there because the choice is nil, "But don't expect us to smile about it. Or really care". That kind of thing.

And there is that aura about them. Burnel had a fit of drama at one point, wrote a suicide note, took lots of heroin, was unconscious for three days and the band never even realised that he wasn't in the studio. You see?

The Stranglers are a wonderful yet very odd band. Even back in 1977 they were older than most punk outfits and polished too. Unusual. Their music was more 'pop with anger attached'. Just listen to Hugh Cornwell during 'Live (Cert-X)' insulting the audience and taunting them terribly.

Which brings that earlier Royal Court experience into focus. It all makes sense now. What a night. What a concert. ●

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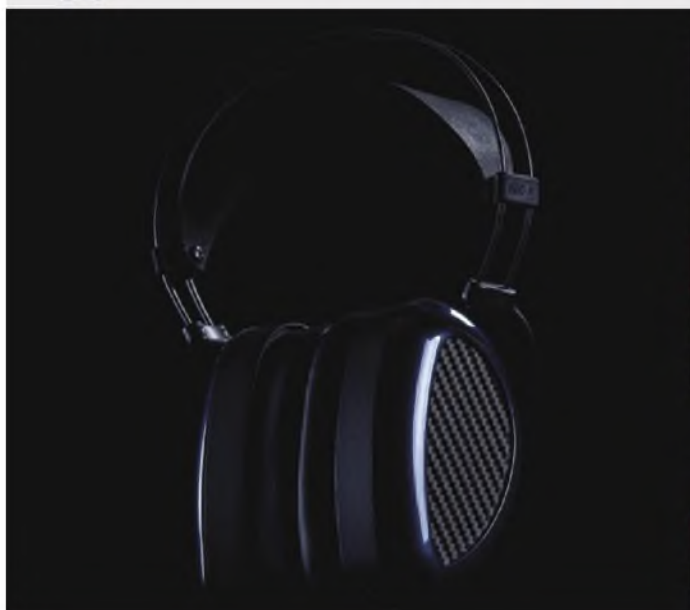
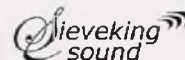
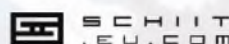
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MrSpeakers



# “The NME was produced by people who cared about music”



Jon Myles

It is the end of an era – well, at least in my eyes. NME – or The New Musical Express – is to close its print edition after 66 years. From here on it will become just one more internet site with the occasional special edition.

It's another sign of our changing consumption of information which is switching to on-line – but I still find it very sad. For those of us of a certain age NME was a must-buy publication. There was an excitement about rushing down to the local newsagent every Wednesday to pick up the latest issue – scanning the listings to see which bands were announcing a tour and then read the album reviews to discover new releases.

Then I'd head to school to impart my new-found information to friends; he it an LP we must buy or tickets to a show that we just had to go and see.

Alongside the late, great John Peel's evening shows it was the conduit to discovering music I'd never heard before but, once listened to, has stayed with me to this day.

In its pomp in the late 1970s and early 1980s NME also fostered a whole new generation of writers who have gone on to achieve greater fame including the likes of Paul Morley, Julie Burchill and Tony Parsons.

NME also championed exciting music like no other publication. I can still remember the review of the first Clash album ending with the words “If you don't like The Clash, you don't like rock 'n' roll”. It made me buy the LP – and I couldn't disagree with that verdict.

Then there was the full-page eulogy to the same band's London Calling which, presciently, identified

it as a classic album whose influence would outlive its creators. Oh, and then there's also the great headline on the review of the Sex Pistols' 'Never Mind The Bollocks' which hailed it as 'A big, bad, beautiful sound'.

Television's 'Marquee Moon'?

No, I would never have heard of it without reading the glowing review in NME – and the same would go for The Only Ones 'Another Girl, Another Planet' which is still one of my favourite tracks and, actually, is a true classic.

Former NME editor and now TalkSport radio presenter Danny Baker tells the story of how animated the editorial meetings with various writers championing their favourite up-coming bands for the coveted cover slot were. Allegedly, after one particularly heated exchange, Steve Lamacq actually injured himself when kicking the desk to make his point. Now, that's passion!

But this was the genius of NME when it was at its glorious best. It was produced and written by people who cared about music and poured their heart and soul into reporting about what they loved. As Danny Baker says “The NME never once asked me where I studied. Or what certificates I had. Or where I saw myself in 5 years. They just sent you to see some band and asked for 400 words on them. If they liked it they'd give you an album to review. Next thing you know you're in New York...”

In truth, the NME's fate was probably sealed in 2015 when it converted from a paid-for title to a free advertising-funded publication given away outside Tube stations and the like. According to its own figures this meant circulation went

from 15,000 per week to 300,000. But it still wasn't enough to keep the print edition going – mainly because the vibrancy, energy and must-have interviews had gone.

It became a pale imitation of what had gone before and just another free magazine I'd pick up on the commute to work – competing against no end of others featuring bland gossip columns, insubstantial music reviews plus no end of pointless question and answer columns as well as reviews of films and restaurants. All great for a quick read but not something to pour over once you get home.

Of course, all of this is a factor of the changing nature of the music business. At one time having a new band feature on the cover of NME was seen as a major coup – a guarantee of increased album or singles sales. Now the attention has switched to on-line with record company budgets used to create a buzz via Facebook, Twitter and the like. Which is probably why NME is going down this road and becoming a mostly web-only presence.

So I do retain some hope that the new, on-line NME site can become a viable entity and continue to prosper – championing new music, old classics as well as bringing some vibrancy to music writing, plus letting me know which gigs I should go and buy tickets for and what bands to watch out for.

If it can channel the sheer enthusiasm of the likes of Parsons, Burchill, Baker and Morley it might well be worth reading. But, in the meantime, I'll wait and see.

I'll also cherish those memories of rushing down to the shop to get my latest fix of the print edition of NME and spending the week reading through it. ●

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# "Maplin couldn't compete with solely on-line monoliths like Amazon"



Martin Pipe

**A**t the end of February, retailer Maplin Electronics announced that it was going into administration. This was particularly sad news for me, as the firm gave me my first break as a technical author back in the early 1990s. When I joined, Maplin was a privately-owned venture with its head office in the Essex town of Hadleigh – not far from where I lived. It started in 1972 as a mail-order operation by hobbyists, for whom obtaining new components of decent quality was proving difficult.

Maplin grew from mail-order to establish a professional trade division and 20 shops around the country, the very first of which was in Southend. Nearby were Bi-Pre-Pak, Sendz and the Radio Constructors' Centre, which mostly served enthusiasts and the repair trade with 'surplus' gear. In the area we also had businesses like Marroni, Ekro (then in decline) and hi-fi manufacturer Rega. The electronics industry, now dominated by Chinese imports, was important back then.

As a recent graduate and electronics hobbyist, I had little writing experience. "Don't worry", I was told. "It's easier to train technical people to write, than train writers to be technical". I must have impressed them as the job offer was hand-delivered to my parents' home later that day. My initial task was to prepare copy for the voluminous Maplin Catalogue, a hobbyist bible containing copious quantities of useful data as well as product descriptions.

I also worked on its other main publication. 'Electronics - The Maplin Magazine' was claimed to be the biggest-selling title of its then-strong genre. Like their famous catalogue, it was sold by newsagent chains like W.H. Smiths as well as in-store.

It contained 'projects' – detailed descriptions and constructional details of kits sold by Maplin – as well as industry-related news, lively correspondence pages, columns and a broad range of features.

In various issues you could read about basic electronics, amateur radio, restoring apparatus, new developments (anyone for packet radio, PICs, transputers, Nicam or DCC?) and computer programming. The magazine also did much to revive interest in valves, publishing theory and amplifier designs.

Maplin's publishing department was still using old technology. Text was printed onto bromide paper with a machine known as a Linotron 202 – an early hi-res digital printer that cost as much as a house in those days.

Text was edited onscreen with customised Apple II microcomputers (complete with 8-inch floppy disks and green screens) and even now I can remember some of the control codes inserted for font changes.

I can also remember the pungent aroma of the associated chemicals. The printed bromide paper was cut up and literally pasted onto card with illustrations. These 'camera-ready' pages were then dropped off, together with any original photography, at a local company where the high-resolution films needed by the printer would be produced.

When I came on board, Maplins' magazine had not long been a full-colour publication – the first of the electronics hobbyist mags to make the switch. This made sense, given that its main role was to shift Maplin product – colour made that task easier.

Its graphic design and use of colour was rather garish, usually at the expense of readability, but this was the late 1980s! By the time

I joined, the magazine's look had become a little more conservative. Maplin was also just about to phase in desktop publishing, courtesy of Apple Macs running Quark Xpress. Eventually, those smells disappeared altogether.

Now Maplin might itself share the same fate. The firm I worked for was however very different to the one that, barring a miracle, stands to be picked apart by corporate vultures while 2,500 jobs disappear. This Maplin operated a pioneering online shopping service ('Cashtel') for computer users with dial-up modems in the early 1980s and ensured its stores were manned by knowledgeable electronics geeks who relished solving customer problems.

My Maplin employed a team of talented engineers to design kits. They were musicians, computer enthusiasts, radio hams and hi-fi nuts – whose jobs were merely paying extensions of their hobbies. In the mid-1990s, all that was to change. Maplin was acquired by a private equity group and its emphasis gradually shifted from enthusiast to gadget-loving consumer. Its magazine was offloaded to a Welsh company, which went bust shortly afterwards. Those Hadleigh engineers were made redundant and the centre of operations moved from Essex to Leeds.

Despite expanding its online shopping presence (and sponsoring snooker tournaments to increase visibility), Maplin couldn't compete pricewise or choicewise with solely-online global monoliths like Amazon – which don't need to provide decent retail jobs or pay high-street business rates. Maplin became a 'Tandy replacement' – a convenient source of gadgets, batteries, leads and common components when waiting wasn't an option. I shall miss it. ●





# "I would love to find out what piano is used on a specific piece of music"



Dave Tutt

It's been crazy here at Tutt Towers since Christmas. Sometimes I get the chance either before or after the Christmas period to catch up on some of the work that is delayed due to lack of parts, or press on with things that have hung around because in reality they are not economic to repair. This period however has been different.

Some things that arrived probably would not directly interest those whose only love is hi-fi, but actually, if you like music from the 1980s then perhaps not so, since some relate to that period. I repair Casio guitar synths which give a whole different twist on playing guitar whilst sounding like tubular bells or, for that matter, any sound that might be resident on a synth and accessible via a MIDI communication. Two of them arrived within a day, both with similar faults and in need of every surface mount capacitor replaced.

Playing a few notes on a guitar with a piano sound is so wrong and yet if I could play either (I am definitely never going to be a musician) I am sure I would get much more from it!

These things bring me to my point this month – about the sound of the digital piano played through your system.

As the quality of the digital piano has advanced it has become less easy to tell if you are listening to a real piano very well recorded, an indifferent piano poorly recorded or any variation on the theme – or any number of digital samples on digital instruments directly injected into the mixing desk.

With solo piano only the very best recording will definitely identify a real piano I'd suggest. And if it is part of a band, I would argue that under most circumstances it is

just about impossible to tell which is which – real or synthesised – buried in the mix. Some of the synth pianos I have worked on recently have anything up to eight unique and separate samples of grand piano sounds alone. They are becoming increasingly sophisticated.

Pushing these sounds through the mixing process and subsequently into a download or CD would make it particularly difficult for your hi-fi or your ears to know the difference.

Yamaha make both real and digital and so sample their real piano into the digital equivalent. And recently, Yamaha pianos they have made much more effective use of the damper pedal.

If you sit in front of a real piano and play a few notes with the dampers lifted you feel the frame and the body of the instrument, especially from the bottom couple of octaves.

This with the older digital pianos was missing, even from the line outputs. Now it is much more to the fore, bringing synthesised piano far closer to the behavior of a real piano, making it less easy to tell one from the other.

Of course, the digital sampling that goes into these instruments is not a single sample scaled across the keyboard but multiple samples with the full range of dynamics stored too – so the note is like the real thing in sounding correct for tone, dynamics and subsequent harmonic structure.

This brought me to wondering if we could ever run an experiment with any number of pieces of music played on any number of different hi-fi systems with thousands of different sets of ears to see if what we are hearing is actually what we think it is. It's just a thought and would entail monstrous amounts of work – but it would be intriguing.

We all, I would guess, know – or think we know – what a piano

sounds like. It is something we experience from almost the day we are born until the day we die – in its great variety of flavours. We know the difference between a Fender Rhodes and the Grand – but could you tell a Wurlitzer from a Rhodes I wonder? Or for that matter a synth version of a Rhodes that could be from Technics or Yamaha or Roland or Nord? Just how sensitive and aware of original sounds are hi-fi listeners?

I often would love to find out what piano was used on a specific piece of music. It is rarely stated on LP or CD covers or inserts which is quite frustrating.

So if we started a list of what we think are the types of piano used on our favourite music would everyone agree what it is? I suspect not.

And would someone with a sub £1000 hi-fi set-up come to the same conclusion as someone with a system worth £10,000. And if the latter was incorrect in identifying the make and type of a piano, would they run down to their local hi-fi emporium to buy a far cheaper set up? Hmmm!

Perhaps there is a potential game available for all to try here – either between fellow local enthusiasts or the wider hi-fi community as a whole. I would be very interested in your choice of music and what piano you think has been used, without of course the piano being listed on the album sleeve. If only the musicians themselves could be brought into such a conversation – then we would all learn. It might enlighten us as to what ultimately is coming out of our speakers. Is the sound so good you can identify a real piano; can a hi-fi system do this? Or do budget systems perhaps turn real to synthesised? Christmas craziness and blown synths have been a challenge for me at the start of 2018 – even raising the issue of piano quality! ●

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# ARTS of FM radio

Martin Pipe looks back at 1990s VHF/FM and a classic Pioneer F-91 analogue tuner designed to cope.



**T**he Thatcher government's 1990 Broadcast Act was to shake radio out of its patrician public-service complacency, into a free market where 'consumer choice' was everything. It accommodated many more local and regional commercial radio stations, in addition to community and special-event radio. These plans allowed Virgin to start their London FM service, which competed for audiences with other new entrants like dance-music Kiss FM (an

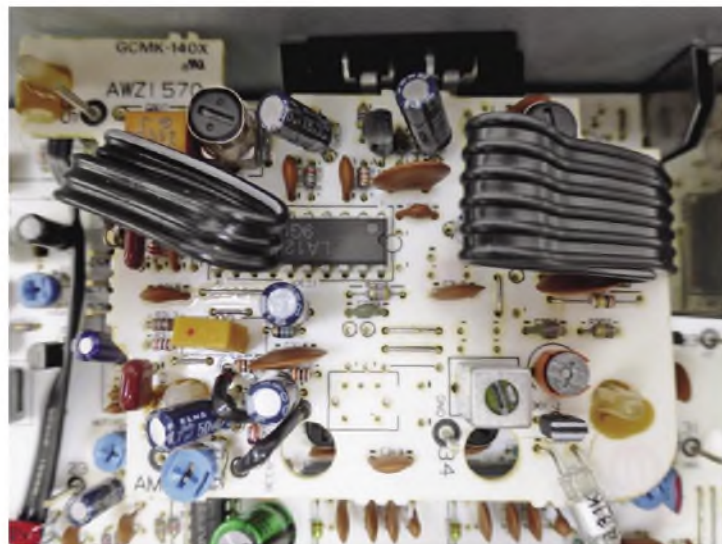
different tastes. A radio tuner needed to discriminate between what you wanted to hear, and what you didn't. In some cases, adjacent stations could 'bleed' into the one you were listening to. This was especially true in London. There, a number of illegal land-based pirate stations were attempting to cater to fans of soul, rap, reggae and house – musical forms that, at that time, were being poorly-served by legitimate radio outlets. And in 1996 Melody FM moved from 104.9MHz to 105.4MHz,

reallocating the following year to the alternative rock station Xfm (now called Radio X).

For a good few years prior to the early 1990s many upmarket FM tuners allowed you to trade off selectivity (the ability to discriminate between stations) and sound quality (distortion) by changing the filter bandwidth of the intermediate-frequency (IF) stage. Choose the wrong IF setting, and performance is compromised. Pioneer, at one time the world's largest producer of hi-fi equipment, came up with a practical and user-friendly alternative known as ARTS (Active Real-time Tracing System). This automatically fine-tuned the IF channel to suit the incoming transmission, thereby ensuring optimal results were obtained each and every time.

ARTS was expensive to implement and only made it into one tuner – the F-91 featured in this article. Billed as a 'reference digital synthesiser tuner', the \$600 F-91 made its first appearance in the US, as part of Pioneer's 1988 top-tier 'Elite Series'. It was available in the UK by 1990 – where radio conditions were not quite so challenging.

Befitting its luxury status, the F-91 (£500 at the time) had wooden side-panels, a glossy black/gold finish and a neat fluorescent display (but not RDS). It was also rather heavy, thanks in part to a solid chassis with Pioneer's trademark 'anti-vibration' honeycomb structure. This high-end unit can tune into AM medium-wave stations as well as FM ones, with a total of 24 presets shared between them. You can switch between stereo,



**The F-91's low-fi AM section doesn't perform as well as that built into older scale-and-pointer tuners like Pioneer's own 1976 range-topping TX-9500.**

ex-pirate), easy listening from Melody 104.9 and the original 102.2 Jazz FM.

The upshot of all these changes was a much busier Band 2 – nothing new to listeners in the USA where VHF broadcast channels were packed with competing stations pandering to

after listeners in South West London complained that a transmitter carrying the now-defunct BBC Southern Counties transmissions were causing interference. VHF spectrum was at a premium, and Melody's original frequency was

mono for weak stations too hissy in stereo) and a compromise 'hi-blend' mode that reduces noise at the expense of stereo separation – of value if a station is only moderately hissy. These settings are conveniently memorised by the presets. Unfortunately, you cannot over-ride ARTS, as no manual IF bandwidth selectors are provided (unlike its F-93 successor).

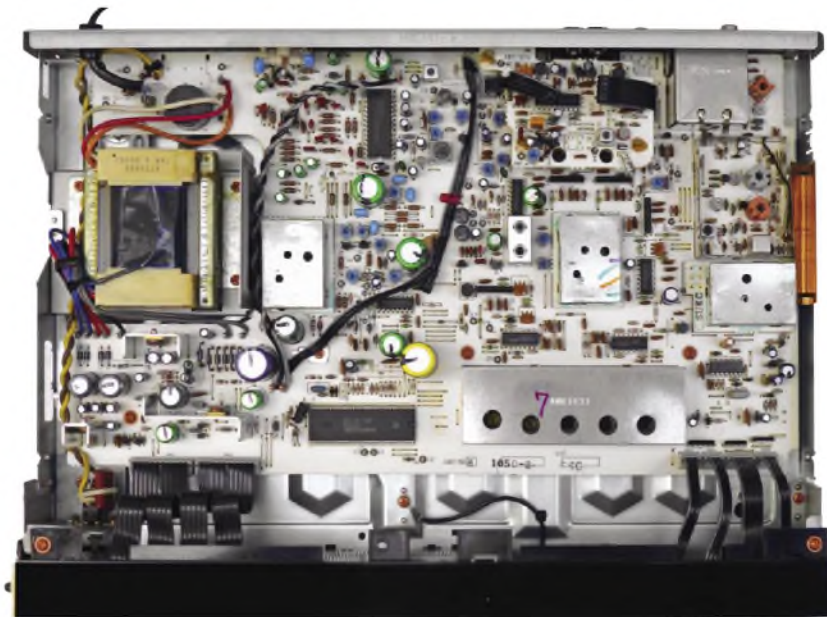
Although there was no remote control or direct frequency-entry, you could go up or down in frequency until the desired station was reached – it could then be stored as a preset, if desired.

A neat feature was the 'tuning mode' button, which specified the signal level at which auto-tuning 'locks into' a station thereby allowing weak signals to be 'skipped'. Three levels were offered, in addition to a 'manual' mode so the most distant (weak) of services could be found. Those in the habit of taping broadcasts would have appreciated the 'rec level check' function – basically a 330Hz oscillator, of output equivalent to 50% transmitter modulation, that allowed the recorder's levels to be set (to -2dB, suggests Pioneer) before an all-important live concert perhaps. For unattended recording with a timer, a sequence of three stations ('program memory') could be defined. Each time the F-91 powers up, it tunes to the next station in the sequence. Simple, but clever!

Pioneer also paid attention to the stereo performance, a custom chip (identified as 'FA5007') offering a feature known as DDD (Direct Digital Decoder) Type III. What had happened to Types I and II, only Pioneer will know.

Digital? Yes indeedy. According to the marketing blurb, DDD (Type III) "takes the output from the ARTS IF circuitry and converts it into digital form before turning it directly into stereo analog(ue) signals". We take SDR (software defined radio) for granted now, but DDD would have been quite a feat with consumer-level technology thirty years ago.

It is quite telling that the F91's service manual describes ARTS in some depth, but is completely silent about the inner workings of DDD. A look at the service manual suggests that the stereo decoder chip works in the analogue domain – from an analogue audio signal, output from a conventional FM detector! There's no digital output – all you get on the F-91's rear panel are analogue stereo



***There's a lot of cutting-edge high-tech built into the F-91. It was however expensive to implement, and the F-91's replacement - the F-93 - dropped the clever ARTS feature.***

outputs (alongside MW/AM and unbalanced 75ohm FM/VHF aerial terminals).

'Digital' was, thanks to CD, the 'buzzword' of the 1980s – in short, it helped to sell! In all fairness, the F-91's analogue circuitry offers an impressive specification. And the F-91 can sound good, even today – certainly with FM! I was able to obtain a surprisingly-clean signal even from 'difficult' FM broadcasts like Radio 3, using nothing more than a simple piece of wire. However, run like this the stereo image lacked depth – musical involvement was conspicuous by its absence. Switching to a decent outdoor aerial trained on the nearest BBC transmitter

with and it will sing. Sadly, so much on FM nowadays is garbage. Working through the bands with the F-91 one evening, I found one national network whose compression was so bad a kick-drum would cause the audio level to drop momentarily. Yuk!

We're now very close to the magic figure of 50% of radio listening being via digital platforms that could trigger the demise of FM/VHF analogue broadcasting in the UK. When that happens, tuners like the F-91 – current typical eBay selling price £150 – will become useless in this country.

That will be a shame, as selecting stations from a screen doesn't provide quite the same joy as



***Surprisingly little socketry for a top-of-the-range tuner - fixed-level stereo analogue audio output, plus MW/AM and VHF/FM aerial connectivity.***

(Wrotham, in my case) proved that the 'garbage in, garbage out' adage applies just as much to analogue as it does to digital! The image widened to give the orchestra the necessary room, and I found listening to be far more engaging via an Arcam A49 integrated amp driving Quadral Aurum Wotan VIII floorstanders.

An organ work demonstrated another strength of the F-91 – a deep and controlled low end. In short, give the F-91 something good to work

scanning the wavebands and chancing on an interesting broadcast. Myself? I was lucky to find my F-91, in perfect condition and working order, in the trash nearly a decade ago. All I had to do was replace the captive mains lead, which had been cut off close to the strain-relief (why do people do that?). Following the recent advice of one Hi-Fi World reader, I should continue to make the most of the F-91's canny FM performance – while it still can!

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

# WORLD CLASSICS

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

## TURNTABLES

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



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

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

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

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

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

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

**MICHELL GYRODEC SE** 2005 £1,115  
Design icon with superlative build. Sound is beautifully smooth, effortless and exceptionally expensive.

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

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



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

**SME MODEL 10A** 1995 £4,700  
Exquisitely engineered deck and SME V tonearm combo that's an extremely accomplished performer with classical music.

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

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

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

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

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

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

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



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

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

**TRIO LO-7D** 1978 £600  
The best 'all-in-one' turntable package ever made. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

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

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

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



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

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

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

**GOLDRING LENCO GL75** 1970 £15.6S  
Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today.

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



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

**TONEARMS**

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

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

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



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

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

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

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

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

**SME SERIES V** 1987 £2,390  
Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

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



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

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

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

**LINN ITTOK LVII** 1978 £253  
Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. The final LVIII version worth seeking out.

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

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

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

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

**PHONO STAGES**

**CREEK OBH-8 SE** 1996 £180  
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.

**MICHELL ISO** 1988 £ N/A  
This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse



**LINN LINNK** 1984 £149  
Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

**INTEGRATED AMPLIFIERS**

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

**MUSICAL FIDELITY PRIMO** 2009 £7,900  
Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

**SUGDEN A21A S2** 2008 £1,469  
Crystalline clarity, dizzying speed and forensic detailing. Power limited so needs sensitive speakers.

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

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

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

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

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

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

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

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

**EXPOSURE VII/VIII** 1985 £625  
Seminal pre-power, offering most of what Naim amps did with just that little bit extra smoothness. Lean, punchy and musical.



**AUDIOLAB 8000A** 1985 £495  
Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.

**VTL MINIMAL/50W MONOBLOCK** 1985 £1,300  
Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

**MUSICAL FIDELITY A1** 1985 £350  
Beguiling Class A integrated with exquisite styling. Questionable reliability.

**MISSION CYRUS 2** 1984 £299  
Classic 1980s minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



**NAIM NAIT** 1984 £350  
Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

**CREEK CAS4040** 1983 £150  
More musical than any budget amp before it; CAS4140 loses tone controls, gains grip

**MYST TMA3** 1983 £300  
Madcap eighties minimalism, but a strong and tight performer all the same.

**ROTEL RA-820BX** 1983 £139  
Lively and clean budget integrated that arguably started the move to minimalism.

**NAD 3020** 1979 £69  
Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.

**ROGERS A75** 1978 £220  
Lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet.

**A&R A60** 1977 £115  
Sweet and musical feature-packed integrated; the Audiolab 8000A remains a classic.



**SUGDEN C51/P51** 1976 £130  
Soft sounding early Sugden combo with a plethora of facilities and filters. A sweet and endearing performer but lacking in power and poor load driving ability.

**SUGDEN A21** 1969 £ N/A  
Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

**ROGERS CADET III** 1965 £34  
Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves

**CHAPMAN 305** 1960 £40  
Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper secondhand.

## POWER AMPLIFIERS

**ELECTROCOMPANET NEMO** 2009 £4,995 (EACH)

Norwegian power station as cool as a glacier tonally, yet impresses with sheer physicality and fleetness of foot. 600W per channel.

**NUFORCE REFERENCE 9SE V2** 2006 £1,750  
Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.

**QUAD II-80** 2005 £6,000 PER PAIR

Quad's best ever power amplifier. Dramatic performer with silky but dark tonality, blistering dynamics, serious power and compellingly musical sound.



**QUAD 909** 2001 £900  
Current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but superb value all the same.

**NAIM NAP 500** 2000 £17,950  
Flagship amplifier will drive just about any speaker with ease. Factor in the company's trademark pace, rhythm and timing and it all adds up to one effortlessly musical package.

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

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



**MUSICAL FIDELITY XA200** 1996 £1000  
200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.

**PIONEER M-73** 1988 £1,200  
Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the experience.

**KRELL KMA100 II** 1987 £5,750  
Monoblock version of the giant KSA-100 is one of the seminal 80s transistor power amplifiers. Massive wallop allied to clean and open Class A sound makes this one of the best amplifiers of its type.

**RADFORD STA25 RENAISSANCE** 1986 £977  
This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.

**QUAD 405** 1978 £115  
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound. 606 and 707 continue the theme with greater detail and incision.

**HH ELECTRONICS TPA-50D AMPLIFIERS** 1973 £110  
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain

**LECSON AP1** 1973 £ N/A  
Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

**QUAD 303** 1968 £55  
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

**LEAK STEREO 20** 1958 £31  
Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



**LEAK STEREO 60** 1958 £N/A  
Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability 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-fi!

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

**LOUDSPEAKERS**

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



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

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



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

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



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

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

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

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

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

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



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

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

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

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



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

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

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

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



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

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

**TANNOY WESTMINSTER** 1985 £4500  
Folded horn monsters which sound good if you have the space. Not the last word in 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 cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



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

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

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



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

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

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

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

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

## SYSTEMS

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



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

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

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

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



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



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

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

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



## TUNERS

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



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

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

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

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

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



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

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

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

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



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

**SANSUI TU-9900** 1976 £300  
A flagship Japanese tuner. It boasts superlative RF performance and an extremely smooth and lucid sound.



**TECHNICS ST-8080** 1976 £180  
Superb FM stage makes for a clean and smooth listen.

**REVOX B760** 1975 £520  
The Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?

**SEQUERRA MODEL 1** 1973 £1300  
Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.

**LEAK TROUGHLINE** 1956 £25  
Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Deliciously lucid with true dimensionality.



**HEADPHONE AMPLIFIERS**

**GRAHAM SLEE NOVO** 2009 £255  
Dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.



**MUSICAL FIDELITY X-CAN V8** 2008 £350  
Open and explicitly detailed sound plus serious bass wallop. A great partner for most mid-to-high end headphones.

**CD PLAYER/RECORDERS**

**MUSICAL FIDELITY TRIVISTA** 2002 £4000  
When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

**MARANTZ SA-1** 2000 £5,000  
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



**SONY MDS-JE555ES** 2000 £900  
The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.

**PIONEER PDR-555RW** 1999 £480  
For a moment, this was the CD recorder to have. Clean and detailed.

**MARANTZ DR-17** 1999 £1100  
Probably the best sounding CD recorder made; built like a brick with a true audiophile sound and HDCD compatibility.



**CAMBRIDGE AUDIO CD4SE** 1998 £200  
A touch soft in the treble and tonally light, but outstanding in every other respect.

**SONY TCD-8 DATMAN** 1996 £599  
Super clean sound makes this an amazing portable, but fragile.

**LINN KARIK III** 1995 £1775  
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

**NAIM CDS** 1990 £ N/A  
Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.

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



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

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

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



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

**SONY CDP-701ES** 1984 £890  
Sony's first bespoke audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperbook-sized remote control.

**YAMAHA CD-X1** 1983 £340  
Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

**SONY CDP-101** 1982 £800  
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!



**ANALOGUE RECORDERS**

**AIWA XD-009** 1989 £600  
Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

**NAKAMICHI CR-7E** 1987 £800  
The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



**SONY WM-D6C** 1985 £290  
Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

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

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

**SONY TC-377** 1972 £N/A  
A competitor to the Akai 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.

# Colourful Cala

**T+A's Cala all-in-one hi-fi unit combines good sound with a beguiling light display. Jon Myles looks and listens.**

**A**ll-in-one units are becoming increasingly popular. Combining a CD player, amplification, streaming and internet radio in a single unit obviously has its attractions – especially for those with limited space or who don't want to clutter their living room with numerous boxes.

Naim kicked off the trend back in 2009 with its Uniti model (I still have one of the first units) but since then many other manufacturers have followed suit, including Germany's T+A with its Cala series.

There are two models available – the Cala SR which is a streamer/DAC with a 55 Watts per channel output (4 Ohms) and the Cala CDR featured here which adds a CD player to the equation and also ups the power output from the amplifier section to a claimed 100 Watts per channel (but see Measured Performance).

At first glance it seems amazing so much has been packed into the unit. It measures just 105mm x 370mm x 245mm (H/W/D) which is smaller than some standalone CD

players. But as well as the silver disc spinner you get UPnP capability for connecting to Network Attached Storage (NAS) drives or music stored on computers, plus co-axial and optical digital inputs that can handle up to 32bit/192kHz. There's also Bluetooth and an FM/DAB+ radio tuner, plus wired or wireless internet connection for listening to streaming music services such as Tidal, Deezer and Qobuz. A USB input is provided for playing back music stored on such devices and one of the analogue inputs can be configured to act as an MM/MC turntable input.

In effect all you need to do is add a pair of loudspeakers to have a fully-featured music system able to deliver all music sources – impressive.

Cala is well built, the chassis being milled from a solid block of aluminium with, under the plinth, an LED light strip that glows white, blue, green or red, or can be turned off. Add to this a remote control plus a free smartphone app (iOS and Android) and you are getting quite a lot for the £3242 price.

## SOUND QUALITY

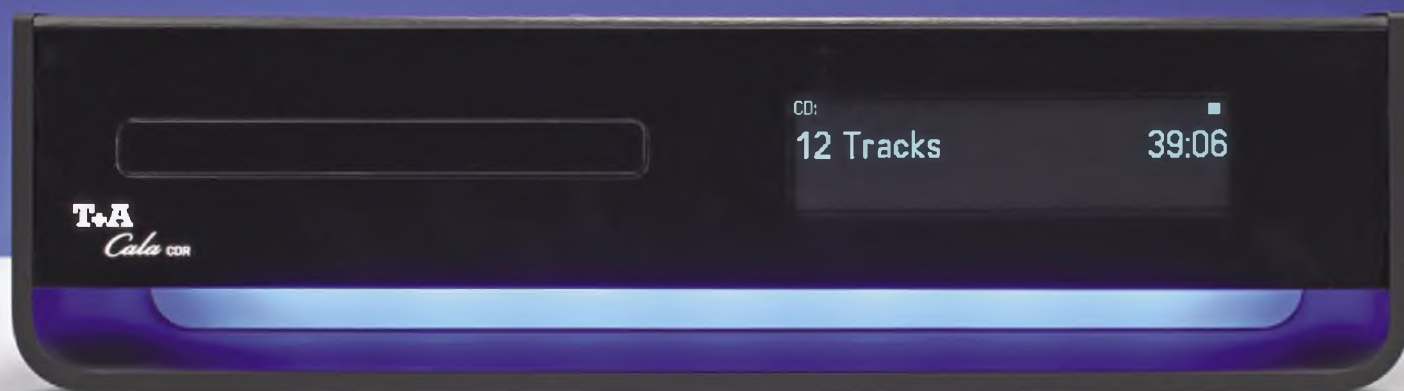
I started off with CD replay, the T+A connected to a pair of Arcaydis EB15 standmounts (see review this issue). These are not the most sensitive of loudspeakers and need some healthy power to reveal their qualities but T+A's Cala rose to the task.

On The Jam's 'A Town Called Malice' there was a rich and weighty quality to the sound with verve on offer that went well with this fast-paced track.

There are bass and treble settings – and playing around with these was interesting, enabling me to get a bit more low-end from the small 'speakers with the controls finely adjusted.

With Eleanor McEvoy's 'Non-Smoking Single Female' there was again a rich mid-band and good tone to the vocals. Bass weight was fair, if not outstanding, but clarity excellent.

Streaming the same track from a MacBook Air in 24bit/96kHz quality proved revealing. The song took on a more rounded, enveloping quality with increased presence from individual instruments.





The rear of the Cala CDR has analogue inputs, plus optical and co-axial digital inputs. Also included is an RJ45 socket for wired network connection, although a supplied aerial can be employed for wireless connection.

On Olivier Messian's 'Quartet For The End Of Time' through the same source and loudspeakers I couldn't help but be impressed at how well the Cala handled subtle changes in mood. The violin was striking, piano tonally lifelike and the clarinet imbued with presence. This unit has the ability to bring the best out of hi-res tracks.

Connecting the Cala to a pair of larger Klipsch R28-F floorstanders – that have massive bass – showed a slightly different character. Dialling down the low-end worked was necessary for a match between the pairing.

With this combination fed through a NAS drive, Talking Heads 'Psycho Killer' delivered fine impact, David Byrne's vocals being also creepy and atmospheric.

If there was one thing missing, though, it would be the fact that the T+A doesn't quite bring out the best from individual instruments. They are all there but lacked air and presence. So on John Mayall's 'Bare Wires' I

didn't quite get the bite and thrust of the guitar parts.

Naim's Uniti Atom, for example, gives a better rendition of this track. The T+A is smoother but the Naim rather more propulsive and engaging.

But that is very much down to personal taste. After hours of listening I could not help but be impressed by the Cala CDR. It's a refined and good all-in-one box that

doesn't cost a fortune considering what's inside, but will provide hours of listening pleasure.

**CONCLUSION**

If you want a single box to do everything the T+A Cala may just be the right choice. A comprehensive range of inputs allied to a rich sound make it ideal with a good pair of loudspeakers.

**MEASURED PERFORMANCE**

The T+A Cala produced 44 Watts into 8 Ohms and 80 Watts into 4 Ohms under measurement. It did not produce the 100 Watts (4 Ohms) claimed however; at that output the unit was in severe overload (10% THD), so it didn't get close.

Frequency response of the Class D amplifier peaks up a little to 20kHz then drops sharply into an 8 Ohm load, but was flat but similarly band limited into a 4 Ohm load, the upper -1dB limit being 23kHz. Noise above 50kHz affected distortion measurement, but a

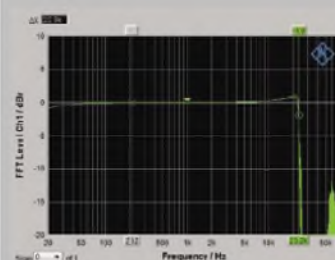
respectable 0.06% distortion at 10kHz, 1 Watt was measured from 2nd, 3rd and 4th harmonics only. The amplifier is low in distortion but may have a slightly bright demeanor.

Dynamic range via the digital inputs was very high at 125dB but frequency response again hard band-limited to 21kHz by brick-wall filtering. All the same, due to low distortion and noise, digital from the Cala will sound clean. Results were different from the norm., but overall the figures were good.

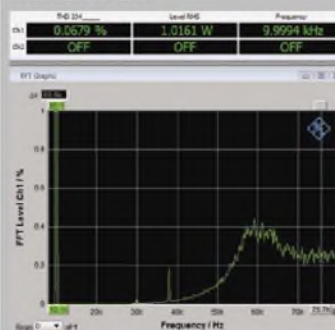
The VHF/FM tuner had wide frequency response with slow roll down above 1kHz to 17kHz (-3dB). It will sound smooth and natural. Distortion was low at 0.2% (50% mod.) and hiss low at full quieting, measuring -66dB. However, to achieve this demanded 2mV or more at the aerial input – very high. The unit is insensitive so needs a strong aerial signal to avoid hiss.

The Cala's amplifier measured well overall, whilst the unit's digital section and VHF/FM tuner also turn in good figures. Band limiting at 21kHz and slight treble lift may make for a hard sound though. NK

**FREQUENCY RESPONSE**



**DISTORTION**



Power (8 Ohms)	44W
Frequency response (-1dB)	4Hz-23kHz
Distortion (10k, 1W, 4 Ohms)	0.06%
Sensitivity	0.17V
Noise	-102dB
Damping factor	55



The fully-featured remote is easy to use – while there's also a smartphone app for Android and iOS devices.

**T+A CALA CDR**  
**£3242**  
  
**EXCELLENT – extremely capable.**

**VERDICT**  
 An excellent one-box system. Flexible, good-sounding and able to handle a wide range of inputs.

- FOR**
- rich sound
  - powerful
  - compact
- AGAINST**
- stiff competition

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# vinyl section

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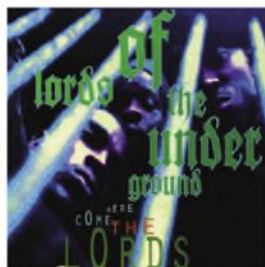
### NAD C 558 TURNTABLE 87

A new budget turntable from NAD is reviewed by Noel Keywood.

### AUDIOPHILE BOOK - THE VERTIGO SWIRL LABEL 91

Music expert Paul Righy on a new book about Vertigo Swirl label.

# news



Melissa Etheridge's self-titled debut (1988) is a rocky album with a roots template that dazzled when it was initially released, reflecting on the complexity of relationships with an uptempo beat.

From The Idle Race, *The Birthday Party* (1968) is British psychedelia at its best. No surprise from a band who features future ELO man, Jeff Lynne. There's an attractive combination of strength and fragility here.

Also a psychedelic art factory of some note, Dutch outfit The Fool's self-titled LP (1968 – offered here with two bonus tracks) – is a superb slice of Graham Nash-produced, 'way out' folk fusion. A period piece but fun with it.

Finally, from the Lords of the Underground's *'Here Comes the Lords'* (1993), a superior rap debut packed with top singles feature Marley Marl, K-Def, Mr. Funke and Dupre "Doitall" Kelly.

### AT THE MOVIES

Soundtracks a-plenty from [www.musiconvinyl.com](http://www.musiconvinyl.com)

include limited numbered pressings and coloured vinyl.

Netflix's original series, 'The Crown' from Rupert Greyson-Williams and Lorne Balfe spans two discs within a gatefold sleeve.

On just a single disc is 'Roman J. Israel, Esq.' (a film starring Denzel Washington) and the music of James Newton Howard. Includes a 4-page booklet.

Finally, starring Robert Redford as a CIA agent, the suspense thriller, '3 Days of the Condor', via Sydney Pollack, arrives on gold vinyl with music composed by the prolific Dave Grusin.



### MUSIC ON VINYL

MOV ([www.musiconvinyl.com](http://www.musiconvinyl.com)) continues to push out high quality releases including two from blues legend Buddy Guy. 'Bring 'Em In' (2005) is too glossy while Guy is subsumed by his guest stars. 'Sweet Tea' may be a bit contrived, a bit too 'authentic' but it's a success nevertheless, revealing the man's undoubted talents.

Two jazzers now. Jaco Pastorius' 'Invitation' (1983) is a big band presentation in which Pastorius offers a democratic template, allowing much of the excellent soloing to go elsewhere. Ramsey Lewis' 'Sun Goddess' (1974) is jazz fusion at its best, introducing funk, R&B, synths, you name it. Earth, Wind & Fire fans out there? A lot of that band fill this superior LP.

From The Delfonics 'La La Means I Love You' is the epitome of smooth, Philly groove soul. The title track is one such sublime – and signature – group sound.

## LET'S ROCK

Autopsy's 'Puncturing the Grotesque' (*Peaceville; peaceville.com*) marks the thirtieth anniversary of this death metal outfit. This is a seven-track mini-LP.

From K-Scope is Gleb Kolyadin's self-titled debut LP for the label. A pianist, he is joined by instrumentalists associated with King Crimson, Porcupine Tree, Marillion and more. A keys-fronted piece of prog.

From Music on Vinyl is the New York Dolls' reunion concert, 'Live from Festival Hall 2004!' Despite the absence of Johnny Thunders and Jerry Nolan, the 'band did good' on the night. Bassist Arthur Kane would be dead only weeks after this recording.

From Dream Theater, 'A Change of Seasons' (1995) is prog metal at its best with five tracks on one disc packed with drama and complexity.

Trivium's metal/thrash 2008 outing, 'Shogun' is more thrash than anything else, packed with riffs and outstanding Metallica-esque manoeuvres.

'The Final Countdown' anyone? Yes, that was Europe. 'Out of this World' was the 1986 sequel to that album with an accessible, approachable entry into hard rock. Friendly, even.

Would you believe that most of the people behind the hard rocking Ram Jam derive from bubblegum pop? Listen to the magnificent 'Black Betty' and try to reconcile that one! That's the highlight to this reasonable album that too often has a me-too flavour to each song.



## MUNSTER AND MORE

From the Spanish audiophile outfit on the label's Vampi Soul imprint is the first reissue of Los Chicos Malos (1980) self-titled album. Combining hard salsa and cumbia.

Onto large beats now and Los Yetis (Vinilissimo) from 1966 featuring covers of songs by The Beatles and Wayne Fontana & The Mindbenders.

Completing our 'Los' trilogy is Mexico's Los Pankeys. 'The Complete Recordings' (1966 Munster) features beat rock'n'roll.

Also from 1966 is The Wallflower Complexion's self-titled debut (Vinilissimo) – and only – LP. Occupied by the children of US government staff combining surf guitar and psych rhythms, mixing original songs with covers from the likes of the Rolling Stones.

## LEFT FIELD

A double album gatefold production, Tonaliens (Edition Telemark; edition-telemark.de) features Amelia Cuni (voice), Werner Durand (invented wind instruments), Robin Hayward (microtonal tuba), Hilary Jeffery (trombone) and Ralf Meinz (live sound, electronics) which gives you an idea of the sonic direction here. The group explore microtonal tuning through minimalist, modulated ambience. Also look out for Jean-Luc Guionnet & Daichi Yoshikawa's 'Intervivos' (Empty Editions: emptyeditions.com), an improv – sound explorations using feedback, electronica and found sounds with linearity set to zero.



## ...AND FINALLY

Aussie, Davey Lane's 'I'm Gonna Burn Out Bright' offers melodic power pop, often upbeat and layered with synth washes. Davey offers you smiles.

Keigo Oyamada is the rather brilliant Cornelius and 'Mellow Waves' (Rostrum; rostrumrecords.com) is his latest retro-futuristic, slightly jerky, thinking of too many things at once, child-like, spacious musings. The man...thinks aloud in rhythm.

# HEATHCOTE AUDIO

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NHT 1.8 STANDMOUNTERS	EXCLT/BOXED	£325
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PMC.TWENTY/24 FLOORSTANDERS 1 OWNER FROM NEW	MINT/BOXED	£1850
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MBL 300E FLOORSTANDERS PIANO BLACK (10K)	EXCLT	£2750
MERIDIAN M2 ACTIVES & STANDS 1 OWNER FROM NEW	EXCLT/BOXED	£795
NHT 3.3 FLOORSTANDERS (SEE STEREOPHILE REVIEW!!)	EXCLT	£1395
SONICS BY JOACHIM GERHARD (AUDIO PHYSICS) AMERIGO ( 5K?)	DEM/BOXED	£1850
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MARTEN MILES CHERRY (8k+ ONE OWNER)	EXCLT	£2995
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PODIUM 1s PANELS VERY LOW USE (£6000? NEW)	1 OWNER	£1595
ART AUDIO PRECISION MONITOR ( PIANO BLACK 6K+)	DEM+1	£1795
AUDIOSTATIC ES-100 ELECTROSTATICS	EXCLT	£995
ALR JORDAN CLASSIC 2 (BIRCH VENEER £800+)	NEW/BOXED	£450
AURUM CANTUS MUSIC GODDESS (£2500)	DISPLAY	£1250

## VALVE

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ROGUE AUDIO HYDRA FEW HOURS DEM USE	MINT/BOXED	£2100
ROGUE AUDIO RP-5 LIGHT DEM USE	MINT/BOXED	£2450
ROGUE AUDIO TRITON NEW/DISPLAY	MINT/BOXED	£695
ROGUE AUDIO 66 MAGNUM REMOTE CONTROL PRE	EX.DEM	£695
MELODY M88Q KT88 MONOBLOCKS	MINT/BOXED	£2150
NEW AUDIO FRONTIERS 300B SUPREME POWER AMP		
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MULLARD 5-20 EL-34MONOBLOCKS	EXCLT	£650
AUDIO INNOVATIONS 1000 SILVER PASSIVE PRE-AMP	EXC	£599
ANTIQUE SOUNDLABS MINI PHONO & PSU	EX.DEM	£275

## SOLID STATE

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XTZ CLASS A-100 D3 C/W DAC & PHONO STAGE 1 OWNER FROM NEW	MINT/BOXED	£449
MERIDIAN 501 PRE AMP & MSR	MINT/BOXED	£325
NAKAMICHI PA7E STASIS POWER AMP ONE OWNER FROM NEW	EXCLT	£1350
NAKAMICHI CASSE PRE AMP ONE OWNER FROM NEW	EXCLT	£450
DENON PMA 2010 INTEGRATED ONE OWNER FROM NEW	MINT/BOXED	£1250
PASS LABS X-2 PRE AMP ONE OWNER FROM NEW	EXCLT	£1295
H-CAT P-12B PRE AMP (£2500?) DEM USE ONLY	EXCLT	£1250
CONSONANCE A-100 LINEAR AMP ONE OWNER	EXCLT	£650
PRIMARE I-121 INTEGRATED ONE OWNER FROM NEW	MINT/BOXED	£595
AUDIO INNOVATIONS 1000 SILVER PRE-AMP	EXC	£599
PS AUDIO GCA 100 X 5 POWER AMP 1 OWNER (4.5K?)	XCLT/BOXED	£1795
ADVANTAGE i200 REMOTE INTEGRATED (SUPERB AMP)	EXCLT	£895
JOHN SHEARNE 2.5 INTEGRATED AMP	1 OWNER	£375
JOHN SHEARNE 3.5 POWER AMP	1 OWNER	£375
TRIO L-05 MONOBLOCKS (RARE)	EXCLT	£795
TRIO L-01 PREAMP C/W PHONO STAGE	EXCLT	£495
DPA 50S PRE AMP	VGC/BOXED	£495
DPA 50S POWER AMP	DEM/BOXED	£750
DPA 50S 3 BOX PRE AMP (PRE/PSU/PHONO STAGE)	EXCLT	£750
DPA 50S SINGLE BOX PRE AMP	GC	£395
DPA ENLIGHTENMENT PRE	NOS	£395
SONY F542E INTEGRATED	MINT/BOXED	£125
SONY N-220 POWER AMP	VGC	£175

## VINYL

GARRARD 401 AUPHELION PLINTH	DUE IN	RING
GARRARD 401 ACOUSTAND PLINTH	EXCLT	£995
ACOUSTIC SOLID 1/ORIGIN LIVE ARM/EXTRA'S	EXCLT	£3495
CLEARAUDIO MASTER REFERENCE/MASTER TQ-1/ETC	DUE IN	£9950
CLEARAUDIO UNIFY 12 INCH TONEARM FEW HOURS USE ONLY	MINT/BOXED	£1250

LUXMAN PD-444 TURNTABLE 1 OWNER COLLECTORS DREAM	EXCLT	£2450
PROJECT 12 INCH CARBON FIBRE ARM (EX.DISPLAY)	BOXED	£395
PROJECT 9CC CARBON FIBRE ARM (EX DISPLAY)	BOXED	£295
AUDIO INNOVATIONS DELTA INERTIA TONEARM N.O.S	N.O.S	£695
NOTTS ANALOGUE MENTOR & HEAVY KIT	EXCLT	£1750
DENON DP-1200 SPECIAL EDITION (INC.ARM/CART.)	RARE	£495
ODDESSY RP1-XG ARM 1 OWNER COMPLETE COLLECTORS CONDITION	EXCLT	£1450
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GRAHAM ENGINEERING ROBIN TONEARM (UNUSED?)	MINT/BOXED	£450
PROJECT 12 INCH CARBON ARM 2 WEIGHTS DIS/DEM/UNUSED?	MINT/BOXED	£395
PROJECT 9 INCH CARBON ARM 2 WEIGHTS DIS/DEM/UNUSED?	MINT/BOXED	£325
HADCOCK GH-242SE UNIPIVOT TONEARM (EX DEM ITEM)	EXCLT/BOXED	£475
VERTEX AQ SILVER SOLFONN TONEARM LEAD	DIS/DEM	£795
MICHELL ISO PHONO STAGE & HERA PSU	EXCLT	£349
AUDIO INNOVATIONS 1000 MC STEP UP	MINT/BOXED	£475
VAN DEN HUL MC D 501 SILVER HYBRID TONEARM CABLE (SME V ETC)	EXCLT	£225
OKKI NOKKI RECORD CLEANING MACHINE 1 OWNER	BOXED	£249
THORENS TD160 SUPER	VGC	£225
VOYD VALDI AND HUGO PSU 1 OWNER FROM NEW	PLEASE	RING
NAD PP-2 PHONO STAGE	MINT/BOXED	£99
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ANTIQUE SOUNDLABS MINI PHONO & PSU	DEM	£275

## DIGITAL

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TRICHORD DIGITAL TURNTABLE/ACOUSTIC RESEARCH ISOLATION	VGC	£450
KENWOOD DP-7090 CD PLAYER (8 X BURR BROWN CHIPS) 1 OWNER	VGC	£275
ARCAM R-DAC	EXCLT	£149
LINDEMANN 680 EXCLT BOXED	PLEASE	RING
TECHNICS SLP-S7 REMASTER CD PLAYER ONE OWNER	EXCLT/BOXED	£295
TECHNICS SLP-1200 AND REMOTE CONTROL PRIVATELY OWNED	EXCLT	£695
MUSICAL FIDELITY KW DM25 DAC (SUPERB)	MINT/BOXED	£895
INCA TECH KATANA	VGC	£395
THETA CARMEN CD/DVD TRANSPORT 1 OWNER	EXCLT/BOXED	£695
THETA DS-PRO GEN III COAX AES/EBU/AT&T RCA/BAL.OUT 1 OWNER	EXCLT/BOXED	£750
PINK TRIANGLE ORDINAL (GETTING RARE)	GC	£349
PIONEER CLD-D925 LASER DISC/CD 1 OWNER LOW USE	MINT/BOXED	£299
LARGE NO.OF MINT LASER DISCS	PLEASE	RING
TEAC CD-RW890 CD RECORDER/PLAYER 1 OWNER	EXCLT/BOXED	£75
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## TUNERS/MISC.

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VAN DEN HUL/CHORD /RINGMAT/PS AUDIO/BLACK RHODIUM ETC		
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## INTERCONNECT

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ABBAY ROAD REFERENCE 1.5 METRE PAIR EICHMAN PLUGS	DIS DEM	£375
ABBAY ROAD REFERENCE 1 METRE PAIR EICHMAN PLUGS	DIS/DEM	£345
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CHORD CO.EPIC SUPER TWIN 2 METRE PAIR	DUE IN	TBA
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HOVLAND NINE LINE 4 METRE BI-WIRE PAIR	DIS DEM	£450
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**Noel Keywood finds NAD's latest C 558 budget turntable/arm/cartridge package a lively and powerful performer.**

# Dynamic NAD

**N**AD have always delivered a simple, stylistically austere yet effective budget product – and that is the obvious intention with the £450 C 558. It is a complete package comprising two speed turntable, arm and Ortofon OM10 budget moving magnet (MM) cartridge that comes fitted. Also provided is a moulded clear acrylic lid on simple friction hinges, not spring-loaded.

NAD say in their literature it has an a.c. motor that runs from its own clean power supply, not the mains direct, for good speed stability – measurement confirming it held steady speed as claimed. Unfortunately, speed change is manual, meaning to move from 33

to 45 or back, the platter must be removed and the belt re-positioned by hand to a different step on the motor pulley. Push button speed change has become the norm., putting the C 558 at a rather obvious disadvantage in this respect, if not alone.

The plinth measures a reasonably compact 430mm wide, 340mm deep and although is 125mm high with dust cover closed, needs clearance above as usual so it can open unobstructed – like all turntables with hinged covers. The machined MDF plinth is sturdy and carries a brass bearing that supports a hub driven by the flat rubber belt, a tried and tested arrangement used by Thorens long ago and Rega since. Like Regas the platter that sits atop the hub is made

of glass, carrying a thin felt mat – again reminiscent of Rega. Yet the box says 'Made in the Czech Republic' so source is Pro-ject it appears.

The arm comprises a large diameter alloy tube that proved rigid in measurement with a fixed flat headshell platform that lacks strengthening ridges or webs, measurement showing it was lively as a result. Arms with detachable headshells use a bayonet plug to make cartridge changing easier and quicker – and upgrade shells can be used.

The arm rest is a U-shape plastic moulding without a locking mechanism for transit and the lift lower a damped platform; it operated well enough. Build quality was "light", meaning satisfactory – but the plastic

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**The counterweight slides over the rear stub. It's held by a small screw tightened by hex key – a basic arrangement. The dust cover hinge is restrained by friction. A dial applies magnetic anti-skate force.**

mouldings such as that holding the arm rest flexed. Similarly, the pliantly suspended counterweight was difficult to position precisely when setting down-force. Bias force is applied magnetically and set by using a simple linear dial.

Where most rivals nowadays at this price point fit an on-board phono stage, often with a digital output, the C 558 does not have this and I suspect it'll be a deal breaker for many. On-board budget phono stages with 16bit ADCs might not be the best things going but they suit budget buyer expectations and have bypass switches allowing an external stage to be used. At this price Sony even fit a 24bit ADC to their PS-HX500 that outputs hi-res and DSD to PCs so LPs can be recorded to a computer. All this makes the C 558 look barren in terms of facilities at the asking price. NAD however fit a good cartridge in the Ortofon OM10 – considerably better than Sony's for example.

Packed with the turntable are the usual set-up parts such as alignment protractor and simple Ortofon stylus pressure gauge. An external wall wart power supply delivers 15V through a long lead so there's no mains power on-board, meaning no ground loops and hum.

## SOUND QUALITY

I used the C 558 with an Icon Audio PS3 valve phono stage (with volume control) driving a McIntosh MC152 solid-state power amplifier connected to Martin Logan ESL-X hybrid electrostatic loudspeakers. The system ran from an Isotek Evo 3 Mosaic Genesis re-generated power supply.

Eleanor McEvoy's 'I've Got You To See Me Through' (180gm vinyl) had snappy pace and a sense of rock-steady stability. The balance overall was full-bodied and dynamically powerful, the bass line having a strong

and deep presence in the mix. It slid along fluidly, underpinning the song with impressive power. There was some smudge to sibilants but this almost certainly came from the OM10's stylus that consistently added some fluff to high treble. But that is a common limitation of budget MM cartridges rather than a problem of the turntable.

With Fleetwood Mac's 'Dreams' (new 180gm re-master) again the NAD delivered a massive bass line that was pacy and obvious, each note having rounded definition.

Old LPs not so well produced, such as Patti Smith's 'Horses', were portrayed with honesty, warts and all, but still sounded exciting rather than challenging, the sharp pace changes in 'Gloria' made obvious by the turntable's grip of tempo.

Ortofon's OM10 cartridge has strong mid-band presence; it isn't laid-back like Audio Technica's popular AT-3600, giving the C 558 explicit vocals that hung clearly centre stage between our Martin Logan X-Stat electrostatic panels. Mark Knopfler's laconic delivery in 'So Far Away' from Brothers in Arms was vivid and

squeaky clean, cymbals shimmered in accompaniment whilst the bass line all but thundered behind; this deck has sub-sonics!

The friction hinges of the lid made me use it with care whilst playing or the stylus would jump from the groove. I hand cue and the flat finger lift wasn't easy to grip. Operationally, the C 558 lacks the sophistication of its price competitors.

## CONCLUSION

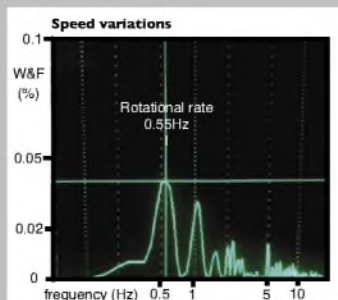
Pacy and dynamically powerful, the C 558 gave an exciting sound. It's bright and clean across the mid-band, rather than warm and laid-back, largely due to the Ortofon OM10 cartridge fitted. A snappy sense of tempo and tight grip on timing made it livelier than the norm. This is a deck that brings LP to life!

The downside, however, is it's basic nature: manual speed change, lack of a quality removable headshell and friction hinge dust cover being jarring limitations at the price, not to mention absence of an on-board phono stage and digital convertor, all of which rivals offer at a lower price. I liked its sound but wonder whether it is competitive.

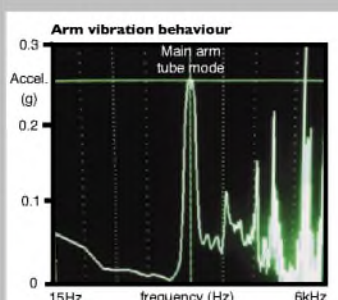
## MEASURED PERFORMANCE

The C 558 ran +0.5% fast – not ideal but within the 1% error level at which pitch change becomes obvious, at least to those who are pitch aware, such as musicians. As belt drives go NAD's drive system was both stable and clean – meaning it held speed tightly without wandering and there was little flutter rubbish in its speed spectrum, shown

### SPEED STABILITY



### ARM VIBRATION



here. Our analysis shows the usual 0.55Hz (33rpm) main peak at around 0.05%, plus a second order component at 1.1Hz, but little else above. The 0.55Hz component is caused by platter eccentricity and bearing precession, not by the motor that spins much faster. The NAD figures are good and it will have stable pitch and clean tone as a result. Speed stable belt drives sound less 'watery' in pitch than is common with this drive arrangement.

The large diameter arm tube is rigid: its first bending mode occurring at 500Hz, well above the 250Hz or so of less rigid alloy tube arms. However, the resonant peak this causes was high so this is a lively arm in the mid-band.

The simple headshell was resonant, more so than usual. There are no strengthening ribs or side webs commonly used for rigidity and modal dispersal. The arm floated freely and there was little obvious slack in the bearings.

The C 558 has stable speed but its arm was unimpressive by modern standards. **NK**

**Speed accuracy** +0.5%  
**Total W&F unwt'd** 0.1%  
**Total W&F wtd** 0.07%

**NAD C558 £449.00**



**GOOD - worth auditioning**

### VERDICT

Good sound, with pace and bass, but pricey and poor value against its many rivals in the burgeoning budget turntable market.

### FOR

- strong tuneful bass  
 - clear mid-band  
 - hum free

### AGAINST

- no phono stage  
 - manual speed change  
 - no digital output

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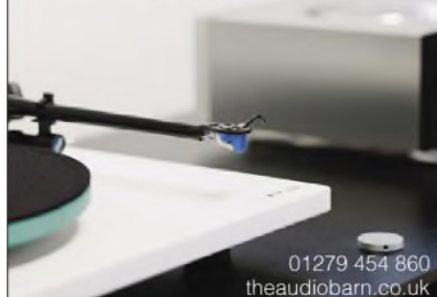
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# Vertigo - A History

**Paul Rigby reviews a book charting the iconic record label that featured a superb range of artists.**

**The Vertigo Swirl Label: Worldwide Discography & Price Guide**  
**Authors: Ulrich Klatte & Marcel Koopman**  
**Price: £35**

**V**ertigo was an imprint of the Philips/Phonogram record label started in 1969 by Olav Wyper, covering both LPs and singles. Content-wise? You're looking at a lot of prog-based releases and other non-mainstream styles ranging from Black Sabbath to Magna Carta to Gentle Giant and many more.

The label is also one of the most collectable entities on the planet, I've known some people whose entire aim in life is to collect every single one of them. Original pressings can fetch silly money: from around £100 to the multiple thousands. If you've ever stood in a record fair and someone mentions buying/selling a Vertigo swirl LP, just watch the ears prick up. Vertigo is always big news.

This specialist, new hardback book, packs in 320 pages and 400 coloured images and is devoted to the Vertigo label during its swirly design period with additional coverage for the label when it later adopted its UFO label design.

When I unpacked the book, I have to admit to a measure of disappointment at the size of the tome, 21.5cm high and 15cm wide. I wondered if there was enough space to tell this image-intensive story.

Then I realised that this book will most probably be used 'live', on

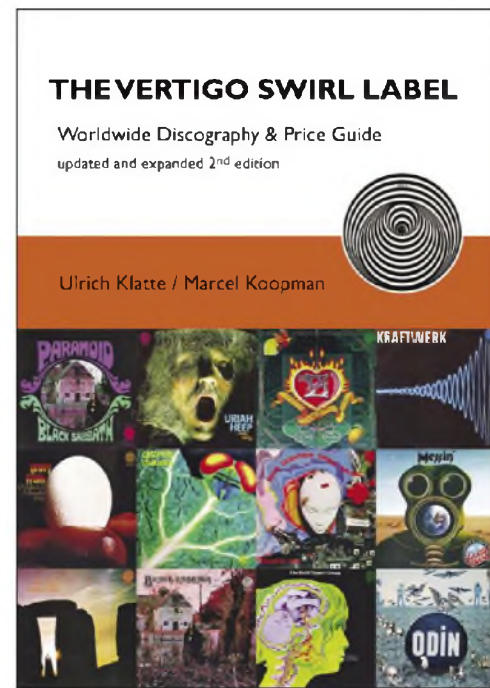
site in a record store, at a record fair or at a dealer's location and a ready reference might just be what's needed before a potential purchase. This is not the time to be toting a massive and very heavy book.

And while we're on the subject, relating to one minor yet important design point, I'm happy to see a bookmark ribbon attached to the binding to select a valuable page for later quick access.

Inside this book – also described as an 'Updated and Expanded 2nd Edition' – you'll find a brief label history and a description of the book as a tool, the development history of the label design and additional sales territories such as Germany. Pricing advice is sensibly given as a range instead of a specific (i.e. €500-€800). This is a European production, hence the Euro price points.

There's an excellent multi-page visual explanation of the different swirl designs plus a nice interview with the designer of the label design itself, Linda Nicol.

Near to the front of the book – an ideal position for those in a rush – is the full catalogue of each Vertigo release, the LPs and then the singles. After that, the book settles down to examine each and every LP release. Here my initial fears were erased. The book places the sleeve image on the left with an opinionated review



underneath. Whatever you think of the review style and content, I'm happy to see this feature. It brings the music to life and at least offers a view on the music, removing the threat of this book becoming too dry in nature.

This is the place where you'll find gatefold (and multi-section gatefold) sleeves, opened in full when required. Posters are displayed here too.

On the right is the label number, band name, LP title, catalogue number, format and release date, plus monetary value along with the band line-up, production information, cover design and even matrix numbers, plus additional notes if required. The book is completed with a review of foreign sleeve art and label styles, plus singles sleeve art.

An excellent, detailed, in-depth analysis of the label with a host of valuable advice, production insights and a list of rarities that will have many a knowledgeable vinyl collector slaving in hope and anticipation.

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# Q For Quality

Tellurium Q's Silver Diamond USB cable is a real star, says Jon Myles.

**U**SB cables – they cannot be much too different can they? After all, what they are doing is carrying a string of 1s and 0s in the digital domain, so how can they differ?

Well, they do. Quality of construction, insulation and materials all matter to ensure that digital information arrives correctly. If there's errors you will certainly hear it.

So spending money on the right cable is worth it. But £880 for a metre? Yes, that was my initial thought when unboxing the Tellurium Q Silver Diamond USB cable but as I already use the company's other products in my own system to tremendous effect I pushed the price aside and concentrated on sound quality.

As ever, Tellurium Q gives little information on the specific construction of the cable, simply saying it is part of its Silver range which are said to be uncoloured and acting as a wide, open channel for the music.

and Chord 2Qute DAC I was immediately struck by how much the Tellurium Q seemed to lower the noise floor.

Notes emerged from a much quieter background – the clocks at the start of Pink Floyd's 'Time' were startlingly striking.

On 'Another Girl, Another Planet' by The Only Ones the soaring guitar line sounded more vibrant, having added edge to the leading notes. It wasn't edgy or unpleasant but just natural and exciting.

It's hard to say exactly what the Silver Diamond is doing as it appears to impose little of its own character on



"with Kraftwerk's 'Autobahn' the synthesisers were shinningly bright, taking on a perceptibly cleaner sound than my usual cable."

That said, the construction of this cable is up to the company's usual impressive standards. It's relatively thick but extremely flexible with the connectors at each end firmly attached. Plugging and unplugging it a numerous times showed no sign of stress or strain on the cable.

## SOUND QUALITY

Unplugging my current reference USB cable between a MacBook Pro

the music, simply passing the music through totally uncoloured.

With Kraftwerk's 'Autobahn' (24/96) the synthesisers were shinningly bright, taking on a perceptibly cleaner sound than my usual cable. I could also hear details that I'd previously not noticed. The odd note here, the odd note there – seemingly insignificant but actually making a great difference in portraying the full flow of the track.

Playing acoustic material the Tellurium Q rendered violins, guitar and vocals with a realistic tone and timbre. It seemed to pull the best out of the Chord DAC, which itself is tremendously resolving.

That does mean, though, that if you play some highly-compressed files you'll definitely hear it. An MP3 of Keith LeBlanc's 'Malcolm X - No Sell Out' sounded truly dreadful – lacking power or punch.

But that's as it should be. This cable takes what it is fed and relays it with unerring accuracy.

## CONCLUSION

The Tellurium Q Silver Diamond USB cable is one of the best I've heard. Yes, it's expensive but it also outperforms most other alternatives. If you want to hear the full musical range of your digital files then it's a must.

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SILVER DIAMOND  
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## VERDICT

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## FOR

- amazingly open
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- construction

## AGAINST

- not cheap

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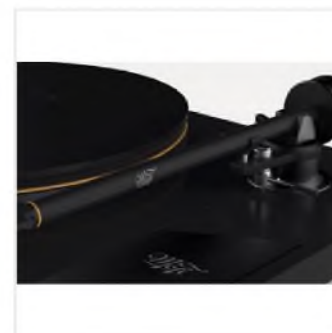
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NAIM NAC 282, NAPSC, remote and leads. One owner, new October 2012. Boxed with owners manual. Excellent condition. £2450. Prefer buyer to audition and collect. Tel: 01245 250 375 or Email: [ruane-hp@blueyonder.co.uk](mailto:ruane-hp@blueyonder.co.uk)

TOWNSHEND ROCK 7 turntable. Excellent condition. £1700 ovno. Martin logan spires. Fantastic condition. Amazing sound. £2800 ovno. John. call 07743364076. Email: [lesburn100@yahoo.co.uk](mailto:lesburn100@yahoo.co.uk)

KEF CODA 9 Stereo Speakers'. Black Finish. Used but totally new condition. Collection only from West London. £110. Tel: 07787 574784 [stephenadolphus@yahoo.com](mailto:stephenadolphus@yahoo.com).

CAMBRIDGE AZURE 840W power amp £300. REL Quake sub-woofer £60. Buyers collect (both very heavy) M25/A21 area. [ytkippington@gmail.com](mailto:ytkippington@gmail.com)

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# NEXT MONTH JUNE 2018 ISSUE



## FOCAL KANTA No.2

Focal's new Kanta loudspeakers feature a beryllium tweeter matched to flax mid-range and bass drivers in a specially constructed curved cabinet. It is an unusual construction but one that promises much. Read our review and exclusive measurements in next month's issue.

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B&W 686 S2 SPEAKERS  
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...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 issue we cannot guarantee that all products listed above will appear.

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# LEE DORSEY

## YES WE CAN MUSIC ON VINYL



"he would go and get into his grease clothes, his dirty work gear and go and work on cars."

Lee Dorsey might be pictured on the sleeve and his name spans the same but the core of this LP is just as much about Allen Toussaint who not only co-produced the album but wrote – with one Joe South exception – all of the songs.

In fact, Dorsey and Toussaint were part of a team: you might say that they were part of a sort of repertory company that included Joe Tex, Irma Thomas, Aaron Neville, Ernie K-Doe and Benny Spellman. Hits would flow from Toussaint to his group of artists freely and frequently.

Toussaint would scribble away at the back of his house with the songs, then he would bring them to the singers hanging out at the front, who would tinker with it. Once some sort of agreement had been forged, it was off to the studio to record it. If one of the singers found that song was for them then the other artists would tend to act as backing singers and the rotation of lead and backing singers would flow around the group from song to song. That was the essential pattern.

Dorsey himself was born in 1926 in Toussaint's own home town, New Orleans. In fact, Dorsey was a good childhood friend of the late Fats Domino.

Many thought of Dorsey as a "friendly guy" but he was no push-over, his military experiences as a lightweight boxer took care of that.

When you listen to Dorsey you hear R&B sweating out of his pores, in a similar way to the style delivered by Otis Redding. Possibly combined with a touch of Ray Charles.

Dorsey's first hit was a great little ditty that he wrote called 'Ya Ya' which was apparently inspired by a children's chant that went, "Yo' mama's sittin' on the slop jar/waitin' for her bowels to move" Enchanting, eh? That evolved into, "Sittin' here in la la/Waitin' for my ya ya," thankfully. It was a massive 1961 hit.

Toussaint and Dorsey hit the ground running with a tremendous hit in 1966, 'Working in a Coal Mine', offering an insistent bass and plenty of hooks, "Lee Dorsey was a guy full of life and his voice had a smile in it."

said Toussaint. "So the song didn't have to have a big romantic subject." According to Toussaint, Dorsey was, "Very inspiring because he had such a happiness about him. He loved what he was doing when he was singing. He was a body and fender man when he wasn't singing and even at his peak, when he would come off the road at the end of a successful tour, he would go and get into his grease clothes, his dirty work gear and go and work on cars".

In fact, some readers may have personal memories of Dorsey because he became mixed up in the British Invasion – although he moved the other way. Dorsey would join the likes of The Beatles and The Rolling Stones during concerts in the UK.

This LP was released in 1970 and is a masterpiece from both Dorsey and Toussaint (The Pointer Sisters had a hit with the title track while Ringo Starr and Robert Palmer covered other tracks from it).

Frankly, it is one of the best soul albums there has ever been, certainly of the seventies decade with everyone – even the backing voices from The Meters – at the top of their game. There's a tremendous combination of mood and style here that should please everyone, especially as the quality of the song-writing is through the roof – with highlights such as 'When the Bill's Paid', 'Gator Tail' and 'Sneakin' Sally Through the Alley'.

Music on Vinyl's new, numbered edition is limited to 1,000 copies and has been pressed on dark green vinyl. This reissued record has received a balanced and sensible master which provides a relatively wide soundstage that is both nicely ordered and structured, allowing subtle secondary percussion to emerge without undue effort. There's an easy flow to the album which means that time moves quickly when you listen to it. I could be a little picky, of course, and want more depth around the soundstage and a touch more focus around the stereo image area but I'm being a little churlish in that request, the music is so relaxed and rhythmic that you can forgive it just about anything. These songs glide like a river on a Summer's day. That'll do. **PR**

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