

# HI-FI WORLD

AUGUST 2017

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## TIMESTEP TECHNICS EVO GR

turntable



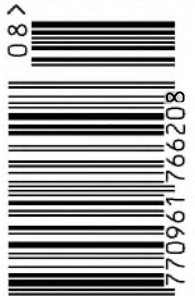
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Paul Rigby, Martin Pipe.



**F**irst shown earlier this year at the Bristol Sound&Vision Show, in this issue we finally review a full production Technics SL-1200GR Direct Drive turntable, rather than an early review sample for the press. Interesting that our Timestep tweaked Evo version was better under measurement than its more expensive stablemate, the SL-1200GA. It had none of the measurable cogging everyone likes to talk about – that even Technics mention – even though this phenomenon is minuscule compared to all the stuff a belt drive puts out. What you get

from the Technics is a sparkingly clean sound with metronomic precision. If you are looking for a top quality turntable to play LPs then turn to p78 to read our report on this fine piece of technology. There's every likelihood a GR would see out your lifetime and not be bettered over it.

Almost worryingly, Lenco's budget L-3808 Direct Drive we measured and reviewed in the June 2017 issue was also speed stable, yet at one-fifth the price of the Technics. That made us think: was there some mysterious Chinese turntable plant now about to challenge the Japanese in this field? To find out we have reviewed another Lenco in this issue, the L-90 belt drive – see p87.

Watch an old sixties science-fiction movie like 2001 A Space Odyssey and you'll see big tape reels spinning away on banks of computers. Nowadays we've got digital and solid-state memory to hold data, including music. But not everyone is happy about this. A vast wealth of musical history sits on analogue master tapes and copy masters offer a great – if expensive – way of hearing it. Trouble is you need an open reel tape recorder – and they ceased production long, long ago. So I'm sorry to say we haven't got an open reel recorder review in this issue! What we have got is a fascinating look by Dave Tutt at what to expect from an old open reel or cassette deck in Letters p28 and his column p69. Good to know if you spot one at a car boot sale, or lust after the many on eBay.

There's a link between old analogue and today's deep digital in the form of NAD's M32 amplifier and 502 streamer/server. Both these products have an ADC on board to turn analogue to digital, and once there it can be recorded. Martin Pipe looks under the bonnet of these fascinating products on p15.

Analogue or digital, we've got it covered in this issue. I hope you enjoy it all.

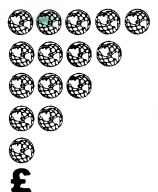
**Noel Keywood**  
**Editor**



## hi-fi world

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## verdicts



**OUTSTANDING**  
**EXCELLENT**  
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**POOR**  
**VALUE**

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extremely capable  
worth auditioning  
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flawed  
keenly priced

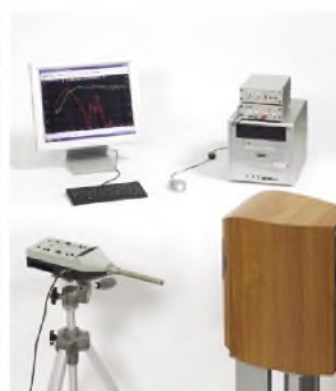
## testing (see [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) for full explanations of all our tests)

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

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

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

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



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For a limited time, we are offering a system bundle with our friends at Rotel, allowing you to get more of the Hi-Fi you want, for less than you may expect.

Featured system: Bowers & Wilkins 686  
Rotel A10 / Rotel CD14.



Available at participating retailers. Find out more at your nearest Bowers & Wilkins or Rotel stockist: [bowers-wilkins.co.uk/store](http://bowers-wilkins.co.uk/store)

Bowers & Wilkins



email:news@hi-fiworld.co.uk

# news

## KEF ANNOUNCES TIDAL FUNCTIONALITY ON LS50 WIRELESS

KEF has announced its partnership with TIDAL that integrates TIDAL into the app of the KEF LS50 Wireless loudspeaker.

TIDAL is now integrated into the navigation drawer inside the LS50 Wireless app and will be accessible after a simple app update.

Users with a TIDAL subscription need only tap on TIDAL and log in to begin enjoying TIDAL's catalogue of music through KEF's audio streaming solution.

For more info: [www.tidal.com/kef](http://www.tidal.com/kef)



## WHARFEDALE DIAMOND 11: CELEBRATING 85 YEARS

The new range comprises eight models: three standmounting speakers (Diamond 11.0, 11.1 and 11.2), three floorstanders (Diamond 11.3, 11.4 and 11.5) and two centre speakers for home cinema systems (Diamond 11.CC and 11.CS).

The curved cabinet sides hold bass and midrange drivers using a basket with a network of ribs while leaving a large open area behind the cone. High-frequency performance has been addressed with a new tweeter design. An over-sized ceramic magnet system is used, with a copper cap. And, here, the pole piece is vented through to a specially shaped rear chamber.

Prices are: Bookshelf speakers – Diamond 11.0: £159.95; Diamond 11.1: £269.95; Diamond 11.2: £349.95; Floorstanding speakers – Diamond 11.3: £599.95; Diamond 11.4: £779.95; Diamond 11.5: £999.95 Home cinema centre speakers – Diamond 11.CC: £149.95 & Diamond 11.CS: £229.95.

To learn more, call 01480 447700 or click [www.wharfedale.co.uk](http://www.wharfedale.co.uk)

## MARANTZ RECEIVERS

Marantz new home cinema receivers include HEOS wireless multi-room audio technology. The NR1508 (£500) also features Bluetooth and AirPlay compatibility to stream music directly from any compatible device. For high resolution surround from your favourite movie soundtracks the it is equipped with 32bit DSP processing supporting all the major sound formats.

The NR1608 (£600) offers high current discrete power amplifiers on all seven channels with Dolby Atmos and DTS:X decoders. It's fully compatible with the latest HDMI and HDCP 2.2 specifications on all eight HDMI inputs and will pass all the latest video formats – 4K 60Hz video, 4:4:4 Pure Color sub-sampling, BT.2020, HDR and Dolby Vision.

The full-size receivers are the SR6012 (£1,100) at 185W and SR7012 (£1,500) at 200W. These are 9-channel designs offering eight HDMI 2.0 inputs. Both support Dolby Atmos up to 7.1.4 configuration with Wi-Fi/streaming, a 32bit DAC, Dolby Vision and HLG. Both offer 4K 60Hz HDCP2.2, 11.2-channel processing on board and feature integrated Tidal, Deezer and wireless multiroom capability.

Finally, the SR7704 (£1,900) resembles the SR7012 and adds XLR outputs to the RCAs.

To learn more, click [www.marantz.co.uk](http://www.marantz.co.uk)



## DENSEN 1NRG

1NRG...pronounced One Energy power supply features Vishay metal film resistors, ultrafast precise rectifying diodes and a vibration damped custom-made transformer, with two separate windings.

It can be used to upgrade the following Densen products: B-110, B-110+, B-110XS, B-120, B-130, B-130+, B-130XS, B-150, B-150+, B-150XS, B-175, B-175+, B-175XS, B-250, B-250+, B-250XS, B-250CAST, B-410XS, B-420XS, B-440XS and B-800MK 1, 2 & 3.

The 1NRG has a retail price of €1500 and is available now in black and albino finish.

To learn more, call +45 75 18 12 14 or click [www.densen.com](http://www.densen.com)



## OCTAVE LAUNCH FIRST SINGLE-ENDED TUBE AMPLIFIER



Octave have launched their first single-ended amplifier. The V16 Single-Ended has a range of high-end elements as well as an integrated headphone amp. It combines Octave's signature features of powerful dynamics, low noise and incredible stability. The component also achieves a 100 kHz bandwidth spec, something previously thought impossible in single-ended amplifiers.

Octave's decision to create a single-ended amplifier with their specially developed technology was down to the fact that the circuitry is desirable for its natural audio reproduction. The technology offers clarity and sonic benefits, making them perfect for high-efficiency loudspeakers and headphones.

The single-ended design has a harmonic sonic signature, meaning that there is an extremely lurid midrange with no crossover distortion.

The V16 remains linear at 10Hz, the bandwidth has been extended from 10Hz to 100 kHz, hum is reduced by specially placed electronic stabilization circuits and utilises Octave's Ecomode technology and automatic adjustment in Class-A mode to keep the amplifier from overheating.

Available Finishes: Metallic Black, Ocean Blue and Ice Grey

The V16 Single-Ended Integrated Amplifier will be available in the UK from Elite Audio and is set to retail at £7,495.

For more information please visit [info@eliteaudiouk.com](mailto:info@eliteaudiouk.com) or call +44 020 3397 1119



## MIXXTAPE BY MIXXIM

Mixxim has developed a new music player that looks, feels and plays like a cassette tape. The MIXXTAPE arrives with a built-in LCD display plus touch controls, Bluetooth + EDR, a headphone socket, 3.5 Aux port and a SD card handling 64GB of storage (an 8GB card is included). A USB 2 port allows a connection to a PC or Mac to transfer music.

The MIXXTAPE also plays as a cassette. That is, it will play in most standard cassette players.

Other features include a shuffle play option while the next version promises a remote control. Retail price is \$80 but you can get a 50% discount from the Kickstarter page.

This is the first functional prototype. Since then, the chipset and display have been upgraded. Also, Bluetooth has been added.

To learn more, click [www.kickstarter.com/projects/mixxtape](http://www.kickstarter.com/projects/mixxtape)

## ACOUSTIC ENERGY THE AEGO BT2

Acoustic Energy has announced the Aego BT2 Bluetooth speaker, featuring an aluminium chassis with a power rating of 40W.

Installed within are bespoke twin 64mm drivers and a side-firing bass driver plus Stereolink mode, where two speakers can be used as a stereo pair.

The top mounted push button controls include the on/off button, volume and Bluetooth 4.2 pairing. You'll also find Apt-X support plus USB phone charging, analogue input and a microphone for hands free calling.

Spanning 140 x 200 x 100mm, weighing in at 2kg and with a battery life of up to thirty-six hours (it'll be much less if you use Bluetooth a lot, though, think around eighteen hours), the price of the BT2 is £249.

To learn more, click [www.acoustic-energy.co.uk](http://www.acoustic-energy.co.uk)



## LOVE HULTÉN'S ASTOVOX

A limited-edition hi-fi system, Astovox's cubic casings are handmade from African Mahogany while the front panels come in a brushed aluminium finish. If desired, the wooden stands can be removed. Only 100 units will be made, each one signed by Love Hultén.

The ported speakers house two Pioneer TS-D1702R 172mm drivers. The 50W amplifier is built around the TPA3116 chip from Texas Instruments.

Astovox can be purchased in full set, with or without stands. Price (excluding VAT and shipping) for full set inc. speakers, amplifier and cables (with stands) €2300. To learn more, click [www.lovehulten.com](http://www.lovehulten.com)



## TT8 RETRO WOODEN MULTI-FUNCTION TURNTABLE-BASED SYSTEM

Minfort Audio intends to launch the TT8, a multi-function turntable and speakers/subwoofer system. Minfort Audio will be on Kickstarter in July.

Details are a little thin on the ground but this is what we know so far. The speakers will arrive in a selection of natural woods, including Oak, Teak and Walnut.

The speakers include a 25mm silk dome tweeter, 102mm paper cone woofer and 133 subwoofer.

Streaming is possible via WiFi and Bluetooth 4.0. Wired options include optical, coaxial and RCA. Minfort has launched a survey, in which people can who fill it get 40% discounts.

Minfort Audio was founded in 2013 by a group of carpentry, design, engineering and audio professionals in Corpus Christi, a coastal city in Texas, USA. There are two main people at the company. Travis has a love for minimal design speakers and has won awards in Germany for his work. William is the other principle; he was in charge of product research and development in Sony, Aiwa and Casio for eight years and has nearly twenty years of R&D experience.

Check them out at [www.minfort.com](http://www.minfort.com).



## PURE ONE SERIES 3S

The portable One Midi (£79.99) and One Maxi (£99.99) will be available in two colour variants, Jade White and Slate Blue.

The radios feature diamond cut, luxury rose gold and chrome metallic dials, with buttons and telescopic aerials to match.

As well as running off the supplied mains power adapter, both models can be powered by a rechargeable ChargePAK D1 or regular AA batteries. They also feature alarms, timers and an Aux-in option.

One Midi (£79.99) is ideal for use in the kitchen or bedroom, "Its new digital sound processor gives users more precise audio tuning and greater tone control for an optimum listening experience," said the company.

One Maxi (£99.99) is the largest product in the family offering dual speakers to, "...ensure enhanced clarity and the lifelike presence of stereo giving an extra dimension to the music," said the company.

For more information, please visit [Pure.com](http://Pure.com) or call 0845 1489001.



## DK VINYL DISPLAYS WALNUT VINYL RECORD STAND

A custom-made vinyl display/storage shelving unit. Each piece is totally customisable: any finish, any size and any colour. The outside finish comprises high quality commercial laminate/Formica.

The insides are painted with a No VOC paint in any colour you choose and naturally stained. The edge trim can be painted or stained to any finish.

Each piece is custom built to order. This unit holds around 500 12" vinyl LPs. The illustrated model's exterior is a walnut laminate finish, the interior is stained a light walnut finish with clear coat.

Spanning 1,454 x 1041 x 406mm, the unit is priced at £975.

To learn more, [www.etsy.com/uk/listing/479673400](http://www.etsy.com/uk/listing/479673400).



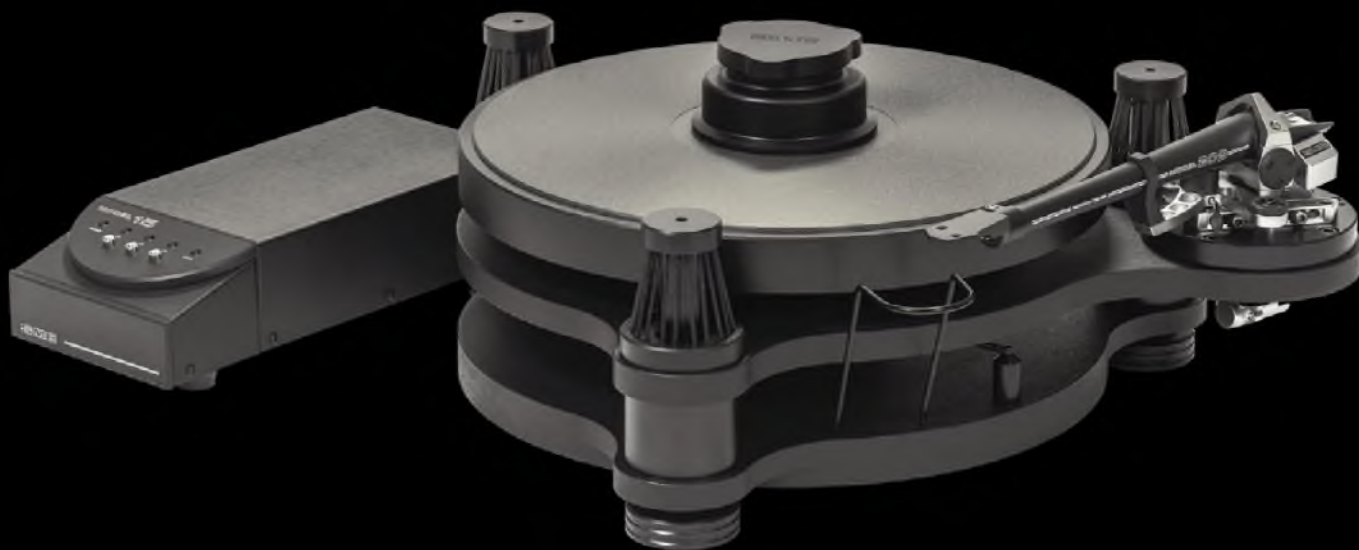
## THE LIVING CUBE: GET CLOSER TO YOUR VINYL

Swiss artist and designer Till Könniker needed space to store his record collection and hi-fi, coats and shoes, his TV and DVDs, books, seasonal boxes and other items. Instead of purchasing many different pieces of furniture he decided to design an all-in-one solution that would maximise space. The result was the first Living Cube.

Living Cube currently features production models in four different sizes: Nano, Micro, Pod, and Urban, two heights (1.6m and 2m) and three colours (black, natural and white wash, with more colours coming soon). All current Living Cube models are available for preorder now at [www.livingcube.furniture](http://www.livingcube.furniture).

# SME

## MODEL 15



## Experience a New Dimension in Sound

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

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

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

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# Price Fighter

Tannoy's new Mercury 7.4 loudspeaker fights it out on price at the bottom end of the market. Is it good value? Noel Keywood listens.



**B**udget products are where we all started out – and they gave us inspiration. Hi-fi loudspeakers have always been big in this – and whilst most retreat into high prices, Tannoy fight it out with a few feisty rivals like Q Acoustics to deliver a loudspeaker that works not just 'well' but really well for the beginner. That's the Mercury 7.4 I am reviewing here.

What you get here is a budget floor stander, something that can deliver a punch – or so you hope – in a tried and tested format. It stands just under one metre (955mm), 308mm deep and has a slim front face 315mm wide carrying two 178mm multi-fibre coated, pulp-paper cone bass units set above and below a 28 mm Nitro-urethane damped layer woven polyester dome tweeter with neodymium magnet system in what's termed a D'Appolito arrangement. The idea here is to give a consistent sound balance whether you are sitting or standing, perhaps walking about. It's interesting that the tweeter uses a fabric dome, not an aluminium alloy dome, to avoid the zing you commonly get from the latter. The Mercury 7.4 is a smoothy, our measurements show – the tweeter works well.

Two ports on the rear panel exert control on the bass units so they give even sounding low frequency output free of boom, or 'one note' bass – as per usual as in the large majority of loudspeakers that use this simple but potentially effective system. Small, light foam bungs are supplied to lessen bass if need be, in smaller rooms with a boom.

To improve stability these Mercurys come with separately packed moulded plastic feet that must be screwed on; they possess inserts to accept floor spikes, with a set of small steel discs carrying an indent for the spikes for users that don't want to put holes in the floorboards.

The connecting panel accepts bare wires, 4mm plugs or spades connectors and bi-wiring is made possible by removable links. Manoeuvring the speakers into position is easy enough as they weigh

# Tellurium Q®

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



## Introducing our new Black II Speaker Cable

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

John Myles, HiFi World

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

Jeff Dorgay, Tone Audio

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

Mono & Stereo



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[telluriumq.com](http://telluriumq.com)

+44 (0) 1458 251 997

== TQ ==



15kgs apiece – not heavy. There are three finishes: light oak, walnut or black oak, in artificial veneers. They're smart and well made, but budget all the same.

## SOUND QUALITY

We ran the speakers in for 50 hours, measured them and listened, using our reference McIntosh MC152 power amplifier, as well as a Creek Evolution 50A to represent a more typical but neutral and punchy amplifier. Sources were an Oppo BDP-105D Universal player to spin CD, as well as accept hi-res digital from an Astell&Kern AK120 portable digital player connected through a QED Reference Quartz glass optical SPDIF cable.

Measurement showed a fundamentally accurate and well engineered loudspeaker (see Measured Performance) with some advanced properties, such as broad bass damping and a very smooth, extended bandwidth tweeter.

What you get from this Mercury is a sparkling bright and clear sound with pin-point detailing from extended treble. As I turned up volume to shattering, the Tannoys held together. What I was looking for here was the point at which muddle would appear, since at normal listening levels they are starkly clear, where some muddle or confusion is usual (compared to our Martin Logan ESL-X hybrid electrostatics). They held together even at very loud, remaining tight and composed.

From the outset I could hear a smidgen of pushiness in the midhand that projected detail, drawing a hard edge around images but this made for dramatic stereo. It wasn't unpleasant, providing the music being played was reasonably clean, such as that from our Dali demo CDs or the better hi-res transcriptions held on the AK120. Spinning Lady GaGa's Bad Romance on CD, however, for its powerful low end content to see how these Tannoys would cope, also showed me that the raised mid-band can make tracks like this sound a bit edgy; there was "spitch". With an older digital recording (1988) of The National Symphony Orchestra (Washington, USA) the choir in Mussorgsky's Boris Godunov was well lit and had strong presence, but also sounded a bit coarse and edgy. This is distortion within the early digital recording but the 7.4s highlighted the problem, making it overly obvious – something a bit of

crossover re-tuning would cure.

High treble was also strong and again obvious, but the tweeter is smooth and glassy clear, making the Mercurys sound clean and accurate up top. Guitar strings shimmered and had bite.

Bass? In essence it is dry and restrained, but there in good balance all the same. I could hear the affection for some notes over others but at high volume there was no loss of grip and the broad damping applied by the ports let bass tunes play cleanly, without waffle or boom.

The bungs made little difference and could have been better, by being longer and more dense. The Mercurys are balanced to be used close to a rear wall.

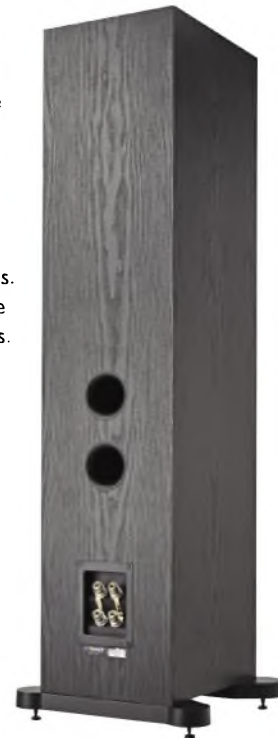
There was some boxiness from side-wall resonance, especially when I wound up volume through our big McIntosh power amplifier, but that is to be expected from a lightweight budget cabinet.

Overall, I thought the Mercury 7.4s were excellent for the price. They are grippingly clear, very fast and have even bass that is kept under good acoustic control. Dynamically, they were lively and engaging.

Being super-sensitive, the 7.4s go loud very quickly from little power; a Tannoy trait. That makes them an easy match for all amplifiers, even vintage valve amps. for those that like to use old classics.

## CONCLUSION

You could not easily find better at this price unless you want a speaker that is warmer and more laid back. The Mercury 7.4s are fast and forthright – and fairly accurate our measurements show – but can be unkind to early digital because of their projective midrange. In view of their low price, the Mercury 7.4s are fine budget loudspeakers, but as always listen first if you can.



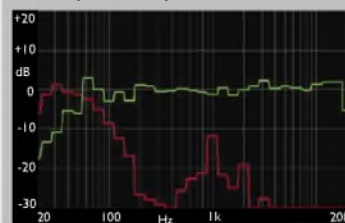
## MEASURED PERFORMANCE

Our pink-noise, third-octave analysis of frequency response shows the Tannoy Mercury 7.4 has a reasonably even balance right across the audio band. There is a small lift in output at crossover, around 3kHz, enough to give emphasis to upper midrange detail. The tweeter has a smooth output but it extends strongly to 18kHz and is +2dB above the midband, so treble will be obvious.

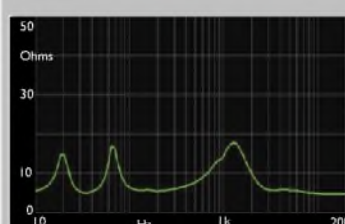
### FREQUENCY RESPONSE

Green - driver output

Red - port output



### IMPEDANCE



Together, these characteristics mean the Mercury 7.4 veers toward brightness. Our response is a best result, achieved slightly off-axis, when the speaker is pointed straight down the room, not directly at listeners. Treble output was slightly more pronounced on-axis.

Low frequency output starts to roll away below 200Hz but then returns to peak at 60Hz, before falling quickly. The ports are tuned a bit low (35Hz) against this but still exhibit a broad damping effect, our impedance trace shows.

In all, the 7.4s are reasonably even in bass output (with foam bungs). The ports extend output to 20Hz so deep lows are possible, but not with any power since port output was low. With bungs removed bass rises by a small 1dB or so; they make little difference.

Sensitivity was very high for a small floorstander, measuring 90dB from one nominal Watt (2.8V) of input. The loudspeaker will go loud at low volume control settings and needs no more than 40 Watts to reach very high volume.

The Mercury 7.4 measured well. It will come across as bright but very detailed. Bass will be in good balance but some narrow emphasis may be apparent.

NK

## TANNOY MERCURY 7.4 £399.00



**EXCELLENT** - extremely capable.

**VALUE** - keenly priced.

### VERDICT

A well engineered budget floor stander that delivers a fast, clear but forward sound, with bass in good balance.

### FOR

- low price
- fast and clean
- detailed

### AGAINST

- obvious treble
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# Master minded

**NAD's Master Series M50.2 BluOS digital source and M32 digital amplifier are technologically advanced, complex products. Martin Pipe explains...**

**N**AD's Master Series products are the embodiment of avant-garde technology. The company has come a long way since the iconic 3020 amplifier that made its fortunes back in the early '80s. Their latest Masters Series components – the M50.2 digital source and M32 integrated amplifier reviewed here, clearly show the way things are going.

Both 'red-carpet' products make heavy use of advanced digital


technology, and feature touch-screen TFT LCD control panels. The M50.2 is based around Bluesound's BluOS (essentially an audio operating system, based around Linux) to transfer, stream, rip, organise, store and play your music collection. It almost goes without saying that a network connection (Ethernet or Wi-fi) is essential. At the heart of the M32, meanwhile, is 'direct-digital', a clever system that converts PCM digital data into PWM (pulse width-modulated) trains that feed

the Class-D output stage directly. NAD describe the M32 as a "high-resolution DAC that directly drives the loudspeaker".

Asked for more details about Direct Digital, NAD's technology director told me: "It runs at approximately twice the speed of most Class-D amplifiers, with an 844kHz sampling rate. This adds tremendous accuracy. Likewise the master-clock is, at 108MHz, much faster than the 6 to 8 MHz clocks found in most DACs. It's a closed-loop



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**Dominating internally is a switch-mode power supply and the heatsinked output devices of the M32's PWM amplification. The 'lighter-current' boards contain the DSP chips that drive the latter, together with the converter needed to accept signals from analogue sources. The MDC compartments can be seen to the top-right of the picture.**

design, meaning that we compare the analogue output to the digital input and correct them to perfectly-match each other. This reduces distortion to a typical 0.0002% (you'll need a state-of-the-art measurement system to measure it) and signal-to-noise ratio of -94dB when referenced to only 1W."

The M50.2 digital source doesn't come with a remote. Instead, the BluOS app – available for Android and iOS devices – connects to the machine via your home network. The app is in fact essential, as many operations cannot be carried out from the touchscreen. But it's very, very clever. For a start, as so much of the system's functionality is carried out in software it can be 'future-proofed' to accommodate new standards. Doing stuff in software rather than hardware wherever possible is a very sensible aspect of the M50.2's design, as it helps to keep obscurity at bay.

And its value struck home during the review process. Although the M50.2 is compatible with a multitude of audio formats and sources – streaming, Bluetooth, USB, CD, 24/192 PCM, FLAC, WMA, MP3, ALAC, Ogg Vorbis, AAC and MQA audio – DSD is off the list. Yet BluOS devices from NAD's rivals support it. When pressed, the NAD guy told me that it was on the "software

roadmap to add DoP (DSD-over-PCM)" so that DSD files can be processed. NAD "hopes to have this implemented later this year."

The BluOS app presents you with



**To integrate the M50.2 into an audio system a digital amplifier like the M32 or a DAC is needed. The rear has optical, coaxial and AES-EBU digital outputs, as well as asynchronous USB, but no analogue outputs.**

content categories – among them a range of online streaming services (TuneIn Internet radio – complete with search, TIDAL, Spotify, Deezer...), any USB media you've connected (there's a front-panel port, and two on the rear), CDs (a 'slot' drive is hidden in the fascia) and music stored on its internal hard-drives (2TB of storage, provided by a pair of drives configured for 'mirroring' – so that if one fails, you're less likely to lose your music). The resulting 'library' supports cover-art (displayed on both front-panel and app) and can be browsed by genre, album, artist or song; playlists and favourites are

supported too.

Unfortunately, the M50.2 won't 'pull' music off any DLNA-compliant servers (such as NAS boxes) you might have. You can, however, access the M50.2's storage directly from a computer across your network. Into here can be copied tracks (CD-quality or hi-res) from your PC or NAS; it's also possible to back up tracks stored on the M50.2 to an external repository. On which subject the CD drive will also act as a 'ripper', the disc being identified via an online database so that tracks/albums are named and cover-art downloaded. Tracks stored on the hard drives are left in 'untouched' PCM form, or – depending on configuration – compressed into FLAC or MP3 files.

But that's not all. Courtesy of the app, you get the ability to select external sources – coaxial and optical digital inputs, apt-X Bluetooth and an asynchronous USB port (for computer-audio use); the M50.2 can be used as a DAC with these.

Also provided is an analogue line input (which digitises the incoming audio at 24/96, using a TI PCM1803A chip). Given all the hardware present, it's a pity you can't record from these external sources – the benefits of archiving LPs and analogue tape

for convenient BluOS playback are obvious.

NAD's response to this observation was interesting: "We may be able to add recording from analogue in the future, but to be useful it needs to discover the music from the analogue signal (no metadata present) and find the correct metadata from 'the cloud'. Doable, but the devil is in the details. It also needs to be reasonably fast and accurate to be useful." I can see no reason why you couldn't plug in a keyboard and add these details manually. After all, Yamaha's MCX-1000 provided this fifteen years ago!

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# audiolab





**Most of the M50.2's sophisticated functionality lives on one board, with a UK-designed ARM chip at its core. You can see the slot-loading CD-ROM drive at the bottom of the picture. The two aerials cater for Wi-Fi and Bluetooth.**

In output terms, you get optical/coaxial/AES-EBU for recorders and external DACs. Unusually, digital audio is also available on a HDMI port, connectivity that's normally associated with AV equipment. This is to aid integration of the M50.2 into systems built around AV receivers.

What the M50.2 doesn't give you is any form of analogue output. It's assumed you'll be using the unit with a DAC, the M32, or another amp with digital input. There's no proprietary 'NAD-link' between the M50.2 and the M32; we used a short AES/EBU balanced digital cable supplied.

The M32, unlike the M50.2, does come with a remote. But like the M50.2, it features analogue inputs (two line, plus an MM phono stage). These inputs are converted by a TI PCM1804 ADC into the PCM stream required by the 'direct-digital' amplifier section.

This brings us to another key feature of the M32. This is modular design construction (MDC), essentially a hardware upgrade path that allows new features to be incorporated. On the rear panel are a series of four panel-covered 'expansion slots' into which proprietary modules can be plugged. One, which provides five digital inputs (two coaxial, two optical, one AES/EBU) is already fitted. The M32's only non-MDC digital input

is asynchronous USB (a tried-and-tested XMOSS interface).

Of the optional units, one adds HDMI inputs with 4k video 'passthrough'. Another provides high-quality analogue inputs (line, MC/MM phono stage and balanced).

Another is the module that adds BluOS; it features network, USB and Bluetooth connectivity. Both the M32 module and the M50.2 appeared in the BluOS app – the Bluesound system is 'scalable', and can be



**One of the M32's most impressive features is MDC (modular design construction), which can be loosely-compared with the expansion-slots of desktop computers.**

expanded into a comprehensive multi-room system. Indeed, the M32's player (and for that matter any other BluOS players you may have) can access music stored on the M50.2's hard drives.

As befits amplification that can deliver 150 watts to each channel, the speaker terminals are chunky binding posts with provision for banana plugs. They are augmented by a line output for

subwoofer or external amplification. Comprehensive set-up menus allow it to be configured – the output can be 'straight', or equalised to 'dovetail' with your sub's capabilities.

All of this is implemented in DSP to minimise distortion (especially that related to phase), as are (defeatable) bass/treble tone controls and stereo balance. If you're using one of the analogue inputs, you can configure its analogue-to-digital conversion settings with a 'source setup' menu. Curiously the default is 48kHz (the maximum is 192kHz) and, for some reason best known to NAD, the phono stage is tied in with a fixed 48kHz setting.

## SOUND QUALITY

The M50.2/M32 was used as a 'system', driving a pair of Quadral Aurum Wotan VIII speakers. For comparison I also tried the M50.2 digital source with a Chord Hugo TT DAC and Arcam A49 integrated amplifier. The BluOS user interface does take some getting used to, but once you've figured it out finding and playing music is a straightforward-enough activity. Despite its sophistication – it can be accurately-described as an 'audio computer' – the M50.2 put in a remarkably-reliable performance. No crashes, no glitches, just music. Not even Internet radio (specifically, the BBC Radio 3 stream) flummoxed the 50.2.

Ripping CDs to the hard drive and lossily-compressing them into FLAC files worked exceptionally-well. After ripping Boards of Canada's

Tomorrow's Harvest, I compared the FLAC version with direct CD playback – there was no discernible difference! This beautifully-atmospheric electronic album, with its layered soundscapes and sustained drones, would easily expose the ripping errors that are usually audible as unpleasant 'glitches'. Furthermore the challenges of reproducing the music were easily met, those lush analogue textures being accurately-



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conveyed. Switching to more rhythmic electronic music (Reich's for 18 Musicians and Kraftwerk's Tour de France Soundtracks – specifically Etape 2) showed that the system has tremendous speed and rhythmic verve – and the result is immediately engaging.

Through music of this nature low-end definition was heard to fare well in terms of both quantity and quality, the M32 never losing grip of the Wotan's woofers. However a direct comparison with the Hugo TT/A49 (using the same speakers) ekes out a little more 'bass-depth, guts' and warmth that some might prefer: the M32's presentation is, in contrast, a tad more neutral. But when it comes to a clean percussive edge, the NAD's high-tech amplification wins out – if ever so slightly. Radiohead's Burn The



**This HTRM2 remote can be programmed to operate eight devices in total. Unfortunately, the M50.2 isn't one of them. To drive that, you'll need an Android or iOS smart-device loaded with the BluOS app.**

Witch's (from A Moon Shaped Pool) sounds cluttered on lesser equipment, but here the complex bassline, multi-layered production, vocals and string-driven rhythms all come across in the correct proportion.

Switching to 24-bit audio yielded the expected increase in definition. With the Noseda/LSO performance of Britten's War Requiem (24/48), the piece's brooding strings were found to be richly portrayed, and choirs bestowed with an appropriate sense of scale and authority. Reinforcing

the observations made with CD-quality material, I found that the brass instruments were delivered with bite, attack and precision. A careful 24/96 rip of Jethro Tull's classic 1972 concept LP (original Chrysalis pressing) Thick As A Brick was deftly handled, Anderson's flute-playing and the Hammond organ being of particular note. It certainly managed to deliver much of the LP's impact. Talking of which, the M32's analogue line inputs were a bit of a let-down – the M50.2's were cleaner and more open – until I changed the default 48kHz setting to something more in keeping with the amp's potential.

**CONCLUSION**

The M50.2/M32 show that cutting-edge design and complex electronics support the subtle nuances of music reproduction here. Convenience, functionality and future-proofing are also plus factors. The system is complex though.

**MEASURED PERFORMANCE**

The NAD 32 amplifier delivered 180 Watts into 8 Ohms. Into 4 Ohms current limiting pulled this back to a steady 144 Watts, but measurement with short term bursts of 100mS were delivered at 28V, equivalent to 200 Watts. Since 100 Watts is more than enough to deliver massive volume from modern loudspeakers the M32 is capable of handling just about any situation.

The analogue line inputs run through an ADC that imposes an upper bandwidth limit of 23kHz – no better than CD – and distortion measured 0.24% at -60dB below a 2V input – 16bit CD resolution. Maximum input was 2V. The ADC was noisy too, measuring -73dB; it was mediocre.

Phono stage RIAA equalisation was perfectly accurate, a roll off in gain below 20Hz providing some LP warp attenuation of -6dB at 5Hz. Although input sensitivity was seemingly low at 9mV for full output, the amplifier has high voltage gain overall, making this more than enough. Moving coil cartridges are not an option.

All digital inputs (including optical) accepted 192kHz sample rate and frequency response reached to 96kHz, with an unusual +3dB peak at 50kHz due to the NAD's processing scheme.

Distortion (24bit, -60dB) was lower than all DACs we have measured to date at 0.009% (0.02% is typical for a top quality DAC) and dynamic range was commensurately impressive at 124dB.

This gives a performance up with the best stand alone DACs (ESS, Chord Electronics) available – impressive.

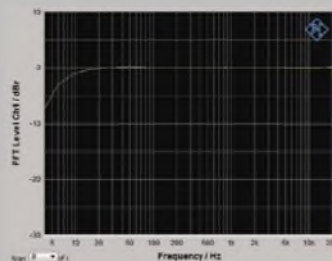
Via its digital inputs the M32 offers excellent results, up with the best. Its analogue line and phono inputs run through an ADC that is CD quality only.

The 50.2 server's ADC delivered much better results than that in the M32. It accepts a maximum analogue input of 2.5V, albeit with 0.4% distortion. At 2V in this subsided to 0.2% and at 1V input

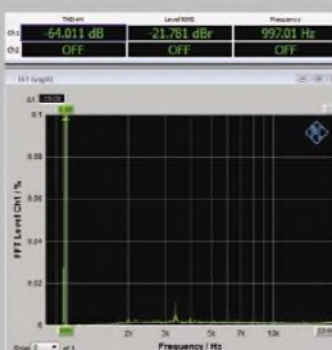
distortion measured a very low 0.009%. At -60dB below 2.5V, distortion measured 0.38%, not wonderful but good as ADCs go. Dynamic range (which is IEC A weighted and includes noise) was high at 99dB, a relatively good result for an ADC.

Through its digital inputs the M32 delivers excellent results, up with the best. Its analogue line input and phono stage, was mediocre though. The 50.2 offers better results from analogue and is necessary if a high quality external phono stage is to be used. **NK**

**FREQUENCY RESPONSE LP**



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**Frequency response** 4Hz- 23kHz  
**Distortion (1kHz, -60dB)** 0.24%  
**Separation** 88dB  
**Sensitivity** 600mV  
**Noise** -73dB  
**Overload** 2V

**PHONO**  
**Frequency response** 4Hz- 23kHz  
**Distortion (1kHz)** 0.1%  
**Separation** 88dB  
**Sensitivity** 9mV  
**Noise** -73dB

**DIGITAL**  
**Frequency response** 4Hz- 96kHz  
**Distortion (24bit, -60dB)** 0.009%  
**Separation** 86dB  
**Dynamic range** 124dB  
**Noise (IEC A wtd)** -122dB

**NAD 50.2 DIGITAL SOURCE (£3800); M32 INTEGRATED AMPLIFIER (£3500)**



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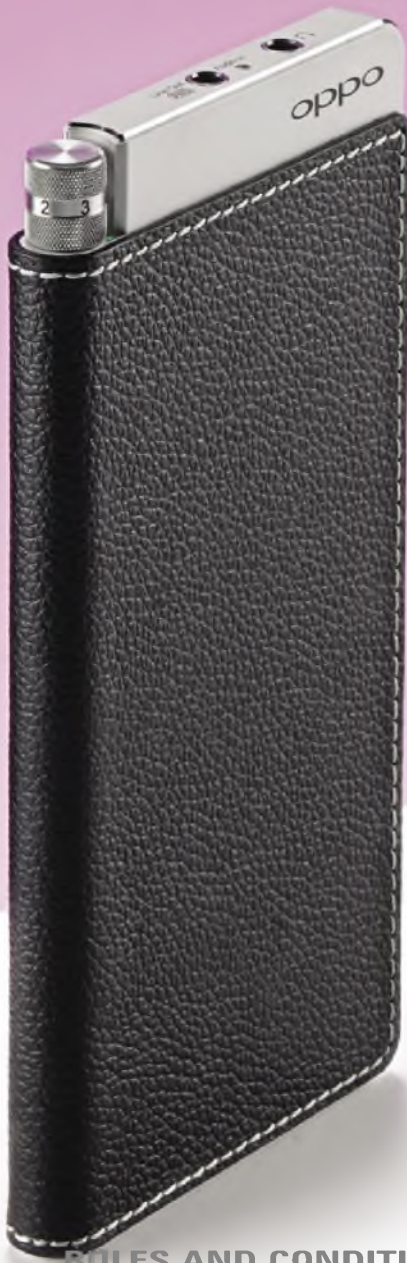


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It weighed a solid if not overly heavy 178gms on our scales and measures 137mm high, 68mm wide and just 12mm deep – almost as large as an iPhone 6S. So it will fit a trouser pocket but not a shirt top pocket. Build quality and finish were superb.

Needless to say, there are many little extras that embellish the cake. In addition to the iPhone USB A socket input (marked A) there is a micro-USB socket for connection to a computer (B) and an analogue input (C), a slide switch selecting between them. There is no S/PDIF digital input, however – a disappointment – and no balanced headphone output which is not a disappointment, except for

deep headphone geeks.

Oppo fit a nice rotary volume control complete with on/off switch – just like a radiogram! There's a High/Low volume switch, Bass boost switch and battery check/power bank mode select button. A Line output socket (no volume control) can feed a hi-fi amplifier or active loudspeakers direct.

A set of short connecting leads are supplied: Apple Lightning to USB A for iPhones etc, micro-USB to micro-USB for Android phones (e.g. Samsung) and 3.5mm stereo jack – so the headphone output of a player can be connected. In this case the HA-2SE acts as an amplifier with volume control alone.

Oppo supply a fast charger that will charge the internal 3000mAh battery in 90 minutes (1.5 hours) or the unit charges from a computer's USB outlet, from the 5V d.c. line that is intrinsic to USB. Play time is 7 hours via the digital inputs or 13 hours via the analogue input.

The ESS chip accepts PCM up to 384kHz sample rate and also quad rate DSD".

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### QUESTIONS

**[1] Music is piped through -**

- [a] a tap
- [b] a horn
- [c] ESS DAC
- [d] cardboard tube

**[2] What embellishes the cake -**

- [a] sparklers
- [b] winking lights
- [c] toy robin
- [d] micro-USB socket

**[3] The ESS chip accepts -**

- [a] 384kHz sample rate
- [b] credit cards
- [c] written instructions
- [d] morse code

**[4] The battery is -**

- [a] 2 Ah
- [b] sodium peroxide
- [c] lead-acid
- [d] 3000mAh

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



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**A pair of QUADRAL ARGENTUM 520 loudspeakers are on their way to Clive Kerr, Letter of the Month winner in our July 2017 issue.**

## Letter of the Month

### OPPO HA2SE & DSD

In the July 2017 edition, page 15, you say "forget playing DSD from an iPhone". You can play native DSD from an iPhone via an external DAC. Download Onkyo HF Player from the App Store (free download but there is an in-app purchase to unlock HD features)

The internal DAC of an iPhone is limited to 48kHz / 24 bit PCM. However, if you have a suitable DAC attached and use Onkyo HF Player, you can play higher resolution PCM and DSD files. The app also allows you to play non Apple file formats such as FLAC. While the player can access non DRM protected music already on the iPhone's standard music app, music can be dragged and dropped into the Onkyo HF Player app via iTunes.

I have been happily using Onkyo HF Player with my iPhone and iPad Air via an Oppo HA2 for the past year with a mixture of PCM files up to 96kHz / 24 bit and DSD files (ripped from SACD using an Oppo BDPI03D player), so I am sure that the HA2SE will be able to function in the same manner. I believe some DACs require the use of the Apple Camera Connection Kit, but this is not needed with the Oppo HA2/HA2SE.

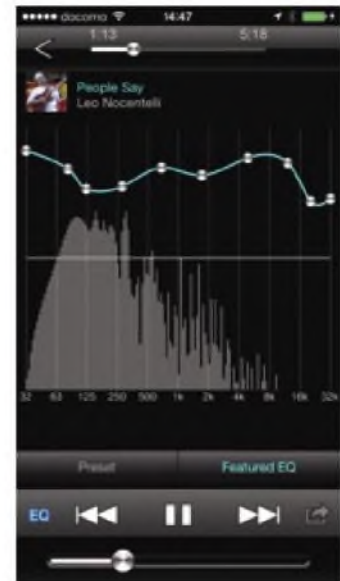
**James Atkinson.**

Further to my last email, the waters have been rather muddied courtesy of recent iOS updates. There have been numerous reports of the audio cutting out when an external DAC is attached to an iDevice running iOS 10.3.1 or later. This appears to happen independently of the app being used for music playback and has been reported by people using Oppo, Chord, Dragonfly and Peachtree DACs. I have certainly found that my Oppo HA2 now cuts out repeatedly whether I use my iPhone 7 or iPad Air since updating iOS, which didn't happen before.

This is frustrating given that the Oppo DACs are Apple MFi certified so may well have been purchased by people assuming they would be fully compatible with iOS devices.

My Oppo DAC continues to work without issue, connected to either my Windows 10 PC running Foobar or my MacBook Pro (running Dacibel, though the developer of Dacibel appears to have abandoned development on it, so I wouldn't recommend it any more).

It would appear to be an issue relating to how the iOS USB drivers work, but until it is resolved (there are a couple of reports from people



**Onkyo HF player. "An in-app HF Player Pack purchase (US\$9.99) enables FLAC, DSD, WAV, and AIFF playback of up to 192 kHz with 24-bit sampling. It also enables upsampling from 44.1 kHz to a possible 192 kHz. Paired with a set of quality headphones, HF Player lets audiophiles enjoy premier high-resolution sound" from their phone, via an external DAC with DSD capability.**



using the developer release of iOS 11 (suggesting that it has been fixed in iOS 11) I wouldn't recommend people rely on an iOS device via an external DAC for listening. Anyone thinking about buying a DAC for this purpose would be well advised to wait and see whether this issue is resolved before parting with their cash.

The whole situation is rather frustrating; hardware and software developers do have a tendency to move the goalposts when you least expect it.

**James Atkinson.**



**The Oppo HA-2 SE has a top quality ESS 9028Pro DAC that plays DSD, as well as normal PCM.**

Hi James. Thanks for your explanation of how to play DSD out of an iPhone. Most hi-res DAC chips these days have the ability to handle DSD because it requires fairly simple low-pass circuitry, but the iPhone hasn't yet moved into these waters yet – perhaps understandably; it cannot play DSD natively. I somehow doubt it ever will do either.

Your trials with iOS 10.3.1 via an Oppo HA-2 portable external DAC and headphone amplifier are fascinating. Thanks for sharing them with us. I just hope Apple provide a fix in iOS 11. **NK**

### **NAD M32 REVIEW**

If I recall correctly Hi-Fi World was intending to review NAD M32 already last summer, but then its launch to the market was delayed. However, now it has been available already some time, so can you please advise whether you will issue its review within next few



**NAD M32 amplifier. It converts digital inputs to Class D (PWM) in software to give exceptional results – clever stuff.**

months

To my understanding this NAD is currently one of the very few higher end all-in-one amplifiers with integrated Tidal, Qobuz, Spotify etc. streaming.

Growing number of people are nowadays looking for simple set-ups and mainly or only listening through Cloud services. In addition to all-in-one design this amp's clear advantage is availability of the most main Cloud services (with the exception of Apple) as the longer term continuity of some of them (Tidal?) is uncertain.

Bluesound being part of the group, combined with the amp's modular design (MDC) gives reasonable confidence that the Cloud streaming alternatives would be up to date, also for one time in the future. And MQA support may turn out to be additional real benefit.

However, the sound quality is always the main issue and therefore I would appreciate a proper review of this amplifier.

Yours Sincerely,  
**Pentti Aalto**

Hi Pentti. You are in luck: the NAD M32 amplifier and 50.2 server are reviewed in this issue. Both products are unusual in their topology and quite complex but measurement showed outstanding results in many areas. Digital expert Martin Pipe has more to say however. **NK**

### **FOAM IN THE HOME**

Reading the email from Mark Douglas in the June issue regarding Foam in the home reminded me that, just before Christmas, we had to have our living room rug cleaned. What might this have to do with Hi-Fi? Well, the cleaning necessitated moving a chunky coffee table that sits between the sofa (me!) and the speakers, and I took advantage of this to listen to a few tracks.

The sound improved drastically, with an improvement in fine detail and better spatial presentation. A level of gloom descended when the coffee table

was duly returned to its old position.

Hoping that the improvement might be caused by the removal of reflections between the coffee table and the loudspeakers I searched the internet for some suitable acoustic foam (eFoam.co.uk).

Delivered, expertly cut to size for about £10, I installed it and the improvement was – I'm pleased to say – dramatic. The picture shows the foam placed against the coffee table and you can just make out my Naim Uniti, resiliently mounted in the Singer Sewing Machine table, with loudspeaker wire routed under the floor to my PMC twenty 21s.

There are probably many coffee tables providing similar sound disruption in other households and this £10 upgrade could well be worth a try.

Regards,  
**Denis Holliday**

Hi Dennis. That's interesting – and thanks for the picture. You'll see foam panels being used to suppress reflections at hi-fi shows, especially in small rooms. Whilst a simple slab of foam will do, companies such as StudioSpares (Studio/Acoustics) offer a wide range of sculpted foam panels to absorb sound, plus some hard and heavily-contoured panels to disperse it. If you use a lot of absorption the room will eventually go dead on you; if you use dispersion it will stay lively but sonic anomalies can be lessened or banished. You have soft settees to damp room boom, and a carpet between you and the speakers – but that hard coffee table top looks suspect! Hard reflecting surfaces are always bad news.

Generally, cover floors with a thick carpet; Ikea have one that absorbs sound. Diffuser panels are good on ceilings, to break up the ceiling reflection. Put them only in a small area where sound reflects back to listeners; there's no need to cover the whole ceiling. Bookcases are often quoted as useful for side wall



**A foam panel sits at front of Denis Holliday's coffee table. "The improvement was – I'm pleased to say – dramatic" he says.**

diffusion but I use small patterned carpets to add a dash of colour, and/or diffusor panels. Do it right and you get a nice room to live in, plus a great sound. **NK**

**LISTENING AT LOW LEVELS**

In recently reading and enjoying the May issue of *Hi-Fi World*, I came across your reply to Neville Octon regarding systems sounding brighter at low listening levels. I am sure you are aware of the Fletcher-Munson equal loudness curves. Above 1 kHz, most of the curves are pretty similar in shape, while below 200 Hz the curves corresponding to lower sound levels rise more rapidly with reducing frequencies than those corresponding to higher sound levels.

For example, the curve for 50 phons rises from about 50 dB at 200

Hz to about 75 dB at 40 Hz (an increase of about 25 dB), while the curve for 90 phons rises from about 88 dB at 200 Hz to about 105 dB at 40 Hz (an increase of only about 17 dB). There is a difference of around 8 dB between the shape of these two curves which is enough to make quite a difference in subjective terms. The curve for 100 phons rises from about 100 dB at 200 Hz to about 113 dB at 40 Hz (an increase of only about 13 dB). This is 12 dB less than the difference for the 50 phons curve, which would be even more readily audible. While the portions of all of these curves above 1 kHz are not identical, there is much less difference between them.

Keep up the good work.  
Regards,  
**Owen Clingan**

Hi Owen. Yes, there are two sets of commonly quoted equal-loudness curves, Fletcher-Munson and Robinson-Dadson. Both go way back. What they say is the ear loses sensitivity to both bass and treble at low listening levels – more so to bass than treble. That is why a system sounds bass-light at low volume, and why the loudness control (button) is to be found on some amplifiers, especially older designs.

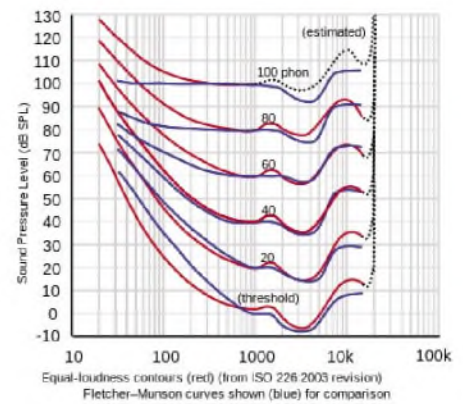
Unfortunately, because applying loudness correction properly is difficult within an amplifier, and because loudness cannot be correlated to real life experience, because loudspeaker sensitivity and much else comes into play, loudness controls work poorly in practice. They have fallen out of favour as a result. When we finally get loudspeakers with acoustic correction by DSP on-board, plus

a measuring mic to sense external conditions, this sort of thing could better be compensated for. **NK**

**MAXIMISE FIDELITY**

Forget fidelity; maximise musicality. After forty years of accepting the badge of, audiophile with a level of pride and, to my shame, superiority I have realised that we audiophiles need to change; the reason being that it in the modern world the current focus of audiophiles misses the point.

Please indulge me. According to most dictionaries, an audiophile is someone who is enthusiastic about high fidelity sound reproduction. Fidelity is qualitatively assessed by describing specific characteristics of the reproduced sound. We all know what they are but they include tonality, sound-stage and

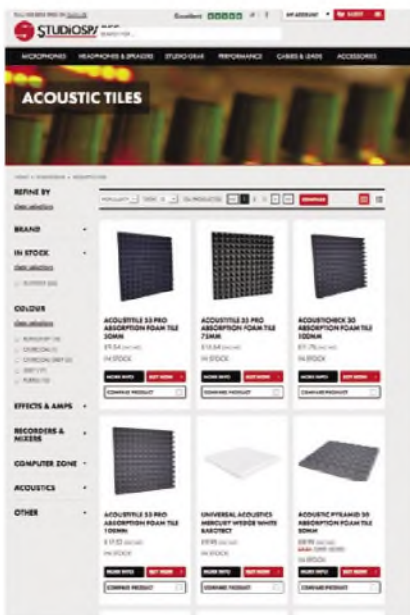


**The ear loses sensitivity to bass (mostly) at low levels, a phenomenon charted way back in the 1930s through the Fletcher-Munson curves.**

dynamics to name but three.

However what we hear is not a bunch of differing characteristics but a wall of sound whose whole is much greater than the sum of its parts. This sound ends in an emotional response that in some way measures the musicality. It is this musicality that truly matters. I believe that if we focus too much on the fidelity we can miss the point of sound reproduction, which is to give us a musical experience. If the sound I hear doesn't lead to foot tapping, goose bumps, tears, joy, melancholia or a combination of such responses then it isn't musical.

This musicality has no system and few cost boundaries. Turning the wick up on my Roberts Stream £93i radio can cause me to dance around the kitchen as much as my £50,000 main system. There are obviously advantages to my main system because it generates a broader and greater emotional response,



**Studiospares offer a wide range of acoustic absorption and dispersion panels for the home or studio.**



but they are both sort of comparable musically, but pretty much incomparable in fidelity.

Now in the good old days, I'm talking about up to a few years ago, there was a very strong relationship between a system's fidelity and its musicality, but a few recent experiences have lead me to believe that that relationship is now broken and we need to redefine what it is to be an audiophile.

This thought crossed my mind because I had been looking at upgrading my DAP from my current Fiio X5 II. I started with the AK70, which was getting rave reviews from the audiophile press. But my time with the AK70 left me with the feeling that Astell&Kern considered that greater musicality came from pushing the technical envelope and



**"I had been looking at upgrading my DAP from my current Fiio X5 II" says Dean Marshall.**

creating more accurate tonality, a more expansive soundstage and huge dynamic swings and so on. But logic suggested that if the A&K approach held true in the limit then no-one would ever buy a tube amplifier or turntable!

The truth was that musically the AK70 left me cold. But it wasn't that easy for me because my audiophile mentality of wanting greater fidelity meant that I did appreciate the AK70's individual sound field characteristics, but when I listened to the whole as a musical experience it seemed to fall apart. So even though musically my foot never tapped and a goose bump was never seen I understood where the rave, audiophile reviews were coming from.

To be honest this was rather weird and disconcerting! I then tried the new

Fiio X5 III and I have to say it was less hi-fi but more musical than the AK70.

To me this just proved the point that its all about a subtle balance of characteristics and compromise that optimises the whole musical experience. Yet again the audiophile within me kicked in and I tried to persuade myself that the mark 3 must be better than the old X5 mark 2. My preconceived bias meant that I spent four weeks trying every tweak I could to make the X5 III fit my perception of what musicality is to me, when the truth was I just preferred the musicality of the old player, which was less refined and detailed, but far more intimate and integrated.

In fact, the old X5's fidelity was so bad that playing it through my Chord CPM 2600 into my Tannoy Dimension TD8 speakers sounded almost as wonderfully musical as my £4000 turntable set up! The performance of this little DAP surprised me even more when I realised that it sounded more like real perceived sound than my Chord Blu and second generation DAC64. So in terms of pure musical enjoyment my £250 X5 II achieved around 70% of the musicality of an £8000 CD player!

This proved to me that things had moved on in the last few years and that pure fidelity in the digital domain was no longer an indication of musicality. I realised that I needed to stop thinking like an audiophile and just let my emotions take control. However I wondered if I could do better.

So we come to the Onkyo DP-X1, which to my mind gets it just about right with a fine set of fidelity characteristics and compromises that result in a wonderful musical experience for the money; for me its a keeper.

I now believe we have to move away from describing fidelity and find a new lexicon that describes musicality. We have to open our minds to the whole and not focus on the parts, because as audiophiles and the human need to conform to the consensus view, we can be swayed by the latter in preference to the former. It seems to me that we are now at a point where digital technology is able to produce sound with amazing fidelity that is beyond the abilities of most real world analogue or older digital technology.

However this does not by any means make the new stuff more musical, in fact I would argue the opposite. It seems to me that for some of the new players in the hi-fi business it is more about pushing the technical envelope, which is probably easier than adding the art of listening and technically pulling back to create a

compromised system that is far more musical.

Finally, I enjoy reading reviews like the rest of you and I greatly admire the knowledge, experience and analytic ears of the reviewers. However I think this is now less than half of the story. Personally I would like to see a little more emotion expressed by said reviewers and more attention to describing musicality through their emotional responses to what they are experiencing. Maybe if this were the case then A&K may not be such a golden child. It will be interesting to see how this plays out in the future, but for new digital equipment I am giving a little less credence to the traditional review format. Keep up the good work, but maybe just change it a bit.

**Dean J Marshall.**

Hi Dean. You'll be listening to valve amplifiers next. They don't measure well or do anything else much right, except produce an intriguing red glow in a dark room – scant payback for the expense, heat, weight and limited tube lifespan. It is sound quality alone that underpins demand for valve amplifiers, so I think we can safely say audiophiles worldwide have already made that leap from technological efficiency to pure sound quality, based upon emotional experience.

And to stir things up a little I think we can include general admiration for the sound of DSD digital in this; I've yet to hear anyone say it sounds worse than PCM, or they don't like it.

One trouble you have with many reviews, especially the ones you have been reading, is lack of experience of the reviewers – especially on-line reviews that, for portables say, like the AK70, will come from someone



**"The truth was that musically the AK70 left me cold" Dean Marshall tells us.**

who has plenty of experience with both them and headphones, but little experience outside of that niche.

This conflicts with your own experience of owning a lavish audio system. In effect, you know better, based upon broader experience. This is one reason Hi-Fi World reviews in-house, where we deliberately run both box and panel loudspeakers, transistor and valve amplifiers, discrete and chip-based amps, hi-res digital and hi-res LP. Portable players are subjectively assessed with headphones and through a hi-fi system.

High fidelity is a broad church comprising many individual faiths. Best to stand back and look at where

could only dream of.

*Yes, we are competing on quality, innovation and ease of use, and yes, it's now a global market these days, but to have a market dominated by one country could be regarded as unhealthy. I was hoping to fly a little Union Jack for the home-grown stuff.*

*Oh, and my turntable is Sony, my amp is Marantz, my CD player is Yamaha, my surround system is Panasonic and my TV is Samsung. Yes, maybe this makes me a hypocrite, but I'm a hypocrite on a limited budget who can't afford British but would still like a Garrard Zero 100SB - and have done so since I first discovered hi-fi back in the 70s, along with maybe with a Shure V15/III, Quad 33/303 amps*



**The Sony PS-HX500 turntable turns analogue to DSD digital. "I want to fit a better cartridge" says John Malcolm.**

you are in the broad picture. Also, go to dealers and shows to hear demos. to upgrade your experience. Unfortunately, at the end of the day you will have to accept that your neighbour may not hear or appreciate things the way you do – which is why I ended up walking out of rooms with prominent ribbon tweeters firing digital distortion at me at a recent L.A. Show.

**NK**

### LOOKING EAST

*I hope you didn't think I was having a go at Chinese products or the people in response to your column about Far East mass manufacture; that was not the intent of my letter. I simply was worried that a great British industry (one of the few genuinely home-grown ones we have left in these days of international companies) might get swamped by the rise of very good but seriously cheap kit produced on production lines with capacity that most British companies*

*and Monitor Audio MA3s or Yamaha NS1000s... Not cutting edge hi-fi, but this kit is representative (poster on wall) of what I still regard as desirable quality hi-fi!*

*Finally, is it possible to fit a better cartridge than the one that comes with my Sony PS-HX500? I use its built-in phono stage, so it would have to match electrically the (presumably) Audio Technica cartridge it already has. Budget only £100 I'm afraid.*

*OK, I'll admit it. I dropped the stylus on the outer edge of a single and it slipped off and hit the platter, so now I may have a damaged stylus and, as a result, I'm not playing any new vinyl just in case those delicate and expensive grooves get damaged. Also, I'd like to drop the 3g tracking weight (it's what the set-up manual told me to use) as this seems a bit heavy/milling machine/chisel-like for virgin vinyl.*

*Yours sincerely  
John Malcolm*

Hi John. If your Sony turntable has an Audio Technica cartridge tracking at 3gms it is likely the AT-3600 commonly fitted as an OEM unit. Common upgrades are an AT-91, AT-95 or AT-110E, all of which fall within your budget of £100. If you want to go back to the 1970s then consider the Shure M97Xe (£99) since this has a distinctly warm sound and it has a stylus guard with brush that guards against handling accidents.

I suggest you consider buying second-hand UK product at car boot sales or eBay, or even a dealer that accepts trade-ins. Go for a Rega turntable with RB300/301 arm, do not buy a Shure V15/III but a modern Ortofon, Audio Technica or Denon, or perhaps a Goldring 1012GX. A Creek amplifier and any good British loudspeaker of yore will then get you where you want to be, without costing a fortune. **NK**

### LP AND DSD

*The June 2017 edition of HFW was fascinating, especially the letter from Ron Koorm about the Audiolab M-DAC+ (I agree) and the Auralic Aries review: please test the Auralic Aries Mini one day. (PS what is a FemtoClock? The Mini does not have them.)*

*I have one urgent question for now: I have a Sony PS-HX 500 turntable with built in DSD ADC. I want to upgrade the cartridge soon to one suitable for direct DSD recording. No other equipment is involved except a USB connection to a PC and Sony HD recording software. My shortlist:*

*Goldring G1012GX or G1042 (I know the 1012 is a Hi-Fi World Standard) Audio Technica VM 540 ML or VM 740 ML (new but based on earlier models – please test these).*

*There is a lot more discussion on my 'DSD Recording' thread and the 'Ortofon 2m Silver/black With Sony PS-HX500' thread under 'Audio Hardware' at <http://forum.vinylmeplease.com/index.php>. I think the Ortofon cartridges are too tall and there is no height adjustment on the arm, but otherwise it is of good quality.*

*I really wish you would test this Sony turntable. I think, with tweaking, it could be a future budget classic (currently less than £300 at Richer Sounds). There are many tests online which make interesting reading, some by well known reviewers (Ed Selley). It uses the same AD chip as the £500 Korg DS DAC 10R (records in HD/DSD and also worth a review).*

*Best wishes,*

**Mike Tartaglia Kershaw**





**The new Audio Technica VM740ML MM cartridge with aluminium body, tapered alloy cantilever and MicroLine stylus shape. Possibly a good choice for the Sony PS-HX500 turntable, if you want to spend £350.**

We have been working our way through the glut of budget turntables coming to market and will get around to this one soon Mike. The Audio Technica cartridges you list are relatively new and we hope to be reviewing them soon too.

The Audio Technica VM740ML with its tapered alloy cantilever and aluminium body does indeed look good and I have heard it sounds superb, but we have yet to review it. Otherwise a Goldring 1012GX provides a punchy sound, graced by superbly even tonal balance and plentiful treble detail from the Fritz Geiger stylus. **NK**

#### **MALARKEY?**

Problems, problems – but what's the answer? My system revolves around a Bewitch EL34 amp (became the Pure Sound A30) or rebuilt QUAD 34/405 II combination, Rega P25 or Thorens TD124 II (rebuilt over a long two years by experts in Berlin) with Rega RB300 or SME 3009 2 Imp revived by Audio Origami and Denon 103 or Corus Black (both rebuilt by Expert Stylus).

Additionally, I have a TEAC UD 501 DAC and PD 501HR CD Player and finally KEF LS50 speakers.

Cables are mostly basic Kimber for mains, interconnects and loudspeaker. And don't get me started on the Grundig Auditorama loudspeakers. I have a motley selection of extra cartridges, plus a Troughline tuner...need I go on? Perhaps I should open a shop!

I have too many bits and pieces, not enough room and need to change. What do I keep and what do I sell on?

Now, unusually, I don't want the modern version of accuracy. When I listen to music, usually jazz with

perhaps the odd West Coast singer songwriter, Steely Dan and – whisper it gently – Caravan or the Enid, I want beauty. I have no need of piercing highs and gut wrenching bass. I want to sit back and relax, to tap my feet and even sing along once in a while, not have my ears pinned back whilst the neighbours howl and the dog hides under the sofa.

I'm minded to give up on all this upgrade malarkey and return to my first hi-fi love which is a NAD 3020 rebuilt a couple of years ago. I have around 800 LPs which begs the question of how good my turntable need be? I love the look of the Thorens TD124 but does the Rega P25 make more sense? But since when did hi-fi make sense anyway?

I love valves and idler drives, but it seems to me they need a little time, effort and expertise to get the best out of them. I have come to the conclusion that I will never have that expertise no matter how hard I try.

I have yet to get into the world of downloads, but as that must be the next step how about aiming to move on most of the above, counting the pennies to buy a Mytek Brooklyn with its MQA and rather good phono stage, getting a Tidal subscription and settling down to some serious music listening?

And that's the thing. I have almost stopped listening to music whilst stumbling around my box filled apartment. Can you help me get back to my musical roots? A simple question really.

Thanks

**Kevin Brock (Confused of Vienna)**

Hi Kevin. That is quite a collection of oldies but goldies. I suggest you get focus and move into the modern world, one that offers great results without the fiddling and tuning.

You obviously want to enjoy LP and simply need, I would suggest, a good modern turntable that gives great results right now, but can be smoothly upgraded – as and when you wish – by a modern pickup cartridge. The world has moved on; your components were fine in their day but have been surpassed.

Keep analogue LP separate from all else. I would suggest you consider a Rega Planar 3 with a cartridge of your choice. Go for a high end MM like the Ortofon 2M Black, or Audio Technica VM740ML perhaps, that I hear sounds superb, but we have yet to review it. Or step up to the new Technics SL-1210GR Direct Drive with its own arm, or preferably in tuned form with a Rega arm (Sound Hi-Fi can fit this – see our review in this issue).

What to say about valve amplifiers? You obviously like the sound but don't want the hassle. Icon Audio's Stereo 30SE uses modern and durable KT-150 power valves – and tube pair-matching is not needed, because it is single-ended. Our in-house Stereo30SE leads a hard life but it has proven easier to use and more consistently lovely in its sound with all loudspeakers than most else. At around £2000 it is a benchmark as modern valve amplifiers go.

Otherwise, if you want to move to solid-state with a powerful but easy sound consider a Creek Evolution 50A or a Rega Brio. All these amplifiers will drive your fine KEF LS50s with ease and prove a good sonic match.

Step into the world of network players with a Cambridge CXN. It has a wide ranging ability and a great sound. Alternatively, consider an Auralic Aries streaming bridge that



**A well honed design from a master of the business, Rega's Planar 3 belt drive turntable with superb Rega RB303 one-piece tapered tube tonearm is a platform able to accept the best cartridges. It will banish any further malarkey.**

works into an external DAC. I hope this helps to get your situation into perspective. **NK**

**REEL ISSUES**

My notes on open-reel tape decks in the last issue should have really mentioned the two machines most likely to appear in the local boot fair. The Akai GX4000 and its variants, and the Sony TC377. If you really want to try open-reel (reel-to-reel) then both of these machines are relatively cheap, usually having sat in a cupboard for 20 years and have very little wrong with them in terms of servicing.

A belt kit for the Sony is available



**The Akai GX4000 (above) was very popular in its day; it used hard glass crystal (GX) heads that suffered little wear. Another popular open-reel recorder was the Sony TC-377 (below).**

for less than £15. The tyres and pinch rollers are usually good. The Sony has sticky grease that needs cleaning off and re-lubricating and the capacitor for the motor may need replacement. The mains filter cap on the back of the voltage selector will be either missing or trying to fight its way out of its plastic shell so it needs to be swapped out.

The Akai has a few quirks in the record switching and the power supply circuit needs to be reworked as it is usually in need of a couple of capacitors. Both can have suspect bias oscillators – but it is rare!

Physical damage is often the problem with open-reel recorders, with bent bits and missing knobs or smashed meters etc., but there are either easy mechanical repairs or spare bits on eBay. The Sony even has good, hard wearing heads better than most non-Akai decks (Akais have hard ferrite heads).

Random noise on either machine

means you need to go through the playback circuit boards and replace the electrolytic caps and you may as well do the record circuits while you are at it. I did a quick new tape of Marian Hill on TDK Audua on my trusty Akai GX600D and under test the Sony played really well until the motor cap failed and it slowed to a halt!

I have just had an Akai GX52 cassette deck that had been either dropped or had something hit the cassette tray, resulting in a pile of bits and some damage to the pinch roller arm bearing. The cassette tray had lost its four plastic pins so replacements were made from brass rod to re-align in the rest of the mechanism. Without this, because the cassette tray is powered you cannot use the machine. The loading of the tape is all motor driven and jams can occur when the pinch roller pillar jams. Removal of the circlip on top, lifting the arm and applying a touch of WD40 lubricant once the pillar is straight will get things running again.

I don't know if this is a known fault with this particular model but I will record any others with the same fault just in case.

The Yamaha KX-M5 is a tiny tray loading cassette that is probably not considered true hi-fi as it looks more like an add on for a stacking system although it didn't sound bad at all to my tired ears and probably a better bet than the standard KX230 or 300 machine. Its an auto reverse mechanism with a roll over head but of far better quality head than was fitted to many standard cassettes of the time. These suffer from a loading belt failure which stalls the mechanism just before it gets to the important bit! Its an easy change of the belt and needs only the top cover to come off to fit a new one.

Many cassettes arrive with me looking as though they have never been used. I have just had two Yamaha KX580 decks with possibly less than 10 cassettes ever been through them. No wear, no tape oxide deposits just working machines. I think that many decks were poorly aligned as the 580's didn't exactly sound good with a standard ferric tape without backing off the bias and even using better tape seemed to indicate bias is set far too high resulting in dull recordings. I returned them to the owner and have advised him to try them with the metal tapes he wants to use and let me know what he thought.

And finally. If you own an Arcam FMJ A22 and it appears dead then the chances are the standby transformer has failed. It is unlikely there is anything else wrong with it. Unfortunately, Arcam cannot supply replacements but there is a solution! A standard part can be fitted in the case with a little metalwork and some long wires. I fitted a 12-0-12 12VA chassis mount unit on the side of the chassis which ran cool during the 4 hours I had the amp on and under test, so it is well within the specification of the original. Given that the transformer is on from the moment the unit is plugged in these are all likely to fail eventually – as they do on all amps with the same technology. This includes some Teacs and Denons if I remember correctly – and I am sure there are others where I have made the same repair.

Thanks for reading.

Regards and best wishes

**Dave Tutt**

[www.tutt-technology.co.uk](http://www.tutt-technology.co.uk)

**Chatham**

**Kent.**





# Black Rhodium strikes again!

Martin Pipe listens to a new high-end interconnect from Black Rhodium.

**G**raham Nalty's Black Rhodium has been producing high-quality interconnects, mains leads and speaker cables for fifteen years

or so. These products – hand-built in Black Rhodium's factory with high-quality materials, from some interesting designs – have been very well-received by audiophiles. And that includes us; in the past, Hi-Fi World contributors have positively-reviewed many of them.

One of the latest products to surface from the banks of the Derwent is the Concerto interconnect, which is pitched at the upper end of the market. It's available in 0.5m and 1m pairs, terminated at either end with either phono plugs or XLRs (we tested the 1m/phono version). That said, 3m and 6m 'singles', intended for use with subwoofers, are also produced.

All plugs, as the manufacturer's name might suggest, are rhodium-plated for reliability (a cleaner and less-corroded contact). Rhodium-plating is claimed to sound 'livelier and more exciting' than the more usual gold. The phono plugs are Nalty's proprietary 'Legacy Range GN-4' types. Their plastic shrouds embody a clever star cross-section to ensure a good fit, making contact with the barrel of the phono socket with a rod running down the side.

What's wired between them is just as interesting. The Concerto's cable employs silicone rubber insulation, to reduce the 'time-smearing distortions' that the company estimates are caused by dielectric absorption. 'Transient phase distortion' also receives attention,

courtesy of insulation thicker than what you'll find in many speaker cables. The conductive screen,

meanwhile, is tightly-braided to increase immunity to radio-frequency interference (from Wi-Fi, mobile phones and so on).

Substantially built and very distinctive in appearance, the Concertos are heavier than a pair of typical interconnects – and there's a good reason for that. At the half-way mark are fitted 'Legacy VS-4' vibration-stabilisers. According to Black Rhodium, these devices will limit 'the effects of vibrations travelling through the conductor wires, which can cause audible distortion to your music'.

My test system comprised a NAD M50.2 digital source, Chord Hugo TT DAC, Arcam A49 integrated amplifier and Quadral Aurum Wotan VIII speakers; Focal Utopia headphones were tried too. The Concertos were connected between the DAC and amplifier. I noted in passing that the interconnects they replaced were older Black Rhodium models (the distinctively orange-clad Harmony) that have quietly been doing good service here for over a decade!

And yes, the Concertos did yield a surprisingly worthwhile improvement – especially when listening via those incredibly-accurate headphones (reviewed elsewhere in this issue). The bassline of Adele's I

Miss You (CD) had a distinctively firmer footing, and the track's disparate elements were heard to gel better together.

Switching to David Bowie's Blackstar (24/96), I appreciated a new-found definition, which revealed additional layers of musical detail buried in the busy title track. I found that the sax seemed to gain greater prominence – yet this wasn't at the expense of balance. The energy of the complex rhythm was more palpable too, with more attack and verve evident.

Next came a 24/48 LSO recording of Britten's War Requiem. It benefitted from cleanliness during the quiet sections and a stereo image that's better-delineated – even down to individual contributions from the choir's singers – and the brooding nature of the piece was conveyed with lucidity and engagement.

## CONCLUSION

A natural cynic I may be when it comes to the outlandish claims so often made for pricey interconnects, but the proof is in the listening – and I found that the Concertos really did make a positive difference to the music. Consider me converted!



**BLACK RHODIUM  
CONCERTO  
£525 (PHONO-  
TERMINATED 1M  
PAIR)**



**EXCELLENT - extremely capable.**

## VERDICT

A fine interconnect – if the rest of your system is up to it.

## FOR

- excellent definition  
- soundstaging improvement  
- greater musical involvement

## AGAINST

- expensive

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# Hear to Make Music

# LA AS

LOS ANGELES AUDIO SHOW

## LA Audio Show 2017

Noel Keywood visits an audio show in Los Angeles, California, USA.

**W**ho wouldn't want to go to a hi-fi show in Los Angeles? It's the "City of Dreams" after all, even if the reality is a bit less glamorous for some of its inhabitants. But since California has an economy not far below that of the UK and wealth so conspicuous it's breathtaking, an LA. show promised big things; I couldn't miss it.

Held in a large Sheraton hotel next to LA's main airport (LAX), it was a big show spread over five floors – and well attended.

America seems to be leading a surge back to high speed analogue master tapes for show demos; I saw spinning reels everywhere. Most of the tape machines were renovated – and also upgraded with new heads

and mechanical parts, topped out by fancy tape spools. The move back to analogue copy masters is welcome to me, helping restrain the sharp, spitty treble of so much digital.

The other continuing US trend is toward open baffle loudspeakers, something the UK hasn't yet awoken to. The idea here is to eliminate internal box reflections and resultant box sound.

Outside the sun shone in usual California style, a cool wind off the Pacific keeping temperatures down to UK levels and people off the county's massive Baywatch beaches, where cafes sell food and refreshments away from the pounding traffic. That's where I went out of choice to see the surf, watch the surfers and listen to great 70's Rock that America still plays with proud confidence. Heaven!



*America likes big, and these massive Von Schweikert Ultra 11 loudspeakers stretched from floor to near the ceiling, giving a fast sound with huge scale and deep detail, courtesy of ribbon tweeters at centre. Note at left a Technics RS-1500 open reel recorder and a turntable, both analogue sources. Drive was from VAC Statement 450 iQ tube power amplifiers.*



S O t M

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*the SMS-200Ultra: a powerful mini network player that is compatible with many music playing software, including Roon.*

#### Key Features

- Compatible with Roon, Logitech Media Server(LMS), Squeezelite and more
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- Internal reference clock: sCLK-EX2425 board
- External master clock input : Optional



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### Power

*the sPS-500: power your SMS-200Ultra with this battery based power supply.*

#### Key Features

- DC output on/off switch
- Voltage : 100Vac ~ 240Vac
- Voltage : 7Vdc, 9Vdc, 12Vdc, 19Vdc selectable
- Operating indicator LED x1



RRP: £550

### Regenerate

*the tX-USBUltra: a USB hub and regenerator that cleans up your signal for a pure and musical output.*

#### Key Features

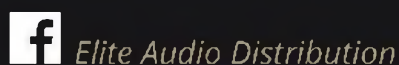
- USB audio signal regenerated by sCLK-EX
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The most eye catching exhibit of the show wasn't American. Mag Lev are from Slovenia (at top right of Italy). They were displaying a turntable with a platter that magically floated above the plinth, with a large see-through space beneath it – dramatic. "What happens when the power is turned off?" I asked. "Legs come out" was the reply. Worried about further misunderstandings, I asked no more. The platter is held aloft by a magnetic field and the field is made to rotate; the arm was a budget Project unit.  
[www.maglevaudio.com](http://www.maglevaudio.com)



Eye catching Voss Audio amplifiers are built on a carbon fibre and copper chassis, rather than trad. mild steel that suffers magnetic hysteresis distortion. Inside they use MOSFETs for a claimed DC-1MHz bandwidth. Their big Reference One at front costs \$56,000. Note also the Goldmund Studio parallel tracking turntable at right.  
[www.vossaudio.com](http://www.vossaudio.com)



A Dan D'Agostino Progression preamplifier that uses fully discrete circuitry – and no negative feedback. It is a fully balanced design, so has a four channel stepped resistive attenuator (volume control). The power supply is housed separately. Those meters use an old Swiss watch face style they say, showing both volume and VU level.



GamuT (Studer) B62 open reel recorder and RS3i loudspeakers. This Danish manufacturer produces an upgrade board for the Studer recorder, as well as loudspeakers and amplifiers.



Cambridge Audio (UK) were there 'bringing a great British sound to America'. Nice to see Brits in LA – and Meridian, ATC, Spondor, EAR and others were there too.



OK, not hi-fi but hi-fi transport, since this lovely '98 Triumph Thunderbird Sport, pristine under the California sun, was wheels for someone at Verastarr cables (USA), exhibiting at the show. With Paul Newman, Marlon Brando and Tom Cruise all riders, the whine of Triumph's triple wasn't uncommon in LA.  
[www.verastarr.com](http://www.verastarr.com)



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The best sound of the show was in the MBL (Berlin, Germany) room. MBL's unique Radialstrahler omni-directional loudspeakers – at left in our picture – were driven by a bank of the company's latest amplifiers, that were fed by a UHA-Q Tascam open reel recorder from United Home Audio (USA) with their own "steel heads" I was told. It was running a second generation master tape and the sound from this system was

smooth, organic, effortlessly dynamic and seamlessly integrated. I could have listened all day.  
[www.mbl-northamerica.com](http://www.mbl-northamerica.com)  
[www.unitedhomeaudio.com](http://www.unitedhomeaudio.com)



An Audio Valve (Taiwan) Conductor tube preamplifier, sitting atop its power supply. This unit uses eight tubes (6N6P & 6N1P) working fully balanced and is microprocessor controlled. The acrylic front window gives a view into the circuit board and the analogue volume control position is read out to drive a display as well. Very eye catching.



An all-glass open baffle loudspeaker, The Point from Perfect8 of Sweden - cost \$120k. At top sits their own ribbon tweeter, accompanied by twin bass/midrange units below. The bass bin carries twin opposed

woofers, constrained by multiple tie rods between the cabinet's glass side walls. No box colouration here, but CEO Jonas Rantila admitted they were a bit above what the UK would be willing to pay, so if you have the itch and the wallet, contact them direct.  
[www.perfect8.com](http://www.perfect8.com)



PranaFidelity (Denver, USA) delivered a lovely analogue sound from a Kuzma Stabi M turntable with impressive 4Point 14in arm and CAR-40 cartridge as a front end, via their Puma amplifier and Bhava loudspeakers. It was smooth, full bodied and easy to enjoy, captivating a packed room.  
[www.pranafidelity.com](http://www.pranafidelity.com)



A McIntosh 275 valve power amplifier, their classic from 1961, albeit in recent form here. The big Mac always had a complex output transformer that gave it state of the art performance. Today's version, shown here, has LEDs below the small signal valves that glow orange at start up and green when running. It delivers a claimed 75 Watts from KT88s or 6550s.



With Hollywood just up the road a bit, diamond encrusted headphones on the 1More stand seemed appropriate. This was definitely a product for L.A. I thought, known for its sparkling glitz and glamour. Covered in Swarovski crystals, they cost \$25,000 so you'd need a movie star's income to enjoy them. Available in the UK all the same, they told me – perhaps for Miss Moss.  
[www.1moreusa.com](http://www.1moreusa.com)



# WORLD STANDARDS

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

## TURNTABLES

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



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



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



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

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



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



**REGA RP3 £550**  
The first of the super-quality Regas, little compromised by price and featuring Rega's outstanding R3003 tonearm, suitable for MM and MC cartridges. A standard at the price point.

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



## TONEARMS

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

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

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



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

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



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

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

## CARTRIDGES

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



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

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

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

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





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



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



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

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



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

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

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



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



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

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

## PHONO PREAMPS

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

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



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



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



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



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

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

## PREAMPLIFIERS

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



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

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



## INTEGRATED AMPLIFIERS

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



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



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

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



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

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



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



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

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



**POWER AMPLIFIERS**

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

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

**ICON AUDIO MB845 MKII** £7,600  
With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.



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

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



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

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



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

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



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

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

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

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



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



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

**QUADRAL ORKAN VIII AKTIVS** £6,200  
Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter.



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

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



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

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



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



**LOUDSPEAKERS STANDMOUNT**

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

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





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



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

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



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



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



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



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

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



## HEADPHONE AMPLIFIERS

**CREEK OBH1** £150  
Designed specifically for low to medium impedance (30 Ohm – 300 Ohm) headphones the little Creek has a marvelously well-judged sound.

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



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



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



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

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



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



## CD PLAYERS

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



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



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

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



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



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

**ELECTROCOMPANIE EMP-1/S £4,650**

Epic in scale, lavish in tone and exuberant in its musicality - this is a memorable SACD spinner. Quirky in operation and modest in finish, though.



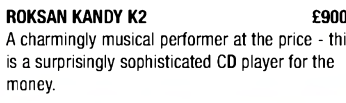
**OPPO BDP-105D £1200**

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



**REGA APOLLO-R £550**

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



**ROKSAN KANDY K2 £900**

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



**TUNERS**

**CAMBRIDGE AUDIO AZUR 651T £299**

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



**CREEK DESTINY 2 £550**

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



**MAGNUM DYNALAB MD-90T £1,900**

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



**DACS**

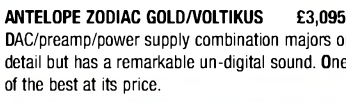
**AUDIOLAB M-DAC £600**

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



**AUDIOLAB Q-DAC £250**

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



**ANTELOPE ZODIAC GOLD/VOLTIKUS £3,095**

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



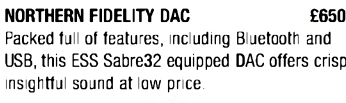
**CHORD 2QUOTE HD £990**

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



**DCS DEBUSSY £8,000**

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



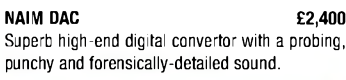
**NORTHERN FIDELITY DAC £650**

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



**METRUM OCTAVE £729**

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



**NAIM DAC £2,400**

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



**TEAC UD-501 £699**

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



**RESONESSENCE INVICTA MIRUS £4,499**

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



**NETWORK PLAYERS**

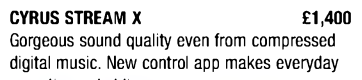
**CHORD DSX100 £7,500**

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



**CAMBRIDGE AUDIO NP30 £399**

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



**CYRUS STREAM X £1,400**

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



**CONVERT TECHNOLOGIES PLATO £2999.00**

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



**NAIM NDX £2,995**

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

**NAIM ND5XS £2,175**

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



**NAIM NAC-N172 XS** £1,650

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



**PRO-JECT STREAM BOX RS** £1,095

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

**QUAD PLATINUM DMP** £2,500

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



**DIGITAL SOURCES**

**ASTELL&KERN AK100 MKII** £569

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



**FiiO X3** £150

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

**LOT00 PAW GOLD** £1,500

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



**NAIM HDX** £4,405

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

**NAIM UNITILITE** £1,995

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



**PORTABLE SPEAKERS**

**BAYAN SOUNDBOOK** £149.99

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



**IRIVER IBA-50** £69

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

**CABLES**

**BLACK RHODIUM TWIST** £71/3M

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



**MAINS CABLES R US NO.27** £95

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



**CHORD SIGNATURE REFERENCE** £900

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



**TELLURIUM Q BLACK** 280/3M

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

**TELLURIUM Q SILVER DIAMOND** £804/M

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



**HEADPHONES**

**AUDEZE LCD-3** £1,725

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



**B&W P3** £170

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

**JAYS V-JAYS** £49

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



**NOBLE K10 INC. FITTING** £1,279

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



**OPPO PM-1** £950

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



**SENNHEISER HD700** £599

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

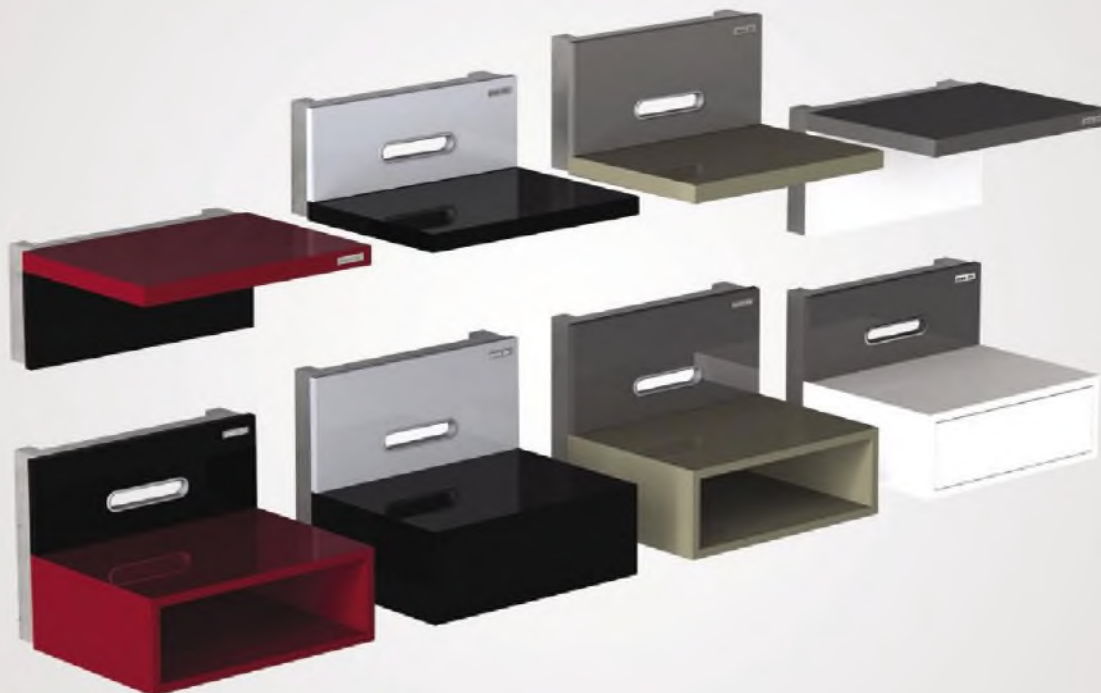


**YAMAHA HPH-MT220** £150

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

# BoxIT

by *creaktiv*



The BoxIt range is perfect for giving you the sound quality you are looking for from your equipment whilst aesthetically looking great and hiding all those cables away from sight.

Units can be put together in combinations to accommodate your system. Available in a variety of colours to match your decor, shelf or with a drop flap the BoxIt can be wall mounted or stand alone the choice is yours.





# Utopia? Yes!

**Martin Pipe is knocked for six by Focal's incredible uber-phones.**

I've listened to many pairs of headphones over the years, but the Utopias from French speaker manufacturer Focal are the first I'm aware of to be accompanied by a health-warning. Nothing to do with the hearing-damage caused by listening at head-banging volume levels, but everything to do with the incorporation of beryllium into their drive units. The properties of this rare-earth metal make it ideal for audio transducers. It's three times as stiff as titanium, yet is considerably less dense. As a result, it has a fast sound-conduction speed. But it's not the nicest stuff to handle, being listed as a Class I carcinogen.

Focal understood the sonic benefits of beryllium and for some time has harnessed the substance to good effect in its speaker designs. Notably, the inverted-dome diaphragms of Focal tweeters – including those built into its flagship (£120,000) Utopia EM floorstanders – fashioned from beryllium.

As regards the material's effect on human health, Focal reckons that you'll be fine as long as you don't abrade, ignite, breathe in, touch or apply acid to one of its beryllium transducers.

It was a logical step for Focal to take their beryllium development, and use it as the basis of headphones. After all, in fundamental terms a speaker drive-unit is very similar to a dynamic headphone transducer. Hence the Utopias, which at current exchange rates sell for a cool £3,500. They're thus among the most expensive headphones in the world; maybe they should come with a wallet-warning too.

Like the speakers with which they're associated, the Utopias are

a cost-no-object statement of the art. Hardly surprisingly, they look absolutely gorgeous and exude luxury from every pore of their lambskin earpads. Even the box they arrive in makes it perfectly clear you're dealing with something special.

The 3m cable, which attaches to the cups by means of Lemo locking connectors, is rather substantial. It's terminated in a standard 6.3mm (1/4in) jack plug (i.e. unbalanced), although third-parties are already selling balanced cables for these 'phones. No 3.5mm adaptor is supplied for personals; to avoid stressing socketry, a 'trailing' adaptor is recommended.

The pure-beryllium 40mm diaphragms of the Utopias have 'M'-shaped cross-sections, in pursuit of a planar wavefront, and are coupled to formerless voice-coils. 80-ohm impedance and a sensitivity of 104dB/1W (1kHz) are claimed; as a result, these headphones shouldn't be difficult to drive.

The high-tech transducers are built into circumaural open-back enclosures, meaning that your musical tastes could be shared with those in the immediate vicinity. That said, would you be happy wearing three-and-a-half grand's worth of headphones on the Tube?

The Utopias are rather heavy – nearly half a kilo, or 200-odd grams more than the Oppo PM3s I'm used to donning. Yet the leather headband, carbon-fibre yoke and luxurious synthetic/natural pads contribute to a design that's sufficiently-comfortable to wear for hours at a time. If you're lucky enough to afford these 'phones they'll draw you into extended listening sessions.

I tried the Utopias with various



gear, ranging from a FiiO X3 to a Prism Callia DAC

driven by a Cambridge CXN streamer. It doesn't matter what you're listening to – orchestral, heavy rock, opera, electronica, jazz or the (difficult!) spoken word, whether analogue or digitally-sourced, the Utopias will get you closer to the performance.

In all these cases the results were simply breathtaking in terms of clarity, frequency extension, dynamics, layering, definition, imaging, percussive speed and the sheer lack of audible colouration. I also got much pleasure out of some binaural material (including the Rite of Spring from last year's BBC Proms (<http://bbc.in/2s3Hd8f>).

These headphones are the best transducers I've heard – speakers or headphones. Reference-class all the way, they should come with another kind of warning: once heard, you'll be satisfied with little else...



## FOCAL UTOPIA £3,500



**OUTSTANDING** - amongst the best

### VERDICT

The best headphones yet produced?

### FOR

- jaw-droppingly accurate sound
- stunningly-built
- comfortable

### AGAINST

- expensive
- heavy

Focal  
[www.focal.com](http://www.focal.com)



# Russell K.

Precision Audio Loudspeaker Systems

*"The RED 50 might well be the finest sounding miniature speaker around right now... I feel a Best Buy rating is entirely appropriate."*

Paul Messenger, Hi Fi Critic Best Buy Red 50

*"Highly recommended, and fabulous value to boot."*

Alan Sircom, Hi Fi + Red 100

*"When I think about other loudspeakers with a similar mix of virtues, I'm struggling to think of any at much less than twice the Red 150s price, which makes them truly extraordinary."*

Steve Dickinson, Hi Fi + Red 150

Every Russell-K is a truly exceptional loudspeaker. Exceeding all our expectations, the new Red 120 continues the bloodline, with a perfect balance of size, price and performance. Greatness is in the genes.

## The new **Red 120** Loudspeaker

On demo now at these dealers -

Acoustica - Chester	01244 344227
Audio T - Enfield	020 8367 3132
Audio T - Portsmouth	023 9266 3604
Audio T - Reading	0118 958 5463
Audio Works - Cheadle	0161 428 7887
Brook Audio - Huddersfield	01484 538438
Castle Sound and Vision - Nottingham	0115 958 4404
Deco Audio - Aylesbury	01296 422224
Signals - Ipswich	01394 672464



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Martin Pipe revisits a Garrard classic from the early 1970s

# This Zero's a hero!

**B**etween Garrard's budget SP25 turntable of the 1970s and their upmarket professional 401 lurked the Zero 100S – a machine that's still visually-striking today, nearly 50 years on, with its perspex arm details, ivory-white deckplate and gold controls. The Zero 100S came with integrated arm and was usually supplied 'ready to play' in a plinth, the cartridge often having been fitted by the dealer. And like both the SP25 and 401, the turn-

table (just under 12in. diameter here, with a ribbed rubber mat glued to it) is rim-driven by means of an intermediate idler wheel. The latter only spins at 33 or 45rpm; you don't get the 78rpm option of the budget and high-end models.

But the mains-powered 'Synchro-Lab' motor has a tapered shaft, a ring surrounding the speed selector knob shifting the idler contact-point vertically. This simple but effective contraption enabled pitch to be varied by 3% either way. To help



*With the platter removed (a plastic disc is removed from the centre of the platter, to reveal a circlip), the motor pulley and idler are clearly visible. The linkages push the idler against the inner-surface of the platter when playing records, retracting it when the deck is off to avoid the possibility of 'flats' (and audible 'wow').*

adjust it correctly, a neon-lit strobe disc (mounted beneath the platter) can be viewed through a window set into the deck plate.

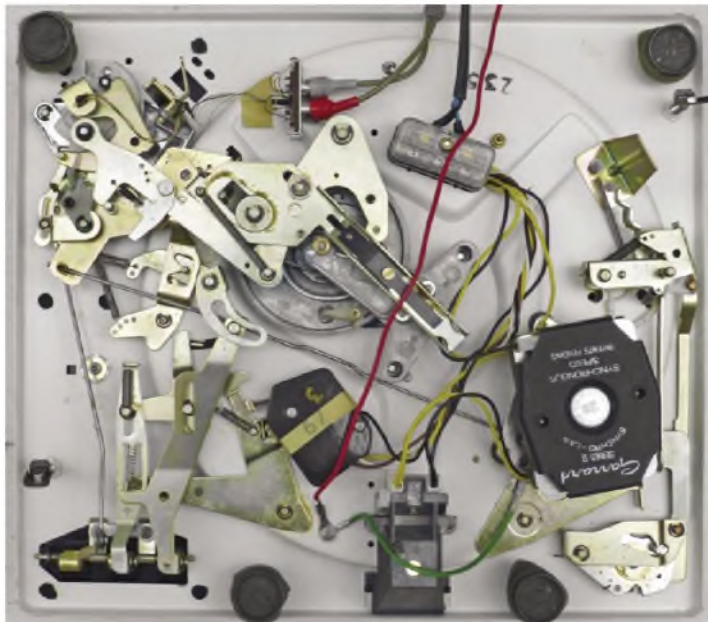
The motor is an interesting design, combining an induction element (to start it quickly) and

**Hi-Fi decks to choose with confidence**

**Garrard**  
Audiophile Quality Products

The incomparable **ZERO 100** and the entire Garrard Series.

**Garrard**  
Audiophile Quality Products



**Compare this to the uncluttered simplicity of a modern manual turntable! Note the four isolation springs with damping foam, the neon-light for the stroboscope and the chassis-mounted phono sockets.**

a synchronous element (to lock it to the mains-supply frequency thereafter). The deck itself had an automatic mode as well as manual operation. Responsible for its complex automatic mode is a complex series of cams, cogs, springs, plates and linkages under the deck. Watching their interdependent waltzing is quite a joy in itself!

The 'table featured in this article is the '100S' – the S standing for 'single-play'. There's also a non-suffixed '100' version, which is an autochanger and thus even more complex beneath the bonnet. The 100 has a 'record platform' and extended spindle (a 'fat' one, for 45s without adaptors, was sold as an optional extra) that join forces to 'drop' unplayed records onto the platter in sequence, one by one, until the stack (up to seven discs in total) is exhausted. Ouch!

It is the tonearm of this family of decks that shines, being responsible for the 'Zero' part of the name, referring as it does to the elimination of tracking error. Before linear-tracking 'tables became popular in the 1980s, the Zero's arm was the only affordable means of getting the cartridge and stylus to follow the same 'straight-line' path as the linearly-tracked lathe head that cut the record in the first place - basically, the stylus cantilever must be tangent to the record groove at all times. This isn't possible with conventional tonearms that track in an arc,

angular tracking error resulting in distortion.

Garrard's solution was to mount the Zero arm's headshell onto a pivot that's linked by a narrow tube (the 'articulating arm') to a fixed point on the arm-base. As the arm slowly makes its progress inwards, its headshell is 'pulled' by the rod, gradually changing its angle so it remains at a tangent. Tracking error of the Zero arm was claimed by Garrard to be a mere 90 seconds (a fortieth of a degree). To minimise friction, the pivots, according to contemporary brochures, employ 'precision-loaded' ball-bearings bought in from an operation specialising in "gyroscopes and other sophisticated space-age equipment".

Clever stuff, yes, but not totally Garrard's idea. In the late 1950s, a firm by the name of Burne Jones produced a 'parallelogram' tonearm

consisting of a two parallel arm-tubes, independently-pivoted at either end, to achieve the same end. The basic idea has resurfaced as the 'Simplicity' arm associated with Thales turntables. You can't keep a good idea down...

The Zero 100S had even more features to set it apart, including



magnetic bias-compensation, for which Garrard was granted a patent. Then there's the arm 'lock' to prevent accidental stylus damage, and a slide-in 'cartridge-carrier' (headshell) system. Another Garrard 'original', the latter provides overhang adjustment - but it's flimsy, and the contacts are prone to oxidation over time.

The Zero 100S that came my way, courtesy of a car-boot sale, worked only insofar that the motor could be heard gently whirring away – although the platter wouldn't rotate. This is because the type of grease applied by Garrard during manufacture goes hard, effectively



**A diecast cam-wheel meshes with teeth at the base of the turntable bearing. It facilitates the Zero 100S's automatic operation – which is great for users who don't feel comfortable with manual cueing.**

gumming up the works. It's particularly bad where fixed posts meet moving metallic sleeves – and for that matter the main cam-wheel that's core to the deck's automatic functionality (in other words, it's driven by the rotation of the platter)!





***If your 60s/70s Garrard automatic turntable won't... turn, chances are that the grease specified by the manufacturer has dried up. You have to strip down the mechanism, remove all traces of the offending grease and re-lubricate.***

It couples to teeth on the base of the platter bearing. No wonder it was seized! I had to strip down the deck completely, removing all traces of the dried grease and replacing it with a modern equivalent.

It's important to grease only areas that are supposed to be greased; to operate correctly, some of the mechanics actually rely on friction between metal and metal! Also ensure the motor and bearing housing are correctly-lubricated, carefully keeping oil away from the idler-wheel's rubber (which should



***The 'Synchro-Lab' motor is, in Garrard's words, "an ingenious concept based upon split-rotor design. It combines the powerful torque and instant acceleration of the traditional induction motor, with the unwavering, perfect speed of a synchronous motor locked to the accurately-controlled (50Hz) frequency of the (mains) electric current."***

itself be checked, for 'flats' and other irregularities that could be heard as wavering pitch – and seen as stroboscope instability). The arm should be free of play too. Service information is freely-available from the excellent Vinyl Engine website. This,

alas, doesn't detail the adjustment needed to make the arm come down on the lead-in groove of the record in auto mode (it involves a screw – and it's very tricky to get right!).

Having restored my Zero 100S to a functional state, it was time to play some vinyl. I stuck with the original M75ED fitted - a classic MM cartridge of the time, tipped with an elliptical stylus. I loved using this deck, especially in the automatic mode. Those controls, and the quiet mechanical 'clunks' emanating from the 'works' beneath are quite endearing – it's also reassuring to see the tonearm swing into position and carefully lower onto the record, with the arm returning back to its rest at the end of play. What a pity that the resulting sound proved rather disappointing, irrespective of musical genre. Admittedly rumble was surprisingly-inaudible - and although the low-end was more than acceptable, it fell short of the depth and articulation that one can expect from better-known idler-drives, not to mention more modern 'tables.

The presentation was treble-dominant and a little coarse – regardless of whether the track being played was innermost, outermost or somewhere in between. And while I got some idea of what the musicians were trying to convey, the finer details of their performance tended to

blur into inaudibility. Imaging seemed rather two-dimensional and the pitch didn't seem to be rock-steady, either. But then again, the platter is a relatively-lightweight affair – it's closer to the pressed-steel of the SP25 than the massy die-cast assemblies of more upmarket idler-driven units. Furthermore, the plinth in which my 100S is mounted is of the cheap plastic injection-moulded variety; I doubt that helps matters (401s give their best when built into slate or multi-layer plywood plinths).

The main bearing was stripped down again and given a more careful relube, before 'roughening' the surface of the idler wheel with fine emery paper. And the ancient Shure cartridge was replaced with an up-to-date Audio-Technica AT-440MLb (£130).

These 'tweaks' opened up the soundstage, put the deck on a more solid footing with respect to speed and yielded more audible detail. Tonal balance was improved immeasurably, and the grittiness disappeared – laying bare the advantages of Garrard's



***Here we see some of the controls that operate the Zero 100S (on the opposite side are the speed/record size selector and pitch adjuster). They invoke 'auto' operation, manual operation and cueing.***

'zero tracking error' arm design. Musically-speaking, though, the deck was comfortably-outperformed by a Rega Planar 3 (equipped with RB300 arm and Bias cart). But the Rega lacks the visual drama and clever automatics of this funky Garrard – in short, the Zero 100S is a fun conversation-piece that's best relegated to uncritical listening. Just as well that the cost of acquisition is peanuts – expect to pay anywhere between £10 and £100, depending on condition, and expect some servicing work.

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### SENNHEISER HD 4.50 BTNC WIRELESS £170

This closed-back wireless headset features Sennheiser's NoiseGard active noise cancellation for mobile

use in lively environments with Bluetooth and NFC to connect the headphones to your mobile music source. Quite comfortable with a foldaway design for easy storage, the HD 4.50s let you enjoy NoiseGard-protected music for up to nineteen hours on a single battery charge (it lasts up to twenty-five hours with NoiseGard switched off).

Arriving with a carry case and a plug-in wire when wireless is not possible (plugging the cable into the chassis effectively turns off the headphone power and NoiseGard), the chassis includes a power button, phone-related multi-function button, volume control, access for the headphone cable and USB port for charging.

I initially tried wired mode using an ATC HDA-PI DAC and Red Wine Audio modded Astell&Kern AK120. In this mode, the HD 4.50s were weak with bass character or form, with

lower bass frequencies noticeable by their absence. I then turned to mobile mode via my iPhone 6S and downloaded the company's Captune app. I realised where all the bass had gone: it was hidden in the app!

Also acting as a music player, the app gives you a selection of EQs plus custom sound preferences. The app encouraged the previously hidden bass and a far more tonally balanced presentation which, depending on the music type (a bit of Nina Simone here, U2 there), enhanced the overall enjoyment.

Used in conjunction with an iOS or Android device and the Captune app, the HD 4.50 BTNC headphones might not reach the cultured, sonic heights of a typical home design but, with effective isolation and responsive EQ settings, they proved sonically effective in a high energy mobile environment, providing an efficient and easy to use performance. **PR**

[[en-uk.sennheiser.com](http://en-uk.sennheiser.com)]

# SOUNDBITES



### SENNHEISER FLEX 5000 £180

A wireless transmitter/receiver set aimed at improving headphone-based TV viewing, it comprises a long, slim

docking station that connects to the mains and your TV via the headphone socket or optical port. A removable, rechargeable pod can be clipped to your clothing for mobile use and includes a volume control and a headphone port. You connect your favourite headphones to the pod and then listen to the TV output through there.

On the pod is a voice enhancement EQ and three further EQs are present on the docking station (each enhances treble/mids, enhances and/or lowers bass). Although I found the EQs of no great use, in general terms, they could be useful on poorer quality broadcasts.

More generally, I tested the unit against a wired system, using an audiophile quality Melodika cable extension direct to my Sennheiser HD650 headphones and plugged into my Samsung Smart TV's headphone port. I used the same port for the Flex 5000.


Playing Eddy Grant's 'I Don't Wanna Dance' via a music TV station,

I was impressed! The Flex 5000 produced an open and airy midrange response that brought the Grant vocals to life, adding a new range of emotive textures to his delivery while removing a gloopy bloom to the bass portions of his voice. This also helped the double tracking portions of the Grant vocal, giving each tracking element an enhanced individuality.

I then changed to a talk-based National Geographic documentary channel. Via the Flex 5000, speech had added inflections and sat in a sense of space. A previous nasal quality was less reedy and added reverberation gave authority to voice. Also, underlying sound effects exhibited greater air and freedom.

This is one of those rare occasions when wireless outperforms a wired source, the Flex 5000 is an easy-to-use and quite brilliant sounding TV/headphone system. **PR**

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HANK MARVIN

Without a Word  
Demon

**M**y goodness, what a career this man has had and continues to have. This is solo album number sixteen (which ignores all of the Shadows and Cliff Richard LPs he featured on and more besides) and yet the guy still looks like a whipper-snapper, just out of short trousers despite being in the business for almost sixty years.

Available on CD, limited edition signed CD and limited edition red vinyl including a signed photograph, this release packs in fourteen covers of classic songs, given the unique Hank twist. Hence, you'll find ditties such as 'The Fool On The Hill', 'Cry Me A River', 'What a Wonderful World' and 'Moon River' but there's also, intriguingly, the theme tune to Doctor Who!

There's also one new original composition called 'Russian Doll', that Marvin co-wrote and recorded with his son Ben (it's

competent but not a mind-blower).

Marvin is at his very best on this release, his on so languid mood is just perfect for 'Don't Get Around Much Anymore'. In fact, he brings an almost sleepy Stephane-Grappelli-in-Paris feeling to the song which is ideal Sunday morning fodder. As is his rendition of The Beatles' 'Michelle' which features a wordless female vocal backing along with, well I have to say, Parisian accordion. The track flows off your speakers and fills up your room like the water in a soothing hot bath.

But what of the Doctor Who theme? An introductory synth wash raises an eyebrow but Marvin grabs the central theme and, amazingly enough, provides a strong, quite bullish central guitar theme and...it's brilliant! Especially as he introduces a strong and always present bass guitar to act as a meaty foundation. This Doctor rocks! A definite purchase for the fans, methinks.

AUDIOPHILE CD



BOOKER T. & THE MG'S

Stax Classis  
Rhino

**T**he Rhino record outfit is taking a full year to celebrate the sixtieth birthday of the legendary Stax label, partnering with Concord to release a host of CDs and vinyl. Each CD release features twelve tracks with new liner notes. This CD is quite apt as a representative release, because the group were effectively the Stax house band, playing behind a host of stars and appearing on many of the Stax label hits. The four-piece outdoor offered a selection of their own hits, of course including 'Green Onions', 'Hip Hug-Her' and 'Time is Tight'.

Playing the classic 'Green Onions' track, I was pleasantly surprised at the mastering quality which demands at least a semblance of dynamic range to work at all. As with all modern commercial CDs, there is a slice of compression here but there's nothing to really worry about, certainly nothing

too offensive. I was able to up the volume and not have my ears frazzled by the hash guitar sounds from Steve Cropper. His string plucking interjections can offer bright crescendos that easily betray excessive peak limiting. This track managed to survive without too many problems.

'Hip Hug-Her' was another case in point, although this time the Hammond organ often threatens to feature its own issues as its high notes are squeezed. Rhino should be congratulated in taking a measure of time and effort with these releases.

Also look out for other Stax Classics from Sam & Dave (including 'Hold On! I'm Comin' and 'You Don't Know Like I Know', Carla Thomas (offering 'B-A-B-Y') and Otis Redding (with '(Sittin' On) The Dock of the Bay'). Look out for future release from the likes of The Dramatics, Isaac Hayes, William Bell, Albert King, The Staple Singers and Johnnie Taylor.



It's a weird concept, I have to agree. This is, after all, a legendary group responsible for such easy classics as 'The Great Pretender', 'Only You' and – who can forget – 'Smoke Gets in Your Eyes'. I'm sure that you're even singing each one in your head as you're reading this.

And while doing that you also are thinking, "doo-wop". Because I am too. That tone from the lead singer, Tony Williams offered a signature sound. And now Bear Family wants to tell us that it is giving us a thirty (thirty!) track CD compilation of The Platters rocking out?!

Indeed it does. The place is their time on Chicago's Mercury label and the reason is the group's former training as a R&B combo and also because, despite recording 'Only You' for their earlier Federal contracts (a song that had been 'buried' since the recording and was re-recorded at Mercury in April 1955, a waiting release that

Summer), it was not then decided that The Platters would become balladic specialists. Instead, a number of other styles were examined, early on in the group's career.

During that April, the group tackled a raucous ditty called 'Bark, Battle and Ball' which was supposed to be an answer song to Joe Turner's classic 'Shake, Rattle & Roll'. This storming song, sung well by the girl member of the group, Zola Taylor, was actually the B-side to 'Only You' and was authentically rock'n'roll. It even had a 'Shake, Rattle & Roll' refrain.

As their career took off, The Platters would inject an uptempo song into the mix whenever they could get away with it, which is how thirty tracks fill this CD – including the likes of 'I Wanna', 'Winner Take All' and 'It Isn't Right'.

Look out for another new release from Bear Family in this series, Arthur 'Big Boy' Crudup, the man who penned 'That's All Right' for Elvis Presley.



THE PLATTERS

Rock  
Bear Family

AUDIOPHILE CD

I do have to question the inclusion of one or two songs on this fifty track compilation. For example, Laurie London's 'He's Got the Whole World in his Hands' really isn't rock'n'roll of any sort. Whether London is considered 'unsung' in rock'n'roll terms is not helped by the inclusion of this folk track. More Pete Seeger than Elvis in style.

Despite the blip, there's plenty to like here including the essential inclusion of Broadway stage and film star, Tommy Steele who, despite what some observers might exclaim, was an important part of rock'n'roll development in the UK with such bizarre tracks such as 'Rock with the Caveman'. There were other, far more serious figures that are welcomed within this set including Terry Wayne and Terry Dene who obviously patterned themselves on Elvis Presley but who featured enough talent to attract their own fan base.

Among the familiar names of UK

rock that includes Duffy Power, Wee Willie Harris and Vince Eager & The Vagabonds (his rolling 'Yea Yea' plus raucous sax playing, is included here). There were true rock'n'roll stars such as Johnny Kidd & The Pirates.

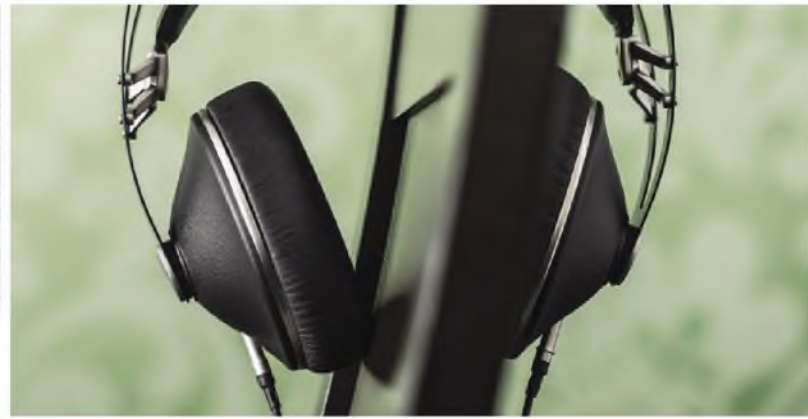
They are my second 'beef' with this compilation because I wouldn't describe Kidd as at all 'unsung'. In fact, their hit single, 'Shakin' All Over', was a direct influence on many world stars, including The Who. Before the Beatles appeared on the scene, it's arguable that Kidd ruled the UK rock roost. Included here is that very song plus 'Restless', 'You Got What it Takes' and 'Please Don't Touch'.

Despite the odd strange inclusion, this is a worthy set, full of interesting characters and songs. Also look out for Jasmine's newly released 'Everybody Loves The Voice of... H.B. Barnum', 'Swamp Pop' featuring Earl King, Roy Perkins and more plus 'the Beat Generation' including Adam Faith, Bob McFadden and Add 'Kookie' Burns.



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# " 'perfect' digital recordings came at me like demented band saws"



Noel Keywood

I've just thrown down my bags after a few days on the beach – Venice Beach, L.A. In places amazingly far out (man!), always entertaining and with great swimming and surfing there were throwbacks to the 1970s – the boards on the vans, and the music at the bars. But it was the music at the show I was really there for – well that's what I tell myself – and it had 'issues'.

I am very sensitive to what is being played and how it is being played, having run World Audio Design show rooms myself. Been there, done that and know the difficulties. But the rooms at the L.A. show seemed to be further apart than ever in their sonic character. There was an obvious gap between two different approaches to sound quality.

In simple summary, there were the 'digital rooms' and the 'analogue rooms', a situation made increasingly obvious as time moves on by the move back to analogue that I saw more strongly at this show than any before it. This is opening a gap between two views of high fidelity.

America supports or even promotes alternative cultures, as on Venice Beach, and that's happening in audio USA where the modernists (er – mods!) play digital typically out of music libraries in MacBooks, whilst the new-traditionalists play analogue from a growing array of spectacular tape machines and record decks.

Happily these people are realists, not romanticists. Old kit wasn't always so clever and a re-build with modern components is necessary to banish the woes of leaky electrolytics, noisy carbon comps. (resistors) and bent tape capstans, giving a revival sound that is clean and fresh for a modern world. It is also easy to appreciate and gripping in its dynamics. Modern analogue

is a breath of fresh air when done properly – and America does things like this with a dedication and ability that's awesome.

The digital rooms sounded clean, well manicured, sometimes impressive but often times bright and challenging. A perceived need to extract detail and (over) emphasise speed and timing lie behind this trend and it has been leveraged by loudspeaker ribbon tweeters set too high.

By way of contrast the sonic delight of the show was MBL's room. This German manufacturer of the eye catching Radialstrahler omnidirectional loudspeaker was, through their US arm, using an United Home Audio (USA) renovated recorder as a source, playing second generation master tapes. It wasn't perfect: I could hear a distinct lack of high end treble from one tape, likely due to azimuth error. But apart from this the smoothness of the sound and its impressive dynamic swings made digital sound flat and lifeless by way of contrast. Whilst dynamically engaging it was also easy enjoy: I could relax and be entertained, rather than gripping the edges of the chair.

Why is there such a gap between digital and analogue? Because digital is still very obviously flawed I believe, by an elephant in the room few talk about – the ADC.

All digital derives from an ADC; it turns the real world to a digital one. Yet I am increasingly hearing from the few genuine experts on this topic that ADCs are the weak link in the digital chain and need improvement. Rob Watts, designer of Chord Electronics DACs (Dave, Mojo, etc) told me just days ago that he is finalising a new super-ADC for audio because current ADCs were so poor: ESS were about to release a new ADC but have gone silent;

Avermetrics at the L.A. Show told me the best ADC they could find for an audio spectrum analyser was from AKM and there was a need for better.

I get few ADCs to test; they are rare in hi-fi products. But we have the world's most advanced spectrum analyser able to test them, a Rohde&Schwarz UPV. And this tells me the 16bit ADC chips, now commonly found in turntables, produce noise and distortion at around -76dB whilst the 24bit chips, as in NAD's 50.2 server/streamer manage around -98dB. Since DACs manage 102dB (16bit) and 125dB or more (24bit) you can see where the problem lies: the ADC. The digital I was listening to in L.A. derived from CD I suspect, and was 16bit recorded 5, 15 even 25 years ago when ADCs were far worse than they are today. Hardly any surprise than that these 'perfect' digital recordings came at me like demented band saws.

It isn't 'digital' that is intrinsically weak in conveying music, it is poor ADC technology that pollutes what we hear. What I heard in L.A. was digital distortion and hash passed through hi-fi systems that by unfortunate accident emphasised it, electrically powerful amplifiers sending discordant hash through acoustically powerful ribbon tweeters.

The depressing part of all this is that ADCs figure little in the hi-fi playback landscape; few talk about them; it is the recording industry for whom they are a concern. Yet Rob Watts told me there was no money in ADCs, because demand for good ones was low. Design and build a good ADC then – and no one will come knocking at your door to buy it. I suspect this is why ESS suddenly gave up.

So digital is still awful, but it isn't. It's ADCs that are awful, not digital. That's why I was forced out of the show and onto the beach. ●

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# "Tillotson had a brain and he wasn't afraid to use it"



Paul Rigby

**P**ick an era. Then look around it. Inside you will see a type or types of music that could be described as 'authentic'. Produced by and filled with passion. It means a lot to its proponents and its fans. It matters. It might not coincide with mass consumption and the broadest of popularities, though. Often, existing alongside this meaningful music is the music to fill commercial gaps or music that is possibly less than challenging or threatening.

Rock'n'roll was, initially, one such passionate and meaningful genre. It declared the existence and financial independence of the teenager, it was a reaction against old values and was also a result of the awareness that occurred during that time though social class mixing and world travel.

The result? Elvis Presley, Chuck Berry, Bill Haley, Buddy Holly, Little Richard and more.

By the time of the early 60s, rock'n'roll was a distant memory. Holly was dead, Little Richard was a priest. Haley had hit the buffers, Berry was occupying more time in jail than on stage and Elvis had been bled of his fire by the army and – probably more importantly and pertinently – his manager.

So, if we pick another era, and let's pick the early 60s, we find no genres that really meant much to many. Too much commercial mass consumption and very little passion. Too much bubble gum-type rock from the likes of Bobby Vee, Bobby Vinton, two dozen other Bobby's and several Frankies to boot.

Of course, there were plenty of lone wolfs that were trying to be true to themselves, producing quality work, sure, so it's wrong to

paint the scene with a broad brush but a vacuum was present that was filled by the might of Britain.

Many of us might be celebrating the fiftieth anniversary of the initial release of the landmark album 'Sgt Pepper's Lonely Hearts Club Band' but many of us too might have forgotten or not even realised just how destructive the band really were. Destructive, that is, in wiping out entire musical careers. When The Beatles hit America especially, dozens of musical acts were irrelevant overnight. It was literally that sudden. One minute they were successful acts with steady jobs, the next they were penniless and depressed with a future amounting to zero. The cultural change was that large. It was that devastating.

Maybe it's the contrary aspect of my nature but I'm intrigued by this sector of the music industry and find its complexities strangely appealing. There's a lot of drama to be found around this time that's for sure, but there's also a lot of truth finding. This cataclysmic time really separated the strong from the weak and the floundering one trick ponies from the clever and innovative creative artists. I've already featured one of those tough cookies in a recent *Classic Cuts*, Brenda Lee.

Lee not only toured with The Beatles but she survived their creative onslaught through skill and basic musical talent, as well as business sense – and she prospered. Another was rock'n'roll hero Roy Orbison whose career, after the rock'n'roll boom died, seemed to steadily become stronger as time moved onwards.

These names are almost 'super hero' in nature. I was drawn to a third name. One that was not quite as powerful or as wondrous, with

apologies to the man himself, Johnny Tillotson. In awe of Elvis Presley, Tillotson secured a contract with the professional little label, Cadence, in the fifties, signing onto the label at the same times as the Everly Brothers. He managed to secure TV appearances to spread his fame, enjoyed a popular No.1 UK hit (No.2 in the USA) called 'Poetry in Motion' later in 1960 and then, like Elvis, he was called up to serve in the Army. This was 1961.

Tillotson differed from Elvis, though. He might not have had Elvis' blinding fame or stage craft but he had his own strong will and, inspired by other figures such as Paul Anka, could write his own songs. Which is why Tillotson had a No.3 smash hit with 'It Keeps Right On A-Hurtin' in 1962, soon after leaving the army.

Then The Beatles hit and Tillotson should, by rights, have folded. But he didn't. He continued making hits. Why? Because Tillotson had a brain and he wasn't afraid to use it. He went to Nashville and followed the likes of Brenda Lee and Roy Orbison, exploiting the stellar session men down there, built a strong team around him and didn't succumb to the growing neurosis of some of his contemporaries.


He remained level headed and thought, 'Hey, maybe there's people out there who might like to here a Tillotson song now and again.' He was right too. In fact, he continued to be right, long after The Beatles split up, maintaining a career away from the studio and in Las Vegas.

You can find a host of CDs from Tillotson – who was also canny enough to retain the copyrights to his own work – on the Ace label ([www.acerrecords.com](http://www.acerrecords.com)). Internet musicians? Do yourself a favour. Study Tillotson. ●

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# "You might not hear the effects of such sonic vandalism on a stand-alone 'tranny'"



Martin Pipe

In the beginning, digital radio was sold to British listeners as 'CD-quality', by well-paid neophiles who could barely contain their enthusiasm for all things consumer-friendly, high-tech and non-analogue. But they were of course completely wrong. Yes, the decoded result passed to a DAB radio's digital-to-analogue converter may have CD's 16-bit resolution and a sampling rate of 48kHz – higher than CD's 44.1kHz; I'm surprised the marketers didn't try to convince us that DAB is actually better than CD-quality!

But the UK's primary digital-radio platforms (the terrestrial DAB, and its newer DAB+ variant), and for that matter the online-streaming platforms snapping at their heels, employ lossy compression. Data that psychoacoustics theory (questionably) tells us we can't hear is discarded from the original PCM (i.e. non-compressed, and thus 'genuine' CD-quality) source.

You might not hear the effects of such sonic vandalism on a stand-alone 'tranny', but it's obvious when listening via hi-fi – especially with DAB streams at 128kbps or lower. Note that Radio 3 is better than most, streaming at 160kbps (which is increased to 192kbps for evening concerts).

Online, capacity is less of an issue. Here, Radio 3 streams at 320kbps using an AAC codec similar to that associated with DAB+. The result is audibly superior to the DAB service, and for that matter FM. But it's still lossily-compressed. And even at 320kbps, quite a lot of information is irretrievably-lost; the transfer rate of 'raw' 16-bit/48kHz PCM clocks in at a whopping 1536kbps (CD's 44.1kHz-sampled variant is 1411kbps).

Clearly, a broadcasting platform

operating at 'PCM' bitrates would be an inefficient non-starter. But what about using lossless audio compression? It has the potential for true CD-quality. Of these lossless codecs, the best-known is FLAC. Most personal music players support FLAC, as it allows more content to be squeezed onto memory cards with no sonic penalty. The bitrate is roughly half that of a PCM original.

So with this in mind, I was pleased to learn of the latest collaboration between Radio 3 and the BBC's R&D arm. The 'Radio 3 Concert Sound' pilot project delivers a Radio 3 FLAC stream to your PC, via a player that runs within your web browser. For the past three years, the BBC used a similar system to convey Proms concerts in 4.0 surround-sound (i.e. quadrasonic) to listeners.

And indeed many of the underlying technologies and standards (MPEG-DASH streaming, version 5 of the HTML Web-page markup language and the ISO-base media-file format) are the same. But instead of a 4.0 AAC-LC stream, the payload is FLAC. BBC R&D worked with open-source Internet community Mozilla and Xiph (the FLAC developer) to modify the existing standards so that FLAC could be accommodated.

The result, reckons the BBC, is an opportunity to "hear Radio 3 exactly as it left the studio".

The first phase of the trial, which lives on a BBC Taster page (<http://bbc.in/2p6SKrc>), ended in May. But the second phase will be Proms coverage – which sadly replaces, rather than augments, the 4.0 streams; as a BBC spokesman put it: "since 4.0 has run on Taster for the last 3 years, it can no longer be considered to be an experiment".

The FLAC stream should,

however, be more than a consolation for quality-conscious Proms fans. As before, you'll need a computer with compatible browser and a high-quality soundcard. Ideally, it would have a digital output to feed an external DAC. You'll also need a reliable broadband connection – the BBC explained that although the average transfer rate is 550kbps, it can peak at 1024kbps or so. The spokesman recommended a connection of "at least 2Mbps, to avoid buffering".

Currently, there is no test stream (as there was with 4.0) that would enable you to test your set-up ahead of a concert. I sincerely hope that the BBC R&D team implements one before the First Night of the Proms on July 14! One of the biggest criticisms of the 4.0 trial was its lack of a catch-up facility, whether independent or as part of iPlayer – you had to 'listen live'. There won't be one for 'Concert Sound' either: "Catch-up", I was told, "may be something we look at in the future", but for now "the trial is focused on live broadcast".

I then asked about the possibility of 24-bit audio. Internally the BBC uses 24-bit/48kHz, as I discovered when putting together my 'behind-the-scenes' Proms article for this magazine a couple of years back. Why couldn't the BBC encode that into a FLAC stream? A 2-channel 24-bit/48kHz stream works out at 2304kbit/s (not a vast amount more than the 16-bit equivalent). Halve that for FLAC, and the result should be conveyable via broadband.

Genuinely 'better than CD-quality' would have been another 'first' for the BBC, and the result would give listeners with fine hi-fi systems a real treat. Despite much chasing, the Beeb has alas failed to answer this query. ●

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WDPre3 Transformer coupled single ended valve pre-amplifier. Low output impedance. Multi-inputs utilizing relay switching. Requires WDPSU3 power supply

WDPSU3 High performance choke power supply

WDHD35 Transformer coupled single ended valve headphone amplifier. Multiple settings for headphone impedance matching.



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# "there is a thin line between what a customer might call a repair and what is actually a renovation"



Dave Tutt

I must introduce myself: I run a one-man operation in Kent providing electronic repair services to all those that come to my door.

Perhaps door isn't quite right. I also provide on line help and advice across the world for equipment that many think is beyond repair. I specialise in Casio guitar synths from the 1980s and Technics keyboards and organs with work from as far afield as New York, Texas, Belgium, the Philippines.

With the Technics side of things I have had requests for help from Alice Springs, the Bahamas, South Africa to name but three. I work on a diverse range of equipment and hi-fi is just another part of my workload – but with the obvious advantage that I get to try all manner of items, and this gives me a different insight into the market.

Over the years I have seen changes in the hardware as the market develops, producing new models and more facilities – though some things I would suggest have not extended the life of products despite what manufacturers might suggest.

Contrary to much wisdom, all product has what they call a design life. Even if the warranty says you have a 5 year return to base scheme, the product is likely to be made of the same commercially available components that all have the same life, no matter what.

The products I deal with may be anything up to 75 years old, but could also be only 14 months from purchase too, which means I have to be able to diagnose faults and sometimes reverse engineer the technology used at the time. That means repairing with parts that closely resemble the originals to maintain the sound. This sometimes means parts so small to be almost impossible to see, let alone replace.

I won't go into the manufacturers who treat independent repairers like idiots!

There is a thin line between what a customer might call a repair and what is actually a renovation. Some work called a service. It can also be that, no matter how old the item, yet at the same time some are in truth a renovation rather than a repair.

Examples? I had a very nice looking Audiolab 8000P in last week. My customer said it had never been turned off which, from the inside was very likely the truth. Even though it hummed so loud that it almost blew my test equipment off the shelf, it all still worked. The struggle to strip it to get the old main smoothing capacitors out and to replace them with modern high temperature versions and then the process of repairing the heat damaged printed circuit board was at least a 12 hour job but once done was a considerable success.

Another customer arrived with five cassette decks all from eBay. Three midrange Yamaha KN580 models, a Yamaha auto reverse tray loading Kx-m5 and a badly damaged Akai GX52.

There is always some trepidation with any electro mechanical device like these units when it arrives in the workshop. Apart from the electronic issues that may involve sourcing parts that haven't ever been for sale to the public, there are also the problems of rubber components that have turned to a liquid glue like state that cannot be cleaned out of mechanisms and renders the equipment beyond repair.

However the three KN580 cassette decks had probably only had 10 cassettes through them: they were free from wear. The Kx-m5, a paperback size machine, was very good for its compact and somewhat unique design, although it is obviously compromised because of that. The

later needed a loading belt so that was obviously a repair, while the other Yamahas were a service case so with a clean of their heads, pinch rollers, a check of bias settings and that the channels are matched in both record and playback modes, they were ready to be returned to the customer.

The Akai GX52 was physically damaged, having been struck with something that smashed off the cassette door; the mechanism itself was jammed; the loading motor could not move anything.

The damaged door needed new pins where the plastic ones had broken – some brass rod glued in place worked well. The mechanism had possibly become damp and the aluminium and stainless steel interaction at the pinch roller arm stuck so hard even brute force to remove it was difficult. Heat from a soldering iron and some carefully cleaned and lubricated parts got things back to normal. This was by far the most heavily used cassette deck I have seen but because of its hard wearing Akai GX glass-crystal head it still produced the fine tapes under test. This was a renovation rather than a repair.

Everything I take the lid off must be electrically safe to return to the customer: they all have to be PAT certified before they disappear into the distance, back to their owners.

So this week continues much as normal. A visit to a customer with an old Hammond organ that doesn't play its bass pedals properly, three active speakers all with various failures and all awaiting spares. A large FA slaveamp with one channel down and a collection of exciting things on the horizon just waiting to be repaired! Hi-fi products old and new are still a big part, valve amps and tape recorders in particular, that I will talk about more in future. ●

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, paced 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 autoboard 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 R3300, 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  
Ronkers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

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

**PIONEER PL120** 1973 £36  
When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL1120 was off the pace compared to rivals.



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

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

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

**GOLDRING Lenco GL75** 1970 £15.65  
Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today.

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





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

**TO NEARMS**

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

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

**AUDIO DRIGAMI PU7** 2007 £1,300  
The classic Syriax 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 TECNODARM A** 2003 £442  
Clever reworking of the Rega theme, using blasting drilling and rewiring!

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

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

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

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



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

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

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

**LINN ITTOK LVII** 1978 £253  
Japanese design to Linn specs made for a 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 DBH-B SE** 1996 £180  
Punchy, rhythmic character with oddles of detail makes this a great budget audiophile classic. Partner with a Goldring 61042 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 Supernail 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 DBH-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 semi-nal 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 30W 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.

**LECSO 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.

**LECSO AC-1** 1973 £ N/A  
Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.

**QUAD 33** 1968 £43  
Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...



**LEAK POINT ONE STEREO** 1958 £ N/A  
Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!



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

**LOUDSPEAKERS**

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



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

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



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

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



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

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

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

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

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

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



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

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

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

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



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

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

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

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



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

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

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



**CELESTION SL6** 1984 £350  
Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit coarse at high frequencies and limp in the bass. Speakers would never be the same again...

**HEYBROOK HB1** 1982 £130  
Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic



**QUAD ESL63** 1980 £1200  
An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.

**MISSION 770** 1980 £375  
Back in its day, it was an innovative product and one of the first of the polypropylene designs. Warm, smooth, clean and powerful sound.

**ACOUSTIC RESEARCH AR18S** 1978 £125  
Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, although finesse was most definitely not their forte...

**YAMAHA NS1000** 1977 £532  
High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image 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 NVO** 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. Total 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 ATAC-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 light, 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 lot 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 15x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperback-sized remote control.

**YAMAHA CD-X1** 1983 £340  
Nicely built 15x2 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 15x2 DAC, and you even got remote control!



ANALOGUE RECORDERS

**AIWA XD-009** 1989 £600  
Aiwa's Nak heater 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 magstan transport on a par with a Swiss watch, single rec/play head better than most Naks. Result, sublime.

**PIONEER CTF-95D** 1978 £400  
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.

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

**SONY TC-377** 1972 £N/A  
A competitor to the Akai 40000 open reel machine, the Sony offered better sound quality and is still no slouch by modern standards.

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

COMPACT DISC TRANSPORTS

**ESOTERIC PD** 1997 £8,000  
The best CD drive bar none. Brilliantly incisive, ridiculously over engineered.

**TEAC VRDS-T1** 1994 £600  
Warm and expansive sound made this a mid-price hit. Well built, with a slick mech.

**KENWOOD 9010** 1986 £600  
The first discrete Jap transport was beautifully done and responds well to re-clocking.

DACS

**DCS ELGAR** 1997 £8500  
Extremely open and natural performer, albeit extremely pricey - superb.

**DPA LITTLE BIT 3** 1996 £299  
Rich, clean, rhythmic and punchy sound transforms budget CD players.

**CAMBRIDGE AUDIO DAC MAGIC** 1995 £99  
Good value upgrade for budget CD players with extensive facilities and detailed sonics.

**PINK TRIANGLE DACAPO** 1993 £ N/A  
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

**QED DIGIT** 1991 £90  
Budget bitstream performer with tweaks aplenty. Position PSU upgrade makes it smooth, but now past it.

CABLES

**MISSING LINK CRYO REFERENCE 2008** £495/0.5M  
High end interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

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

**VDR ULTIMATE THE FIRST** 2004 £250  
Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space.



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

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

# vinyl section

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AUGUST 2017

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

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**LOST RECORDINGS FEATURE 83**  
Paul Rigby explains Davialet's new Lost Recordings LPs.

**LENCO L-90 87**  
A budget belt drive turntable reviewed by Noel Keywood.

**AUDIOPHILE BOOK 93**  
Paul Rigby reads about a Melange of Musical Pipe Dreams (etc).

## news

### MPS JAZZ

Two LPs from MPS ([www.mps-music.com](http://www.mps-music.com)) include German jazz trumpet genius and avant polyphonist Albert Mangelsdorff's '...and His Friends': Don Cherry and Elvin Jones being just two as he moves into free jazz. Innovative and enthralling.

Also look out for 'Tristeza on Guitar', Baden Powell's latin jazz guitar, a superb jazz outing with pop-related arrangements that add accessibility.



### ROCK TRIO

From SPV's Steamhammer ([spv.de](http://spv.de)) is Nitrogods' 'Roadkill BBQ' plus a CD version with two bonus cuts. Founded in 2011, this heavy metal band was founded by guitarist Henny Wolter (Ex-Primal Fear). This is big bearded, gruff-voiced, Lemmy-style rock.

Katania's new double album gatefold, 'The Great Cold Distance', recorded live at a Roman amphitheatre on 22 September 2016. Lyrically superior, melodic prog metal with [shock] light and shade.

Also look out for stoner outfit, Ex People's 'Bird', another lyrical triumph on social issues. Refreshingly confrontational for misery rock.



### MUSIC ON VINYL

A varied batch from the Dutch label ([www.musiconvinyl.com](http://www.musiconvinyl.com)), this month includes a gorgeous edition of 'Gorgeous' (1993), a double album of blissed dance electronica from 808state. On purple vinyl, numbered and including seven bonus tracks.

Also on coloured vinyl are Bronx-based Tim Dog's rap 2LP, 'Penicillin on Wax' (1991). Vicious, sneering and decidedly anti-West Coast; Dutch outfit, New Cool Collective's 'Featuring Thierno Koite' a LP including the Senegalese saxophonist offering moody rhythmic jazz with latin flavours; New York singer songwriter, Somi's new LP uses R&B and jazz to investigate the immigrant experience using Harlem as a backdrop for 'Petite Afrique' with a Nina Simone vibe while German outfit Nena's '(Fragezeichen)', do you remember her 80s hit, '99 Luftballons'? This was the previous album from 1984 mixing seventies rock, with eighties simplicity and melodic pop.

If Mickey Baker's guitar work had been played and released under his own name instead of being placed as a backing artist for others, then he would have ranked up there alongside Chuck Berry as rock'n'roll's supreme guitarist. 'The Wildest Guitar' (1959) his solo debut doesn't feature his strongest material but it still highlights his undoubted talent.

Also look out for Forest's 'Full Circle' (1970) a pleasant journey into folk-rock plus Procol Harum's superb 'Shine on Brightly' mixing art rock, blues and prog to full effect.







**BEAR FAMILY**

Two and half releases from the German audiophile label ([www.bear-family.com](http://www.bear-family.com)) include Tages, an excellent Swedish group that could have been mistaken for a British band. After early Merseybeat song cloning, they pumped out respectable mod-influenced rock. This intriguing Abbey Road-produced 'Studio' (1967) combines psychedelia, rock and folk, and backwards guitar. Includes the 1968 promo film 'Dalamanía' on DVD.

Bobby Bland's 'Dreamer' (1974) was a popular seller but not up to his earlier releases.


As for the half? Jerry Lee Lewis' '...and His Pumping Piano' (1959) Sun 10" features 'Great Balls of Fire' and 'Whole Lot of Shakin' Going On'.



**AT THE MOVIES**

The Music on Vinyl soundtrack imprint offers four excellent releases, limited and on coloured vinyl. First up is James Horner's 'Avatar', first time on vinyl and including a 6-page insert; 'The Chamber' arrives via The Manic Street Preachers James Dean Bradfield with a four-page booklet (only 750 copies of this one out there); 'Hatari' is Henry Mancini's 1962 soundtrack from the Howard Hawks' film (limited to 500 copies) and also look out for 'M\*A\*S\*H' (limited to 750 copies), Johnny Mandel's 1970 classic.

**WAH?**  
 From the Spanish audiophile outfit ([www.wah-wahsupersonic.com](http://www.wah-wahsupersonic.com)) Wah Wah has released GAM's '1976' cassette release on vinyl for the first time. Gunter Schickert partners with Axel Struck and Michael Leske. This mind-expanding and rhythmically evolving krautrock LP (plus insert) mixes drones and loops with Floyd noise with Ash Ra Tempel-esque guitar vibes.




**MODERN HARMONIC**

Two from the Sundazed imprint ([modernharmonic.com](http://modernharmonic.com)) includes Dennis The Fox's 'Mother Trucker' (1972), originally a 1,000-copy private pressing, offering a loquacious singer-songwriter and Seattle backing musos offering earnest, manly and slightly cheesy vocals singing slightly skewed rock strangeness.

'Blues for a Stripper' is a sexploitation soundtrack for the film, 'Satan in High Heels'. This jazz noir from Mundell Lowe mixes sleazy, smoky club tones with deliciously lounge-like pop vibes.

**...AND FINALLY**

From Munster ([munster-records.com](http://munster-records.com)) is Mattin's 'Songbook #6', no-wave/punk from Berlin with a sloppy Lou Reed-esque vocal style.

Sam Airey's 'In Darkness Rooms' (Hide & Seek; [www.hideandseekrecords.com](http://www.hideandseekrecords.com)) presents a simple suite of arrangements moving away from a silent background. Airey's approach to the 'still' gives his songs a skeletal feel.

'Orchestra of Samples' from the UK electronica duo, Addictive TV is a 45rpm edition. The duo sampled over 100 artists in over twenty countries, mashed it all up and did a Moby by turning this impassioned, authentic music into aural Lego, acceptable to Western ears and the guy's bank accounts.

Finally, acoustic piano man, Alan Broadbent, releases 'Developing Story', recorded at Abbey Road through valves, we hear. The jazz man fronts a full orchestra full of lush melodies, including original music and covers from Miles Davis and Coltrane.





**Technics launch a budget version, the SL-1210GR, of their new Direct Drive turntable – and Timestep tune it up. Noel Keywood listens.**

# Better Direct

**I**f you want to spin LP perfectly, for 40+ years a great way to do it was with the Technics SL-1210 Mk2 Direct Drive turntable – price around £650.

The production machinery wore out and the motor became

outdated, so last year Technics introduced the technologically sophisticated SL-1200G and GAE limited edition as replacement. With a bigger motor came a bigger price – £3000.

Recently, they announced a

simplified and less expensive version, the SL-1200GR (silver), price £1300. Here's a look at the new GR, but upgraded by Timestep of the UK to become the Evo SL-1210GR (black). Yes, it's all very complicated and confusing, which is why I have just



laboured through all the editions, colours and names, as a prelude to set the stage.

The promise here is of a technologically sophisticated 21st century Direct Drive turntable from Technics we can all afford, but in tuned Evo form without unwanted bits, because as standard the Technics GR comes with a prosaic arm and on-board switch-mode power supply, both of which raise audiophile eyebrows. But let me cover the new GR first before looking at Timestep's improvements.

Back in 1972 the Technics Direct Drive motor was revolutionary. Technics came up with one of the first electronically controlled low speed motors, one that could hold perfect speed. Tough and reliable, they built it into a turntable aimed at DJs – Saturday Night fever and all that. Variable speed and a standard 1970s pattern S shaped arm, found on budget belt drives like Pioneer's PL-12D of the time, were part of its package appeal. An orange strobe light illuminating the platter's edge markings added visual interest and a pop up cue light for DJs working in the dark was a useful aid. Quick start and stop, triggered by a large square on/off switch underlined the unit's functionality.

But to audiophiles the original SL-1210 Mk2 had limitations. It's arm was simple in construction and outdated, surpassed by Rega and SME for example. The platter was necessarily lightweight, in order to start and stop quickly. This was a benefit to DJs but a drawback to audiophiles, because it was structurally resonant. And the plinth was also light and lively. All the same, we've used a Timestep upgrade of the original SL-1210 Mk2 for some years now because it is utterly reliable and holds both accurate and rock steady speed, which we must have when reviewing. Ours is equipped with a lovely SME309 arm in order to carry cartridges under review and has the external power supply you see with the Evo GR model here. So we know the breed well.

It was Japan's electronics industry of the time (early 1970s) and the emergence of the transistor that led to the development of the Technics motor by Matsushita, using early servo-control technology. But that was long, long ago. Nowadays it is all done on a silicon chip and such motors are used everywhere, including your washing machine that turns slowly forward, then backward, then moments later cranks up to

1400rpm; it's driven by a massive BLDC, or brushless d.c. motor.

With so much demand, BLDCs have become the norm and technologically very sophisticated, used as servo-motors in aircraft, in disc drives of all sorts and what have you. That's why the 40+ year old motor of the SL-1210 Mk2 could, underneath the hood, be improved. However, performance has always been exceptional, way better than belt drives in terms of speed accuracy and stability.

Hence the new-in-2016 Technics SL-1200GAE turntable. Beneath the platter sits a massive twin rotor motor with enormous starting torque, allowing the use of a much heavier and more rigid brass and aluminium dual layer platter. But again this suits DJs more than audiophiles used to watching a belt drive crank up to speed whilst the tea is being made. Now Technics have introduced a less expensive GR version that I first saw earlier this year at the Sound&Vision Show, Bristol (UK) 2017. Underneath, it uses a smaller and simpler single-rotor motor, closer in mechanical topology to the original motor. If anything the SL-1200G motor is over kill for hi-fi use and, our measurements



**The long slide control alters speed by +/-8%, with a central zero and circular quartz-lock button to select 33, 45 or 78rpm exactly. Speed adjustment range can be doubled to +/-16% by pressing a small rectangular button.**

show, is actually a little worse than the cheaper GR – who would have believed it!

Peering closely at Technic's spec for the new SL-1200G/1210GR (silver/black) I spot the subtle differences. The single rotor motor has less torque, 2.2kg-cm instead of 3.3kg-cm, and a lighter one-piece die cast aluminium platter of 2.5kgs, compared to the 3.6kg brass/aluminium platter of the SL-1200G. Yet both have a quoted Wow & Flutter figure of 0.025% and a start up time of 0.7secs to 33rpm. All these changes make a big difference to weight however: the SL-1210GR weighs 11.5kgs whilst the SL-1200G weighs 18kgs.

So that gets the new Technics into perspective. Timestep take this package, remove the arm, fit a new arm mounting plate and provide an external linear power supply, as well as tune the plinth with new mat etc, as options. Recent price increases have put SME out of the cost frame here, so the Timestep Evo version gets a Michell TecnoArm, which is a modified Rega RB202. Part of the mod process is to drill the arm tube to disperse resonances; moths have nothing to do with it.

So in Timestep's Evo package you get a Rega sourced, Michell tuned UK arm suitable for all cartridges (MM and MC), a small, external linear power supply replacing the original internal switch-mode unit, a Oyaide platter mat option, all adding to the basic Technics offering.

The SL-1200GR has three speeds: 33,45 and 78rpm. Each is adjustable, using the slide control you can see at right on the plinth. At the central detent of this control however, the turntable speed-locks to a quartz crystal reference – and this is quite important. It prevents speed-wander, which in turn reduces wow. The turntable runs at the correct speed always, and variation in speed from wander barely exists. Direct Drives without speed lock can wander and traditionally have done, although this is abating as chip-based frequency sources become more stable.

A rotary On/Off switch sits atop the stroboscope pillar at left, and switching on triggers the blue strobe

light that shines on the platter's edge.

The plinth is solid and heavy, made from BMC (bulk moulding compound). Dimensions are 453mm wide, 173mm high with dust cover on but closed, and 372mm deep. The spring-assisted dust cover hinges upward and space is needed above the turntable to accommodate this, as always, or it can be removed.

The Rega RB202 arm is a one-piece casting with tapered arm tube of exceptional rigidity, integral bearing hub and rigid but light fixed head shell. That means you don't get the convenience of a removable head shell, instead getting lower moving mass and better sound from the unitary structure. Michell add silver wiring and drill the tube to further improve sound quality. Timestep supplied ours with a Denon DL-110 high output moving coil (MC) cartridge but are happy to fit any or no cartridge.

Feeding the motor and electronic

supply that does not, by its nature, produce radio rubbish. It is housed in a small, solid metal case with IEC mains input and XLR output. The turntable has a fixed power lead, 2ft long, terminated in a matching XLR plug that pushes in and locks.

### SOUND QUALITY

I used the Evo GR with an Icon Audio PS3 valve phono stage, driving both a McIntosh MC152 power amplifier and alternatively an Icon Audio Stereo 30SE single-ended valve amplifier, into Martin Logan ESL-X hybrid electrostatic loudspeakers. The system was fed by an Isotek Evo 3 Mosaic mains regenerator.

The Denon DL-110 I am unfamiliar with – and I got a big surprise here. Priced at an almost frighteningly low £200 it's a high output moving coil designed to be used through an MM input – and this is how I used it. Immediately I was struck by a very solidly wrought



**The Michell TecnoArm is based on a Rega RB202. Michell fit their own counterweight assembly, secured by a hex bolt and matching key. The lift/lower lever has little clearance beneath it, making use slightly awkward.**

circuits of the SL-1210GR is an on-board switch-mode power supply, used because there's limited space in the chassis and switch-modes can be made small. Also, they accept 110V-240V at 50Hz or 60Hz, so work anywhere. However, switch-modes radiate radio-frequency rubbish and the SL-1200GAE unit is unscreened – unfortunate.

It has been removed by Timestep, to avoid possible interference into a sensitive pickup cartridge and lessen noise. Instead, power now comes from an external Timestep linear

sound stage where instruments had a firm presence, so whilst Neil Young sang After the Gold Rush in front of me (new all-analogue re-master pressing) the piano behind him had massive scale and sat in an open and natural acoustic. At times I heard some congestion on vocal peaks that sounded like the tracking limit was being approached – a common problem with high output MCs – and upper treble was reticent; the '110 lacks sparkle. I duly changed it for an Ortofon 2M Black MM and was chastened to hear the





**The strobe light now shines blue against the machined platter markings. At top is a rotary on/off switch. The GR retains the same large start/stop button of its predecessors.**

flatter sound stage of a typical MM, if better defined higher frequencies and more confident tracking too. All the same, the Denon was so clear, dimensional, solid in its imaging and smooth that I soon unbolted our 2M Black and went back to the DL-110; it really is a very good cartridge, with great strengths tempered by a few weaknesses.

Our sharp sounding and messy cut of Valerie by The Zutons was tidied up nicely, background stick work having intriguing rearward presence, whilst drums had a lovely firm, dimensional thwack to them. The ability to make sense of 'difficult' tracks is always heartening to hear and the DL-110 in the TecnoArm managed well here.

The SL-1210GR for its part was rock steady in pitch, with no sense of wateriness or wavering of tone, as you might expect. I also felt this unit had a slightly darker tonality than the GAE, in spite of its lighter plinth and platter, likely attributable to the heavy rubber platter mat on our review sample.

The strings of the Weiner Philharmoniker playing Mozart Symphony No35 (Decca re-master by Project) were blurred over by the stylus of the 110 but otherwise the orchestra had impressive dimensionality and vivid presence before me, between the X-Stat panels of our Martin Logans. All the same, I'd had enough after a while and fitted our Ortofon Cadenza Bronze MC cartridge to see what the turntable could do with a refined MC free from limitations.

Now – suddenly – I was in business! Re-spinning After The Goldrush, Neil Young moved a few

steps forward toward me. There was clear resolution of fine vocal intonations and conspicuously more detail all round. The strings of the Weiner Philharmoniker had a sheen to them and I could discern individual instruments, rather than a homogenous blur.

The SL-1210GR with TecnoArm now started to show what it could do. With such resolution I heard from the TecnoArm an mild attenuation of upper midband frequencies that gave forceful detailing and sharply defined images on the sound stage. It's an arm that best suits softer sounding cartridges than the Cadenza Bronze I feel, a Quintet Black being more appropriate in this price bracket, although a Cadenza Black would be even better. Otherwise, I would veer toward fitting a more neutral Rega RB303 or, with deep ponkers, an SME309.

Since the lower torque motor of our SL-1210GR had absolutely no cogging at 6.6Hz, unlike the more expensive GAE, and even better

speed accuracy and stability as result, it was hardly surprising that it should sound smoother and darker in tonality, but just as rock stable as its more expensive stablemate. You can detect the stability of a Technics in what is razor sharp metronomic timing, especially obvious with Rock using synthesisers, such as the Scissor Sisters's 45rpm Ta Dah LP that I span.

**CONCLUSION**

The Michell TecnoArm is forward and detailed in delivery and is well suited to the smooth Denon DL-110 cartridge Timestep fitted to our review product. The main drawback of this cartridge is a budget stylus of limited resolution.

Fitted with an Audio Technica AT OC-9MLIII or Ortofon Quintet Black, both high quality but not-so-expensive moving coils, what you get with this package is exceptional sound quality from LP at an affordable price.

**PRICE LIST**

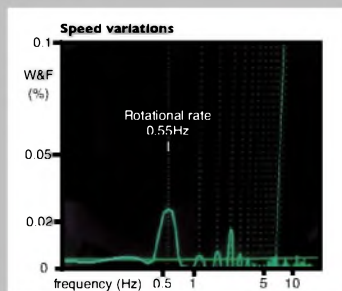
Technics SL-1210GR	£1299.00
Michell Tecnoarm	£677.00
Arm mounting plate	£90.00
Timestep HE III PSU	£450
Fitting etc	£200.00
<b>Total</b>	<b>£2716.00</b>

**MEASURED PERFORMANCE**

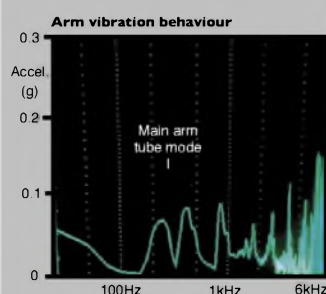
There was negligible speed error, as always with the quartz-locked reference used by the Technics motor. A 3150Hz test tone measured 3153Hz – negligible error. Better, it held this value rather than wandering up and down in frequency like belt drives.

Speed variation was minimal when using a carefully centred DIN 45 540 test disc (no other disc is suitable). There was fractionally more wow (0.05%) than

**SPEED VARIATION**



**ARM VIBRATION**



the SL-1200G (0.04%), likely due to the lighter platter, but with DIN weighting applied both have a fantastically low 0.04% total Wow&Flutter figure. With Japanese JIS weighting, this value fell to 0.025%, exactly as Technics claim in their specs. and beyond most other turntables.

Our spectrum analysis of wow and flutter components up to 20Hz shows also that where the SL-1200G we tested in the September 2016 issue had a small amount of flutter around 6.6Hz (0.55Hz rotational rate x 12 pole motor), our review SL-1200GR had nothing at all here. In other words, it had none of the talked about 'cogging' of a Direct Drive. Not even one smidgen of it – and was actually a little better than the more expensive SL-1200G in terms of flutter, likely because the motor has less torque and therefore less influence on the rotating inertial mass of the platter – a fascinating outcome.

Vibrational modes in the TecnoArm were fairly well suppressed our analysis from a B&K accelerometer fitted to the headshell shows. NK

<b>Speed error</b>	<b>0%</b>
<b>Wow</b>	<b>0.05%</b>
<b>Flutter</b>	<b>0.02%</b>
<b>Total (DIN wtd)</b>	<b>0.04%</b>
<b>Total (JIS wtd)</b>	<b>0.025%</b>

**TIMESTEP TECHNICS EVO GR**



**OUTSTANDING - amongst the best**

**VERDICT**

A tweaked Technics Direct Drive and tuned arm that together give superb results from LP.

**FOR**

- sound quality
- adjustable speed
- 78rpm

**AGAINST**

- mediocre stylus
- all manual
- no removable headshell

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# Totally Lacquered

**French audiophile hi-fi outfit, Devialet and its gallic mastering engineering cousins, Fondamenta has launched the Lost Sessions series of vinyl using the latter's new Phoenix system.**

**T**he Lost Recordings is a new series of carefully crafted audiophile vinyl LPs (primarily, although CD and hi-res files are available alternative formats too) that unearths previously lost music for your listening pleasure. So far, we've had three jazz LPs from Sarah Vaughan (at the Laren Jazz Festival in 1975), Oscar Peterson (at Concertgebouw in 1961) and Bill Evans (at Hilversum in 1968) and there's a fourth on the way (see The Latest, below) but non-jazz releases could be forthcoming in the future.

Audiophile vinyl releases are, especially these days, not especially infrequent. The difference with this announcement is two fold. Firstly, the audiophile hi-fi company, Devialet has brought its Expert Pro system to the mastering process. The Expert Pro is essential to the creation of these LPs.

Secondly, the restoration/mastering engineer studio, Fondamenta has developed a wholly new, multi-step system of restoration and mastering to create, in its view, the best vinyl editions that you can buy anywhere in the world. Such is the faith that Fondamenta has in this new system, it has even issued patents all over the place to protect its new technology and has given it a name: Phoenix.

Before we get to the techie parts, though, why vinyl at all? If you're going to launch a shiny new restoration/mastering system and you're looking at a product that is equally shiny, why not package it in something like DSD 256 or even the new DSD 512 into a fancy package and charge a lot for it? Why pick on ye olde vinyl?

According to Devialet's UK General Manager, Victor d'Allancé, there was no contest, "After finding



**Sarah Vaughan's whose Lost Recordings takes you back to the Laren Jazz Festival in 1975.**



**...while the Oscar Peterson vinyl edition is taken from Concertgebouw in 1961.**

the original master tapes we wanted to do full justice to the sound," he said. "We felt that the lacquer was the best medium firstly and the limited-edition vinyl followed from that. We also wanted something tangible, somewhat that you can touch."

Again, though, you could put a series of DSD files in a fancy looking USB stick-like package couldn't you? "The first thing I did when I was in Paris and discovering the whole Lost Recordings project last year," said d'Allancé, "that was the first time in my life that I had seen a lacquer disc. The first thing I wanted to do was to touch it and...to smell it. You yourself are bringing emotion to this record. You're also talking about some of the greatest jazz artists on

earth. Also, this project is all about playing something for the first time in history, to the public. Something that has never been put in public hands."

It's amazing just how organic and necessary vinyl still is to music fans and producers. Even here, within this premium project and its high-priced reproduction process, vinyl was seen as the 'go-to' source format. It seems that, if you want to present the essence of what music is to the public, vinyl – even now – cannot be beaten. Especially where Phoenix is concerned.

The system itself was created by Fondamenta's founder (and recorded concert pianist) Frédéric D'Oria Nicolas, who is responsible for all artistic direction.

"I asked four engineers to help to develop a mastering process," said D'Oria Nicolas. "I was the only one to know about all of the stages. The engineers only knew about the part that they were developing. At this time, we were using the Devialet Expert Pro convertor. The Phoenix system is actually a restoring process from the original source to the final result. Phoenix doesn't actually work with the vinyl itself. Phoenix comes



**The original 'lost' Sarah Vaughan masters tape. Lost no longer!**

tools. If you don't use your ears then you can ruin everything. The result? It might not sound very humble but Phoenix cannot be compared to anything else. Really. Treated music sounds like it was recorded yesterday."

But what about the audiophile who may complain and say that Phoenix moves you out of the

may convertors before we talked to them. The best was the Devialet. It is absolutely amazing. Its also light and mobile so that we can process source material in the host country because most people will not ship precious tapes via the post."

So just how exacting has this process been? How in depth has Fondamenta been in creating The



**Restored and mastered by France's Fondamenta studio using their patent-pending Phoenix system.**

into play before vinyl appears on the scene. It is only the restoration process. Not just tape, either, it can be original vinyl processing, even 78s."

Phoenix is a four-step process. You have to clean and prepare the sources, play them well, convert them into digital and then delete every flaw in that recording, "We have very good algorithms for every kind of flaw too," said D'Oria Nicolas. "How we extract and how we restore the signal, before we even get to those algorithms, this is the secret bit. On the final step, we had to use our ears because the algorithms are only

analogue domain, into digital and back to analogue. Surely that is a cheat? It's no longer analogue is it? "I can tell you that if you are losing something, it's not really measurable. But look, even if you do lose something, the gain, on the other side, is so huge, it doesn't matter. The 'win' is so large," said D'Oria Nicolas.

As for the choice of Devialet kit in the process? "We didn't use the Devialet convertor because they were a partner and we felt obliged to use their hardware. It was completely the opposite. We chose to use their convertor and then we approached the company. We tried

Lost Recordings LPs? Here's one insight, the company actually tested different lacquer and cutting stylus types. It actually heard differences between different types.

"We travelled the world and tried different lacquer recipes to see which one was the best. Why? Because creating a lacquer is a hand-made process. This included lacquers from France, Germany, UK and Japan. I then asked a French engineer to create a lacquer using a Japanese and then an American cutting stylus on American and then Japanese lacquers. Four were created from the same recordings. There were



huge differences! Two were not great, two were very interesting."

The final choice was a Japanese cutting stylus on an American lacquer. That was seen as the best sounding combination for the project.

"When we created the lacquers for the limited edition releases," said D'Onia Nicolas. "That is, when we made available for sale with Devialet the 30 listed lacquer box sets, we had to use every American lacquer and Japanese stylus in stock at that time. There was actually a European shortage of both for a short time and it was our fault! The industry was complaining about the shortage and no-one could understand why the shortage had occurred. We knew though!"

So how good is the lacquer's sound quality? Compared to the original master tapes? "It's much better," said D'Onia Nicolas. "Don't forget that the Phoenix system has restored the tapes too. With no doubt is the sound quality better."



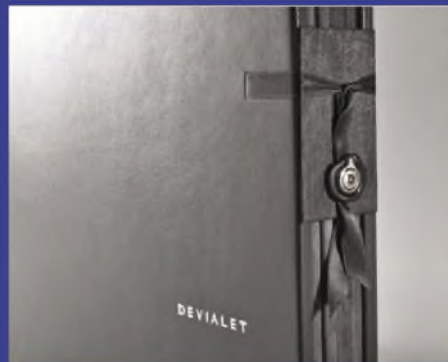
**Next in The Lost Recordings collection, Dave Brubeck Quartet at the Grand Hotel Kurhaus in 1967**

## THE LATEST

Next in the series within The Lost Recordings collection is one of the very last concerts of the Dave Brubeck Quartet, in the Grand Hotel Kurhaus, famous for its concert hall. From October 1967 in Scheveningen, the concert has been restored and remastered by Fondamenta. Released by Devialet on its online store, this limited edition vinyl will include a download card to receive the digital files (MP3 and AIFF 16bit) for free. A CD and hi-res 24bit version will be available separately.

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Created from aluminium, coated with nitrocellulose lacquer and spanning 14" with a blue edge, there have been a limited number of lacquers of each album produced for sale. Limited to 30 sets for each title release with multiple lacquers forming the entire album, the Vaughan, Peterson and Brubeck sets (of four discs in each) will cost you £6,300 per set. The Evans (of just two discs) will cost £4,500. This is a lacquer, though, which means that the sound quality will be far



superior even to the released limited edition vinyl but - and here's the kick - the surface is very soft. Play it once, just once, and the stylus will distort the medium. It will never sound that good ever

again yet, because it is the lacquer, this is the best way to hear this LP. You're looking at a one hit play experience, though. Keep it for a special occasion.

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**The lacquer has been created from aluminium, coated with nitrocellulose lacquer and spans 14" with a blue edge.**

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Category	Entertainment
Updated	7 Dec. 2014
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# Budget class

Noel Keywood takes Lenco's latest low-cost belt-driven turntable for a spin.


**A** flood of budget turntables from China is hitting the market and I see 'net chatter has them ranked as vinyl chewers by some – those convinced Chinese means rubbish. Even those reporting a happy experience seem doubtful this can be possible. Add the Lenco L-90 I'm reviewing here to the flood. As with earlier Far East spinners from Audio Technica, Reloop et al, I gave the L-90 very close inspection and extensive measurement to see how big its appetite was for vinyl – and what form it took: chew it or play it!



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VINYL NEWS AND REVIEWS SECTION 54 PAGE 78  
AUGUST 2017

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**The L-90 plinth looks the part – and so does the arm. It has a removable headshell with a standard bayonet fitting, making cartridge change easy and quick.**

Surprisingly, the belt drive L-90 is more expensive than the £199 Lenco L-3808 Direct Drive I reviewed June 2017 issue. Yep, it's got to a point nowadays where technological sophistication in the form of Direct Drive comes cheaper than wood; the L-90 costs £50 more because it boasts a wooden plinth! It even says so in big letters on the box: Wooden Plinth. I wonder whether this may be for an emerging Chinese market where Western preferences and domestic style are valued more highly than latest technologies, which are marketed brashly in the East.

Whatever, the L-90 isn't a threat to forests because there's very little wood in it. The plinth is made from thin compressed particle board (not MDF) covered in a plastic veneer. What you get here though is a structure that's less lively and resonant than the light plastic moulded plinth of the L-3808. It also looks more homely and elegant too: the Direct Drive L-3808 was presented as a DJ turntable.

A weight of 4.62kgs makes the L-90 easy to handle and place on a sideboard or shelf, either of which should be firm and vibration free of course. Dimensions of 460mm width, 368mm depth and 130mm height (cover closed), or 400mm cover open are all as low as it can get with LP; the unit is compact.

Two speeds, 33rpm and 45rpm are selectable at the push of a button; no need to move a belt or anything like that. Inside, a d.c. servo-motor simply changes rotational speed.

Although the platter comes with strobe markings around its periphery there is no strobe lamp to check speed. The fitted straight arm has a removable headshell, pre-fitted with a moving magnet (MM) cartridge, calibrated counterweight and manual lift/lower lever. Anti-skate (bias) is applied by a dial.

With power switched on by a small rear-mounted rocker switch, moving the arm over to a record sets



**A small rear panel carries a USB digital output (16bit/44.1 or 48kHz sample rate), auto-stop disable and power. There is no Direct analogue output bypassing the internal phono stage.**

the platter spinning; the arm must then be lowered manually using the lift/lower (cue) lever. At the end of a side it automatically stops after 15 seconds in the run-out groove, but the arm does not lift, nor return to its rest.

Unlike most other budget turntables hitting the market, equipped with an internal phono stage and USB digital output, the L-90 lacks a Direct output option – it has Line output only, even though the module used internally is the same as that of rivals. This eliminates the ability to use an external phono stage as an upgrade option – a peculiar omission within a product that is

priced higher than the £199 Lenco L-3808 Direct Drive, since it saves little, just the cost of a slide switch.

The rear carries a USB digital output that delivers 16bit digital at 44.1kHz or 48kHz sample rate, CD quality in other words. A copy of the free software editing programme, Audacity, is provided on a CD and much of the handbook is taken up with explaining its use. However, Audacity for Mac or PC is best downloaded from the 'net (latest version) and the on-line user guide and help forums are best used if you want to record digitally. Analogue output is through a captive cable, not phono sockets, again a restrictive method that prevents the use of longer or better cables.

In all then, the L-90 lacks the options of many budget rivals, including Lenco's own lower priced L-3808. It also lacks the well honed Audio Technica AT3600 cartridge, using instead a SkyTec CR2861 that tracks at 2.5gms.

Unpacking and set-up were both easy enough, but no alignment protractor is supplied, unlike Audio Technica's AT-LP5 for example. The L-90 looks smart, that's for sure, and I found it easy to use. Measurement showed the internal phono stage has a warp filter like all its rivals, that

eliminates loudspeaker cone flap when playing warped LPs. This gives fast, tight bass, but you don't get the low end depth and weight of phono preamps that lack such a filter (as most do). Personally, I like the fast, punchy bass this module provides so it's an observation, not a criticism, but inability to use an external phono stage means there's no alternative here. Not so good.

Tests showed the arm floats freely; it has good bearings. Anti-skate force even when set to maximum was too weak to prevent inward skating on a smooth vinyl surface, or to fully counteract mistracking.

The SkyTec cartridge tracked

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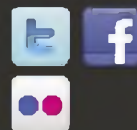
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*The pre-fitted SkyTec CR2861 MM cartridge tracks at 2.5gms.*

well and does not chew vinyl; it stayed in the groove on the high level 80µm test track of Clearaudio's Tracking Test disc, a surprisingly good result. But I was to learn this was its only strength.

### SOUND QUALITY

Dropping the needle into the groove on Amy Winehouse's 'Rehab' revealed spitty vocal sibilance and sharp sounding cymbals; with a hard patina to the sound it made for less than pleasant listening.

This LP does have treble emphasis but the peak in output of the uber-budget CR2861 cartridge (revealed by measurement) made it painfully worse. Smoother, softer sounding LPs suffered less but by any standard the SkyTec cartridge was an unlovely sounding device, so I changed it for a Goldring 1012GX fairly quickly. I'm baffled that Lenco should use this cartridge in preference to the Audio Technica AT3600 on their L-3808 that costs little more (£25) but has a lovely

sound and great tracking.

With the Goldring in place, and volume turned right up on our Icon Audio Stereo 30SE valve amplifier I dropped the needle into a silent groove and heard no motor drone or rumble from the main bearing, nor was there hiss from the preamp; only vinyl noise issued forth when needle hit the groove.

The arm has a light patina to its sound, possibly from a ringy arm tube but this apart I heard a nicely balanced and wide-ranging sound from the Goldring cartridge. Bass was fast and punchy, due to the unit's in-built rumble filter, without wallow or heaviness from subsonics.

The sound stage between our

Martin Logan ESL-X hybrid electro-static loudspeakers was wide and stable and a conspicuous sense of stable pitch existed, giving the L-90 a confident sound; it lacks the watery pitch of so many belt drives that, at the price, is impressive.

### CONCLUSION

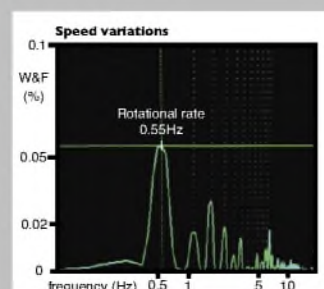
In essence the Lenco L-90 is a fine little turntable, if with a large weakness – the fitted cartridge. Curious that the Lenco L-3808 I reviewed last month was better all round at less cost. What I think Lenco are trying to offer here is a simple yet elegant package for the home. It fulfils this need if the cartridge is replaced.

## MEASURED PERFORMANCE

The L-90 still held impressively steady and correct speed under test. There was some slight speed drift over many seconds, from correct speed (3150Hz) up to 0.2% fast (3157Hz), a minor amount compared to usual. The needle of our Wow & Flutter meter stayed fairly close to a low 0.1% wow (DIN, unweighted) value, with occasional swings out to 0.15%. Our spectrum analysis shows variation at basic rotational frequency 0.55Hz (33rpm) as usual, accompanied by a few harmonics. This is a speed stable turntable.

The internal phono stage that provides Line output had a low gain of x55 (33dB) at 1kHz, giving 550mV from 10mV input. This is just enough to drive insensitive amplifiers (400mV) to

### WOW & FLUTTER



full output, with volume turned up. Its overload ceiling was adequate at 34mV.

Frequency response (equalisation accuracy) was correct, a warp filter rolling off gain below 52Hz. This suppresses cone flap caused by LP warps, but it removes deep bass. Noise measured a low -74dB IEC A weighted, a respectable figure.

The USB digital output reached digital maximum (0dB) at 16mV input to the stage from the cartridge. This is a bit low as the fitted cartridge was capable of delivering more but it does extract best results from the 16bit Analogue-to-Digital (ADC) fitted.

The SkyTec cartridge tracked very well (90µm), but frequency response peaked at 8kHz and rolled off steeply above this frequency, a poor result.

The L-90 had excellent speed accuracy and stability. The internal phono stage and USB digital convertor were also good. The SkyTec cartridge had sonically obvious limitations. **NK**

<b>Speed error</b>	<b>+0.1%</b>
<b>Wow</b>	<b>0.15%</b>
<b>Flutter</b>	<b>0.05%</b>
<b>Total W&amp;F weighted</b>	<b>0.08%</b>



*Two speeds are selectable by a small front rocker switch. The d.c. servo-motor changes speed, so the rubber drive belt doesn't have to be moved by hand.*

### LENCO L-90 £249



**EXCELLENT - extremely capable**

#### VERDICT

A good turntable that needs and can support a better cartridge.

#### FOR

- elegant appearance
- good all-round performance
- auto-stop
- ease of use

#### AGAINST

- sharp sounding cartridge
- no direct output
- captive phono lead

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**Paul Rigby looks at an intensely researched book of music from Australia and New Zealand – and elsewhere!**

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**W**ith a book name like that, it can only be a new tome from Vernon Joynson and, in fact, this softback book of 762 pages (and limited to no more than 850 copies with its own number printed on the inside front cover) will be familiar to any fan of Joynson's other detailed and well researched works.

I do have an issue with this book. Well, it's more a scratching of the head, really. I can see why the author has linked Australia and New Zealand together in a single book. The geographical connection is obvious. I'm not sure why Africa is featured at all in this book and, if you are to look at Africa, why in this limited fashion.

On a similar level, why include Turkey here at all? The latter receives less than a 100 pages while Africa a little more. Why not save both sections for books of their own or more logically formatted books? Both are literally tacked onto the enormous amount of information provided by both Australia and New Zealand: 532 pages in total.

Because of this, the book has a decidedly eccentric and illogical feel to it. Of course such a presentation will not put off the determined music fan and collector who will lap up the

information 'as is' and be happy that it exists in the first place. After all, what we have here, within the covers, is information of such specialist knowledge and such dedicated hard work that it's impossible to feel angry or even slightly irritated with Joynson for his questionable formatting decisions. The man is a research machine, there is no doubt. And more power to him.

Before I leave the scratching and digging, there are also a few quirks which will actually benefit the reader in the long run. For example, the book's title should actually be a little bit longer because you will find the odd jazz and rock-soul entry included too. Also where the original Turkish and Israeli album, EP, 45 and song titles where in their original language, Johnson has translated these into English to ease browsing and research for English-speaking readers.

The book features a host of images which can be found throughout, including a 12-page colour section. These principally include cover art but also the odd extra such as press shots of the artists and even the odd concert poster.

Each section is presented in the now familiar Joynson fashion. Let's

flip over to page 290 and see the might that was The Seekers. What we have here is a band line up and their tasks within the group as well as when they appeared: The Seekers underwent several line-up changes during their life time.

After that, a list of albums can be found. For The Seekers, that meant twenty-two LPs including compilations. Here, you will also find additional album information relating to, for example, an album appearing under a tweaked name in particular territories. Hence, the compilation, 'The Best of The Seekers' was the same the world over except in Holland and Denmark in which it had a different track listing. Essential information for the collector.

Retrospective compilations are even listed, as well as the band appearing on other various artists' compilations. Joynson then provides a detailed band history.

The information, covered on this one entry, is breath-taking. That goes for the rest of the book. A marvellous achievement and a source of information and pleasure for years to come.

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**TANNOY** 15 inch Gold speaker with crossover. Leak Troughline II with Studio 12 decoder. Quad 2 stereo tuner. Naim NAP90 amp, olive green. Tel: Phil 07754 550 755 (Cardiff)

**ISOTEK MAINLINE** mains filter. Very good condition, £90. Black Rhodium Symphony XLR interconnects, one metre long, £90. Electrocompaniet EC4 B balanced pre amplifier, very good condition, £1200. Tel: 07555 263 931 (Northamptonshire)

**Q-ACOUSTICS** Concept 20 speakers. Yamaha amplifier AS301 digital inputs. Monitor Audio Bronze 2 speakers. Q-Acoustics 3020 speakers. Q-Acoustics 2020 speakers. Open to offers. All boxed ready to go. Buyer collect please. Tel: Alan 01977 695 385

**REGA PLANAR 3** turntable, Arcam BR amplifier, Kef Q300 speakers, £550 ono. Tel: 01943 467 859 (West Yorkshire)

**TECHNICS** SL150 direct drive turntable, SME 3009 S2 detachable headshell, Shure M75ED, £450. Musical Fidelity E100 amplifier, E600 CD, E50 tuner. Remotes, instructions, mint condition. £550. Collect or courier. Tel: 01708 457 691

**ICON AUDIO** Stereo 20 amplifier, upgraded (JJ) valves. As new, minimal use. Manual and packaging. £490 ono. Revolver RW45 speakers, 90dB, unmarked, cherry, £170 ono. Tel: 01639 641 043

**TANNOY LANCASTER** speakers 12" Monitor Golds. Crossovers upgraded by Lockwood Audio. Stain rings on tops and cat scratches to fabric grills hence only £900. Buyer collects. West London paulhs015@gmail.com 07960014146

**AUDIONOTE INTERCONNECT** £300. Huygen K4 stands (specifically built to match Snell K's and Audionote K's) £295. Wanted: Audio Innovations valve amplifier. Anything considered. Tel: 0113 255 9475

**HARBETH P3** ESR speaker, rosewood, £900. Wilmslow Audio SMI 10 near field monitor, 2-way reflex, Scanspeak D2905/9700, Volt BM2500.4, 560mm x 330mm x 450mm, 92dB, £450. Wilmslow Audio horn loaded speaker, full range Fostex FE20B EZ, 97dB, Fostex T90.A, 106dB, 1100mm x 340mm x 495mm, £450. Tel: 020 8279 1810

**ROWE AMI** valve amplifier (11 watts) £295. Wanted: Elite Rock/Alphason Sonata turntable. Rehdeko RK115 speakers. Tel: 0113 255 9475

**ATC SCM 19** speakers in cherrywood. One year old, perfect condition. Cost £2000. Just £1200. Can demo. Tel: 01981 242 067 ask for Lee (Monmouthshire)

**NAIM STAGELINE** headphone amp, £180. Also Turntable Mat, £20. Tel: 01743 245 888 (Shropshire)

**UNISON RESEARCH** Unico hybrid integrated amplifier, £625. EAR Yoshino 834L line pre-amp, £625. Both in top condition. Tel: 07505 057 414 anytime, 020 7263 5702 after 7pm

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**GENELEC M040** Studio Monitors. Original owner. 7/2015 manufacture date. Excellent condition. £750 per, 01743 344 136, [denis\\_james@yahoo.com](mailto:denis_james@yahoo.com), Shropshire

**MUSICAL FIDELITY** A3 2 RDS tuner £175. Absolutely spotless, remote, original box. No smoke or pets. Kept covered and clean. Beautiful. Mike (Cheshire) Email: [imaldayates@hotmail.com](mailto:imaldayates@hotmail.com) Tel: 07500804700

**NAIM NAIT 1** amplifier. Red led light. Excellent condition. Superb sound quality. Very reluctant sale. Tel: 07432720033. Email: [pd123anwar@outlook.com](mailto:pd123anwar@outlook.com)

**ALL AUDIOQUEST** Gibraltar, 2m speaker cable £650, sky 1m xlr Interconnect £900. Eagle eye 1m coax digital £450, Isotek Syncro 1 mains lead £680. Email: [jamesmckendrick@btinternet.com](mailto:jamesmckendrick@btinternet.com) Tel: 01772 314151. Preston Lanc's.

**SONY PS-X555ES** turntable. Biotracer electronic tonearm. Shure V15 cartridge. Instruction book. vgc £600. 01394 387393 (Suffolk)

**ROGERS LS7** speakers Mahogany finish. Best price. £2-£3 West Wickam, Kent. 02087771235

**OYAIDE DB-510** pure silver digital cable BNC connectors. Ultimate purity and transparency 1.3m 5N (extremely pure) silver £150. Tel: 01243 528010

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# NEXT MONTH

## SEPTEMBER 2017 ISSUE

### McINTOSH MB50 STREAMER

McIntosh do a lot differently; we use their MC152 transistor amplifier as our in-house reference but it is unique in using bulky and expensive output transformers. Mad – but effective. That's why we have their recent MB50 streaming player with DTS Play-Fi for you next month. It does a lot differently. With streaming becoming so popular we had to find out just what McIntosh has to offer us in the field. Don't miss our September 2017 issue to find out.

Also, we hope to bring you –

DYNAUDIO EXCITE X38 SPEAKERS

Q ACOUSTICS CONCEPT 500 SPEAKERS

ONIX DNA 50 AMPLIFIER

AUDEZE EARPHONES

TRINITY AUDIO DELTA EARBUDS

SONY PS-HX500 DSD TURNTABLE

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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 issues, we cannot guarantee that all products listed above will appear.

**PICK UP THE SEPTEMBER 2017 ISSUE OF HI-FI WORLD ON SALE JULY 28TH 2017, OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: SEE PAGE 36**



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 OCTOBER 2017 - 9TH AUGUST

# PEARLS BEFORE SWINE

...BEAUTIFUL LIES YOU COULD LIVE IN  
1971. TOM RAPP.



"he was known to produce acid folk back in the late sixties – but with an edge: whether that be anti-war or pro-drug or some other large and contentious social subject."

**U**S-based music magazine, *Billboard* chatted to Bernie Taupin a while back about his song, made into a hit by Elton John, called 'Rocket Man'. Had he and John stolen it from David Bowie, it asked?

"Certainly not!" was the indignant reply and then, "We stole it from Tom Rapp and a band called Pearly Before Swine".

You could stage an argument that calling your band Pearly Before Swine is to confront the potential audience. That is to say, "This music is pure genius, huh, not that you would know what that is". The band itself was principally studio bound and, although it featured a rotating line-up, generally consisted of one man, Tom Rapp. He wrote and sang the songs as well as arranged them. He was known to produce acid folk back in the late sixties – but with an edge: whether that be anti-war or pro-drug or some other large and contentious social subject. He's still at it now, as a matter of fact: he works as a civil rights lawyer in the USA.

"I was born in Bottineau, N. Dakota, about 10 miles from Canada, near the Turtle Mountains", said Rapp to website, *Psychedelic Baby*. "We lived in Pine Island, Minnesota and Northfield Minn. where Jesse James robbed the bank. My grandparents lived near Hibbing. It is a true story that I was in a talent contest with Bob Dylan. I remember nothing of it – just news clippings my parents kept ('Another contestant was Bobby Zimmerman...'). We both lost to a seven year old baton twirler in a red-sequined costume. Why I didn't think of the costume first, I'll never know."

Rapp's work was steeped in culture. His lyrics borrowed from the likes of A.E. Housman, W.H. Auden, Sara Teasdale and Herodotus, while his cover art took from the likes of Hieronymus Bosch, Pieter Bruegel the Elder and other confrontational individuals. Even his choice of instruments was of an individual nature, utilising everything from celeste to cello and sarangi, to oboe and wind chimes. He even turned down a chance to appear at Woodstock. He was in love with a woman, at the time, and they were happily writing songs in Holland. So he was occupied.

Rapp's career really wasn't, to be honest.

The man was ripped off by label managers, his albums sold less and less with each succeeding LP release and, at one time, he almost starved to death through lack of funds.

This album, *...Beautiful Lies You Could Live In* was the final album produced under the Pearly Before Swine monicker before Rapp then continued under his own name. Recorded in New York, the album has a distinctly modern yet low-key American electric folkish edge to it, unlike the European flavours of past work. Sharing the load was Amos Garrett who played lead guitar on Maria Muldaur's massive 70s hit 'Midnight at the Oasis', plus former Mother of Invention Billy Mundi, who guested on Todd Rundgren's hit 'Hello, It's Me' and pianist Bob Dorough who recorded with Blossom Dearie and Charlie Parker and wrote 'Comin Home Baby' for Mel Tormé.

Here, Rapp's poetry remains layered and quite complex but it is not quite as incomprehensible or as opaque as some of his earlier works.

Not all of the tracks on this album are original either. Notable is the Leonard Cohen cover, *Bird On A Wire*, which is the best cover of the song bar none and is – arguably – better than the Cohen original! A.E. Housman's 'Epitaph on an Army of Mercenaries' is a thing of wonderment, meanwhile, with lyrics delivered by Rapp's wife, Elisabeth (she was that lady in Holland, I mentioned, above).

For fans of Van Morrison, Dylan and the like, this album is a dead cert grab and listen. Even within the scattered and rather irregular Rapp discography, this one album is a rarity within rarities. BGO ([www.bgo-records.com](http://www.bgo-records.com)) who's reissued this LP alongside 'City of Gold' (1971) as a value for money, 2-on-1 release should be congratulated in pushing it out of the door.

Also look out for other cult releases from BGO, this month including Janne Schaffer's 'Katharsis' (1976), 'Earmeal' (1978) and 'Presens' (1980). Schaffer? A Swedish guitar god working with everyone from Bob Marley to... Abba.

Also look out for pop/rock/jazz outfit Lighthouse and 'Lighthouse' (1969), 'Suite Feeling' (1969) & 'Peacing It All Together' (1970). **PR**



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