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MARCH 2015

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# welcome

## EDITOR

Noel Keywood  
e-mail: [editorial@hi-fiworld.co.uk](mailto:editorial@hi-fiworld.co.uk)

## DESIGN EDITOR

Faiza Chunara  
tel: +44 (0) 20 8206 6018  
mob: +44 (0) 7917 047 548  
e-mail: [adproduction@hi-fiworld.co.uk](mailto:adproduction@hi-fiworld.co.uk)

## PRODUCTION EDITOR

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

## SALES MANAGER

Louise Palfrey  
tel: +44 (0) 203 005 4927  
mob: +44 (0) 7917 047 548  
e-mail: [louise@hi-fiworld.co.uk](mailto:louise@hi-fiworld.co.uk)

## ADVERTISING EXECUTIVE

Brad Francis  
tel: +44 (0) 1923 677 256  
mob: +44 (0) 771 542 1569  
e-mail: [advertising@hi-fiworld.co.uk](mailto:advertising@hi-fiworld.co.uk)

## PUBLISHER

Noel Keywood  
e-mail: [publisher@hi-fiworld.co.uk](mailto:publisher@hi-fiworld.co.uk)

## FREE READERS CLASSIFIEDS

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

## SUBSCRIPTIONS

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

## PHOTOGRAPHY

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

## WRITERS

Paul Rigby, Rafael Todes, Tony Bolton,  
Jon Myles, Martin Pipe



What is it that we find so intriguing about products like that in our lead review this month, Icon Audio's industrially dimensioned MB81 valve amplifier? I have always loved the look of big valve amps, but then I wouldn't – to paraphrase a certain infamous lady. Not everyone is turned on by power stations – or so I thought. But nowadays they are it seems, after seeing reaction to these monsters in our office. That hi-fi products should manage to return to a time where form simply but eye catching

followed function, as in the Garrard 401 or Mkl Land Rover say, is an interesting possibility. There may be more behind the slow emergence of fantastic valve amplifiers like the MB81 from Icon Audio, that you can read about in our review on page 10. We will, I am sure, be seeing more big tube amps like this.

Rafael Todes, our illustrious contributor who plays violin in the Allegri String Quartet and has spent time immersed in the London Philharmonic, really, really wanted to take home Magneplanar's 3.7i loudspeakers. So he did, living with them for many weeks: you can read his review on page 15. He loved them, if with a few reservations. We also used them in the office, with the Icon Audio MB81 amplifier and Creek Evolution 100A, and we felt the same – fantastic. For classical music they are superb, even if they don't capture full orchestral forces Rafael says; for much Rock they also shine. But a high quality powered subwoofer would be a boon, even a necessity for heavy Rock.

The vinyl LP just won't die. Even if we wanted to ignore it, we could not. Looks like Technics are having trouble ignoring it too, a Facebook petition begging them for the return of their much loved SL-1210 Mk2 Direct Drive turntable. Take a look at <https://www.facebook.com/TechnicsPetition> that has attracted over 13,000 likes – including one from me. And what a fascinating and even controversial device it is too, as you'll find when reading readers responses to our bearing upgrade in the February issue. See page 36.

And finally, staying with the subject of vinyl, you'll see that suddenly, over Christmas, vinyl expert and contributor Tony Bolton passed away. One minute he was fine and chirpy – and loving what he did as a reviewer, next minute he had gone – I was shocked. Tony was totally dedicated, very popular and could stir debate; we will all miss him. There's a tribute to Tony on page 89.

**Noel Keywood, editor.**



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

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

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

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

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

## hi-fi world

Audio Web Publishing  
Studio 204,  
Buspace Studio,  
Conlan Street,  
London W10 5AP  
[www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk)

## verdicts



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unremarkable  
flawed  
keenly priced



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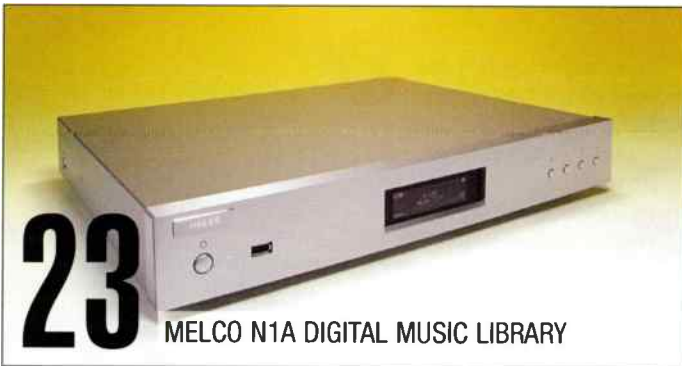
Distributed by Seymour Distribution Ltd 86 Newman Street London, W1T 3EX Tel: +44 (0) 20 7396 8000 Printed by Artisan Press Limited Tel: +44 (0) 116 235 5221  
Our Agents in Malaysia Millennium Hi-Fi & AV Simon Chang Showroom & office, 500-1-3 First Floor Wisma Indah (Shen Court), Jalan Tun Razak 50400 Kuala Lumpur, Malaysia  
Tel: 603 9283 8171 Fax: 603 9281 3762 e-mail: [info@millennium-audio.com](mailto:info@millennium-audio.com)

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# news

## WHARFEDALE DIAMONDS

Replacing the Diamond 100 Series, Diamond 200 comprises two standmount speakers and three floorstanding models, plus a centre speaker for home cinema use. The first Diamond 200 Series model to launch is the Diamond 220. Available now, this model has a 130mm mid/bass driver. It is the direct replacement for the Diamond 121 from the outgoing Diamond 100 Series. Price is £199.95 per pair. Don't miss next week's Hi-Fi World for an in-depth review of the model.

The remaining Diamond 200 Series models include the Diamond 210, a compact speaker for rear/surround duties or stereo applications where space is at a premium (£149.95 per pair) plus three floorstanders: the Diamond 230 (£499.95); Diamond 240 (£699.95) and Diamond 250 (£999.95). The Diamond 220C home cinema centre speaker (£199.95) completes the range. The bass and midrange cones are fashioned from woven Kevlar and incorporate semi-elliptical 'break-up' areas, visible as raised 'V' shapes on the cone's surface. The dust cap is blended and treated which incorporates a ferrite magnet system and a waveguide around the fabric dome.

Also featured is a Slot-Loaded Distributed Port, first introduced in the outgoing Diamond 100 Series. Instead of the usual circular reflex port all Diamond 200 Series models incorporate a port that exits at the base of the speaker cabinet, loaded by a slot that is created by the plinth.

Go to [www.wharfedale.co.uk](http://www.wharfedale.co.uk) for more information



## CHORD 2QUTE & HUGO TT

Essentially a Hugo in a Chordette chassis, Chord's 2Qute contains the same Spartan 6 FPGA and supports up to 32bit/384kHz audio via COAX and USB and 24bit/192kHz over optical. DSD64 is supported on all inputs and DSD128 is supported via coax or USB (all via DoP). The new DAC also gains a switch to move between coax, optical and USB digital inputs. The device features a Class 2 USB input which, because of the 2Qute's home-system orientation compared to

Hugo's more mobile aspirations, has been galvanically isolated. Price is £995.

The new larger desktop-orientated device offers wider connectivity including a USB-B input, XLR outputs and two 6.35mm headphone outputs.

Hugo TT gains a new larger chassis, remote control, an alphanumeric LED display with input/sample rate data and the addition of supercapacitors. It can handle up to 32bit/384kHz audio via coax and USB and 24bit/192kHz over optical plus DSD64 on all inputs and DSD128 via COAX or USB (all via DoP). It now benefits from an asynchronous B-type USB connection for both the SD and HD USB input, a new BNC coaxial and optical (TOSLink).

The Hugo TT also has A2DP Bluetooth capability and uses a custom-made module with the aptX codec to feed a digital signal directly into the DAC circuitry while retaining the same Spartan 6 FPGA. Being a home-orientated device, the TT has been designed to run continuously from the supplied charger, however Chord's engineers have also improved the battery and added Supercap energy storage, extending the battery life as well as improving performance. Price is £2,995.

For more information call 01622 721444 or click on [www.chordelectronics.co.uk](http://www.chordelectronics.co.uk)



## McINTOSH D150

McIntosh has launched the new D150 digital preamp, a DSD and DXD compatible digital preamp. With its five digital inputs (two coaxial, two optical and one USB) plus balanced and unbalanced connections for both variable and fixed volume audio outputs, the USB input accepts up to 32bit/384kHz signals and supports DSD64, DSD128, DXD 352.8kHz and DXD 384kHz. Its two coaxial and two optical inputs accept up to 24bit/192kHz signals plus its DIN input also connects to select McIntosh SACD/CD transports/players.

The D150 also boasts a built-in headphone amplifier. The device uses the same DAC as the D100 and features an eight-channel 32bit/192kHz D/A converter (used in stereo Quad Balanced mode). Price is £3,495.

For more information, call 01202 911886 or click on [www.mcintoshlabs.com](http://www.mcintoshlabs.com)







## PHILIPS FIDELIO NC1L

The Philips Fidelio NC1L on-ear headphones are battery-free with a direct digital connection to your iOS device via the Lightning connector. The digital to analogue conversion (DAC), amplification and noise cancellation take place in the headphones themselves.

The Philips Fidelio NC1L headphones use a hybrid Active Noise Cancellation approach, with four microphones detecting ambient noise before inverting the signal. Two 'FeedBackward' microphones positioned next to the headphone drivers provide noise cancellation at low frequencies, whilst the two 'FeedForward' microphones positioned on the outside of the headphone extend the bandwidth of noise cancellation. Price is €299.

For more information, click on [www.woox.com/news](http://www.woox.com/news)

## STREAMAMP

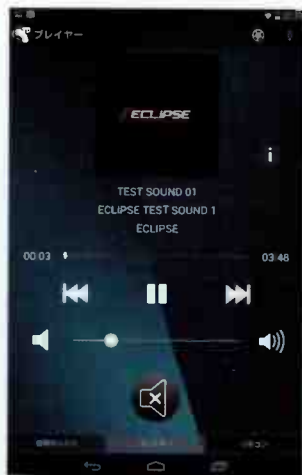
New from Cabasse is the StreamAMP, a compact four-channel amplifier. Centrally stored digital music files from downloads and CD rips can be streamed via the Wi-Fi or Ethernet connections, all controlled by the new StreamCONTROL app for iOS and Android. Locally stored music from a tablet or smartphone can be accessed via Bluetooth and a high-definition connection can be made using the StreamAMP's Wi-Fi direct mode. StreamAMP is fitted with four loudspeaker outputs while the preamplifier section includes two analogue RCA inputs, an optical SPDIF input, a preamplifier output and a subwoofer RCA output. Price is £448. Go to [www.cabasse.com](http://www.cabasse.com) for more information.



## NEW ECLIPSE APP

ECLIPSE has added a free Android control app to the AirPlay TD-M1 desktop system. The new app enables Android users to wirelessly control the TD-M1 system. Functions include: wireless audio playback from an Android device, sort and display music on an Android device by genre, artist, album and song; switching between power-on and network standby and volume adjustment plus some useful functions that cannot be undertaken on the speaker unit, such as a dimmer and auto-standby (automatic switching to network-standby when there is no operation or signal input for a certain period). Access Google Play to find the new app.

Contact [www.eclipse-td.com/uk](http://www.eclipse-td.com/uk) or call 020 7328 4499



## DENSEN B-130XS

Densen's B-130 has always had the option of adding a FabelDAC internally. In the new B-130XS, this feature has been enhanced. It is now prepared for the forthcoming top of the line Densen internal DAC. This DAC will have USB, Toslink and COAX inputs. The B-130XS can control this DAC directly, by either the Gizmo remote or by the pushbuttons on the front panel of the B-130XS.

The pre-amp stage of the B-130XS, based on the B-275 reference pre-amp, has three separate power supplies. Densen uses its own microprocessor-controlled relay attenuator, for volume, having 200 steps where each step accounts for 0.5 dB. The power amp stage of the B-130XS is based on the basic design of the B-350 power amp, delivering 80W. Price is €3000. Go to [www.densen.com](http://www.densen.com)



## LINDY MINI

Lindy has announced the release of its Mini-Headphone Amplifier and Splitter. Specifically designed to improve the overall sound quality and volume of portable music players such as MP3 players, smartphones and tablets, the rechargeable Lindy Mini-Headphone Amp and Splitter features dual amplifiers built-in bass booster.

Thanks to an intelligent power switch, users can enjoy up to twelve hours of continuous playback from a single charge. Output is amplified 120%, reducing the power demand on the smartphone/music device when playing audio tracks, whilst users can drive larger, more powerful headphones.

A second 3.5mm stereo port allows users to share their music by plugging in an additional set of headphones.

Price is £22.98.

Click on [www.lindy.co.uk](http://www.lindy.co.uk) or call 01642 754000 for more information.





## ONKYO BUDGET INTEGRATED & TURNTABLE

Onkyo has introduced the A-9010(UK), an integrated stereo amplifier delivering up to 44W and including a MM phono equaliser, phono inputs and grounding terminal for turntable connection.

With five analogue inputs, one line output and a set of phono inputs, users can connect a wide selection of audio source components. Independent headphone amplifier circuitry includes gold-plated banana-plug-compatible speaker terminals with transparent screw knobs. The A-9010(UK) has chunky knobs for volume, tone (balance, treble, and bass) and input selection.



Including Onkyo's high-current WRAT (Wide Range Amp Technology) system, based on low-impedance architecture to control the speaker drivers, even when impedance fluctuates and the load on the receiver increases, the A-9010(UK) sits at the gateway to Onkyo's Pure Hi-Fi amplifier range comprising two mid-range integrated amps (A-9030 and A-9050), a high-end A-9070 integrated and three flagship Reference Series products (A-9000R integrated, M-5000R power amplifier and the P-3000R pre-amplifier). Available only in black, price is £199.

The company has also announced a new turntable, the CP-1050, featuring a low-torque direct-drive motor. The body is constructed from thick, vibration-damping MDF and the quartz-lock-controlled platter is die-cast aluminium. An aluminium S-shaped tonearm with detachable head shell includes a MM cartridge.

A button on the top left of the deck changes rotation speeds to accommodate playback of both LPs and 45s (an adapter is included for 7" records), while four anti-vibration feet are height-adjustable. The phono outputs are gold plated and there is a dedicated grounding post. An RCA audio cable with earth and a detachable smoked acrylic dust cover are included. Price is £399.

Call 08712 001996 or click on [www.onkyo.co.uk](http://www.onkyo.co.uk) for more information.



## CES 2015 - THE BIG PEEK

This year's CES show in Las Vegas has come and gone. Here's a quick peek at some of the audio equipment on show with brief details.

Highlights from Audio Research included the G Series amplifiers: the company's first range built around the recently launched KT150 valve. Look out for the GSPre preamplifier, GS150 power amplifier and GSi75 integrated amplifier.

Constellation Audio features distinguished designers such as John Curl, Bascom King, Peter Madnick and Demian Martin and was assembled by two of the founders of Continuum. The company's new Inspiration line was on show including the Preamp 1.0 and two power amps: the Mono 1.0 and Stereo 1.0.

Crystal Cable was showing The Cube, a compact integrated amp due later this year, featuring the Light Drive system developed by sister company Siltech.

Forthcoming products from Dan D'Agostino included the MLife, D'Agostino's first design to incorporate wireless streaming and an amp for home cinema applications called the Cinema Standard.

Parisian audio outfit Devialet offered a new concept, the Phantom an all-in-one wireless speaker system with ADH amplification at its core.

Turntable outfit European Audio Team (EAT) showed its new entry-level model, the C-Sharp. Incorporating a suspended carbon fibre sub-chassis, it includes a weighty sculpted aluminium platter.

French valve amp creator Jadis demonstrated its latest model, the I-50: an amalgam of chrome, brass and glowing glass, incorporating the latest KT150 valves.

High-end brand Krell showed its latest integrated amplifier the Vanguard with the option of an integrated digital module that adds USB, HDMI and Ethernet connectivity plus wireless streaming via Bluetooth with aptX support.

From California's Magico was the limited-edition M Project. This £130,000-per-pair, built-to-order speaker was created in celebration of its 10th anniversary.

Over to Kansas now and Martin Logan showed its new flagship, the Neolith. Three years in the making, Neolith combines an electrostatic radiating surface with front- and rear-firing subwoofers.

French CD experts Metronome Technologie included its CD transport the Calypso plus Le Player and the CD+ Converter.

PrimaLuna expanded its mid-level ProLogue Premium range with new products like the ProLogue Premium Integrated Amplifier.

Handcrafted in Vicenza, Italy, Sonus faber's new Lilium floorstanding speaker incorporates technologies trickled down from the Aida, with an unusual 3.5-way driver configuration including an infra-woofer that fires from the top of the speaker.

Designed and built in Japan, the TechDAS, which created the Air Force One turntable, featuring an air bearing, adjustable air suspension, a silent outboard vacuum record clamp, has now announced the Air Force Two, a more affordable deck forged upon the same engineering principals.





Icon Audio's MB81 power amplifiers lit up our listening room – and that's the point. Here are amplifiers no one can miss, Noel Keywood finds.

# Light Power

**A**s we gingerly pushed an MB81 amplifier down the business centre corridors, people gawped in surprise. Everyone was awestruck, even if they didn't fully know why. Women stared quizzically whilst men stopped and were eager to ask about it.

And that's why you may want to own an Icon Audio MB81 200 Watt valve amplifier. It stands out, catching everyone's attention. Although not 'styled' as such, its appearance powerfully speaks to people – and you can't say that about much hi-fi these days.

Functionality? Yes, every part of this extraordinary beast has a job to do, some parts explaining why most hi-fi companies shy away from building an amplifier based on Russian industrial transmitter valves. The spectacular glow from their heaters is achieved at a price: they need a large, dedicated filament transformer that adds significantly to weight (55kgs) – and cost.

And then there's the price: £10,000 a pair. OK it isn't so big by hi-fi standards and it's less than many modern hi-fi items. – but it isn't cheap.

And finally, Icon Audio's new

babies are not really intended for general use. Designer and founder David Shaw wanted to build this amplifier for his own use, but he felt others may be interested too. Trouble is, those white top caps on the GR81 valves have lots of volts on them and are potentially dangerous. To avoid a fry up, David says he will only sell this amplifier to buyers he has met and vetted first. An amplifier like this must be easily serviceable to keep it safe, so the owner has to be in contact with the factory, in the way that any transmitter would be serviced by trained engineers, not those using it.

It may all seem extreme, but in



the world of valve amplifiers there is a trend toward such 'boutique' products. Audio Research of the USA started the trend back in 1975 with the D-150 tube power amplifier that weighed 60kgs, no less. Tim De Paravicini kicked off EAR in the UK in 1976 with the 100 Watt EAR509, while Japan can perhaps claim to be first into the tube fashion contest with disco amplifiers that use the rare Western Electric 212E. Icon Audio took to the big 845 valve some years ago within their MB845 monoblock amplifiers. The new MB81 continues this trend but uses the Russian GU-81 ruggedised military transmitting pentode that is still available and not too expensive at around £60.

There's a stonking great 12V heater in the GU81 that draws 10A, meaning it's equivalent to a 120W light bulb – and that's why it glows so bright. With two GU-81s working in push-pull this means 20A for the filaments so the MB81 has an independent heater transformer inside one of those big, black screening cans at the rear of the chassis. The other cans house mains transformer, output transformer and chokes.

David Shaw told me he does not run the GU-81s at anything like the 1500 Volts they'd see normally, but at around half this. So they're not sizzling monsters waiting to zap the nearest living organism. Switch on wasn't accompanied by a thrum from the transformers, but there was – as expected – a thrum from the loudspeakers until the circuits had settled, within seconds.

The GU-81s emitted a sudden and intense glow when I switched on; they light up like a lighthouse. The mains switch is at the front of the chassis, so there's no need to get within striking distance of the top caps either!

For maximum power output fixed bias is used, meaning occasional bias adjustment is necessary – hence the front panel meters. They monitor current, in conjunction with another front panel switch that selects between them, or in its Off position shows power output.

There are also 'hum buckers', small potentiometers that adjust for minimum hum from each amplifier. A user must occasionally adjust for minimum hum from the loudspeaker, but it is at a very low level and only audible when close to the speaker.

Life can get a little technical

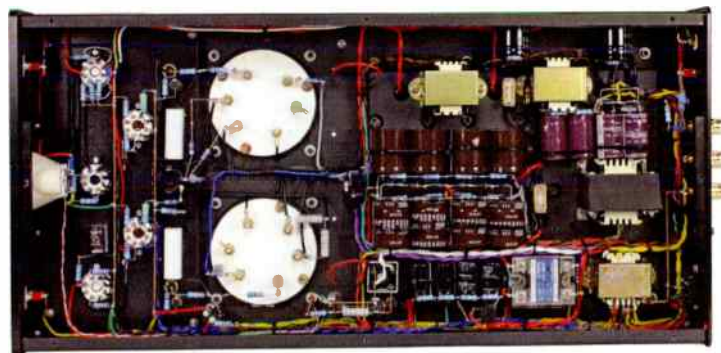
when trying to explain the Sensitivity switch on this amplifier, but I'll keep it simple. It's a three-position toggle switch, selecting H, O or L - meaning High / Off / Low sensitivity. Icon suggest L (i.e. low sensitivity) is used. This gives best measured performance and tightest bass by applying maximum feedback, so lowering output impedance and increasing damping factor. It makes the MB81 insensitive, needing 2.7V from a preamplifier for full power output. Most can manage this easily, but if they have a gain of x3, or perhaps no gain, then only silver disc players will drive these power amps to full volume. The argument is a tad academic because full volume is 220 Watts and most users won't get near to needing all that power. All Icon Audio preamplifiers can drive the MB81s easily and I used an Oppo BDP-105D Blu-ray player and Icon Audio PS3 phono stage without difficulty.

Switching sensitivity to High gives the MB81 a normal input sensitivity and better matches low output external sources, such as low gain phono stages. Then there's



*The rear panel carries 8 Ohm and 4 Ohm loudspeaker terminals, a Sensitivity switch that alters feedback levels and an IEC mains input socket.*

loudspeakers with lean bass suddenly sound better balanced I find from my own World Audio Design 300B amplifier, with feedback switched off. So what you hear in use depends upon your loudspeaker, to some extent your room – and what setting you choose will rest upon your personal preferences. For the most



*Another five transformers/chokes lurk underneath, plus hard wired audiophile components.*

the O, or Off position. It doesn't mean sensitivity off, so much as feedback off. Switching feedback off further increases gain and therefore sensitivity. However, distortion goes up too and bandwidth decreases, although the amplifier remains flat to 10kHz before a slow treble roll off.

As usual, with no feedback output overload becomes much more progressive, but as we are talking about 3% distortion caused by soft clipping at 250 Watts I don't think this is going to affect many users. Without feedback underdamped loudspeakers will start to sound loose in their bass, as well as boxy, but conversely well damped

part I used Lo when listening to the MB81s, since this gives just 0.1% distortion, best damping and is what David Shaw recommends.

### SOUND QUALITY

Valve amplifiers need a good 30 minutes before they give their sonic best so I was careful to give the MB81s one hour warm up.

I ran the amplifiers with Tannoy Kensington Gold Reference loudspeakers. Sources were high-resolution digital from an Astell&Kern AK120 player, connected via optical digital link to an Oppo BDP-105D Blu-ray player, with its ESS Sabre32 DAC. This player also allowed me to



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play CD via the Sabre32, and since it has remote control of volume through the Sabre32's 32bit internal digital volume control I was able to drive the MB81s direct.

Even with the amps set to Lo sensitivity there was no trouble generating enormous volume from a setting of 70 on the Oppo's control. Playing taxing material like Angélique Kidjo's 'Aye' album (CD) with its powerful bass lines at very high volume the MB81s sounded relaxed and in control. They have strong bass, and plenty of clean low-end power. I was aware of the enormous bass push of these amplifiers and the laconic ease with which they deliver lows. I did start to realise I was playing everything super-loud, where I don't normally do this – Willy DeVille is singing 'Spanish Harlem' (24/96) at full nightclub level as I write this, his guttural voice having a big, solid forceful presence.

A little earlier I span Lady GaGa's 'Monster' (CD) at a ridiculous level to see how the MB81s would deliver the track's huge subsonics and it just shrugged the whole thing off; vast power is a non-issue. The huge dynamic contrasts of this amplifier were made very obvious with Safri Duo's 'Samb-Adagio' (CD) where the

explosive electronic percussion work was unrestrained in power.

Overall, the MB81s are well balanced and not especially characterful. They sound vastly powerful because of their unrestrained dynamics, yet at the same time they are easy-going and gentle up top. I set the Kensingtons to have a little treble lift yet even with this I noticed no treble character. Bass has a big, gently muscular quality. There's simply no hardness nor strain. It is like an encounter with a whale: not intrinsically threatening, yet at the same time there's a lot of left there!

The MB81s have a lovely deep soundstage, roughly on-par with big 845s. I was aware of this with pieces like 'Marasa Elu', sung by The Creole Choir of Cuba (24/48) where the space in which the performance took place permeated our large listening room, seemingly turning it into a small church. The mournful lead vocal hovered in front of me, surrounded by the small choir – a lovely performance, made large by this amplifier's generous sound staging and lush delivery.

The Beatles sounded equally large and lifelike on 'This Boy' from the LP Mono Masters. There was a sense of John Lennon at the



microphone in front of me, sounding forceful and fluent in his delivery.

### CONCLUSION

Not many people dream of running an amplifier like this. I know from a vast 211 amplifier we once built for a Hong Kong customer in 1994 that such amplifiers are a rich man's sport – one most appreciated in the Far East. And although the MB81 was designed in the UK, it is built in Icon Audio's Chinese factory. I say this to get the MB81 into context. It is a breathtaking sight to behold and equally impressive to hear. High Fidelity doesn't get more impressive than this.

## MEASURED PERFORMANCE

With LO sensitivity switched in, meaning maximum feedback and flattest response, the MB81 measured flat across the audio band from its 8 Ohm winding, output rolling down to -1dB at a respectable 28kHz. With no feedback (0) response narrowed a little, the -1dB frequency reducing to 20kHz.

The 4 Ohm tap measured -1dB down at 3.4kHz and -3dB at 10kHz with max feedback, meaning the 4 Ohm tap will give a warm sound, as this degree of treble roll off is high. Reducing feedback to zero had little effect.

The easiest solution to this difficulty is to use a single 6 Ohm winding that feeds equal power to 4 and 8 Ohm loads, if less power than matched windings, or to use a feedback summing point; I suspect Icon will choose one or other in final samples to eliminate this problem.

As it stands the MB81 suits 8 Ohm loads, into which it delivered 220 Watts for just-visible distortion on an oscilloscope (2%). In practice overload is progressive even with maximum feedback (i.e. LO), distortion measuring 1% at 120 Watts, and 3% at 253 Watts - this is effectively the maximum usable

power. The 4 Ohm tap gave similar power figures.

With LO sensitivity selected, input sensitivity was very low, 2.7V being needed for full output. However, with the voltage gain available sensitivity won't seem low; the MB81 will go very loud from 1V in. Noise was low too and hum around 3mV, enough for hum to be just audible at the loudspeaker, if not at a distance, as with all directly heated triodes.

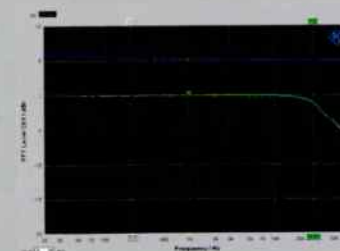
The highest damping factor measured 3 (maximum feedback) and the lowest was 0.4 with no feedback (8 ohm output).

The MB81 works well as an 8 Ohm amplifier but the 4 Ohm tap will give a warm sound as things stand. Icon Audio may well be able to cure this by altering the feedback arrangement in the final design. Massive power is available - 250 Watts no less - so its huge MB81 transmitting tubes do a good job and this is one impressive device, its one current but eradicable flaw notwithstanding. **NK**

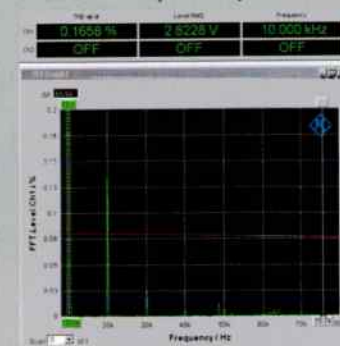
**Power** 220 Watts  
**Frequency response** 12Hz-28kHz

Noise	-100dB
Distortion	0.16%
Sensitivity	2.7V
Damping factor	3

### FREQUENCY RESPONSE



### DISTORTION, 10kHz, 1W



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**AGAINST**

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- weight
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HI-FI WORLD



# Maggie Magic

**Rafael Todes finds Magneplanar's new 3.7i panel loudspeakers can bring music to life like few others. They even get his wife dancing!**

**T**he concept of the planar magnetic speaker dates back to 1969 when Jim Winey, Magnepan's founder, became frustrated with electrostatic speakers and tried a thin-film magnetic version of the electrostatic skin. The rest is history and Magnepan has firmly established itself as the leader in this technology.

Jon Myles recently reviewed the 1.7 in the July 2004 edition of *Hi-Fi World*, while the model I'm reviewing here is based on the 3.7, released in 2011. The changes which make the 3.7i are small, significant but confidential, so technically speaking they cannot be described here! Suffice it to say, having heard these speakers at the Whittlebury Show, I got very excited with what they were doing and was champing at the bit to have a more extended listen.

The panel's dimensions are 1.8m high, 61cm wide, and 4.1cm deep, making them each a possible one-person lift – but they are heavy at around 28kgms each. At the rear of the speaker, there are treble and midrange bridging connections which offer the opportunity to insert a supplied resistor to attenuate each ribbon.

The user has a choice of speaker arrangement, as they are 'handed', the treble panels can either go inside or on the outside. I found the soundstage in my room to be more preferable with the treble panels on the outside.

Location within a room is critical; the speakers work best when they are toed-in, with optimum bass when the speakers are 3 feet from the rear wall.

## SOUND QUALITY

First up on my Inspire Monarch turntable was a classic jazz album, Kenny Burrell's 'Midnight Blue' on the Blue Note Label. I was immediately struck by the immense ease and transparency of the sound. The hi hats are sizzling with no overhang or slur, like they are in the room. The conga sounds similar; it has a life-like quality that leaves me awestruck.

Having been a fan and longtime user of B&W



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802Ds, the Maggies shine a blinding light on the limitations of the box speaker. There is no cabinet noise, no phaseiness, and what is left is as

recording of the Schubert Piano Trio in Bb, played by the Beaux Arts Trio on the Philips label. The first major shock on hearing this is the way the piano comes out. Due to the use of multiple drive units on a box speaker, a piano is in effect split into two, three or four different instruments from the top of its range to the bottom, as each drive unit takes its range. The Maggies unify this to amazing effect. There is startling clarity to Pressler's playing (the pianist in the trio), the piano sounds almost vocal. The violin sounds truly beautiful, a rich sumptuous sound – maybe a little too sweet and sumptuous having heard this group live several times?

The physical representation of instruments from the 3.7is is massive, they appear in space in my room almost twice normal size.

There is something hyper-real about other aspects of the performance. The Maggies tend to shine a bright spotlight onto the leading musical line, at a cost of the accompaniment. This reminds me a little of the Linn Sondek's party piece of spotlighting a tune. The result is that as a listener you are drawn in and intoxicated by the sheer beauty of sound.

My wife returned from a trip abroad, took one look at them, and pronounced that they "had to go". I persuaded her to listen to them, and she sat spellbound, and then got up to dance, grabbing my hand! I suppose I would have to register the infamous wife acceptance factor as being minus five, perhaps a bit damning, but with the caveat that the Wife Audio Rating (VAR) was much higher! Herein lies the paradox; for objects that are so large and dominant in a room they have a sweetness and gentleness which belies their looks.

My favourite torture track for speakers is the 'Dies Irae' from Britten's Sinfonia da Requiem, it employs huge forces and textures, and is brilliantly recorded by a vintage Decca team, and conducted by the composer. The speakers give a good account of the



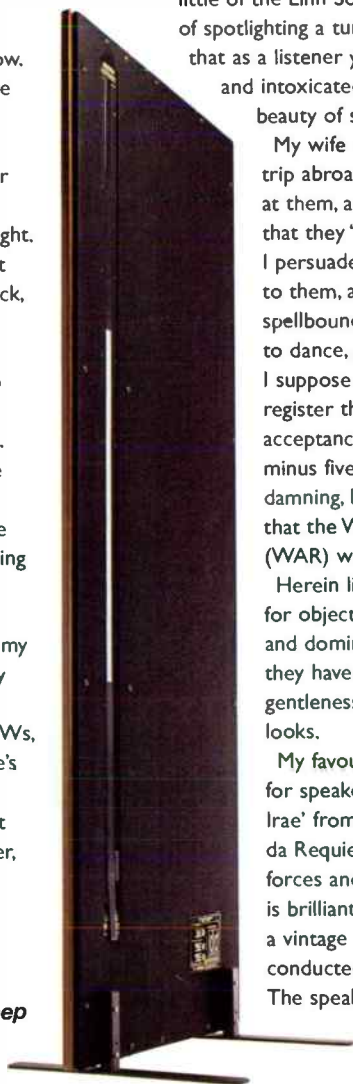
**DWM bass panel, an optional extra which adds body to the sound. Can be used as a single stereo or dual stereo pair.**

pure as the driven snow. The tenor sax is as I've never heard it before, sweet with a massive presence, and vying for my attention - it just sounds captivatingly right. I have no desire to get up and change the track, it is truly transfixing.

Planar magnetic speakers are prone to having less bass than speakers with motors. Magnepan make some additional bass panels which can support the lower regions but having experimented with a panel, I feel that their use is unnecessary in my room. The bass quality is good, a shade less powerful than the B&Ws, but no disgrace. There's a slight lack of the plusive quality you get on a good box speaker, however.

Next, a favourite

**Side view of the Speaker, 4.1cm deep**



**Rear panel of the main speaker. Note the ability to slot in resistors to attenuate the different panels to alter the frequency balance of the sound.**

music. There is less of a sense of the pin-point imagery that I get with my B&Ws, the left-to-right imagery is quite good, maybe a bit smudged like a camera shot with Vaseline on the lens, but the layering backwards of the orchestra is less impressive.

There may be a perfectly reasonable explanation for this; the speakers being bipolar fire backwards as well as forwards and in my room, which has plain walls, the sound



**DWM connector panel, stereo with pass through and optional attenuation.**

waves bouncing off the rear wall may be confusing the imagery.

Fearsome orchestral anger is quite well portrayed, but the visceral power of my 802Ds is not there in full. The leading line is always crystal clear, but the supporting texture is partially smoothed out. Some of the bass and midrange detail is getting lost in the flurry as full orchestral forces are unleashed.

Ray Gelato's 'The Full Flavour' (CD) is beautifully recorded on the Linn Label and through the Maggies, there is sheer aesthetic sonic pleasure in hearing the astounding life-like presentation. Where the B&Ws are dry and studio-like, the Maggies get down and party. The transients are razor sharp,



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it be Vivaldi or the Verve. Whilst the Compact Disc is stuck with its dated 1977 software, Vinyl technology continues to advance. Improved stylus shapes and tone arms keep pushing the technical boundary on what can be recovered from an LP groove and with an Icon Audio phono stage can reveal simply astonishing results, even from 1950's recordings. As the definition of equipment improves we have refined our designs to maintain the focus and presentation to be without any "mechanical" or contrived quality.



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**The rear view of the ribbon. This comes with a cover to protect it in transit.**

the trumpet positively gleams, and the percussion mesmerises. Ray Gelato's voice is totally natural. There is complete clarity in the way the different instruments are portrayed. I haven't ever heard this track sound better.

**CONCLUSION**

On several levels these speakers are truly astonishing. They are extremely good value-for-money, as few speakers at this price can come close to the level of musical insight they bring. I find myself excited at the prospect of playing a new recording on the Maggies as they bring out the sheer joy in the music-making and the deepest sentiment in the material; they are by far the most emotionally affective component I've ever had in my system.

They can reproduce the music of small forces of musicians like no others I have heard, casting an almost magical spell on the listener with their extreme beauty of sound. And they are the closest thing I can think of to the often overused word 'musical'.

Like a great conductor who shows the audience how to listen,

they have a way of dragging the listener closer to the heart of the music.

Despite their crystalline clarity, they are the polar-opposite of being 'monitors'. They make tiny differences between cables and equipment harder to identify through the sheer force of their personality. This doesn't make life any easier for nit-picking reviewers like me! For raw musical insight, however, very little I've heard comes close.

**REFERENCE SYSTEM**

- Inspire Monarch turntable
- SME V arm
- Lyra Scala cartridge
- VAC Phi 200 monoblocs
- VAC Signature Mk2a Preamplifier/phono preamp
- Esoteric K-05 CD player
- B&W 802D speakers
- PS Audio PS10 mains regenerator

**MEASURED PERFORMANCE**

Frequency response of Magneplanar's Magneplanar MG 3.7i was similar to that of the 1.7 we reviewed in the July 14 issue. There is a plateau lift of lows from the bass/mid-range panel over highs, of around +4dB our analysis shows. This will add body to the sound, bringing it into line with that perceived from a typical box loudspeaker (panel loudspeakers sound lean by nature).

Output from the 3.7i was consistent over the full height of the panel. However, it was not consistent laterally, as the relative phase of the output of the panels changed. The smoothest result - and the best sounding one with pink noise - was off-axis with the narrow vertical high frequency panel on the outside when seen as a pair.

This is unusual; the tweeter usually works best on the inside because of the wavelengths and physical distances involved, but the 3.7i integrates best with the tweeter on the outside, the speakers facing down the room, or toed in slightly toward listeners.

Juxtaposed with the tweeters on the inside, a large midrange dip appears, producing a warm, bland sound balance, albeit with plenty of low midband and strong upper treble - a 'boom and ting' effect some may like.

This was with the jumpers installed, directing full output to the midrange and treble drivers. Inserting 1 Ohm resistors, supplied and recommended, pulled output down by a small, almost negligible 1dB, so subjectively the resistors supplied affect response little.

Resistors of 2-4 Ohms would have more audible effect, but they would make the 3.7is sound dull. The only potential benefit of using the resistors supplied is to make the 'speakers an easier load, so as not to threaten the life of amplifiers unable to handle a load that sinks to a low 3 Ohms.

This brings in the issue of sensitivity. Producing a meagre 83dB sound pressure level (SPL) at 1 metre, from one nominal Watt (2.8V) the 3.7is are very insensitive, meaning they need a lot of power to go loud. Measuring out at 4 Ohms impedance they also draw current, much more than most loudspeakers. Transistor amplifiers are designed to cope with a 4 Ohm load of this (resistive) nature, so no problem in outline. However, this will shake the power supply when volume is turned up, so the 3.7s may well magnify amplifier deficiencies.

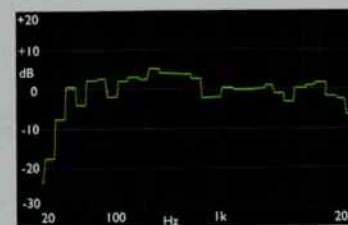
A small amelioration is that sound power decreases less with distance than with a normal (monopole) box loudspeaker, -3dB per metre measurement showed, so at a distance the 3.7is improve on their deficit, even though they don't manage to eradicate their 7dB disadvantage. The 3.7is need sturdy 100 Watt amplifiers - minimum - as partners.

Panel loudspeakers live or die by their lack of box colour, and the 3.7is measured well here, as expected. With no box behind to reflect sound back out through the drive units, a 200mS decay map showed the speaker has low coloration, but not no coloration. The

bass/mid panel in particular is a little hot, possibly because of an absence of air load damping, but its output falls away faster than that of a box loudspeaker, giving a different and better overhang/colouration pattern to that of a box loudspeaker. There is, all the same, a strong overhang at 40Hz and a lesser one at 80Hz, suggesting there is likely to be perceivable character to bass.

The new Magneplanar 3.7i now measures well enough in response terms to be a serious high end challenger amongst panel loudspeakers. Offering dipole bass and a box-free sound, plus smooth upper treble, it works well in all areas. The 3.7i needs big power, like all magnetic planar drivers, but this is a small drawback against its many strengths. **NK**

**FREQUENCY RESPONSE**



**IMPEDANCE**



**MAGNEPLANAR 3.7i £7500 (depending on finish) DWM BASS PANEL £1100 (each)**

**OUTSTANDING - amongst the best.**

**VERDICT**  
These speakers put most others to shame. Transparency like no other.

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# More on Maggies...

## NOEL SAYS...

I listened to the 3.7is in-house, running them from the 220 Watt Icon Audio MB81 valve amplifier I review in this issue, as well as the Creek Evolution 100A.

For sources we used an Astell&Kern AK120 portable high-resolution digital player feeding an Oppo BDP-105D Blu-ray player, used as a DAC as well as a CD player. We span LP on a Timestep Evo Technics SL-1210 Mk2 Direct Drive turntable, fitted with SME309 arm and Ortofon Cadenza Bronze MC cartridge feeding an Icon Audio PS3 valve phono stage.

The 3.7is were positioned with the vertical treble ribbon on the outside, which measurement showed gave flattest response. We swapped them around to ribbon on inside, but as measurement suggested this dulled the sound by suppressing upper midband whilst high treble remained strong, making for an incohesive presentation; they were not used like this as a result.

The soundstage sounded properly proportioned with the panels well apart, 7ft between centre lines being a minimum, and no 'hole in the middle' appeared with this wide spacing, when the panels were toed in slightly. Bass would be strengthened by use against side walls, but this is rarely practical as it demands a long narrow room.

Our 25ft long and 19ft wide listening room offered little modal support for deep bass and in this respect the Magneplanars got no help from their surroundings. An 18ft long room – about ideal for these speakers – would have enough floor space to accommodate them and add some room gain at 30Hz from the length mode, plus extra boost from a (narrower) width mode.

## SOUND QUALITY

Magneplanar's 3.7is were a bit disconcerting; they are one of the best loudspeakers I have ever heard – but their lack of bass impact may be a fatal weakness for lovers of rock. A few classic tracks suffered particularly. Spinning Phil Collins' 'I Don't Care Anymore' on 200gm LP, the opening drum solo was clearly outlined but lacked visceral punch. From panels this size I expected more and felt a bit cheated. However, with a massive image painted up in front of me and Phil Collins singing ethereally down from a superbly smooth canvas devoid of blemish, I was still transfixed. Switching in a Magneplanar DWM bass panel – hooked up as B loudspeakers to a Creek Evolution 100A amplifier – added some extra heft, but not as much as I would have liked.

In spite of this loudspeaker's measured performance, in our room the 3.7is lacked deep bass power and this most affected tracks like Lady Gaga's 'Monster', where massive quantities of deep bass power from a synth are part of the artistic construct; without this element the track lacked the thunderous impact of its subterranean synth line and the song seemingly lost its delivery vehicle. A DWM panel helped, but it was insufficient to fully compensate; 'Monster' needed more heft and our Tannoy Kensington's beckoned from afar.

With a choir singing Veni Creator Spiritus, backed by the Chicago Symphony Orchestra (24/96) the 3.7is constructed a massive soundstage before me, the choir stretching upward toward the Gods. Toed-in slightly they delivered a soundstage of concert hall dimensions, on which singers were well differentiated, one from another, and there was a conspicuously smooth and cohesive quality much like that I've heard from Audeze magnetic planar headphones.

With simple vocal deliveries like Diana Krall's 'Narrow Daylight' the lack of box boom, overhang, colour or any other blemish gave the sound extraordinary purity, quite beyond that of conventional loudspeakers. The ribbon tweeter did at times have a bit of bite to it, making for viciously fast transients from strummed steel string guitars, such as those of Nils Lofgren's 'Keith Don't Go'.

Nigel Kennedy's Stradivarius violin was larger than I've ever heard it, I'll swear, exhibiting a lovely sense of body that made me almost able to reach out and touch it. For performances like this few loudspeakers could compare to the Maggies; box loudspeakers seem laughably restricted against them.

Magneplanar's 3.7i is a wonderful loudspeaker, but its restricted bass impact will be too strong a limitation for some I suspect, unless a powered subwoofer is used; Magneplanar's own DWM panels were none too effective.

**Noel Wood**

## JON SAYS...

The Magneplanar 3.7is do many things well – and, in fact, some things exceptionally well. But they also have some drawbacks to my ears.

First to the good points, though. In terms of soundstage, imaging and depth of field they are truly impressive. Being a full-range panel ribbon design with both forward and rear dispersion they can fill a room with a clarity and atmosphere few traditional box loudspeakers can even come close to.

Play acoustically-based music such as Pierre Bensusan's 'Altiplanos' and the leading edge of the guitar work is a delight. Even more impressive, you can actually tell where he switches from his traditional guitar to a Lowden S22 throughout the album. That's the detail and resolution that comes from a large panel loudspeaker.

The same goes for Portishead's 'Dummy' where every little studio embellishment can be heard loud and clear, while Beth Gibbons' voice has an intoxicating realism that makes you believe you are listening to a living, breathing human being instead of a digital reproduction.

Indeed, I heard that quality on all vocal reproductions and with solo acoustic instruments. The Magneplanar's really shine in this regard. Treble has a slight edge to it – just enough to add some tension to music but not so much that it veers into unpleasantness.

But moving to the likes of Lady GaGa's 'Monster' found an inherent lack of low-end punch. When this track's bass comes in it's there for a reason – to knock you off your chair, get a smile on your face and make you dance round the room like an idiot.

Here, the Maggies seemed a little short. Bass is there and does have definition but there's a lack of absolute power and slam. Similarly with Jackie Leven's mournful 'Working Alone/A Blessing' the rhythm section can't quite manage the power needed to give the track the scale it truly deserves.

Things are helped by the addition of the Magneplanar DWM which brings greater definition to the like of Phil Collins' drumming and – admirably – doing so without adding any sluggishness or drag to the overall sound.

But it still doesn't dig exceedingly low and I'd speculate the use of a powered subwoofer correctly tailored to the Maggies may be the better solution for some.

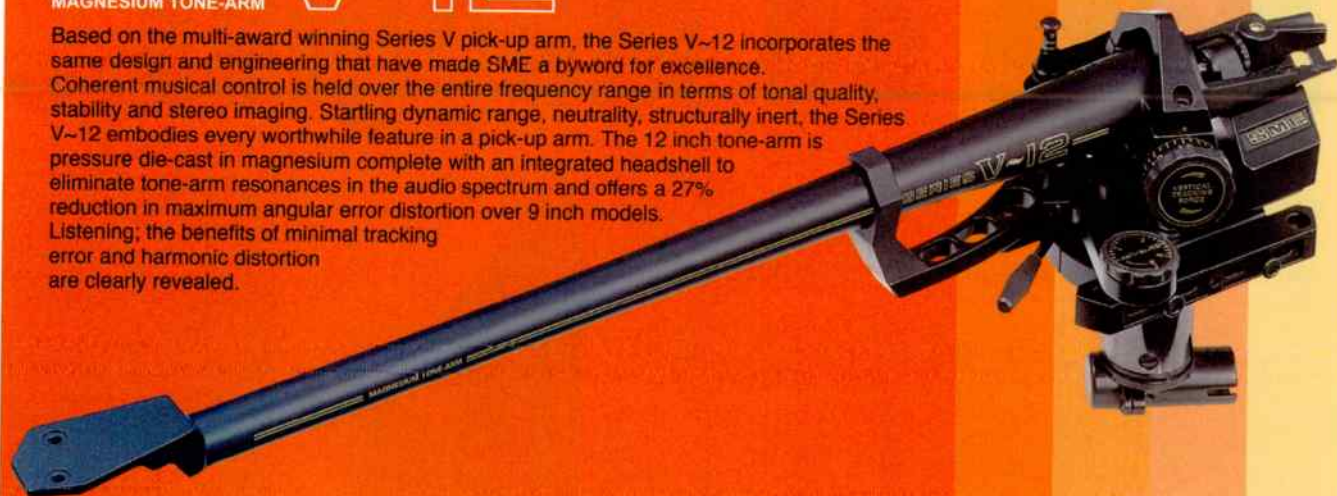
For those whose tastes veer towards more hard-hitting rock or bass-heavy dance music then, careful audition is definitely recommended.

**Jon Myles**



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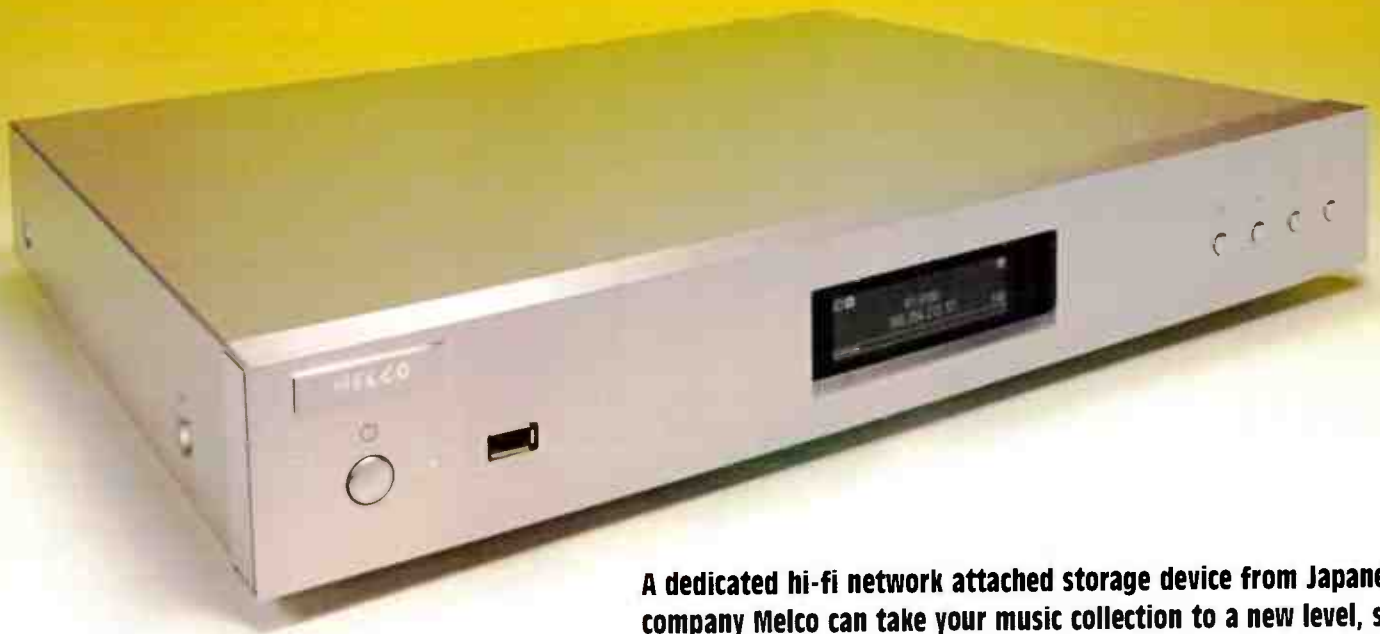
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A dedicated hi-fi network attached storage device from Japanese company Melco can take your music collection to a new level, says Jon Myles.

# Magic Melco

**A**n increasing number of people are using network attached storage devices to handle their collection of digital music files. After all, what's not to like? One small box can contain a veritable living room's worth of CDs, ripped LPs or high-resolution downloads – and when connected to your chosen streamer make playback from an armchair as easy as can be.

Except there's one problem. Most NAS drives are not purely for hi-fi replay. Instead, they will store music, pictures, videos and any other digital files you care to mention.

Which is all well and good...but perhaps not ideal when it comes to getting the best sound possible from your music.

Which is where the £1600 Melco N1A Music Library comes in. Yes, it's a NAS drive – but has been engineered as a high-end audio component whose sole purpose is to store and feed digital files to your chosen streaming device.

As such it comes housed in a standard-sized, hi-fi rack size unit with an OLED display on the front and an on/off button on the left, combined with four control buttons on the right.

Look under the hood and you find 4TB of hard drive storage, a high-quality power supply and audiophile-grade components throughout.

Round the back there's a specific IP port for connection to your streamer/network player with an additional port for control and ethernet.

The pre-installed media server means no configuration is required while the front panel OLED display gives track data, system set-up information and access to the menu tree.

Full power-on takes an impressively quick 15 seconds and in a number of hours of use the Melco never once dropped its connection to the streamer.

USB 2.0 and 3.0 sockets allow

for importation of music files or the attachment of extra storage capacity if those 4TBs are not enough.

## SOUND QUALITY

If you ever believed all hard disk storage was essentially the same then the Melco has the ability to make you think again.

The attention to detail and research that has gone into the basic design is certainly impressive – and it translates into a sound quality that is a step up from any other network attached music library I've heard.

What immediately struck me was the crystal clear clarity of the delivery. Hooked up to a Chord streamer and playing through our resident Tannoy Kensington GR loudspeakers powered by Icon Audio's new powerhouse MB81 monoblock amplifiers (see review elsewhere in this issue) the amount of detail the Melco delivers is quite astonishing.

Paul Simonon's bass on 24/96 files from The Clash's 'Sandinista'



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**Three USB sockets on the rear panel allow for the importing of music files as well as connection of additional storage devices and back-up to other hard-disks. Two RJ45 are dedicated for connection to your own network and streamer.**

was firm and fulsome, with a tactile quality that pined me back in the seat.

There was an absolute lack of graininess or smear and instead a natural, pristine quality to the sound, bringing out often missed details in

of music I chose. With a dense piece of music such as John Coltrane's 'Ascension' the Melco managed to pick apart the cacophony of sound, allowing me to track individual instruments with ease. This piece isn't the easiest listen for even die-hard

heard. On The Smiths' 'The Queen Is Dead' (again 24/96), for example, there's a cavernous quality to the soundstage that is purely sumptuous – rich, resonant and totally engaging.

Johnny Marr's overlaid guitar work can be clearly made out, while Morrissey's vocals are suitably gruff. There's so much more detail than you'll get through a standard Red Book CD player, but no lack of attack or verve.

Melco say they designed the N1A to be an audiophile storage system and front-end for the digital generation – and to that end they have succeeded in a massive measure.

**CONCLUSION**

The Melco N1A is a truly impressive piece of equipment for anyone looking to house their music collection in one place. Bags of storage, simple to operate yet possessed of a gorgeous sound – it comes unreservedly recommended.

"what immediately struck me was the crystal clear clarity of the delivery"

even the most familiar of tracks.

Playing Nick Cave & The Bad Seeds' 'Where The Wild Roses Grow' I could hear the sharp intakes of breath in Kylie Minogue's vocals between the individual lines, while instruments had a clearly-defined timbre to them.

It might be a cliché, but it really did sound as though a veil had been lifted from the music. Playing the same track through my own Western Digital NAS drive there was still detail and atmosphere but not the same level of precision the Melco delivers.

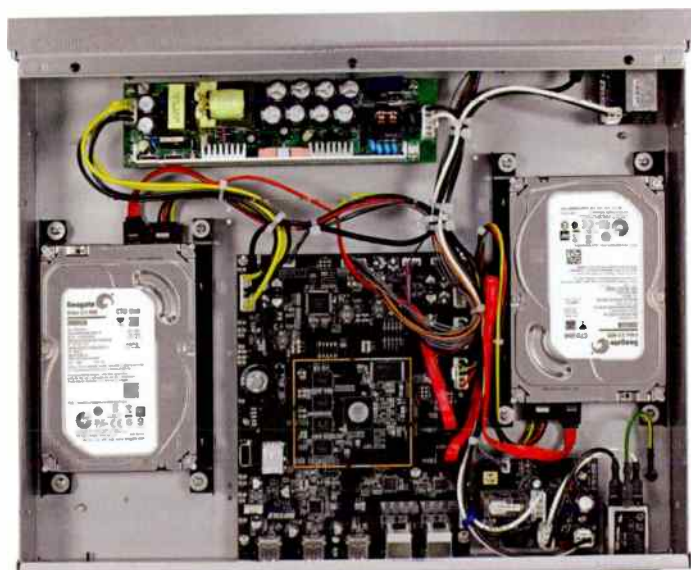
This extends to whatever genre

jazz fans but the Melco lets you hear the interplay between the various musicians and the rhythmic swing of the track.

Of course, the sound quality is going to be very much dependent on the quality of the streamer and its DAC – but what the Melco does is let you hear exactly what they are doing.


To that end it's probably the ideal digital front end for anyone looking to house a large music collection – especially if that contains a good deal of high-resolution tracks.

For the Melco allows the extra information in such recordings to be



**Inside lie two 2TB Seagate hard drives, a switch-mode power supply (top) and digital processing and control circuitry.**

**WHO ARE MELCO?**  
 The name may be new to many – but those readers with longer memories may recall Melco for its range of well-regarded turntables from the 1980s.  
 The company later rebranded as Buffalo as it branched out into the computer industry, becoming one of the largest IT peripheral manufacturers in the world with products including wireless routers, ethernet data switches and storage devices.  
 But founder Makoto Maki remained a committed audiophile and more than two years ago revived the Melco brand with the aim of providing music-lovers with high-technology networked devices.  
 The N1A is the result – with a higher-specification N1Z featuring upgraded components and specially-designed SSD drives also available at a price of £8200.

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AT JORDAN ACOUSTICS



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# Head Honcho



**Oppo's new HA-1 headphone amplifier combines balanced operation with one of the best DACs on the market. Noel Keywood finds that makes for a truly mesmerising performance.**

**Y**ou may think £1999 is a bit steep for a headphone amplifier, but Oppo's HA-1 offers a lot more than other headphone amplifiers. Inside lies one of the best DAC chips currently available, an ESS Sabre32, and on the front panel a bright indicator panel shows no fewer than eight inputs that can be selected, including Bluetooth transmission from a mobile phone or portable player. Add in a fully balanced headphone amplifier output and you start to see that what I'm reviewing here is a long way down the road from normal headphone amps; it is almost a complete hi-fi – sans source – if you listen exclusively on 'phones.

But let me work backwards from that balanced headphone output, to

explain what the HA-1 is all about. Its role in life is to send a very strong signal to Oppo's own, insensitive PM1 planar magnetic headphones, making it seemingly specialised and narrow in purpose, but in truth the challenge of driving these phones to their utmost ability pays dividends with all other designs.

The HA-1 has a conventional 1/4in (6.35mm) jack socket on the front panel for headphone connection. Alongside it sits an unusual socket that attests to the HA-1's special purpose: it is a 4-pole XLR socket able to deliver a balanced output to headphones. Here's what this entails.

Hi-fi equipment is

generally moving towards balanced working these days and this includes high-end headphones. As you'd expect, the point is to improve sound quality and this it almost always does. Some design engineers object that the whole thing is a fiddle, a deception foisted on end-users – and technically they have a point, but in my experience balanced working works: it gives a cleaner sound.

With headphones, balanced simply means each earpiece is connected to its drive amplifier independently, just as loudspeakers are connected independently. This eliminates a shared "earth return" meaning in practical terms





that what is usually a lightweight twin-core cable with screen, between player and headphones, becomes two twin core cables – often a twisted pair – with an optional screen.

Balanced headphone working is, then, largely a cabling issue with the headphones, as well as a connector issue because a 4-pole electrical connector is required – another difficulty. Either a 4-pole jack is used (2.5mm, 3.5mm or 6.35mm) or an XLR connector, mini or full size. Oppo have used a full size XLR with 4 pins (most XLRs are 3-pin). It all gets a tad confusing, unless like me you often have your head buried in an electronics component catalogue – sad, I know!

But I've soldered up leads to connect my Oppo PM-1s to a fully balanced Astell&Kern AK240 portable player and know the virtual impossibility of soldering two screened cables to a tiny 2.5mm 4-pole jack plug.

Boxed with the HA-1 was – thankfully – a short fully balanced flexible cable that plugged straight into my PM-1s. If you're interested in an HA-1 for its balanced headphone output I hope this little explanation makes you aware of the issues.

To deliver a strong output to the insensitive PM-1s, Oppo have designed high-quality balanced analogue amplifier drive circuits, fitted with an analogue volume control, a motor driven Alps that allows remote control. This means they've bypassed the ESS Sabre32's own internal 32bit digital volume control.

As well as driving headphones, the HA-1 can be used as a preamp to drive a power amplifier and



**Balanced (XLR) sockets and unbalanced phono socket inputs and outputs, plus a full range of digital inputs and a Bluetooth aerial.**

silver disc players (CD/DVD/Blu-ray) and iPads (iV), if connected via their analogue outputs.

Most sources will be connected digitally of course, and to this end Oppo have equipped the HA-1 with just about every input you could wish for, all digital being processed by the superb ESS Sabre32 DAC of course. Rotating the Source button

to have a lot of gain, x200 (46dB) for MM and x2000 (66dB) for MC, minimum.

The casework was solidly made and very well finished, having a brushed black satin surface. Pressing in the Source button brings up three display panel options: input level meters, a spectrum analyser or a text Status display. The only peculiar issue

"silky smooth, deep and rich in its sound, it gets the best from the on-board ESS Sabre32 DAC chip".

at top left lights up a pictorial display, showing analogue RCA phono socket inputs, analogue XLR socket inputs, USB DAC with the warning BYPASS appended (the volume control is bypassed), a front panel USB digital input for iPod, iPhone or iPad, an optical S/PDIF digital input and an electrical RCA S/PDIF input (both accept 192kHz sample rate), a balanced AES/EBU S/PDIF digital input and – finally – a Bluetooth

here was that all digital inputs were flagged as 16bit, including 24bit test files flagged in meta-data as 24bit, so something needs attention here. It got sample rate right, but this is to be expected.

The unit weighs a substantial 5.9kgs, or 13lbs – for good reason. Oppo make the point that they use a high-quality linear power supply, with weighty toroidal transformer, to feed the Sabre32 DAC and all digital circuitry – and in my experience this does give a bigger, weightier sound than that from cheap, lightweight switch-mode supplies that are increasingly used these days.

A width of 254mm, depth of 333mm and height 80mm make the cabinet reasonably compact.

## SOUND QUALITY

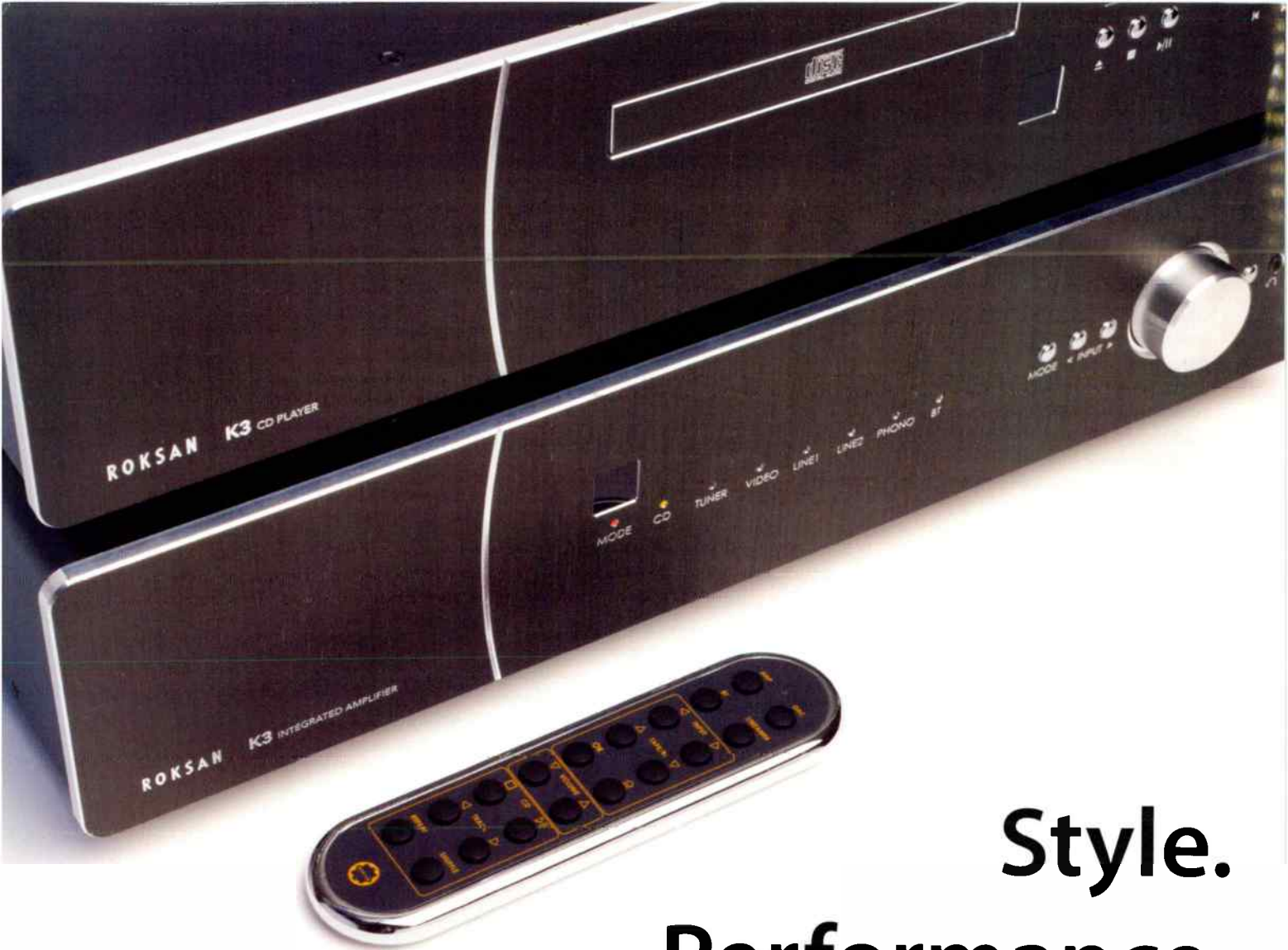
For most listening I used an Astell&Kern AK120 high-resolution portable player connected by optical digital S/PDIF cable (Toslink), playing 24/96 and 24/192 high-resolution files, as well as ripped 16/44.1 CD files. But I also used a MacBook Pro laptop computer connected via USB and a Samsung phone with Bluetooth and 24/96 music files that it/Android can play (unlike iOS), even though Bluetooth uses CD sample rate and



**A bar graph display with short-term peak hold (red) reveals music energy spectrum.**

loudspeakers. For this purpose it has both unbalanced phono socket outputs and balanced XLR socket outputs. There's little gain, just x1.8 or 5dB, inadequate for low gain/output external phono stages and low output mobile phones (0.3V), but plenty enough for all else, meaning

input so music can be transmitted across the lounge from a mobile phone or portable player equipped with Bluetooth. So there's little the HA-1 cannot work with; only those wanting to hook up a record deck via an external phono stage need to be aware that the phono stage will need



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The K3 CD Player is a high-quality source component that delivers a rich, almost analogue, sound performance that perfectly matches the Integrated Amplifier's delivery. When using these products together, you have a package that is truly unrivalled for the price.



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compression.

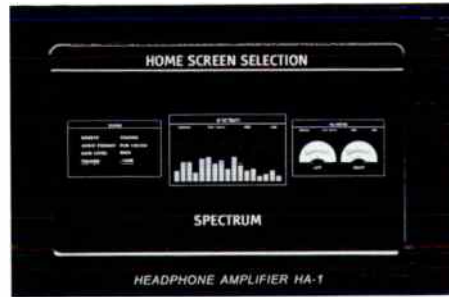
At this quality level, headphone listening is worrying! Oppo's PM-1 planar magnetic headphones have silky smoothness that gives them an almost creamy quality and the HA-1 emphasised this, making for a sound better than that from most full-sized hi-fi systems. The ESS Sabre32 is a very mild sounding DAC if there ever was one; it even has too little 'bite' for some of those used to traditional digital, but this is one reason I love its sound – and in the HA-1 it all got better.

At this very moment, a trumpet is somewhere outside my head at top right with a cornet just below it, as both play complementarily against each other, whilst a trombone oomphas slowly at the centre in my cranium in Wycliffe Gordon & Friends 'Back Home in Indiana' (24/192). A ukulele strums at far right, again outside my head. The PM-1s image beautifully from the HA-1, instruments occupying a wide arc through and beyond my music soaked cranial cavity, individual instruments

taking up precise position, seemingly locked firmly into place.

There's no sign of digital harshness, horns sounding rich and brassy in Haydn's 'Variations on a Theme' played by the Berliner Philharmoniker (24/96), cymbals crashes sounding deliciously sonorous, without hint of that 'bandsaw' quality digital can bring to such events.

The HA-1 quite obviously has firm dynamics, the kick drum and bass line in The Eagles 'Busy Being Fabulous' making this point. What I could also hear here was the clean edges to transients and pin-sharp timing that balanced working brings, as well the way individual instruments were better separated from each other. Balanced working in headphones cleans everything up, as if the soundstage was washed free of crud, leaving instruments sounding spick and span; even the final, short drum roll of this Eagles track was perfectly picked out, with firm dynamics and machine gun precision.



Home screen selection options comprise an info display, music level meters or spectrum display.

**CONCLUSION**

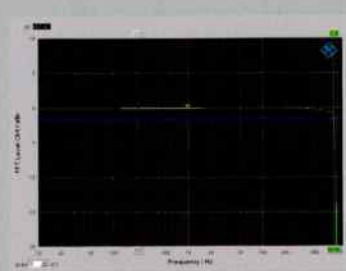
The Oppo HA-1 is a superb headphone amplifier. Silky smooth, deep and rich in its sound, it gets the best from the on-board ESS Sabre32 DAC chip by partnering it with a high-quality linear power supply and audiophile components.

With a huge range of inputs, including Bluetooth and USB, this is great way to run headphones of any hue and description, as well as fine way to drive a power amplifier and loudspeakers.

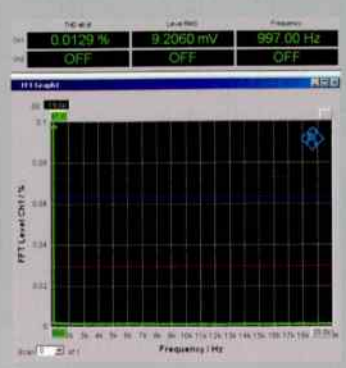
**MEASURED PERFORMANCE**

The S/PDIF digital audio electrical input accepted up to 24/192 PCM code, giving a flat audio response to a very high 90.6kHz through the analogue outputs. The S/PDIF optical input also worked 24/192, unlike many that still reach 96kHz sample rate maximum due to limitations in the optical input receiver. Distortion was minimal at -60dB, just 0.013%, and

**FREQUENCY RESPONSE, 192k**



**DISTORTION, 24bit**



EIAJ Dynamic Range a massive 124dB with 24bit PCM.

Likewise, playback via USB from a MacBook Pro was accepted at 32/384, no less. Note that this was a 24/192 test signal, upsampled and interpolated to 32/384 by the Mac, and accepted by the HA-1 at this resolution, 32/384 appearing on the front panel display. This does not improve the signal, however, and in practice dynamic range was 5dB less than S/PDIF, likely because of USB receiver noise. The full benefit of 192kHz sample rate was resolved all the same, analogue bandwidth measuring 2Hz to 92kHz. The HA-1 works only as a USB DAC; no signal is made available through USB for recording, since there's no internal ADC.

Bluetooth frequency response measured flat to 20kHz but as always compression/transmission noise limits EIAJ dynamic range of this system, to 98dB measurement showed - but this is still a very good value, close to CD's 102dB.

No gain is available to USB; output measured 2V maximum from Phono sockets and 4V from XLR and the volume control does not operate; volume must be adjusted digitally in the source device.

At full volume, with 6dB of gain showing on the front panel display (but only 5dB achieved), the HA-1 delivered

a high 9V output through its XLR outputs before overload, so it can drive any power amplifier, since most need 1V. The phono outputs overloaded at 4.4V maximum and front headphone four-pin XLR 7.3V - all values way above what would be needed in any system under any circumstance.

Gain was a modest x1.8 (5dB) maximum from analogue input to outputs, so the HA-1 is limited in its role as a preamp., best matching high output sources such as silver disc players (2V out). Frequency response of the analogue section was very wide, extending beyond 100kHz, and down to 2Hz. Distortion was also low at 0.003% for 2V output.

The HA-1 measured well all round. It's high quality DAC offers enormous dynamic range, plus super high headphone output through a balanced three-pin XLR headphone connector, all of which suggests it will provide superb sound quality. **NK**

<b>Frequency response (-1dB)</b>	
24/192	2Hz-90.6kHz
<b>Distortion (24bit)</b>	
0dB	0.0002
-60dB	0.013
<b>Separation (1kHz)</b>	116dB
<b>Noise (IEC A)</b>	-123dB
<b>Dynamic range (EIAJ)</b>	124dB
<b>Output (phono/XLR)</b>	4.4/9V

**OPPO HA-1 £1999**



**OUTSTANDING - amongst the best.**

**VERDICT**

A fabulously smooth and rich sound, with great depth and plenty of dynamic punch, the HA-1 is deeply impressive. Versatile too.

**FOR**

- smooth, deep sound
- many inputs
- Bluetooth

**AGAINST**

- low preamp gain
- 24bit identified as 16bit
- no touch screen

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# Synchro-nicety!

**Stay clear of its LiveStage feature, reckons Martin Pipe, and JBL's S700 Synchros cans are a strong midrange headphone contender**

**J**BL 'Synchros' headphone range spans the entire contemporary gamut from in-the-ear types, through compact Bluetooth 'on-ears', to its top-of-the-range S700 headset featured here. This is a 'closed' design; it stops the outside world from leaking into your music - and vice versa.

A USB cable provides a means of charging a lithium-ion battery that resides in one of the cups. This is needed to power a proprietary signal-processing feature known as 'LiveStage' - which is reckoned to 'recreate the experience of listening to live performance'. LiveStage is engaged by pressing the left-cup's 'JBL' logo. When it's not turned on, the S700s work in 'passive' mode - just like any other pair of headphones.

JBL's signal-processing must be followed by amplification to drive the 50mm transducers. Two cables (terminated with standard 3.5mm plugs) are supplied. Both have hands-free microphones and volume adjusters for various smartphones and tablets - one is compatible with Apple iOS devices, while the other is described as 'universal' (Android). Both worked with the Sony CD transport and Benchmark DAC2 HGC (DAC/headphone amp) I was using for 'quality' listening.

Thanks to their die-cast aluminium body (available in dark-grey or white) and integrated batteries, the S700s aren't light at 400g or so.

But thanks to the steel headband's sensible adjustment range and comfortable leather ear cushions, they're comfortable to wear for extended periods if my experiences are anything to go by.

Sound quality on the whole is very good. A random selection of electronic dance-music reveals that bass is deep and solid, without the artificially-impressive emphasis

that marks some of the premium headphones being aimed at urbanistas.

It's also very good at the other end of the scale, with a crisp and insightful treble that doesn't dominate either. Vocals are a little subdued in the mix compared to, say, Sony's similarly-priced MDR-1Rs, but speech (e.g., Radio Four) is acceptably free of colouration.

They're also relatively easy to drive, thanks to good sensitivity. A Samsung smartphone and even a PC yielded strain-free listening.

I was impressed by the amount of detail that could be resolved; it was easy to pick out various underlying keyboard noodlings, percussive motifs and guitar parts in carefully-crafted albums like Can's *Tago Mago* and the Manic Street Preachers' *Futurology*.

The S700s were not as analytical as my Onkyo ES-HF300s, which means they don't emphasise recording weaknesses as much. Keep

away from LiveStage, though. It alters the tonal balance, making everything sound horribly thin.

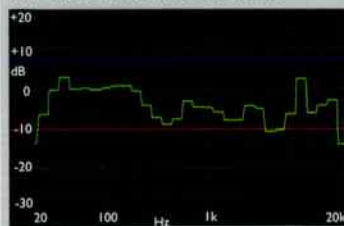
At the same time, it screws around with the stereo image. Exactly how this aural abomination got through JBL's quality-control is beyond me...



## MEASURED PERFORMANCE

The JBL Synchros S700 has a distinct response pattern, different from most headphones in that there is a distinct step up in low frequency output below 200Hz, meaning bass and upper bass will sound strong relative to vocals across the midband. Most headphones run flat to 1kHz before output falls to account for Head Transfer characteristics (or their absence in fact).

### FREQUENCY RESPONSE



Across the midband the Harman's are not especially smooth, not a good sign as it suggests local resonances, phase additions and cancellations and what have you; a smooth response gives a smooth sound and the Harman's are a way off this.

Frequency response and hence tonal balance was, however, consistent across the surface of the headpiece, and sensitivity quite good at 93dB Sound Pressure Level (SPL), which is loud, from a small 1mW of input power, which the weakest portable can deliver. Their impedance is resistive, like most phones, measuring out at 36 Ohms.

The Synchros will likely have strong bass and lower midrange, plus a characterful sound. Their output is irregular. **NK**

**SYNCHROS S700, £260 (TYPICAL)**



**EXCELLENT - extremely capable**

### VERDICT

The overall sound quality suggests that JBL has utilised all those decades of speaker-design experience when creating its top-of-the-range headphones.

### FOR

- analytical, but not ruthlessly so
- detachable cables
- strong at both frequency extremes

### AGAINST

- liveStage sounds abysmal!
- midband a tad recessed
- more could have been made of onboard electronics

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# SOUND & VISION

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WHAT HI-FI?







# X2 extra

Philips new Fidelio X2 headphones offer a refined sound at an affordable price, says Jon Myles.

**P**hilips has won a multitude of plaudits for its Fidelio range of headphones – and rightly so.

While the likes of the behemoth that is the Beats brand and its various imitators may focus on pumped-up bass and an in-your-face sound, the Fidelio range has majored on a smoother, more even tonal balance.

So it would be natural to expect some superior sound from the flagship £300 X2 model – and they do not disappoint.

Purposed for home listening, the X2s are an open-backed design featuring 50mm drivers with neodymium magnets, memory foam earpads and a sturdy, shielded OFC cable.

While large, the self-adjustable lightweight headband means they sit comfortably on your head without feeling unduly cumbersome.

That open-back design means sound leakage is quite heavy – but that pays dividends in the overall performance.

Plugged into a Naim Supernait 2 with its dedicated headphone output the X2s immediately shone, having a clean, clear and balanced output.

There's an impressive degree of detail on offer which allowed me to

hear deep into complex recordings such as Massive Attack's 'Mezzanine'.

Bass is well-judged here – having just the right amount of punch and clarity but never threatening to overwhelm what's going on higher up the frequency spectrum.

If there's one criticism it's that some may prefer a little more top-end sparkle. The X2s do not dazzle with an exaggerated treble but instead err on the side of smoothness.

That means initial listening can make them sound a little laid-back. But give them time to grow on you and you start to realise they are instead giving a natural reproduction

of the music.

Play a 24/96 file such as Tom Petty's 'Refugee' and the leading edge of the guitar notes are clearly delineated and there's air and atmosphere to the mix.

The same goes for Daft Punk's 'Random Access Memories' where top-end details in the cymbals and vocals are clearly projected over the audible over the grumbling bass and electronic beats.

Switch to Tchaikovsky's '1812 Overture' and the orchestral crescendos are handled with aplomb – there's no sense of a thickening or hardening of the sound and individual instruments are easy to follow.

## CONCLUSION

The Philips Fidelio X2s are an excellent set of headphones that deliver a smooth, even sound with an openness and clarity that is hard to beat at the price. Bass is obvious, without being excessive. They come highly recommended.

## MEASURED PERFORMANCE

The Fidelio X2s have a bass lift of +6dB at 60Hz, so bass will be obvious.

The Fidelio X2s measure flat across the rest of the audio band, with little of the upper midrange dip most headphones display, so detail will be strong. Upper treble looks very smooth, even reticent by headphone standards.

Results were consistent as the earpieces were moved across our measuring microphone, so dispersion is good and sound will be consistent on the ear.

Impedance measured 31 Ohms.

Sensitivity was good at 94dB from 1mW of input.

Overall the X2s measure well. They should sound smooth and detailed but with obvious bass. **NK**

## FREQUENCY RESPONSE



## PHILIPS FIDELIO X2 £300



**OUTSTANDING** - amongst the best

## VERDICT

A refined set of headphones that beguile, having an even sonic signature and plentiful detail.

## FOR

- comfortable
- smooth tonal balance
- well-built

## AGAINST

- some may prefer a little more bite

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# mail



**Visit our website at [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) or send your emails to [letters@hi-fiworld.co.uk](mailto:letters@hi-fiworld.co.uk). Letter of the month wins a pair of KEF Q100 loudspeakers.**

Answers by: NK - Noel Keywood; PR - Paul Rigby; MP - Martin Pipe; HB - Haden Boardman; RT - Rafael Todes; RA - Rod Alexander; JM - Jon Myles.

## LETTER OF THE MONTH PRIZE



**KEF Q100 LOUDSPEAKERS**

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

**A pair of KEF Q100 loudspeakers are on their way to ANDREW ENTWISTLE, Letter of the Month winner in our February 2014 issue.**

## Letter of the Month

### CLICK OFF

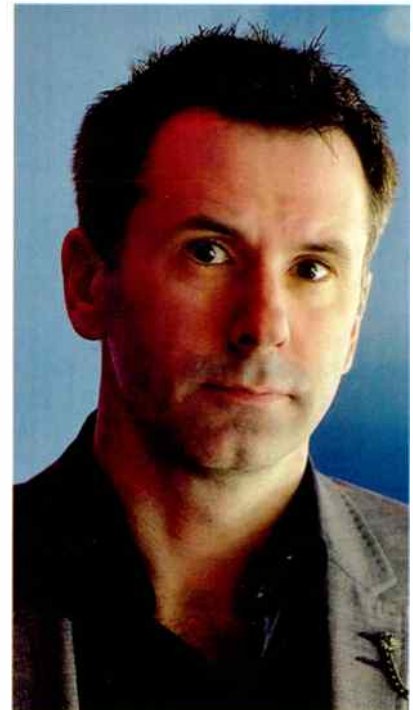
Shame on you BBC and shame on you Spencer Kelly. Your piece on high-resolution audio was factually incorrect, derogatory to the audio industry, and generally poor journalism. I have been a fan of high-res audio for some years, so my ears pricked up when you were to do a report from CES on this subject, but to say I was disappointed is an understatement. I can still remember a time when the BBC were at the technical forefront of most things in the audio world and we waited to see what kit was used by the BBC before we made any purchases of our own (speakers, turntables, etc.). How times have changed. However I'm sure there are plenty of engineers in the BBC now who will be cringing at the dire quality of your report.

It starts off in a very negative way calling it the "latest fad" and asking "is it really a thing, or just a way of selling us more expensive kit?" which sets the tone of the whole report. I have never seen this attitude taken to the ever increasing high-res world of video i.e. 3D, 4k, 8k that we get rammed at us most weeks, so I wonder what is behind this kick out at the audio industry who, the report continues, want us to buy "better, more expensive equipment" – so unlike the world of video!!

Then Spencer talks about the "very, very large FLAC files that can be even bigger than CD quality WAV files". Not sure what the point is here, but he goes



**Spencer Kelly says "There's a lot of hype in the tech world – everyone is trying to sell us new devices, and making claims that sound amazing. Part of our job (on Click) is to cut through the PR and explain if, when and where this tech might actually live up to its promise" - his words on the Click website. They illustrate a common journalistic approach and he has, the BBC say, a "double first in Computer Science from Cambridge", so he isn't daft, but all the same Andy Aldridge thinks his report on high-resolution digital audio was "shoddy".**



on to give two examples of new players, one costing \$4000 and another the Sony Walkman costing \$1200.

He then compares the size of a CD quality WAV file to a mp3/m4a file of the same piece of music and follows this by using a pixelated and non pixelated image to explain the difference.

Further on we get a graphical representation of a CD quality WAV file (30 - 40 MB) to a "massive" hi-res FLAC file (350MB) that "contains frequencies that the human ear can't even hear – now what's the point of that?"

The report goes on to interview Will Prentice at the British Library who



explains that inaudible frequencies can have a physical affect on the listener but ends up concluding that a lot of other things have to be taken into consideration by the listener and in answer to the question "is there much difference between CD WAV files and huge hi-res files?", concludes "notionally yes, but very often no".

Spencer continues with a visit to Meridian to talk about their MQA system which holds the same information as WAV but with the smaller file size of FLAC.

He goes on to take another swipe at the industry, accusing musicians of coming up with hi-res to extract more money from the public and says that there is "not even an agreed standard" that qualifies as hi-res.

The report deteriorates further by implying that Neil Young's support for the PONO player and accompanying music download service is just to sell his music and concludes with a ridiculous interview with Paul McCartney climaxing with Spencer shouting into a corrugated metal pipe – very informative.

As I'm sure any of the audio engineers working for the BBC know, hi-res audio has for many years been described as any digital audio file above the standard definition CD format which has a sampling rate greater than 44,100Hz and a bit depth greater than 16. No mention of this crucial fact ever entered your report.

SACD (Super Audio CD) was introduced by Sony in 1997 based on DSD (Direct Stream Digital) developed by Sony and Philips and utilising a sampling rate of 2.8224MHz i.e. 64 times the CD Audio sampling rate. Although SACDs are almost defunct now (but also highly sought after), DSD remains at the forefront of hi-res audio, but it didn't get a mention in your report.

As your engineers will also know, for any given music file the WAV version will be larger in size than the FLAC version, which are just two of several lossless audio coding formats available to carry standard or hi-res audio.

Your report left the audience with the impression that WAV was for CD and FLAC another "huge, enormous, massive" audio file. Ridiculous.

And by the way, you do not need a \$4000 player to play hi-res audio: I can play hi-res FLAC files on my phone using the appropriate free application.

Hi-res files certainly don't cost a fortune either, generally starting at similar cost to a CD and less than a



**Sony continue to support high resolution DSD in downloadable form, but we don't see much of this activity in the UK. In the U.S., however, Sony demo DSD at audio shows, such as this one in San Francisco, so people can hear its benefits.**

vinyl album. The whole idea of hi-res is that it is equal to the actual studio recording rather than a frequency restricted file (CD) or a lossy file (mp3 etc.) – and yes the file sizes are larger, but with modern technology in data storage this is no longer an issue and will undoubtedly become more convenient in the future.

Overall, I'm altogether disgusted with this shoddy report from Click, the BBC should be ashamed.

Regards

**Andy Aldridge**

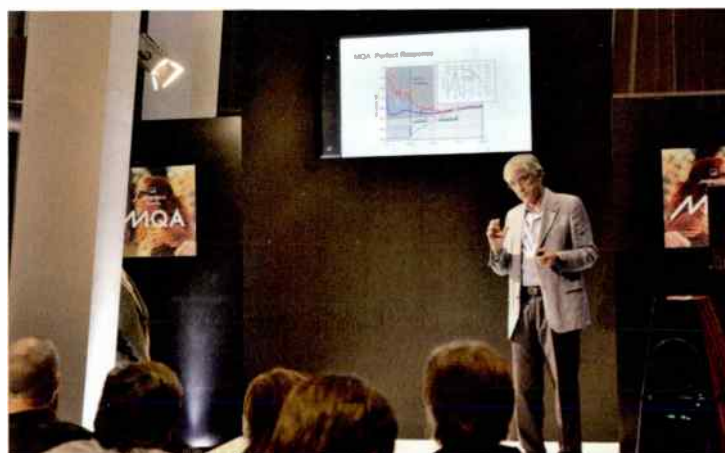
Sadly, our collective experience with digital audio was kicked off by the CD, accompanied by openly misleading claims it was "perfect". It will take a long time to get this out of people's heads and the process isn't being helped by high-res digital that isn't high-res at all – see the letter below.

Here's a fact: at -60dB CD distortion measures 0.2% and high-res distortion (24bit) measures ten times less, namely 0.02%. So hi-res is, by this metric, ten times better. **NK**

### **DODGY DOWNLOADS**

After purchasing a Squeezebox Touch and ripping all my CD collection to FLAC a year or so ago, I sold it and am using Vortexbox software and have built a ripper/server out of a compact PC and a 2TB hard drive.

Last week I bought an ifi Nano DSD DAC (amazing for the money imo) and connected it to my Marantz PM11 s3 amp. After much cursing and swearing due to my non-existent computer skills, I got it to make a noise – and a rather pleasant one at that. However, the DAC has an LED that changes colour depending on the sampling rate and after playing some 24/192 tracks and some DSD



**Spencer Kelly from the BBC's Click programme visited Meridian to hear about their recently released MQA (Master Quality Authenticated) high-resolution digital audio technology. Here Bob Stuart, founder of Meridian, talks to the press about it.**



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downloads all was good.

I then played a supposed 24/192 album I purchased from a reputable source to find it was only playing back in 44/48. It was too long ago to query it now, but it makes me wonder, do we actually get what we pay for all of the time? It's a decent quality recording and with the Squeezebox I was none the wiser, but it does make me think twice before paying, in some cases, nearly twice the price of the equivalent CD.

Many DACs don't show the sampling rate, so what guarantee does the end user have that they are not being ripped off? It could be something as simple as the wrong file on the retailer's server perhaps. Who knows? Thank God I've just bought some upgrades for my Technics SL-1210. At least I know where I stand with that! Regards,  
**Neil Macmillan.**

It is possible to both up-sample a digital recording to a higher sample rate and re-quantise it to higher bit depth, usually from CD's 16bit to 24bit commonly used for high-resolution files. The process now being so simple, inevitably low-resolution digital files can and – I am told – are being processed to appear to be high-resolution when in fact they are not. Neither process improves quality, it just changes data presentation, so it's a dubious practice to say the least, a scam if done knowingly and deliberately to

ripped to a 96kHz file and this will be seen as such by a player able to flag up sample rate. But the analogue bandwidth will not change, so there will be no improvement; a spectrum analyser such as the Rhode&Schwarz UPV we use can see the original spectrum limit – but they're expensive.

It is the same with bit depth too, once changed the only way to sense what might have been is to look at noise during silences, but I doubt this would yield a meaningful value for complex reasons I will not go into here.

You can reprocess a file at home if you want, to amuse yourself. The free Audacity music editor will do it, as will XLD for Mac. Sound quality will not change, although when you

analogue, and free of fuff. But times have changed and now we don't know what we are getting.

I was worried by a recent tale that a music retailer in the UK had asked a US music label whether a high-resolution version of an album was available, only to receive it almost by return. They noticed sound quality hadn't changed and on enquiring about how the recording was made were told with naive honesty the file had been "converted to high-resolution". The person handling their request thought this was how high-resolution was truly generated. Doh! **NK**

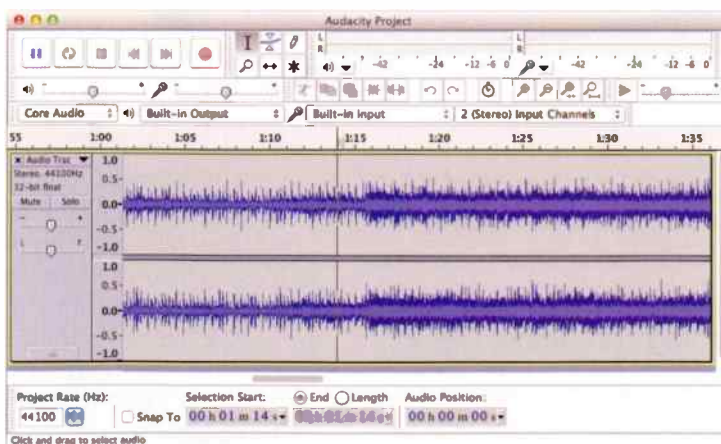
### LETTER TO TONY

I haven't given you feedback for the last three or four months as I felt I needed to take some time to listen to music in my so recently developed system, this time, focused on the mono records for which the system is now properly tuned.

My main system now consists of the following items: Pair of KEF Reference 107.2 Raymond Cooke version + KUBE (Unplugged), VTL 6.5 Line preamplifier, ASR Basis Exclusive phono preamp, Rek-o-Kut re-equalizer, Technics SL-1210 Mk2 modified for 78 rpm/Sound, Hi-Fi HE external PSU/SME M2-9R tonearm/Ortofon 2M 78/ Sound Hi-Fi Archival Elliptical Stylus Kit, Garrard 401 fully restored/SME M2-12R/Ortofon 2M Mono SE, Well Tempered Lab Amadeus GTA MKIII/LTD Tonearm/Dynavector XX2MK2, DPA Enlightenment DAC/ Upgraded Primaluna Prologue 8 CD player, Audiolab M-DAC/Denon A1XV SACD/CD/DVD player, AKAI I730D-SS Reel-to-Reel tape recorder, Sony RS-DAT DTC-1000, Monster and QED interconnects/ MIT Terminator5 bi-amping speaker cables Rotel RHB 10 (Michi) dedicated to low frequencies amplification, BAT VK60 dedicated to medium and high frequencies, external



**The ifi Nano DSD DAC - "amazing value for money" says Neil Macmillan.**



**The Audacity free music editor can increase sample rate and bit depth of a digital file but sound quality will remain unaltered.**

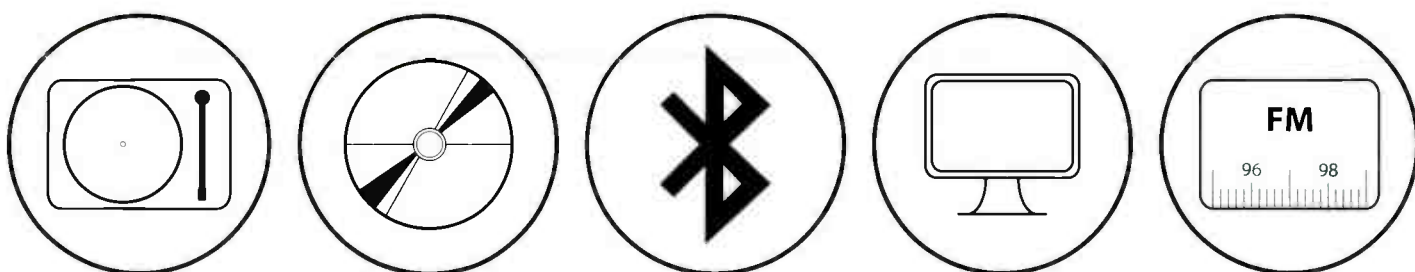
charge more for a CD-quality file.

The bad news is you cannot easily divine the original sample rate of a file once it has been up-sampled, or down-sampled. The data is irretrievably changed, that is unless original rate was entered into meta-data. So a CD track whose sample rate is 44.1kHz can be

rip CD it will be re-clocked, jitter reduced by this process and the sound slightly smoothed, but this isn't to be confused with the benefits of higher sample rate or bit depth.

Digital has turned out to be a very confusing technology, which is ironic because in the early days it appeared rigidly defined, unlike

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Though my amplification and speaker claim for retirement I've had hundreds of hours of musical pleasure in the last four months listening to all kinds of records, SACD and lossless audio files.

Shellac records have been real eye-openers revealing a musical quality level that for me was absolutely unsuspected. I truly believe that I have the privilege of listening to these records in a way that would have blown my grandfather's mind away. Even my father hasn't had the chance of listening to his records and his music the way I do now.

Modern remastered LPs are, by far, better than their original pressings of the 50s, 60s and 70s and it doesn't matter if the new releases are of Bach's works, the Beatles records or Ella Fitzgerald's irreplaceable voice. Old shellac records have a magic of their own and may sound glorious nowadays. My father's reel-to-reel tapes sound amazing properly filtered, digitalized and listened to through the Audiolab M-Dac.

Modern VTL's pre-amplification reaches quality levels very difficult to overtake. The potentialities of each 78 shellac record liberated by the choice of a more adequate stylus and the exact equalization curve can't be overlooked. Treble harshness almost disappears, the lack of bass is a pure myth, voices become more credible and what in the old days sounded like amateur bands playing suddenly become integrated and reveal extraordinary musicianship and actually super conductors replacing the previously perceived band leaders.

In some cases the speed adjustment allowed by the Garrard 40 I doesn't seem to be enough though.

Tony Bolton, I really mean it when I state that I owe it all to you, to your sensible advice to the interest you revealed studying the problems I have put you and giving me the most useful answers and advice. Recently recorded CDs also sound great. We are on the brink of a new era for audiophiles with all the new file formats, software and DACs.

I will never fully profit in all this new-era audiophile world because I do not need it and, on the other hand, I also do not want it all, but it complements my traditional way of listening to music, allowing me to benefit from my physical music supports in a more efficient way. In many cases, I kept reading the magazine and as usual starting with your column and reviews.

The issues you talk about in your January opinion article are very interesting and gave me leads in more different ways to listen to my records. I



**"Shellac records have been real eye-openers, revealing a musical quality level that for me was absolutely unsuspected" says Mario Kopke Tulio.**

still haven't decided if it is relevant for me the correspondence between the reproduction of music and the actual live performance. As I see it, it is probably more important to me that what I listen to corresponds to what the performers intended to obtain as a recording of their music.

Many musical works of the sixties and seventies have been recorded in the studio in a way that rendered a live performance impossible at the time. Overdubs, multiple instruments played by the same musician, recorded loop effects could never be reproduced live and whenever attempted became samples of a different league.

Sometimes the intentions of the performers have not been respected

during the mastering operations. Things were added and things were subtracted against the performer's will.

A very neat example of this understanding is the Let it Be NAKED LP by the Beatles, that shows to posterity that the Beatles could also be wrong sometimes, as the original record is a lot better than the nude issue. The original Let it Be LP sounds better but, more than that, it keeps the production at almost the same quality level previously achieved by the band. Thank God the engineers decided to ignore John and Paul's decisions regarding this matter.

Best regards,

**Mario Kopke Tulio  
Portugal**



**Reviewer Tony Bolton at Hi-Fi World's Awards ceremony, Bristol Sound & Vision Show, February 2014.**

# HI-FI WORLD

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I am sorry to say, Mario, that Tony is not with us anymore. He 'phoned me just before Christmas saying he had been diagnosed with cancer and left us for hi-fi heaven, Saturday 27th December 2014, just a few weeks after diagnosis. But thank you so much for your kind letters to Tony. I know he enjoyed receiving them and answering too. It was Tony's passion and delight. For more, see World News, Tony Bolton, on our website at [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk). Needless to say, we are very sorry to lose him.

**NK**

### TECHNICS SL-1210 UPGRADE?

As a Technics SL-1210 owner, I always read your reviews of the 1210 with interest. I invested in a Timestep HE power supply upgrade with favourable results. I was surprised to read, following the positive review by NK, that the Mike New bearing actually undermines the area where the 1210 excels, i.e. extremely low W&F.

Surely an engineering upgrade which somehow (?) degrades otherwise excellent mechanical performance must be considered somewhat of a failure, regardless of the claimed sonic benefits. At this (or any) price point the perfectionist in me expects precision engineering to enhance both areas for an item to merit recommendation. The numbers may be small, but on the face it, it would appear that NK actually prefers turntables with increased levels of W & F and this partly undermines the argument for DD over BD turntables. Maybe the numbers don't really matter after all, in which case why publish them?

Regards

**Paul Mumford**

Hi Paul, we also measure valve amplifiers and their numbers don't look so good, but guess what I listen to at home? In the end there is weak correlation between measured effect and its sonic impact; this psycho-acoustic relationship is a hopelessly challenging field and it is very dangerous to ignore what people hear, or say they hear. Remember how CD was once considered 'perfect'?

Ideally, flutter would not exist – as you hope; I agree with that. But a balance has to be struck between flutter and so much else. As an engineer I specifically do not accept engineering solely for low figures: you must listen and take a view. That's where hi-fi design is as much an art as a science and – happily – the best



**Timestep EVO turntable with external Timestep power supply, as used by Paul Mumford. It gives "favourable results" he says.**



engineers in the business understand this. You will find more on all this in reply to another letter published below. **NK**

### TECHNICS SL-1210 MEASUREMENT

Thanks for a very interesting article on the Mike New SL-1210 bearing mod. In essence, your article is essentially just documenting what the Mike New Audio bearing does to a previously modified Timestep SL-1210 rather than a standard stock SL-1210.

In the article you show a picture of the 'stock' bearing next to the Mike New Audio bearing. The 'stock' spindle and bearing in the photo looks as long as the Mike New Audio spindle – suggesting it's a Timestep SL-1210 spindle/bearing rather than a stock spindle/bearing which is shorter and has a brass(?) section above the bearing housing. The Timestep retains the original bearing housing of the stock SL-1210 but has a thicker, longer spindle

- presumably there's no need to snip the protruding wires on the PCB underside compared to the Mike New Audio mod. The Timestep webpage: <http://www.soundhi-fi.com/sl1200/> shows the stock bearing/spindle next to their SL-1210 spindle/bearing mod.

Interestingly, you report measurements where wow is worse than the typical for the SL-1210 standard units. How does the Mike New Audio bearing compare with the Timestep bearing mod or was the figure you quoted one measured with the Timestep bearing mod?

A more interesting and useful comparison would be to do a side-by-side comparison of the original stock SL-1210 vs stock SL-1210 plus Timestep SL-1210 bearing/spindle mod only vs stock SL1210 plus Mike New Audio SL-1210 spindle/bearing mod only. In terms of sound quality and measurements of the effect of the mods on speed accuracy, wow and flutter and additionally/importantly, transmitted



**The Mike New bearing at right increased flutter at 6.6Hz from Technics 12 pole Direct Drive motor.**

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noise through the bearing on all three players.

A further useful comparison would be to compare the effect on sound quality and measurements of changing the platters on stock SL-1210s with stock platter and slip mat vs Timestep plus stock platter with Oyaide mat (or Funk Firm platter Mk1 - discontinued now, so not likely to be available) vs the Mike New Audio ETP platter and/or Mike New Audio copper bonded aluminium platter.

There are also a number of mods to the stock SL-1210 electronics, with off-board power supplies as you know - another source of a proper comparison Stock vs Timestep PSU vs MCRU PSU v Paul Hynes sourced PSU.

It would be interesting and helpful for your readers and consumers to have some indication of how effective these mods are at improving (or not as the case may be) the standard SL-1210 units - in terms of sound quality and importantly the measured results. At this time there is no reliable independent verification these mods make a significant difference as in terms of perceived sound quality nor measurements (I'm aware that measurements are not the be all and end all but would you want a mod that makes your turntable perform worse???) and which ones make the most significant difference - and this is without even considering tonearm/cartridge changes.

I for one would like Hi-Fi World to take up the challenge and undertake a systematic review of the SL-1210 and effect of the numerous modifications - you owe it to yourselves and your many loyal readers, not to mention the many SL-1210 fans out there who would flock to your magazine if you did!

Regards,

**Anthony Ange**

Hi Anthony. You are right that the bearing we replaced was a Timestep in the review photos, but our Wow & Flutter (speed variation) measurements relate to results from a standard bearing measured some time ago, as well as the Timestep, both of which don't suffer the flutter we measured at 6.6Hz from the Mike New bearing. This raises a lot of interesting issues which I feel I ought to explain in some detail so you get the full picture, whilst also answering your specific queries.

The Technics SL-1210 uses a 12 pole motor, so there are 12 drive pulses per revolution turning the platter around. Since one revolution

at 33rpm occurs in 0.55 seconds, this being the rotational frequency of the platter in effect, the frequency of the pulses is  $12 \times 0.55\text{Hz} = 6.6\text{Hz}$ , and this is where the flutter comes from. It is the fabled flutter problem of Direct Drives that Technics managed to suppress in the SL-1210, helping give it impressive speed stability, at least with conventional measurement routines - more later.

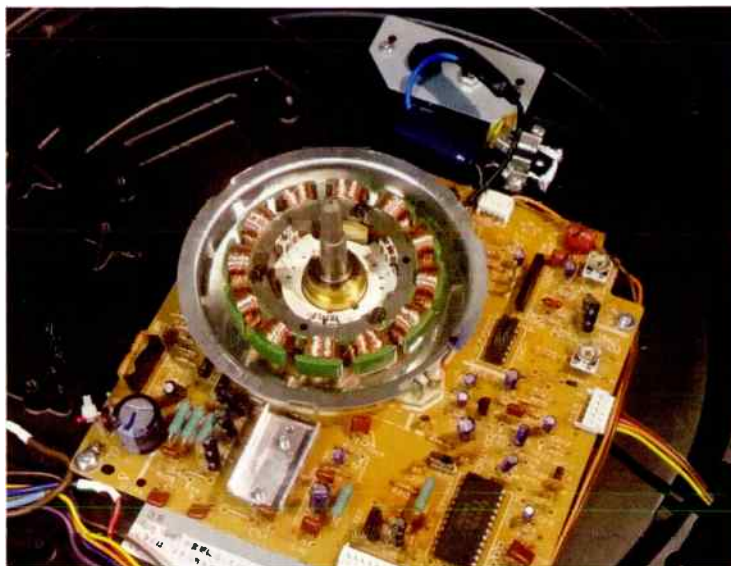
Our detection of flutter raises many interesting issues

about this motor, Direct Drive and turntables in general that have set me thinking about the problems - see my column. This is something that interests me, and it seems to interest a lot of other people too - I have had many discussions with others about the phenomenon and perhaps I need not tell you that there's even a petition at Facebook (see <https://www.facebook.com/TechnicsPetition>) asking Technics (a brand name of Matsushita, Japan) to reintroduce this turntable.

So why did the Mike New bearing introduce flutter? My suspicion was that tighter coupling of the drive coils to the base plate, possibly aided by removal of the plastic cover that may well have served as a mechanical damper, raised the intrinsic flutter of the motor to make it more visible under analysis. In other words, the flutter was there, but not obvious during analysis amongst general noise in the signal from the pick-up cartridge when playing a DIN 45-452 test disc, measuring the Technics bearing.

Timestep's Dave Cawley has another take on this, however. He attributes the flutter to extra drag caused by higher viscosity oil used in the Mike New bearing - and this is equally plausible. Extra drag would increase the load on the motor and servo-feedback would increase current to the drive coils to maintain control of speed, causing the drive pulses to increase in amplitude. Dave tells me he has measured current with a clamp meter to confirm this.

Higher mechanical coupling and higher drag could, together, be the



**Technics 12 pole Direct Drive motor - count the number of coils!  
These are fed from drive amplifiers and a servo-feedback system.**

reason for increased flutter, the two acting in unison; these effects are not mutually exclusive. Whatever, at least we know what is happening.

Obviously, the Mike New bearing does change operating conditions, but because flutter increases, are they for the worse? Personally, I don't think so. I felt it improved low-end weight, something the Technics has always lacked, and it also improved stage depth. Jon Myles walked into our office and noticed the difference immediately; he also likes the Mike New bearing, for exactly the same reasons.

This scenario raises lots of interesting issues, one being that if the motor has to compensate for changes in drag, flutter becomes obvious. A higher mass platter should smooth this out but it will lengthen start times. Technics have quite obviously fitted a low drag bearing and lightweight platter to get short start times (remember, this is billed as a DJ turntable) and fabulous speed stability figures under measurement, but there are downsides.

Firstly, and most obviously, the lightweight platter mechanically 'rings' and needs damping.

Secondly, flutter would be less possible if mass was increased, although not if the motor tries to compensate by increasing drive even more. This becomes an issue within the servo-feedback system that only measurement could resolve: I suspect drive torque needs to be smoothed by changing the pattern of current delivery to the coils, and here we may in effect be looking at the limitations of 1970s motor servo

# Letters On-Line!

You can now read our Letters on-line, from the last issue back to March 2010. That's a treasure trove of information and advice to our readers, as well as a fascinating catalogue of reader's systems and views. There's mountains of buying information, all just a click away on your computer or i-Pad. Have fun!



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**DP** David Price, editor, **NK** Noel Keywood, publisher, **PR** Paul Rigby, reviewer, **TB** Tony Bolton, reviewer, **RT** Rafael Todes, reviewer (Allegri String Quartet), **AS** Adam Smith, reviewer, **DC** Dave Cawley, Sound Hi-Fi, World Design, etc.

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technology and analysis methods.

Back in the early 1970s, when this turntable was designed, the sort of analyser needed to look at actual servo circuit behaviour under load, as well as computer analysis (e.g. Spice) of circuit behaviour to help correlate and fine-tune the servo circuits, were unavailable. Technicians engineers did a great job, I believe, in designing such an effective motor without these tools at their disposal, and especially in building the motor into the platter. But much better is possible today.

Our review did eke out the motor's limitations and suggest what can and cannot be done to improve the SL-1200 series turntables. Before I go on to speculate on this, however, straight away I'd suggest there's massive leeway to improve this motor, both in torque and its application; an entirely new SL-1210 successor is easily conceivable.

You would like us to measure and listen to the various mods – and that's understandable, but there is a reason you won't find verification of most of them through measurement, as you wish: it is extremely difficult to carry out.

It isn't impossible: a University Physics department or large motor manufacturer would be sufficiently well equipped and knowledgeable about rotational inertia, dynamic drag and, in particular, servo-feedback theory/behaviour (this is a whole subject of electronic engineering in itself, because it is important in today's world – think aero engineering), but such topics are not for ordinary mortals. We can do it, but perhaps not as effectively as is needed. Here's why – and it's technical!

Our measurement of Wow & Flutter is, by hi-fi industry standards, sophisticated – but it isn't sophisticated enough. We use a test LP, W&F meter and spectrum analyser connected to its demodulated output: it allows great insight.

However, to really see what is going on, especially with dynamic loading of the motor and servo-system reaction to it, the test LP, with its inherent errors, must be replaced by a highly accurate, mechanically calibrated, optically read grid, possibly printed onto a clear plastic 'LP' that overlaps the edge of the platter. Then an LP is placed on top and played.

This is both more accurate than a test LP, and also able to show real life reaction to dynamic load changes of the sort a cartridge tracking an LP

groove introduces.

If there is any engineer reading this that thinks "what rhubarb, the changes would be too small to be discernible" let me just introduce a note of hi-fi caution. The relatively massive mechanical system of a tone arm "sings" to the music being played, even at its base, as I have found in tests. I suspect a Direct Drive servo system would reveal a lot about what is happening if electronically interrogated.

One limitation of a classic Wow & Flutter LP of the sort we use is that groove reading is a repetitious mechanical condition that doesn't stress the servo-system (according to its time constants). So it is insufficiently revealing. Test LPs also have intrinsic W&F from the original cutting lathe.

I could write a book on this, so best to stop here and summarise. We are close to our measurement limit of Wow & Flutter; to go further would mean Hi-Fi World moves from hi-fi magazine to research establishment.

The same observation applies to measuring vibration at the bearing. This requires an accelerometer, its pre-amp and a spectrum analyser, all of which we have, but making such measurements entails stripping down SL-1210s sent in for review – and their owners don't much like this, especially if the outcome is "not good". We cannot take apart items for review; manufacturers like to talk about damage and compensation.

We would love to do all those things you mention, but they are beyond our current ability or available time – Hi-Fi World is not yet the size of Matsushita! As things stand we are able to – almost uniquely – apply a technically valid measurement system to the Technics SL-1210 turntable to see how well it performs, but going any further would demand a research budget big enough to be the subject of Government funding – and I know what answer we'd get to that!

Having said all that, I do hope that in the near future we will be able to make further insightful measurements with the equipment we currently possess and come up with more about the behaviour of this turntable, as well as others. **NK**

### ONE-BOX SOLUTION

*My CD player is currently formed by Micromega CD2.1 transport feeding a Musical Fidelity Tri Vista DAC.*

*I am happy with the sound of the player, but due to a house move and space considerations, I need to re-configure the physical layout of my hi-fi set-up.*

*If you were in my position and needed to get a new CD player to replace my current equipment, what options would you consider? It has been suggested (by guess who!) that a single box front loader would be a good solution, but you don't have to take notice of such suggestions while I do, so please don't feel you have to take such suggestions into consideration.*

*I like MF gear as, in the main, the music I listen to is classical, and as a classical musician, Anthony Michaelson seems to make equipment that works well in my sound spectrum, but I'm open to all suggestions.*

Many thanks

**Phil Cowling**



**Oppo BDP-105D Blu-ray/DVD/CD player gives fabulous sound quality from CD, from one box.**

The short, sweet answer to this is to get Oppo's BDP-105D Blu-ray player. It is a single box unit just as the other half – I guess – would wish, meaning domestic harmony will be enhanced. This may well help you get the £1000 price tag through the finance department!

The player is smooth as silk in its sound, because not only do Oppo use an ESS Sabre32 DAC, but also a high-quality, internal linear power supply. Many alternatives use either an external supply or a switch-mode unit, or both – and I fancy they don't quite have the low-end presence of the Oppo.

The BDP-105D is a very well implemented, high-quality package that I now use regularly in-house to play CD and hi-res files, fed from an Astell&Kern AK120 portable player. The only irritation here is that 96kHz sample rate is the limit via the optical S/PDIF input.

I think this very modern design will suit your musical tastes. **NK**

# A Great Addon

Compact yet rather special. Audio Pro's Addon T10 has good enough sound quality to stand out from the crowd, believes Jon Myles.

**T**here's no shortage of Bluetooth-equipped, stand-alone powered speaker packages on offer at the moment. Indeed, it seems most hi-fi manufacturers (and a fair few non-audiophile companies) are coming up with designs.

So to really make a mark the product has to stand out in at least one respect – be it looks, price or sound quality.

Luckily, from our point of view, Scandinavia's Audio Pro has gone firmly for the latter in the case of the £299 Addon T10.

It's a sleek-looking unit measuring 320mm wide by 166mm high and solidly constructed. Our review unit came in a clean matt-white finish but other finishes are available, including a truly distinctive orange version with a leather carrying handle.

The front 'speaker complement consists of a 110mm bass/mid driver flanked by two 20mm soft-dome

tweeters protected by metal mesh grilles. A rear-facing oblong port helps augment the low-end.

The only other feature on the front is a black disc underneath the left-hand tweeter which is an IR receiver, as well as LED indicator light. It glows a dim blue when in standby mode and grows brighter when a Bluetooth device is being used as a source.

Around at the back is the power supply socket, as well as a pair of stereo RCA phono connections for line-level inputs, and a 3.5mm mini-jack. Interestingly there's also a dedicated subwoofer output for those seeking more bass – not something seen on all these types of products – as well as a USB socket which can be used to charge portable devices.

Inside power is supplied by an 80 Watt Class D amplifier – with 40 Watts going to the bass while the tweeters receive 20 Watts apiece. The T10 supports Bluetooth 4.0 and aptX if your device has it and Audio Pro also uses its own DSP signal processing to tailor the Addon's sonic signature.

Control of the unit comes courtesy of a lovely little remote control constructed from a solid piece of aluminium and featuring on/off, mute, volume, Bluetooth pairing and source selection controls. It feels nice in the hand and is admirably clear and easy to navigate.

The remote must not be misplaced, though, as there is no other way to operate the unit – there are no controls on the 'speaker itself.





In use, the Addon paired with both iOS and Android devices quickly and seamlessly – although this is to be expected as routine nowadays – and maintained a steady connection throughout the review period.

enough to quickly let you know the quality of the file it's being fed. Given some low bit-rate modern pop via the iPhone, guitars and cymbals became edgy and gritty with the sound losing much of its previous smoothness.



The rear panel includes a pair of stereo RCA line-level inputs, a 3.5mm mini-jack as well as a dedicated subwoofer output and a USB socket for charging portable devices.

**SOUND QUALITY**

Straight from the off there's an impressive sophistication to the T10's overall sound.

Paired with an Apple iPhone 5 via Bluetooth there was real weight and bass power on offer, but it's obvious the Addon has been engineered to be smooth and relatively even without any of the boom and tizz effect some cheaper rivals display.

Playing Massive Attack's 'Safe From Harm' I found there's a slight warmth to the low end which gives a nice sense of punch, while the midband was smooth and even.

Pushing the volume hard, there was a small amount of box shake at really high levels, but nothing too untoward in a unit of this size.

Indeed, the T10 was able to go loud enough to fill a medium-sized room with no obvious sense of strain.

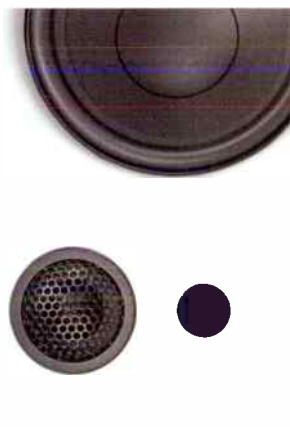
Treble is clear and distinct with a little forward nature that helps highlight the intonations in female vocals. Barb Jungr's smoky jazz was beautifully rendered, with no sign of sibilance.

Switching to the line-level inputs the sound changed slightly, the bass losing some of its warmth and becoming obviously drier.

There are no earth-shaking subsonics on offer but playing Leftfield's 'Rhythm And Stealth' I found the electronic bass lines were firm and well-pitched, refreshingly free of one-note thump.

Indeed the Addon is discerning

Sticking with good quality recordings, though, the Addon turns in an impressive performance.



Beneath the mesh grille-enclosed left tweeter sits an IR receiver which also acts as a status indicator light.

**CONCLUSION**

The Audio Pro Addon T10 is a thoroughly well-engineered and grown-up sounding Bluetooth speaker system with a relatively even sonic balance free of any nastiness.

It'll fill most rooms with ease, combines good bass performance – considering its size – with a smooth and even midband, which gives a real sense of hi-fi sophistication to the performance.

At just shy of £300 it's not the cheapest option on the market, but its construction and sound quality fully justify the price.

**MEASURED PERFORMANCE**

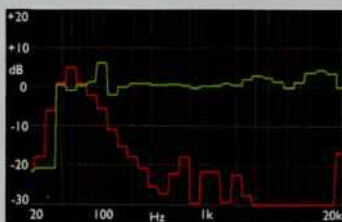
Measured on-axis, frequency response of the Addon T10 was smooth and mostly flat, our analysis shows. Moving off-axis, left or right, upper treble fell slightly, reducing the two small treble peaks.

On balance, the Addon T10 is impressively flat and accurate in terms of output, but it will have a slightly bright balance because tweeter output rises.

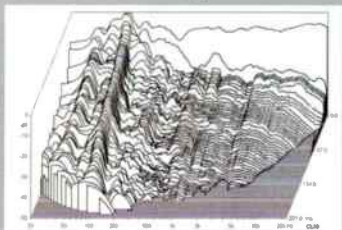
It was also free of phase dips (ignoring a sharp phase rotation at 110Hz), over a wide forward angle so the

**FREQUENCY RESPONSE**

Green - driver output  
Red - port output



**DECAY ANALYSIS, 200ms**



sound will stay consistent across a range of listening positions.

Strong upper midband output around crossover at 3kHz will make the T10 sound intensely detailed, but poor recordings may well sound harsh. This result was obtained through the line input.

Bluetooth gave a subtly different result, a small amount of bass lift giving a warmer sound.

Bass was essentially flat down to 40Hz via line in, below which it cuts off sharply, suggesting electronic equalisation and filtering is used. The port adds a little to output at 50Hz, the red trace shows. Flat bass like this sounds a little dry in practice, so use against a wall is appropriate, to lift bass a little.

The T10's 200ms decay spectrum was clean, except at low frequencies where inevitably there was a strong box mode at 100Hz. The bass/midrange unit was otherwise coloration free - impressive.

Line input sensitivity was extremely high, just 55mV being needed to achieve 90dB sound pressure level (loud) at 1m – most portable players manage 300mV, so (+15dB more) so will match.

The Addon T10 measured very well. It has been tightly engineered for a good result. NK

**AUDIO PRO ADDON T10 £299**



**OUTSTANDING - amongst the best**

**VERDICT**

A compact Bluetooth speaker system with genuine hi-fi sound. Highly recommended.

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- good bass
- neat design

**Against**

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### SSC RECORD POINT 420 RECORD CLAMP. £125.00

German based company SSC have introduced a new record clamp onto the market called the Record Point 420. It is claimed to improve the contact between the record and the platter, thus stabilising the record,

producing less distortion and providing more realistic sound image.

It is a substantial item, weighing a not inconsiderable 420g which will mean that users of suspended subchassis turntables will have to recalibrate the deck's suspension to use this item. The name SSC stands for String Suspension Concept and this technology is incorporated into the Record Point 420. There are two anodised aluminium caps and between these is a high grade steel core with what is described as the SSC triple ring technology.

It is easy to use, merely requiring placing on the record on the platter. I will admit that I am not generally a fan of heavy record weights. They tend to produce a very deep and solid bass sound, but often at the expense of a loss of air and detail in the decay of notes, especially in the higher frequencies.

In the bass area the Record Point 420 worked as expected with a sensation of a deeper and heavier bass sound, but I was pleasantly surprised at the way the mid and upper frequencies were displayed. They did not have the overly controlled sound that I was expecting but a certain amount of lucidity and freedom which counterbalanced the power of the bass sound quite well. The soundstage also seemed to be more defined and I felt more confident in ascribing positions on the stage area to the musicians. The overall image seemed more stable and focussed.

Priced at £125.00, the Record Point 420 is not cheap but it seems to be very effective and avoids a lot of the drawbacks of the heavier type of record clamp. **TB**

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# SOUNDBITES



### TIDAL MUSIC STREAMING SERVICE £20 PER MONTH

Streaming services are becoming an increasingly popular method of listening to music. Spotify blazed the initial trail – but it's now being joined by an increasing number of imitators/rivals.

But while the convenience of having millions of tracks at your fingertips is hard to fault there's one major drawback for hi-fi enthusiasts:

sound quality.

Yes, a vast music collection may be out there in the ether (or, should I say, cloud) but the quality of the files is usually less than we'd like.

Which is where Tidal comes in. For unlike most other services it streams at full CD-quality.

Boasting some 25 million tracks, Tidal is already supported natively on products from the likes of Linn, Meridian, Bluesound and Simple Audio and works with iOS, Android

and on desktop Macs and PCs.

Join up and as well as the music library you also get access to high-definition videos, as well as curated content including interviews and playlists.

But the important feature is the sound quality – and on this it scores highly.

Accessed through Simple Audio's excellent Roomplayer+ streamer/

amplifier there's a punch and vitality to the sound that you just don't get with lower bit rate services.

Playing Daft Punk's 'Get Lucky' there was the requisite bounce and drive to the track with, most importantly, bags of detail and definition. Switch to playing the same track direct from CD and I was hard pressed to notice any difference.

Obviously, like any music streaming service, there are a few foibles in the catalogue. I searched in vain for some of my more obscure favourites, for example.

But overall, if you're prepared to pay £20 a month for access to a vast CD-quality music library, this is an excellent way to do it.

Most interestingly, as well, Tidal has also just announced a tie-up with Meridian which promises to deliver high-resolution streaming via the latter company's new MQA technology.

Now, that could be really something. **JM**

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

# Power-packed portability

Your smartphone doesn't have to sound bad, providing you plug it into this pocketable USB DAC/headphone amplifier from Onkyo, says Martin Pipe.

I'm impressed with the number of DAC/headphone amps that are now available; clearly, there's a viable market for these things. And the market could expand further, if this diminutive Onkyo is anything to go by. First of all, at £250 the DAC-HA200 is one of the more affordable products out there. Secondly, it's intended to be used with a smart device (iOS, and some Android models - support for a protocol called AOA 2.0 is a must here). Indeed, a couple of thick rubber bands are provided for binding the two together. These also make good non-slip 'feet' for desktop use.

Smartphones and tablets, generally speaking, have mediocre audio. And so some means of bypassing the lacklustre DACs that feed puny

headphone amps, instead routing audio to something more substantial, is to be welcomed.

The DAC-HA200 interfaces to your device via USB. There are in fact two USB ports. The first is a 'type A', and this connects to the USB port of your smart device via a cable. A type-'A'-to-micro USB cable is supplied, but Apple users will need the proprietary cable supplied with their equipment.

The second USB port is a 'micro' type; with another cable, this can be routed to your PC (Windows Vista/7/8/8.1) or Mac (MacOS 10.6.4 or later). Drivers aren't required. Yup, the DAC-HA200 is capable of acting as an asynchronous USB DAC, working at sampling-rates of up to 96kHz with 16- or 24-bit resolution. The micro-USB port is capable of

charging an onboard lithium-ion battery, which can provide up to 11 hours of listening. I successfully used the charger that came with my Samsung smartphone. An alternative is to use the cable that links the DAC-HA200's 5-volt jack to a computer's USB port.

A built-in battery is great news for two reasons. Not only can the DAC-HA200 be used 'on the move' (laptops as well as tablets and smartphones), but you're assured a clean power supply. Use a 'power only' USB cable, and the unit can be used as a smartphone 'battery booster' too.

But today, we're here for the audio. With the free iOS app, native 24/96 USB playback is possible. The app will even handle 5.6MHz DSD, although the app decodes that and





passes it to the DAC in PCM form. Android users, who are served with an Onkyo app of their own, are stuck with 16-bit resolution and a maximum sampling rate of 48kHz.

Not enough for you? The DAC-HA200 will also accept an optical digital source – or a line-level analogue one. But Onkyo is clearly pitching this unit squarely at the countless users of smart devices and laptop computers out there. It's easy to use; a slide-switch determines what input is selected; the same socket is used for optical and line-in, as with the personal Minidisc recorders of the past. There's also a 'gain' switch that provides a boost of about 3dB; this can be useful when using the DAC-HA200 with an analogue source.

Onkyo's engineers have made the best use of the limited space inside the case. The DAC is a TI Burr-Brown PCM5102, which is PCM only (explaining the absence of 'native' DSD playback). In the output stage, an audiophile-grade MUSES 8920 op-amp is partnered with a push-pull output stage built around discrete transistors (in essence, a conventional solid-state amp 'in miniature') to provide good drive capability. And indeed, the DAC-HA200 happily powered all of the headphones I plugged into it with no sense of strain.

### SOUND QUALITY

The manufacturer would, I'm sure, rather you partnered its own ES-HF300 'cans' with the DAC-HA200 - and indeed I did just that, although I also tried Sony's MDR-1Rs and JBL's S700s (as reviewed in this issue). All of these headphones are a good match - in pricing, as well as audio terms - for the DAC-HA200. Sources included a Sony CD player (optical), Cowon D20 pocket music player (line-in), Apple Mac Pro (USB) and Samsung Galaxy S4 Mini (USB).

With the Onkyo phones, I was treated to a highly-detailed if rather top-dominant sound with hi-res material played out via the Mac (running the Audirvana player). 'Almost Like Being In Love' (Linn Records, FLAC download), Joe Stilgoe's live 24-bit recording of the Loewe/Lerner song made famous by Frank Sinatra and Nat King Cole amongst others, was given a natural sense of space and immediacy. The throb of the double bass was distinct but lacked impact; switching to the JBLs (operated in their 'passive'

mode) restored the missing warmth while taming the treble. Sometimes, it wasn't enough; a slight sibilance could occasionally affect Morrisey's vocal throughout The Smiths' 'The Queen is Dead' (CD, remaster).

Something the DAC-HA200 does exceptionally well is boost the sound from personal players - rather like the 'Walkmate' type accessories that were doing the rounds during the 1980s. The Cowon, connected to this unit via a 3.5mm-3.5mm cable, transformed the audio quality. Previously, it was gutless and disappointingly quiet with some 'phones. But now, the brooding basslines and fat analogue synths of Deadmau5's 'Some Chords' were given the substance needed. And energetic rock, like Queens of The Stone Age, were now free of an unpleasantly-gritty edge. It was like listening to a completely-different player. My Samsung smartphone, loaded with CD-derived FLACs and thus unaffected by the Android



The Onkyo features both optical and analogue line-level in as well as USB connections.

USB-link's 16-bit limitations, was similarly-transformed.

### CONCLUSION

I was very impressed with this modestly-priced and flexible unit. Its sound quality may be bettered in absolute terms by more expensive hardware (like the Benchmark DAC2 HGC I was using as a reference). But you'd need to lay out a lot more cash, and you wouldn't necessarily get the DAC-HA200's portability prowess. It will transform the sound of smart devices (especially Apple ones, which don't suffer the hi-res handicap) bringing them closer to the performance of dedicated high-end players. A 'two-box personal', if you like...

### MEASURED PERFORMANCE

**FREQUENCY RESPONSE**

Frequency response from the 3.5mm analogue input to headphone out extends past 100kHz. Via the DAC, it reaches 31kHz (-1dB) our analysis shows, the DAC supporting 96kHz sample rate maximum. There was plenty of output for headphones, 3.8V driving even the most insensitive very loud.

**DISTORTION, -60dB**

A dynamic range of 107dB means the HA200 manages better than a mains powered CD player (102dB). Distortion was very low, measuring just 0.055% at -60dB with a 24bit resolution signal - a very good result.

Low noise and high output distinguish this little headphone amp. It is very well engineered. **NK**

Frequency response (-1dB)	
4Hz-31kHz	
Distortion 0dB	0.0024
-60dB	0.055
Separation (1kHz)	105dB
Noise (IEC A)	-106dB
Dynamic range (EIAJ)	107dB
Output	3.8V

### ONKYO DAC-HA200, £250



**OUTSTANDING - amongst the best**

#### VERDICT

One of the portable bargains of the year...

#### FOR

- numerous connectivity possibilities
- detailed sound with lots of 'oomph'
- integrated rechargeable battery

#### AGAINST

- tends towards the bright
- no hi-res for Android users
- no native DSD decoding

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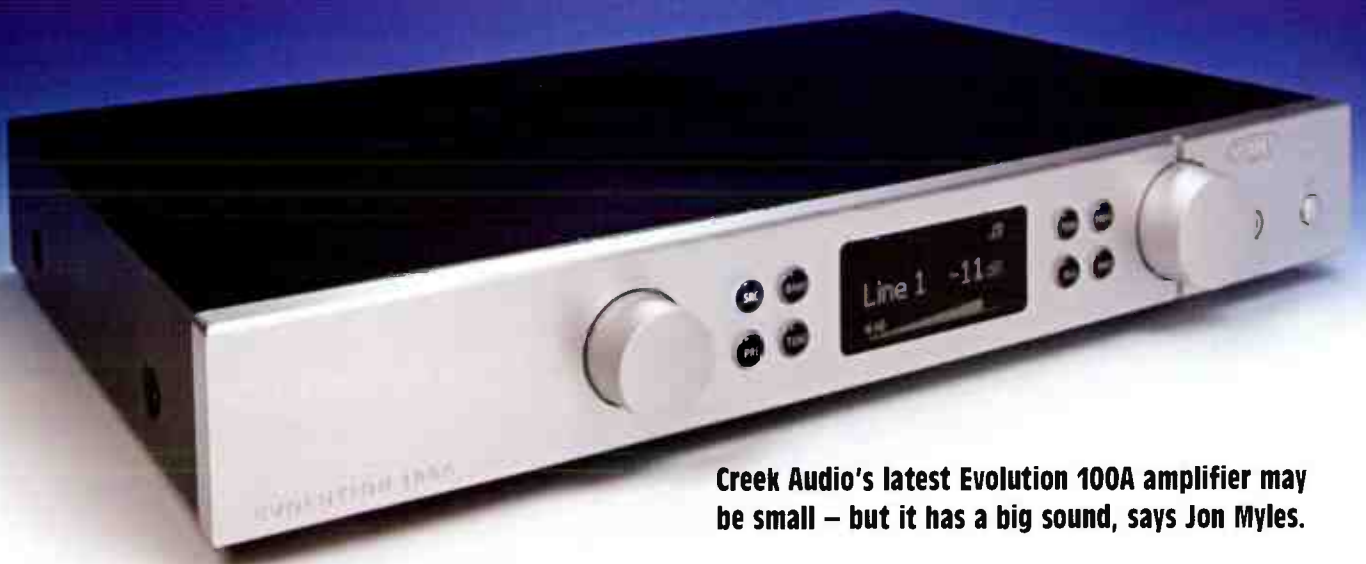
This instrument attracted a lot of interest last year from readers and industry engineers alike keen to know how we assess products under review.

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*Noel Keywood, Editor.*





Creek Audio's latest Evolution 100A amplifier may be small – but it has a big sound, says Jon Myles.

# Evolution solution

**W**hile perhaps not having the overall brand recognition of some of Britain's biggest hi-fi manufacturers, Creek has been quietly and steadfastly going about its business of making great-sounding equipment at realistic prices for more than 30 years now.

The company launched its first amplifier – the £99 30 Watts per channel CAS4040 – in 1982 and that unit went on to become a massive success with audiophiles.

Founder Mike Creek's long experience in the electronic engineering and hi-fi industries convinced him he could produce an amplifier that matched or bettered most of those on sale at the time, at a price that wouldn't burn a hole in people's pockets.

His confidence proved well-founded and since then Creek has gone on to produce a series of award-winning mid-priced products including CD players, tuners, pre-amps and headphone stages.

All share the same characteristics

of technically sophisticated circuit design, careful component selection and build quality as good as it gets at the price.

So it was no surprise that I jumped at the chance to review the new Creek Evolution 100A – an upgrade to the best-selling entry-level 50A.

Priced at £1,499 the 100A is housed in the same slim-line cabinet as the 50A but inside things are significantly different.

For a start, the 100A has twice the power of its partner – pushing out a 136 Watts per channel into an 8 Ohm load and a massive 225 Watts into 4 Ohms (see Measured Performance).

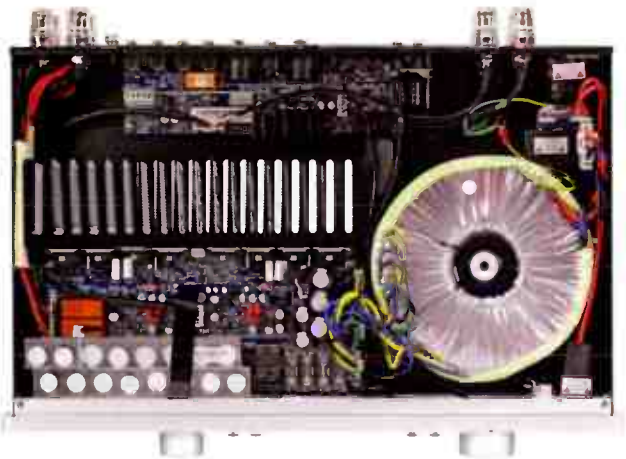
To do so Creek has utilised a specially-designed Class G circuit which sees the amplifier running at a lower voltage for power levels up to 25 Watts and then switching to a secondary higher voltage above that level.

The theory isn't entirely new – Arcam, for one, has used a similar topology – but this is the first time it's been used in a Creek product.

Round the back are five line-level inputs – although one of these can be converted to a phono stage with Creek's optional plug-in board. Another can also take the optional Ambit analogue tuner module or the new 24/192 capable Ruby DAC board with Bluetooth functionality. None of these upgrades were fitted to our review model, but can be specified at the time of order.

Completing the rear panel are a pair of balanced inputs, a ground post and two pairs of switchable

*A large toroidal mains transformer provides plenty of current, and the heatsinks keep this Class G amp cool.*





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loudspeaker binding posts which can be selected individually or used in tandem – useful for those looking to bi-wire their 'speakers.

The front is pure Creek – a minimalist yet purposeful-looking brushed aluminium design bereft of unnecessary frippery. A rectangular OLED information display is flanked by eight backlit soft-touch control buttons with two metal rotary knobs on either side. The left selects inputs and sets levels such as bass and treble boost and balance, while the right handles volume.



To Creek's credit the controls are a joy to use – with the volume control in particular beautifully-weighted, making small adjustments in level tremendously easy.

The display brightness can also be dimmed or turned off completely while a fully featured remote completes the package.

**SOUND QUALITY**

Of all the solid-state amplifiers out there Creek's have a reputation for being some of the most un-transistor like. Instead they have a mellifluous, natural flow to their presentation free of the grain or artificial edge which rivals can display.

And that is what you get with the Evolution 100A – except with a hefty dose of power and punch added, thanks to that beefy output stage.

It was more than up to the job of driving a pair of the relatively demanding Magneplanar 3.7is (see our comprehensive review in this issue) with the second set of speaker connections being employed to power an additional bass panel. And the 100A positively excelled with our big Tannoy Kensington Gold Reference loudspeakers.

Playing Led Zeppelin's dense and congested 'When The Levee Breaks' John Bonham's thundering drums had the power to blow me across the room. The 100A exerts a firm grip on partnering 'speakers meaning bass is firm and tight, although it can be just a trifle dry. Not that that's a bad thing, though – it means you are not overwhelmed by the low-end on bass heavy tracks, but merely hearing what's on the record.

Take Jah Wobble and Evan Parker's testing 'Passage To Hades'. Here the Evolution presents a rock-solid yet melodic foundation from

Wobble's sinuous bass lines, while allowing Parker's saxophone improvisations to float ethereally into the room.

Here the treble is extremely smooth with no sense of harshness or grain – more akin to a valve set-up than a mid-priced transistor amplifier.

But don't take that to mean there's any lack of detail or resolution on offer. Switching to something really layered such as New Order's 'Bizarre Love Triangle' remixes the Evolution brings out the various overlays and studio trickery with ease – including the slight laughter and sound of a chair crashing to the floor as one mix ends.

Fans of female vocalists will also love the Creek thanks to its smooth midband. Alison Kraus with Union Station on 'Now That I've Found You' has tremendous intimacy and a lush

feel – and you know all about it on the Evolution; not too syrupy as to be boring but pitched just where it should be in terms of air, atmosphere and swing.

And, actually, that's what the Evolution 100A tends to do so well. It'll grab hold of anything with verve and really power it out, but it can also take a step back and show the detail in more nuanced recordings. What more could you want in an amplifier?

**CONCLUSION**

It may have a slim case – but the Creek Evolution 100A has a very big and sophisticated sound. Tight, controlled bass is allied to a smooth midband and treble while it has detail aplenty. The range of upgrade options only add to the value – which, at £1499, is something of a bargain.

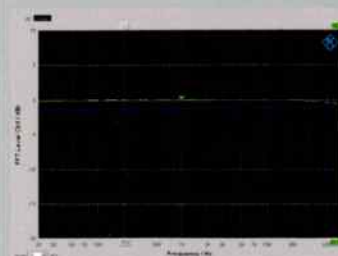


**MEASURED PERFORMANCE**

Although compact in size, the Evolution 100A delivers big power, 136 Watts into 8 Ohms and 225 Watts into 4 Ohms, so it can play very loud in all situations, including big rooms with insensitive loudspeakers. Frequency response measured flat to a high 85kHz and was unaffected by volume control position. Damping factor was very high at 73, suggesting tight, or dry sounding bass.

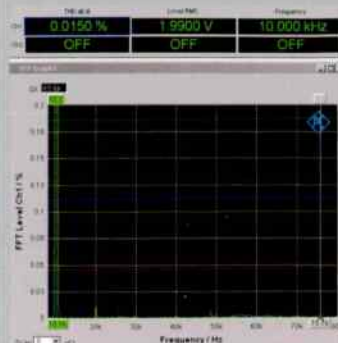
The Evolution produced minuscule amounts of distortion, measuring just 0.002% in the midband at 1 Watt, and the same close (-1dBV) to full output. At high frequencies distortion rose little, measuring 0.01% second harmonic only, our analysis shows, and this distortion pattern remained absolutely stable as output increased, suggesting the amplifier will sound smooth in its treble and free of harshness. The low level of distortion and its consistent pattern suggest the output stage works better than most.

**FREQUENCY RESPONSE**



The unbalanced (phono socket) line inputs were insensitive, 0.8V being needed for full output from the amplifier, where half this – 400mV – is common. The balanced XLR input needed 1.5V. These inputs will suit silver disc players with an output of 2V, but not external phono stages with low gain.

**DISTORTION**



The Evolution 100A is a powerful amplifier that measured well, except for very low sensitivity. Excellent measured results, better than most amplifiers, point to optimised circuitry and fine sound quality. NK

Power	136 Watts
Frequency response	3Hz-85kHz
Noise	-110dB
Distortion	0.01%
Sensitivity	0.8V
Damping factor	73

**CREEK EVOLUTION 100A £1499**



**OUTSTANDING - amongst the best**

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Atmos height speakers can be accommodated by the TX-NR3030 in its full eleven-channel-plus-two-subwoofers (11.2) configuration, although the Atmos spec allows for as many as 34 speakers in total! Since Atmos is scaleable, though, you can get away with 5.1 plus one pair of height speakers. The more speakers you have, the more precise the positioning. Two pairs of the aforementioned SKH-410s – assigned to front and surround-height – were employed for this review. Accurate matching of timbre is essential to preserve realism – especially considering that effects 'move

between' speakers.

Thankfully, the TX-NR3030's 'AccEQ' auto-calibration system – powered internally by twin 32-bit DSP engines – looks after all this stuff, as well as room-acoustics and speaker configuration/layout. Plugging the mike into a dedicated front-channel input kicks off the menu-driven process. This lurks under a flap, as do basic controls and a sensible brace of connectors – HDMI, headphones, optical digital/analogue stereo audio and composite video".

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### QUESTIONS

**[1] Atmos speakers fire -**

- [a] upward
- [b] at the walls
- [c] out of the window
- [d] down the stairs

**[2] Atmos speakers can total -**

- [a] 21
- [b] 4
- [c] 7.1
- [d] 34

**[3] Auto-calibration is carried out by -**

- [a] chipmunks
- [b] three blind mice
- [c] AccEQ
- [d] Cray computer

**[4] The front input lurks under -**

- [a] a flap
- [b] a carpet
- [c] a pile of newspapers
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# Musical Crescendo

Martin Logan's first one-box wireless 'speaker system not only looks good, it sounds great too, says Jon Myles.



**S**ay "Martin Logan" and most of us think of large, impressively-sounding hybrid electrostatics. After all, that's where the company made its name and continues to shine.

The Summit X for example. Judged our Best Loudspeaker in the January 2014 Hi-Fi World Awards issue it has the ability to knock your socks off.

But it's a large and imposing model which demands a large room to give of its best and – at £15,000 a pair – a sizeable wallet to boot.

But the company has also enjoyed great success recently with

its more traditional Motion range of box loudspeakers. These use Martin Logan's proprietary Folded Motion tweeter – a Heil Air Motion type folded ribbon design which the company says gives a closer sonic match to the more expensive hybrid electrostatic models.

Now it's extended that concept into the wireless 'speaker market in the shape of the Crescendo – a one-box Bluetooth/Apple AirPlay system that at £849 is aimed at giving customers a slice of the Martin Logan sound in an affordable and room-friendly package.

And it's certainly one of the most distinctive-looking examples of

the breed. The crescent shaped unit has a gloss black finish (a walnut veneer is also available) and sits on a curved aluminium stand with small control buttons sitting above the black mesh, magnetically-attached fascia grille.

Remove that grille and you reveal a 5"x7" oval polypropylene mid/bass unit and the same Heil-type tweeters as used in the Motion range – except here they are angled slightly outwards







on a sculpted baffle to aid stereo separation.

The woofer is housed in its own ported enclosure – which vents from underneath the Crescendo meaning close-to-wall placement is possible.

Behind these sit a 24bit/48kHz digital signal processing pre-amp and a 100 Watt power amplifier section – with 50 Watts driving the woofer and 2x25 Watts going to the tweeters.

Six input methods are available – wi-fi via AirPlay for Apple devices, Bluetooth 4.0 with aptX capability, wired ethernet, USB, analogue via a 3.5mm headphone-style jack and optical digital. There's also a dedicated subwoofer output on the back for those wanting to add some extra bass power.

The Crescendo can be controlled from the front panel buttons or its accompanying solid aluminium remote which provides source

"the Folded Motion tweeters really do give the Crescendo a delicious top end - helping push the music into the room...."

selection, volume, mute and standby as well as access to bass boost as well as functions such as shuffle track and repeat on Apple devices.

Set-up is easy. Simply plug the Crescendo in and let it find your network (wired or wireless) and then pair it with your chosen devices. My Apple iPhone was up and running and streaming music in a matter of seconds while an Oppo BDP-105D Blu-ray player connected seamlessly via the optical digital input.

### SOUND QUALITY

Starting off with Bluetooth streaming via the iPhone and the Crescendo reveals itself to have a delightfully open and airy sound. Violins on Arvo Part's 'Tabula Rasa' have a real presence and timbral quality. Even



**Behind the grille a central bass/mid unit is flanked by two of Martin Logan's proprietary Folded Motion tweeters - angled outwards to aid stereo dispersion.**

more impressively you can hear the delay and echo of the notes as the various passages fade away.

This is a quality not always heard on one-box loudspeaker systems which can sometimes be lacking in detail. But not the Crescendo which is able to pick out intimate details of tracks with an apparent ease.

Sharon Van Etten's exquisite vocal

warranted. Not that the bass lacks quality or definition – it's more that the Crescendo doesn't have quite the low-end heft of the similarly-priced Naim Mu-So which I reviewed in Hi-Fi World's December issue.

But it more than makes up for that in the midrange and treble where it really shines. Listening to Kairos 4Tet's 'Home To You' and there was admirable separation between Marc O'Reilly's vocals and the delicate, subtly-shaded violin backing which brought out the full atmosphere of the track. Not quite the same spine-tingling effect as you'd get from a full-sized Martin Logan but still enough of the same DNA to make you think that at just £849 the Crescendo may be something of a bargain.

### CONCLUSION

Martin Logan's Crescendo has to be viewed as one of the best one-box wireless loudspeaker systems on the market at the moment. Delicious styling is allied to a top-notch sound which benefits greatly from the company's excellent Folded Motion tweeters.

I can see a great many Martin Logan enthusiasts investing in the Crescendo as the basis of a second system, while for others it gives the chance of getting a taste of the company's distinctive sound at a much lower price level. If you are in the market for this sort of system then the Crescendo needs to go right at the top of your auditioning list.

shadings on her 'Tramp' collection have tremendous delicacy while Bjork's 'Human Behaviour' sees the Icelandic singer's voice well to the fore.

Those Folded Motion tweeters really do give the Crescendo a delicious top end – helping push the music into the room in a way that belies the relatively small dimensions of the system. And while the treble is prominent it is never harsh or grating – instead coming over as rather smooth and refined.

Below that bass is taut and firm although perhaps not the most fulsome you've ever heard. Playing TV On The Radio's 'Seeds' and I found myself switching in the bass boost option via the remote to get the full driving attack the music



**The rear panel features ethernet, USB, analogue and optical digital connections.**

### MARTIN LOGAN CRESCENDO £849



**OUTSTANDING - amongst the best**

#### VERDICT

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- range of inputs
- great remote control

#### AGAINST

- a touch bass shy

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# "Technics' Direct Drive turntable was the best of the bunch"



Noel Keywood

**A**fter stripping down a Technics SL-1210 Direct Drive turntable, I've been learning more about the apparent conundrum of Direct Drive: why it never sounded as good as it measured. There was a lot of speculation about this at the time Direct Drive was the latest whizz-bang technology, meaning the late 1970s, but never any facts.

It might seem a bit late to hold a post-mortem on the SL-1210, no less than thirty five years after it was launched, but now Technics have finally ceased production of what has been an enduringly popular product others may well jump into the void, because with vinyl sales on the up, a simple, low maintenance, press-button turntable like the Technics will find a market.

Direct Drive can be made to work well and Technics' Direct Drive turntable was the best of the bunch. However, in typical Japanese mass production fashion, every component in it was pared to the bone to keep price down and performance suffered: it was only ever good for DJs whilst it lived. I use a Garrard 401 and a Technics SL-1210 Mk2 almost every day (both with SME arms) and sonically the Technics is no match for the Garrard.

But this isn't what our test equipment tells me. Technics SL-1210 Mk2 is, even now, the most speed stable turntable ever made: it leaves all else in the dust, including the 401. Taking one apart to replace its main bearing, for last month's issue, was a revealing experience however, showing me where the Technics was weak, raising in my mind the possibility that one day we could well see a similar but better Direct Drive.

What the Japanese did – Technics in particular – was take the then-new technology of the low speed DC servo-motor, made by possible by

emerging servo-control theory and the solid-state circuits needed to implement it, and package it into "the ultimate" turntable. Low speed DC servo-motors aren't rocket-science, although Technics did excel with their feedback sensing system by incorporating it into the platter. Other designs, including current Manpins (Taiwan) don't do this.

Had such a motor been mounted in a better, less cost-cut package like the Garrard 401 it likely would have sounded much better. But whilst the big Japanese manufacturers were brilliant with their basic motor technology they failed to grasp there is more to a turntable than just speed stability. The Technics base plate is flimsy and the tubular pickup arm structurally simplistic. Both limited sound quality, especially on an arm designed for DJs.

As good as Garrard's idler drive was and still is in certain ways, it's flaws would be banished by the use of a quality Direct Drive motor such as that used by Technics. But as history would have it, Garrard were swamped by – ironically – cheap belt drives from Japan, like the capable Pioneer PL12D, and ceased production in 1978 (Garrard had a crude direct drive motor in the 1930s 78rpm 201, whilst the later 1975 DD75 used a bought-in Japanese direct drive motor, without platter speed sensing).

What is needed is a Direct Drive motor as good as the one from Technics, servo-controlled and quartz locked to hold rock-steady speed, mounted in and forming an integral part of a structurally solid platter/bearing/base assembly, like that of the 401 (you can tell what I dream about!).

Interestingly, you can hear how stable the Technics is: this isn't a purely academic argument. Music is reproduced with a sense

of clockwork precision to its timing; it almost sounds too stable, metronomic like a synth drum machine.

I'm not suggesting this is bad, only identifying the subjective impact of a good motor. What the flimsy base and bearing do is rob its sound of weight and solidity. The Technics lacks the power and force of the Garrard, sounding quite reticent, even polite and unengaging. My Garrard isn't perfect but it has bass and pace the Technics could only dream of – and it is discernibly tighter in timing and impact than a belt drive.

Fitting the Mike New bearing to our Technics improved its bass and its sense of low end weight; I was quite surprised. But measurement showed it introduced flutter at 6.6Hz, caused by the 12 pole motor rotating at 0.55Hz (33rpm).

Why did the bearing introduce flutter? Either because it has higher drag than the standard bearing, as has been suggested to me, so making the motor work harder, which the servo will force it to do, or because of its tighter mechanical coupling to the drive coils, a feature of the Mike New bearing.

Whatever the reason, this experience has made it clear to me that the Garrard sounds good because of its massive bearing and base plate, anchored to a vast plinth, and rim drive from a powerful motor to a huge cast platter. Nothing comes close. It would be possible to build a sensor into the rim, however, and/or even drive to the rim, from a DC servo-motor.

Never in the past would I have seen any connection between these two turntables, but turntables and motors are mysterious things once you start to look at them closely and I think they had a way to go before life was cruelly cut short by the emergence of CD. ●



# Asimi Ultra RCA Interconnect

hi-finews  
EDITOR'S  
CHOICE

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*HiFi News,  
December 2014*

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World Radio History



# "Flash was created by a photographer and an electrician"



Paul Rigby

One of the problems with much of the modern music industry is its relatively faceless aspect. Yes, there are quite a few independent music labels currently operating in the UK, but the majors hold the greater part of well-known and classic music available to us. Gone are the rather intimate aspects of the originating labels that actually created this music.

In Britain we used to have a wealth of smaller labels such as Decca, Pye and – before The Beatles – the rather quirky Parlophone, even though it was part of the larger EMI conglomerate. In the USA, there were many, many more.

One of the active, smaller labels, based in this country, is Ace ([www.acerecords.co.uk](http://www.acerecords.co.uk)), an outfit that has made a habit of rescuing original material from long dead labels of yore – saving original master tapes, documents, acetates and more for the benefit of music fans.

Such historical material tells a tale of a record industry that was governed by personalities and not banks or the Stock Market. Because such labels were controlled by individuals, you often found that they operated in a unique, quirky or unconventional manner, a world away from their bigger, more commercially-minded counterparts.

Hence the set-up of the label, its roster or the song output was often unique to that label. This is why many music fans, rather than following a particular artist or group, sometimes target a label instead, collecting anything that might have been issued by it. Examples include Chess, Stax or Motown.

Ace happens to own the rights to a wealth of companies, some of which are relatively unknown to the general music fan but will be of

rabid interest to the connoisseur.

Arguably the epitome of the small, personality, character-based record label was a little outfit from the USA called Flash which was run from a record shop...inbetween a barbers and beauty salon. You could never say that about Sony could you?

Flash was created by a photographer and an electrician, so it couldn't really be called anything else. It produced blues, doo-wop, proto-soul and R&B and is an ideal label as the centre of a collection because it only produced 32 singles. Actually, one of those is even more collectable because it consists of two B-sides!

Laurie Records, named after the daughter of one of the directors, on the other hand was set up in 1958 and became an important centre for white doo wop recordings. Well-known names included Dion and the Belmonts, the Mystics and Passions but the label also featured a host of additional groups that can be seen within 'The Laurie Records Story, Vol.1'.

Of course, other artists occupied the roster too including the magical Chiffons who had hits with 'Sweet Talkin' Guy', 'One Fine Day' and 'He's So Fine' (the song that apparently was plagiarised by George Harrison to create his seventies hit 'My Sweet Lord').

Then there was Dial (seen on 'The Dial Records Southern Soul Story') which was only initiated to circumvent a business hurdle. It was created by William D. Killen, born at the end of the Depression.

A bass player who sang harmonies, he later joined the Tree Publishing Company and became a partner after convincing its songwriter, Mae Boren Axton, to sign up a song from an outside writer.

That song was 'Heartbreak

Hotel' and Elvis Presley made a hit and a lot of money for Tree with it. Later, Killen saw a struggling soul singer, Joe Tex, perform and a light appeared over his head. In Tex, Killen saw the birth of country soul. The country big-wigs just didn't 'get it' though, so Killen started Dial to publish Tex's songs.

That was supposed to be the end of it but Dial became a centre for southern soul featuring star turns such as Clarence Reid, Annette Snell and Bobby Marchan.

And we haven't even got to Dore ('The Dore Story: Postcards From Los Angeles 1958-1964') which saw a street-level operation eventually launch the careers of star producer Phil Spector and superstar surf rockers Jan & Dean. Why? Because I wanted to squeeze in a British label called Sue.

Sue (seen on 'The UK Sue Label Story') was a UK spin-off of the American original, run by Chris Blackwell (founder of Island Records).

When Guy Stevens (later founder of both Mott the Hoople and Free) was brought into the fold, he wanted to take the UK Sue into new directions, directions that would also allow Stevens to indulge his own eclectic personal tastes.

Sue never had major hits but it did have plenty of intriguing songs from people like Inez & Charlie Foxx, The Daylighters, Lowell Fulson, Billy Preston and OV Wright.

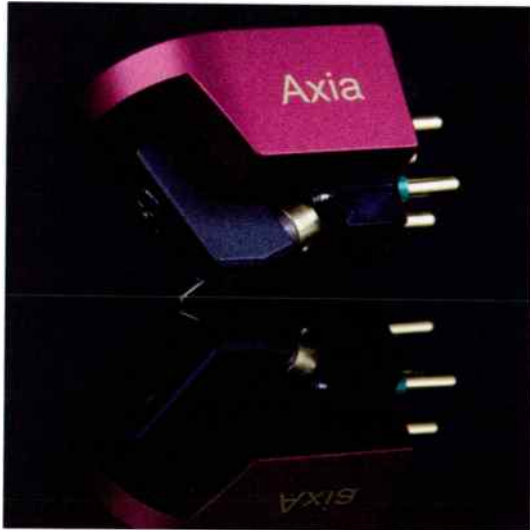
These CD collections are a wonderful introduction to the world of independent labels. More, though – which I touched on earlier with Flash – is that they are small enough to form the basis of a collection.

Collecting the original singles from these labels is like re-collecting scattered items from a broken family. Re-connecting a jigsaw that told a story about a time and a place. ●

# DECENT AUDIO

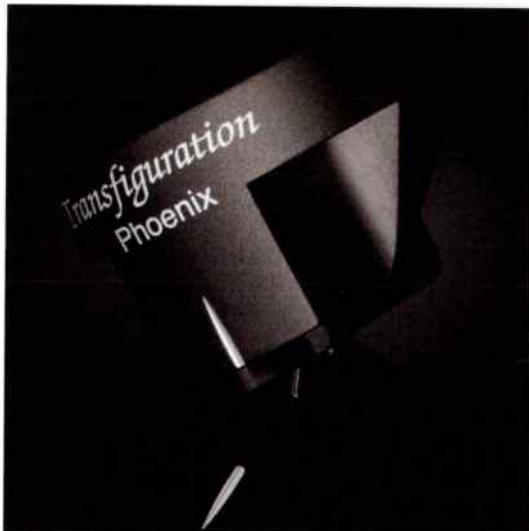
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'Outstanding Product' rating



"He was astonished at just how good the combination sounded and the extra clarity and detail"



Jon Myles

Three fascinating conversations exercised my mind over the past month – and made me think the future of true high-fidelity replay is not quite as threatened as some of the more doom-mongering of critics might say.

The first started aboard a London Underground Tube train, just as I was about to don a pair of Philips excellent Fidelio X2 headphones that were plugged into my iPhone. These 'phones are not really purposed for music-on-the-go, being intended for home use with a suitable headphone amplifier. Having said that, they do work well with a portable music device – although they draw current and can be quite draining on the battery.

Not that I got very far into draining the battery. Instead a fellow passenger's eyes immediately lit up at the sight of the Fidelios and the rest of the journey involved a detailed discussion of headphones, the drawbacks of an iPhone's DAC compared to Samsung models, the worth of portable headphone amplifiers and the stupidity of Apple's refusal to allow native FLAC support on any of its products. He was also keen to hear my views on high-end, expensive Audeze magnetic planar headphones. Oh – and then we bemoaned the fact we'd missed our station!

Nothing strange there, you might think. But the passenger was 19, carried a pair of Shure SE846s in-ears and used a dedicated headphone stage at home for listening to music.

That's some serious investment in audio quality, even if it might not include loudspeakers, traditional amplifiers or a CD player/vinyl. It also showed a keen knowledge and desire to wring the best possible sound quality from his equipment.

The second came courtesy of my brother. This took a little longer but was just as illuminating. Always a music lover, he's never quite embraced my passion for continual upgrades to improve sound quality until you get where you want to be.

So his system comprised a good, but ageing Cambridge CD player, a venerable Technics amplifier and standmount Epos loudspeakers. All thoroughly impressive in their time, but decidedly lacking sparkle and resolution in this day and age.

However, a move of flat brought him round to thinking perhaps it was time for some replacement components – and maybe removing some of the CD clutter from the new living room by going down the streaming and Network Attached Storage route.

So cue the loan of my Naim Uniti all-in-one player and a Western Digital NAS drive for a couple of weeks – and welcome to one very happy brother indeed!

In short, he was astonished at just how good the combination sounded and the extra clarity and detail he was getting from his beloved music collection. Added to that was the ability to control his listening sessions from the comfort of an armchair via an iPad; this was a revelation.

Not surprisingly, it prompted a visit to his local hi-fi dealer where, armed with credit card, he not only purchased a streamer, but also a new amplifier, loudspeakers and associated cables. All this because for the first time after a long while he'd actually sat down and listened to how much more enjoyment a well-sorted hi-fi system can bring.

Apparently, he's not alone, I discovered during a chat with my local independent hi-fi retailer. Like many retailers – and a great number of High Street stores – this one had

struggled to sell high quality audio in recent years. But recently they've seen a surprising and gratifying upturn in sales – and noticed their regular customers are being joined by a younger clientele.

Many are coming in looking for wireless Bluetooth loudspeakers, quality headphones or all-in-one music systems such as the Naim Mu-So or Martin Logan Crescendo (which we'll be reviewing soon).

But a number are leaving with something more substantial in the form of a separates system, after spending time listening to some of the alternatives on offer and chatting at length to knowledgeable staff.

OK, they're not selling gear in iPhone 6 volumes, but they did tell me there's a definite and appreciable increase in hi-fi purchases – which can only be a good thing.

So what connects these three recent tales? Well, looking at it optimistically, they seem to indicate that the desire for good-sounding equipment is still very much alive and well – and not just among those who grew up in the golden days of hi-fi or are committed hobbyists – but among all ages, meaning across generations.

It's simply a matter of sitting people down in front of the right system to get them to appreciate what a difference a good set-up can make, it seems.

Yes, the likes of CD player sales may be down across the UK but – as my Tube companion vividly showed – the quality headphone market is booming and streamers and network storage devices are enjoying strong growth on the back of this.

This has to be encouraging news for us all, because the audio industry needs sales if it is to survive – and we can continue to enjoy music played properly. ●

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# "It's amazing what bands managed to do with just four tracks in the 1960s"



Martin Pipe

**F**or as long as I can remember, I have been fascinated by electronics, music, sound and recording. It might have been my mother, a keen amateur pianist, or my father's love of opera, Russian composers and Radio 3 drama. We would sit down in front of a budget hi-fi system, built around a chipboard-enclosed Amstrad 5050 receiver and Audiokraft (no, me neither!) speakers, to enjoy a live Radio 3 concert or BBC radio play. Even with such mediocre equipment I marvelled at how technicians could include sound-effects and make clever use of the stereo soundstage to suspend your disbelief.

In the late-70s, when as a schoolboy I started taking an interest in audio, a recording studio would usually contain one or more enormous two-inch, open-reel tape machines storing up to 24 separate tracks, each containing a different instrument or effect. These would subsequently be 'mixed down' and processed to create a stereo master tape for record-cutting. It wasn't always that way, though; previous generations of hardware offered only one, two, four, eight and sixteen tracks.

In retrospect, it's amazing to hear what bands like The Beatles managed to do with just four tracks in the late 1960s. With today's infinitely-flexible computer-based 'cut-and-paste' recording systems, though, no-one bats an eyelid at multi-tracking.

It all became horrendously complex, especially when expanded to the enormous scales of classical music. A major orchestra may, after all, feature over a hundred musicians. The venue would be 'miked up', with each solo performer or group having their own microphone. Sometimes, all of these performances would

be captured separately on a multi-track tape for subsequent mixdown in a studio. On other occasions, it was reduced to two-channel 'live' – with those Radio 3 concerts that astounded me as a boy, for example.

Some smaller specialist record labels, who tended to concentrate on lesser-known works performed by smaller chamber orchestras, string quartets or jazz groups, went back to the roots of stereo, employing just two microphones arranged in what is known as a 'crossed-pair' (also known as 'coincident' or 'X-Y') configuration. This was conceived by the brilliant EMI engineer Alan Blumlein, who also did much work on television and early radar back in the 1930s and early 1940s.

It's amazing just how good this 'back-to-basics' Blumlein approach can sound, the stereo image being natural. I have made such 'live' recordings and they can be very effective, even when played through revealing equipment of the standard featured in this magazine. Indeed, in some respects (dynamic range, for example) they can surpass commercial recordings.

In recent years I have covered all manner of subjects - among them brass-bands, the ambience of the British countryside, dawn choruses, French cathedrals – even inner-city protest marches!

'Field recording' can be a fascinating and absorbing hobby, like photography or film-making. And it's arguably just as important as a historical record. My own modest equipment comprises a pocket Compact-Flash digital recorder (an M-Audio Microtrack 24/96) acquired second-hand, and a home-built crossed-pair stereo microphone.

Not that you need to go to such trouble; ready-made mics are of course available, as are a number of decent-quality portable recorders

from Zoom, Olympus and others. Audio sites like Soundcloud and Freesound.org feature many sounds recorded with this type of gear.

Is this something new? Hardly. It was flourishing fifty years ago. In the 'pre-cassette' mid-fifties, sales of domestic reel-to-reel recorders had begun to take off. These mono-sound, valve-driven machines were usually supplied with a microphone, stowed away in a compartment on the side or back. Most were used to capture for posterity amateur musical or dramatic performances or record a baby's first gurgles, weddings, church-services and other events.

In many parts of the world tape-recording clubs were formed to explore the medium's creative potential. A fascinating 'time-capsule' documentary made in the late 1950s by one such London-based club can be found here: <http://bit.ly/1ubVN9o>. They met regularly in venues like community centres and church halls and individual members recorded ambient soundtracks with subjects ranging from country birdsong to interviews of WWII soldiers.

Tape groups also occasionally joined forces with the similarly-popular 'cine clubs' and contributed their collective expertise to the audio side of an ambitious film.

There were also annual amateur recording contests and broadcasters like the BBC devoted airtime to the hobby. All of the recording was done with cumbersome reel-to-reel machines; even portables of the period, which were eventually ousted by cassette recorders, occupied more volume than a modern laptop computer.

By the mid-70s, though, creative tape-recording clubs were on the wane – a pity. With the benefits of modern tech, this hobby is long due a revival I believe. ●



**THE MOODY BLUES**

**The Polydor Years: 1986-1992**  
Polydor

In a recent Hi-Fi World column, I referred to those musical artists that have had a long and fruitful career. Even so, time and the whims of fashion plus changing personal circumstances too often alter the nature and quality of an artist's musical output. It's a rare band or singer whose musical quality remains top-notch over a span of thirty or forty years.

The Moody Blues have been treading the boards since 1964, evolving from the Denny Laine-fronted R&B band to the psychedelia and prog sounds via Justin Heyward from 1966.

Creatively, the band were significant until the mid-80s, when they lost their way. After that period, they looked for a new home. Which is where this eight-disc box comes in.

Featuring six CDs, two DVDs and a 7" single on blue vinyl, it includes the albums: 'The Other Side Of Life' (1986), 'Sur La Mer'

(1988), 'Keys of the Kingdom' (1991) and 'A Night At Red Rocks' (1993) plus a DVD of the latter show and a documentary called 'The Other Side of Red Rocks'.

There's plenty of fascinating unreleased material, including a CD of a 1986 concert in Cleveland plus a BBC Radio session from 1991 plus other rarities, and a sixty-four page book.

If I said that the music on this box set was average in comparison to the band's earlier works then you'd believe that I was damning this release. Not so.

The music is average, yes, but this box set is brilliant... for fans. Essential for fans, actually. Wonderfully produced, incredible content and excellently implemented.

If you're not a dedicated Moody Blues fan, it's a box full of horribly patchy music.

If you are a Moody Blues fan, however, just go out and buy it - NOW!



**IT BITES!**

**Whole New World: The Virgin Albums 1986-1991**  
Virgin

When they were in the UK charts, reaching No 6 with the single, 'Calling All The Heroes', I never considered It Bites! were any more than a regulation pop band. It seems, though, that they had more to them, because their aspirations spanned not only metal and blues but also prog (partly a spin-off from their producer Steve Hillage).

This box set, featuring four CDs, provides all the proof that you need. You get the debut album 'The Big Lad In The Windmill' (1986) which features 'Heroes', but also the band's debut single 'All in Red'. In this album, the band were at their most pop-ridden but offered a prog gloss with glam accents.

It was once the band got to 'Once Around The World' (1988) that the prog feel got really under way, but the music always had that eighties feel, especially with the

style and type of instrumentation It Bites! tended to use. Those Yamaha DX7s are forever rooted in that decade.

Intriguingly, when the 'Eat Me In St. Louis' (1989) album was released, the band were exploring a hard rock feel to their music, returning again to the glam accents and even adding metal features. This change in style was obviously encouraged by producer Mack who had worked on the Queen album 'The Game'.

The one cuckoo in this box set is the live album, from 1991, 'Thank You and Goodnight' which features live tracks from the other three albums.

If you enjoy eighties pop and rock music then It Bites! should be in the frame. More than that, though, the band never allowed themselves to rest upon their laurels, they were always looking beyond the next song, always ready to explore and experiment.



**S**omewhere on a recorded file on a hard disk, I have a copy of the John Peel show in which the legendary DJ was so enamoured by the new album 'Tubular Bells' (the famed first album on the then-new Virgin label, in 1973) by Mike Oldfield that he had to play the entire LP all the way through.

In fact, he may have done this more than once. Oldfield rose to fame off the back of this conceptual piece.

Oldfield has since had a long career that involved more conceptual success, while the punk genre threw him into a dark corner only to see him emerge with shorter songs and dance rhythms in a pop vein.

This box set begins in 1992 when Oldfield met Trevor Horn to release 'Tubular Bells 2', which returned Oldfield to the charts.

'The Songs Of The Distant Earth' followed two years later, then 'Voyager' (1996) was released with

'Tubular Bells III' (1998) linked to a thirtieth anniversary.

'Guitars' (1999) and 'The Millennium Bell' was followed by 'Tres Lunas', when Oldfield decided to code his own, rather odd, computer game. The latter was the soundtrack to it.

I'm proud to say that, while briefly revisiting my old computer games journalist days, I did a bit of PR for Oldfield for the latter music (and the game).

I remember that I had to enter his house via the servants' entrance (really) and that I had to speak VERY LOUDLY because Our Mike had gone a bit deaf by that point. I did lose count of the guitars in his studio, though. Needs to improve his coffee too.

Finishing the box is yet another 'Tubular Bells' rendition, the '2003' release, which is the best thing in here.

Apart from the latter, there's nothing startling, but it's a great collection for fans.



**MIKE OLDFIELD**

**The Studio Albums: 1992-2003  
Warner Music**

**A**s a youngster of around fourteen, the band Brand X were only of interest to me because they sometimes featured drummer and then Genesis frontman Phil Collins.

The band was a British jazz-rock outfit formed by Collins, but also featuring Atomic Rooster guitarist John Goodsall and completed by the inclusion of Robin Lumley and Percy Jones.

This four CD set features the six albums the band recorded for Virgin, complete with three previously unreleased sessions recorded for the BBC.

A series of unreleased recordings were made in the band's early months, but it was with the arrival of Collins that they finally got the chance to record and release 1976's 'Unorthodox Behaviour', the group's best album, which revealed two factions within the band. That is Jones and Collins provided

an accurate, measured almost mathematical freneticism while the sections presented by Goodsall and Lumley were far more moody and atmospheric.

Their second album 'Moroccan Roll' (1977), was another good'un, adding percussionist Morris Pert to the line-up and exploring eastern rhythms and textures.

Releases were distinctly average after that. Live album 'Livestock' (1977) was followed by 'Masques' (1978) with Chuck Burgi replacing Collins on drums and keyboard player J. Peter Robinson replacing Robin Lumley.

The return of keyboardist Robin Lumley and drummer Phil Collins as well as the recruitment of bassist John Giblin and drummer Mike Clark resulted in 'Product' (1979) and 'Do They Hurt?' (1980). Both were rather half-hearted affairs.

This is a good collection of albums with enough rarity action to attract the fans.



**BRAND X**

**Nuclear Burn  
Virgin**





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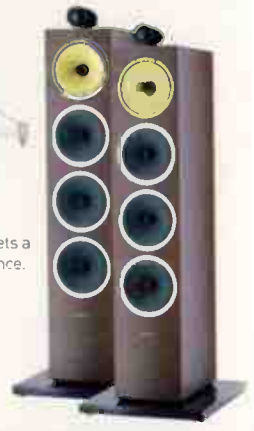
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# vinyl section

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MARCH 2015

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**PRO-JECT RPM 1 CARBON TURNTABLE 82**  
Pro-Ject's new budget package is an ideal introduction to vinyl replay, says Noel Keywood

**VINYL SALES CONTINUE TO GROW 86**  
Vinyl sales go up - here are the figures.

**TONY BOLTON TRIBUTE 89**  
Hi-Fi World contributor Tony Bolton passes away at Christmas.

## news

### LEFT FIELD

First up is Anne Hyttas 'Draumsyn' (Carpe Diem; [www.carpediem-records.de](http://www.carpediem-records.de)) with medieval-esque vocalisations and arrangements outing an ambient delivery. 'ΥΔΩΡ' via Alcalica

([www.alcalica.org](http://www.alcalica.org)) is a limited edition LP featuring organic world instruments combined with broken bass beats and complex rhythms. Highly recommended to any fans of Ninja Tunes' classic releases.

Mesak's 'Howto Readme' (harmoena.fi) breaks those beats up even further, plays with blips and noises and layers rapping vocals while surrounding it with playful electronica.



### JAZZ JUICE

Norwegian jazz from Albatros, 'Night Owl' is the group's second LP for Rune Grammofon ([www.runegrammofon.com](http://www.runegrammofon.com)). A contemporary feel with plenty of improv, the outfit are both inventive and quite sparkling.

Jan Garbarek & The Hilliard Ensemble and 'Officium' (ECM, [www.ecmrecords.com](http://www.ecmrecords.com)). A jazz and early classical music collaboration, improv around four male voices. Draws you in over time.

Finally, the Neil Cowley Trio's new 'Touch And Flee' (Naim Jazz, [www.naimjazz.com](http://www.naimjazz.com)) shows admirable evolution, providing greater variation to maintain the relevancy of the piano trio.

### WAH WAH TRIO

Three from Spanish reissue specialists Wah Wah include 'Big Time Operator' from Zoot Money's Big Roll Band featuring future Police guitarist Andy Summers. A compilation of sixteen 7" mod/jazz tracks from 1964-1966.



Gregor Cürten & Anselm Rogmans' 'Planes' was a 1974 private pressing exhibiting electronic experiments of krautrock proportions. Think Kluster.

Finally, Mario Molino's 'Gli Angeli Del 2000' is an original soundtrack from 1969 for the counter culture. First time on vinyl with five extra rarities. Psych beat and experimental grooves.

### P L A N E S



### GEARBOX

Avant-garde jazz man Leon Thomas is heard here via the Gearbox ([www.gearboxrecords.com](http://www.gearboxrecords.com)) release 'Live 1970' as he joins British fusion jazzers Nucleus just after they had recorded their debut album 'Elastic Rock'. A first time release, great recording and well produced via Gearbox.





**WANTED WAX**

New from Music on Vinyl ([www.musiconvinyl.com](http://www.musiconvinyl.com)) is a new batch of numbered edition original soundtrack LPs, all pressed on coloured vinyl. They include 'The Giver' (Marco Beltrami), 'If I Stay' (double album via Jason Linn), 'West Side Story' (includes four previously unreleased tracks on vinyl via Leonard Bernstein), 'Hercules' (double album via Fernando Velazquez), 'Coming Home' (includes an insert via Qigang Chen) and 'Dawn Of The Planet Of the Apes' (includes an insert via Michael Giacchino).



Other albums to look out for include Jewel's 'Pieces Of You', Arrested Development's '3 Years, 5 Months and 2 Days In The Life Of...', They Might Be Giants 'Flood', Nico's 'The End...' and Calvin Harris' 'I Created Disco'.

**THE HORROR!**

Check out 'Hammer Presents Dracula' (Dust Bug, [dustbugrecords.com](http://dustbugrecords.com)). A 40th anniversary edition featuring Christopher Lee telling a vampiric tale on the A-side and spine chilling music on the B-side. All cut from 1/4" master tape with a pure analogue chain, the excellent music features the work of James Barnard and Philip Martell.



**PURE PLEASURE DUO**

Two from UK audiophile outfit Pure Pleasure ([www.purepleasurerecords.com](http://www.purepleasurerecords.com)) begins with Otis Spann's superb 'Walking the Blues' (1972), blues piano masterpiece.

Also look out for Sarah Vaughan's Roulette-era 'The Divine One' (1961). Ballad-based and backed by Harry "Sweets" Edison, this is a small group gem.



**...AND FINALLY**

High energy, multi-cultural rhythms overlain with varied electronica meat means that Gum Takes Tooth's 'Mirrors Fold' (Tigertrap; [www.tigertrap.co.uk](http://www.tigertrap.co.uk)) is a trance-like noise-fest.

Secret Colours' 'Positive Distractions' (Secret Colours) is a garage-styled, 60s-a-like yet mature and rather bouncy rock ride. Plenty of sonic surprises on offer.

Sweet sounding electro-pop from Seattle's Odesza duo, 'In Return' (Counter; [www.counterrecords.com](http://www.counterrecords.com)) is a blissful experience that encourages you to close your eyes and...drift.

Classic vibes from Fairground Attraction and 'The First Of A Million Kisses' (Vinyl180; [www.vinyl180.com](http://www.vinyl180.com)) from this neo-skiffle outfit features the smash hit 'Perfect'. Features the original four-page insert.

From Tiger's Milk ([www.tigersmilkrecords.com](http://www.tigersmilkrecords.com)) comes 'Peru Bravo: Funk Soul And Psych From Peru's Radical Decade'. That is, artists from 1968-1974 that thrived in the country's political instability. Features lots of rarities from the period including Telegraph Avenue and Black Sugar. What Thee Image is doing here, though, is a mystery.

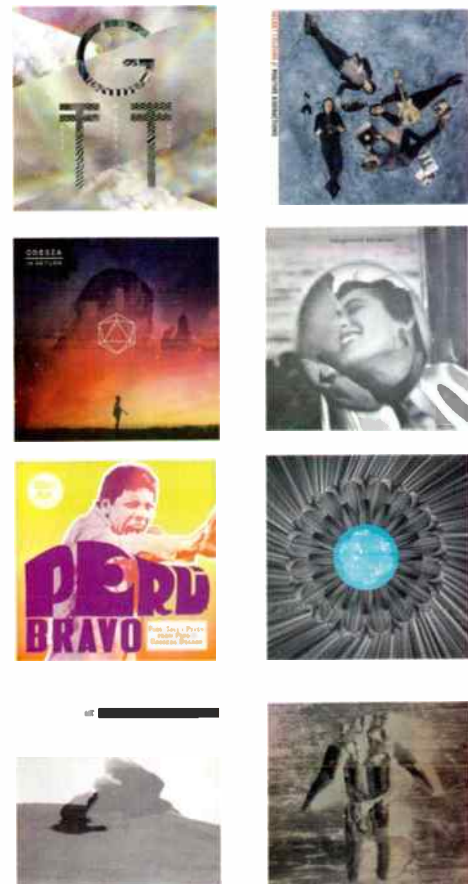
UNKLE veterans, Pablo Clements and James Griffith have released Toydrum, a six-track mini-album mixing understated ethereal rhythms and voices, lo-fi arrangements and simple beats.

LCC's 'D/Evolution' offers a haunting range of sonic soundscapes and sparse electronics that provides air and space for melodic tension and climax.

Ex-Dollboy, Oliver Cherer's 'Sir Ollie Leigh and Other Ghosts' (Second Language [www.secondlanguagemusic.com](http://www.secondlanguagemusic.com)) provides an album of controlled, yet gentle, songs with dissonant elements just to make things interesting.

From indie-folk band, The Fugitives and 'Everything Will Happen' (Light Organ; [www.lightorganrecords.com](http://www.lightorganrecords.com)) a take on modern bluegrass with sing-a-long ditties that are easy on the ear.

Finally, Bell Gardens' 'Slow Dawns For Lost Conclusions' (Rocket Girl) is heavy, portentous and often plaintive music from ex-members of Furry Things and Stars of the Lid that reminds me of the balladic side of Pink Floyd.





# Carbon Class

**Pro-Ject's new budget turntable package is an ideal way to get into the joys of vinyl replay, thinks Noel Keywood.**

**T**his all-in-one turntable package from Pro-ject announces its status and role in hi-fi life by the number of bits contained in bags! Yes, here's a proper little hi-fi design, with all the accessories its status demands. It's a turntable for the impecunious or – more likely these days – those new to vinyl.

The RPM 1 Carbon is a budget turntable package costing just £350, yet with full hi-fi spec and a good cartridge thrown in – just plug and play.

Well, not quite. We're talking old analogue here, so there are things to do to before play can commence: the

turntable must be set up. Pro-ject have good experience in this so the slim paper instruction manual is succinct and clear in its explanations of what to do.

The RPM1 is a belt drive with a free standing motor that sits firm on a flat surface, due to its weight. So

what I removed from the carton on arrival was the base plate with platter and arm, forming the main assembly. The motor with its 33/45rpm pulley is a separate part, as is the power supply for it – a wall wart.

Assembly is easy enough: the base/platter unit is placed on a flat, horizontal surface, like any turntable, the motor positioned to sit centrally in the circular cut out for it, the belt attached and the arm set up.

Assuming the RPM1 will end up in the hands of first time buyers, Pro-ject's bag of accessories includes everything needed for set up, including stylus force gauge and alignment protractor – I was impressed. There are even three protective steel discs that go under the spiked feet, preventing damage to furniture. Pro-ject recommend the RPM1 Carbon sits on a heavy wooden board, forming a massy plinth of sorts.

The arm, with integral headshell, is made from lightweight, yet stiff carbon fibre. The headshell does not detach, which makes cartridge installation more difficult, but the

RPM1 comes with an Ortofon 2M Red budget moving magnet cartridge already fitted – a nice touch. This means it does not have to be aligned, but a counterweight must be attached and downforce set to 1.8gms, using a simple downforce gauge supplied. I did this and the result was accurate when checked on a digital downforce gauge.

The arm tube can be rotated to ensure the cartridge stands perfectly upright (azimuth), and the arm can be raised or lowered by undoing two hex screws to alter Vertical Tracking Angle, or VTA. Cartridge alignment is adjusted, as usual, by sliding the cartridge in the headshell, so that it is tangential on inner grooves.

The arm will accept cartridges weighing between 5-12gms with counterweight 82 supplied, and this covers most on the market. There is an anti-skate mechanism too, adjusted by twiddling a knob – no thread and weight here.

With the RPM1 Carbon set up I could take stock of its operational strengths and weaknesses. There were some difficulties: the motor has



**The free-standing belt-drive motor features separate pulley diameters for 33rpm and 45rpm replay**



a power switch on its top surface, a natty idea that solves an awkward problem, but I had to reach through the belt to use it – and this was awkward.

Another small difficulty for me was that the headshell's cue lever is flat, short and smooth in its finish; it repeatedly slipped from my grasp when hand cueing. The solution is to use the cue mechanism which worked well enough, descending smoothly. This is only going to be a problem if you hand cue of course.

Also, the arm cradle is a vertical Y shape where a horizontal U better holds an arm, without obstructing its movement into and out of the cradle.

And finally, the RPM1 has a single-speed motor; to change from 33rpm to 45rpm the belt must be moved manually on the motor pulley, from one sector to another. The belt passes around the platter's outside edge, and this is a good place to apply drive since it exerts most control over the platter's rotational inertia.

Project provide an interesting set of figures for the RPM1 Carbon. Headshell effective mass is 13.5gms, which is about right because this is not a super lightweight arm, but not a heavy one either – and 12gms or thereabouts is about ideal.

Wow (speed variation) is quoted as 0.27% and we measured exactly 0.27%, so that's spot on. Unusually, this is a worst case, unweighted figure; switching in weighting during measurement produced a figure of 0.15%, and this is the value to use when making spec-sheet comparisons, because inevitably most manufacturers quote best-case values.

***The Pro-Ject's cueing mechanism works well - descending smoothly onto the vinyl.***



Pro-ject are unusually frank in publishing a worst case value, and correct in the actual values they quote.

The Ortofon 2M Red MM cartridge we first measured and reviewed back in 2007. Its stand-out feature is a flat frequency response with small treble lift, so it doesn't sound warm like MMs of yore, but instead analytical and detailed. It tracks well too and is a great unit at a low price of around £85 when bought alone.

### SOUND QUALITY

I ran the RPM1 Carbon into our in-house Icon Audio PS3 valve phono stage, feeding a Creek Evolution 100 amplifier driving Tannoy Kensington Gold loudspeakers set flat (Level).

"Alison Goldfrapp's 'Supernature' LP had the RPM1 Carbon sounding positive and forceful; it has good pace and solid bass"

The sound of the RPM1 is set strongly by Ortofon's 2M Red cartridge, that has a treble lift and quite a hard sound across the upper midband as a result. The good side of this is that it comes over as fast and well-defined, making the opening drum sequence on Phil Collins 'I Don't Care Anymore' (200g vinyl) sound impressively tight as it rolled across the soundstage. The arm



***The Pro-Ject comes supplied with an Ortofon 2M Red cartridge.***

maintains lower midband separation well and this helped definition. Damaged LPs were quite obviously crackly though.


Spinning Mark Knopfler's 'True Love Will Never Fade' brought out

the best in this combo. The 200gm LPs of 'Kill To Get Crimson' have a full-bodied sound in themselves and this counterbalanced the 2M Red's brightness to give superb vocal clarity and rock stable centre stage positioning of Knopfler's voice. Strummed guitar strings sounded solid and fast. There wasn't so much fine detail, but this is due to the Red's budget stylus.

I swapped over to our 2M Black and all changed for the better immediately, which is why I said the deck's sound as delivered is dominated by the cartridge, but this is only to be expected; I would trade up to a Goldring 1012GX sharpish.

However, in the overall scheme of things, listening to Mark Knopfler's 'Kill To Get Crimson' LPs was an enjoyable and impressive experience quality wise, clearly demonstrating vinyl's fabled strengths to any new user. In this respect I think the RPM1 Carbon will meet expectations.

Being a cruel reviewer I did spin a Chopin Nocturne, Opus 48 No 1, with long sustained piano notes to check for the audible effects of speed instability and the outcome wasn't an especially happy one, notes having "cracked pitch" as I would describe it. But then I have heard this so often



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*The Project's base plate and arm with phono socket outputs.*



from belt drives; it takes quartz-locked Direct Drive to get piano right; with rock music the problem is barely discernible. Piano lovers may like to consider spending more; Pro-ject don't hide the fact that this turntable is not a paragon of pitch stability, but others around it are no better.

Alison Goldfrapp's 'Supernature' LP had the RPM1 Carbon sounding positive and forceful; it has good pace and solid bass, if not sounding seismic like my Garrard 401 on a Martin Bastin plinth. But then I am used to playing this album with a 12in SME 312 arm and Ortofon Cadenza Bronze MC cartridge and against this standard the RPM1 Carbon was good enough. It teases out the best qualities

of vinyl which, for a budget turntable, I felt was impressive. I would swop out the cartridge fast because it is



*The supplied counterweight must be set to a downforce of 1.8gms.*

overly bright and lacks fine detail; a Goldring 1012GX would be fine, or a Shure M97HE for a warm sound.

**CONCLUSION**

The RPM1 Carbon is a good budget package. Coming with a full set of accessories, a competent budget cartridge with a forward, modern sound – not the warmth of yore – it brings the wonders of the LP to new users. Fully adjustable, it will easily cope with cartridge upgrades and is tweak-able too, so the best can be had from such upgrades. At a low price, this is a fine way for beginners to spin LP.

**MEASURED PERFORMANCE**

The Pro-ject RPM 1 Carbon ran +0.6% fast, just enough to add a little to pace. Its speed wandered, resulting in wow peaking at 0.27% unweighted. Our analysis shows this in the basic rotational frequency of 0.55Hz, with another component at 2.1Hz, likely from the motor/pulley. With DIN weighting applied, a figure of 0.15% total wow and flutter

was recorded and this is a respectable value at the price.

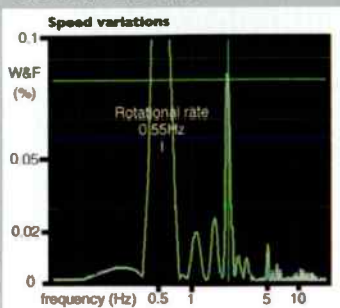
The arm is very stiff, having a first bending mode at a high 400Hz – 200Hz is a common value for tubular aluminium arms. The resonance is strong and undamped it would appear, so may add a small amount of arm character to the sound, possibly a slight zing. The

headshell is lively, but not unduly so.

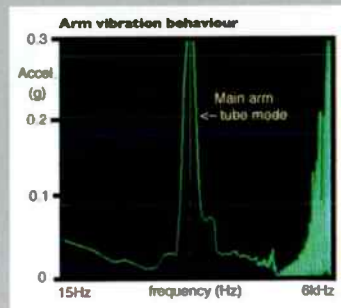
As budget belt drive turntables go the RPM1 Carbon turned in a decent set of results. It isn't perfect but it is competently engineered for the price. **NK**

<b>Speed accuracy</b>	<b>+0.6% fast</b>
<b>Wow (unwtd.)</b>	<b>0.25%</b>
<b>Flutter (unwtd.)</b>	<b>0.06%</b>
<b>Total W&amp;F, DiIN weighted</b>	<b>0.15%</b>

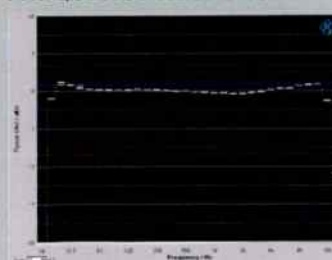
**WOW & FLUTTER**



**ARM VIBRATION**



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**PROJECT RPM 1 CARBON**



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**VERDICT**

A good budget turntable package, with a clean, fast sound that is forward and gripping.

**FOR**

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- full set of accessories
- adjustable
- upgradeable

**AGAINST**

- some wow
- awkward to hand cue
- inaccessible on/off switch
- bright sound balance

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# Vinyl Goes Up

*While those that grew up with LP moved on to newer technologies such as CD, a younger generation realised there was music and merit in the old LP. The record store Pie & Vinyl in Southsea, England, offer food for the stomach – and for the soul from LP!*



**Vinyl LP sales are on the increase. Here are the facts and figures behind an unexpected but encouraging phenomenon.**

**V**inyl LP sales are on the increase in both the UK and USA, recent sales data shows. The UK posted a 54% increase to 1.2 million and the USA 40.4% to 4 million over 2014 so vinyl is re-gaining popularity in both markets; the UK's rise isn't an isolated local phenomenon.

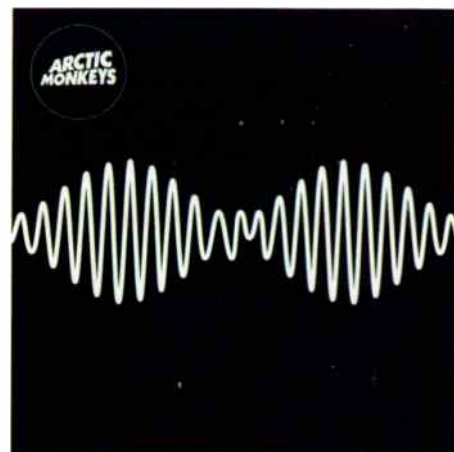
The British Phonographic Institute (BPI) issued a fascinating set of figures at the end of December 2014 that we've graphed to show the trend. The upturn in sales is sudden and sharp and everyone seems to have their own reasons for this. Record Store Day is one candidate we are told – see what the BPI say further on – although it seems unlikely an industry marketing exercise could alone be responsible, even though the music business

would surely like to think it was entirely down to the success of their own efforts.

There is a change in outlook, especially amongst young people, about the value and consumption of goods that encompasses the avoidance of needless waste. In this new paradigm, technologies that work well, are intrinsically durable and have unique strengths, such as the LP, are appreciated - they have value even as worthy veterans. And then there is the vast catalogue of music on LP too.

Ironically, it is the generation that used LP, then disposed of them, investing in replacement technologies like CD, that are least likely to see value in an 'outdated' medium. Marks

& Spencer don't sell LPs at their flagship store on London's Oxford Street – a seemingly bizarre idea – but across the road Urban Outfitters, that caters to a younger audience, do.



**The Arctic Monkey's album AM was 2014's best selling LP.**



There has been a change of attitude in the music business to match that of consumers: vinyl is now seen as a 'heritage format', rather than an old analogue format hopelessly outdated in a shiny digital world. It now comes with shed loads of cool, helped by being a tactile medium easy to use and lovely to behold, due to generously-sized cover artworks that look good and feel good in the home. Here's what the BPI now say about the LP.

### BRITISH PHONOGRAPHIC INDUSTRY, DECEMBER 2104

"Vinyl still remains a niche product, accounting for just 2 per cent of the UK's recorded music market compared with a 10 per cent share for the fast-growing audio-streaming sector, but sales of the much-loved physical format have shown a remarkable fivefold increase since 2009, and show little sign of slowing down.

In part made popular again by annual events such as the Record Store Day held by independent music retailers each April, vinyl is regarded by many as an art-form long valued for its authentic audio quality as well as its iconic cover art and sleeve notes.

Burgeoning demand is coming not just from core 'baby-boomer' music fans, who grew up with vinyl recordings and have 'kept the faith', but increasingly from a new generation of younger fans eager to appreciate its appeal for the first time alongside the seamless versatility and convenience offered by digital music. In fact we appear to be entering a more pronounced multi-channel era, where streaming music day-to-day and collecting physical recordings of your favourite

artists can be seen as complementary passions.

Record labels are also helping to boost the popularity of vinyl with increased promotional activity – Universal Music UK, for example, is offering independent music retailers an early seasonal boost in the form of 12 exclusive vinyl releases to roll out onto their shelves from

December 1st. The "12 Days of Christmas" initiative includes gems from the Universal Music catalogue such as a heavy-weight etched and numbered 7" of The Who's 'Be Lucky' – never previously available on vinyl – and a limited release of The Beatles' 'Long Tall Sally', which is back on 7" vinyl 50 years after it was first released".

## TOP SELLING LPS OF 2014

The best-selling vinyl album of 2014 is 'AM' by Arctic Monkeys, although the current Official Vinyl Chart No.1 is David Bowie's best of 'Nothing Has Changed', just ahead of Pink Floyd's first album in 20 years, 'The Endless River' – whose first week vinyl sales of over 6,000 copies are the highest of any LP released since 1997, making it the fastest-selling vinyl album this century.

Official Charts Chief Executive, Martin Talbot, comments:

"Releasing music on vinyl appeals to a growing number of artists, who see it as a 'badge of honour' that symbolises the very essence of Rock 'n Roll culture. Unsurprisingly Rock music is by far the dominant genre at the heart of the vinyl revival, with an exciting new crop of bands including the likes of Royal Blood, whose self-titled debut release on Warner Bros. is so far the year's fourth best-seller, and indie group Temples helping to lead the way. Among the year's best-selling titles are also a number of classic recordings by heritage artists, including by Oasis – the only act to feature in the 1996, 2014 and current top 10s – Led Zeppelin, who have three LPs in the year's top 10 to date, and Pink Floyd, who have two.



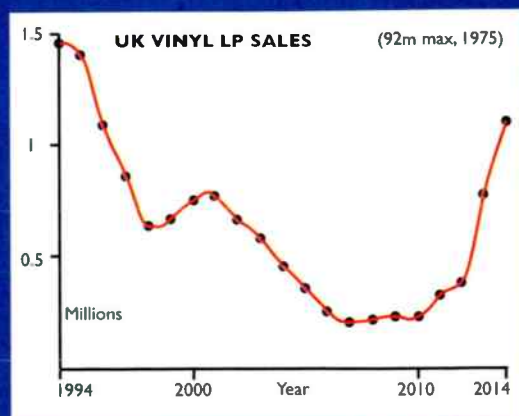
Cover art of the Pink Floyd's latest album, *The Endless River*, released 2014.

## THE FIGURES

LP sales in the UK peaked at 92 million in 1975, our BPI Yearbooks show, and were in decline thereafter. By comparison LP sales today are miniscule, at an estimated 1.2 million units over 2014 according to the BPI. The trend in sales is a strong upward one, however, our graph clearly shows – and this is attracting a lot of attention.

The LP was in decline well before the arrival of CD, sales having plummeted to 54 million units in 1983, the year CD was launched. For a short period, before CD caught on, it was the pre-recorded cassette that took over, with sales of 55 million in 1985 for example.

Nowadays, it is CD that is reaching life's end, with around 50 million sold end of 2014, we estimate from 2013 sales figures and the downward trend line. This is still a healthy figure, but downloads and streaming now account for a large part of the music industry's income, the BPI say.



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Jeff Dorgay, *Tone Audio Magazine*, January 2013



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Paul Rigby, *Hi Fi World*, March 2013



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# Tony Bolton

25th  
MARCH  
1964



COURTESY OF JOLYON HOLROYD

27th  
DECEMBER  
2014

COURTESY OF ED BOLTON

**H**i-Fi World contributor, Tony Bolton, passed away from cancer, Saturday 27th December 2014.

Tony had a deep interest in early audio, from artist and performance through to the medium from which it could be appreciated. Vinyl LP and shellac 78s were his speciality, although he couldn't help collecting radiograms and all sorts of other devices that enabled early replay. Who better then to head up the vinyl section in Hi-Fi World magazine. From this position he could meet others with similar interests, such as Dave Denyer (DaveDenyerPR), David Price (Hi-Fi World) and Dave Cawley (Sound Hi-Fi), all of whom were in visiting distance of his home in Exmouth, Devon, that he shared with his mother.

Tony was totally engrossed in his subject, for example becoming intrigued by a small ad-hoc investigation into diminishing mono groove width during the 1960s that affected the proper replay of early Beatles LPs (for example) including a second-pressing Parlophone mono Please Please Me in his collection.

An avid and fluent writer, Tony had an easy, unassuming style that drew in readers, not just from the UK but outside it too.

One week or so before Christmas I received a phone call from him telling me that "at 50" he had been diagnosed with cancer. Chemotherapy offered hope, he said. On going for treatment he was admitted to hospital and passed away little more than two weeks later. I hope he will find peace in a true hi-fi heaven.



COURTESY OF KAVIDA REI

"I still use my acoustic gramophone, as well as the hi-fis and radiogram, for my 78s. The enjoyment of a pre-dinner glass of wine in the garden in summer, with friends and a few choice records on a gramophone are one of the simple pleasures in life that should be indulged"

*Tony Bolton*

Noel Keywood, publisher, Hi-Fi World

# Got it taped

**Nakamichi decks were famous for their ability to extract every ounce of cassette performance. Martin Pipe looks at the quality Nak everyone can afford.**



***The Nakamichi BX-300 offered top quality from cassette tape at an affordable price – less than half that of top models.***

In recent times, the humble analogue cassette has been making a moderate comeback thanks to the efforts of the hipster brigade. But as a mainstream sound-recording tool and music-distribution medium, the cassette died with the last century.

But a revealing audio system laid bare the cassette's limitations. Eventually, all major hi-fi firms built high quality cassette decks in an attempt to overcome its deficiencies. Nakamichi Research, founded in 1948 by Etsuro Nakamichi, was at first an OEM supplier, but finally launched a cassette deck under its own brand, the no-compromise 1000 'Tri-Tracer' - the first cassette deck to achieve a response up to 20kHz, and the first to offer a three-head ('discrete head', in Nak-speak) configuration.

Classic Naks maintain high resale values; decks like the Dragon and CR7 will typically cost you over £1000. However lower-rung Nak 3-headers boast much of their performance, including the famous 20Hz-20kHz response, although you miss out on some worthwhile features (auto-azimuth, for example).

And that brings me to the

BX300. This was Nakamichi's 'affordable' performance deck during the mid-80s, and its all-black styling (with red LED tape-counter and vertically-reading 50dB-range peak-reading bargraphs) firmly places the BX300 in that era. When I say 'affordable', by the way, that's in Nakamichi terms. In 1985, its £500 selling price would buy you a competitor's top-of-the-range machine. That would be an all-singing, all-dancing deck with auto-everything. In contrast, the BX300 was a 'no-frills' design - with the emphasis on performance.

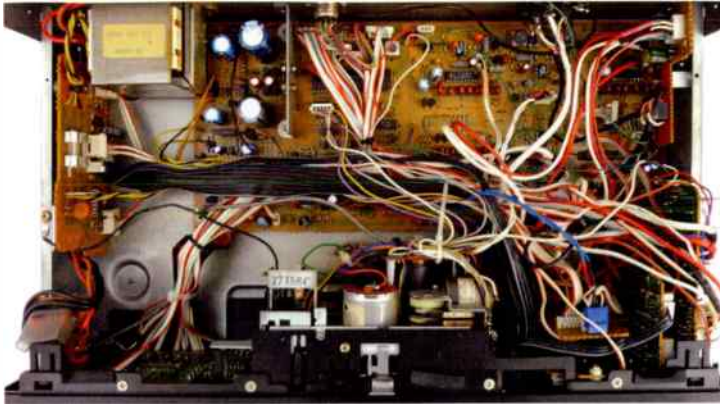
Sure, the BX300's classic dual-capstan drive mechanism is logic-controlled (a 4-bit microprocessor lurks behind the scenes) with the option (courtesy of a rear-panel DIN socket) of remote control. It's equipped with a switchable multiplex filter for clean recordings from stereo FM radio, low-distortion (<0.005%) electronics, both Dolby B and C, and a two-speed fader that allows you to - for example - smoothly bring down the recording level before your tape reserve runs out. And while the BX300's 'serious' contemporaries can automatically

sense and adapt to whatever type of tape you're using, the BX300 needs manual intervention.

On its frontage are recording bias-level buttons for SX (ferric), EX (chrome) and ZX (metal) and a fine-bias control. A fourth push-button selects the appropriate equalisation characteristic (120us for ferric, 70us for chrome and metal). Get any of these wrong, and the result could be a sub-optimal recording. The BX300 was usually set up by the dealer before delivery to give its best for a specific cassette brand - it lacks a tape-optimisation system, although the fine-bias adjuster provides a little manual leeway. Also missing are staples like auto track-seek and microphone inputs.

But you do get a feature that is very useful today - a +/- 6% control that can restore correct pitch to a recording made on a deck that was running too slow or fast. There's also a headphone socket, its level (and that of the phono output sockets) being controlled via a convenient slider control ranged alongside the record-level adjusters. And although the heads (and pressure-pad lifter) are Nak 'specials', the mechanism was





**Mechanically, Nakamichis were sophisticated. Their internal wiring reflects Japanese standard practice of the time, however - a jumble!**

bought in from Sankyo. It works very well, and employs three motors - one of which directly-drives the right-hand (take-up) capstan. This motor is also coupled to the left-hand (supply) capstan's heavy flywheel via a belt, to reduce the effects of 'cogging'.

Even thirty years on, the sound quality of the BX300 still amazes; this deck is a great option for those who wish to archive cassettes to digital. Pre-recorded tapes retain an openness and sparkle that are denied to lesser machines. Although the playback head auto-azimuth of upscale Naks isn't included, manual adjustment is easy enough. Pitch stability is excellent, as

playback of piano recitals and organ works amply demonstrates. The soundstage is always solid, with none of the 'wandering' that is so often



**A simple rear panel carried audio inputs and outputs through phono sockets. No digital connectors here!**

attributed to the cassette medium.

There are however two main problems that affect Naks of this age. The first plagues all decks with the Sankyo mechanism where the idler

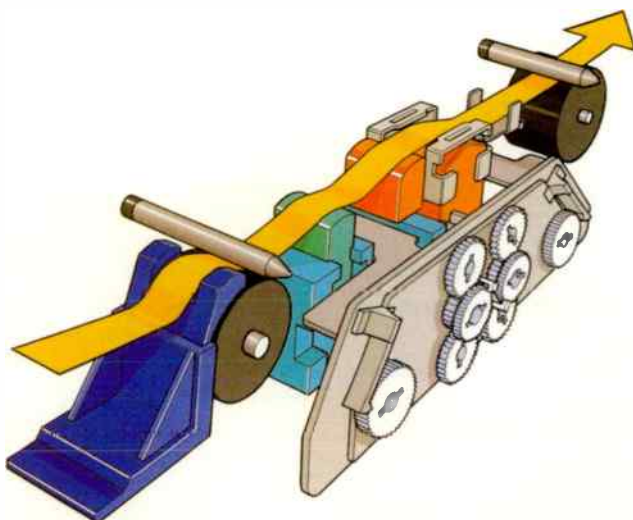
that couples the drive motor to the spools tends to wear - symptoms include lack of fast wind/rewind and the lack of take-up (leading to tangled tapes!). Thankfully, idlers are still available (expect to pay around £5 online). Later machines benefitted from a redesigned and longer-lasting part, which is almost unobtainable today.

The second problem usually results in crackling, distortion or the absence of audio on one or more channels in playback and/or record. This is down to the long-term deterioration or failure of certain mylar-film and polyester capacitors in the electronics. Typically, the Dolby circuits and bias oscillator are involved. These components are nearly always orange in colour, thus the term 'OCD' (orange cap disease)! Replacing these and aging electrolytics, checking/replacing

the spool-idler/drive belts/pinch-rollers and giving the machine a good general service (including head/capstan cleaning and demagnetisation) will usually make a well cared-for machine as good as new. Instruction and service manuals are available freely from various websites.

Thanks to Nakamichi's attentions to detail, the heads fitted to BX300s can lead long lives (up to 10,000 hours). Cases of extreme wear aren't however unknown, and as these heads are difficult/expensive to replace it's a good idea to check them before making a purchase. Tweaks aren't impossible - careful substitution of op-amps and capacitors, and modification of the playback muting system, can improve an already-excellent deck. The good news is that a BX300 is a viable second-hand buy. I've seen them go for anywhere between £20 ('no rewind' or 'untested') and £100 (boxed and 'everything works') on eBay; even after the costs of service have been factored in, you could be onto a bargain!

**The tape path in a dual-capstan Nakamichi, where one capstan pulls the tape and the other exerts steady back-tension. Beneath lie record, replay and erase heads.**



# This is a comprehensive directory of Hi-Fi Dealers throughout the UK and Ireland.

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Tel: 01799 599080  
E-mail: [radlettaudio@hotmail.co.uk](mailto:radlettaudio@hotmail.co.uk)  
Website: [www.radlettaudio.co.uk](http://www.radlettaudio.co.uk)  
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Makers of the prize-winning range of MusicMaker cartridges and other desirable audio accessories. We also have a cartridge refurbishing service and rebuild classic valve equipment to the highest standards. "It doesn't have to cost an arm and a leg - but there is no such thing a free lunch, either."

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# free reader Classifieds

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**WANTED: AUDIO-**  
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S-shaped spare pipe  
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07971 953628

**MICHELL  
TECHNOARM A11,**  
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Rega RB300 tonearm,  
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Mint condition  
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Minuetto speakers  
with stands. Excellent  
condition, £500.  
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speakers. Excellent,  
£200. Snell 'K' speakers.  
Excellent, £250. Radford  
T90 speakers. Excellent,  
£200. Woodside SC26  
valve preamp with  
phonostage. Excellent  
condition, £750. All open  
to offers. Tel: 01446 418  
207 or 07792 221 917

**WANTED: TEAC 10"**  
reel to reel or Sony or  
Akai. Must be 10" reel.  
Tel: 075355 96822

**GRAHAM SLEE** Gram  
Amp 2 (Special Edition)  
with PSU 1, Project  
Carbon Esprit with  
Goldring 1042, offers.  
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**PIONEER PL1000**  
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condition, £450. Pioneer  
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MDX793 MiniDisc, £60.  
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cable 2x 3m (original),  
£40. Naim 322/4 MM  
phono boards, £45. All  
excellent condition. Tel:  
01722 334 694

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purifier block including  
a mains Zapperator plus  
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installed internally. Mint  
condition RRP £1750  
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£885 cheque posted.  
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Email:-  
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Analogue Audio Power  
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condition, new Jordan  
drivers fitted for greater  
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Burmester 113 DAC  
USB Bluetooth. Little  
used, boxed, as new.  
£1050. Tel: 01737 350  
711

**MARTIN LOGAN**  
Electromotion  
speakers. New. Bought  
November 2014 with  
packing. Reason for  
sale - Wife unhappy  
with appearance.  
Demonstration available.  
£1900. Tel: 01303 258  
961 (Kent)

**MICHELL  
TECHNOARM,** black,  
boxed £350. Project  
Tubebox S phono  
stage, black £125, both  
pristine, nine months  
use. Phone Tim on  
01353 665059 (East  
Anglia)

**MERIDIAN 500** CD  
transport and 566 20-  
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boxed with manuals,  
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**AUDIOLAB 8200T**  
DAB/Tuner Silver  
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**PANASONIC DMP-  
BDT260** Bluray player.  
Able to play FLAC  
files via ethernet or  
wirelessly or from  
a USB. Purchased  
October 2014, £50 ono  
+p&p. Tel 01302 772495,  
[adrian.petch@btinternet.com](mailto:adrian.petch@btinternet.com)

**MUSICAL FIDELITY**  
M6CD player with  
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inputs. Analogue outs  
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Excellent player, boxed,  
manual, remote. £1000.  
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(Leeds)

**BLACK RHODIUM**  
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Phase 2 integrated and  
Phase 3 amp for sale,  
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£600 for the two. Will  
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Tel Coventry 02476 679165 or Email: woodfine@hotmail.co.uk

**FOR SALE, pair of Celestion SL700 speakers and stands in excellent condition £600 o.n.o. Contact David 01758 614380.**

**SONY ST-SB 920 AM/FM tuner.** Incl. Manual. Black finish £50. ono. Denon DR-M24HX 3 x head Cassette Recorder Incl. Manual and TDK Head De-guasser. Black finish £50.00 ono. Dark wood veneer H-Fi cabinet with lift up lid for T/table £50.00 ono  
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**EXPOSURE VIII Dual Pre Amplifier with Analogue Audio Power Supply.** Fully operational in good condition. £225 including postage. 01502 565406  
0788821996. Email: svelliot@aol.com

**AUDIO RESEARCH LS25 preamp in excellent condition.** Boxed, instructions, remote control, spare valves £1950. British made Arion all valve preamp with phono. £650. 07930 121847  
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**WANTED: CASTLE Acoustics Winchester speakers.** A Pair of Castle Acoustics Winchester loudspeakers, preferably S2 variant. Excellent price paid. Please contact me on 07897292189.

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**WANTED FAULTY or non working Quad 34 preamps.** Contact Mike 01758 613790.

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**GRADO 325 Headphones for sale.** £90 spent on bringing them up to spec with new cable and earpads. £100 ono. Tel: Andrew 01743 245888

**TECHNICS 205CMK3 cartridge, integral headshell, unused,** boxed, £150. NAD 312 amplifier, £50. Marantz CD63SE CD, remote, £60. Armstrong 626 Receiver, £45. Technics 8020 Graphic Equalizer, £60. Tel: 01708 457691

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Mob: 07960 962579  
www.gtaudio.com

### TECHNICAL AND GENERAL

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### CARTRIDGE MAN

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Email: thecartridgeman@talktalk.net  
www.thecartridgeman.com

### Dr MARTIN BASTIN

(Shropshire) Garrard 301/401 restoration, renovation and service. Special plinths; rumble cures, etc.  
Tel: 01584 823446

### CLASSIC NAKAMICHI

(Paul Wilkins, Worthing, West Sussex). Restore, Repair & Service Nakamichi Cassette Decks. Tel: 01903 695695  
Email: paul@bowersandwilkins.co.uk  
www.bowersandwilkins.co.uk

### ARKLESS ELECTRONICS

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### REVOX

(Brian Reeves, Cheshire)  
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Email: brian@revoxservice.co.uk  
www.revox.freeuk.com

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Email: one.thing@ntlworld.com  
www.onethingaudio.com

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Email: w.hodgson@btclick.com

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Tel: 0117 925 6015  
www.octave-aw.co.uk

### WEMBLEY LOUDSPEAKER

(Paul MacCallam, London)  
Comprehensive loudspeaker servicing.  
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Email: paul@wembleyloudspeaker.co.uk  
www.wembleyloudspeaker.com

### LORICRAFT AUDIO

(Terry O'Sullivan, Bucks)  
Garrard 301/401 and their own 501 repair, spares and service.:  
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www.garrard501.com

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Quad's service department, able to repair almost all Quad products, from the very first. (Also Audiolab, Mission & Wharfedale).  
Tel: 0845 4580011  
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### **TANNOY DC10Ti LOUDSPEAKERS**

Tannoy continue to refine their statement DC10 floorstanding domestic monitors to reach new standards.

Next month we will be looking closely at the latest version, the new DC10Ti. Don't miss our in-depth review, complete with definitive measurements.

We also hope to bring you –

MING-DA MC3008-A AMPLIFIERS  
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WHARFEDALE DIAMOND 220 SPEAKERS  
NOVA FIDELITY X40 NETWORK STREAMER AND MUSIC SERVER

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, such as failure under review, we cannot guarantee that all products listed above will appear.

**PICK UP THE APRIL 2015 ISSUE OF *HI-FI WORLD* ON SALE FEBRUARY 27TH 2015,  
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You can email your advert to us at: [classifieds@hi-fiworld.co.uk](mailto:classifieds@hi-fiworld.co.uk) or write or type your advertisement copy in block capitals with one word per box and post it to us at:

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APRIL 2015 - 4TH FEBRUARY  
MAY 2015 - 5TH MARCH

# IRON MAIDEN

## THE NUMBER OF THE BEAST 1982



"This is one intensive album that never gives an inch and never backs off while the quality of the songwriting is truly immense"

If ever an album could be described as ground breaking – in terms of the future career of the artists involved and the genre in which they played – this was it. Frankly, this album would become one of the greatest rock albums of all time.

Associating the LP with the word 'classic' is, in fact, rather understating the effect it had on the rock-buying public.

It also saw the first appearance of vocalist Bruce Dickinson (late of Samson), after the previous singer Paul Di'Anno left due to alcohol-related problems.

There was an interesting confluence of time and events here because the band's closest rivals, Judas Priest, had made a conscious move towards commercialism – and this provided Maiden the leeway for a unique blend of success, making them the choice of the rock purist, as they were unaffected by commercial compromise.

The Iron Maiden template of aggressive tempos, twin-guitar interplay, wide-ranging power vocals, which was the basic Judas Priest plan, was turned up to eleven on 'The Number Of The Beast'.

This is one intensive album that never gives an inch and never backs off, while the quality of the song writing is truly immense. The latter is down to the band's original founder Steve Harris, whose writing style had evolved from the basic street-fighting content of his earlier days to more epic themes involving history, SF and, of course, horror.

"I try to read quite a few books whenever I can" Harris noted at the time of the LP's release. 'Children of the Damned' was derived from a film, while others, like 'Invaders', is about, "...an invasion of England as seen through the eyes of a Saxon".

He added "Hallowed Be Thy Name, well, it's a bit morbid but it's about a prisoner who is in the death cell. He's sort of had these real strict beliefs all through life and then, with about two hours to go, he's not really sure. There's one line in it that says, 'If there's a God, then why does he let me die?' It's just conflicting ideas in your mind, I suppose. Well, I mean, I never want to be in that position".

It was notable how Harris' writing style never entered the romantic realm. In fact, this

style of lyric just never appealed to Harris, which gave Iron Maiden a direction and this album a style that has been copied ever since,

"I don't think we've ever written anything that is romantic", said Harris. "Everyone writes about how they want to love their 'baby,' and all that! People write about how hard it is on the road, which it is – and how lonely they get, which is true what they're saying. They miss their baby and they want to love them and all this business... But I find that a bit boring. I mean, frankly, it's a bit sort of... wimpy, I think. That's not to say I don't sort of have any romance in me at all. It's not that. But I just don't think something like that is what I particularly want to write about".

If you missed the album, the first time around, look out for the Parlophone reissue schedule that sees the appearance of the first eight Iron Maiden albums, which spanned the 1980s, with brand new pressings of the discs on 180gm black vinyl.

They are cut from the original analogue master tapes and packaged in identical artwork to the initial 1980s releases. As a bonus, the first batch of album releases ('Iron Maiden'/'Killers'/'The Number Of The Beast') are also available in a Collector's Box sized to house all eight albums.

In conjunction with these album releases, a strictly limited one-off run of the 7" singles from each respective album is available. These black vinyl singles are cut from the original analogue master tapes and released in replica artwork packaging.

The records have been released chronologically. First released were the first three albums (i.e. 'Iron Maiden', 'Killers', 'The Number Of The Beast') and the seven corresponding 7" singles: 'Running Free' b/w 'Burning Ambition', 'Sanctuary' b/w 'Drifter (Live)' and 'I've Got The Fire (Live)', 'Women In Uniform' b/w 'Invasion', 'Twilight Zone'/'Wrathchild' double A side, 'Purgatory' b/w 'Genghis Khan', 'Run To The Hills' b/w 'Total Eclipse', 'The Number Of The Beast' b/w 'Remember Tomorrow (Live)'.

Top of the pile, though, is the album, 'The Number of the Beast'.

Balancing melodicism, technique and passion, it ranks in the Top 5 of any rock LP list.

**PR**



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Dr. Joseph D'Appolito a world renowned authority in audio and acoustics designs the crossover and performs prototype testing/final fine tuning for Usher Audio. Consulting to a couple of famous audio companies, Joe always finds the tremendous value Usher Audio products represent a delightful surprise in today's high end audio world.

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Tel: 886 2 2314 3868, Fax: 886 2 2371 7253

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# QUE SERA, SERA

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58 Durham Road, London, SW20 0TW

T: +44 (0)20 89 71 39 09 F: +44(0)20 88 79 79 62

[www.absolutesounds.com](http://www.absolutesounds.com) [info@absolutesounds.com](mailto:info@absolutesounds.com)

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