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MARCH 2016

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With its huge market and great wealth, the USA produces products that the UK could never support – and we see only half of it. Many US companies don't even bother to export – it isn't worth the effort. Overseas sales are minuscule compared to their own – and that includes the UK. Perhaps sometime the UK economy will forge ahead, when we at last re-embrace manufacturing on the sort of scale Japan and Germany manage to achieve, but in the meantime we can at least enjoy some of what the USA produces, even if it is often pricey. I'm thinking of Martin Logan, McIntosh and Audio Research

in particular. They all produce hi-fi of unusual style and quality and that's why I review the new Reference 75 SE power amplifier from Audio Research this month – see p10. What a beast it was! Of enormous size and solid build, with a slick but at the same time restrained and authentic professional style, the Reference 75 SE was a lovely piece of Americana. I hope you find it interesting: just remember, you may win the Lottery tomorrow!

Reviewer Jon Myles and I were mightily impressed by Quadral's new Chromium Style 8 loudspeaker. It comes over as silky smooth, incredibly refined and yet deeply insightful without being pushy about it. This is one fine piece of German (yes – again) engineering. The irony for me is that once the British sound – after the example set by the BBC with its monitors – was very much in this idiom, whilst Germany produced a product better suited to their brass bands, we used to observe. It's not like that any more. Now Germany has swung to a preferred taste for deep refinement and accuracy, leaving us Brits a bit all at sea. And now Quadral offer a loudspeaker that is so svelte yet coolly accurate at a price most of us can afford – see our review on p15. I think they're teaching granny how to suck eggs. Oh shame.

I've had my head into low speed DC motor technology recently, known in hi-fi as Direct Drive. It's come a long way since the seventies: even washing machines use 'em nowadays and digital controllers are everywhere. DD is as much about electronic motor commutation with feedback servo control – a fierce subject – as it is about coils, magnets and rotating bits. Inevitable then that Technics should re-design their famous SL-1210 disco turntable motor and re-release a new version of it, the SL-1200 – see News on p7. Oh what excitement! The vinyl market is really heating up. We will be bringing you much more on all this soon – as you'll see in Next Issue contents on p12. So dig out your vinyl and keep reading!

Noel Keywood
Editor.



hi-fi world

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Studio 204,
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Conlan Street,
London W10 5AP
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verdicts

●●●●● OUTSTANDING
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●●● GOOD
●●● MEDITOCRE
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amongst the best
extremely capable
worth auditioning
unremarkable
flawed
keenly priced

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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.



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Distributed by Seymour Distribution Ltd 86 Newman Street London, W1T 3EX Tel: +44 (0) 20 7396 8000 Printed by Precision Colour Printing Tel: +44 (0) 1952 585585
Our Agents in Malaysia Millennium Hi-Fi & AV Simon Chang Showroom & office, 500-1-3 First Floor Wisma Indah (Shen Court), Jalan Tun Razak 50400 Kuala Lumpur, Malaysia
Tel: 603 9283 8171 Fax: 603 9281 3762 e-mail: info@millennium-audio.com

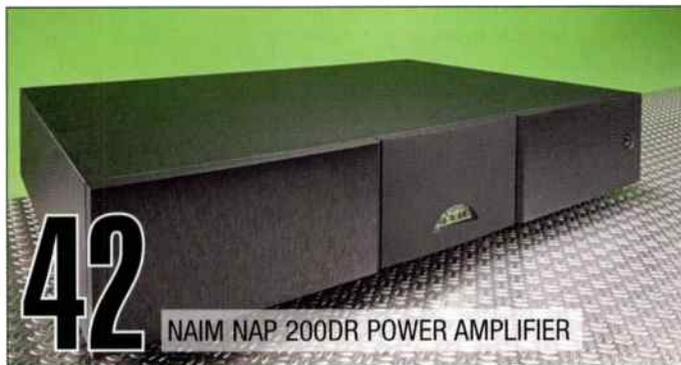
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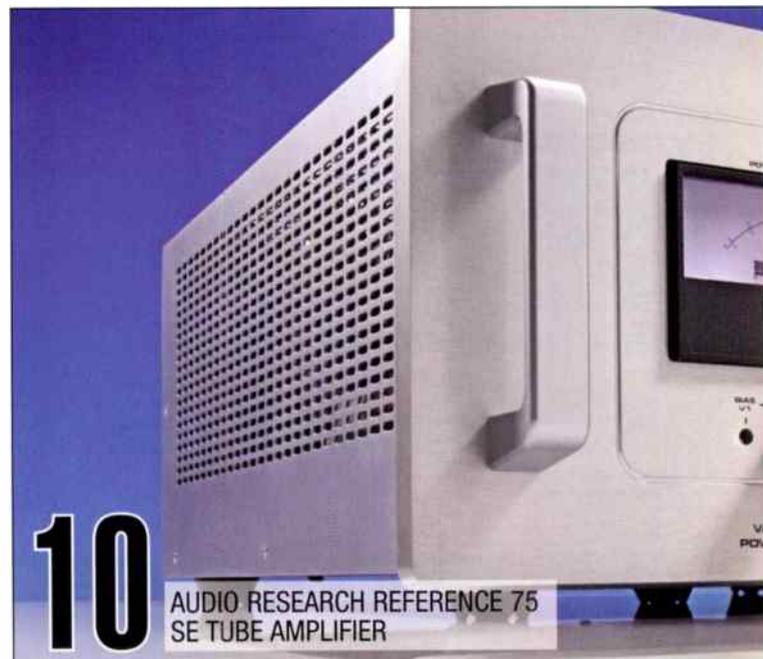
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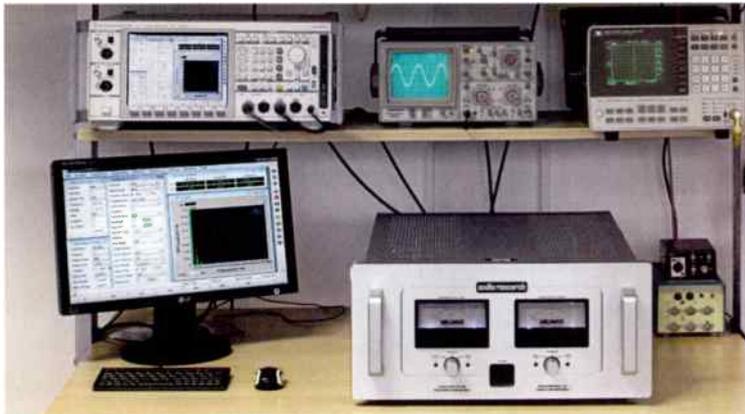
Hi-Fi World measurement

Two products in this month's issue, under test.

The products we review are tested first to ensure they work properly and meet their manufacturer's specification. Our measurements also look at factors that affect sound quality, like frequency response, distortion and dynamic range, as well as those that affect compatibility, such as output level, output power etc.

These tests are complex and can only be made using a professional audio analyser, calibrated to international ISO standards to ensure accuracy – we use the excellent Rohde&Schwarz UPV.

Loudspeakers and headphones require acoustic analysis. For this we use the well known Clio test system from Audiomatica, Italy to provide reference standard acoustic measurements, within a very large 6000 cu ft test room. You can be sure our loudspeaker reviews, covering the full audio band from 20Hz to 20kHz, are accurate as a result.



The Audio Research Reference 75 SE power amplifier under test. It is connected to massive 200 Watt dummy loads, not visible here, based on custom built high power resistors with zero magnetic hysteresis, to ensure valid results at high frequencies. Otherwise, distortion will be generated by the load resistors, giving an invalid result.

Distortion, frequency response and all other parameters are measured with our Rohde&Schwarz UPV audio analyser, seen at top left, with a screen mirror below at left. This analyser has both analogue and digital generators and analyser, so it can handle 'digital' amplifiers too.

The Quadral Chromium Style 8 floorstanding loudspeaker under test. In front of it is a measuring microphone and on-screen is the block outline of a third-octave analysis of a pink noise test signal used to measure frequency response down to 20Hz.

Pink noise has an energy distribution like that of music, giving a useful view of bass performance, as well as subsonic output from the port (red trace).

The measuring microphone is positioned on-axis, high and low, and left and right to judge dispersion and drive unit integration.



email:news@hi-fiworld.co.uk

news

THE TECHNICS RETURN

Technics has announced the return of its direct-drive turntable based on a newly designed direct-drive motor in the shape of the Technics 50th anniversary limited edition Grand Class SL-1200GAE and non-limited Grand Class SL-1200G.

The turntable has a three-layered construction consisting of a combined heavyweight brass and aluminium die-cast platter and deadening rubber covering its entire rear surface.

The tonearm employs a lightweight material (aluminium for the SL-1200G and magnesium for the SL-1200GAE) which has been cold drawn.

To celebrate the launch of this new Technics SL-1200 development, the Technics 50th anniversary limited edition Grand Class SL-1200GAE will be available from the summer of this year with a limited serial number plate and restricted global quantity of 1,200 pieces while the Grand Class SL-1200G will be available in the winter. Contact www.technics.com for more details.



KEF KOLOURS

KEF has announced the launch of three new finishes for its LS50 loudspeakers. The new finishes are racing red, titanium grey and frosted black. The LS50 was designed to celebrate KEF's 50th anniversary and was conceived as a 'mini monitor' derived from the LS3/5a.

The new frosted black version utilises a matt finish and KEF's signature blue cone. The titanium grey finish uses a copper cone.

There are now five colour finishes in total. Price is £800 per pair. For more details, visit www.kef.com.

EXPOSED!

British brand Exposure Electronics has released an enhanced 'D' edition of its 3010S2 pre-amp.

Like its predecessor, the new 3010S2-D preamplifier comes with six line level inputs. One of these is now a direct AV input to enable integration within a surround sound system. There is still the possibility to fit an optional MM or MC phono stage, which is now joined by the option of a plug-in DAC board. The latter is capable of up to 24bit/192kHz PCM and DSD 64 and comes with two inputs: USB and BNC.

The 3010S2-D also sports a new circuit board with high-quality relays for input selection to ensure the shortest possible signal path. There are no integrated circuits, as the signal path uses all discrete components including high-quality capacitors. The new power supply includes a large custom-made toroidal power transformer and adds extra stages of regulation for improved performance. Price is £1,060 with on-board MM phono stage £240, on-board MC phono stage £240 and on-board DAC £325. Call 01273 423877 or click on www.exposurehifi.com.



AUDIO RESEARCH GSi75

Named in homage to Galileo, Audio Research's G-Series valve amplifiers are made to exploit the KT150 valve.

The G-Series launched last year with the GSi150 power amplifier and matching GSPre preamplifier. Now, the 75W GSi75 joins the ranks, an integrated amplifier that uses two 6H30 driver valves and four KT150 output valves and incorporates a high-res DAC for digital sources and a phono stage for vinyl records, the onboard DAC being compatible with DSD and sampling rates up to 384kHz. Fast and slow filter settings for digital sources are featured, with options to upsample to 352kHz or 384kHz, plus a phono stage that is switchable to 45dB or 62dB gain for MM or MC. Price is £14,500.

For more information log-on to www.absolutesounds.com or call 0208 9713909.

A CROSLEY TURNTABLE...IN HI-FI WORLD?

Yes, it is quite startling to see this particular lifestyle brand occupy the news pages of this magazine but there is a valid reason and it's called the C10. Quite different from the company's usual turntable offerings, this example is an audiophile design. For those expecting a wrinkle in this particular story, you'd be right because Crosley didn't actually have a hand in either the C10's design or manufacture. That's principally because the Crosley turntable really isn't. It's a badged Pro-Ject. More specifically, it's a Pro-Ject Debut III with the same Pro-Ject 8.6D arm and Ortofon, OM5e cartridge. No UK release date or price has yet been mooted but the US price is currently \$399.

For more information, click www.crosleyradio.com



AUDIO S & 'PHONES

Ministry of Sound Audio has introduced the Audio S Bluetooth speaker, a wireless audio device with a durable design and splash-proof status that means it can brave the elements. A silicon carrying strap makes it easy to carry around, even if you don't have a bag with you.

Powered by an internal rechargeable battery, the Audio S delivers ten hours of playback at 70% of maximum volume from a single charge. Spanning 212 x 68.5 x 65mm, the Audio S offers two full-range drivers and a passive bass radiator and has a wireless range of up to 10m, a water-resistant rating of IPX4 and the handy feature of remembering the last eight devices it was paired with. It's compatible with NFC pairing (with compatible devices) and also has both a line-in and a micro USB port – so you can charge your phone and keep the music flowing.

The Audio S is available now, costing £80, and comes in white, charcoal, red and blue finishes.

But that's not all, Ministry of Sound Audio has also introduced its new Audio On headphones, a brand new on-ear design in two versions: the wired Audio On (£80) and the Bluetooth Wireless Audio On Plus (£130)

For more details go to ministryofsound.com.



STEINWAY LYNGDORF P200

The Model P200 surround sound processor is capable of handling up to 256 output channels and offers full support of 3D surround formats Dolby Atmos, DTS:X and AURO-3D. It also supports 4K and 3D video and HDCP 2.2. It is also equipped with RoomPerfect, for adapting the sound system to the environment.

Advanced HDMI switching capabilities can handle up to five separate 4K video streams simultaneously, allowing routing from any HDMI input to any output with On Screen Display for each stream. It can also show four inputs on one screen (tiling) or split one input to be shown on four screens as one coherent video-wall.

An optional upgrade is a 16-channel DCI-compliant digital AES/EBU input for integration with digital cinema servers. Multiple control options including RS232, remote web interface and IP-control. Available in anodised matt black and glass as a rack mount or freestanding, the price is \$18,000.

For more information head to www.steinwaylyngdorf.com

PURE THIRD GENERATION

Pure has announced the third generation of its digital radio range, the One Family, available in three sizes: One Mini; One Midi and One Maxi.

The One Midi and One Maxi deliver a new digital sound processor. The One Midi and One Maxi also have the option to take AA batteries or Pure's rechargeable battery pack.

The One Mini (£50) is designed to take up as little space as possible. It has an optional rechargeable ChargePAK BI (£28).

The One Midi (£65) is ideal for use in the kitchen or bedroom. Its new digital sound processor gives users more precise audio tuning. It also features an increased stereo widening in headphone mode and includes DAB/DAB+/FM, two alarms, Aux in and headphone sockets and sixteen preset stations. Available to use with four AA batteries or the optional rechargeable ChargePAK DI (£35), it will give users over twenty hours listening on the go.

The One Maxi (£85) is the largest product in the family offering dual speakers. Product features include a quick select option for up to twenty stations. It is available to use with six AA batteries or an optional ChargePAK DI (£34.99).

For more information log-on to www.pure.com or call 0845 1489001



CAROT ONE PHONO AND MORE

The compact Ernestolone phono (MM only) and Class-D amplifier also provides a headphone amplifier and valve pre-amplification (using a 6922 valve which can be changed, if required, by using supplied jumpers) with, according to the company, a set of "unique equalising circuitry" that reportedly enhances cartridge performance, plus an MCU programmed power on/off sequence to avoid unpleasant 'pop' noises during the power on/off sequence and built-in protection for current and temperature excesses. Connections include standard speaker binding posts, a line input for a CD player (using a 3.5mm to RCA cable convertor) and a 3.5mm input socket for MP3 players.

For more information, click on www.carotone.it.



OHM ACOUSTICS

New speaker models have been announced by Ohm Acoustics to fill out its new 20/20K Series of speakers. They include the Super Walsh 3.3010 and Super Walsh 4.4012 models. The new duo complements the current F-5015 and, like the earlier model, uses the company's XtremeXcursion technology subwoofers and 500W dedicated subwoofer amplifier.

The new Super Walsh 4.4012 employs a 12" XtremeXcursion subwoofer, the same 500W amplifier used in the F-5015 and the driver from the Walsh 4000 built into a Walsh 4 cabinet that now has two sealed enclosures. The new sub, says the company, delivers the performance of the F-5015, except in very large rooms (above 9000 cu. ft.). The Walsh 4000 driver is the same as the Walsh 5000 drivers but without controls. The

Super Walsh 4.4012, in a choice of finishes, is priced at \$8,000 per pair.

The smallest model in the new speaker line is the Super Walsh 3.3010. It is 914mm tall, 254mm square at the top and 330mm square at the bottom with a 254mm XtremeXcursion subwoofer and a 500W amplifier in a sealed chamber in the bottom of the cabinet. Joining that lot is a Walsh 3000 driver on top with its own independently sealed enclosure. These are both acoustic suspension designs.

The Super Walsh 3.3010, in a choice of finishes, is priced at \$6,000 per pair.

For further information contact ohmspeaker.com.

AUDIO-TECHNICA AT-LP5

The Audio-Technica AT-LP5 direct drive turntable features a cast aluminium record platter, fitted with the AT95EX Dual Moving Magnet cartridge, itself mounted on an AT-HS10 lightweight headshell.

Speed options include 33.3 and 45rpm while connections include phono or line stereo outputs with separate grounding.

You also get a low-resonance damped and weighted chassis, a 5mm thick rubber-composite platter mat and matt black paint finish. The turntable offers a choice of the internal or an external phono pre-amplifier. There is also a USB output and bundled Audacity software to allow users to record vinyl music onto Mac and PC in a choice of digital audio formats. Price £329. Contact www.eu.audio-technica.com for more details.



WRAPS

Well, it makes a change from shoving your earphones into your pocket only to later retrieve them as a tangled mess. These Wraps earphones convert the earphone design to enable them to be worn as a bracelet. The chassis is formed from a light alloy, featuring a 10mm driver. When worn on the wrist, the patented slider system keeps the chassis and jack plug all connected together for a compact fit. The cables are kept in alignment and remain tangle free and always close to hand. Prices start from £15.

For more information click www.mywraps.com.



TIDAL COMES TO PRO-JECT STREAMERS

Pro-ject's entire range of Stream Box components are now fully compatible with the Tidal streaming service including the Stream Box DS Net, Stream Box DS+, Stream Box DSA and Stream Box RS. Control over music is managed by the free Box Control application – without any need to switch between different control apps. Full TIDAL integration is included in the latest software releases for all Stream Box models and the Box Control application and the software updates are completely free to new and existing Pro-ject customers.

To learn more go to www.henley-designs.co.uk or call 01235 511166



New Tube

Audio Research use a new valve – the KT150 – in their recently introduced Reference 75 SE tube amplifier. Noel Keywood takes it for a ride.

Audio Research have a house sound that's punchy and exciting – and they stick to it. I guessed their new and visually engaging Reference 75 SE power amplifier would drive their view of the tube (valve) amplifier forward, in much the same way as a Mack truck drives forward. Yes, I am alluding to the sound, but not in a facetious way. If you want an amplifier with eye-popping dynamics, speed and punch, think Audio Research. I love 'em, so I strained at the bit to get this new Reference in for review.

The 75 SE is – physically – a very big amplifier, with a big price

ticket of £8698. Yes, even I was surprised at this, since a pair of KT150 valves in push-pull can be had elsewhere for a lot less. You have to listen to an Audio Research to see why, for some, it will be justified; the rest of us just have to dream, and drool.

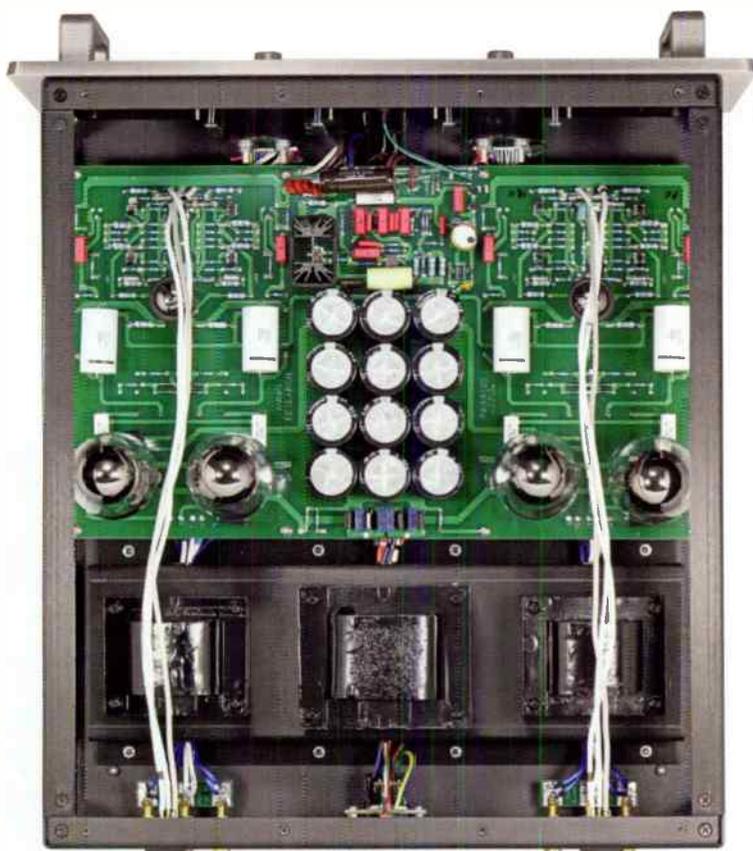
Although very big, this amplifier isn't super heavy, weighing in at a just-liftable 21kgs. For its size - 48cm wide, 22cm high and 50cm deep – it seems almost flyweight, but that's only because Audio Research don't use massive output transformers, something I'll get to later. The chassis is sturdy, all the same, and well finished, with massive grab handles at

the front. The fascia panel is exactly 19in wide to fit a 19in rack, whilst the rear casework is 44cms wide, needing 17.5in clearance in a rack.

Then you have of course a pair of lovely illuminated power meters. They adorn the front and – to me at least – animate the box, turning it into something that has visual interest in the home. Perhaps that's because I like looking at meters, seeing what they have to tell and – er – not everyone feels the same perhaps!

But output meters are a useful thing to have. LED displays better show short term peaks, admittedly, but big illuminated meters like this





At bottom sit output transformers either side of a mains transformer, all with an industrial black finish. Above them pass overhead input lines (white). At centre left and right you can see the KT150 power output valve pairs, with big white coupling capacitors just above. At top sits the discrete transistor input circuitry, and centre banks of power supply capacitors.

still show average music level well enough to give useful warning of overload. Not that that is likely with 75 Watts per channel of power on tap and most people will, I suspect, wonder why the needles stay at such a low level over on the left side of the scale, because little more than 5 Watts is needed in most homes and systems to play at normal volume and this level is indicated just 25% up the scale. Centre scale is 20 Watts and that is very loud.

Another use for these meters is to show bias level, because bias on these amp needs occasional adjustment, possibly every few months under heavy use, as the valves slowly age.

I haven't used KT150 power valves (tubes) for any time in a 'fixed bias' amplifier like this to know from experience how they age, but as they are a new audiophile design and very sturdy, with huge power dissipation, it is likely they'll age slowly, making this a very occasional process. The heater and anode of any valve

degrade as their surface coatings (e.g. barium) wear away, in much the same way as light bulbs wear out, the reason power valves have a life of around 2000hrs or so. Bias has to be adjusted to compensate, in order to keep the right amount of current passing through the valve. So an occasional twiddle is required.

"a spectacular looking and sounding amplifier - one not to be missed"

Fixed bias is used because it gives more power than the popular 'auto-bias' circuit arrangement that makes bias adjustment unnecessary, but there's also an argument about sound quality in here. It's commonly claimed auto-bias sounds soft and fixed bias hard, to put it simply. And I'd go along with that as a broad outline of the difference. I suspect Audio Research choose the inconvenience of 'fixed

bias' because it is part of what they want to achieve in their particular house-sound.

I found bias setting a bit fiddly since you have to fish around inside a hole on the front panel to find the screw head of an adjuster, then twiddle it with a plastic 'screwdriver' style tool, the like of which I haven't seen for a long time, since using an identical object to adjust the ferrite cores of RF and IF coils in my home-built communications receivers.

Apart from this little performance, the Reference 75 SEs otherwise demands little user involvement. The power switch is a sturdy front-panel rocker style device and power connects at rear through a three-prong, U.S. style connector, not a European-style IEC connector.

The meter lights can be switched off, but the switch for this is on the rear panel.

Like most power amps, there is no volume control, the preamplifier must have this. Unusually, though, there are no unbalanced phono-socket inputs either; the Reference 75 SE accepts only a balanced input through an XLR connector, so it must be driven by a preamp with balanced outputs. Needless to say, Audio Research preamps have such outputs, as do many other preamps these days, especially in expensive high-performance systems. Why? Because they eliminate hum loops, provide noise cancellation and also provide screening for both signal conductors, resulting in better sound quality.

The use of balanced inputs and, presumably, all-balanced circuitry, eliminates the need for an internal phase-splitter valve, cutting out a whole stage. Hence the amplifier uses just two KT150 power valves, fronted by rugged 6H30 double-

triodes working as driver valves. Like most Audio Research amplifiers, however, there are solid-state gain stages in front of the 6H30s, making this a hybrid design. The use of solid-state up-front lowers noise and measurement confirmed the Reference 75 SE is very quiet.

The new-design KT150 power valves this amplifier uses update and effectively replace the KT120s that

went before them. The 120s were a relatively recent update of the post-war British GEC KT88 and a rather crude one made by a factory in East Europe. Whilst the KT88 sounded great – fast and clean, rather than lush and warm – the KT120 generally sounded clanky, to the point where I chose not to review KT120 amps. They despoiled the breed.

Happily, someone must have felt the same and decided better was possible, hence the new KT-150. This is not a cheap clunker like the KT120. With a distinctive gherkin-like glass envelope and strong, non-microphonic internal electrode structure, plus large high-power dissipation anodes, the KT150 is a sophisticated build and was selling at £90 apiece (a KT88 is £40), but in the amplifiers I have reviewed to date it offers a smooth and sophisticated sound that justifies this price.

Audio Research were wedded to using the American 6550, a rugged tetrode much like the GEC KT88, but they've obviously been convinced by the charms of the KT150 so now it has popped up in their expensive Reference amplifiers. I'll just make the point here that unreliable valves are a persistent background problem in valve amp manufacturing – and one best avoided. In World Audio

reputation and the cost of dealing with such a problem, is almost surely why Audio Research stuck with the un-lovely but workmanlike 6550 in the past. It also suggests that they are happy with the KT150 in this respect.

So that's just a little aside to explain what you are getting here and why. Valves aren't transistors. Each one has its own history and particular attributes, as well as its own sound. So the valves Audio Research use in their new Reference 75 SE say much about the company's design intentions in this product, as well as what buyers can expect from it.

And finally, those unlovely black transformers you can see in shots of the Reference 75 SE internals. Audio Research manage great results from relatively small output transformers, the smaller black blocks either side of the larger central mains transformer. Quite how they do this I do not know, but you can use feedback, high-quality core material and tertiary windings to get "small stacks" whilst maintaining high performance – and this they do. The result is full power and low distortion at bass frequencies, an area where valve amplifiers traditionally struggle. The use of feedback also provides useful loudspeaker damping to lessen soggy bass, although all this does depend on the loudspeaker used and its own level of acoustic damping. I find. Rear-mounted, gold-plated loudspeaker terminals for 8 Ohm and 4 Ohm loudspeakers are fitted and they accept bare wires, spade plugs or 4mm banana plugs.

SOUND QUALITY

The Audio Research came run in but we put 40 hours on it in any case, and gave it a 30 minute warm up before listening, as with all valve amps. They were used with Quadral's superb Chromium Style 8 loudspeakers featured in this issue,



KT150 power output valves have very large anodes (grey) to dissipate heat, allowing them to handle high power.

and Tannoy Westminster Royal GR loudspeakers, through Black Rhodium cables. The source was an Oppo BDP-105D Blu-ray with its ESS Sabre32 DAC and internal volume control, connected via balanced cables. I have stopped using CD altogether now, becoming too aware of distortion, instead using high-resolution files played by an Astell&Kern AK120 hooked up to the BDP-105D through an optical digital cable. Even CD rips sound better than the original disc when played by this system, likely due to re-clocking in the transcription process.

Classic Rock in the form of Fleetwood Mac's 'Go Your Own Way' (24/96) teased out essential elements of the Reference 75 and, in particular, its ability to make the timbral qualities of instruments more obvious than that of most amplifiers: Mick Fleetwood's kick-drum suddenly had a skin being beaten by a pedal, instead of existing as an amorphous background thud, as I so commonly hear it. The Reference SE injected a sense of character to instruments, removing the bleached quality common to so many of today's transistor amplifiers. It's a fast amplifier too, catching the speed



A 6H30 driver double triode, well known for ruggedness combined with good sound. It has anti-microphony damping rings on here.

Design, we once had an entire batch of KT88s from East Europe that failed prematurely, causing a wave of complaints and returns. To avoid such a thing, so preserving their



The rear panel carries balanced XLR inputs at top, but not unbalanced phono socket inputs, so only pre-amplifiers with balanced outputs can be used – but most have them these days. Note the big power input socket; this is not an IEC design, but a unique U.S. socket. Gold plated loudspeaker terminal posts accept spades, bare cable or 4mm plugs. Power matching is to 8 Ohm and 4 Ohm loudspeakers.

of Fleetwood and his inflections. Similarly, the slow kettle drum strikes in 'Jupiter', from Holst's 'Planets', had delicious dynamic presence and horns called out with a shiny rasp to them.

The Reference 75 SE was airy and spacious in its portrayal of the soundstage, a property supported well by the ribbon tweeter of Quadral's loudspeakers, making clear the position of instruments within the London Symphony Orchestra, playing 'Jupiter'.

Audio Research don't do 'soft and warm', as I mentioned earlier,

and this power amplifier has a light open quality about it; even the 'dark' recordings of Diana Krall seemed to have a window opened onto them, letting light into the shadows. Bass was relatively strong through our giant Westminsters but milder through the Quadral's, although still fast and punchy. - Queen's 'Radio GaGa' (24/88.2) opening synth drum sequence lighting up our listening room with a sense of tightly controlled power, sharply timed as you'd hope from a machine. Freddie Mercury hung above the Quadral Chromium Style 8s caught in a crisp,

clear light; the Reference 75 SE isn't bright but it has a sparkling clarity.

CONCLUSION

The new Audio Research 75 SE is a spectacular looking and sounding amplifier - one not to be missed. With big illuminated power meters and gorgeously finished casework it is a statement in the home.

Delivering fabulous sound quality from a new-design KT150 valves – or tubes should I say in this case – it's a power amplifier that demonstrates just how good it gets when a tube amplifier is so well honed.

MEASURED PERFORMANCE

The Reference 75 delivered 78 Watts into 8 Ohms and 72 Watts into 4 Ohms from its 4 Ohm tap (1% thd), so its rated output of 75 Watts is accurate, if not conservative. It uses KT150 valves in push-pull running with fixed bias to achieve this.

Distortion was low across the audio band, as valve amps go that is. At 1kHz distortion hovered around 0.1% below 5 Watts output, rising progressively to 0.4% (-1dB below full rated output), comprising low order harmonics – mainly second and third.

In spite of compact output transformers the Reference 75 produced little bass distortion, much like other Audio Research amps, but unlike many other valve amps where core magnetic hysteresis produces third harmonic and eventually magnetic saturation that limits bass power. In contrast to this the Reference 75 delivered full bass power with ease and, at low powers, very little distortion.

As power rose, so did distortion, reaching 1% at full power – still a

reasonable figure as valve amps go. Since at 5 Watts and below bass distortion measured less than 0.2% the amp will sound clean in practice. High frequency distortion was under good control also, again measuring 0.2% or less below 5 Watts, and 1% at full power, mostly second harmonic – see our analysis at 1 Watt output, 10kHz.

Frequency response rolled down slowly above 20kHz to a -1dB point at 35kHz, from both 8 Ohm and 4 Ohm outputs, into 8 and 4 Ohm loads respectively of course.

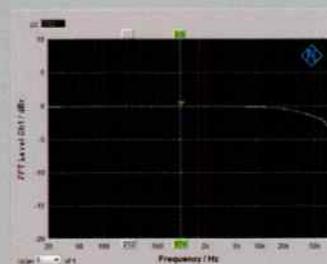
An unusual discrete, balanced transistor input stage ensures low noise of -105dB; there is no unbalanced phono input and therefore no phase splitter stage in this amplifier – it is all-balanced.

The Audio Research Reference 75 power amplifier measured well in all areas, in keeping with the company's standards. **NK**

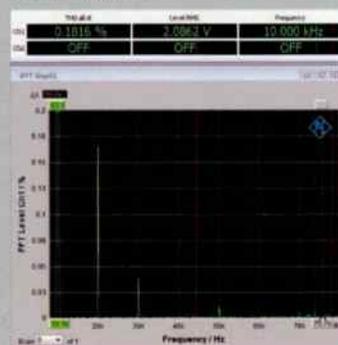
Power	75 Watts
Frequency response	4Hz- 30kHz
Separation	88dB
Noise	-105dB

Distortion	0.1%
Sensitivity	1.4V
Damping factor	4

FREQUENCY RESPONSE



DISTORTION



**AUDIO RESEARCH
REFERENCE 75 SE
£8698**



OUTSTANDING - amongst the best.

VERDICT

A big power amplifier with massive sound, yet clean and fast.

FOR

- appearance
- standard of finish
- sound
- power meters

AGAINST

- very big
- no unbalanced inputs

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Stephen Dawson, Audio Esoterica, Australia

"This Sigma system is a huge achievement which everyone must absolutely discover."

Adrien Rouah, Québec Audio & Video, Canada

Great Eight!

Quadral's new Chromium Style 8 floorstander marries German engineering excellence to a captivating sound – for just £1750. Jon Myles says it's a true hi-fi bargain.

Germany's Quadral may not have quite the same brand recognition here in the UK as the likes of Tannoy, KEF and Wharfedale - but over in mainland Europe the company has an enviable reputation for producing exceptionally well-engineered and clean-sounding loudspeakers that can go head-to-head with the best at their respective price points.

For evidence, look no further than the Rhodium 400 I reviewed in the December 2015 edition of Hi-Fi World. There was a compact floorstander costing just £895 but



with a sophisticated sonic signature out of all proportion to its size. Where some similarly priced rivals have artificially enhanced bass or treble, the Rhodium was by contrast supremely smooth and even - and all the better for it. With a cabinet measuring just 135mm x 828mm X 232mm (W/H/D) and a front-firing reflex port these 'speakers were ideal for use in small to medium-sized rooms - especially if domestic arrangements dictate they must be positioned close to a rear wall.

But the Quadral catalogue is extensive and one step up from the Rhodium series of 'speakers comes the larger Chromium range - with bigger cabinets and drive units, plus - in the case of the Chromium Style 8 on review here - a ribbon tweeter for extended high frequencies.

Measuring 100.6cm x 20.85cm x 34.35cm (H/W/D), this is a true three-way loudspeaker, bass duties being handled by a pair of 180mm titanium-coated drivers.

"with the likes of the free jazz of 'Interstellar Space', Rashied Ali's cymbal work had a glorious shimmering quality while John Coltrane's tenor saxophone had just the right metallic edge"

They work with a 155mm midrange unit of similar construction and the aforementioned aluminium ribbon tweeter - said to extend upward to 55kHz.

The cabinet itself has a deep gloss finish (black or white available) with gently curved side walls to minimise internal standing waves; a discrete Quadral logo is etched on top. Around at the back is a single pair of 'speaker binding posts (so no bi-wiring), above which sits the rear-firing reflex port.

The cabinet sits on an integral base plate, decoupled by spacers to provide a rigid foundation.

All in all, this is an impressive-looking package with a feeling of solidity that fully justifies its £1750 price tag.

SOUND QUALITY

Straight from the off the Chromium 8s impressed me with their coherence and seamlessly integrated soundstage. These aren't 'speakers that seek to wow the listener with pumped-up bass or razor sharp



Quadral's ribbon tweeter has been well integrated with the midrange driver - giving the loudspeaker an extremely accurate response.

treble but instead major on a natural, unforced rendition of the music.

Listening to the Buena Vista Social Club's Ibrahim Ferrer via a Creek Evolution 100A integrated amplifier coupled with Tellurium Q's open-sounding Silver Diamond cables, the Cuban maestro's vocals were rich and sonorous, whilst the band's instruments were separated cleanly both beside and behind him.

Quadral's ribbon tweeter was particularly impressive, having a pin-sharp tonality that never veered into harshness. So with the likes of the free jazz of 'Interstellar Space', Rashied Ali's cymbal work had a

glorious shimmering quality while John Coltrane's tenor saxophone had just the right metallic edge.

Lower down, the twin metal woofers mean bass was tight and fast but still had a real punch when the music demanded it. Through the Quadrals the dissonant low-frequency rumble on James Blake's 'Limit To Your Love' had power to it. It didn't hit me in the chest in the way a 12-inch drive unit would but the Chromium 8s certainly let you know there's some seriously heavy bass here.

I've heard bigger floorstanders struggle to handle the dynamics of this track - either failing to convey the scale of the low-end or making it sound flabby and ill-defined. The Quadrals, by contrast, gave bass just the right weight, while never allowing it to dominate the piano - nor Blake's plaintive vocals higher up the scale. It was all of a whole and a visceral experience.

It's a quality that extends right through the sonic spectrum, the Chromium 8s having a natural, even tonal balance that didn't over-emphasise any particular frequency to the detriment of others.

As such they are adept at revealing the differences between partnering equipment. Using the Creek as a pre-amp with a Naim NAP 200 power amplifier immediately showed the increased drive and tempo the latter is famous for - while switching in a pair of Quad's excellent QMP monoblocks added a degree of smooth sophistication to the sound.

Importantly, the Chromium Style 8s are also easy to drive. Both the Naim and Creek could push them extremely loud without any undue strain and valve amplifiers of around 20 Watts would probably be a good match.

Whatever you choose the Quadrals will let you know exactly what's being delivered thanks to their eminently accurate nature.

That's because, in essence, the Quadrals are imposing very little of their own character on the sound but simply allowing the music to flow through in an uninhibited manner. Which means that if your tastes tend towards acoustic jazz then the Quadrals will let you know all about the tone and pacing of the instruments being played while they'll be equally happy pounding out the likes of Deep Purple's 'Smoke On the Water', relaying the power of a full-



The large diameter rear reflex port means bass response is strong but also well-controlled so it doesn't over-dominate a room.

scale Mahler orchestral crescendo or playing just about anything in-between.

CONCLUSION

The Quadral Chromium 8s are a handsome-looking floorstander with a quality of performance that belies their £1750 asking price. They are unerringly musical with a natural, balanced sound that allies detail to a punchy bass and rich treble. I've heard loudspeakers costing twice as much which don't have the all-round quality of the Quadral - which makes them something of a bargain!

NOEL SAYS -

We were very impressed by the Style 8s. Reviewer Martin Pipe has now inherited our Quadral Wotan Vllls and he is very impressed with their smooth, yet accurate presentation, graced by wonderful treble from a ribbon tweeter – a perfect reviewers tool.

The Style 8s on review here offer a similar experience. They are supremely neutral in their sound and Quadral have, if anything, slightly lowered output from the tweeter so it hardly makes itself known. Yet it does. I used the Style 8s a lot over months of listening, with a wide variety of amplifiers – and always I could detect the razor sharp delineation of highs that ribbons bring; cymbals positively shimmered in a lovely clear light, each tap of stick against brass picked out with military precision. No matter how good domes can seem, they never quite match a good ribbon.

Now, every loudspeaker engineer is, or should be saying in his head "ah, but what about integration?", because ribbons don't go low enough to well match cone drive units, a reason for their avoidance (as well as cost!). For this Quadral use a titanium coated midrange unit that reaches up smoothly to meet the tweeter, and our impedance curve shows they crossover quite low down, at around 3kHz, where wavelengths are long, so easing potential problems. As a result the Style 8 is consistent in its forward sound over a good range of ear height. It is well integrated.

By engineering in good integration with no midrange crossover dip Quadral have ensured the Style 8 is insightful and delivers strong detail, yet by keeping tweeter output in check they have also ensured these 'speakers are smoothies over the long term. I was consistently struck by their sophistication in this respect; at no time did I feel one part of the audio spectrum was out of alignment with another part. Nor did I hear any zing or rasp from the drivers that in themselves have well damped cones of neutral character.

Down in the bass department, the Style 8s go low, very low, covering subsonics right down to 20Hz. And they are well damped, so play a bass tune. They don't have the slam of bigger cones; a pair of giant Tannoy Westminster GRs reminded us, with their 15in Dual-Concentrics, but then you can get Style 8s into your lounge!

What this loudspeaker has is conspicuous balance and sophistication, allied to superb imaging across a wide soundstage – I loved their sound. Audition before all else, I suggest.

MEASURED PERFORMANCE

The Quadral Chromium Style 8 has a smooth and even frequency response, our analysis shows. The lack of 'ups and downs' – perturbations – means there are few local resonances in the cone, or the cabinet behind, to colour the sound. The ribbon tweeter has been integrated in perfectly; most designers choose to give a ribbon slight prominence to show off its properties, but Quadral have avoided this completely, making the Style 8 superbly accurate in its high frequency portrayal.

a similar fashion there's no bass emphasis, low frequencies running down to 45Hz from frontal output, below which the rear port takes over (red trace) to extend output smoothly down to 20Hz, our analysis shows. Sound pressure at the port was the same as that of the cones at 80Hz, where it is commonly +6dB higher, so port output isn't especially strong in SPL terms, but it's a large diameter port so sound power was still strong. Overall then, the Chromium Style 8 produces deep bass and subsonics, at a well judged level to not over-drive a room into boom.

Sensitivity was very high, measuring 89dB sound pressure level from one nominal Watt (2.8V) of input, so the speaker goes very loud from little power and 60 Watts is more than enough; 20 Watts would suffice.

Impedance measured 5.5 Ohms overall and a 5 Ohm dcr bass unit is used, although our impedance curve dips to 3 Ohms. The Style 8 is substantially resistive as a load, but it is a low load all the same and will draw current from an amplifier, magnifying amplifier differences.

The Chromium Style 8 is both smooth and accurate under measurement – and likely to sound well balanced and refined in use as a result.

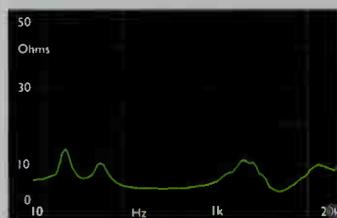
NK

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



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£1750



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- deep, clean bass
- extended treble

AGAINST
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- Jon Myles, **HiFi World 2015**

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HI-FI WORLD



Super Stratos

A pre-amp, DAC, headphone amp, MM/MC phonostage and analogue-to-digital recorder – ADL's new Stratos seems to have it all. Noel Keywood discovers whether the reality matches the promise.

The ADL Stratos preamplifier I'm reviewing here has an analogue-to-digital converter (ADC) on-board, to turn analogue from LP or radio, or even old tapes perhaps, to modern high-resolution digital in 24bit, 192kHz resolution. Few preamps have this ability, which is perhaps surprising considering how popular LP is becoming in its on-going revival. And to make a good job of the process, ADL of Japan use a CS5340 chip, for which Cirrus Logic claim a high 101dB dynamic range.

All of which gets Stratos off to a good start. There's another stand-out feature, an ESS Sabre32 9018 digital-to-analogue converter (DAC) chip, to turn digital from any source file, including DSD, back to analogue. Our measurements and listening

tests show the Sabre32 series deliver outstanding results – and ADL make this point in their literature too. All of which is to suggest the Stratos will add a mountain of ability to any hi-fi system and deliver fine sound quality too. Which it did – and didn't.

The Stratos is compact and I was surprised to see ADL suggest it will be "the heart and soul of nearly any desktop system". What – with a turntable connected up? That's a big desktop.

Although the Stratos will plug into a modern desktop computer, Mac or PC, via USB, and its small size of 215mm wide, 180mm deep and 64mm high allow it to fit into a small space, it is just as well suited to a more ambitious set-up where the computer is an adjunct to the hi-fi, rather than vice-versa.

What I think ADL want potential buyers to understand here is that the Stratos delivers top-quality digital audio from computer to headphones via its ESS Sabre32 DAC. But I'm going to look at it from a hi-fi perspective and, after a two-hour download of Mac's latest operating system El Capitan, what it's like to make a digital recording from Stratos to Mac. I also used a Mac running earlier Yosemite I must add, because it is pertinent to my experience – see Sound Quality.

In a hi-fi the ADL can be used as a preamplifier, feeding a stereo power amplifier or mono-block amplifiers via either conventional unbalanced cables or balanced XLR cables, since both output types are fitted.

A gain of x3 is absolutely standard in this role, so no





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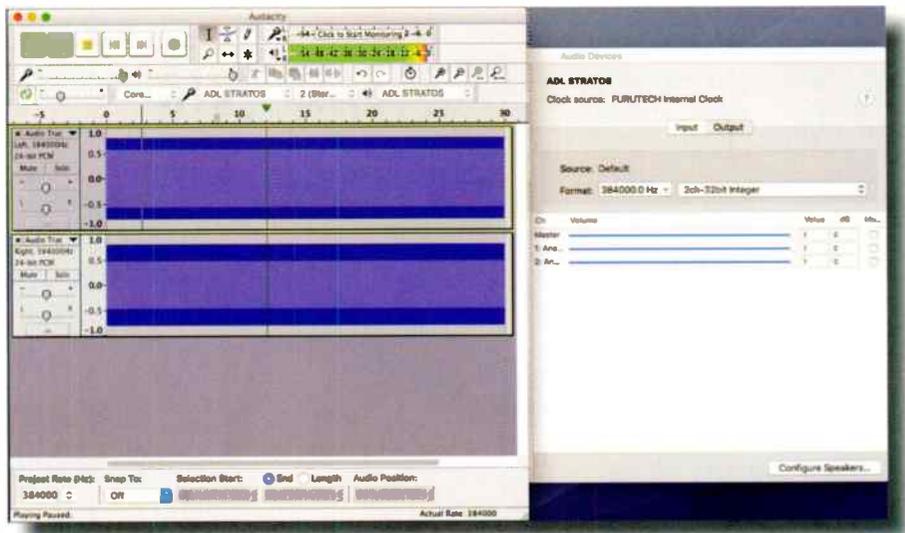
drawbacks here, but the presence of just one analogue Line input in addition to one Phono (turntable) input may be a bit limiting for some potential users.

But these days preamps tend to need digital inputs more than analogue inputs and here there are electrical and optical S/PDIF, as well as USB, so the Stratos is hardly lacking.

If, say, a CD player is hooked up to the electrical S/PDIF digital input, a portable to the optical S/PDIF digital input, a steam VHF/FM radio like a Leak Troughline to the Line input, and one of the brand new Direct Drive turntables recently announced by Technics (boy, can you tell there's a vinyl revival under way!) to Phono, you will then have a full house, except for computer. This is likely to be a laptop connected up to the USB B, that is bi-directional I will note.

I hope this gives you some idea of what the Stratos can do and how you can use it within the context of a normal hi-fi.

Now I'll get to 'desktop' and perhaps the reason ADL prefer to talk in such terms. On the front panel lies a rarely encountered socket, a four pin XLR acting as a balanced headphone output. This is rare: I've not seen such a configuration before. Nor am I certain you'll find a four pin Neutrik plug – or any other make – to fit it, in your local corner shop. Maplin have it on their website at £3.59 but I don't recall seeing such an item at my local Maplin in Bayswater, London, where I'm constantly ferreting for bits. You



In front, at left, is the Audacity recording window, with Stratos seen as both input and output. This is recent Audacity 2.0.1.

At right rear, is the Audio/Midi settings window of El Capitan, Mac's latest iteration of OS-X, showing clock lock against the Stratos.

at this point, it's simple to explain. The headphone market is, these days, massive: headphone quality is now a big deal and in here lies the idea of connecting up fully balanced, for better sound quality. Technically, this isn't difficult, it just means connecting up each ear piece separately, with no shared signal return via the screen. You can't do this with a three pole 3.5mm stereo jack socket; you can do it with a four pole but then a three pole plug will short out one channel if accidentally inserted – poof! The output amps of FiiO's X-1 I review in this issue are not, for example, short

Are you likely to ever use fully balanced headphones? If your 'phones have independent connectors, usually 2.5mm mono jack plugs, to each ear piece then you, or a dealer, can re-wire for better sound. I've done it in the past and the improvement was small, but not with the Stratos: balanced offered a different sound altogether.

Unfortunately, the Stratos doesn't have an on-board power supply, but a wall wart that accepts 100V-240V and delivers 15V at 800mA. It does have 'Furutech' on a label so you can – ultimately – identify it amongst all



At right sit unbalanced phono socket and balanced XLR chassis plug outputs. There are analogue Phono and Line inputs at centre, plus a small MM/MC slide switch and earth terminal. At left lie digital inputs and outputs.

can of course order such an item on-line. At least this solution to the difficulty of connecting up balanced headphones is more realistic than Astell&Kern's use of a 2.5mm four pole jack plug.

If you're scratching your head

circuit protected, and probably most are not. So ADL use a four pole XLR socket to avoid such dangers.

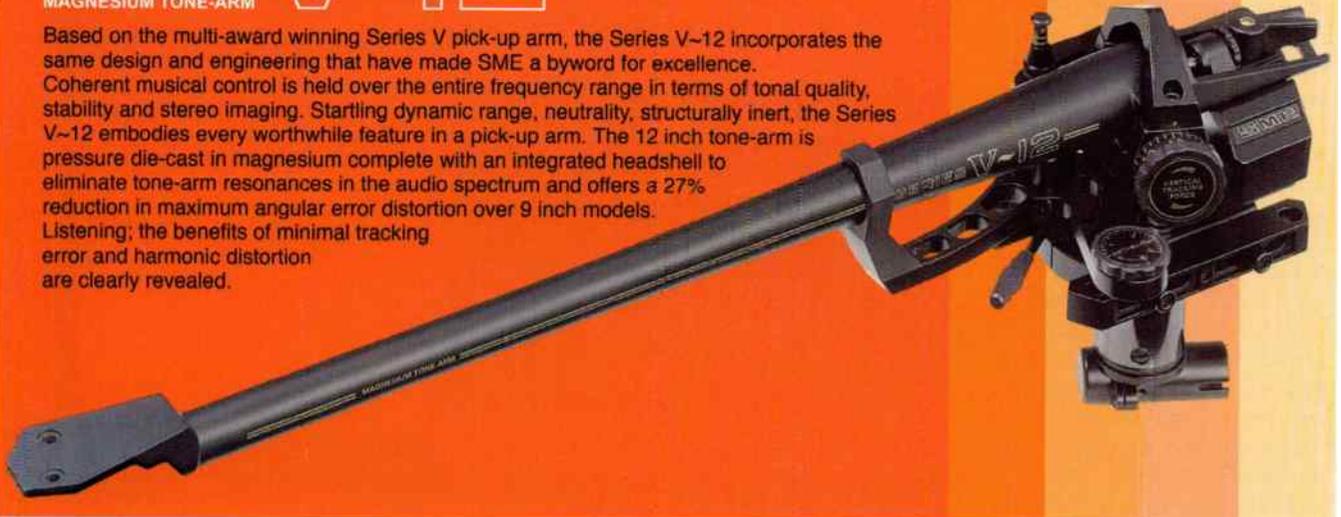
A plus point here is that XLR plugs have enough room inside for twin cables, where 2.5mm/3.5mm jack plugs have no room at all.

the other wall warts but the label is tiny and not visible when plugged in – an inconvenience.

Switch on was silent and accompanied by the bright red numerals of the LED volume level readout spinning upward from zero

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to the setting prior to shut down. Switch off wasn't silent, putting some small cracks through the 'speakers, if the power amps were on.

By default, the shiny, turned aluminium knob at right, connected to a spin-wheel encoder, controls volume, made clear by a bright two-digit 00-99 LED readout of the level setting.

Pressing and holding it in for a few seconds changes function to an input selector, the active input (of 5) being identified by a bright blue LED above a small white legend. Just above sit a row of blue LEDs showing sample rate of an incoming digital signal. And just to the right of the volume level display are three green LEDs that light when DSD (Direct Stream Digital) is being played through the Sabre32 DAC, showing normal, double and quad rate DSD. You must download DSD encoded files to use this – and they remain rare. However, DSD does sound more spacious and analogue-like than PCM, so it's an interesting ability.

The large 1/4in headphone jack on the front panel delivers a massive 7V output before overload, where 3V is more than enough for shattering volume, so care must be taken with volume.

More surprisingly, the balanced headphone output gave 15V maximum, which is very high for most 'phones, although seen in power terms it met ADL's claim of delivering 350mW into 600 Ohms and, they say, 2.2 Watts into 56 Ohms. Headphone amplifiers get ever more extreme and the balanced output used in Stratos seems to be up with the most powerful.

I looked closely at, measured and used the Phono stage and ADC. There is a lot of gain for MM (47dB) from input to analogue output, and ten times more for MC (67dB). When recording digitally, peak digital level (0dB FS) is reached at 20mV from an MM cartridge and 2mV from an MC cartridge, both very low values. But I was to discover worse.

RECORDING LP

If you want to record LP the Stratos will do it in full 24/192 PCM quality (it does not record in DSD). Whilst full 24/192 sounds good spec. wise, a high 192kHz sample rate doubles file size over 96kHz for little change in sound quality I find.

ADCs are still a tad noisy and their dynamic range – typically 96dB – is the real issue, not sample rate.

Whilst the CS5340 ADC in the Stratos has 101dB dynamic range Cirrus Logic have a 'flagship', as they call it, the CS5381 that achieves 120dB dynamic range, giving some idea of what is possible. So recording in 24/96 is a sensible practical choice with the CS5340, which you can do by setting Mac to 96kHz sample rate or down-sampling the 24/192 file with XLD (Mac) or dBpoweramp (PC).

You need to connect the USB B 'printer' socket of the Stratos to a computer's USB A socket, whereupon it should be recognised – see the screen shot of Stratos connected to a Mac running El Capitan (OS-X 10.11.2).

You also need to use recording software to start and stop the record process, set levels etc and a popular choice is free Audacity for Mac and PC. An alternative is Garage Band for Mac that comes packaged with El Capitan, but this is less suitable.

I'll not say Audacity is simple, but most people master it – and it does



A small, light remote control is supplied too, with input selection volume and mute functions.

a great job; the underlying engine is powerful.

El Capitan and the latest Audacity 2.1 will upsample to 384kHz if you so wish but there's no point in doing this. It just shows where modern digital has got to in terms of data rate. I checked for compatibility with El Capitan on one computer I used Yosemite to make recordings on another, spinning LP on a Timestep

Evo Direct Drive turntable fitted with an SME309 arm.

SOUND QUALITY

The Stratos will fit in just about anywhere. It acts as a perfectly conventional pre-amp, so was fine driving the Acoustic Research Reference 75 SE power amplifier I review in this issue, as well as Quad QMP monoblock power amplifiers.

Of the two, the slightly fuller nature of the Quads best suited, because the Stratos is on the lean but clean side of the fence. It didn't have bass heft, so much as a concise presentation when used as a preamp and I suspect the rather measly wall-wart power supply accounts for this. All the same, I still felt the Stratos, for what it costs and all it does, gave fine results sonically, but for one wrinkle that took me by surprise.

The Phono stage sounded clean enough playing LP direct through the system, if a little light in timbre and with slightly sharpened ticks and pops; surface noise with some LPs became more obvious and the measured treble peak in frequency response (see Measured Performance) was doubtless to blame.

However, so long as I played good condition, high-quality LPs all seemed fine enough. It was only when I put on The Scissor Sisters 'Laura' that I became aware of some harshness, checks with another (Icon Audio) phono stage showing the treble peak was emphasising distortion from the LP itself. This was a little unsettling.

The situation deteriorated when recording this track. With the overload warning light set at 0dB remaining dark, I recorded 'Laura' and on playback heard the ripping distortion of what I could tell was digital overload. Switching the overload indicator to +6dB the red LED overload warning light came on continually when using our high-ish output Ortofon Cadenza Bronze MC cartridge (£1.3k).

Switching to MM with its higher overload ceiling stopped this but the sound wasn't wonderful by any means.

Changing SME309 headshells to run our Ortofon 2M Black MM cartridge (£400), one channel then fell silent: the tiny rear slide switch had failed on one channel in the MM position.

Switching back to MC to get both channels working again, I installed a very low output Ortofon A-95 MC cartridge (£3k) and all

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then worked properly. There was no overload and recordings were clean, using Audacity 2.0.5 with Yosemite on a MacBook Pro. Finally, I was in business making recordings, but I still was not impressed by the final result. Recordings had lost LP's silky smoothness, instead exhibiting a lighter quality to the bass, some upper-mid harshness and at times sharp ticks and pops.

Spinning smooth, clean-sounding LPs like Mark Knopfler's 'Kill To Get Crimson', recordings made through the Stratos passed muster, but perspectives were flattened a little and the recording sounded 'digital'. Where distortion was present on LP the ADL emphasised it, making the recording more obviously harsh than the original LP played direct.

In all then, the ADL proved to a bit of a mixed bag, sounding fine in itself until the Phono stage was used, then problems arose. Further tests showed that the Stratos overloads prematurely in the record chain, at just 0.7mV in with MC selected – below 0dB and far too low; no wonder I heard ripping distortion. ADL have a problem here. The RIAA needs to be more accurate – not a difficult thing to do – and overload ceilings raised.

But there's more to the Stratos than preamplifier, phono stage and analogue recording device. Coming back to the "desktop" theme I ran it from an Astell&Kern AK120 digital audio player, connected through a digital optical cable, and used it as a headphone amplifier – its four pin XLR headphone output beckoned!

I'm glad it did. Wiring up separate earpiece leads into Oppo PM-1 headphones I ran them from this balanced headphone output – and was intrigued and impressed. There was an almost total difference in presentation between the balanced XLR output and the unbalanced 1/4in jack, where in the past I have heard little difference. Balanced (XLR) pulled everything apart, introducing almost complete separation between instruments, vocals and what have you; unbalanced – meaning (1/4in jack socket) – bundled the performance back up, even though extreme left and right images remained discrete.

Balanced working sounded technically superior by a country mile, but its naked clarity was almost unsettling. I found unbalanced familiar and comforting; balanced was challenging!

There was no difference in tonal,

"an innovative product that offers a challenge to all others by straddling so many areas so well"

timbral or timing qualities – and all else, I will note. Only that balanced working pulls out all the separate elements of a performance in rude fashion.

By offering both ways of driving headphones, ADL's Stratos sets itself apart from other headphone amplifiers – and here it excels. Its balanced XLR headphone output is innovative: I was pulled into its way of doing things.

CONCLUSION

I enjoyed using Stratos. It does just about everything, as ADL claim – and most of it, it does very well. But ADL have to look again at the phono stage, ADC and overload issues; to suffer the ripping distortion of digital overload isn't necessary or

acceptable.

I still felt Stratos is an innovative product that offers a challenge to all others by straddling so many areas so well. It is difficult to categorise a product that does so much so well and is priced down so hard, yet has flaws – even if they may go unnoticed, depending upon how the product is used.

The most appropriate description in these circumstances is "excellent, extremely capable" and that confers a four globe rating. Yet at the same time I can tell the Stratos is a more ambitious product design than most out there, so I still came away impressed, if a little bit disappointed that it should have some technically obvious deficiencies. But ADL will surely be looking into this.

MEASURED PERFORMANCE

Dynamic range of the Stratos DAC section measured a high 116dB with 24bit digital, above the 103dB of CD but still behind many DACs now achieving 120dB+. Both electrical and optical inputs worked to 192kHz sample rate, giving an analogue bandwidth of 55kHz.

The rear analogue phono socket outputs gave 5.7V and the XLRs double at 11.4V. The front panel 1/4in

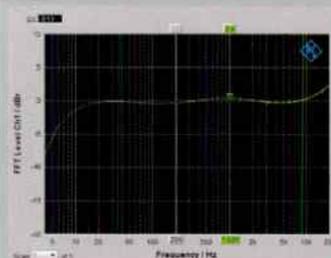
jack headphone socket delivered 7V, massively high for headphones since most need 2V at most. The balanced 4-pin XLR gave 15V!

RIAA equalisation of the phono stage was inaccurate – see our analysis – a 2dB lift in treble above 10kHz will add sharpness to the sound. A warp filter rolls off gain below 20Hz.

The 0dB overload light correlated perfectly with digital full scale (1FS) and overload occurred at 20mV MM and 2mV MC when in record pause. However, the system overloaded well below 0dB when recording, at 0.7mV measurement showed, with MC selected, with Yosemite and El Capitan. Overload was sudden and severe, producing gross waveform deformation, hence ripping distortion when recording from an Ortofon Cadenza Bronze MC cartridge.

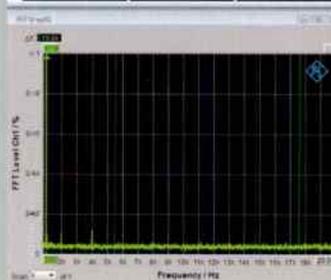
The Stratos measured well in all areas except its phono stage that needs attention all round. **NK**

FREQUENCY RESPONSE



IMPEDANCE

THD	0.0414 %	Level: 0dB	Frequency
IN	OFF	11.429 mV	997.00 Hz
OUT	OFF	OFF	OFF



Frequency response (-1dB)

	4Hz-55kHz
Distortion (%)	24bit
0dB	0.0007
-60dB	0.04
Separation (1kHz)	112dB
Noise (IEC A)	-114dB
Dynamic range	116dB
Output (Phono/XLR)	5.7 / 11.4V
Headphone output (Jack/XLR)	7/15V

FURUTECH ADL STRATOS £995



EXCELLENT - extremely capable.

VERDICT

A preamplifier that does it all – and with unique ability driving headphones. But it has problems.

FOR

- multi-functional
- small
- inexpensive

AGAINST

- external power supply
- phono overload distortion
- awkward input selection

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Passive delight



Lucy Gastall and Harry O'Sullivan – the people behind The Bespoke Audio Company – taking a rare breather from their work.

The Sussex settlement of Hastings has many claims to fame. One that immediately springs to mind is a certain battle way back in 1066 which proved rather pivotal to English history.

It's also home to the largest beach-based fishing fleet in Europe, has Britain's steepest funicular railway and was the place where John Logie Baird first conceived the then extraordinary idea of television (and was probably told that it would never catch on!).

But perhaps rather less well known is that the town and its surrounding area is something of a hot-bed of the British hi-fi industry. Within a few short miles lay the likes of Harbeth, Alacrity Audio, SME and now, right in the heart of the town, The Bespoke Audio Company – which has been quietly forging a significant name for itself with its hand-crafted passive pre-amplifier.

While the company may be fairly new (it was launched in 2013) its

founders Harry O'Sullivan and Lucy Gastall have a wealth of experience in the hi-fi industry having first worked together at Music First Audio in East Sussex producing that company's acclaimed hand-wound

Jon Myles heads to Hastings to meet the duo behind The Bespoke Audio Company and its luxury passive pre-amplifier.

transformer pre-amps.

And while both retain a healthy respect for Music First's products, when they decided to strike out together with the Bespoke Audio Company they looked to introduce something different to the hi-fi market. If you're wondering exactly what, then the clue's in the name – this is a bespoke product in every respect, Harry and Lucy wanting to bring the same level of customer service, attention to detail and individuality you would get when buying a high-end product such as a Bell & Ross watch or a Bentley Continental car.

As such, Harry and Lucy don't just build a standard preamplifier, they construct it exactly to the buyer's specifications. So if you want a particular finish, they'll provide it for you. How about a Perspex case to show off the inner workings? No problem. Fancy your volume dial reading Loud, Louder, Loudest? Yes, they can do that too (or any other



Lucy Gastall at work winding one of the Bespoke Audio Company's custom-built transformers.



Each pre-amplifier is hand-built - from the winding of the transformers to the assembly of the components. Buyers can also specify the exact specification of their unit.

combination of words you fancy).

In fact, nothing gets built until every design detail has been agreed with the buyer – including the number of inputs, XLR or RCA outs or extras such as coloured LEDs on the source selection/volume knobs.

Not surprisingly, this level of service takes time and money – with prices starting at £9000 and a build time of around five weeks. That includes Lucy hand-winding the transformers in-house and an extensive listening and testing session before any product is allowed to leave the premises.

During that time, though, the customer is kept constantly updated on the progress of the build of their product through a weekly e-mail including photographs.

"It's all part of the customer service" explains Harry. "This is a luxury product and if you are

spending that sort of money there should be a real pride of ownership. We wanted to make sure that we were providing a level of quality and service that reflected that".

One look at the finished product leaves you in no doubt that the pair have achieved that aim. Measuring 4.5 inches x 12 inches x 13.5 inches (H/W/D) the pre-amp weighs a hefty 31lbs and is superbly finished with not a stray join anywhere to be seen.

But then, the pair went to extraordinary lengths to source the right suppliers for the casework and anodised parts – driving as far afield as Wales, Mansfield and 100 miles around the M25 in Lucy's treasured 1959 Austin A35 classic car before they eventually found the best one for the former who, in the end, happened to be situated just two miles down the road!

The bobbins for the transformers

are also custom-made for them while some 50 metres of cotton-coated oxygen-free copper wire is used inside each pre-amplifier for the output taps because, as they say, "it simply sounds better". Other features include the transformers being potted in beeswax for long-term reliability, an individually-printed owner's manual and, to cap it all, a lifetime guarantee.

And listening to The Bespoke Audio Company's pre-amplifier in the company's listening room (carefully constructed by Lucy herself) you can hear exactly what all this adds up to.

In short, this pre-amplifier is remarkably open, revealing and uncoloured – simply allowing music to flow through in a completely unadorned manner.

Any fears that you may lose the drive and verve that an active pre-

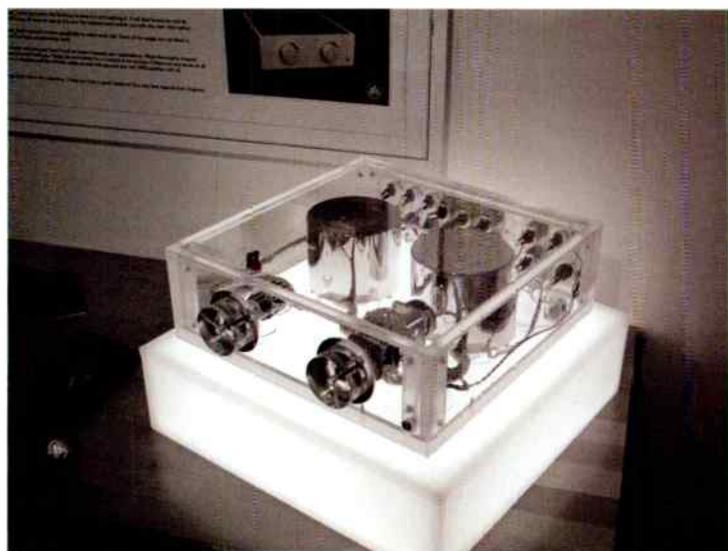


Each component undergoes a thorough test before being certified to be used in The Bespoke Audio Company's products.

amp can offer is quickly swept away by the absence of grain and overall tonal quality on offer. It really is as though a veil has been lifted from the music.

Add in the build quality and overall customer service being offered by The Bespoke Audio Company and this is clearly one very special product indeed. Bespoke by name and definitely bespoke by nature. Harry and Lucy may just be on to something very special here.

* Don't miss the April 2016 issue of Hi-Fi World for our comprehensive review and measurements of the Bespoke Audio pre-amplifier. For more information on The Bespoke Audio Company go to www.thebespokeaudiocompany.com.



Buyers can ask for any finish they desire - including a Perspex case which shows off exactly how much attention has gone into the interior of each unit. Each unit also comes with a lifetime guarantee.



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"The Audiolab 8300A utilises current thinking in electronic technology and design to create a thoroughly innovative product.

Looks-wise it's classic Audiolab with a slim case – 80mm x 444mm x 330mm (H/W/D) and a clean, uncluttered fascia featuring three

rotary controls for volume, source and mode selection with a large, easy-to-read display in the centre.

Inside the 8300A is a dual-mono arrangement, powered by a 300 VA toroidal transformer with 60,000 uF of reservoir capacitance, giving a claimed 75 Watts per channel output into 8 Ohms (see Measured Performance for our comprehensive test figures).

On the rear there are five line-level inputs, as well as balanced XLR plus an MM/MC phono with adjustable gain settings. The pre and power sections can also be separated to allow upgrades such as adding a

better preamp or more muscular power amplifier. There's also two sets of 'speaker posts to make bi-wiring easier.

Build quality is up there with the best at this price with a blasted aluminium finish (silver or black) and CNC machined control dials which feel sturdy and have a nice, smooth action.

There's no DAC option, though, presumably because Audiolab would prefer you to use its matching 8300CD (32bit/384kHz and DSD capable) player for this purpose."

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QUESTIONS

[1] What is its claimed power?

- [a] 15 Horse Power
- [b] 220 Volts
- [c] 500 mW
- [d] 75 Watts

[2] How many line level inputs exist?

- [a] two
- [b] five
- [c] eight
- [d] none

[3] The phono stage is –

- [a] MM/MC
- [b] MM only
- [c] Ceramic
- [d] Optical

[4] The aluminium finish is –

- [a] satin
- [b] drab
- [c] blasted
- [d] rough

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Letter of the Month

BBC RADIO 3 'HD'

The recent letters in the January 2016 *Hi-Fi World* (and similar correspondence in other hi-fi magazines) show just how many dedicated radio listeners are confused and really quite aggrieved that their Internet radio has either stopped working (like the well regarded Logitech Squeezebox) or, at best, now delivers a sound that is little better than DAB.

One can understand why the BBC did what they did: their internet operation needed streamlining and the vast majority of listeners (so they believe) care much more about accessibility than ultimate sound quality. But why is the still available '320 kbs AAC' stream so difficult to find and enjoy?

The default setting on BBC iPlayer is 128 or 320 kbs MP3. Some manufacturers' network players (Naim,

for example) can now access and process the high quality AAC stream, but many can't, including my own Musical Fidelity M1 Clic 'Universal Music Player', which I really don't want to replace.

So, what to do? Ringing around the dealers, I finally obtained some sensible advice from the estimable Steven McLaughlin of Audio Emotion. With his encouragement I rather reluctantly entered the twenty first century and bought an Android tablet for internet access from my dedicated music room. This would (according to Steve) control a rather nifty little piece of kit called Chromecast Audio which would, via an AudioQuest Forest cable, feed the appropriate digital signal into the optical input of the MF Clic and thus (at last!) into its excellent DAC.

And so it proved: with more than a little help from a colleague's clever grandson, I was, at last, able to listen to BBC Radio 3 live concerts without aural discomfort, and, blessedly, without the annoying dropouts which seemed to plague their MP3 stream.

Though the Android can navigate the BBC website, it is not easy to unearth a real 'HD' stream, and I have found it preferable to use the 'Tunein' website (<http://tunein.com/>). This offers the option of '320 aac' when choosing Radio 3, and, reassuringly, '320 aac' logo also appears on the Radio 3 icon.

Being, if not a 'silver surfer', then pretty definitely a 'grey' one, more used to setting up a turntable than swiping



An Asus Zen Pad, running Google's Android operating system. Use a tablet like this if you want a dedicated controller for Chromecast Audio.



Chromecast Audio, a wi-fi connected streaming player from Google. Run their Chrome web browser to get BBC Radio 3 HD.

a touch-screen, the obvious question is, "has all this expense and the ascent of a steep learning curve been worth it?". With some provisos, the answer is 'yes', as the experience of a broadcast live concert is hard to beat. But Podcasts

are disappointing – despite the 'HD', claim they are, as far as I can tell, MP3 and not AAC. I hope my experiences of dipping a toe into the hinterland of 'computer audio' will be useful to other readers. If they follow this path and come to grips with an Android, they will never again be in the position of owning an expensive piece of hi-fi equipment whose dedicated in-built computer is, through no fault of their own, obsolete.

Roger Simmonds

Thanks for your interesting solution Roger, courtesy of Steven McLaughlin of Audio Emotion. The Chromecast Audio player (£30) is a streaming device that connects up directly to the hi-fi and gets its music over wi-fi, so the house must have wi-fi but most internet routers have this nowadays, and most seem to hail from BT it seems to me, looking at the myriads that surround home and office. So if you have a BT box, switch on the wi-fi.

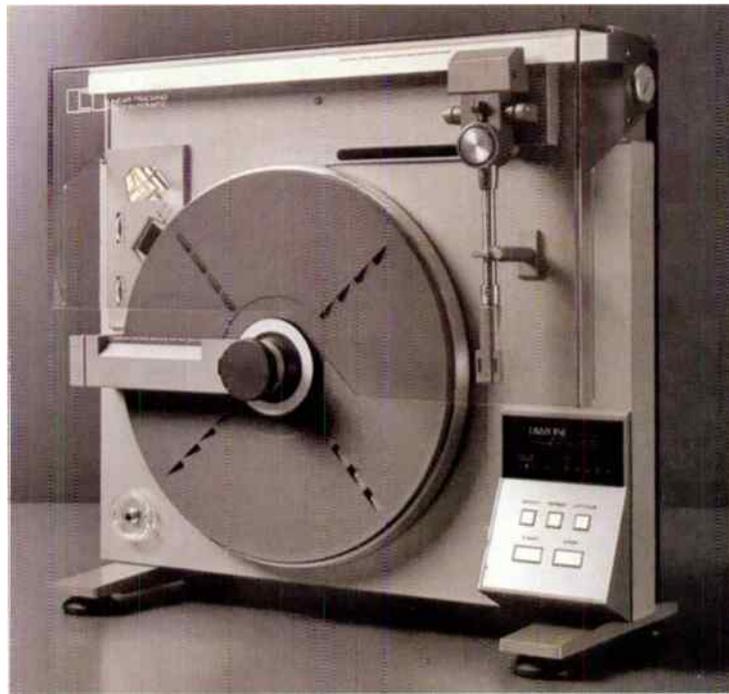
Then you need to run Google's Chrome browser, that is free and runs on PC and Mac, as well as an Android tablet. Then play music – in this case Radio 3 – from an Android tablet or phone (e.g. Samsung) or, after set up, from an iPhone, iPad etc. A 320kb/s AAC compressed stream will give good quality, obviously better than the usual 128kb/s from the 'net audio streams. **NK**

THE VINYL REVIVAL

As someone whose introduction to music was through vinyl 45s and LPs (as well as tapes), I can't quite understand the comeback these have made in recent years. The only reason I would buy an LP now is because it is a deleted item or of historical interest – or maybe the cover art was particularly good! Otherwise nothing would persuade me to go back to those things.

The several physical disadvantages of vinyl, especially LPs, compared to other mediums, should be obvious. I can also remember walking away from a record deck at home for a few minutes only to find the pick-up needle stuck in a groove or not even being able to lift off at the end of play; that as well as all the popping noises and wobbles. Finally, they wear out just by playing them!

I'm staggered also at the cost of turntables and even cartridges and that people are paying these prices because the quality of sound is dependent to a large extent on the quality of the pressing, which varied widely in the past.



"Pick-up needle stuck in a groove or not even being able to lift off at the end of play". With such problems Vince Leonard should search eBay for a vertical Mitsubishi LT-5V, above – a fully automatic, parallel tracking arm, belt drive turntable. Excellent arm bearings on a moving carriage annul "the needle being stuck in the groove", and there was auto lift-off. Brings back the wonder of LP! Not now made, unfortunately.

I don't know about today. People talk of the 'lush' sounds of orchestras, the 'organic' textures, yet I can remember clearly that classical music lovers were won over by the sound quality of CDs over vinyl when they came in.

**Vince Leonard
Bedford**

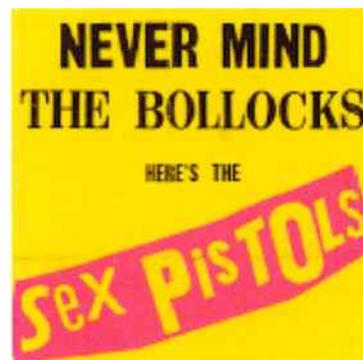
I think you have answered your own question there Vince. The LP is of historical interest and many are deleted items. And the cover art is a recognised part of the overall experience of owning an LP: we recognise them by their glorious covers, not by lines of text as, say, we do a book. Anyone for a Roger Dean cover? And who does not recognise the one and only 'Never Mind the Bollocks, Here's the Sex Pistols' cover?

This subject keeps coming up. There's now a canon of Rock music stretching back to 1960 and it exists mostly on LP. The LP is therefore the authentic way to access this music. It also happens to be a very good way, sound quality wise. Put the two together and you can start to see that if you want to experience the music, au naturel, you still can – you just have to buy a record player.

Better, playing LP is a simple, visceral experience. You own an

LP, you can't erase it and it won't easily get lost, and you do not have to wrestle with a Graphical User Interface devised by troubled minds to play it. Put it on the platter and you get instant access to real music with no fear that you will be met by a warning that you've just performed an illegal operation, or that the format is unsupported.

Sound quality from LP continues to move upward too. We visited Abbey Road Studios again the other day (our offices are close and we know them well) and they are busy now producing ever better quality masters, using half-speed cutting. Add in the use of quiet vinyl such as Quiex SVP at 180gm weight and



**LP cover art was distinctive
- like the LP (cough)!**

you have a quality product that is appreciated and sells, so everyone seems happy. I know I am!

So you may find LP a lot nicer now than when they had "popping noises and wobbles" Vince. My advice is: give it a spin! **NK**

FUSED

In your January 2016 edition you kindly published a letter from me ref. my fitting a new consumer unit and the apparent improvement in the sound of my audio system.

Since then another strange thing has happened. We have fitted around the house several domestic lighting units fitted with halogen bulbs. These bulbs were all many years old and worked perfectly correctly. But since the new consumer unit all have failed and have had to be replaced. The well respected electrician who fitted the new C.U. has checked all aspects of the installation and has found nothing wrong with the installation or our system. My electrical qualifications are the old O.N.C. electrical endorsement which roughly consisted of Ohm's law with bells on and many years with instrumentation on refinery systems so I have no answer to this. Was the old C.U. dropping the voltage due to corrosion?

As a customer of Russ Andrews I am now having to ask was Russ correct all the time about the importance of the mains?

Regards

Pat Rickwood.

LINK TO MADNESS

The madness has got to stop, right here, right now. Substituting the metal links on the Quad S2 binding posts with two short lengths of Tellurium Q silver Diamond, at £500 pounds a pop can only be described as total madness!; the speakers themselves cost £500.

I shudder to think of the thoughts of the esteemed designer of this already very good loudspeaker (yes, we all know who he is!), if he ever gets round to reading this review.

Noel Keywood is known for his common sense approach to reviewing all manner of hi-fi equipment, and I find it amazing that this sort of rubbish is allowed space in what was once the best hi-fi mag on the bookshelves.

This is only one example of the ongoing very sad state of affairs of genuine music lovers/ owners of ordinary/ middle of the range hi-fi systems being duped by "Hi End" cable manufacturers/out of touch hi-fi magazine reviewers who do not seem to understand that we are not stupid.



Half speed mastering and cutting at Abbey Road is being used to improve LP sound quality.

Plus money does not grow on trees – not around here anyway. I will finish on this note: I rang The Chord Company and got through to the Head Honcho concerning how they could possibly charge over a £1000 for 1 metre length of power lead also sporting fancy plugs. I informed him that I live in a village where the power supply wire from the transformer to my socket that feeds my hi-fi has over fourteen separate connections, some open to the elements all year round, covered in corrosion; He did not convince me that one metre of very fancy wire could improve the power supply to my hi-fi, but he did his best with over twenty minutes of spiel. To think, that sort of money together with Tellurium Q Silver Diamond jumper leads would buy me a lovely pair of ribbon hybrid Quad S-5 floorstanding speakers!. Makes you think to say the least.

Regards.

Philip Miles.

Hi Philip. I understand where you are coming from in all this and suspect a majority agree with you. At the same time I am a little wary about censoring the views of others: best to keep an open mind I feel and allow debate. If you don't like it, ignore it.

Can I remind you that we were all once told CD/digital was, by definition, perfect and this became an accepted group view. Seems silly now.

Mains cables are a little different; there is seemingly little justification, yet a lot of listeners report differences all the same. A £500 link on a £500 loudspeaker is perhaps questionable, but I believe Jon has something to say about this. **NK**

Hi Philip. I understand your point and yes - as I said at the time - the Tellurium Q jumper cables may have been slight overkill but I believed the point was still worth making. I have frequently found that replacing the metal connecting links on many bi-wirable loudspeakers with better quality jumpers gives a significant increase in sound quality. Indeed, it's for this very reason that many high-end 'speakers come with such jumper leads fitted.

The same goes for the metal linking pins between the pre and power stages on some integrated amplifiers.

In the case of the Quad S2s fitting the Tellurium Q jumpers only highlighted just how good these little loudspeakers are which I thought



A bi-wire link that costs as much as a loudspeaker. "Madness", says Philip Miles.

was a point worth making. Also, do remember there are more pocket-friendly jumper leads available which can also have a beneficial effect. Tweaking is, after all, part and parcel of our hobby. **JM**

LONDON AMERICAN

I find it odd that in his December column Paul Rigby doesn't mention the fact that 'London American' was a wholly-owned subsidiary of the Decca Record Company. Decca had to use the name 'London' in the USA since it had sold the Decca logo to Kapp during the 2nd World War. It used "London American" to release recordings which it had licensed from American labels such as Imperial, Dot, Chess, Specialty, Atlantic, Sun, (very early) Motown, Monument, Philles, Hi and so on; so it was basically a reissue label, not an originating one and to call it "prolific" is really a misnomer as it didn't commission the recordings it issued. Decca in the UK issued LPs in the UK with the 'London American' logo too.

It's equally mistaken to call Roy Orbison a 'London artist'. When Decca issued the Monument LP MLP8024/SLPI 8024 ("More of Roy Orbison's greatest hits") as SMO5014 it was on the Monument label ('Made in England by the Decca Record Co. Ltd').

It wasn't just pop music. I have several jazz discs, like 'Coltrane plays the blues' (SHK8017) originally on American Atlantic, which were released over here by Decca as 'London Atlantic'. EMI had a similar operation which they called Stateside. 'London American' was

subsumed into Universal Music because it was owned by Decca.

Best wishes,
David Mansell

GOING SPARE

I can very much appreciate the dilemma that Tim Jury faced when trying to contact loudspeaker manufacturers. In my business of repairing hi-fi it is quite often necessary to try to find specific parts that cannot be purchased on Amazon or eBay for example.

Some company spares departments are brilliant. Even if you want circuit diagrams or service manuals they arrive in your in box free of charge with no questions or problems. Recent good people have been Cambridge Audio and Denon Professional who have both gone out of their way to be helpful.

However, others are dire! One speaker manufacturer now owned by people outside the UK seem to think charging £96 each for tweeter diaphragms which 4 years ago only cost £47. Worse, they seem to make the items to order so its always a 6 week plus wait even though the new head office in Canada seem to think there are loads in stock. They no longer supply direct so you have the task of trying to deal with a third party. So why should anyone continue to buy the product when you know that, down the line the gear may not be economically viable to repair?

This month's repairs have included a NAD 705 tuner amp with no output due to the two capacitors in the output stage driver circuit regulated supplies pass transistor base circuit both being faulty (C308, C309) which are pigs to extract but a very quick fix. Good to do C310 and 311 at the same time!

Other repairs were –

Denon PMA-355 amp with an output transistor failure on the left channel.

Teac A-R600 amp with a dead standby transformer but a replacement stock part worked a treat and a slightly larger better quality one ensured a lasting repair.

Rotel RA-921 amp, working but lacking something! Main smoothing caps in the power supply down to less than a third of their marked values.

A Decca Deccalican record player with extensive renovation including replacement of the dead turntable with an old Garrard SP25 mkIII, new stereo ceramic cartridge, replacement grills, mains changed to an IEC connector, stereo mono switching and second amp output all changed to make them practical, caps and resistors replaced as



The London American label was a wholly owned subsidiary of Decca, says David Mansell. Still available at Ace Records, UK.

appropriate! That must be worth £80 from my customer! I wish!

Its also been a organ, guitar and bass amp month so far, so I better get back to it!

Regards

Dave Tutt

Chatham

Kent

www.tutt-technology.co.uk

07759 105932

Very interesting Dave. You are a hero, repairing old hi-fi. It's not an easy task and it is time consuming beyond the value of the time spent. **NK**

SPENDOR

Some years ago you were kind enough to print my letter in Hi-Fi World, as a letter of the month, about the process of finding speakers to suit my Cyrus system. I found a suitable solution in Castle Knight 2s which subsequently won a Hi-Fi World group test. However upgrades elsewhere in my system have moved things on. As you printed a review of the Spendor A5R in your January 2016 issue I am prompted to let you know about my experience with its big brother the A6R.

There comes a moment in every enthusiast's system when an insight into the performance limitations of a component results in that characteristic becoming more noticeable and overshadowing the good features of its sound.

So it was that after upgrading my CD and amplifier to the latest specification, I began to notice that my speakers were not doing full justice to the sonic improvement that had convinced me that upgrading was worthwhile. My Castle Knight 2s have a sonorous and civilised demeanour which suited my Cyrus 7 series equipment. However the upgrade to 8SE2 CD and 8a amp was not reflected in a gain in



A Decca Deccalican record player. See this and other old delights at <http://www.grouchos.co.uk>.



Castle Knight 2 – not in keeping with Cyrus 8a amplifier, says John Hurley.

resolution from the speakers. The new equipment revealed that compared to other speakers the tonal realism was achieved at the expense of a slight thickening of the sound and loss of resolution.

If I may digress, some people might at this stage be asking why Cyrus? Well apart from them being one of the few "British" manufacturers who still manufacture in Britain, the long life span, serviceability and upgradeability of the product means they are an investment rather than just a purchase. The sonic strengths, and operational foibles, of Cyrus SE CD players seem, unusually to have been acknowledged across the



Spendor A6R loudspeakers reveal "ravishing loveliness" says John Hurley.

hi-fi press but their amps seem recently to have acquired a "not as" reputation. That is not as rhythmic as Naim, not as dynamic as Roksan, not as full bodied as Arcam, not as detailed as ... etc, etc. Thus is the fate of components which are excellent all rounders but not class leading in any one respect! For my money they are well balanced and as rhythmic, dynamic, detailed and tonally accurate as I have heard and liked. But the crisp clear treble can excite coarser and forward loudspeakers so matching requires some thought.

Of course, in evaluating a new piece of equipment the context in which any equipment is used and indeed the preferences of the owner also matter. My speakers are connected by a 2x7m run of generic cable of pro origin with OFC medium gauge wires in a twisted pair formation, screened with foil and with a rubberised jacket. This allows me to place my vinyl source and electronics out of the direct line of speakers behind a chimney breast in my 4.5m x 4.5m listening room. My preference was for a large stand-mount or small floor stander which maintained the sonic character of the Castle Knight 2 but with greater resolution, detail and depth.

The search for such a speaker below £1500 led to a parade of new and second hand equipment which fitted the size criteria, some of which offered some of the characteristics I was seeking but none of which conclusively bettered the Castles in all respects.

Then at last a local dealer was offering a promotion on Spendor speakers which brought them into my price range and I duly arranged for a demonstration of the smaller floorstander the A5R which was recently reviewed in *Hi-Fi World*. Unfortunately driven by Rega and Cyrus amps it did not give the big, full bodied sound I had grown used to.

The dealer said "wait a moment you must listen to these" and produced a pair of well run in A6Rs. My first thoughts were too big and too expensive (even with a substantial discount), but the sound was just what I had been searching for and so a home demonstration was arranged. In situ they impressed again and when my wife said "they sound good", not "they are too big", before she asked "how much" the issue was settled. But that is only half the story.

As your review of the A5R suggests the speakers are very well constructed and finished, with good quality components, but the A6Rs being broader and boxier than the current norm might be considered by some to look a little old fashioned. Overall they show good quality and attention to detail. However the first pair delivered to me were wired out of phase. Black marks to Spendor who admitted a lapse in their QA system. A replacement pair were sent instantly and are fine.

Spendor claim a substantial running in period and the dealer suggested



Cyrus 8a amplifier, worked well with Spendor A6Rs.

longer. The speakers were run for over 12 hours a day on Radio 4 for a week and then switched to Radio 3 – all at moderate volume. They are tolerant of placement near to a wall (300mm) due to the rear slot port.

Listening has included a wide range of music, rock, world, jazz, baroque and classical. Initially the treble was a trifle hard and deep bass somewhat recessed, but as the speakers have bedded in their quality has become apparent. Treble is clear and extended with good detail, a little raised in level but not at all coarse. Bass has gained weight and definition and even in my slightly too small and less than ideally shaped room, can be felt as well as heard.

The midband is lovely, liquid, detailed and musical. Tonality is spot on, violins and basses are real. Grand piano sounded slightly clanky until I refreshed my memory of the sound of a live modern concert grand. I had become accustomed to a sound that was a little too soft and diffuse.

Soundstaging is fine, with decent width and the ability to project soloists

slightly forward of the speakers, whilst other instruments fall back. Dynamics are impressive even at lower volumes. Speech is clear and women's speech is without sibilance.

The real joy though is not in these hi-fi considerations but the way they play music. Given a good recording they become quite immersive and involving. I have played familiar recordings from Jon Hiseman, Steeleye Span, Mike Westbrook, Ali Farka Toure and Trevor Pinnock, to name just a few, which reveal subtleties that I have been unaware of previously. The music variously sweeps you up, raises your spirits or simply makes you want to dance. Although with Cyrus equipment they let you know if a recording is poorer it does not spoil the music. The joy remains.

They are certainly revealing enough to show the difference between sources. Whilst the Cyrus 8SE rightly enjoys a good reputation as a CD player, this is the first time in my life that I have really heard the superiority of a vinyl front end, a Funk Firm LSD, Dynavector 20 low output MC and Musical Fidelity X-LPS phono stage. The speakers revealing an extra spaciousness and solidity to vinyl on some recordings I have in both formats, and a ravishing loveliness on others.

In many ways these speakers are similar to the Cyrus amplifier, they excel in lots of ways but stand out in none. They are not characterful, but lack of "character" does not mean characterless or dull. I now have a system that does not impose itself, but lets the music play. I doubt I will want to upgrade my existing components, but when our rural broadband is finally improved from its current crawl the intriguing world of hi-res audio awaits. I am sure these speakers are up to it. I paid a little more than my budget but I have found my ideal match and I do not regret it for a moment.

John Hurley

Thanks for that John. It is nice to hear such a detailed account about choosing loudspeakers and good to know that the Spondor A6Rs are perfect for you.

Now, I don't want to hark on (meaning of course, I am just about to go into one!) but with a system like yours you really must be thinking about listening to hi-res, just as you suggest. The only problem being that as you grow accustomed to it, CD slides ever backward as a source; I now use either hi-res or LP. It's not that CD cannot be good, it's just that

it often isn't. My strong suspicion now is that much of what is on CD was recorded distorted, through inadequate (for music) analogue-to-digital converters; ADC technology still lags even today. This is the weak point in the signal chain, between artist and consumer. Hi-res demands the use of better (more modern) ADCs and 24bit resolution retains sound quality, such as it is from the ADC. You'll hear less coarseness, less grit and a generally smoother, easier quality that is more organic; 16bit gives a good outline. Only DSD moves further ahead again. All these delights await you! Dip a toe in the water with a hi-res portable player, hooked up to your Cyrus 8a amplifier.

NK

live concerts, as it avoids (I think) the dreaded Optimod dynamic compression of FM, but it is not without problems. At best, the quality is most acceptable, but, like David, I also experience irritating 'dropouts'. These are quite regular (usually, it seems, when the music has reached an interesting juncture!) and vary from a few seconds to over a minute. The broadband speed in our area approaches 30Mb/sec, so this is not a factor. Also, during the more extended breaks, I have accessed other 'radio' streams, including Radio 2 and German stations without problems. The dropouts are more common, it appears to me, with live broadcasts in the evening.

There is another problem with the BBC internet stream which has caught out dedicated Radio 3 listeners.

**BBC
RADIO**



RADIO 3 DROPOUTS

...the story so far.

In our Letters pages of the December 2015 issue we published a letter from David Lord (PROMS, p36) about dropouts in the BBC's on-line 320kb/s Radio 3 HD service. Martin Pipe replied.

In the January 2016 issue David Lord wrote again in response to Martin's reply and Roger Simmonds also wrote in saying he had experienced the same problems as David Lord (PROMS PROBLEMS, p70; SAME PROBLEM, p71) and we say the BBC will hopefully reply to this "in our next issue", i.e. February 2016.

Delayed by Christmas, here is the BBC's reply to the questions and problems raised. But first, for readers who don't have these issues, here is Roger Simmonds letter again, followed by Martin Pipe's reply, and then the BBC's reply. And yes, it is the same Roger Simmonds who kicks off this month's Letters with an interesting solution. What fun!

SAME PROBLEM

I was most interested in David Lord's letter (Dec 15). His experience listening to Radio 3's internet stream closely match my own. 'Radio 3 HD' may be the best way to access its wonderful

Some months ago, the BBC, without forewarning to its customers or discussion with equipment manufacturers, changed the way its data is encoded. The stream may be '320 kb/s AAC' (though there is some doubt about this) but the change caused some streamers to default to MP3, whilst others were unable to access the data at all.

I have a Musical Fidelity M1 Clic 'Universal Music Controller', and very nice it is too, but MF are unable to tell me whether I am listening to AAC or MP3, through their machine. The only advice the dealer would give was, "your streamer is out of date and would I like to buy a nice new shiny one?" However, they were unable to assure me that any were compatible with the latest BBC Radio 3 AAC bitstream, nor could anyone tell me how long the BBC would continue with this service.

It seems impossible to get sensible advice about any of this, which leaves your average music lover, not overly competent in computer technology, more than a little frustrated. It's (almost) enough to make me go back to my Leak Troughline and accept the severe compression of FM. Any thoughts?

Thanks,
Roger Simmonds

See us at BRISTOL!

... at the Bristol Sound & Vision Show 2016
 Stand 4A in the Bristol Suite, ground floor.

There is now just one chilly month to go before the UK's most popular hi-fi show is upon us once again in ever-sunny Bristol, from Friday 26th February through to Sunday 28th February 2016, from 10am to 5pm. And we will be there as always, on Stand 4A in the Bristol Suite on the ground floor.

Come and see us with your questions, stories and systems or just for a friendly chat.

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For Show details including ticket prices, click on www.bristolshow.co.uk. It is held at the Marriott City Centre hotel, 2 Lower Castle Street, Old Market, Bristol, England BS1 3AD. Call +44 (0)117-929 4281, or 927 5609.



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Opening times

10.00 a.m. - 5.00 p.m. every day

I spoke to Huw Robinson, the BBC Radio Operations Manager you may remember from my article. He told me that the BBC does monitor the stream: "There are almost no drop outs", he explains, "and so I suspect that any connectivity problem is probably one associated with the ISP". Martin Pipe

Huw Robinson, BBC radio operations manager, says:

Q - Is the BBC indeed still using Optimod compressor/limiters. If not, what system is in use?

A - We do process the R3 FM service with an Optimod device – just like all other FM services. No other R3 platforms have any audio processing of this sort applied.

Jim Simmonds of BBC Digital says:

So, First a bit of background as to what changes have been made to BBC Audio Streaming.

In February 2015, the BBC's Audio Factory project started delivering audio streams for BBC Radio. This brought all our stations (national networks, nations and local radio, plus 24 event webcast streams) on to the same delivery platform for the first time.

We have concentrated on delivery using http chunked delivery formats, which offer lots of advantages to the BBC in terms of its distribution options and supported platforms and devices. We introduced HLS (from Apple, iOS, internet radios and streaming), HDS (Adobe – the BBC desktop player and radio player, pop out player) and since last week MPEG-DASH (Non-proprietary, desktop and Android playback and soon some internet radios and streamers). While reading this please bear in mind the differences between delivery formats (we use HLS, HDS, MPEG-DASH and SHOUTcast), encoding technology (we use AAC and MP3) and bit rates (we typically use 48, 96, 128 and 320kbps).

If you want to experiment with the new MPEG-DASH format, you can opt in to MPEG-DASH playback on the BBC website by visiting <http://www.bbc.co.uk/html5> if your browser supports it. This is currently enabled for on-demand programmes.

In February, we also retired Windows Media for live and on-demand and SHOUTcast streams of national networks using the AAC codec. We retained SHOUTcast streams using MP3 in order to support devices which did not yet support HLS or AAC. This decision was driven by the fact that our technology providers were no longer supporting the Windows Media format.

Audio Factory has enabled a lot of new features for online listeners since its release in February. On-demand programmes for nations and local radio became available on Android for the first time. We expanded the number of sports webcasts available simultaneously from eighteen to twenty four, all available in high quality – and also on mobile for the first time. It is now possible to rewind our live streams on the desktop and we plan to add this feature to mobile. Some internet radios will also be able to exploit this feature.

We introduced downloads on the BBC iPlayer radio app in time for the Proms and there were more than one million high quality downloads in the first month. All the proms were available to download at 320kb/s in "HD sound". We will soon make lower bit rates available for download for those who wish to be more conservative in their data usage.

We are continuing to upgrade audio delivery where possible, to improve the quality of our streams. For national networks we have removed the 15kHz low pass filter that was on the satellite distribution network so that listeners to our 320kb/s streams get more benefit of the higher bit rate. We are continuing to improve the contribution of local radio with twelve stations now available in high quality stereo and the rest following in the next couple of months.

Adaptive bit rate switching (ABR) was recently introduced to our HDS delivered on-demand programmes. This means listeners on the desktop will now get 320kb/s for all our on-demand programmes where the bandwidth supports it. Users outside the UK will now get up to 96kb/s where previously they were limited to 48kb/s. We will roll ABR out across our live and on-demand services across all our delivery methods except SHOUTcast in the coming months.

We recently added World Service streams so that their listeners can benefit from the same schedule pages and platform support that domestic listeners experience. We also enabled our three pop-up stations in 2015 – Radio 2 Country, Radio 2 Eurovision, and BBC Jazz – to be available to the audience with all the same features they would expect from any other radio station. Bit rates up to 320kb/s, and all programmes available to stream on-demand and download in the iPlayer Radio app.

All our radio networks are now produced in four bit rates for both live and on-demand using chunked delivery. 320kb/s and 128kb/s using the AAC-LC

codec and 96kb/s and 48kb/s using the HE-AAC(v1) codec. The 320 and 128 bit rates are only available in the UK. The 96 and 48 bit rates are available in the UK and the rest of the world.

In addition, for live streams, a 128kb/s MP3 SHOUTcast stream is available globally. Uniquely to Radio 3, a 320kb/s AAC-LC SHOUTcast stream is available in the UK. For Radio 3, it should be fairly easy to tell the difference between the 128kb/s MP3 and 320kb/s AAC "HD" stream by listening to them on good quality playback equipment. There is no processing applied to any Radio 3 streams on any of our online streams on any platform at any bit rate. This is why it sounds considerably quieter than other BBC radio services online.

Because the 320kb/s SHOUTcast service is unique to Radio 3, no actual changes were made to the infrastructure delivering it when the roll out of Audio Factory happened, therefore it is unlikely that there has been a degradation to this service related to those changes. The 128kb/s MP3 streams that we produce have had a number of issues and we have spent a lot of time and effort trying to improve the quality and reliability of them. We will continue to work on improving them until we are completely happy with them. We are not there yet, although the situation is improving.

We very recently moved the software generating the HD Shoutcast stream of Radio 3 to new hardware to ensure that it is sustainable over a longer period of time. While we do not consider SHOUTcast to be the best method of delivery in the longer term, we have agreed that any decision to end the HD SHOUTcast stream for Radio 3 will be made in conjunction with the controller of Radio 3. It's fair to say that any future increases in the quality of the Radio 3 streams will happen using the chunked delivery method, and most probably using MPEG-DASH.

In terms of devices that support the new chunked formats, we communicate frequently with the Internet Radio Industry and a number of high end manufacturers now support our HLS streams (off the record SONOS, Naim, Linn, Wireless for the Blind, Pure) and some will soon support our new MPEG-DASH delivery (off the record, Roberts, Radioline) and we have had conversations with other manufacturers about supporting these formats. We are always happy to talk to manufacturers and offer help and assistance in providing the best possible listening experience to the BBC online.

Discrete Evolution

Naim has upgraded its Classic range of power amplifiers with the new Discrete Regulator first developed for the company's flagship Statement pre/power combination. Jon Myles explains the move – and checks out the new NAP 200 DR.

Take a look through Naim's 2016 product catalogue and you'll find the company manufactures an array of products including CD players, streamers, DACs,

integrated amplifiers, one-box music systems, loudspeakers and the cost-no-object £155,000 Statement pre/power combination.

But Salisbury's finest first built its reputation with its range of power

amplifiers – starting with the NAP 200 way back in 1973. This was soon followed by the iconic NAP 250 and NAP 300 that used similar circuit designs with over-engineered power supplies for maximum dynamics. All

this was before the introduction of the (then) flagship NAP 500 at the turn of the millennium.

All three models are still going strong, albeit having undergone a series of revisions and improvements over the years in terms of circuitry, transistors and even casework.

But Naim has now introduced what could be the most significant upgrade yet to the venerable line-up in the shape of its new Discrete Regulator (DR) – a technology first developed for the aforementioned flagship Statement amplifier.

In short, the DR is an in-house designed voltage regulator which is said to better the usual industry-standard monolithic chips more commonly used for the purpose, by employing discrete components carefully selected by Naim's engineers over a two-year development period. The result is said to be a lower noise

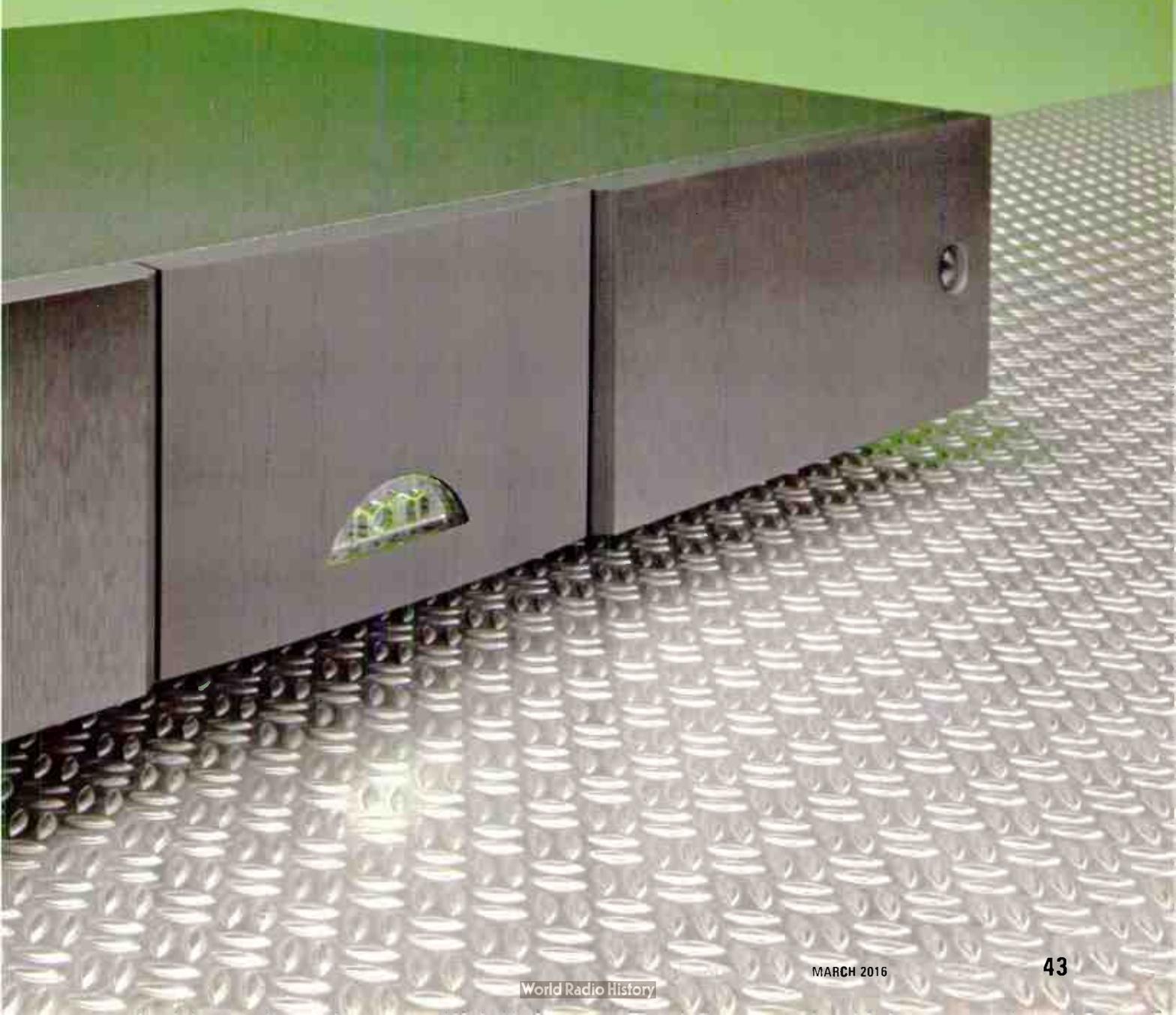
"The NAP 200 was already a very good amplifier as it stood - in its new DR incarnation, however, it's taken a significant leap forward"

floor across the board as well as a vastly improved impulse response and an accordingly smoother power delivery.

The NAP 250, 300 and 500 power amplifiers all now also feature the new high-power NA0009 transistors developed for the Statement while the DR is used to regulate the power supply to the entire amplifier.

The NAP 200, by contrast,

doesn't employ the new NA0009 as it wouldn't benefit from the extra current handling capabilities. The NAP 200 also does not use regulated rails for the power amplifier section. It can, however, provide power to an attached Naim pre-amplifier so this supply has now been upgraded to the DR module. Various smaller improvements have also been made to internal componentry and circuit layout to further improve the NAP





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The NAP 200's rear panel is elegantly simple - featuring loudspeaker sockets and Naim's preferred DIN socket for connection to a pre-amp.

200 DR's overall performance.

Design-wise the NAP 200 DR looks identical to its predecessor – with the triptych-fronted, low resonance, black anodised aluminium casing and glowing green logo common to all the Classic series amplifiers. On the rear are the 'speaker outputs that accept only banana plugs, and Naim's preferred DIN socket connection for attaching to the pre-amp.

The latter means users of non-Naim equipment will need to buy an RCA-to-DIN lead to connect up to their pre-amps – not ideal but it is the company's way of doing things.

SOUND QUALITY

The new NAP 200 DR was pressed into service with a Naim NAC 202 pre-amp and driving a pair of Spendor's excellent A5R loudspeakers (see review Hi-Fi World, January 2016).

The NAP 200/NAC 202 combination was always a potent performer, displaying all the traditional Naim virtues of drive, toe-tapping rhythmic ability and a big, bold presentation. If there was one criticism, though, it was a slight lack of depth and fluidity to the overall sound.

The DR-equipped version, though, has no such drawbacks. Playing Bruce Springsteen's live rendition of 'This Land Is Your Land' (24/96) there was immediately a more convincing presence to the performance. Springsteen's gentle acoustic guitar figure was more natural while there was a greater sense of air and atmosphere around his voice. The soundstage also reached further behind and beyond the confines of the loudspeakers, better portraying the acoustic atmosphere of the venue it was recorded in.

Moving on to Massive Attack's 'Angel', the NAP 200 DR took a firm grip on the 'speakers to ensure the low bass notes on the first few

bars of the track were powerful and rounded. The amplifier puts out a quoted 70 Watts per channel (see Measured Performance for full details) but in practice it sounds significantly more powerful.

Turn the volume up and it will happily drive even insensitive loudspeakers without showing any obvious signs of strain. That's a trait common to many a Naim amplifier (both power and integrated) but what the Discrete Regulator upgrade does on the NAP 200 is bring an extra air of delicacy and insight to the partnering NAC 202 pre-amp.

There's a greater sense of balance and detail retrieval to the sound that makes the likes of Barb Jung's 'Man In The Long Black Coat' sound more intimate and enveloping.

As I mentioned earlier, the NAP 200 was already a very good amplifier as it stood - especially when paired with a NAC 202 pre-amp or above. In its new DR incarnation, however, it's taken a significant leap forward.

CONCLUSION

It's great to see some of the research and development that went into the flagship Statement amplifier trickling down to Naim's more affordable and real-world products.

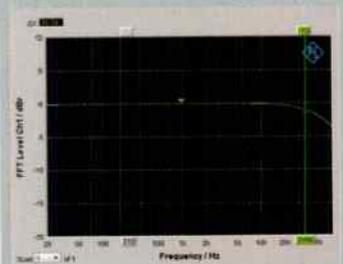
In the case of the NAP 200 the Discrete Regulator brings very real improvements when combined with one of the company's pre-amps. Together, they retain all the traditional Naim verve and vigour but add greater soundstage and detail to the mix.

MEASURED PERFORMANCE

The NAP 200 DR delivered 72 Watts into 8 Ohms and 121 Watts into 4 Ohms so it could be seen as an 88 Watt amplifier into a nominally 6 Ohm loudspeaker,

which most attempt to be these days. Damping factor was 15, a low value, as always with Naim.

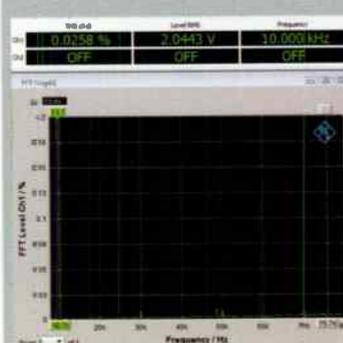
FREQUENCY RESPONSE



Distortion was very low across the audio band, at 1kHz hovering around 0.005%. At 10kHz 1 Watt into 4 Ohms this figure rose to 0.02% but our analysis shows mainly noise, not distortion harmonics.

Frequency response rolled down slowly above 20kHz to a -1dB point at 36kHz. At low frequencies the amplifier reached down to 4Hz. Input sensitivity was normal at 1V, like most power amps, and noise a low -116dB.

DISTORTION



The NAP 200 DR measured very well in all areas. Like all Naims it has low damping factor and rolls off above 20kHz, contributing to its smooth yet powerful sound. NK

Power	72 Watts
Frequency response	4Hz-36kHz
Separation	91dB
Noise	-116dB
Distortion	0.02%
Sensitivity	0.9V
Damping factor	14

NAIM NAP 200 DR
£1995



OUTSTANDING - amongst the best

VERDICT

A fine upgrade to an already impressive power amplifier. Brings added delicacy and depth with no loss of dynamism.

FOR

- transparency
- soundstage depth
- bass quality

AGAINST

- needs pairing with a Naim pre-amp to give of its best
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The Right Chord

Martin Pipe is wowed by the desktop version of Chord's Hugo DAC, the TT.



Chord's Hugo DAC is based around the proprietary FPGA-implemented 'pulse array' DAC technology that first saw the light of day in Chord's revolutionary DAC64 well over a decade ago. This unique technology, which preserves a fast transient response through the use of specially-developed digital-filtering algorithms, has yielded some of the best-sounding digital audio on Planet Earth.

There's now a bigger brother to Hugo. This is the 3kg Hugo TT (or 'Table Top') which, as its name (and weight) suggests, is intended more for home use. However, you still get the internal battery of the original

Hugo. But this is, more than anything, to ensure a clean and ripple-free DC supply for the rest of the electronics. In fact, the extra space has enabled the internal battery-power arrangement to be 'beefed up' - furthermore, exotic components known as 'supercapacitors' (providing, between them, no less than 10 farads of storage) have been added. The 'wall-wart' charger should, according to Chord, be permanently attached to the mains supply.

Like the other two units, the TT boasts headphone amplification (complete with 'crossfeed' image-enhancement DSP) and so I can see the unit being carried down to the garden in summer for a spot of al

fresco listening - especially since the unit has a USB port intended specifically to harness the music library of a smart device.

There are other connectivity benefits too, made possible by the larger casework. In addition to the Hugo's three headphone sockets, optical input, electrical input (here, BNC rather than phono), a decent S2DP/aptX Bluetooth radio implementation, two USB ports and single-ended (unbalanced) analogue phono outputs are a pair of balanced XLR analogue outputs for high-grade amplification. The wider spacing means that making connections is not quite the 'fiddly' undertaking it can be with the Hugo.

FiiO

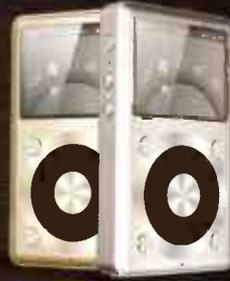
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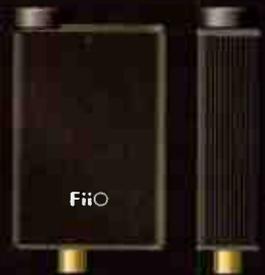
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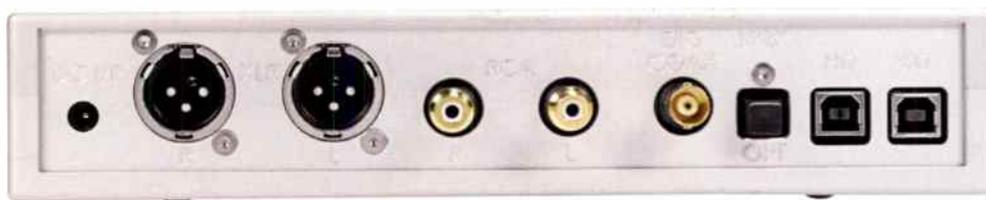
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The TT adds to the original Hugo's complement of connectors a pair of balanced XLR analogue outputs. As there's more panel space, the sockets aren't so 'bunched together' and so inserting and removing plugs isn't so fiddly. On the front panel you get three headphone sockets, that can be used simultaneously. Two are full-sized 6.3mm types, while the third is a 3.5mm 'mini'.

Build quality is superb and the TT's look is best described as 'distinctively Chord'. The latter also applies to the outer 'jacket' of the remote that's supplied for input selection, volume control and muting. Its provision is quite sensible, given that the TT is intended for home use. Another addition is the small green 'windowed' alphanumeric display angled into the top of the front panel. This indicates the selected input; what a shame it cannot also be provoked into revealing the secrets of the input signal (e.g. PCM sampling rate and resolution). To be fair, sampling rate is indicated by the colour of top-panel LEDs – as it is with the Hugo. Red hues indicate lower sampling rates; as the rate increases, the LEDs go bluer. Chord has also specified the same top-mounted thumbwheel volume control, which changes colour as it's rotated; note that, as with Hugo, volume control is implemented digitally at a peerless 64-bit resolution. It can be defeated for line-level DAC use.

The two USB Type B ports are configured pretty much as they are with the 'standard' Hugo. The first, referred to as 'SD', is 'driverless' and should be compatible with all computers – albeit with only 16-bit resolution and a 44.1kHz (i.e. CD) or 48kHz sampling rate. As hinted at earlier, it supports the 'OTG' (On The Go) protocol and can thus provide a vastly-superior 'plug and play' alternative to the DAC and headphone amplifiers of compatible smartphones and tablets. Unfortunately, the USB cable required (Type 'B' to 'micro') isn't supplied. You don't get a cable for the second ('HD') USB input either, but that's no problem as this will in most cases be a 'standard' item with a Type 'A' plug at the other end.

That HD input will provide high-quality computer audio, its asynchronous data transfer being timed by Chord's accurate clock circuitry. It supports resolutions of up to 24-bit and sample rates all the way from 44.1kHz to 384kHz. Furthermore, DSD64 and DS128 are supported natively, courtesy of a system called 'DSD over PCM' ('DoP'), which packs DSD data into a 'pseudo' PCM datastream so that it can be conveyed by an architecture that was never designed to work

being pulled out.

The TT reveals a lot more to the album's rhythms – a fusion of electronic and acoustic drums – than I am used to hearing and I could hear all manner of previously-hidden musical strands. I could easily make out, for example, a vibraphone-like sound that bubbles under the surface of the vibrant 'Firecracker'. Similar complexity and expression could be picked out in the keyboard parts of a wonderfully-eccentric dance track from the late 1980s – Lola's 'Wax

"the TT proved its worth at energetically conveying rhythmic flow and deep, taut basslines - both electronic and stringed"

with DSD in the first place. Apple, Linux and Android devices shouldn't need drivers but Windows hardware will. The necessary software is freely-downloadable from the Chord website.

SOUND QUALITY

I used the Hugo TT mostly with an Arcam A49 'super-integrated' amplifier and Quadral Aurum Wotan VIII speakers. My source for much of the time was the Cambridge CXN streamer, accessing CD rips and HD audio from network folders or local USB storage and feeding the Hugo TT coaxially. Ancillaries included a Samsung smartphone with Bluetooth, various PCs and a pair of Oppo PM3 headphones.

I'll start with the latter. The TT drove these cans effortlessly. Listening to a careful 24/96 vinyl rip of the Yellow Magic Orchestra's first album I was amazed at the detail

The Van'.

At the same time, the TT proved its worth at energetically conveying rhythmic flow and deep, taut bass lines (both electronic and stringed). Crossfeed's spatial-tweaking proved rather subtle here but the effect was more pronounced with other material.

This DAC has a definite analytical quality, yet in no way did it detract from musical enjoyment. Far from it; it was difficult not to be engrossed, a comment extending even to FLAC material streamed from my smartphone via the lossily-compressed Bluetooth link.

Indeed, on occasions I found it quite difficult to tear myself away from listening sessions as I was discovering new musical strata in my collections – a little guitar flourish here, a hitherto-concealed keyboard part there, greater definition to instrumental groups in an orchestra



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and their individual textural contributions to the overall soundscape. Even the fading out of residual master-tape hiss at the end of an analogue-originated track could be picked out on occasions.

Having found much to my taste in David Bowie's 2013's stunning – and unexpected – comeback album, 'The Next Day', I eagerly snapped up a HD copy of its follow-up 'Blackstar'. It was to prove his swansong. I've always been a fan of Bowie's musical output and never failed to be amazed at his ability to absorb and radiate so many different styles and influences. Even though 'Blackstar' must have been difficult to make, Bowie being in the advanced stages of terminal cancer, the album demonstrated – right until the end – how difficult this peerless artist is to pigeonhole.

There's a free-jazz element that percolates through this intriguing album, and the attendant saxes are carried with the right balance of verve and sharpness.

The complex rhythms – so evidently informed by industrial rock, drum-and-bass and hip-hop – are crisp and taught. If they are imparted with an aggressive character here, that's only because they were supposed to be. The soundscapes they're part of – a mixture of



The remote is dressed up in a characteristically-Chord 'full metal jacket'. Note that most of the buttons have no effect with the TT; the only functions that can be controlled here are volume, mute and switching between the five available inputs.

electronic and conventional instrumentation - may be frequently dense but here they never sound congested. And even with a maelstrom in full effect, Bowie's vocals never struggle to be understood.

I found myself going through the Bowie back catalogue, and digging

out classic albums (here, CD-sourced; usually the late-90s remasters) like 'Aladdin Sane', 'Ziggy Stardust', 'Let's Dance', 'Diamond Dogs' and 'Heroes'. All represent various periods of Bowie's career and embrace a gamut of musical styles – among them soul, krautrock, glam, glossy commercial pop and sophisticated art-rock – and, for that matter, studio and production techniques. The TT never failed to do full justice to them; in all cases I was at the receiving end of an absorbing listening experience, rich in musical detail and yet equally compelling as a perfectly-timed and cohesive whole.

My final listening piece was Philip Glass' Fourth Symphony which, although instantly-recognisable as a Glass composition, is – fittingly – based on Bowie's 'Heroes'. The soundstage the TT extracts from it is wide, but accurately-defined and tonally-balanced.

CONCLUSION

The Hugo TT is a superlative DAC that manages to extract the best out of whatever digital source you feed it. Well specified, beautifully built and colourful in the home, it's also satisfying to look at and use. This is a top quality digital converter, built on a unique DAC technology.

MEASURED PERFORMANCE

With volume set to give full output, whilst avoiding overload from a full level digital signal (0dB), output measured a high 3.4V from the unbalanced phono socket outputs, and 4.3V from the balanced XLR outputs. There was plenty more gain available: turning volume up gave an extra 20dB but this would cause overload except for recordings peaking well below 0dB – rare.

Dynamic Range (EIAJ) measured a high 122dB from unbalanced Phono socket output with volume set to avoid output overload; unusually, XLR was 3dB lower at 119dB; USB measured 118dB. Most hi-fi DACs achieve 120dB, a few expensive ones costing thousands 130dB, so the Hugo TT is up with the best. However, Mojo now manages 125dB, a whisker ahead.

Distortion measured a very low 0.02% as shown in our analysis, with volume set to avoid output overload. No distortion components are visible in our analysis, so 'distortion' here is noise, even though a narrow band harmonic-only analysis was used.

Frequency response, with filter set to NONE, measured flat to 32kHz (-1dB), output falling away steadily above this frequency.

Both electrical and optical inputs worked to 192kHz sample rate. USB works to 384kHz sample rate. Switching the filter to Max boosted output by +2dB below 1kHz and to Min by +1dB, to give a fuller bodied sound.

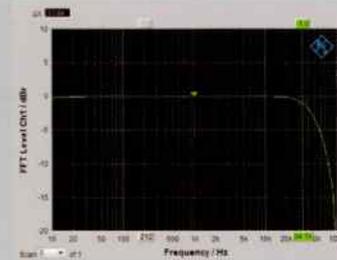
The headphone sockets delivered 5V – more than enough to drive insensitive headphones. Dynamic Range measured 122dB, so there's no degradation of performance here.

Hugo delivered excellent performance figures under test. It's up with the best, but XLR could have been better. NK

Frequency response (-1dB)	4Hz-32kHz
Distortion (%)	24bit
0dB	0.0002
-60dB	0.02
Separation (1kHz)	112dB
Noise (IEC A)	-117dB

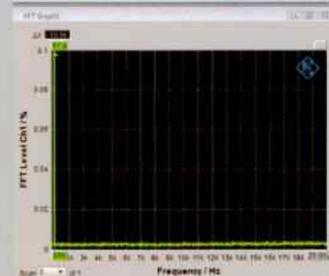
Dynamic range 122dB
Output (Phono/XLR) 3.4 / 4.3V

FREQUENCY RESPONSE



DISTORTION

THD at 0dB	Level 90dB	Frequency
0.0234 %	5.2272 mV	997.00 Hz
OFF	OFF	OFF



CHORD HUGO TT
£2995



OUTSTANDING - amongst the best

VERDICT

A DAC that's versatile, fantastically-built and ever so musical. There's nothing to dislike.

FOR

- effortlessly musical, with tremendous insight
- battery power and 'digital preamp' feature
- substantial build inspires confidence

AGAINST

- no USB cables supplied

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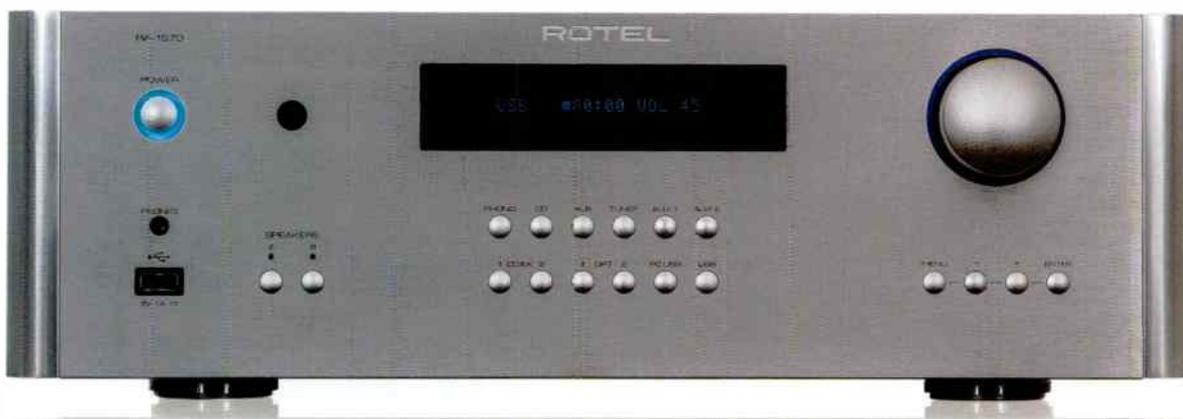


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Metal Guru

Noble Audio's flagship K10U in-ear monitors now come with an all-new aluminium body. They sound just as good as they look, finds Jon Myles.

It takes a brave manufacturer to change a successful design. After all, if a product is selling well and seen as a bit of a benchmark for sound quality, why tinker with it?

But that's exactly what US-based Noble Audio has done with its flagship K10U universal fit in-ear monitors.

Gone is the previous acrylic housing with gold-plated pentalobe screws – replaced by a rather distinctive ridged anodised aluminium casing in a satin finish with red face plates bearing the Noble logo.

The new look has been designed and built by a Californian company which counts the likes of Louis Vuitton, Dior, Marc Newson and Holly Hunt amongst its other clients. So where the original K10U may have looked rather prosaic for a £999 in-ear monitor the new version looks decidedly up-market.

What hasn't changed, though, is the K10s impressive complement of 10 drivers per side. That means you get two precision-tuned bass drivers, two mid-frequency drivers, two mid-/high-frequency drivers and a pair of super-high-frequency drivers packed into each earpiece.

Connection to your player is via a supplied detachable two-pin cable which is twisted to aid rejection

of transmitted interference while accessories include a Pelican 1010 crush-proof carrying case, black velvet pouch, cleaning tool and 12 pairs of ear tips to ensure you get the correct fit.

SOUND QUALITY

The most remarkable thing about the K10U is just how clean, seamless and extended it sounds. Packing 10 drivers into the small confines of an in-ear monitor is no mean feat – but getting them to integrate so as it sounds as though you are hearing one point source is equally as impressive. But that's exactly what the new K10U does.

Despite there being 20 armatures at work what you hear is a beautifully spacious and detailed sound with no hint of any crossovers at work.

So with Dave Brubeck Quartet's 'Take Five' the jolting kick drum had slam and power while the saxophone and piano were perfectly separated in tone and space. It was like hearing the band playing live in the studio – not through a set of electronic transducers.

Voices also had remarkable presence. On Sinead O'Connor's 'Nothing Compares To U' I could

hear every catch of breath and every subtle nuance in her delivery – better, in fact, than many similarly priced full-size loudspeakers would be able to portray.

Despite all this detail, the K10s are also rather forgiving. They will go loud on the end of an Android or iPhone and, while they don't flatter lower bit-rate material, do not make it sound unlistenable.

But they undoubtedly deserve good ancillaries. Pair them with a Chord Mojo DAC/headphone amp (£400) for example and the result is spectacular. The Mojo has tremendous resolution and clarity which suits the Nobles well – meaning that used together they start to reveal hidden details in even the most familiar of tracks.

It's a combination that will cost £1400 all in – but it's one that in terms of resolution, detail and sheer listening pleasure you wouldn't be able to approach with full-sized components.

CONCLUSION

The original Noble K10 was one of the best universal fit in-ears on the market. The updated version adds improved build, durability and looks to the mix – and with no increase in price. Anyone who values headphone listening really needs to hear these.



NOBLE KAISER 10U £999



OUTSTANDING - amongst the best.

VERDICT

New aluminium body adds quality to an already outstanding product. Sets the standard for in-ear monitors at this price.

FOR

- frequency response
- seamless sound
- tonality
- build quality

AGAINST

- not cheap

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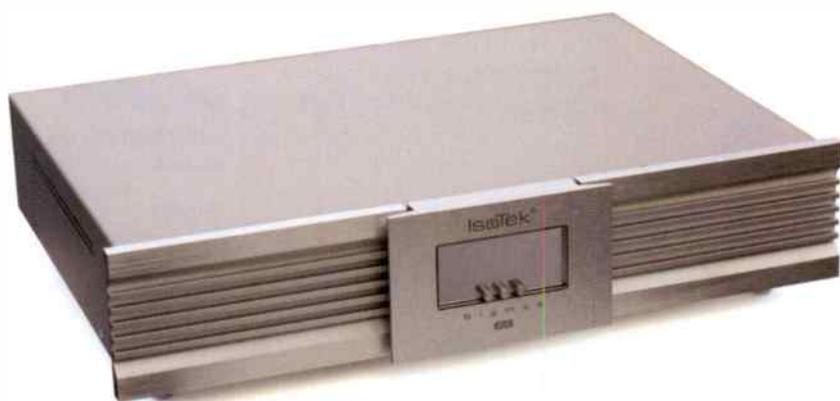
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HI-FI WORLD
VERDICT ●●●●●



Pocket Rocket

Noel Keywood says the FiiO X1 could be just what you need for high-resolution portable music on-the-go.

The little X1 high resolution digital audio player is small in size and small in price – just £90 or so. Apart from a gaggle of super-slim portable players that I've yet to be impressed by sonically, the X1 is one of the smallest high resolution portable digital audio players you'll find today. It'll even fit a shirt pocket.

I was taken aback by the price of the X1, doubting that any hi-res digital player could come in

at £100 or less, but FiiO have done it. Better, the X1 isn't short of ability as a result: in fact, it is delightfully easy to use simply because complexity has been removed. All the same, you get a decent modern (2012) digital convertor chip inside, a PCM 5142 from Burr Brown, a division of Texas Instruments. For this part alone Texas claim a high 112dB dynamic range – much better than CD.

In the X1 this DAC drives a downstream amplifier, the Intersil ISL28291 that, I presume, drives the headphone output; it is quoted as having a very low output impedance of 0.2 Ohms, something many enthusiasts consider of great importance, although I suspect unseen factors such as battery and d.c. convertor behaviour have more impact on sound quality.

The X1 has just one output socket on its top face, the usual 3.5mm stereo jack. There's no digital output, nor separate line output or digital input; you can however switch the headphone output

to line, defeating the volume control. This gives slightly better quality and a signal that can be fed straight into the Line input (i.e. Tuner, Aux, etc) of any hi-fi amplifier, using a 3.5mm jack-to-phono-plug adaptor lead. Doing this turns the X1 into a high-quality digital source; it effectively acts as a CD player, but with better quality when playing hi-res files. It will play whilst hooked up to an external USB supply, preserving battery life.

Whilst the X1 may lack luxuries such as high-resolution touch screen and digital output, it is still an impressive package. The case is of shiny anodised aluminium, with a black rotary wheel.

At the centre of this lies a large button: just press it to select whatever track has been highlighted when spinning the wheel, or hold it to change volume. Four small silver buttons spaced equidistant around the wheel provide forward and back track skip, Return function and an alternative menu set. Volume can be adjusted using external buttons, as well as the spin wheel.

There's no internal memory but a single slot accepts one microSD card up to 128GB – massive capacity. As a hi-res track typically pans out at 0.2GB or so, 500 such tracks could be accommodated with room to spare on one card.

Weighing just 106gms the X1 is a flyweight player. It measures 58mm wide, 97mm high and 14mm thick, fitting the palm of the hand easily. The lower face carries a micro-USB socket for charging and/or file loading. Run from a charger it will play, but run from a computer it goes into file download mode, but can be switched back to charge alone.

Both Mac and PC see the X1 as a mass storage device, like a memory key, so there are no interface problems.

The on-board Li-polymer battery has 1700 mAh capacity and supports around 10 hours of play, but this



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Clockwise from top left: SME, Lawrence Audio, Norma, Jeff Rowland

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Gutwire Cables

Harmonic Resolution Systems

Jeff Rowland Design

Lawrence Audio

Lyra

Norma Audio Electronics

Nottingham Analogue

ProAc

SME Limited

Transfiguration



The microSD slot on the side accepts cards of up to 128GB - enough for some 500 high-resolution tracks.

depends very much on screen usage as always. A tiny LED warns of charge (red), full charge (green) and play (blue), and there is a coloured battery condition icon in the display.

The small coloured display panel shows track listing and data, such as file encoding and spec, as well as name, artist etc. I found it all straightforward and easy to use; FiiO have plenty of experience here. The screen, although small, is clear and bright, text looking pin sharp rather than jagged. The auto shut-off modes can be defeated too, allowing manual



A settings screen allows for easy control of all the FiiO's various functions. The display is small but easy to read with bright text.

control – which I also found easier to cope with.

What files will the X1 play? Well, just about all of them except DSD. Most importantly, it plays WAV and FLAC up to 24/192. For Apple people it plays ALAC and M4a, a version of AAC, which itself is a cousin of MP3 (all supported) and earlier MP2 (horrid), all from Fraunhofer Institute of Germany and the redoubtable Karl Heinz Brandenburg. Then there's OGG and APE (don't ask).

I just threw a melange of files in and the X1 played them all, with no unsupported format messages or stealthy track skipping, as sometimes happens. And I must not forget to mention Windows Media Audio of course, or WMA.

SOUND QUALITY

Interesting to hear The Ramones singing 'Blitzkrieg Bop' on a hi-res player like this, because in hi-res form (24bit, 44.1kHz) I got to hear just how well composed they really were in the studio, as legend had it because of Tommy Ramone's production standards and technical ability. The X1 made a great job of conveying this, sounding whistle clean and with rock steady soundstaging. Joey Ramone's vocals coming in at me from left and right, straight from the mic it seemed. Even the rapid fire drumming of Tommy, crucial to this track – and most of their tracks! – was well supported by the X1, having plenty of punch through Philips Fidelio X1 headphones, with volume occasionally reaching 80 of 100 max, over short periods.

With quieter Rock (cough!) the X1 was even more in its element, Marta Gomez sounding full and clear

centre stage whilst wooden blocks beat out an accompaniment over at left and accordion sounded full bodied, timbrally rich and lively at full right.

Tchaikovsky's 'Waltz of the Flowers', played by the Bruckner Orchestra, Linz (24/96 FLAC), sounded silky smooth; this player having an almost creamy quality about it, where Astell&Kerns are sharper chiselled and perhaps a bit more mechanical. The X1 is a super-smooth, gentle yet clear, open and capable. I was more than aware of listening to good hi-res digital by the sheer ease of the experience across a wide range of material, from Rock to Classical.

CONCLUSION

The X1 is a delightful little player. It comes over as easy and sweet – to use and in its sound. Yet it is dynamically lively and images sound full-bodied. Small, light and unintrusive this is a budget high-resolution audio player that delivers a great sound to even the most insensitive high quality headphones – amazing for the price.

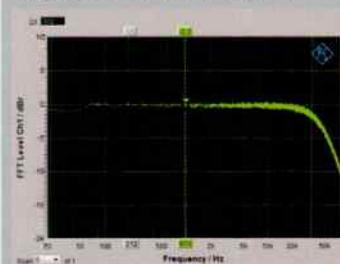
MEASURED PERFORMANCE

With volume at maximum, headphone output measured 1.6V, enough to go very loud with all headphones, including insensitive high-quality magnetic planars. Switched to Line mode, output measured

1.5V, less than a CD player but enough to drive any line input.

Dynamic Range (EIAJ) measured a healthy 110dB (111dB Line) with high resolution 24bit) digital, usefully above the 103dB achieved by CD.

FREQUENCY RESPONSE



Distortion was low at 0.1%, as shown in our analysis. No distortion components are visible so 'distortion' here is noise, even though a narrow band harmonic-only analysis was used.

Frequency response, with 192kHz sample rate files, reached 34kHz before a slow roll away to the 96kHz upper half-sample-rate limit.

In all, the little X1 can drive high-quality headphones and has sufficient dynamic range to exploit the improvement offered by hi-res digital files. NK

DISTORTION



Frequency response (-1dB)

4Hz-34kHz	
Distortion (%)	24bit
0dB	0.003
-60dB	0.1
Separation (1kHz)	102dB
Noise (IEC A)	-109dB
Dynamic range	110dB
Output (Phono/XLR)	1.6V

FiiO X1 £99



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

A superb high-resolution player at a bargain price. You'd have to spend a lot more to get significantly better.

FOR

- smooth sound
- 24bit/192kHz capable
- price
- build quality
- easy to operate

AGAINST

- absolutely nothing at the price

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NAIM • MU-SO Qb WIRELESS MUSIC SYSTEM

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NEW

£299.95 OR LESS



KEF • MUO • BLUETOOTH SPEAKER

Packed with innovative technologies to deliver uncompromised KEF quality sound when you're streaming music wirelessly from a computer or mobile device. MUO packs a punch that is out of all proportion to its size.

NEW

£349.99 OR LESS



KEF • EGG • BLUETOOTH SPEAKERS

Streaming tracks wirelessly over Bluetooth aptX or bringing your TV or computer to life, the new EGG Wireless Digital Music System delivers pure, clear KEF quality sound.

NEW

£149 OR LESS



MONITOR AUDIO AIRSTREAM S150 BLUETOOTH SPEAKER

Monitor Audio has packed the delicious Airstream S150 Bluetooth speaker with the high energy sound of its award-winning audio technology for music lovers to savour from room-to-room.

NEW

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NEW

£999 OR LESS

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The 8300CD improves upon its illustrious predecessor and delivers even better performance while the 8300A includes radically redesigned circuitry and a high-performance phono stage.



£249 OR LESS

5 YEAR WARRANTY

£249 OR LESS

NAD • C 516BEE / C 316BEE • CD / AMPLIFIER

Received an outstanding product award from Hi-Fi News magazine who described the C 316BEE as an "absolute barn-stormer of an amplifier". The C 516BEE is the perfect partner.



£399 OR LESS

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aptX Bluetooth

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NAID • D 3020 AMPLIFIER / DAC

Features digital and analogue inputs plus the convenience of wireless streaming with its Bluetooth capability.

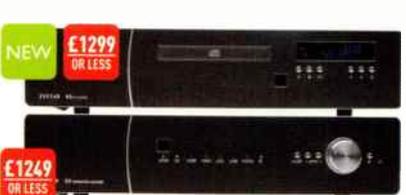


£2245 OR LESS

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NAIM • CD5 XS / SUPERNAIT 2 • CD / AMPLIFIER

CD5 XS uses developments from Naim's more costly CD players and when combined with the SUPERNAIT 2 it simply delivers dynamic, detailed and engaging music that can't fail to move you.



NEW

£1299 OR LESS

£1249 OR LESS

ROKSAN • K3 • CD / AMPLIFIER

New integrated amplifier with aptX Bluetooth, a phono input plus five additional line inputs for other sources. The K3 CD Di player is the perfect match for the K3 amplifier. Three finish options available.



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ESSAV.COM

MARANTZ • M-CR611 • CD/STREAMING SYSTEM

The M-CR611 is a superb performer, reproducing excellent CD-audio, FM, DAB/DAB+ and Network files. Supports 192kHz / 24-bit high-resolution files, 2.8MHz DSD files and Gapless playback.

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NAIM • UNITI 2 WITH BLUETOOTH ALL-IN-ONE STREAMING SYSTEM

Combines an integrated amplifier, CD player, DAB/FM tuner, internet radio, iPod dock, digital-to-analogue converter and high-resolution 24bit/192kHz capable network stream player. Features Spotify Connect and Bluetooth (aptX) connectivity.

NEW

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NAID • VISO HP30 HEADPHONES

SENNHEISER MOMENTUM 2.0 WIRELESS HEADPHONES

£379 OR LESS



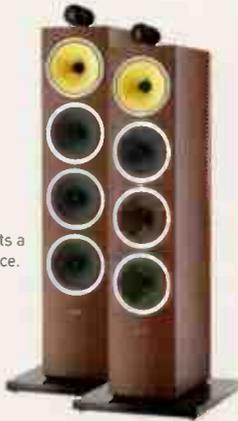


BOWERS & WILKINS • 685 S2
At home on a stand, wall or dock shelf, the versatile 685 S2 is ideal for stereo and home theatre uses in most rooms. And performance is enhanced with the addition of a Decoupled Double Dome tweeter.

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Price excludes stands

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Monitor Speaker

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PMC • TWENTY 23

The first and overwhelming impression of the Twenty 23 is an engaging and communicative speaker. Its size defies both the depth of bass and scale of presentation by taking any music or film material in its stride. The sound is vivid and dynamic and delivered with authoritative bass.

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MONITOR AUDIO GOLD 200

Amazing scale and impressive dynamic control are available from this slender three-way design, comprising ribbon tweeters, twin 5.5" bass drivers and a 4" mid-range driver, which is housed in a dedicated enclosure.

NEW

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MONITOR AUDIO BRONZE 2

The Bronze 2 builds on the strength of its predecessor's audiophile credibility with a neutral tonal balance and high detail resolution combined with high overall efficiency and power handling.

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Multi-room systems



Q ACOUSTICS • 3050

The flagship 3050 is the perfect speaker for larger rooms, boasting ultra-low levels of distortion, typically found of speakers costing three or four times its price.

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£499 OR LESS

WHAT HI-FI? AWARDS 2015
Best Speaker

3050 Standard finishes • Premium finishes £649

PSB IMAGINE X1T

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5 YEAR WARRANTY



Q ACOUSTICS 3020

Replacing the award-winning 2020i speakers, the 3020 incorporates numerous improvements including a revised cabinet with wool fibre damping plus new bespoke drive units.

NEW

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Premium finishes



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Ideal for large areas or where volume is required to make an impact, the MiniPod can be placed on a desk or shelf using the supplied spikes or wall mounted with the optional bracket.



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Multi-room systems

Hi-Res AUDIO

5 YEAR WARRANTY

NEW

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Bluetooth

Spotify

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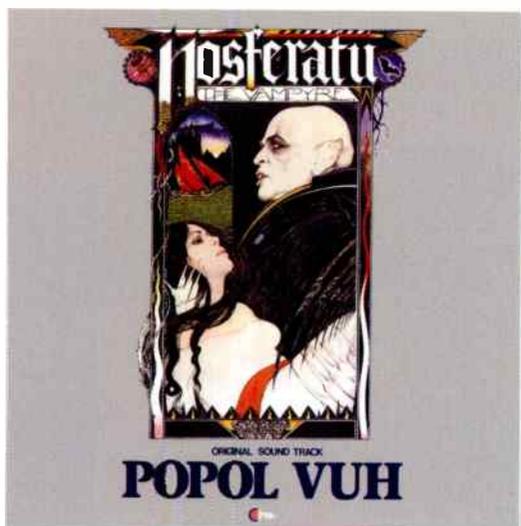
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POPOL VUH

Nosferatu
Wah Wah

One of a stream of new Popol Vuh releases from Wah Wah, this particular LP features 'Nosferatu: Phantom der Nacht' (from the Werner Herzog film starring Klaus Kinski) as a sort of special edition. The resultant double album, presented within a gatefold sleeve, brings together 'Brüder des Schattens, Söhne des Lichts' (originally released on the Brain label) and 'On The Way To A Little Way' (originally released on Egg as 'Nosferatu': extra music for the film after Herzog found that he was a bit short for his project). Both were released in 1978.

The only exception is track five of side three which is a bonus track that never originally appeared on the original release.

You also receive two posters plus an informative large insert full of photos, interviews, discography and a useful list of additional musicians who appeared on Popol Vuh albums – quite a package.

It's not quite a soundtrack,

though, because some of this work didn't appear in the film and non-Popol Vuh film music does not appear here. What you do get is a selection of beautiful pastoral piano works, more Eastern flavoured organics, choral voices and organic drones with primitive electronica.

In terms of sound quality, the music is quietly mastered and recorded to retain as much dynamic spread as possible. Silences are admirable and important for the music itself that is allowed to flow with ease. A fascinating, sometimes beautiful, sometimes dread production.

Also look out for other Popol Vuh releases on Wah Wah, including 'Das Hohelied Salomos' (1976) that continues along the same religious path as 'Hosianna Mantra' (1972); 'Aguirre' (1972) which gathers recordings made between 1972 and 1974 with ambient/proto-new age music and 'Herz Aus Glass', (1977) another Herzog soundtrack, this time full of ambience.



MAGIC SLIM

Born On A Bad Sign
Storyville

Recorded under the Magic Slim name and originally issued by the French label MCM this album also features his Teardrops band – and that's important because Slim liked to promote how a blues band could sound. In terms of original black artists, a blues 'band' is not that popular. Yes there were several 'supergroups', as it were, but most blues men of note were solo wanderers.

What you have here is a Chicago band doing their thing in 1976. Specifically, at Ma Bea's, 3001 West Madison in Chicago on 9th November 1976.

The ensemble approach to the songs gave each track extra substance because each band member was playing for each other. This was less a 'star' plus others and more a group. As for that group? You're talking about Slim's brothers Douglas and Nick Holt, plus Alabama Jr Pettis. Not

only that, Slim and the gang could dip into a repertoire that was broad and deep and covered many hundreds of songs.

This was an experienced and tight unit that knew and strutted their stuff. In fact, because of the large repertoire, you never really knew what this band was going to pull out of the hat, including many obscurities. Slim's vibrato-styled electric guitar cuts into these songs like a knife through butter. It almost acts like punctuation to Slim's own aggressive vocal delivery.

Despite some criticism from some quarters for the small club location, I think the choice is inspired. From an audiophile angle, the sound quality could be better but the atmosphere is top-notch, as is the band's raw energy.

This debut album from Slim and the gang is both vibrant in this live setting and edgy with a sense of electricity that connects each and every track.

A 1988 collection of singles and rarities, this double album reissue, replicating the original album artwork, utilises the 2010 '+/-' masters and features two additional tracks: 'As You Said' and 'Love Will Tear Us Apart (Pennine Version)'

The mastering is quite beautiful in how it allows detail to be presented. On 'She's Lost Control', the track is dominated partly by the insistent drum beat and also the vocal, but throughout the driving nature of the song there is a delicate, fragile suggestion of an acoustic guitar that is being strummed in such a gentle way as to be positively shy. Yet it cuts through the macho nature of the song here by its tinkling, snowflake metallic fragility. It's the highlight of the song for me, on this cut.

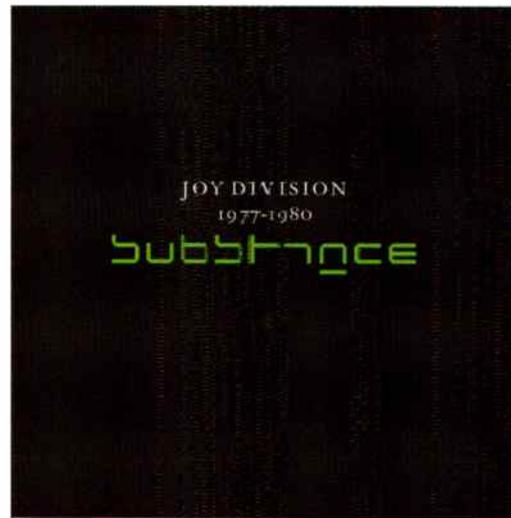
Similarly, and for the same reason, 'Atmosphere' depends on the rolling percussive beat along with Ian Curtis's dramatically

moody lead vocals but both the synths and the tinkling bell-like effects that scatter over the song add welcome delicacy to the track. Also, for 'Love Will Tear Us Apart', the urgent introductory acoustic guitar strumming is appealingly metallic.

It offers a sense of clarity that leaps out at you and gives the track an almost heartbreaking rush of emotion all on its own. This pressing also gives the Curtis song a real sense of solitude and detachment because it doesn't do what most other masters have done, mask the vocal behind a blanket of gentle distortive noise. Here, Curtis is appealing and insistent.

This is a well-produced, nicely put together, great sounding reissue that, sonically, is worth a look, even if you already have an earlier issue.

Also look out for 'Still', another 'post Ian Curtis death' collection, which has been cut from the 2007 master and also uses the original artwork.



JOY DIVISION

**Substance
Vinyl Collector**

AUDIOPHILE VINYL

From pop/soul vocalist, McAlmont and ex-Suede guitarist Butler this album is basically a compilation that includes all of the songs that were present on both of the band's singles plus an unreleased track, The Right Thing. Even before the album was released, the pair fell out and split and, as many others have already stated, leaving nothing but 'might have beens' trailing in their wake.

This rather luxurious looking edition celebrates the 20th anniversary of the original issue in the form of a boxed set...no, strike that, a 'book', really. The album has been remastered by Bernard Butler from the original tapes, along with a fifteen track bonus CD of demos, remixes, single versions and a BBC radio session. You can also find the album on heavyweight vinyl along with a four track 12" single and a 32 page book of notes and photos. A DVD features the promo videos

for the singles 'Yes' and 'You Do', as well as the duo's three appearances on 'Top Of The Pops' and 'Later... with Jools Holland'. In the 'Bonus Features', filmed in June 2015, David and Bernard discuss the writing and recording of the album for an hour and then perform acoustic versions of three songs. Not a bad collection then!

The music itself is certainly grandiose. Big, bold, over the top, feature length and feature height and also shiny, glossy, swimming in production and utilising a cartwheeling vocal performance that verges on irritating vocal callisthenics. Only verges on, though!

In terms of mastering, Demon has done a good job while the original masters have been properly used and implemented.

There's a welcome transparency and balance to the pressing. Nothing grates in terms of the mastering. Every note flows with grace.



DAVID MCALMONT & BERNARD BUTLER

**The Sound Of McAlmont & Butler
Demon**

Vive La Revolution!



Tannoy's new compact XT 6F floorstander packs a potent punch, says Jon Myles.

Regular readers of Hi-Fi World will know we often use Tannoy loudspeakers as a bit of a reference in our listening room.

The big Definition DC10T was named our Best Loudspeaker for 2015 due to its combination of outstanding yet controlled bass and expansive frequency range – while the even bigger, horn-loaded Westminster Royal GRs were a world apart.

But these are large 'speakers with a commensurately large price tag (around £6000 and £28000 respectively) and, obviously, demand a sizeable room to work at their best.

If you're looking for something a little better suited to the average proportioned British living room at a more pocket-friendly price then Tannoy offer the newly-revamped Revolution range. They're the most affordable of the company's loudspeakers to feature its renowned Dual Concentric driver, where the tweeter sits in the throat of the mid/bass driver for better coherence and imaging.

The original series was one of Tannoy's best-sellers but in its latest iteration has been rapidly reworked with a number of important engineering improvements. There are five models on offer; two standmounts, a centre 'speaker and a pair of floorstanders, the smaller of which is the XT 6F on review here priced at £999.

The XT in the name stands for Extra Technology and the changes range from the latest generation of that Dual Concentric driver to an entirely reworked cabinet. Take them out of their packing and it's the latter that strikes you first. It's fairly compact, measuring 400mm x 221mm x 302mm (H/W/D) and is trapezoidal-shaped to help minimise internal standing waves and so reduce cabinet colouration. It comes with an angled base and sturdy integrated plinth, above which sits the

down-firing reflex port.

Tannoy says this arrangement improves bass reproduction and also reduces room boundary effects and so facilitates easier loudspeaker placement – handy for those who need to site the loudspeakers close to a rear wall.

The new 150mm Dual Concentric driver now features Tannoy's own omni-magnet technology, where both the tweeter and mid/bass drivers share a single magnet for better time-alignment and coherence. There's also a redesigned waveguide featuring a bullet-shaped phase plug that Tannoy says gives more accurate high-frequency reproduction, as well as exceptional dispersion and imaging characteristics.

Below this sits a matching 150mm bass multi-fibre bass driver featuring a rubber surround and 44mm edge-wound voice coil to bring low-frequency extension down to below 40Hz (see Measured Performance for full details).

Round the back are a pair of 'speaker terminals to allow bi-wiring or bi-amping if that suits.

In typical Tannoy fashion the loudspeakers are superbly constructed with silver trims around the drivers to add an air of class and a solid feel to the package. But sound is what counts, so how do they perform?

SOUND QUALITY

The first thing that struck me about the XT 6F is how large it sounds for its relatively small dimensions. There's a big, up-front quality to the sound that works well with rock music.

Play New Order's 'Substance' collection and the Tannoys convey the rhythmic power of Peter Hook's bass work on the likes of 'Bizarre Love Triangle' and 'The Perfect Kiss'. That down-firing port puts a lot of energy into the room, but it does so with an agility that never makes the music drag.

Turn them up a bit, though, and that bass can become a little overpowering on tracks with significant low-frequency energy. In this they are a little like the larger Revolution XT 8Fs I reviewed in Hi-Fi World's July 2015 issue. As then, a



The new Revolution XT 6F has an integral plinth; above it is a downward-firing reflex port.

pair of bungs inserted into the downward-firing reflex port helped tame the tendency – as did giving them plenty of space to breathe.

Further up the frequency spectrum, mids were smooth and well-conveyed, with a slight forward nature to the sound that gave plenty of detail.

Listening to Kraftwerk's live 'Minimum-Maximum', the air and atmosphere of the individual venues

was well conveyed, while the group's various overlapping electronic lines were easy to pick out.

Most impressively, these Tannoys had an exceptionally wide soundstage with images locked in place to the

right, left and centre of the cabinets. The new Dual Concentric driver sounds appreciably sweeter than previous versions. It doesn't have the air and extension of the best ribbon tweeters, Sinead O'Connor on 'Sean Nos Nua' lacking the last degree of delicacy.

But on what they do well, relaying music in a foot-tapping, energetic manner, the Tannoys prove enjoyable. On Guadalupe Plato's eponymous debut album, for example, they made light work of the shouldn't-work-but-does combination of jazz, flamenco and howling guitar, leaving me in no doubt that this was a band thoroughly enjoying itself.

CONCLUSION

If you like your music lively and engaging, then the Tannoy XT 6Fs could be just the 'speaker for you. In the final analysis they're not totally accurate, but make up for it with a sound that is never less than entertaining. Add in good build quality and their domestically friendly size and they make a strong case for themselves.

MEASURED PERFORMANCE

Frequency response of the Tannoy XT 6F is shown in our analysis. On-axis tweeter output measured around +2dB up on-axis, meaning the XT 6F will have a bright balance. This flattened somewhat off-axis, so the speaker should be pointed straight down the room, not at listeners. However, there was a still some emphasis at high frequencies off-axis.

Being a concentric drive unit, now with a shallower bass/midrange cone, the XT 6F is coherent off-axis, as well as

from below and above, so it radiates a consistent sound into the room.

Bass output was strong, our frequency response analysis also shows, its downward firing port (red trace) delivering a lot of low bass energy into the room. The port operates across a wide frequency band from 20Hz to 150Hz (red trace) and this suggests broad acoustic damping and potentially well controlled bass output.

The impedance curve reinforces this, having an almost flat characteristic at low frequencies, with only small residual peaks at 25Hz and 80Hz.

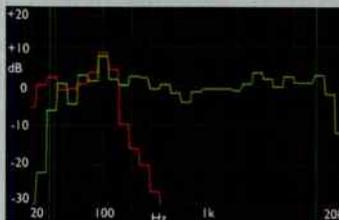
All of this suggests well controlled bass, but there is a peak in port output and overall bass output from the XT 6F is strong, with lift of up to +3dB across the lower frequencies, suggesting 'bass character'.

Sensitivity was high, a loud 90dB Sound Pressure Level from one nominal Watt (2.8V) of input. Impedance measured out at 5.6 Ohms overall, so the speaker draws current. However, an amplifier of 40 Watts or so would be more than enough to make the XT 6Fs go very loud.

The XT 6F will have strong bass, likely with character, but also with subsonics in rooms around 18ft long or more. Treble will be strong also. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



TANNOY XT 6F
£999



EXCELLENT - extremely capable

VERDICT

Wide soundstage allied to a big, propulsive sound make for an entertaining listen. Work best on up-tempo music.

FOR

- build
- big bass
- stereo imaging

AGAINST

- not the most delicate sound
- bass can be overpowering at times

Tannoy
+44 (0) 1236 420199
www.tannoy.com



WORLD STANDARDS

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

TURNTABLES

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



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



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



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

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



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



REGA RP3 £550
The first of the super-quality Regas, little compromised by price and featuring Rega's outstanding RB303 tonearm, suitable for MM and MC cartridges. A standard at the price point.

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



TONEARMS

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

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

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



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

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



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

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

CARTRIDGES

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



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

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

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

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



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



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



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



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

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

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

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



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



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

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

PHONO PREAMPS

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

ICON AUDIO PS3 MKII £1,200
All valve MM phono stage with MC transformer option, graced by big, spacious and relaxed sound.



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



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



PRO-JECT TUBE BOX DS £425
Compact MM and MC phonostage with valve output circuit and a big sound.



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

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

PREAMPLIFIERS

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



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

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



INTEGRATED AMPLIFIERS

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



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



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

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



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

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



ICON AUDIO STEREO 60 MKII £1,700
Excellent tube integrated with plenty of power and an expansive soundstage, plus KT150 tube output and bias meter for easy adjustment.



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

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



POWER AMPLIFIERS

AUDIO RESEARCH VSI75 £7,498
Powerful, fast valve sound that makes everything else look weak at times. Needs careful matching but well worth the effort.

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

ICON AUDIO MB845 MKII £5,500
With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.



ICON AUDIO MB81 £10,000
Big Russian transmitter valves deliver 200W from these massive monoblock amplifiers. Frightening in every sense.

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



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

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



LOUDSPEAKER FLOORSTANDER

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

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



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

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

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

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



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



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

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



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

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



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

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



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



LOUDSPEAKERS STANDMOUNT

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

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



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



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

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



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



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



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



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

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



HEADPHONE AMPLIFIERS

CREEK OBH11 £150
Designed specifically for low to medium impedance (30 Ohm – 300 Ohm) headphones the little Creek has a marvelously well-judged sound.

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



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



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



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

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



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



CD PLAYERS

AUDIOLAB 8200C0Q £949
Inspired CD player and DAC with price-performance ratio like no other. Capable of matching designs costing much more.



CANOR C02+ £3,100
Musically coherent and tuneful valve-driven CD player from Slovakia. Lovely liquid sound.



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



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



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



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



ELECTROCOMPANIE EMP-1/S £4,650

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



OPPO BDP-105D £1200

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



REGA APOLLO-R £550

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



ROKSAN KANDY K2 £900

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



TUNERS

CAMBRIDGE AUDIO AZUR 651T £299

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



CREEK DESTINY 2 £550

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



MAGNUM DYNALAB MD-90T £1,900

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



DACS

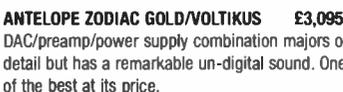
AUDIOLAB M-DAC £600

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



AUDIOLAB Q-DAC £250

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



ANTELOPE ZODIAC GOLD/VOLTIKUS £3,095

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



CHORD 2QUTE HD £990

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



DCS DEBUSSY £8,000

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



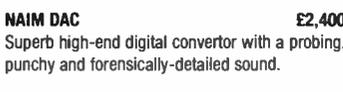
NORTHERN FIDELITY DAC £650

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



METRUM OCTAVE £729

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



NAIM DAC £2,400

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



TEAC UD-501 £699

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



RESONESSENCE INVICTA MIRUS £4,499

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



NETWORK PLAYERS

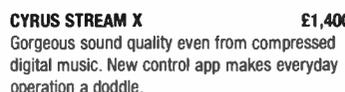
CHORD DSX100 £7,500

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



CAMBRIDGE AUDIO NP30 £399

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



CYRUS STREAM X £1,400

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



ENTOTEM PLATO £3,600

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



NAIM NDX £2,995

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

NAIM ND5XS £2,175

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

NAIM NAC-N172 XS £1,650

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



PRO-JECT STREAM BOX RS £1,095

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

QUAD PLATINUM DMP £2,500

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



DIGITAL SOURCES

ASTELL&KERN AK100 MKII £569

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



FIIO X3 £150

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

LOTOO PAW GOLD £1,500

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



NAIM HDX £4,405

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"Keeping track of microSD cards is worse than herding ants"



Noel Keywood

How do you herd ants? As ever more high-resolution digital portables pass through our portals I'm becoming increasingly occupied by trying to keep microSD cards under control and in some form of order. Quite what sort of order I'm not really sure, because you cannot number them, identify them, list their contents, or even name them. It's like bestowing upon an ant a birth certificate and an NI number – rather pointless really.

Has anyone thought about this? Standard SD cards at least have a record-lock on them and enough space for a label of sorts, or perhaps more wisely a dab of coloured paint to impose some sort of identity.

Or perhaps that should be multiple dabs of paint? I could have 'red cards' with between one to six dabs of paint, knowing that red cards hold rock music, say. Then 'green cards' could hold classical music ... and so on. I think you see my drift here.

But with microSD cards this is difficult, if not impossible – you need a very small paint brush. Having just written that, amongst a small pile of cards beside me I'm reminded that Sandisk manage to give their microSD cards a red and grey livery with, legible white text – so it is possible. But how you stencil or paint a microSD card, as yet I do not know. I have plenty of experience soldering small parts under a large, illuminated work station magnifier, but not painting them.

If I painted my microSD cards, by whatever means, I would at least be able to identify them from incoming manufacturer's cards, Jon Myles' cards, etc, etc – and we wouldn't then be getting into the peculiar situation of suffering ants everywhere, or nowhere as they

mysteriously disappear.

This is another related phenomenon that's increasingly occupying my mind, as I try to recall which card/ant went where, and at what time, to fathom out where it could have gone, complete with music, test tones and all sorts of other digital data on-board. I now have compiled folders of music and test tones that can copied to a new card quickly, to avoid having to continually re-compile this review material.

Others are having the same problem with microSD cards I suspect. Once upon a time portable players sent for review arrived with cards on-board, often pre-loaded with a selection of music. Not anymore. Nowadays players arrive with no card; we have to use our own.

No problem, except for one: microSD cards like ants tend to get overlooked in the great scheme of things, remain in the player and end up going back to the manufacturer or importer who sent us the player.

From this I deduce that in the early days, when players were sent out for review with cards on-board, they came back with no card on-board! Doubtless, this was ascribed to the natural card-snaffling nature of reviewers in general, blah-blah, woof-woof, when in truth – as I'm finding – these cards have a knack of mysteriously disappearing, sometimes between the cracks.

I mean this literally. Have you ever tried to prise a microSD card from its plastic bubble pack? It's a bit like trying to corner and capture an ant. My fingers are too big for the job but I have to use them all the same, because a JCB is even less useful. Many times I've wrestled with the packing, trying to extract said miniature device, only to see it cartwheel into the air and down

into some dark nook or cranny.

Sometimes I'm fast enough to follow its flight and see its landing ground, making recovery likely. But I have a floorboards with cracks between them and of course one card inevitably disappeared straight through.

Losing a card by this mechanism means getting down on hands and knees with a torch to conduct a search beneath tangles of computer and power cables, bits of old toast, dust and the odd dead spider. It's easier and quicker just to write the thing off and unpack another one – but more carefully.

So I now place packaging upon a cutting mat on my bench and slit the clear plastic bubble open with a sharp modelling knife. But even then the card will tend to spring out if it isn't carefully constrained.

Which brings me to packing and storage. How do you store these things? I have small clear cases and Maplins has plenty of storage solutions for small items. Recently I realised SD cards, microSD cards and adaptors all had to go into special containers at home and in the office, and not share space with other miniature connectors, adaptors and what have you. This allows me to count my ants at a quick glance and not get into a full scale audit carried out with magnifying glass, to pick them out from under all the plugs and sockets.

Happily, prices are coming down and Maplins has a line of microSD cards from £5.99 for 4GB. If one of these disappears it's no great loss.

Full size SD cards seemed like a great idea when they were introduced some years ago, but now they are rare. The microSD card is everybody's preferred storage medium these days, but keeping track of them is worse than herding ants. ●

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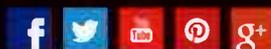
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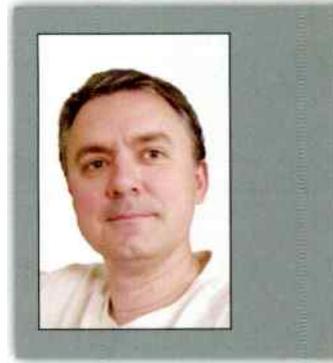
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WHAT HI-FI?

"The UK had a more vibrant roots-based rock circuit than the USA"



Paul Rigby

Call it folk-rock if you wish but, whatever you call it, the combining of rock with a roots source to act as inspiration and add flavours has, for some reason, always been connected more with the Americans.

That's possibly because Bob Dylan has always been seen as the epitome of the genre, especially in terms of its folk origins.

For some he 'owns' the entire genre, the label and all the trimmings. There are plenty of other US-based artists that add weight to the genre too, including The Byrds, who offered a string of hits including Dylan's own 'Mr. Tambourine Man', Simon & Garfunkel, Love, The Lovin' Spoonful, The Mamas & The Papas, Jefferson Airplane and more.

For a more country-edged swing at the genre there was also the likes of Merle Haggard, Hank Williams, Buck Owens and Neil Young.

All of this attention does a disservice to the UK which spawned many fine artists of the self-same genre at the same time as those in the USA - including Donovan, The Animals and, a tad later, Pentangle, Fairport Convention and Steeleye Span.

The evolutionary nature of music also pushed the genre into many sub-genre modes such as psychedelic folk but the essence of folk-rock remained the same.

I would argue that the UK had a stronger, more vibrant and more innovative roots-based rock circuit than the USA. I would attribute that to the purity of the genre.

That is, I would say that the 'folk' elements were purer and more direct from British traditions than US 'folk' which was too infused with both country and blues to remain apart for very long.

For the UK, working men's

songs, sea shanties and the like were our versions of country and blues but always referred to as 'folk', nevertheless. These UK strands never really diversified that much from the core folk label.

Because of that, the ability to play with the nuances of this rather more specialist British genre resulted in some classic releases that, all too often, were ignored by a public then enamoured with British pop (i.e. The Beatles, Stones, Who, etc) and US imports (the list is too long).

Thus a lot of real treasures were released, existed briefly under the radar and quietly died a death in terms of sales. Now? Many of these same albums are viewed as collectables and often fetch incredibly high amounts for original issues. Even reissues of the same can fetch a tidy sum.

Let's look at two of those lost (and, now, very expensive) albums. The first is Tudor Lodge's self-titled LP (1971). Featuring that distinctive UK folk, female lead singer Ann Steuart, whose voice always has an element of the operatic about it, this often reflective and pastoral album includes some very attractive harmonies, organic instruments and strings.

At its heart this is hopeful music, melodic and gentle in its tone and approach. The standout track on this LP is the beautiful 'The Lady's Changing Home', an epic, vocal harmonic feast that sends psychedelic shivers through the spine.

The next group's name even sounds gentle, Mellow Candle's 'Swaddling Songs' (1972) combines vocal harmonies and complex arrangements. It is as compelling as it is flowing, with some truly exceptional guitar work and lush prog touches. An LP that soars. If you can't afford an original than seek out a reissue.

Then there was Tir Na Nog - who were formed in Dublin in 1969. The excellent 'A Tear and a Smile' emerged in 1972 and was engaging, light and airy with delicate string arrangements featuring a mixture of pastoral ballads and laid back folk rock rhythms. If you like Cat Stevens or even Ralph McTell, you'll find much to enjoy here.

There's plenty of other, similar music that is both obscure but also worthy of finding and listening to.

For example, The Sallyangie's 'Children of the Sun' (1969) is notable for featuring the first appearance of Mike and Sally Oldfield; Tea And Symphony's debut 'An Asylum For The Musically Insane' (1969), was an enchanting, self-indulgent collection while Decameron's 'Say Hello To The Band' (1973) is a brilliant album of progressive folk rock. The title track has a slight Lindisfarne feel to it but there's also a Strawbs tone in there too while the track, 'Byard's Leap' tells a tale of British witchcraft and does so with a perfect blend of folk and rock to extract the best from both genres.

In many ways, the existence of such prog-folk, folk-rock, psychedelic folk and the like is another reminder that there is plenty of wonderful music out there that often lives way outside of the spotlight, if you only spend a little bit of time hunting for it.

It's often a good idea to follow a label, when it comes to seeking out the alternative. For example, for the above releases all are available on the UK reissue label Esoteric and, of course, from major retail outlets such as Amazon and their ilk.

Despite being released in the early '70s (there was a definite trend at this time, as you can see), the music sounds fresh and sparkling.

Go take a listen and enjoy! ●

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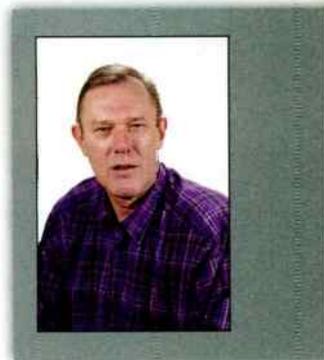
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“The good news is that overall music revenues are on the increase in Britain”



Jon Myles

read the news today, oh boy! Luckily, there were no reports of 4,000 holes in Blackburn, Lancashire (just a delay on the Trans-Pennine rail service instead). But there was the revelation that The Beatles were joining the streaming music revolution at long last.

It was announced to great fanfare in the media. And just to hammer the message home there were also full-page adverts in many national newspapers to herald the arrival of the Fab Four on services such as Spotify, Tidal, Amazon Prime, Apple Music and Google Play.

All this from the band that held out longer than most from sanctioning digital downloads of their work – going so far as to not even allow their music to feature on the iTunes store when other artists were enthusiastically embracing this model.

How ironic then that while The Beatles are available to stream for free on the likes of Spotify et al, more recent artists such as Taylor Swift and Adele – whose customer demographic would arguably be a lot younger than that of The Beatles – are not.

How does that make sense you might well wonder? Most people would think The Beatles core market was in CD/vinyl sales, while Adele's and Taylor Swift's was the sort that grew up with streaming and digital downloads and so finds it second nature to consume music in these formats.

The answer, though, lies as ever in pure economics. Despite the exponential rise in streaming services, the biggest-selling artists still make most of their money from physical sales of albums and CDs. That is where the real money still lies and why, given the choice, any artist will prefer selling hundreds

of thousands of CDs to the same number of tracks on a streaming provider.

Latest figures from recording industry body the BPI show CD is still the most dominant music format in Britain with 53.6 million silver discs sold last year – down a relatively modest 3.6 per cent from 2014.

Adele alone shifted two million copies of her latest album '25' and also, most interestingly, topped the vinyl sales chart for the year – beating the traditional LP best-sellers such as Pink Floyd and The Beatles.

Industry experts say that if the 27-year-old had allowed the new release onto streaming services it could well have hit physical sales of the format, thereby hitting overall sales revenue.

Taylor Swift made a similar decision when she famously removed her music from Spotify, arguing that the royalties being paid failed to compensate her for the work she'd put in creating the work.

In short, you make more money from selling CDs and vinyl than you get from having your tracks streamed – and both artists have the clout and guaranteed sales revenue from their latest works to be able to set the agenda as to how they want purchasers to be able to access their output.

For The Beatles, though, streaming opens up a valuable new revenue opportunity. After all, apart from the occasional release of remastered material, their days of peak sales of CDs and vinyl belong in the past, so are unlikely to be hit so much by their music being streamed. Indeed, it might even open up their work to new audiences, which makes sense.

You can also expect, as well, that they'll be joined by Adele's '25' on the streaming platforms eventually

– just as soon as the original sales momentum of her latest blockbuster begins to dip.

No matter how you like to listen to your favourite music, however, there's some bright news in the BPI's latest figures. Chief among them is the fact that overall music revenues are actually on the increase in Britain. In fact the retail value of UK music sales rose to £1.06 billion in 2015 – up from £1.03 billion in the previous 12 months and the first actual rise since 2004.

Of that, an estimated 26.8 billion songs were streamed, but vinyl also saw another leap in sales of 64 per cent to a 21 year high of around 2 million units.

OK, that's still a relatively small figure in the overall total but it confirms that the vinyl revival is showing no signs of slowing just yet.

For further evidence of this HMV reported it sold one turntable per minute in the week leading up to Christmas, while both John Lewis and Amazon reported turntables were among their best-selling entertainment items last year.

When you consider vinyl sales had plummeted as low as 205,000 units in 2004 and the demise of the format was not just widely predicted but almost taken for granted by many, it just goes to show what an amazing comeback this is.

As for the future, most analysts say the increase in the number of songs being streamed is likely to continue but all indications are that the coming few months will see another rise in the number of vinyl LPs being purchased.

So it seems the music industry is in rather rude health again, after a difficult few years. Which is good news for all of us who get so much pleasure from music, and our favourite hobby of trying to hear it at its best. ●

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"A Prom concert can be astonishingly good with Radio 3's 320kbps stream"



Martin Pipe

It's good to see that recent correspondence of BBC Radio – and its Proms correspondence in particular – has stimulated so much interest in these pages. Streaming provides a valuable alternative to DAB, digital TV platforms and analogue radio. What you hear – most notably from a Prom or evening concert – can be quite astonishingly good with Radio 3's 320kbps AAC stream. As a previous correspondent noted, the sound and performances can approach that of a good CD. Some changes to the BBC streaming services have, alas, 'knocked out' reception on some devices. So this month, I'm going to examine these changes – and reveal how all national BBC radio services are available as 320kbps streams.

The BBC has been shifting towards a new online radio platform called 'Audio Factory'. This went 'live' last February. On a BBC Internet blog (<http://bbc.in/1UK11pb>) BBC Senior Product Manager Jim Simmons explains why the new technology was needed: "Before Audio Factory, BBC internet audio streams were provided by different systems and suppliers. All of these disparate systems have reached their end of life. The hardware is, in some cases literally, rusting, and the software that is running the encoding is no longer supported by the companies that wrote it".

And it was indeed a bit of a hotch-potch, as further details revealed: "To be consistent to all our stations from Radio 3 to Radio Nan Gaidheal, to Radio Solent, we have had to make choices about which standards we will support and which we will no longer support.

BBC Radio is currently delivered as Shoutcast, HLS (HTTP Live Streaming, a proprietary Apple development), RTMP (Real Time

Messaging Protocol, a proprietary Macromedia streaming protocol), and (Microsoft's) Windows Media".

"Listen Again' audio is provided in AAC-encoded mp4, mp3 and Windows Media. For Audio Factory, we have chosen the AAC codec and HTTP streaming as our delivery method for the future. HTTP streaming includes HLS, HDS (HTTP Dynamic Streaming, developed by Adobe) and eventually DASH (Dynamic Adaptive Streaming over HTTP – thankfully, an ISO standard)". Got all that?

Other changes are largely responsible for the incompatibility issues that people are complaining about in this magazine. In a later blog (February 9th 2015; <http://bbc.in/1IPmGZ5>), Simmons announced the BBC's intention to retire its Shoutcast AAC streams – among them the 320kbps Radio 3 service that will, as a result, no longer be available to overseas listeners.

A lot of Internet radio devices rely on Shoutcast. Maybe that's why the BBC also said it would continue lower-quality MP3 Shoutcast streams as a 'fallback'. But the post got a lot of opposition (<http://bbc.in/1P4BQKX>) and so the Beeb changed tack. A week later, Simmons announced that the 320kbps AAC Shoutcast stream for Radio 3 was to continue – although reconfiguration of listener equipment would be required.

These changes, I suspect, are responsible for the confusion among Hi-Fi World listeners. The URL of the new stream (http://open.live.bbc.co.uk/mediaselector/5/select/version/2.0/mediaset/http-icy-aac-lc-a/format/pls/vpid/bbc_radio_three.pls) is given in the above blog. If they switch to it, listening should be restored! I checked the stream, and it works. You can try it for yourself if a PC or Mac loaded with the free VLC

Media Player (www.videolan.org) is to hand. From 'media', select 'open network stream' and enter the above URL. Click 'play', and Radio 3 should pour from your PC speakers.

However, the benefit of the new HTTP streaming system the BBC is migrating to is that all BBC radio broadcasts could be available in high-bitrate HLS/AAC form. Indeed, the national services already are – the URLs are listed here: <http://bit.ly/1TQsUgv>. Plug these URLs into VLC as described above, and you can 'tune in' by computer. Yes, 6 Music as well as Radio 3 – in better-than-DAB quality!

But VLC allows you to go further – timeshifting radio, with local network access. Go to the 'Convert/Save' option of the 'Media' menu, and select the 'network' tab. Enter the URL of the radio station you're interested in and hit the 'convert/save' button.

Check the 'Dump raw input' button and, in the 'destination file' box, enter something like "6music_timeshift.flv" and click 'start'. Basically, the storage location is here being used as a 'timeshift buffer' (or audio cache). The cache file will grow until the drive fills up – or you manually stop VLC.

If you're storing this cache file in a network-accessible folder, compatible devices can 'intercept' and start playing it from the beginning.

I have been using an inexpensive A.C. Ryan PlayOnHD2 multimedia player, which can understand AAC files buried within a FLV wrapper. Other devices, or computers or mobile devices running VLC, could also play it. In my case, the PlayOnHD2's digital-audio output is fed to my audio system via a high-quality DAC.

After listening, the cache file can be deleted – or kept, if you enjoyed the broadcast! ●

Turbo-Charged

The Riva Turbo X promises a big sound from a relatively compact package. Jon Myles checks it out.

Compact Bluetooth loudspeakers come in many shapes and sizes. Some are cheap and cheerful, offering fairly decent sound for not much money. They're the sort you will happily drop a few pounds on knowing that while they won't be audiophile, they will at least play a tune.

Others, however, aim a little

bit higher - looking to combine Bluetooth's convenience into a slim package that will fill a room without making you wince as soon as the volume is turned up a little.

The Riva Turbo X falls firmly into the latter category. Yes, it's undeniably compact at just 4.1 inch x 9.1 inch x 3.5 inch (H/W/D) but it packs a lot into those dimensions. The three-channel amplifier is rated at 45

Watts while there are seven drive units - three full-range units plus four passive bass radiators.

Two of the active drivers are on the left and right sides while the third is at the front; there's a pair of forward-firing passive radiators and two at the back arranged in an asymmetrical configuration to balance out the vibrational forces.

Riva says it uses its own



proprietary digital signal processing called Trillum to mix the stereo signal before it goes to the amplifier to produce the widest possible soundstage from the seven

All this means the Turbo actually weighs a rather meaty 3lbs with a firm and well-constructed case that comes in either a black or white finish. Battery life is put at up to 26 hours - although this reduces the higher you turn the volume up

- while Bluetooth range is quoted as 33 feet - more than adequate for most people.

A nice feature is that the control buttons on the top panel light up when you wave your hand over them, making the Turbo X easy to use at night - although arguably it's better to use Riva's own well-designed and elegantly simple Ground Control app (available for both Android and iOS).

Additional features include Bluetooth aptX compatibility for similarly equipped mobiles, a microphone for taking hands-free calls and a rear USB port for charging 'phones and tablets, alongside a line-input.

There's also something called turbo boost - which is basically a loudness button whose operation is heralded by the sound of an engine revving when switched in. Yes, it's a bit gimmicky but quite fun all the same.

Bluetooth pairing was quick and simple with both Android and iOS and the connection proved rock solid throughout the testing period. The Riva will also remember up to eight devices - although only one can be paired at a time.

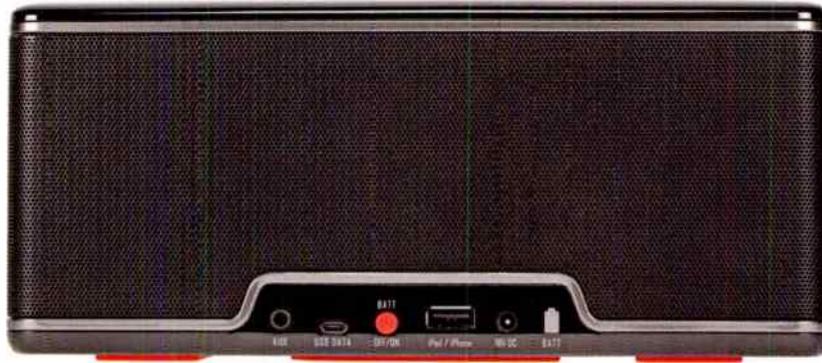
SOUND QUALITY

Even without that turbo boost being used the Riva has a big, expansive sound that is a cut above your run-of-the-mill Bluetooth 'speaker.

Playing Joe Strummer & The Mescaleros 'Streetcore' the bass on 'Coma Girl' had a rich, full quality with plenty of depth to it. This laid a firm foundation that allowed the guitar work to display plenty of detail.

Those seven drivers also mean the Riva manages to fill a medium-sized room with ease.

While it will never match a full-



The Riva Turbo X's rear panel includes a line-in connection plus a USB socket for charging mobile devices and tablets. Battery life extends to 26 hours.

sized system, there's a decent amount of stereo separation so the panning effects on Pink Floyd's 'Dark Side Of The Moon' really do switch from left to right.

Increase the volume and the Turbo X also stays firmly in control of the music - never sounding tinny or harsh but just smoothly getting louder.

OK, push it too hard and it will start to sound a little congested but most people will find it goes plenty

Indeed it was quite amazing just how much low-end definition the Riva could produce.

Switching in the turbo boost here - which, in Riva's own words, cranks the "volume up to 11" (a la Spinal Tap) - there was definitely an increase in sound levels.

However, there was also a reduction in absolute definition and clarity, so I preferred to leave it off most of the time. Having said that, though, the feature did prove useful

"Playing Leftfield's 'Rhythm And Stealth' there was a substantial sense of power to the electronic bass. Indeed it was quite amazing just how much low-end definition the Riva could produce"

loud enough for their purposes.

Careful placement also helps a great deal in getting the best performance from the unit. I found around 6 inches from a rear wall worked best - helping to reinforce the bass from the rear-firing radiators. Move it into the centre of a room and you lose some of that low end - although the sound never becomes thin. Therefore experimentation is recommended to see just what suits you best.

Get the positioning right, though, and you'll be surprised at just how weighty and satisfying the Riva Turbo X can be. Playing Leftfield's 'Rhythm And Stealth' there was a substantial sense of power to the electronic bass that drives the likes of 'Dusted' along.

when I took the Riva into the garden and was looking for some extra volume in the outdoors.

At £299 the Turbo X isn't the cheapest Bluetooth 'speaker you can buy, but its sound fully justifies the price. If you are looking for a potent system for a second room then this could be just the thing for you.

CONCLUSION

The Riva Turbo X is a well-balanced Bluetooth loudspeaker that sounds significantly better than many rivals. Its use of seven 'speakers allied to a sturdy case means it has a big, room-filling sound that is well-balanced and detailed. A free control app means it is easy to operate, and outstanding battery life is an added bonus.

RIVA TURBO X £299



OUTSTANDING - amongst the best.

VERDICT

A feature-packed Bluetooth loudspeaker with a sophisticated sound - a cut above most rivals.

FOR

- seven drivers for a big sound
- ease of operation
- sturdy casing

AGAINST

- nothing at the price

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AUDIOFREAKS

DISTRIBUTION AND CONSULTANCY OF FINE AUDIO INSTRUMENTS

Christmas 2015 Temptation List

	RRP	X-MAS		RRP	X-MAS
conrad-johnson			Avalon Acoustics		
conrad-johnson ET3 valve line preamplifier	£2995	£1999	Avalon Acoustics TIME loudspeaker system	£59995	£POA
conrad-johnson ET3SE valve line preamplifier	£4495	£3195	Avalon Acoustics PRO MIXING MONITOR	£9995	£5999
conrad-johnson ET3SE line/phono preamplifier - review sample	£5990	£3999	Avalon Acoustics SYMBOL loudspeaker system (latest specification)	£4600	£1799
conrad-johnson TEA-2 valve phono preamplifier - review sample	£3490	£2299	Avalon Acoustics STUDIO PRO loudspeaker - review pair	£3700	£1850
conrad-johnson TEA-2MAX valve phono stage - review sample	£7295	£4999	Zanden Audio Systems		
conrad-johnson Classic 60SE stereo amplifier	£4995	£3499	Zanden Model 120 Phono Preamplifier	£7495	£5499
conrad-johnson ARTsa stereo amplifier	£19995	£13495	Zanden Model 8120 Stereo Power Amplifier (90W)	£21000	14999
conrad-johnson ARTmono amplifier (pair) - pre-owned	£40000	£24995	Zanden Model 3000 Line Valve Preamplifier - review sample	£14995	£8999
conrad-johnson Premier 18LS line FET preamplifier - pre-owned	£4900	£1999	Zanden Model 2000P CD transport - review sample	£27995	£16995
HiResTech			Zanden Model 5000MkIV Signature DAC - review sample	£14995	£9995
HRT STAGE Music System (Black or White) - Complete audio system	£1299	£799	Zanden DSC-1 Digital Signal Conditioner	£1000	£499
finite elemente			Magnum Dynalab		
finite elemente pagode Signature Wall - Black wood/Chrome finish	£2300	£1299	Magnum Dynalab MD809T Valve Internet Tuner	£7995	£5999
finite elemente pagode HD02MR Edition HD - Maple/Chrome finish	£6950	£3490	Magnum Dynalab MD807T Valve Internet Tuner - review sample	£4000	£2899
finite elemente pagode HD02MR EDITION HD - white/chrome	£8500	£3999	Magnum Dynalab MD806T Valve Internet Tuner	£2350	£1795
finite elemente pagode HD09MR EDITION "Q" - Left/Right use	£1700	£1150	Magnum Dynalab MD801 Internet Media Tuner	£1500	£1150
finite elemente HD09MR Edition "L" Version - review sample	£1700	£999	Magnum Dynalab MD105T/DAC FM Valve Tuner - pre-owned	£4299	£2499
Kuzma			Magnum Dynalab MD108 FM Valve Tuner - Pre-owned	£6500	£2999
Kuzma Stabi XL4 turntable (black) - review sample	£22495	£13995	Magnum Dynalab MD108T Signature FM valve tuner	£8495	£6899
Kuzma 4Point tonearm - review sample	£4995	£4250	Magnum Dynalab MD108T FM Valve Tuner	£6995	£5499
Kuzma Stabi M turntable - review sample	£13995	£11995	Magnum Dynalab MD107T FM Valve Tuner	£4500	£3499
Kuzma Stabi S turntable/Stogi S arm (brass or black)	£2795	£1990	Magnum Dynalab MD105 FM Tuner	£2700	£2149
Kuzma Stabi SD turntable (for 2 tonearms)	£1695	£1450	Magnum Dynalab MD90T SE FM Valve Tuner	£2000	£1600
Kuzma Stabi S-12 turntable	£1895	£1599	Magnum Dynalab MD90T FM Valve Tuner	£1500	£1150
Kuzma Stogi S-12 tonearm	£1495	£1270	Magnum Dynalab MD90SE FM Tuner	£1500	£1150
Kuzma Stogi S-12 VTA tonearm	£1695	£1450	Magnum Dynalab MD90 FM Tuner	£1150	£975
Kuzma Stabi S HD Isolation Platform (solid maple)	£295	£249	Magnum Dynalab MD306 Integrated Amplifier - 2x125W	£4500	£1899
Kuzma Ebony Record Clamp	£649	£550	Rogue Audio		
Kuzma CAR MC cartridges - all models available - POA			Rogue Audio Stealth Phono MM/MC Preamplifier	£900	£399
BENZ-MICRO			Rogue Audio Triton Phono MM/MC Preamplifier - Silver finish	£999	£499
BENZ-MICRO LP-S mc phono cartridge (0.34mV)	£2999	£2299	Rogue Audio Sphinx Hybrid Integrated Amplifier	£1590	£999
BENZ-MICRO LP mc phono cartridge (0.34mV)	£2299	£1699	Running Springs Audio		
BENZ-MICRO GLIDER SL mc phono cartridge (0.4mV)	£799	£649	Running Springs Audio ELGAR mains conditioner - 4 outlets	£1300	£999
BENZ-MICRO GLIDER SM mc phono cartridge (0.8mV)	£799	£649	Running Springs Audio DUKE mains conditione - 2 outlets	£2000	£1395
BENZ-MICRO GLIDER SH mc phono cartridge (2.5mV)	£799	£649	Running Springs Audio JACO mains conditioner - 4 outlets	£3000	£1795
BENZ-MICRO ACE SL mc phono cartrodge (0.4mV)	£599	£499	Running Springs Audio HZ CROWN JEWEL Cord - 2m set 20A IEC	£2000	£1250
BENZ-MICRO ACE SM mc phono cartridge (0.8mV)	£599	£499	CARDAS		
BENZ-MICRO ACE SH mc phono cartridge (2.5mV)	£599	£499	CARDAS CROSS, NEUTRAL REFERENCE, GOLDEN CROSS & GOLDEN REFERENCE		
BENZ-MICRO MC GOLD mc phono cartridge (0.4mV)	£270	£229	interconnect, speaker, power and digital cable clearance!		
BENZ-MICRO MC SILVER mc phono cartridge (2mV)	£270	£229	CLEAR family of cables (review samples) also available.		
Karan Acoustics			E. & O. E.		
Karan Acoustics KA L REF Mk3 Line/Phono Pre (silver finish)	£12700	£6999	December 2015		
Karan Acoustics Phono Reference preamplifier (silver finish)	£15000	£10495			
Karan Acoustics PH1 phono preamplifier (silver finish)	£7900	£5490			
Karan Acoustics KA S 180Mk2 stereo amplifier - review sample	£5995	£3495			
Karan Acoustics KA I 180Mk2 integrated amplifier (black finish)	£6995	£4999			
Karan Acoustics KA M 650 mono amplifier (pair) - in-house pair	£18000	£7900			
Karan Acoustics KA M 2000 mono amplifier (pair) - (black finish)	£44995	£POA			

Test-driving a mini

Martin Pipe revisits the miniature cassette, and discovers if it ever had any musical potential.

Five years after launching its all-conquering Compact Cassette, Philips introduced a 'mini' version for use in dictation machines. This is ironic, as dictation was one of the original format's intended applications. However, its mediocre sound quality was being improved constantly. The strides in key aspects of technology – recording tape, heads and electronics – could also enable the original goal of dictation-quality recording to be squeezed into a much smaller form that business users could carry around in their pockets.

And so was born the Philips Minicassette, the Compact Cassette's 'mini-me'. Its speed was, on average, half that of the 'Compact' (i.e. 2.4cm/s) although (ferric-oxide) recording tape of the same width was employed. Like the original, it was a 'flip-over' format; here, though, recording capacity was a mere 15 minutes per side.

The mono-sound Minicassette was to prove reasonably successful in its role as a medium for dictating machines. But what about stereo? And music? Could a tiny Walkman-type personal player have appeared a



Microcassettes were offered in Type I (ferric, as shown here) and vastly-more expensive Type IV (metal) form. Few of the latter were sold.



This gives some idea of the scales involved. To achieve a half-hour of recording per side the (thinner) tape was run at half the speed of a compact cassette. This 'new old stock' RD-XM1 Sanyo player worked out of the box after more than 30 years in storage.

decade early? Movie director Stanley Kubrick had an inkling it could. He mocked-up a Minicassette music carrier for his 1971 interpretation of Anthony Burgess's dystopian novel *A Clockwork Orange*. After a night of ultraviolence, Alex relaxes to a pre-recorded DG Minicassette of Beethoven's Ninth in his apartment.

In reality, the Minicassette would have mangled Alex's beloved Beethoven. To enable a simple (and miniaturisable) tape transport, the Mini dispensed with traditional capstan/flywheel/pinch-roller arrangement to pass tape across the heads. Instead, the reels provided the necessary traction. It may have been simpler to implement, but a penalty was paid in terms of pitch stability – note that the speed at the beginning of a tape was different to that at its end! Terrible wow and flutter may be tolerable for the spoken word, but music is a far less forgiving art. And in any case, the total half-hour capacity would have been insufficient for an album – although thinner tape could have provided an answer.

But there was Eastern hope. In 1969, Olympus introduced a rival. Also intended for dictation-type voice recording applications, the so-called 'microcassette' closely resembled the earlier Philips design and even specified similar tape width and speed.

Into the oil-damped jaws of the RD-XM1 cassette compartment. The tape runs in the opposite direction to that of a compact cassette, and so the transport path is in 'opposite order' (from right to left, erase head, record/playback head and capstan/pinch roller).





The Philips 'Minicassette' arrived two years before the microcassette, and owing to its futuristic high-tech appearance was featured in Stanley Kubrick's film *A Clockwork Orange*.

The housing was, however, different enough to be physically-incompatible. A key difference from the Philips was that the microcassette made use of conventional capstan-drive, opening up the possibility of 'hi-fi grade' spec. Better still, thinner tape doubled the potential recording time to a more useful hour. Many machines also had a half-speed (1.2cm/s) facility that



The first stereo microcassette product was the SR11, which was Olympus' attempt to tackle a personal audio market then dominated by the Sony Walkman.

doubled recording times, albeit with massively-impaired sound quality.

For over a decade, the microcassette underpinned Japanese pocket memos and answering devices. Olympus' tiny PearlCorder L400, launched in the early 1980s, was the smallest microcassette recorder ever sold.

At about this time, though, Olympus tried something different

– the SR11, a model with stereo capability. Ferric tape running at half the speed of a compact cassette would have suffered from restricted frequency response and so the Olympus recorder was designed to take advantage of special metal-particle tapes offered specifically for music recording. A bootlegger's dream? Unfortunately, battery life was lousy; typically, you could expect to squeeze no more than a couple of hours recording from a fresh set of alkaline AA cells. Those metal microcassettes were difficult to obtain, and expensive too.

But for a while, the imagination of the Japanese majors was fired up; so too was eighties techno pioneer Juan Atkins, who name-checked the format in his Model 500 track 'Future'.

Sanyo introduced the substantially-built RD-XM1 featured here in 1981 and similar microcassette decks intended for integration into hi-fi systems were later marketed by Hitachi and JVC. By 1982, a microcassette Walkman was being offered by Sony. In some countries Technics sold a diminutive microcassette 'casseiver' (tuner, amplifier and tape in one unit) and even a 'twin deck' with separate transports for microcassette (record/play) and Compact Cassette (play-only).

By far the oddest product, though, was the heroically-named Shogun 'Sound Muff'. This was an ungainly pair of headphones with a stereo microcassette player built in! A deluxe version had FM radio too. A handful of pre-recorded microcassettes were sold for the Sound Muff but the choice was limited. None of the major labels supported the format.

Lack of software wasn't the only

Incredibly, Technics sold this microcassette deck/amplifier/tuner ('microcasseiver') for a while in some regions – most noticeably Japan. Technics also sold a 'twin-deck' machine that was able to copy pre-recorded musicassettes from a play-only cassette deck to blank micro-cassettes. I wonder what the music industry thought of that...



reason for the failure of high-quality stereo microcassettes to catch on. The performance fell short of the full-size Philips cassette and Japanese miniaturisation was to shrink the Walkman to near-cassette size. Of course Walkman owners, unlike those who took the micro route, had access to a burgeoning variety



To each his own.



A 1982 advert for the US market. Sony sold a personal microcassette machine as part of its Walkman range. The M-50 'Micro Walkman', was offered for use with an optional 'FM tuner pack'. It is dwarfed by the Walkman Professional (then only offering Dolby 'B' noise reduction) that can be seen beneath.

of pre-recorded material; during the 1980s, sales of pre-recorded cassettes actually eclipsed those of LPs. Stocks of microcassette decks, which never received massive distribution, ended up being disposed of inexpensively. I can remember Richer Sounds flogging off the JVC model for less than £20 a piece. And this brings us neatly back to the Sanyo RD-XM1. I chanced upon mine while searching on eBay.

It was 'new old stock' - still in the manufacturer's sealed carton,

after nearly 35 years! I guess that for around £200 new, there weren't many takers. That sum would, after all, have fetched you a more-than-competent cassette deck back in 1981. The RD-XM1 looks like a conventional cassette deck 'in miniature'. It features Dolby B noise reduction (the later Hitachi was the only deck to spec Dolby C), complete with the then new-fangled HX (headroom extension) circuitry to improve high-end response, a two-motor logic-controlled transport with wired-remote possibility, headphone and microphone socketry, LED meters with peak-reading characteristics, a smooth oil-damped cassette well and compatibility with metal and ferric tapes.

This machine only offers the 2.4cm/s speed, but few bothered with 1.2cm/s owing to lacklustre results (the JVC model supported it,



Sold in the UK for a short period in the early 1980, was the Shogun 'Music Muff' – an ungainly pair of headphones with a microcassette player built into one cup.

though). Cheap phono-phono cables and - another blast from the past - a demonstration tape containing cheesy instrumentals had accompanied the machine during its long slumber. It almost felt like sacrilege (or, at the very least, opening a time capsule) to break open the box. But I went further still!

A look inside the deceptively-heavy machine reveals a high standard of build quality, although an awful lot is packed into a case that has about half the volume of a standard cassette deck.

I can't imagine servicing will be easy – I noticed tiny motors and ultra-thin belts, neither of which are



This Hitachi D-MC50 was a 'late' microcassette deck, and the only one I'm aware of to feature Dolby C as well as Dolby B. It claimed a response that extended to 14kHz and a signal-to-noise ratio of 66dB, provided that metal tape and Dolby C were employed.

standard items. Impressively the thing worked out of the box. That says something of Japanese engineering, if not careful long-term storage arrangements. Rewind, forward and takeup were a little erratic, but this was fixed by 'roughing up', with a miniature needle-file, the surface of a tiny idler wheel that couples the reel motor's drive to the spool carriers. Thankfully, this idler is accessible through a gap in the top of the transport – the only disassembly required is removing the lid.

The RD-XM1's specs are modest – its service manual (available from Hi-Fi Engine, free of charge) quotes -7dB points of 8kHz and 10kHz for ferric and metal tape respectively, a Dolby'd signal-to-noise ratio of 49dB with metal tape and a wow-and-flutter figure of 'less than' 0.09%. Metal-compatible top-loading cassette decks of the early '70s could fare better!

Interestingly, the specs given in some German advertising I tracked down are much better – a 14kHz upper frequency limit and 0.05% wow and flutter are given. A concrete example of the 'continual improvements' that such products are 'subject to' or a classic example of misleading advertising? Whatever – the ad makes reference to 'High-Fidelity', so the concrete test is to try it with some audio!

I tried some old recordings dictation and answering-machine phone calls, and the RD-XM1 did a good job with those (naturally, Dolby was turned off during playback). One of the other tapes was a metal 60-minute type that contained some opera excerpts in stereo. It lacked top – owing to azimuth error – and the music had been 'broken into' by the profane messages of mysterious children! But pitch stability was surprisingly good. I then found a Maxell UD (ferric) blank and on it proceeded to record a range of music including Al Stewart's classic 'Year of the Cat' and a selection of Art of Noise tracks from CD.

Expectations were low; a treble

that's 7dB down at 8kHz is going to sound very muffled. I was pleasantly surprised with the outcome, though. There was definite HF compression, but in a bizarre way this helped here as 'Year of the Cat' is a rather bright-sounding CD. But treble attenuation wasn't as bad in practice as I thought it might be; the result was certainly listenable. Even with Dolby, though, noise could intrude during quieter passages – it was certainly noticeable between tracks. Wow and flutter was for the most part unobtrusive,



Here is part of the RD-XM1 mechanism. The top of the large capstan flywheel and its flat drive belt can be seen; they contribute to speed stability that was surprisingly good. Note the tiny belt and motor above; they're dwarfed by the mechanism-control solenoid!

even with Spanish guitar and piano; the more sustained synth notes and chords found in the Art of Noise managed to emerge intact.

With metal tape, the response extended noticeably and was obviously cleaner. The overall effect is of a budget early-80s cassette deck. And that would have sold for around £70 rather than £200. Maybe that's why it ended up in a storage locker – and not someone's living room. As a piece of technology, though, the RD-XM1 is fascinating. And chances are those old voice recordings, the residue of the sort of application that was the microcassette's true calling, won't sound better anywhere else.

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

WORLD CLASSICS

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

TURNTABLES

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



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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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



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

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

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

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

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

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



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

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

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

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

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



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

TONEARMS

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

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

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



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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

PHONO STAGES

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

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



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

INTEGRATED AMPLIFIERS

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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



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

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

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

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

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

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

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



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

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

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

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

POWER AMPLIFIERS

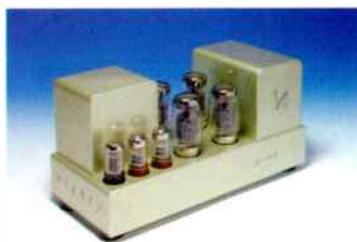
ELECTROCOMPANET NEMO 2009 £4,995 (EACH)

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

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

QUAD II-80 2005 £6,000 PER PAIR

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



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

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

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

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



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

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

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

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

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

HH ELECTRONICS TPA-500 AMPLIFIERS 1973 £110
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain

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

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

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



LEAK STEREO 60 1958 £N/A
Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability rarity value means high price.

QUAD II 1952 £22
The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly



LEAK POINT ONE, TL10, TL12.1, TL/12 PLUS 1949 £28
Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical. Deeply impressive in fine fettle.

PRE AMPLIFIERS

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



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

CONRAD JOHNSON MOTIV MC-8 1986 £2,500
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden. Something of a curio, but worthwhile nonetheless.

AUDIO RESEARCH SP-8 1982 £1,400
Beautifully designed and built high end tube pre-amplifier with deliciously sweet and smooth sound. Not the last word in incision or grip.

LINN LK-1 1986 £499
A brave attempt to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not bad for under £100.

NAIM NAC 32.5 1978 £ N/A
Classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl! but a tad forward for digital.

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

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



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

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

LOUDSPEAKERS

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



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

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



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

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



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

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

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

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

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

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



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

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

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

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



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

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

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

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



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

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

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



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

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



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

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

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

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



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

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

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



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

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

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

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

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

SYSTEMS

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



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

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

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

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



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



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

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

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



TUNERS

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



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

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

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

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

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



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

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

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

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



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

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



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

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

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

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

HEADPHONE AMPLIFIERS

GRAHAM SLEE NOVO 2009 £255

Dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.



MUSICAL FIDELITY X-CAN V8 2008 £350

Open and explicitly detailed sound plus serious bass wallop. A great partner for most mid-to-high end headphones.

CD PLAYER/RECORDERS

MUSICAL FIDELITY TRIVISTA 2002 £4000

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

MARANTZ SA-1 2000 £5,000

The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



SONY MDS-JE55ES 2000 £900

The best sounding MD deck ever, thanks to awesome build and heroic ATAC-DSP Type R coding.

PIONEER PDR-555RW 1999 £480

For a moment, this was the CD recorder to have. Clean and detailed.

MARANTZ DR-17 1999 £1100

Probably the best sounding CD recorder made; built like a brick with a true audiophile sound and HDCD compatibility.



CAMBRIDGE AUDIO CD4SE 1998 £200

A touch soft in the treble and tonally light, but outstanding in every other respect.

SONY TCD-8 DATMAN 1996 £599

Super clean sound makes this an amazing portable, but fragile.

LINN KARIK III 1995 £1775

The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

NAIM CDS 1990 £ N/A

Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.

MARANTZ CD73 1983 £700

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



MERIDIAN 207 1988 £995

Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

SONY COP-R1/DAS-R1 1987 £3,000

Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.

CAMBRIDGE AUDIO CD1 1986 £1500

Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.



MERIDIAN MCD 1984 £600

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

SONY CDP-701ES 1984 £890

Sony's first bespoke audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperback-sized remote control.

YAMAHA CD-X1 1983 £340

Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

SONY CDP-101 1982 £800

The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!



ANALOGUE RECORDERS

AIWA XD-009 1989 £600

Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

NAKAMICHI CR-7E 1987 £800

The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



SONY WM-D6C 1985 £290

Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

PIONEER CTF-950 1978 £400

Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.

YAMAHA TC-800GL 1977 £179

Early classic with ski-slope styling. Middling sonics by modern standards, but cool nonetheless!

SONY TC-377 1972 £N/A

A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

REVOX A77 1968 £145

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days.

COMPACT DISC TRANSPORTS

ESOTERIC PO 1997 £8,000

The best CD drive bar none. Brilliantly incisive, ridiculously over engineered.

TEAC VRDS-T1 1994 £600

Warm and expansive sound made this a mid price hit. Well built, with a slick mech.

KENWOOD 9010 1986 £600

The first discrete Jap transport was beautifully done and responds well to re-clocking.

DACs

DCS ELGAR 1997 £8500

Extremely open and natural performer, albeit extremely pricey - superb.

DPA LITTLE BIT 3 1996 £299

Rich, clean, rhythmic and punchy sound transforms budget CD players.

CAMBRIDGE AUDIO DAC MAGIC 1995 £99

Good value upgrade for budget CD players with extensive facilities and detailed sonics.

PINK TRIANGLE DACAPO 1993 £ N/A

Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

QED DIGIT 1991 £90

Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

CABLES

MISSING LINK CRYO REFERENCE 2008

£495/0.5M

High end' interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

TECHLINK WIRES XS 2007 £20

Highly accomplished interconnects at an absurdly low price. Stunning value for money.

VDH ULTIMATE THE FIRST 2004 £250

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space.



WIREWORLD OASIS 5 2003 £99/M

Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

TCI CONSTRICTDR 13A-6 BLOCK 2003 £120

Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

vinyl section

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A new affordable turntable/arm combination from Pro-Ject impresses Martin Pipe.

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Paul Rigby extols the virtue of Audio Origami's latest uni-pivot tonearm.

PARASOUND HALO JC 3+ PHONOSTAGE 103

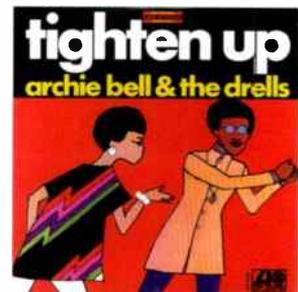
The upgraded phonostage from Parasound is a potent performer, says Paul Rigby.

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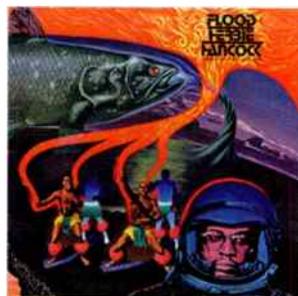
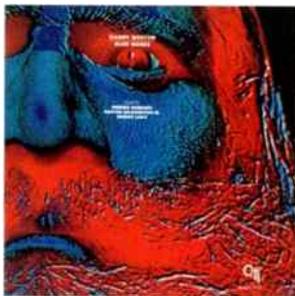
Paul Rigby reviews a new book on The Beatles' time in America.



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news



SPEAKERS CORNER

A super selection of audiophile vinyl from the German audiophile outfit Speakers Corner (www.speakerscornerrecords.com) with Liza Minnelli's 'Liza With A Z' as my personal highlight. This 1972 TV soundtrack includes the sublime 'Cabaret Medley'.

Next, Herbie Hancock's 'Flood' (1975) is a live jazz double album recorded and initially released only in Japan that includes electric and acoustic piano works. Superb adventurous funk.

Randy Weston's 'Blue Moses' jazz piece (1972) was his most commercially successful album which, oddly, he disliked – believing it to be too polished. He plays both acoustic and Rhodes piano here, backed by the likes of Freddie Hubbard, Grover Washington and Ron Carter. A superb album, no-matter what he thinks.

Also look out for George Duke's excellent 'Follow the Rainbow' (1977). A creative R&B/soul/funk outing that saw his exit from the jazz genre.

MUSIC ON VINYL

German new wave band Spliff (1982) were formed in 1979 by the disgruntled male members of the Nina Hagen Band. '85555' was one of four LPs before their 1984, spliff, er, split.

Packed with folk rock love songs, 'Takes Off' was a reasonable, pre-Grace Slick, debut for Jefferson Airplane.

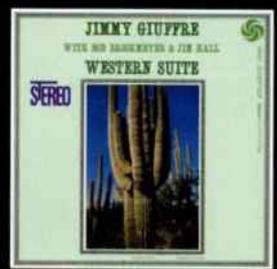
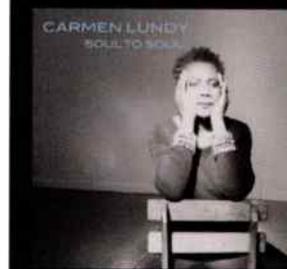
From Archie Bell & The Drells 'Tighten Up' is an infectious and danceable LP that offers a perfect slice of Philly soul featuring 'I Can't Stop Dancing'.

Ghostface Killah's 'Ironman', featuring Raekwon and Cappadonna, is light in tone and features samples from '70s soul with plenty of inventive production and rhymes.

PURE PLEASURE

Two new releases from UK audiophile specialist Pure Pleasure (www.purepleasurerecords.com). First up is Jimmy Giuffre with Bob Brookmeyer and Jim Hall with 'Western Suite' (1958). Jazz saxophonist, clarinetist and composer Giuffre created the four-movement 'Western Suite', his a crowning achievement and a reinvention of the jazz trio.

Also look out for Carmen Lundy's 'Soul To Soul'. The sister of bassist Curtis Lundy, Carmen is a singer/composer open to folk, R&B, and pop as well as jazz improv.



B.B. KING

This double album is more a dip into the accompanying larger four and ten CD sets that are also out now. 'Selections From Ladies & Gentlemen...Mr B.B. King' (Back To Black; www.backtoblackvinyl.com) features seventeen tracks.



POSITION NORMAL

...is the name of the new release from Steeple Remove (gonzairecords.com). Mixing a minimalistic underground rock beat with a New Wave 80s ethic, this is an album that might just have something about it. Worth a spin.



JENNIFER WARNES

Taking an aggressive, more modern take on a suite of Leonard Cohen songs, Warnes worked closely with the composer on this 1987 classic 'Famous Blue Raincoat' (Impex; impexrecords.com). This LP shot Warnes into the big league and gave Cohen a boost too.



MARC BOLAN

From Let Them Eat Vinyl (www.letthemeatvinyl.com) comes Marc Bolan's 'Love And Death' featuring a dozen rare, 1966 demos with rock backing music and vocals added in 1981. That is, the songs feature overdubs added way after the man died and it doesn't sound nice at all. That said, it's also a fascinating rarity in its own right and fans will want to hear it.

From the same label, also look out for Kansas' 'Bryn Mawr 1976/The Classic FM Broadcast' first seen on CD, last year, via Chrome Dreams and featuring the same 10 tracks.

CESARIANS

The Cesarians' new vinyl LP 'Pure White Speed' (NYAT; www.notyouraverageertype.com) runs at 45rpm. The album itself would be improved if the band sacked their inept lead singer. Apart from that...

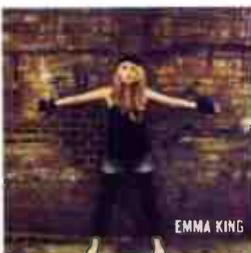


A BOX OF SIX

From Matthew Sweet and Susanna Hoffs is a collectable 6LP box set called 'Under The Covers' (Demon). As you might have guessed, this is a collection of covers from the likes of The Velvet Underground, Little Feat, Buzzcocks, R.E.M., the Smiths, Prince and more. Originally released as individual albums in 2006, 2009 and 2013.



...AND FINALLY



Emma King's self-titled album (www.emmakingmusic.com) is packed with sassy, melodic...country rock, I suppose you'd call it. Upbeat and tap tappy.

From The Carburetors 'Laughing In the Face Of Death' (SPV; www.spv.de) is old fashioned, in your face, full of attitude rock'n'roll. Jerry Lee would love it. Then again, so would Van Halen.

'Legend' (Silva Screen, www.silvascreenmusic.com), the Original Motion Picture Soundtrack, features Jerry Goldsmith's score on vinyl for the first time...and in a

gatefold too!

Two from Luke Haines (remember The Auteurs?). 'British Nuclear Bunkers' is a brief, tippy-toe collection of ideas that never really coalesce. Fans of this reposted songwriter should tune in, though. Also, check out a 10" EP from the man too ('Adventures in Demantia').

Via Gilles Peterson comes Sun Ra and his Arkestra in 'To Those of Earth...And Other Worlds' (Strut; www.strut-records.com) offers two LPs of unmixed originals, rarities and unreleased tracks from the alien avant-jazz being.

From Third Man (www.thirdmanrecords.com) comes Timmy's Organism's 'Heartless Heathen', a grinding, gritty, high-tempo and, above all, loud rock excursion. Also look out for Video's 'The Entertainers'. Another rock piece, more considered, introspective yet still packing a punch.



A turn for the better



Martin Pipe takes Pro-Ject's new RPM 5 Carbon turntable for a spin

Sitting somewhere in the middle of Pro-Ject's range of turntables is the RPM 5 Carbon. It supersedes the well-received RPM 5, which has been available in various guises for a decade or so.

There are some significant differences between the old and new. Most obviously, the motor is no longer built into the turntable with a traditional sub-platter belt-drive system concealed under the playing surface. As with higher-end Pro-Ject 'tables like the RPM 9 and 10, the drive motor is decoupled. It's built into a separate cylinder that sits atop a solid non-slip base.

The motor is a synchronous type, internally-driven by a stable quartz-referenced oscillator and

heatsinked amplifier chip that are powered by a 15 Volt DC wall-wart. It's coupled, via a stepped pulley, to a substantial acrylic platter via a round cross-section neoprene belt that runs around its periphery. Said steps provide playback of 33rpm and 45rpm discs; 78rpm is an optional extra for shellac-lovers.

A hook tool for moving the belt between steps is included with the package. This is easy enough to accomplish, but a switch would be even easier! The deck's only control turns the motor on or off. A blue glow from an LED built into the motor-unit casing is transmitted through the platter - an attractive effect that adds to the RPM 5 Carbon's visual class, especially if you appreciate listening to your music in

(semi) darkness!

The turntable's name suggests the use of carbon-fibre - a stiff yet light material, one that is ideal for so many aspects of turntable design. Carbon-fibre is used in the manufacture of the supplied tonearm (which I'll discuss shortly), but it also forms the outer coating of the turntable's low-resonance base/plinth.

This supports the main bearing, that features a ceramic ball ('for minimal rumble', according to Pro-Ject), and it supports the rear-mounted tonearm socket box fitted with high-grade phono sockets and earth terminal.

The opposite end of the main bearing shaft - the spindle - is threaded to accept a disc-clamp that makes all the difference when playing in

warped records.

And so to the tonearm. This is Pro-Ject's own 9cc Evolution, a low-mass design that typically sells for well over £500 on its own. Its tapered 9in. arm-tube that integrates a fixed headshell and finger-lift, is also made of carbon-fibre.

The arm is solidly built and silky-smooth, with no play, it's accompanied by three counterweights to accommodate a wide range of cartridges. Our review sample was supplied with Ortofon's Quintet Black MC cartridge, a proven £600 transducer that won a prestigious Hi-Fi World Award in 2014.

The Quintet Black is a medium-compliance moving-coil cartridge with a Shibata-profile stylus designed to track at 2g or so, making it well-suited to the 9cc Evolution. Theoretically, the cartridge/arm resonance of this combo is 10Hz – below the audible spectrum and above warp frequencies.

Incredibly, the RPM 5 Carbon/9cc Evolution – something of a bargain, considering the tonearm fitted – is being offered with the Quintet Black for a saving of over £200. It's almost as if the turntable part of the package was being given away!

If you don't want an MC, though, UK importer Henley reckons that the Ortofon 2M Bronze MM works well in the arm. I'm sure that other medium-to-high compliance types should be compatible, though.

Getting things going is pretty straightforward by turntable standards. Pro-Ject has clearly given this issue considerable thought. The felt mat is part of the overall system; the firm doesn't recommend changing it. Three 'tip-toe' feet are attached to the base via threaded bolts, ensuring everything's level. There's even a spirit level!

Also supplied is a template that enables the motor to be positioned the correct distance from the base, avoiding belt stretch. If the cartridge has been pre-installed, no need to worry about things like VTA or azimuth adjustment.

SOUND QUALITY

I coupled the turntable with an Arcam A49 'super-integrated' amplifier and a pair of Quadral Aurum Wotan VIII speakers. The unit was placed on a custom slate-topped table and set up according to the instructions. The A49 only has an MM stage, albeit a good one for

an integrated, and so I used a High-End Audio Devices TX4 'The Head' transformer to step up the Ortofon's low output voltage to something the Arcam can work with. I then put the RPM 5 Carbon through its paces with a wide variety of listening material.

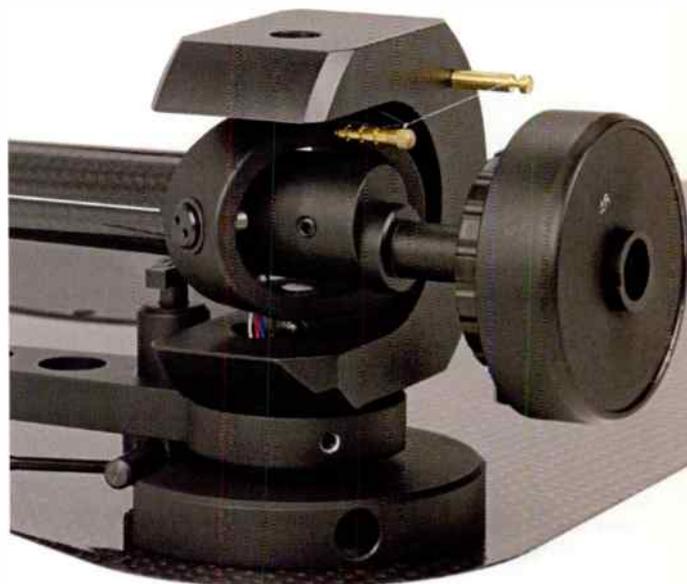
As my own Valhalla-era LP12 doesn't exactly make the playing of 45rpm material a user-friendly experience, I took great delight in dropping the Pro-Ject's belt to the lower motor pulley and spinning some of the wonderful twelve-inch singles of yesteryear. A copy of Alton Edwards' 'I Just Wanna Spend Time With You' demonstrated from the outset that this deck has a commendable grasp of rhythmic attack that will, at the very least, provoke some foot-tapping (proving, along the way, that isolation to external vibration is commendably good).

This early-80s track has a Moog bassline, which here is tight and well-defined with no trace of sag. Back in the day, 'disco' singles tended to be derided for their sound quality. And quite unfairly, certainly if my experiences are anything to go by; there is so much more to them than the 'big bass' and insistent rhythm (real drums here – not just electronic ones!) that kept the era's dancers on their feet. Here, you can also delight in the layers of guitar, brass and keyboard melody.

It enticed me to spin some of its contemporaries, among them Nick Straker's 'You Know I Like It',



The motor unit is 'decoupled' from the turntable to minimise the vibrations that can cause 'rumble'. Inside is a synchronous motor powered by a quartz-referenced signal generator – the Project RPM 5's turntable speed is thus not influenced by any mains supply variations



Pro-Ject has specified the worthy 9cc Evolution arm, a carbon-fibre low-mass design that – as you can see here – uses a traditional 'dangling mass' for anti-skate bias. The 9cc Evolution is supplied with three different counterweights to suit a range of cartridges.

Unlimited Touch's 'Searching to Find' (this one a 33rpm 12in. single) and Toney Lee's 'Reach Up'. Backing the optimism and good vibes of those soulful vocals were instrumental elements that the RPM 5 Carbon revealed in a balanced and musically-satisfying way. The middle track of the above trio has a guitar line that runs through most of the track. On lesser systems, this tends to be 'pushed back' by the mix's more prominent elements. But not here...

Naturally, dance music of a (slightly!) more recent vintage – late-80s house cuts like Nitro Deluxe's classic 'Let's Get Brutal' – fared well too. The electronic rhythm is appropriately-incisive, while the synth chords and bassline get the depth they deserve. Somewhat more down-tempo but musically-sophisticated material – like 'Trust Me', from Herbie Hancock's 1979 'Feets Don't Fail Me Now' LP – also fared well, with flow and detail. Even the vocoder, which in my view gives Mr. Hancock a curiously 1930s lounge-music sound, is mostly free of 'rasp' or sibilance.

The same comment also applies to Joan Baez – even on her 'Best Of' compilation's final track, the best-selling cover of The Band's 'The Night They Drove Old Dixie Down'. This demonstrates that tracking errors have been minimised – good stuff for a nine-inch arm. What followed, as the stylus sped towards the run-out groove, was for the most part silence. The RPM 5 Carbon's rumble

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Graham Slee Fantare Gramamp 3	used	179	used	1999	used	699	dem
Linn Sondak, Head PSU, vgc boxed	used	749	used	10999	used	399	used
Linn Basik Plus, vgc+	used	149	used	249	used	399	used
Logic DM1DI /Alphason HR100s/MC15 super REDUCED	used	699	used	2999	used	599	used
Lyra Skala, excellent boxed	used	2249	used	1999	used	399	used
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Michell Tecnoarm A, excellent	used	399	dem	799	used	199	used
Musical Fidelity XLP5V8 phono stage	dem	199	used	119	used	1999	used
Musical Fidelity XLP-S phono stage, due in	used	149	used	199	used	699	used
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Project PhonoBox SE phono stage, excellent value	dem	99	used	899	used	249	used
Project RPM 10 turntable with arm and platform	dem	849	used	5499	used	249	used
Project Debut Carbon, near mint REDUCED	dem	249	used	4499	used	99	used
Project Xpression mk2, arm and cart	used	199	used	8999	used	399	used
Project RPM 4 Turntable/Arm with cover, great!	used	249	dem	2999	used	1199	used
Project Perspective, Speedbox SE, Shure V15Mx	used	599	used	1999	used	449	used
Project PhonoBox S, excellent	used	99	used	5499	used	149	used
Rego Planar 2, vgc+ boxed	used	179	used	1749	used	99	used
Rego RP3, RB303, Elys 2, excellent REDUCED	dem	399	used	1749	used	2249	used
Roksan Xerxes 20", DS1.5, Phono, Tabriz	used	2499	used	299	used	999	used
Roksan TMS 2 with Reference PSU, boxed as new	used	2899	used	Call	used	999	used
SME 3009 improved, vgc+	used	199	used	999	used	199	used
SME V, excellent, boxed, due in	used	1499	used	849	used	649	used
SME V12, nr mint boxed	used	2249	used	6499	used	119	used
SME M2/3r, nr mint boxed	used	649	used	299	used	99	used
Technics 1210/Funk platter/NEW bearing/Hynes PSU	used	1499	dem	399	used	99	used
Thorens TD170 Auto excellent boxed REDUCED	dem	229	used	449	used	99	used
Thorens TD150, fair condition, no arm, REDUCED	used	79	used	4499	used	599	used
Thorens TD160 original, boxed	used	199	used	1099	used	499	used
Thorens TD209 turntable package REDUCED	dem	649	used	1499	dem	Call	used
Thorens TD2030 Blue turntable	new	999	used	799	used	349	used
Townshend Elite Rock c/w Excalibur/Merlin/Cover	used	949	used	149	dem	199	used
Transfiguration Temper W, great condition.	used	699	used	299	dem	1199	used
Trichord Dino Mk2, excellent	used	249	used	449	used	399	used
VDH Calibri M/C cartridge, as new boxed, REDUCED	dem	2899	used	3999	used	299	used
VDH Candor M/C cartridge as new boxed, REDUCED	new	1899	used	349	used	449	used
VPI Scout, JMW arm excellent	used	999	used	1099	used	1199	used
Wilson Benesch Act 1 Tonearm, nr mint superb	used	799	used	449	dem	499	used
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Radio/Recorders							
Aiwa F640 3 Head Cassette deck, just serviced	used	99	used	249	dem	899	used
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Arcam T61, vgc+, REDUCED	used	69	used	1499	used	199	used
Cyrus FM7, excellent boxed	used	99	dem	499	used	2249	used
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Revox PR99, crated, REDUCED	used	749	dem	499	used	399	used
Revox H1, just serviced, great condition	used	499	dem	499	used	1499	used
Sony TA-KB820S, superb condition	used	79	dem	549	used	249	used
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TEAC V8000S, superb, REDUCED	used	249	dem	699	used	399	used
TEAC CD RW 890, brand new sealed, due in	used	Call	dem	799	used	Call	used
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Accessories/Cables							
Audze LCDXC excellent	dem	899	used	349	dem	899	used
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Isotek Nova, excellent boxed with cable	used	799	used	999	dem	799	used
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MIT Cables - various	used	Call	used	499	dem	399	used
Musical Fidelity M1 HPAB	used	Call	used	499	dem	199	used
NAIM Naxo 2-4	used	499	used	499	dem	399	used
NAIM XPS, excellent boxed	used	499	used	499	dem	1499	used
NAIM HiCap, various Olive/Chrome, starting at	used	549	used	249	dem	249	used
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NAIM Uniti 2, excellent ex demo	used	2299	used	Call	dem	Call	used
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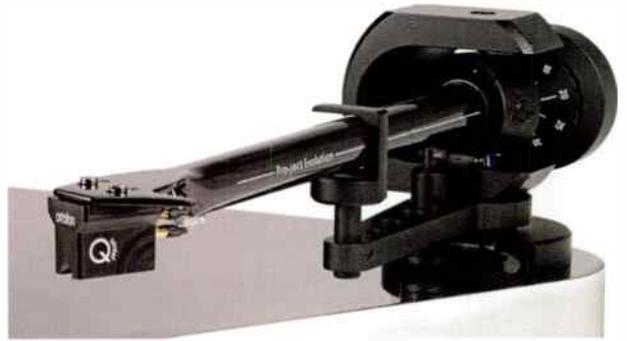
contribution is evidently very low; indeed, much of what I heard tended to be pressing rumble. This varied widely from record to record; indeed the resolution of the RPM 5 Carbon was such that with one (stereo) LP I could hear a slight tone that could only be attributed to a setup fault with the mastering or cutting equipment.

Also evidently low are wow and speed instability. A Philips recording of Mozart's 2nd Piano Concerto (LSO/Haebler, c. Rowicki) was characterised by rock-solid piano

pitch, bereft of any tell-tale 'wavering' or coarseness.

The accompanying orchestra was portrayed with a definite ambience and sense of scale. Electronic music with sustained notes and chords, such as Kraftwerk's classic 'Autobahn', succeeds for the same reason. At this time (1974), Kraftwerk had not gone completely electronic. The flute, particularly evident on album-closer 'Morgenspaziergang', was clean and free of 'flutter'.

Another track on the album's second side, 'Kometenmelodie 2', has



Our review sample was provided with an Ortofon Quintet Black, a fine moving-coil cartridge with Shibata stylus tip. This is offered with substantial discount in a 'package deal'.

a bright melody that tends to 'bloom' and on some players break into harshness.

And while the RPM 5 Carbon wasn't completely free of such analogue artifacting, it was kept to a comfortable minimum that didn't detract from the music.

CONCLUSION

The RPM 5 Carbon is solidly-built, well-designed and fine-sounding disc player that continues the Pro-ject tradition.

Given the tonearm that's included, and the Ortofon cartridge special-offer that Henley Designs assures me will "run indefinitely", the package represents excellent value for money. As such it comes highly-recommended.



The RPM 5, with substantial acrylic platter removed to reveal the carbon-fibre finish and platter bearing. Note the terminal box at the rear of the turntable.

MEASURED PERFORMANCE

After some minutes warming up the Pro-ject 5 Carbon achieved a good level of speed stability over a long period, wow measuring a low 0.13% from a centred test disc.

Our analysis shows very little basic rate variation at the rotational frequency of 0.55Hz (33rpm) and the fact that speed was held tightly by a stable motor was the major reason for this; low speed variation results in low wow.

As a result the DIN weighted wow and flutter figure was low for a budget turntable, measuring 0.1% with little of the expected variance from a simple, low cost drive system lacking a quartz reference.

The Ortofon Quintet Black MC cartridge fitted to our review sample – and an optional extra – had a smooth response and this will give it a tonally neutral balance with good rendition of detail. The Shibata stylus tracked

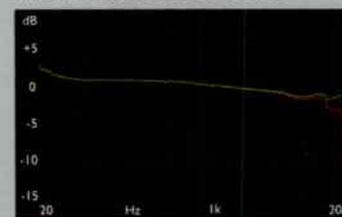
inner grooves with little 'tracing loss' measurement showed. A recommended 2.3gm VTF allowed it to track (i.e. stay in the groove) 23cms/sec in the midband and 70µm peak amplitude at 300Hz – impressive results.

The carbon fibre arm has a first order bending mode at 265Hz and second order harmonic at 530Hz. It is quite stiff and should have a good low end performance, but is a tad lively in the lower midband.

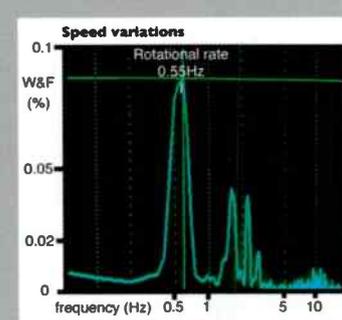
The Pro-ject 5 Carbon turntable measures well all round, and especially for the low price, having especially good speed stability. Sustained notes should sound stable and pure, whilst the Quintet MC cartridge is superb. **NK**

Speed accuracy	+0.2%
Wow	0.13%
Flutter	0.05%
Total W&F weighted	0.1%

FREQUENCY RESPONSE



SPEED VARIATIONS



RPM 5 CARBON (£899; £1299 WITH ORTOFON QUINTET BLACK)



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Graduate to Uni



Promising a possible solution for multi-cartridge owning analogue fans, Paul Rigby reviews Audio Origami's UniArm.

The UniArm unipivot sports a familiar Naim Aro feel to it – and arrives with Rega or Linn cutout fitting options. There are various customer-ordered colour options, in addition to aluminium and black finishes.

The angular headshell (designed for extra strength) is secured by a tight-fitting, hidden pin into the tube. Johnny Nilsen, owner and designer for Audio Origami added: "The arm has been anodised. It's very hard. You can attack it with the edge of a coin but you won't scrape it. Also, if you touch it, you won't leave fingerprints. We had to construct the arm before we anodised it, a rarity in manufacturing. In effect the tube is a constrained layer, an outer layer of anodised coating, soft aluminium in the centre and hard anodised layer

on the inside that you cannot see".

The sapphire bearing includes a tungsten-over-steel spike and offers two cups.

"There is one cup in the centre that the spike goes into" said Nilsen, "and, above that, a second cup allows you to tweak the arm sound with the supplied bottle of silicon 'treacle'. Add a small amount to the bearing cup and listen to the effects, adding and removing the silicon (a long cotton bud is supplied to clean the cup), until you are satisfied. The damping might improve the arm's musicality but possibly at the expense of dynamic ability and punch. The wee bit of damping oil can also calm down a bright cartridge".

The main feature of the arm is that each tube (or "wand" as Nilsen has it) can be quickly swapped out and replaced with a spare.



The quick-release plug allows for speedy arm tube replacements.

In this way, you could, in extremis, buy an arm plus three spare wands (£1,000 each), fit a different cartridge to each and 'hot swap' them when you are changing from, say, stereo to 78rpm cartridge

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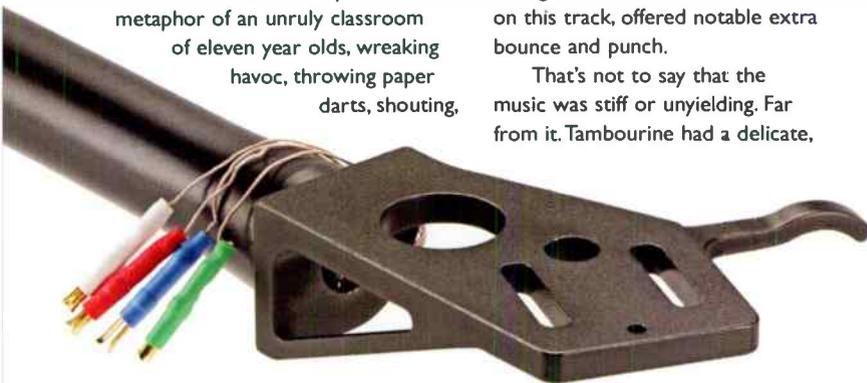
to mono (1 mil) to mono (0.7mil). I asked Nilsen if he could fashion a suitable storage container for an owner with multiple spare wands and he replied in the affirmative.

Swapping "wands" in this way is far more audiophile than the Jelco-type headshell hot-swap as the "wand" is more rigid and less liable to micro-movements.

SOUND QUALITY

Spinning the Nancy Wilson vinyl track 'Reach out For Me', this song features orchestral backing with a bank of strings, plus notable secondary percussion including glockenspiel, tambourine plus guitar – and occasional drums. There's plenty going on.

To convey the first impression of the UniArm, I can only use the metaphor of an unruly classroom of eleven year olds, wreaking havoc, throwing paper darts, shouting,

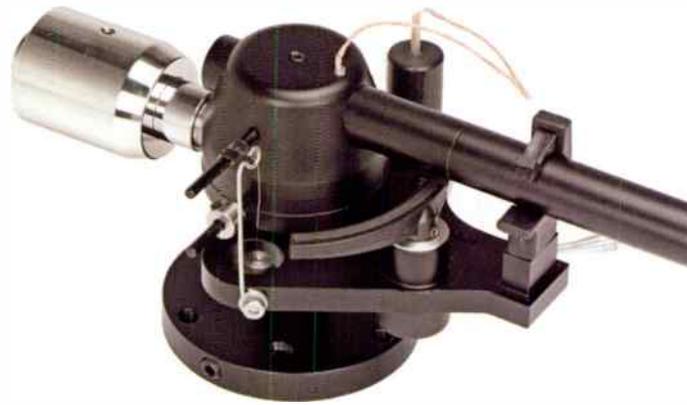


The headshell has been specially designed to enhance its inherent strength.

running around the class and such like until the commanding presence of a strong and firm teacher storms into the room and stops the shenanigans immediately.

That teacher influence is exactly what the UniArm does to music and its extraneous frequencies. I was very impressed just how controlled and strong Wilson's voice sounded. It was mature, full-bodied and had complete command of the lyric. There was power, potential and variance in delivery. With some arms, this Wilson track sounds like her voice is just part of the mix, in amongst the backing instruments. With the UniArm, she is star of the show. I was also happy to hear that a slight spotlighting of her voice in the upper mids, a blemish delivered via lesser arms, was now removed.

In terms of that backing suite of instruments, everything tightened up, even the glockenspiel stood to attention. There was not an ounce of fat on any of the sounds emanating



The UniArm features a hard-wearing anodised finish.

from the backing group. Any possible bloom, smearing or muddying effects were instantly removed while even bass guitar, not a dominant factor on this track, offered notable extra bounce and punch.

That's not to say that the music was stiff or unyielding. Far from it. Tambourine had a delicate,

Turning to rock, Joy Division and their track 'Exercise One' from the album 'Still', its almost subterranean bass guitar and drums were tackled with aplomb by the UniArm. Bass was controlled and steered in such a way that the arm almost acted like a controlling conductor's baton. That is, I tended to place full confidence in bass performance.

Finally, with Popol Vuh's piano-dominated soundtrack for the horror film 'Nosferatu', potentially uncontrollable piano frequencies were kept in check to allow the ensemble of instruments more of a say in the mix, giving more time for the rhythm guitar and the relatively exotic sitar.

CONCLUSION

The Analogue Origami UniArm inspires great confidence during use. You never feel that it will ever let you down because it corrals all available frequencies to produce great music. The discipline and authority that the UniArm gives to music blends happily with finer, more delicate implementations providing a perfect blend. Like the perfect cherry picker, the UniArm gives you the delicate fruits and leaves the rubbish for the birds.

SYSTEM USED

Wilson Benesch Circle turntable
Roksan The Pug arm
Miyajima Takumi
Icon Audio PS3 phono stage
Aesthetix Calypso pre-amp
Icon Audio MB 845 Mk.II mono-blocks
Quad ESL-57 speakers with One Thing mods
Vertex AQ & Atlas cabling

fragile collapsing cascade during every strike, strings were relaxed in their sweeping effects and a gently strummed guitar was almost somnambulant in its approach.



The spike in the top section of the arm wand fits into the tiny cup at the top of this pyramid-like structure to form a frictionless pivot.

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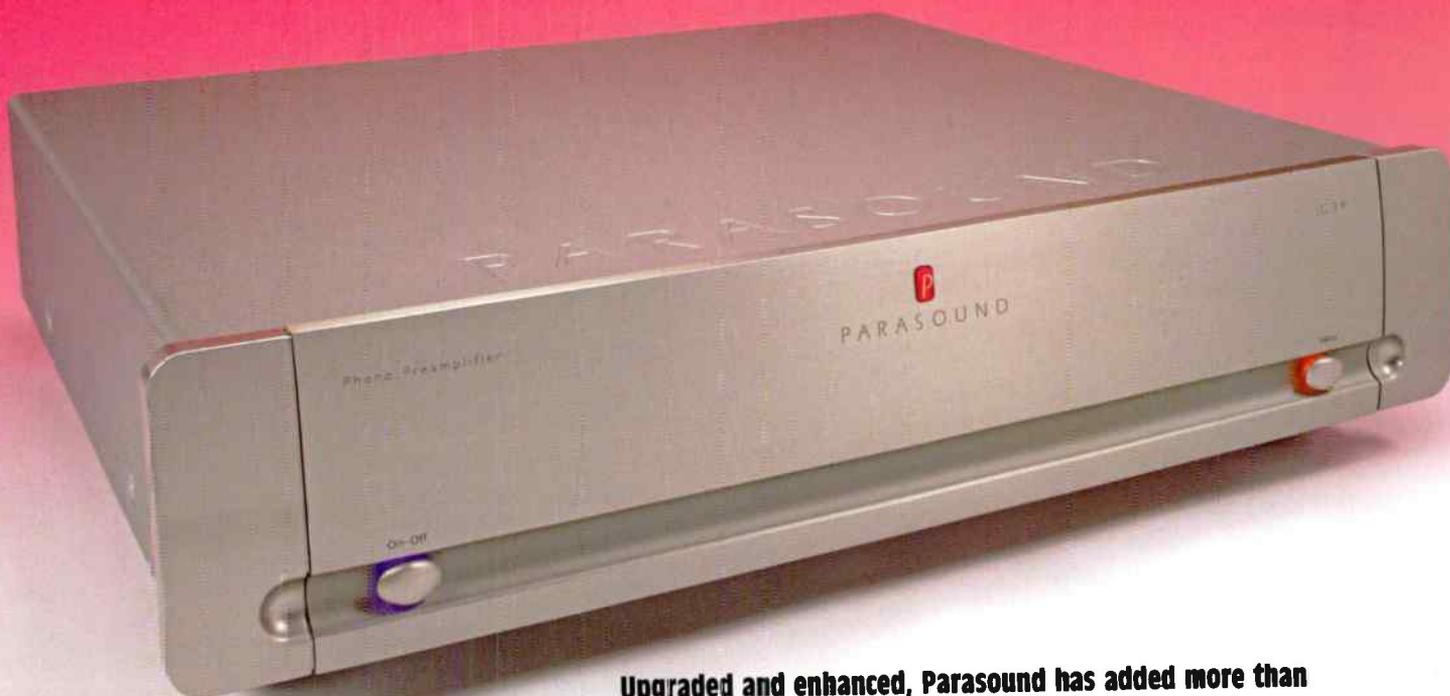
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Phono power



Upgraded and enhanced, Parasound has added more than 'go-faster' stripes onto its new phono amplifier. Paul Rigby reviews the JC 3+

Lonely boy? You betcha. This John Curl-designed phono amp is nothing if not a stickler for isolation. Everything is separated out to avoid components talking to each other, out of turn. This dual mono design has each channel contained in its own aluminium housing. More partitions, this time of the steel variety, are used to isolate the power supply. The latter also features 47% larger power-supply filter capacitors, an upgrade from the previous JC 3 model. This has been done to add more reserve current to lessen the strain upon the phono amp as a whole. The transformer is 82% larger too that, says the company, should improve bass performance.

At the rear are the usual inputs and outputs (both sets of RCAs are supplied by Vampire), a pair of Neutrik balanced outputs, two cartridge select toggle switches and two impedance adjustment rotating knobs, a switch to turn off the front fascia illumination (a great idea) and a rocker power switch plus an IEC socket that enables a power cable

upgrade if you wish.

On the front is a power button. Oh, and one final addition that I must mention, the fascia also includes a mono switch! Hurrah!

Spanning 437 x 350 x 105mm and weighing in at 8.6kg, the JC 3+ can be yours in black or silver.

SOUND QUALITY

I began the sound test in unbalanced mode with Nancy Wilson's 'Reach Out For Me', from the LP, 'Today – My Way', which is a busy track packed with orchestral strings, a subtle electric guitar and bass, numerous secondary percussion, drums and more.

I like to test solid state phono amps against my Icon Audio PS3 valve reference because it often illuminates the amp's inherent personality and how far along the sliding scale the designer has moved towards a valve-like sound...or not.

In the Parasound's case, the latter is certainly the case. This is a solid state sound and no mistake. Although my first task, as our tests showed, was to rush for the volume knob as

gain was relatively high.

In general terms, the soundstage was tight and honed, which meant that Wilson's delivery was crisp, precise and accurate. Her vocal was 'in your face' as she pushed her emotions square between the eyes.

Because of this approach, the Parasound also emphasised the bass and secondary percussion such as tambourine, and it spotlighted glockenspiel strikes, giving the overall track added drive and pace.

Turning to Joy Division's 'Exercise One' from the album 'Still', this dynamic track offered powerful lower frequencies from both drums and bass guitar which the Parasound was all over like a rash, offering a dominant, forceful and exciting performance. Vocals were nothing less than haunting, while the low noise design offered a clean and open presentation.

Moving to Popol Vuh's film soundtrack for Werner Herzog's horror film 'Nosferatu', a piece of music where the central piano is orbited by a gamut of stringed instruments. With some phono

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Internal aluminium and steel screens are used to minimise crosstalk, hum and noise.

amps, this piece is rather bass light, giving a somewhat floaty, sometimes indistinct feel to the presentation. Not with the Parasound, its slight bass emphasis added valuable balance to the majority of the instruments. Meanwhile, many of those, including the sitar, were detailed and precise in nature. String plucking, in particular, was brisk and clean.

This is a powerful musical suite that benefits from the Parasound's inherent guts and oomph, adding to the soundtrack's epic qualities.

Turning to the balanced sockets,

I reverted to Nancy Wilson and had to leap for the volume control again because this mode is even louder than unbalanced mode!



The rear panel carries unbalanced (phono socket) inputs, and both unbalanced and balanced (XLR) outputs.

Reduced to acceptable levels, the sound output exhibited an enhanced clarity with a broadening of the soundstage and extra transparency within the upper midrange.

CONCLUSION

Although not for valve fans, or even those looking for an extra touch of solid state snap, the Parasound provides a musical output with bite and a resolution that is turned up to a high level, ideal for dynamic rock and big soundtracks and, for many, jazz and classical movements where detail is important. Although, for the latter genres, I would press for the balanced mode which will bring rewards in terms of extra detail and complexity. In all then, an impressive design with all its own sound.

SYSTEM USED

- Origin Live Sovereign turntable
- Origin Live Enterprise 12" arm
- Miyajima Takumi
- Icon Audio PS3 phono stage
- Aesthetix Calypso pre-amp
- Icon Audio MB 845 Mk.II monoblocks
- Quad ESL-57 speakers with One Thing mods
- Vertex AQ & Atlas cabling

MEASURED PERFORMANCE

Frequency response measured flat across the audio band, our analysis shows, meaning RIAA equalisation was very accurate. Phono stages have a lot of gain at low frequencies, causing loudspeaker cone flap – and the JC3+ has no warp filter, nor gain roll-off to lessen this; it runs at full gain to below 4Hz so warped records played by heavy arms that don't warp ride will be a problem.

The JC3+ overloads at 9.5V out, typical for silicon chips. With high gain values of x330 for MM and x1700 for MC, input overload computes to 29mV and 5.6mV respectively and that's exactly what was measured. Gain for MM is on the high side – the usual value is x100, a high value x200 – and this makes input overload low, if just adequate for high output MMs that can deliver up to 30mV. MC gain is high too and purposed for high quality, low output MCs; overload will not be a problem.

The basic equivalent input noise value (IEC A weighted) for MC was exactly 0.1µV on the Right channel, a

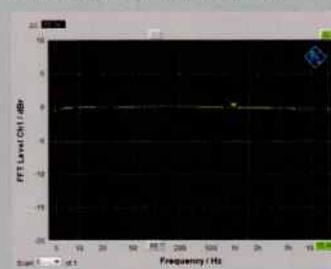
very low figure just 2dB worse than an input transformer (0.08µV) and around what is expected from a low noise transistor operated properly in low noise circuitry.

The Left channel had some 100Hz and 200Hz power supply breakthrough however, worsening the result a little. It was very small – I am talking minuscule levels here – but it should not ideally be there at the price; earthing or screening needs attention.

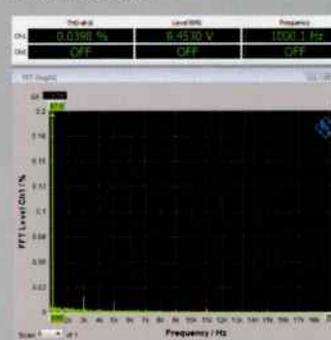
The Parasound JC 3+ measured well all round. It isn't perfect, due to one channel being noisier than the other, but absolute noise levels were very low all the same. A switchable warp filter or LF gain reduction would have been useful at the price. **NK**

Frequency response	4Hz-20kHz
Separation	87dB
Noise	dB
Distortion	0.03%
Gain (MM, MC)	x330, x1700
Overload (MM, MC)	5mV, 29mV

FREQUENCY RESPONSE



DISTORTION



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JC 3+
£3,300



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US Beatlemania

In the fourth in his new series of music-related books, Paul Rigby examines a new book that gives the complete low-down on The Beatles in America.

As this august journal has been known to cover The Beatles now and again and it seems that there are a few Beatles fans amongst the readers, I want to draw your attention to two books – a print book in this issue and a digital book to be covered in a future issue – written by an American author who may not be too well known to some of you in the UK and Europe.

He is, though, one of the world's foremost authorities on The Beatles. In fact, just as we in the UK have Mark Lewisohn as a fount of Fab Four knowledge, the Americans have Mr Bruce Spizer.

Such, in fact, is Spizer's expertise on all things Beatles, that he was the primary expert source for the producers of the magnificent CD box set, 'The US Albums' which I featured, in some depth, for Hi-Fi World you may recall.

Indeed, it is The Beatles in the USA which is the principle target of

of Beatlemania in the USA and spans the events during the group's stay as well – and this might be even more interest to fans as the sequence of events that actually lead up to the visit.

There are many highlights to be read in this 246-page tome, such as why Capitol Records turned the group down four times; why the group ended up on the Vee-Jay label which had always specialised in R&B and gospel; a focus on the first DJ in the USA to play a Beatles record; the first DJ to undertake the first interview; the first Beatle to perform before an American audience; why Ed Sullivan decided to book the band and who was responsible for starting Beatlemania, weeks before the band arrived.

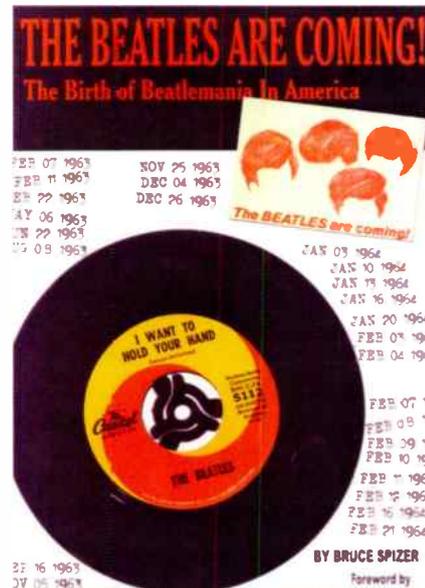
There are also over 450 images and documents in the book, many previously unpublished.

Beatles fans and, especially, Beatles collectors are famous (infamous?) for their dedication to minutiae when it comes to collecting Beatles records.

The subtle, even tiny variations between one similar record issue and another is often critical. This book covers this sort of thing too.

So, for example, when The Beatles released the LP 'Introducing The Beatles' on the Vee-Jay label, you could find the album with the centre label sporting a Vee-Jay logo within an oval and the word Stereo positioned over it (a rare edition) or the mono edition with the Stereo word removed, others with the word 'Stereo' to the right side (also rare) and mono editions with the logo in brackets (stereo and mono).

That's it? You kidding me? There were editions pressed by Southern Plastics and others by Monarch and... well, the variations go on and on (and on).



The Beatles Are Coming!
Author: Bruce Spizer
Publisher: 498 Productions
Price: \$30 (\$50 hardback)
Contact: www.beatle.net

You could think, from the latter, that this book would be a tedious rant about trifles and subtleties but nothing could be further from the truth.

There are plenty of fascinating Beatles stories and anecdotes and general cultural notes including the fierce competition between the chat shows of America hosted by the likes of Ed Sullivan, Jack Paar and Johnny Carson as well as a sample of some of the inane questions the poor Fabs had to face, on a regular basis, from the press.

For example, to Ringo:
 Reporter: "Which do you consider the greatest danger to your careers: nuclear bombs or dandruff?"
 Ringo: "Bombs. We've already got dandruff".

All in all it's fascinating stuff and a must for any real Beatles fan.



Spizer's research efforts and this book is just the latest in a long list of superb tomes from this author that feature exacting textual details and beautiful illustrations within excellently produced covers.

The sheer level of research and attention to detail from Spizer is a wonder to behold...audiophile indeed!

This print book covers the birth

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 Compatibility: Requires iOS 5.0 or later. Compatible with iPhone, iPad, and iPod touch.
 Language: English

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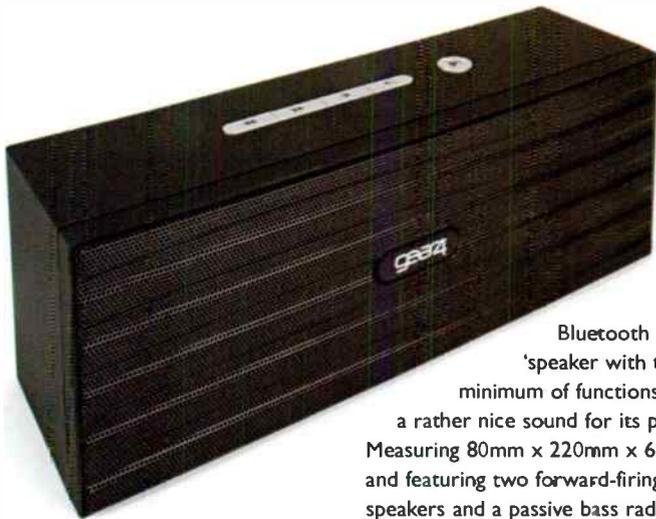
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MARCH 2018

HI-FI WORLD

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GEAR4 SOUNDWAVE BLUETOOTH SPEAKER £25

Gear4 has a reputation for making solid, reasonably-priced audio products aimed firmly at the mass market. They're often not the flashiest or most technologically innovative but they work well, look good and won't break the bank.

Which exactly describes the company's Soundwave. It's a

Bluetooth 'speaker with the minimum of functions but a rather nice sound for its price. Measuring 80mm x 220mm x 65mm and featuring two forward-firing speakers and a passive bass radiator it's ideally sized for use in a kitchen, bedroom or even on a desktop.

Battery charging is via a rear miniUSB port (lead supplied) alongside which there's also an on/off switch and line-in socket. On the top sit buttons for play/pause, forward/back and volume up/down. The case itself is constructed from a nice, soft-touch plastic with a metal fascia grille, while two rubber feet on the underside provide a slip-free

grounding on whatever surface it sits on.

As is pretty standard nowadays, the Soundwave paired immediately with all my devices – laptop, desktop and both Apple and Android mobiles.

It also sounds nicely balanced with a crisp and clean mid and treble performance. Bass can be a little lacking at times but if you position it close to a rear wall this improves, so a little experimentation pays dividends.

Get that right and the Soundwave has some punch to it. Listening to Patti Smith's 'Because The Night' on my desktop, there was no rattle or hum from the cabinet even when taking the volume above the halfway level. Vocals weren't harsh and the guitar solo had some good bite to it. The same went for a variety of tracks from jazz to classical.

If you want a Bluetooth loudspeaker for convenience listening in another room in your house it's well worth seeking out. **JM**

[www.gear4.com]

SOUNDBITES

XQISIT XQ S20 £89.99

The XQISIT XQ S20 is a portable Bluetooth speaker that is exceptionally well-built for its price. Measuring a rather mini 70mm x 145mm x 23mm (H/W/D) its metal body means it still weighs 821g – so it is sturdy but also easy to pocket for using out and about.

It also packs into its specification hands-free telephone call answering, plus a USB output for charging your mobile.

Soundwise, that metal casing gets the best out of the small 'speaker complement inside. It has a tight and tight sound with detail in the higher registers.

On Presence's 'Far Far Away From My Heart' the vocals were clear and impossible not to like.

Similarly, the likes of New Order's 'Bizarre Love Triangle' had plenty of zip and verve with a nice

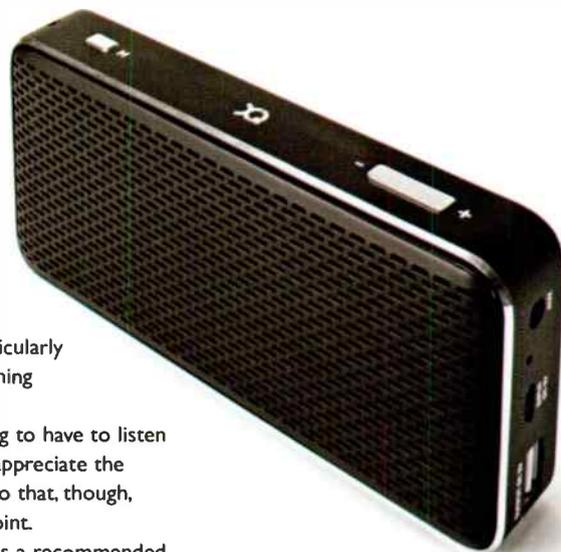
sense of rhythm. The XQISIT is certainly able to play a tune and does so with aplomb.

Unfortunately, the size of the unit means there's a lack of depth to the bass and it also struggles to go particularly loud if you are listening outdoors.

So you are going to have to listen rather close-up to appreciate the XQISIT's benefits. Do that, though, and it won't disappoint.

Also, while it has a recommended price of £89.99, shop around and you can get it for significantly less – which is always a bonus. **JM**

[www.xqisit.com]



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NEXT MONTH

APRIL 2016 ISSUE

SMD Acoustics V2.0 Turntable

It came... then it went back. Measurement suggested better was possible. With improved details like revised felt washer (no less!) this new idler-drive turntable from SMD now spins with the best. Driven by a modern servo-controlled, high-torque motor the V2.0 is now giving great results, our analysis of speed stability shows. Add in a massive cast plinth and SME arm carrier and you have – yes! – a Garrard 401 upgrade, in effect, from Peak Hi-Fi of the UK. Don't miss our in-depth exclusive review of this fascinating new product in next month's issue.

Also, we hope to bring you –

Dali Rubicon 5 loudspeakers

The Bespoke Passive Pre-Amp

Cyrus Phono Signature

FiiO X7 portable player & headphone amp

Project MaiA DS My Audio integrated amp

KEF EGG Wireless Digital Music System

...and much more.



This is a selection of what we hope to bring you, not a complete list. We regret that due to a wide range of issues, such as failure under review, we cannot guarantee that all products listed above will appear.

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MARVIN GAYE & TAMMI TERRELL

UNITED
1967



"A terrific vocal bonding from a soul pairing who formed a warm and harmonious partnership"

We are used to Marvin Gaye as a socio-political animal within the 1971 album 'What's Going On' and an overtly sexual being on his 1973 release 'Let's Get It On' as his personal and business life would become entangled in problems and issues. But in the late sixties, unlike later in his life, there was a period when Gaye looked and sounded happy, contented and untroubled. He almost sang with a sense of joyous innocence and most of the reason for that was because he was teamed up with the gifted soul singer Tammi Terrell. Together the pair would create some of the greatest love songs ever to emerge from the Motown hit factory including 'Ain't No Mountain High Enough', 'Ain't Nothing Like the Real Thing' and 'You're All I Need to Get By'.

You can see and hear the difference when you compare the Terrell outings with Gaye's former duet work with the likes of Kim Weston and Mary Wells. Of course, both ladies were superb singers and the output from both with Gaye was top-notch, but there was something extra to be had from the Terrell sessions.

Of the three albums that were issued under the pair's name: 'United', 'You're All I Need' and 'Easy', the first in that list is surely the best. Apart from that air of freshness, it also showed focus, direction and Terrell at her strongest, in physical (and medical) terms.

'United' was a little different from the other LPs. Although featuring songs from Valerie Simpson and Nickolas Ashford, unlike that pair's production style for the later LPs, 'United' had a slightly harder tone via the producers Harvey Fuqua and Johnny Bristol which added to the enhanced emotive tone and drive of the album.

The LP itself includes three top-quality hit smashes: 'Ain't No Mountain High Enough', 'If I Could Build My World Around You' and 'Your Precious Love'. Charting at No 29, it would also be the highest placed of any of the three Gaye & Terrell album releases.

Unlike some soul/pop albums which largely featured processed guff that hung off hit singles, the supporting tracks on 'United' where excellent cuts. For example, 'Little Ole Boy,

Little Ole Girl' was a successful remake of Loe & Joe's little-known release on Fuqua's Harvey Records in 1962, while the track 'Two Can Have a Party' was easily good enough to be used as a fourth single. Then there was 'Hold Me Oh My Darling' which Terrell had already come across on her first solo outing.

Even the ballads, a genre that can be used as sloppy fillers and cack-handed methods of forcing a pace-balance on a LP were, here, quality items. Witness both Give a Little Love' and 'If This World Were Mine'.

That the pair appeared on three albums says something for their chemistry and the fact that they got along as friends. Three duet albums for two, essentially, solo performers is pretty good going and maybe it would have lasted longer but for Terrell's illness. In fact, the singing duties on part of the final, third album were taken over by Valerie Simpson because of it. Tragically, Terrell, who suffered from migraine headaches, was to be diagnosed and would subsequently die of a brain tumour in 1970.

Gaye was traumatised by Terrell's death. "She was soft, warm and sweet, yet misunderstood. Tammi's death hurt so much, not because she and I were lovers. I wish we had been but the relationship was platonic. I was hurt because such a talented and beautiful being died so young" said Gaye.

In fact, Terrell's death would trigger a period of inactivity from Gaye. "I had such emotional experiences with Tammi and her subsequent death that I don't imagine I'll ever work with a girl again" he said later.

We are fortunate, therefore, to have a wonderful album such as 'United' to not only remember Terrell as a talented performer but to witness a terrific vocal bonding from a soul pairing who formed a warm and harmonious partnership.

This album and, in fact, all three of the Gaye/Terrell albums can be found within a new vinyl box set of Marvin Gaye albums called 'Marvin Gaye Volume Two: 1966-1970' featuring eight studio albums on 180gm vinyl. The set features: 'Moods Of Marvin Gaye', 'Take Two' (with Kim Weston), 'In The Groove', 'You're All I Need' (with Tammi Terrell), 'M.P.G.', 'Easy' (with Tammi Terrell), 'United' (with Tammi Terrell) and 'That's The Way Love Is'. **PR**

Revolution XT



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Retaining the classic trapezoid shape from its multi award-winning predecessor, the new Revolution XT cabinets now feature an ingenious reflex-coupled dual-cavity design. This optimises performance of the all-new Omnimagnet™ Dual Concentric™ driver across extremely low to mid-bass frequencies. The complex internal design is further perfected with an integrated pinth that provides a uniform and predictable low frequency interface to the listening environment, delivering the deepest bass notes with ease.

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For more than a quarter-century, Sonus faber has represented the pinnacle of loudspeaker aesthetics. From its earliest models, incorporating real wood, furniture-grade finishing, seductive curves and even grilles that reveal style and inventiveness, this repository of Italian artisan skills and artistry has achieved what was once deemed impossible: creating speakers that sound as beautiful as they look.

Along with a series of models paying homage to the great luthiers of Cremona, the company has since been inspired by the Teatro Olimpica in Vicenza. It is appropriate that this new family of speakers considered the standards of a famed venue as the ne plus ultra of the reproduction of music with vivacity and power... exactly what defines music from opera to orchestral to rock music to soul to jazz. To achieve this, Sonus faber has exploited all that it has learned since its inception.

Like all Sonus faber loudspeakers, Olympica represents what is possible, while respecting what has mattered.



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