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8 PAGES OF LETTERS - THE BEST WINS A PAIR OF KEF Q100 LOUDSPEAKERS! (UK ONLY)



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welcome

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For us, this was a particularly fascinating issue because of the problems we encountered with products under review.

Looking back on the action I do worry slightly that we seem to be getting bogged down in digital issues so complex and obscure, no-one could understand them. Are we unwittingly learning to accept a degree of digital complexity that does not sit well with the real-world?

I can't help thinking about the rise and fall of the home computer here: in the end the complexities and unreliability became both absurd and intolerable. I knew of families who'd invested in a home computer for themselves and their children and ended up being unable to use it. Self-defeating technology no less: clever, but stupid too.

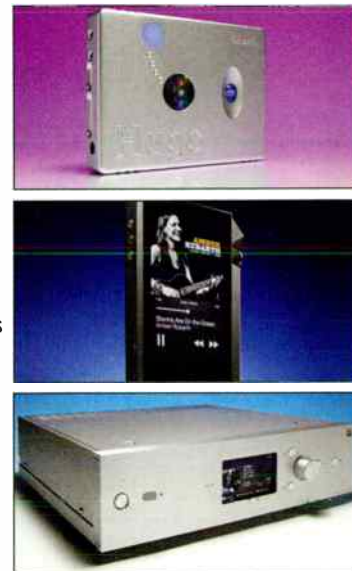
Being an engineer I tended to thrive on such stuff but normal people do not. Long discussions with Sony, in particular, but also Chord Electronics and Astell&Kern, gave me a twinge of unease. I just hope hi-fi isn't going the way of home computers where there's been a mass migration to the iPad, just because the thing works.

Downloading music files isn't difficult and playing them on a portable player like the amazing Astell&Kern AK240 reviewed in this issue (see p54) is relatively straightforward. But here we encountered the novel issue of a plug the world knows nothing of.

The Sony HAP ZIES just would not work for us under test, for another reason so obscure it defies belief (see p42), and Chord Electronics Hugo DAC (see p16) had us puzzling over whether the volume control was white, or blue and whether the sample rate light was purple or light purple, and whether we were playing 176.4kHz PCM or DSD. A night out in Blackpool would have been less confusing!

Happily, they were all great products; progress seems to come at the price of complexity. But that is a trend that ought not to continue or we will all end up abandoning modern digital products in favour of wind-up gramophones. This'll keep contributor Tony Bolton and reader Mario Kopke Tulio in Portugal eternally happy, as you'll understand from our Letters this month (see p27). If, like them, you are interested in wind-ups, or DSD, please join the debate and write to us. In the meantime, I do hope you both understand and enjoy our reviews.

Noel Keywood, editor.



testing (see www.hi-fiworld.co.uk for full explanations of all our tests)

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

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

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

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

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verdicts

●●●●●	OUTSTANDING	amongst the best
●●●●●	EXCELLENT	extremely capable
●●●●●	GOOD	worth auditioning
●●●●●	MEDIOCRE	unremarkable
●●●●●	POOR	flawed
£	VALUE	keenly priced



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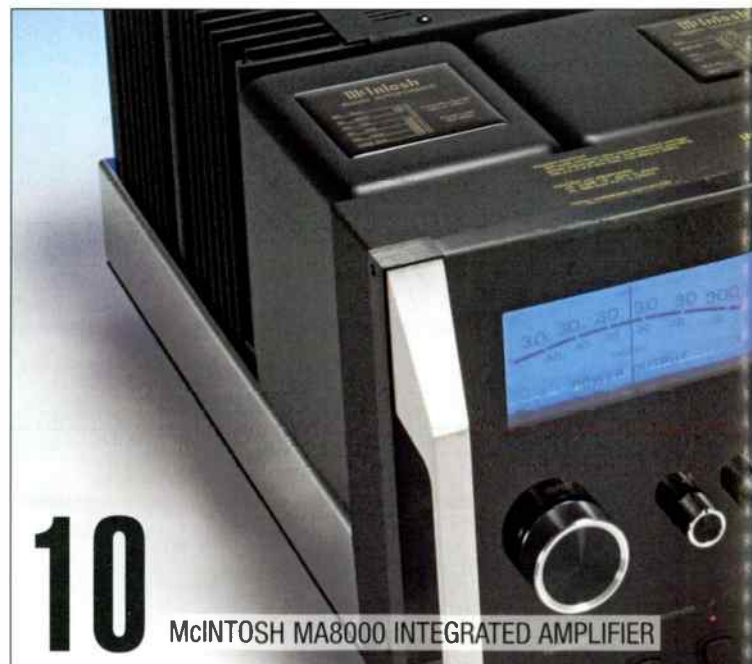
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Audio products
designed to combat
phase distortion

Tellurium Q[®]

"In short, I can honestly say the Tellurium Q Black Diamond interconnects and speaker cable are the very best leads that I have ever had in my system."

Tony Bolton, Hi Fi World 2014

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"I've talked a lot about Tellurium Q of late. I've also sung its praises constantly. To be honest, I wish I had something to grump about, it would make a change but when a company gets a series of products "this right" it is difficult to say anything negative."

Paul Rigby, HiFi World 2012

"A certain magic when it comes to absolute sound quality"

Jimmy Hughes, Hi Fi Choice 2012



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MCINTOSH HEADPHONE AMPLIFIER

McIntosh Laboratory has launched a dedicated headphone amplifier for the first time in its history. The new MHA100 comes complete with four digital inputs and remote control and employs a new adaptation of McIntosh's autoformer technology which offers three selectable headphone impedance ranges: 8-40; 40-150 and 150-600 ohms.

It also features McIntosh's new Headphone Crossfeed Director (HXD) technology that, says the company, allows recordings played through headphones to image like conventional speakers.

The internal McIntosh Digital Engine offers four digital inputs (coaxial, optical, balanced digital AES/EBU and USB) allowing decoding at up to 32bit/192kHz. The MHA100 upsamples digital signals to 192kHz with 32bit resolution before the D/A process begins. Two analogue inputs (including balanced) have also been appointed.

Electronic input switching is also included. The preamplifier uses logic circuits controlling electromagnetic switches on all inputs and operating functions.

The MHA100 is more than just a headphone amplifier: 50W stereo speaker outputs are included for use with loudspeakers. The power amplifier uses ThermalTrak I output transistors and McIntosh's patented gold-plated output terminals. Loudspeaker listening is automatically switched off when headphones are connected.

The MHA100's multifunction OLED display indicates source selection, volume levels, trim settings and set-up functions. Price is £4,995. For more information, call 01202 911886 or go to www.jordanacoustics.co.uk.



NAIM MUS ALL-IN-ONE

Naim sprang a surprise when it took the wraps off its latest product at a launch event in central London. The Naim Muso is a one-box streamer/speaker system featuring six Naim-designed drivers powered by 450 Watts of digital amplification and priced at £895.

Measuring just under 63cm wide, 12cm tall and 25.6cm deep, the aluminium-clad all-in-one unit boasts Wi-Fi, UPnP, Bluetooth and Apple AirPlay compatibility as well as internet radio. It can handle file sizes up to 24-bit/192kHz via wired ethernet connection and up to 48kHz in wireless mode.

The on-board active speaker system uses a custom-designed tweeter, midrange driver and bass unit for each channel – each powered by their own dedicated 75 Watt amplifier.

Digital signal processing allows for boundary gain compensation when the unit is placed close to walls and a loudness function to boost bass and treble at low volumes. A large, circular aluminium volume control – derived from Naim's top-of-the-range Statement amplifier – also includes touch-sensitive buttons for selecting inputs as well as pause play and track skip. As well as wireless connectivity the Muso also has a 3.5mm analogue input, optical digital and USB.

A dedicated control app for both Apple and Android mobile devices will also be available when the Muso hits the shops, including the John Lewis chain, in September. Watch out for a full review in Hi-Fi World shortly.

More details at www.naimaudio.com.

CANOR'S NEW CD/DAC

The new Canor CD1.10 combines a CD player and 24bit/192kHz DAC in one box along with a valve output stage feeding both XLR and RCA analogue outputs. The integrated CD drive features a disengagement bearing driving mechanism to decouple and minimize jitter.

Two separate Burr Brown PCM 1792 24bit/192kHz DACs are used, one for each channel. Switchable digital filtering allows fine-tuning.

External digital sources can be connected by optical, coaxial or USB 2.0 interfaces.

Internally, the CD 1.10's circuit boards feature Canor's own patented PCB Milling Technology: the precision removal of specific areas of the circuit board enables low level of dielectric loss throughout the circuit. In addition, the CD 1.10's power supply features valve rectification.

Supported formats include CD, CD-R, CD-RW and hybrid-SACD, PCM up to 24bit/192kHz and 2.8/5.6MHz DSD.

The Canor CD1.10 is available in silver or black, priced at £3,295.

Go to www.canor-audio.com or call 0118 981 4238 for more information.



ONKYO 'EMOTION DELIVERED'

Onkyo has launched its 2014 mid-range hi-fi/home cinema receivers.

Both Onkyo's 'Emotion Delivered' TX-NR737 and TX-NR838 network A/V receivers feature high-current power amplification with dual Digital Signal Processing (DSP) engines and 24bit/192kHz Burr-Brown D/A conversion. The TX-NR737 and TX-NR838 also both feature proprietary AccuEQ room calibration.

Both models allow you to hook up a record player. What's more, TX-NR838 owners can select Pure Direct Analogue Path mode to physically shut down all digital circuitry in the receiver, eliminating electrical interference.

Built-in Wi-Fi and DLNA compatibility allows the streaming of high-resolution music libraries from PCs or media servers, with search, track selection and playback controls all enabled via the remote app. A variety of file formats are supported including 5.6MHz DSD, Dolby TrueHD and gapless 24bit/192kHz FLAC and WAV.

TX-NR737 is priced at £800 with the TX-NR838 fetching £1,000. Call 08712 001996 or click on www.onkyo.co.uk for more information.



DYNAUDIO EVIDENCE PLATINUM

Dynaudio's new flagship speakers are finished in wood grains, incorporating a four-centimetre thick mid-section milled from aluminium. Weighing 115kg each and measuring 194cm in height, the design includes Dynaudio Directivity Control technology which reportedly reduces sound reflections from the floor and ceiling of any room by at least 75% through the exact matching of the phase responses of the individual drive units, consequently achieving a sound radiation vertically focused towards the listener.

The crossover includes ceramic resistors, copper air coils and Solen capacitors. The glass-fibre reinforced circuit boards have copper traces connected to the drive units, with pure copper cables and pure copper, gold plated WBT NextGen terminals.

The diaphragms of the new Evidence Platinum bass and midrange drive units are manufactured from MSP (Magnesium Silicate Polymer), a composite material developed by Dynaudio. Ultra-lightweight aluminium voice-coils with powerful magnet structures drive the speaker cones.

The tweeter is an Esotar2 with Precision Coating featuring a coated fabric soft dome. The magnet assembly of the tweeter is aerodynamically shaped and internally damped to fully absorb the energy dissipated from the rear of the tweeter dome. Price is £58,500 per pair.

Call 01733 350878 or log on to www.analogueseduction.net for more information.

MUSIC STREAMER III

The HRT Music Streamer III is a digital to analogue converter (DAC) that connects a computer, tablet or smartphone to the analogue inputs of any audio system. With its asynchronous USB transceiver, differential mode conversion and a differential signal path, all power requirements for the Music Streamer III are supplied from the host.

The Firmware can be updated using HRT's UpStream Utility, available for Windows computers and now Mac computers, using OS 10.9 (Mavericks). Price is £189.

Tel 020 8948 4153 or click on www.audiofreaks.co.uk for more information.



CHORD'S HDMI

The Chord Company has added to its audio cable range with a new high-speed HDMI cable in lengths of up to 20m.

Key to the new cable's design is an improved conductor: the Active Resolution HDMI V2 now features heavier gauge conductors for all critical signal paths, employing silver-plated oxygen-free copper 26 AWG conductors. The Active Resolution HDMI V2 is fitted with a die-cast gold-plated HDMI plug with a metal body to improve shielding. Further features include low-loss gas-foamed polyethylene insulation with all critical signal conductors protected with high-frequency-effective shielding.

The original Active Resolution HDMI cable was designed to work in any situation that required a long HDMI cable, carrying a high-speed signal in lengths of up to 20m. Active Resolution HDMI V2 is now available in lengths of: 0.75m; 1.5m; 2m; 3m; 5m; 8m; 10m; 15m and 20m. Prices start at £150 for the 0.75m version.

For further information call 01980 625700 or go to www.chord.co.uk



SONORO

New lifestyle music systems from Sonoro include GoLondon, a portable, durable, colourful and mess-resistant FM/DAB/DAB+ radio; the living room system, sonoroSTEREO, a 2.1 channel stereo, Bluetooth streaming, CD, FM/DAB/DAB+ radio and bespoke bedroom systems in sonoroRADIO and sonoroCD. The former offers Bluetooth streaming, FM/DAB/DAB+ radio/clock/ alarm while the sonoroCD adds a CD facility.

Prices are: GoLondon, £129; sonoroSTEREO, £499; sonoroRADIO, £249 and sonoroCD, £329.

Call 0843 523 6344 or visit www.sounddesigndistribution.co.uk for more information.



YAMAHA SPOTIFIED

Yamaha says the CRX-N560D micro Hi-Fi and R-N500 networked amplifier have been updated to include Spotify Connect. This will allow anyone with a Spotify premium subscription to stream music to their chosen system at the touch of a button.

Using the R-N500, Yamaha offers access to Net Radio, Airplay, USB playback, iDevice USB connection, DLNA streaming, and Bluetooth streaming using the YBA-11 adapter. The CRX-N560D micro Hi-Fi is equipped with two AUX inputs, subwoofer out, vTuner Internet radio, DAB radio, expandable to Bluetooth again with the YBA-11 adapter. The CRX-N560D is also available as part of the MCR-560 package which contains the NSBP182 speakers.

Price of the RN-500 is £449.95 and the CRX-N560D retails for £399.95. The MCR-560 package is available for £499.95.

Click on uk.yamaha.com or call 0844 811 1116 for more information.



FURUTECH USB

Following on from the original GT2 USB cable, Furutech has introduced the GT2 Pro.

Furutech's GT2 Pro USB cable is formed around Alpha OCC silver copper alloy conductors with high-density polyethylene insulation/dielectric. It features three-layer shielding and 24k gold-plated USB 2.0 connectors with a 24k gold-plated copper alloy EMI shield incorporated into the connector. Prices are: 0.3m, £135; 0.6m, £150; 1.2m, £180; 1.8m, £210; 3.6m, £300 & 5.0m, £370.

Click on www.furutech.com or call 0118 981 4238 for more information.

LINN AKURATE EXAKT

Scottish high-end audio manufacturer Linn has announced it has now implemented its Exakt digital loudspeaker technology in its Akurate range of products.

The new Akurate Exakt system – comprising an Akurate Exakt DSM digital streamer/pre-amp and a pair of Exakt Akubarik floorstanding speakers – is now on sale priced at £25,500.

Those who already own a pair of Akubarik Activ speakers can also upgrade to Exakt specification for £14,000.

Linn's Exakt design relies on music files being kept in the digital domain as long as possible. It means the Akurate Exakt DSM connects to its partnering Akubarik speakers via a CAT5 cable. Once signals reach the loudspeakers they are passed to Linn's proprietary Exact Engine digital sound processing engine which is said to eliminate the magnitude and phase distortion of analogue speaker crossovers and also corrects for the manufacturing tolerances of the individual drive units. Linn says this allows for the dealer/installer to optimise each system for the room they are used in and account for elements such as furnishings, wooden floors and boundary reflections.

The company also claims the reduction in the number of 'lossy' stages in the audio path and shortening of the analogue signal path gives dramatic sonic benefits.

Further details are available from Linn's website at www.linn.co.uk or from Linn dealers across the country.



CADENCE FOR ANDROID

Cyrus Audio's bespoke control app has been released for use on Android with their all-in-one Lyric Series products.

Cadence allows you to control all of the inputs of the Cyrus streaming device. Full playback control allows you to completely replace a remote control with the app. Much like the screen of the Lyric itself, Cadence allows you to enjoy album artwork where available and the Android app will even take you straight to a Wikipedia entry relating to the music you're listening to.

Cadence allows you to save music in Favourites lists, providing a way to create playlists with a phone or tablet. Lyric Series products will need a small firmware update in order to work with the Android app. Customers can do this themselves.

Go to www.cyrusaudio.com or call 01480 410900 for more information.



Big, bold and beautiful sounding...Jon Myles finds there's nothing not to like about McIntosh's latest juggernaut of an integrated amplifier

Blue heaven



When McIntosh announced a new luxury integrated amplifier in the shape of the £10,000 MA8000 we were keen to be the first to get our sweaty hands on it. And sweaty was indeed the operative word once we'd hauled it into our listening room. For this is a juggernaut of an amplifier — weighing in at over 45kg (60.3kg in its packaging) to be the very definition of a two-man lift.

Not only is it heavy it's also imposing in size, measuring some 44.5cm x 24cm x 55.8cm (W/H/D), making it amongst the biggest amplifiers out there, be they power

or integrated. This McIntosh is purposed as a complete digital and analogue audiophile system hub.

As such, in addition to its conservatively-rated 300 Watts per channel of output power (our Measured Performance gave a 450 Watt figure into 8 Ohms), the MA8000 features a total of 15 inputs, a proprietary digital-to-analogue convertor (dubbed the McIntosh Digital Engine), high-quality headphone output and a fully-adjustable dedicated MM and MC phono stage. And, if so required, a Home Theatre pass-through allows for incorporation into a multi-channel domestic cinema system.

Digital connectivity comprises many pairs of assignable coaxial and

optical inputs, plus asynchronous USB 2.0, capable of decoding files up to 32-bit/192kHz.

Additionally, there are six line level and two balanced analogue connections, while the MM and MC phono sections feature adjustable cartridge loading and impedance matching so they can be optimised to suit a wide range of turntable and cartridge configurations.

For headphone lovers there's a dedicated high-drive circuit able to handle almost any set of cans you choose from 20 to 600 Ohms and the MA8000A also sports a discrete analogue eight-band tone control to allow for manual adjustment of the sound — although this can be by-

passed for the purists out there.

In true McIntosh style the output transistors are autotransformer-coupled (see Measured Performance and Noel Keywood's box out) meaning 2, 4 and 6 Ohm taps are available on the rear for accurate loudspeaker matching – unheard of in transistor amplifiers.

And, finally, two big, blue-lit power meters let you know just how many of those 300 Watts per channel you're using.

It's probably true to say the McIntosh design is a look that divides opinion – but, personally, I love it. There's something about those big, blue meters and the illuminated green brand logo that just screams 'serious hi-fi' – perhaps the nearest any sold-state amplifier comes in looks to replicating the romance of valve equipment.

SOUND QUALITY

With those blue-tinted meters illuminating our listening room and connected to a pair of Spendor's new D7 floorstanders (see review in this issue) it didn't take the McIntosh long to reveal its prowess.

In short, it looks big – and it sounds big too. With all that power on tap the MA8000A has the muscle to drive almost any speaker you care to name and it gripped the Spondors like nothing else I've heard. What that translated to was an eminently lifelike



digging deep with a beautiful bloom and solidity.

It's not simply power but a sonic signature that is relaxed yet completely controlled. Yes, the reserves of power are there – but the McIntosh doesn't force the sound at you in the way of some multi-Watt behemoths.

Instead it lets the music flow in a totally organic and refreshing manner. In this the MA8000 is more reminiscent of a good tube amp than a heavyweight solid-stater.

The mid-band is lush, generous and totally satisfying. But it doesn't do this at the expense of dynamic shading or detail retrieval.

The Minnesota Orchestra's rendition of Ravel's 'Rapsodie Espagnole' conducted by Stanislaw Skrowaczewski was crisp and atmospheric, individual musicians placed securely in their place within

of power mean the McIntosh also thrives with hard-charging rock tracks.

The Jesus & Mary Chain's 'Psychocandy' sounded ferocious and suitably menacing, the bass deep and firm with the feedback-drenched rhythm section spitting and howling above it.

Importantly, the McIntosh has the resolution and timing to let you know this CD is not merely a sonic squall but a carefully-crafted piece of melodic invention allied to some fearsome, visceral guitar lines.

Impressively, the McIntosh manages to retain that sense of clarity and authority even when played at lower volumes. This is one amplifier that doesn't have to flex its muscles to give of its best – something that those of you who indulge in late-night listening sessions will doubtless appreciate.

On top of that it is also adept at throwing out a wide soundstage as well as imparting realistic height and depth.

All this was with the eight-band tone control section in by-pass mode. Dialling it in and trying various settings showed that the facility is effective at subtly altering the sound of some tracks – and was useful in taming the tizzy, digital-edged harshness of some modern pop and rock recordings.

Having said that, the MA8000 sounds just so naturally 'right' most of the time I can see many users simply leaving it alone.

Moving to high-res playback through the in-built DAC – sorry, McIntosh Digital Engine – and the MA8000 remained as sure-footed as

You can see the MA8000's output transformers in their black shield-ing cases at left and right of the mains transformer.

Big heatsinks provide cooling, allowing high power to be delivered continuously.



Balanced analogue inputs and outputs through XLR sockets on the rear panel, massive loudspeaker terminals, and digital connectivity, including asynchronous USB.

and captivating sound.

Individual instruments are rich in timbre and bass especially rolls into the room with captivating force. Eleanor McEvoy's 'I've Got You To See Me Through' is an exquisitely recorded track where the five-string bass underpins an upbeat piano/guitar refrain. Through the McIntosh the low notes were fabulously convincing,

the overall soundstage with the attack and decay of instruments beautifully nuanced.

Played through a pair of the new Magneplanar 1,7 loudspeakers (see review this issue) and the orchestra was portrayed in its full majesty – the sound swelling gloriously to fill the room.

Not surprisingly, those reserves



HEAR LIKE A PRO

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Hi-Fi World, July 2013



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www.kef.com/LS50

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with CD.

The crunching opening guitar chords of The Clash's London Calling (24/96) crashed true and clear from the loudspeakers. And when Paul Simon's descending bass line cuts in, it is as full, clear and rounded as I have heard from any amplifier regardless of price.

Similarly a 24/96 download of Get The Blessing's 'OC DC' revealed the MA8000's ability to latch onto a rhythm and push tracks along with a purpose. Treble was detailed yet easy on the ear while leading edge transients – such as the initial strike of a cymbal – were clean and clear.

If there's a criticism to be made it's perhaps the fact that the McIntosh's DAC section isn't quite as open or finely-etched as some other stand-alone units I've heard.

It's not bad or disappointing in any way but doesn't quite hit the exemplary heights of the rest of the package.

That really is nit-picking though. Taken as a whole the MA8000 is a genuinely desirable and sweet-sounding piece of hi-fi exoticia.

In short it's just the right piece of equipment to have you dipping into

your musical collection for hours on end whether it be on vinyl, CD or in digital download form. And that, after all, is what we buy hi-fi for.

CONCLUSION

No doubt about it, the MA8000A is a tour-de-force design. It has massive reserves of power making it capable of driving almost any loudspeaker on the planet yet a detail and subtlety to its presentation that is truly beguiling. At first sight that £10,000 price tag might make you catch your breath – but putting together a comparable system of pre-amp, beefy power amp, DAC and adjustable phono stage at this level could well cost a lot more – especially when you factor in the cost of cables and interconnects.

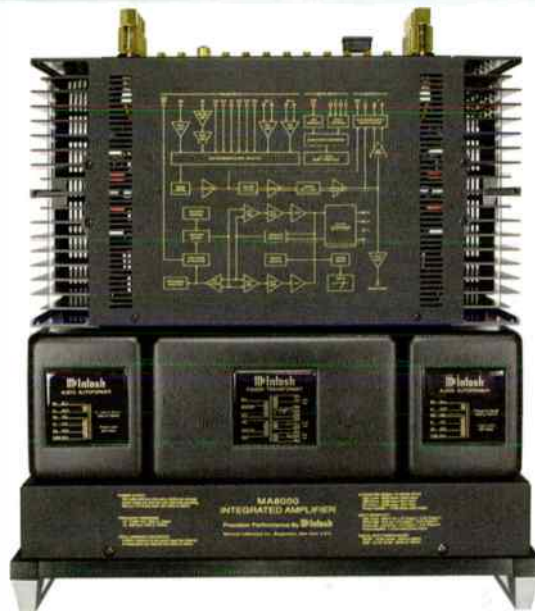
Factor in its classic looks, bomb-proof build and sheer versatility and the MA8000 has everything it takes to form the heart of a seriously impressive high-end set-up.

NOEL SAYS -

Output transformers in a transistor amplifier? Barking mad! They add to size, weight and cost – and transistor amps don't need 'em. Or do they?

An auto-transformer allows the transistors to drive a high load – the transformer. This minimises distortion, whilst also acting as protection for the output devices by shielding them from the loudspeaker, a low load.

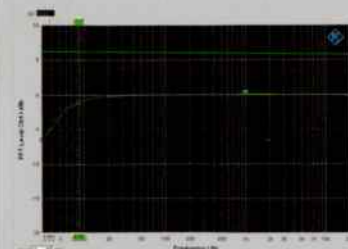
Counter-intuitive it definitely is, but also very cunning. The MA8000 sounded fabulously strong-armed and powerful as a result, whilst having clear yet sweet treble. It drove every loudspeaker we had superbly, gaining full marks at Hi-Fi World towers. Brilliant.



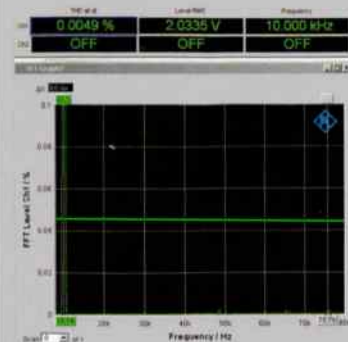
MEASURED PERFORMANCE

The MA8000 produced a massive 450 Watts into an 8 Ohm load, falling slightly to 440 Watts into a 4 Ohm load. The presence of output auto-transformers (a single winding with taps) accounts for power not doubling as usual; this

FREQUENCY RESPONSE



DISTORTION



amplifier is not a constant voltage source, but a generator requiring a matched load, like a valve amplifier. Its 2 Ohm tap can survive just about any load and is ideal for electrostatic loudspeakers, that commonly sink to 2 Ohms at 20kHz.

Distortion was unusually low at all output levels and all frequencies, measuring around 0.005%, even at 10kHz. There was no sign of crossover distortion, even at low levels, and the heat sinks got quite hot during test; the output stage is biased quite strongly into Class A.

Input sensitivity via CD was low at 400mV, but noise low too at -107dB. The MM phono stage had a 4mV sensitivity and the MC phono stage ten times less at 0.4mV, both normal enough values and satisfactory for a wide range of cartridges.

Both MM and MC phono stages have a fixed high pass warp filter that rolls off output below 20Hz. Equalisation was accurate across the audio band. Equivalent input noise levels were very low, MC managing 0.032µV, so the MC stage is very quiet and will suit low output cartridges. Although input sensitivity seems low, voltage gain available in the MA8000 is huge.

The DAC worked to 192kHz and

frequency response extended to 43kHz. Distortion levels were high from the DAC however, measuring 0.33% with -60dB 24bit resolution signal; most DACs manage 0.1% here or better, so the digital input isn't distinguished. As a result EIAJ Dynamic Range was 107dB through the speaker output and 108dB through the XLR line outputs. These are unexceptional figures (120dB is possible).

The MA8000 is enormously powerful, measurement shows, and has super low distortion, due to the use of output auto-transformers. It's phono stages were very good. Only the DAC's linearity could have and should have been better, in order to lift available dynamic range above mediocre, as hi-res goes. **NK**

Power	450watts
CD/tuner/aux.	
Frequency response	Hz-kHz
Separation	dB
Noise	dB
Distortion	%
Sensitivity	mV
Disc	
Frequency response	Hz-kHz
Separation	dB
Noise	dB
Distortion	%
Sensitivity	mV
Overload	mV

MCINTOSH MA8000 £9,995.00



OUTSTANDING - amongst the best

VERDICT

Power, poise and passion rolled into one – McIntosh's MA8000 is a superb piece of engineering. It combines superb musicality with masses of detail and vast flexibility. Demands to be heard.

FDR

- power
- smooth and musical
- extended, controlled bass
- MM/MC phono stage
- eight-band tone control

AGAINST

- price
- DAC could be better

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New Dynamic

The new Hugo portable DAC and headphone amplifier from Chord Electronics breaks all records for dynamic range, Noel Keywood finds.

How to sell yet another headphone amplifier into a market saturated with them? Use a Rob Watts-designed DAC that shades all else, offering massive dynamic range.

Enter the Chord Electronics Hugo portable DAC/headphone amplifier, price £1700, designed by Rob Watts – including the central Digital-to-Analogue (DAC) convertor chip inside, no less. Few people can do this; DACs almost always come from the design team of a large electronics company.

Rob Watts started Deltec Precision Audio way back in the early 1990s, building amplifiers and DACs. A digital audio designer beyond most, Rob well knows all the arguments against digital, and also

the difficulties of pinning down what we are hearing. His long experience has been employed to produce Hugo, making it truly unique; our Rohde & Schwarz UPV audio analyser showed it has a massive 138dB dynamic range – no less than 20dB better than all else around it. So Hugo looked overwhelmingly impressive before I even listened to it.

In keeping with Chord Electronics styling, Hugo comes in a bullet-proof cast alloy case, sprayed matt silver. Measuring 132mm wide, 96mm high and 24mm deep it is compact, and weighs 400gms – not overly heavy, but not easily pocketable, except in the large pockets of cargo trousers or a coat. Chord Electronics label it 'portable'.

Hugo is mains driven and/or internal-battery driven for use on the

move. It uses an external wall wart power supply (12V, 0.5A), connected through a thin, two-core cable 6ft long (1.8m) to run tethered, whilst charging the on-board battery; the wart is unmarked and needs a Hugo label to identify it from the swarm we all have nowadays (and the mountain in our office!).

Hugo can be unplugged from its supply and will work from its internal battery (5 hours charge time) for 14 hours. In this role it is a super high-quality portable DAC and headphone amplifier which you would typically pair with a portable player having a digital output. This could well be a £150 FiiO X3 but I used an Astell&Kern AK240, reviewed in this issue, able to play DSD and DXD, both formats which Hugo can handle. You can plug in the digital output



of a CD player of course, optical or electrical; Hugo will handle just about anything.

The other point about Hugo is that it swings enormous output into headphones, making it able to power even the most insensitive to high volumes. These days that means 2V minimum, the output of a CD player, and Hugo delivers 5V no less (typical portables deliver a weedy 0.3V).

So Hugo is designed for use in a hi-fi system as well as on the move with insensitive, high-quality headphones. And of course it works from a computer too, connected through USB.

Chord supply a wide range of connecting cables, comprising two Toslink-to-Toslink opticals (short and long), Toslink optical-to-headphone socket optical as used on Apple devices, and a phono-to-BNC adaptor for the S/PDIF electrical input so a BNC terminated cable can be used. Three white computer connection leads are provided, two microUSB-to-USB A (short and long), and microUSB-to-microUSB. A memory stick carries a pdf version of the paper instruction manual, and a PC executable (.exe) file for Microsoft Windows Vista 7 or 8 equipped PCs when HD input is used. Apple and Android do not require audio drivers and Mavericks (Apple) works up to 384kHz without difficulty.

For convenience Hugo accepts Bluetooth A2DP short range radio transmissions from portable phones and players. AptX is employed and Bluetooth quality is very good, due to an unusual compression algorithm (5:1) but bear in mind that Bluetooth transmits at CD quality, compressed, so it isn't a high-definition connection.

Hugo's HD USB connection accepts 384kHz PCM/DXD (DXD is PCM, being a mastering/processing format for DSD), using the DoP protocol.

It also has electrical and optical S/PDIF digital inputs, specified to 192kHz, and three headphone outputs, two 3.5mm and one full size 1/4in (6.35mm). All three can be used at once. The headphone amp will work with loads as low as 4 Ohms, although most headphones are 40 Ohms to 300 Ohms. The Audeze LCD-XCs I reviewed in our last issue were a low 20 Ohms, so anyone able to afford it could use three pairs with Hugo.

The left and right phono socket line outputs share drive with the



headphone outputs so what applies to headphones also applies to these line outs.

A tiny slide switch turns Hugo on and this switches on a little light show, Chord Electronics style. Little but intense coloured LEDs (light emitting diodes) on the circuit board shine through a circular window on Hugo's top face and an unusual clear plastic roller-ball volume control also lights up, its colour showing status, so as I twiddled (rolled?) the ball, volume changed colour from red/yellow/green/blue/purple/white, each in three hues, giving 18 levels of resolution. The levels shown are critical and the instructions don't explain them adequately: in essence you should not go into white — the top level (max volume) — because this can overload the output stages on peaks, but it improves sound quality until distortion becomes obvious.

Another colour light show inside the player indicates sample rate, from red for CD up to blue for 192kHz, light purple for 352kHz and Purple for 384kHz, Chord's manual says.

SOUND QUALITY

I compared Hugo to my otherwise favourite DAC, Audiolab's M-DAC. Initially, when first running-in the Hugo (our second sample after the input lock relay of the first started losing lock, causing sporadic chattering) I used it over a weekend at home and on my Martin Logan Electromotion hybrid electrostatic loudspeakers: it sounded quite bright, almost sharp. But Martin Logans are brutally revealing and the budget (£3k) Electromotions do have upper mid-range emphasis and a bright balance. It was also obvious through the Martin Logans that Hugo has enormous insight and a cavernous soundstage, something well captured through my WAD 300B valve power amplifier, fitted with new and special graphite anode 300Bs, from Icon Audio.

Having run in the new Hugo, I transferred listening to our

office system comprising the quietly impressive and tonally accurate Quadral Aurum Wotan VIII loudspeakers with their ribbon tweeters, driven by a McIntosh MA8000 amplifier. Set against the M-DAC the Hugo gave a very similar balance but was a tad more open, dynamic and certainly more forceful in its treble; it made the M-DAC sound almost creamy, arguably too smooth, even with the brightest Optimal Spectrum filter selected.

This, however, is how I know the M-DAC to be — and while it does a good job of smoothing out the many digital recordings that are coarse in themselves, like Tom Petty's 'Refugee' (24/96) for example.

Matters changed when I started cranking up digital gain in Hugo and volume down in the MA8000. This way I was increasing Hugo's dynamic range — and it sounded like it too! Hugo is lively and spacious at set gain (i.e. 3V out), but used like this it delivered massive

dynamics. Treble was sharply-etched but precision clean — there's no warmth — from all I played, from CD through to high-resolution material.

Life became even more fascinating when playing DSD 128 and DXD versions of Mozart's Violin Concerto in D, from 2L of Norway, via Astell&Kern's AK240 player through Hugo, sent as 24/176.4 PCM over its optical link. These gave fabulously lively orchestral dynamics and a smooth, stable presentation, way beyond CD quality.

Again, Hugo was very dynamic and clear up top. DSD was richer and more convincing than DXD, but DXD was more tightly timed and a tad more dynamically forceful (and the source of the DSD version!).

HOW TO GET HIGHEST DYNAMIC RANGE

Turn Hugo volume up as far as possible, and turn amplifier volume down — this maximises dynamic range. Once the volume roller shines white, output overload on music peaks becomes possible, especially with music compressed upwards to maximum (0dB peak level). Increase until distortion becomes audible, then back off a little. You will find sound quality best at this setting: it gets the most out of Hugo.

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VERDICT
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- easy biasing
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Running via USB from a MacBook Pro, where it acts as a DAC and headphone amplifier, allowed me to stream native DSD to Hugo, using PureMusic player.

This added another step up altogether: running Blood Sweat & Tears 'Spinning Wheel', a DSD64 file sounded as sharply timed and dynamically forceful as a high-speed master tape, horns sounding strong and dense, spread across a wide soundstage, strikes against a cowbell hitting my ears like sonic hammer blows.

Most demanding was 2L's DSD128 recording (TL-09C) of Tchaikovsky's 'Souvenir de Florence' that crashed PureMusic repeatedly (4GBs of MacBook Pro memory was barely enough) but settled down in the end, painting the Trondheim Soloists in a wide arc across my head through Audeze LCD-03 planar magnetic headphones.

Violins sounded timbrally rich and dense and the various instrumental strands were wonderfully separated; I could almost have walked through the soundstage and touched each violin. Hugo ran the insensitive LCD-03s with ease, with plenty of volume to spare.

The only small queries I had were its inability to play 192kHz via its S/PDIF optical input; Rob Watts says it does, but neither our audio analyser or two Astell&Kern players could trigger lock at 192k when using Chord's own optical cable or our own, although Hugo worked at 176.4kHz.

The 352k and 384k sample rate light colours shone dark and light purple respectively on ours, and this is correct Rob Watts told me, but the instructions say the other way around, so there's an error here.

In overall balance Hugo did not have the weight of our Audiolab M-DAC and the not dissimilar sounding Sony HAP-ZIES hard disc player in this issue, both of which were warmer and more solid in their sound, both Jon Myles and I found. But these players both have serious linear (i.e. not switched mode)

mains power supplies; here I was reminded that no matter how good the Astell&Kern portable players may be, they always sound better though our mains driven Audiolab M-DAC. Hugo has the benefit of being small and portable too, unlike the Sony and Audiolab products.

CONCLUSION

This then is how you sell another DAC/headphone amplifier into a crowded market – give it facilities and ability able to make rivals tremble!

HOW TO PLAY DSD

You need JRiver (PC only), Audirvana or PureMusic players on your computer to play DSD. Don't try iTunes – it'll not work.

Audirvana is commonly quoted as the easiest to use, and PureMusic is hopelessly geeky and difficult, but sounds good.

These players can send DSD natively (i.e. not in PCM format) over USB to a DAC like Hugo.

Native DSD cannot be sent over digital audio S/PDIF links, there is no standard for it and data rate is too high for optical. In this situation it is common for DSD to be converted to high resolution 24/176.4kHz PCM so the link will work. This gives very good results, but it does dilute the original intent of DSD and isn't as organic in its sound.

Hugo is a tour-de-force of engineering and delivers fabulous sound quality with all files, even CD. It is also very easy to use. Playing DSD and DXD files natively was almost a shock, Hugo showing just how dramatic high-resolution digital can be.

MEASURED PERFORMANCE

The Rob Watts (ex-Deltec, DPA) designed DAC of the Hugo distinguishes it from all else. It has +18dB of digital gain "built into the digital volume control" I was told. This is very high and if volume is turned up to maximum with low level signals it enables Hugo to deliver a massive measured EIAJ Dynamic Range of 138dB – that's no less than 20dB better than all other DACs (that we've measured to date).

However, if used in this condition the output may overload with peak level signals. However, it does show that Hugo is capable of astonishing results

and that, as its designer says, has an "absence of any distortion at small signal levels, plus an absence of noise floor modulation". Our Rohde&Schwarz UPV analyser confirmed this.

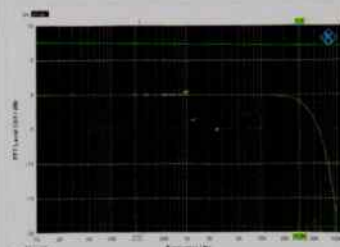
Fixing gain to give 3V out at peak signal level, (i.e.0dB FS), shown by the roller volume button illuminating white, EIAJ Dynamic Range measured 117dB, a little lower than an Audiolab M-DAC at 122dB. The DAC can output 5V before overload.

The extra gain within Hugo allowed a -60dB distortion value of 0.0028% to be measured, ten times lower than other DACs, but this rose to 0.03% with gain fixed for 3V maximum output, due not to distortion but noise.

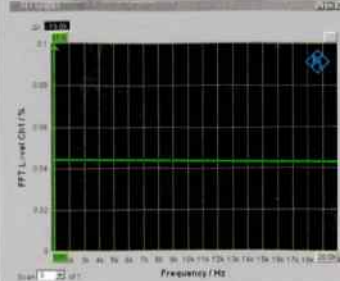
Frequency response was flat to 32kHz (-1dB) with a 192kHz sample rate signal through the co-ax input, rolling off slowly above this frequency, up to 96kHz our analysis shows. The optical input accepted 176.4kHz sample rate maximum.

Hugo is capable of an exceptional measured performance, up with the best at fixed gain, or well above with advanced digital gain. NK

FREQUENCY RESPONSE



DISTORTION



Frequency response (-1dB)	
CD	4Hz-32kHz
Distortion (%)	
0dB	0.0003
-60dB	0.0028
Separation (1kHz)	112dB
Noise (IEC A)	-136dB
Dynamic range (EIAJ)	138dB
Output	5V

CHORD ELECTRONICS HUGO DAC £1700



OUTSTANDING - amongst the best

VERDICT

A super high-resolution DAC and headphone amplifier with fabulous ability.

FOR

- deep insight
- drives any headphone
- plays any format
- battery/mains

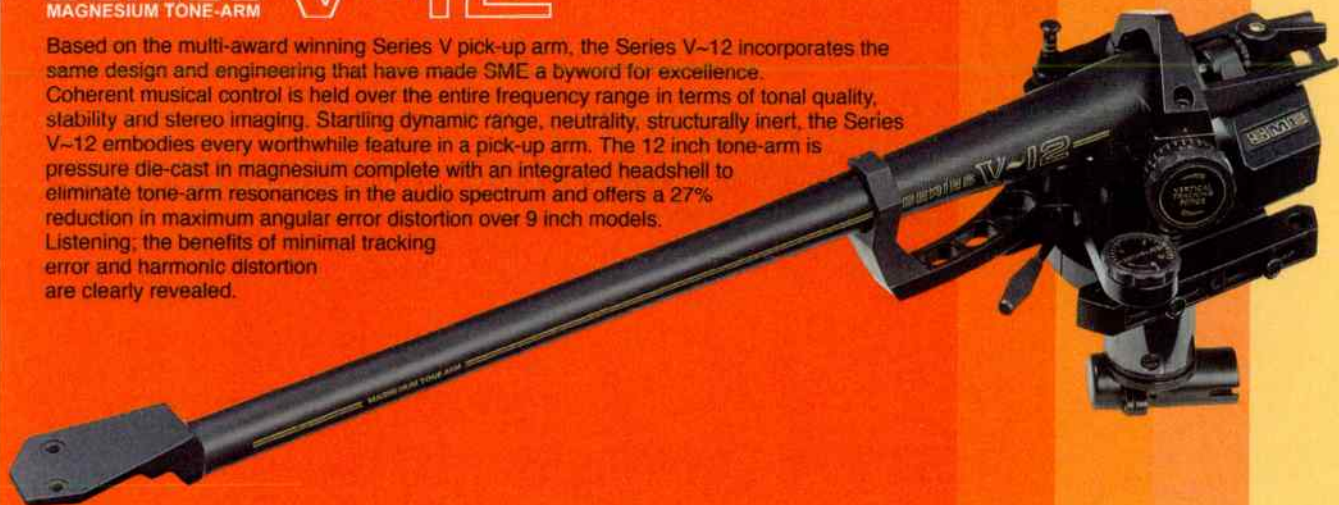
AGAINST

- big for a portable
- awkward volume ball
- unmarked PSU

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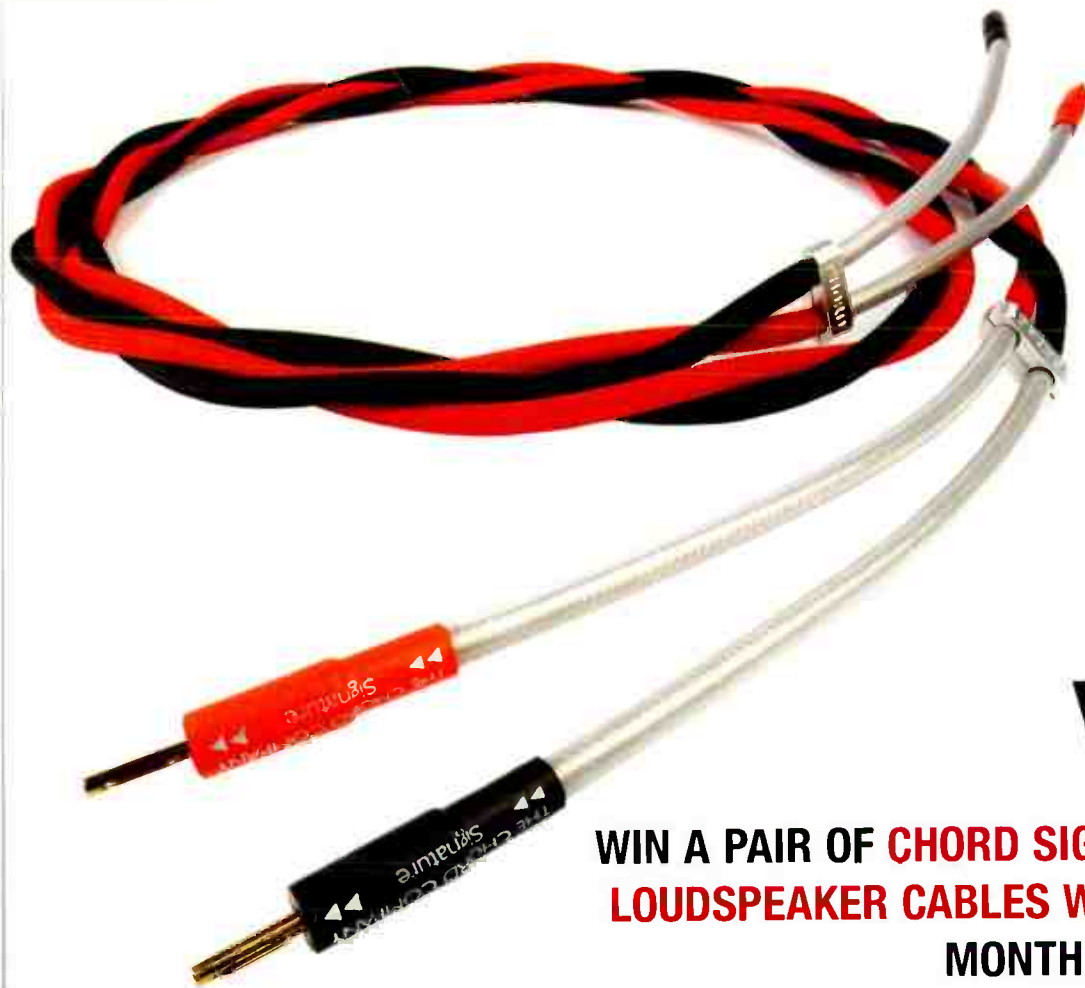


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WIN

WIN A PAIR OF CHORD SIGNATURE REFERENCE LOUDSPEAKER CABLES WORTH £1200 IN THIS MONTH'S GREAT GIVEAWAY!

There's so much interest now in screening to keep electrical interference and noise out of a system – see our Letters pages this month for example – that we thought it a good idea to offer screened loudspeaker cables as a competition prize this month. Not any old cables, but Chord's impressive screened Signature Reference cables.

Read Chord's description of them below and answer the questions at right.

"With the development of our

flagship Sarum speaker cable we learnt so much that we've been able to completely re-design our Signature speaker cable to produce the Signature Reference cable.

We've improved the shielding, made changes to the spacing between the conductors and the shield, and we've changed all the materials. The new Signature Reference features two 10AWG multi-strand silver-plated oxygen free copper conductors in combination with PTFE insulation.

The shield is dual layer, high density, high frequency effective braid with an overlapped foil.

Each set is made to order and the two conductors are held in place with a precision machined aluminium clamp and twisted along their length to improve flexibility.

The aluminium clamp is designed to hold the cable securely but avoid any compression on the cable itself.

Signature Reference is available in red and black and also in all-black as well.

Terminations are Chord 24 karat gold-plated banana plugs, direct gold-plated copper spade connectors or BFA Camcon connectors".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by July 8th to:

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- NO CORRESPONDENCE WILL BE ENTERED INTO
- THE EDITOR'S DECISION IS FINAL
- NO EMPLOYEES OF AUDIO PUBLISHING LIMITED, OR OF ANY COMPANIES ASSOCIATED WITH THE PRODUCTION OR DISTRIBUTION OF THE PRIZES, MAY ENTER

QUESTIONS

[1] The conductors are plated with –

- [a] Titanium
- [b] Silver
- [c] Mercury
- [d] Goo

[2] How many layers does the shield have –

- [a] Triple
- [b] Dual
- [c] Mono
- [d] Quad

[3] The conductor insulation is –

- [a] PTFE
- [b] Paper
- [c] PVC
- [d] Old rope

[4] Available colours are –

- [a] Green
- [b] Pink
- [c] Black or red/black
- [d] Yellow

entries will be accepted on a postcard only

**APRIL 2014 WINNER: YAMAHA BD-A12- BLU-RAY PLAYER
Mr Robert Paul Symcox of Rothley, Leicester**

The Beatles: U.S. Albums Part 2

Paul Rigby concludes his review of The Beatles 'U.S. Albums' box set with a thorough sound test and a closer look at the unique Capitol mixes.



obvious, direct, comparative source. As we have also learned, in Part 1 of this special examination of the 'U.S. Albums' box set, it makes heavy use of the 2009 stereo and mono masters that were also used in the UK editions of the 'Beatles In Stereo' and 'Beatles In Mono' box sets, respectively. Hence, we need to look at how both the stereo and mono tracks, within the 'U.S. Albums' box set, compare with both of these boxed UK sources.

I began the sound tests by spinning the mono version of 'Love Me Do', on the 'U.S. Albums' (USA) box set with the same version/track on the 'Capitol Albums' (CA) box set.

The dominant impression of the USA edition was one of clarity: each instrument and vocalist could clearly be discerned within the master. The CA version, in contrast, was dogged by blurring and blooming. The USA track also enjoyed a spacious and airy presentation while the bass drum and bass guitar were big standouts. Both were beautifully formed, simple but effective.

Further, on percussion the CA version allowed the tambourine to dominate whereas the USA master pushed this secondary percussion back into the mix to allow the bass guitar to take a full part in the performance for the first time. This was especially noticeable within the instrumental break, where the bass acted more as a partner to John Lennon's harmonica solo while George Harrison's subtle

rhythm guitar could be heard easily throughout for the first time.

Next, was the stereo version of 'Twist And Shout' on the USA box set compared with the same stereo track on the CA box set. This track provided a perfect A-B comparison because it allowed a rare glimpse of The Beatles as a flat-out, high-energy, rock band as heard in their pre-fame Hamburg style via an official, commercial release. This is the track that turned the Rolling Stones into the 'Strolling' Stones.

Writing in 'The Complete Beatles Sessions', Beatles' expert Mark Lewisohn commented that this track is, "...the most stunning rock and roll vocal and instrumental performance of all time: two and half minutes of Lennon shredding his vocal chords to bits, audibly ending with a hefty sigh cum groan of relief". Lennon even sang the song stripped to the waist to get into the mood.

Listening to the CA original, it bristled with energy and passion. This is a raw cut made during the original session. Add the contemporary compression and limiting which added urgency and plenty of rough edges and you have a song bristling with sexual tension, aggressiveness and power.

Moving to the USA version, cleaned up and derived from the UK 2009 mono masters, I was initially confused. The track sounded bereft of drive and desire. Gone was the excitement. Then I realised that I had kept the same gain setting from the relatively compressed CA version. The USA clean master almost begged for volume, so up went the gain. Then everything made sense again. I was closer to the action, in amongst the band and almost able to

Listening to the music of the new 'U.S. Albums' box set, mastered by Sterling Sound in New York City, USA, is an enjoyable experience but attempting to come to definitive sonic conclusions, in the face of the other contemporary collections currently available for sale, is another matter.

To achieve this aim, the 'U.S. Albums' CD box set demands comparison with several other notable musical CD sources.

Firstly, there are the 2004/2006 editions of 'The Capitol Albums' box sets, ('Vol.1' and 'Vol.2' respectively) which represented the first time that the American albums were officially released onto CD and is the most



Beatles '65 - 'Beatles '65' features three tracks from the original Capitol master tapes.

reach out and touch the hunger in Lennon's delivery. Ringo's drums had also found weight, heft and power while new space and distance was realised between the McCartney and Harrison backing. The new version of 'Twist And Shout' was momentous, monstrous even.

Finally, comparing the USA box set's versions of the Capitol-specific mixes to the CA versions and focusing upon the mono version of 'I'll Be Back', the new USA master offered a far more mature rendering than the CA version. Most noticeable was the increased width of the mono soundstage and, more immediately, the layering that saw the vocals positioned in front of the strumming guitars. This effect added welcome texture and complexity to the final master.

For the next test, I turned to Sterling's 'U.S. Album' box set stereo masters (which utilised the Abbey Road-created 2009 masters) versus Abbey Road's unique implementation of the self-same 2009 stereo masters as heard in the 'Beatles In Stereo' UK box set. Don't forget that Abbey Road added a touch of limiting to its own stereo masters (see 'The Beatles: U.S. Albums, Part 1' feature, in the last issue). Sterling, on the other hand, reportedly added no limiting or compression for the USA box set, just a touch of neutral gain.

Playing 'Tomorrow Never Knows' (surely a production that was years ahead of its time) it was apparent that Sterling had done, well, a sterling job. While the soundstage size and structure was the same as the UK, Abbey Road master, the Sterling master added warmth and enhanced bass, giving it greater drive and power. Ringo was deep and dirty in his

contribution whereas, in the UK master, he was a touch too polite. In addition, via Sterling's stereo master, Lennon's vocals lost that harsh edge, sounding more natural and flowing, while percussion offered increased delicacy, precision and fragility in its presentation.

The same general result was present during other A-B tests between the Sterling and Abbey Road stereo masters.

So how did the Sterling and Abbey Road mono masters rate? By rights, there should have been no difference as Abbey Road didn't add any limiting or compression to the mono masters within 'The Beatles In Mono' box set. In fact, the latter has always been seen as an audiophile edition box set. Nevertheless, I gave 'Taxman' a spin to hear for myself and was pleasantly surprised to hear subtle yet definite improvements in the Sterling edition. As in the stereo masters there was an element of warming in the overall presentation of this mono track, triggered by slight lifting of the bass frequencies. More surprisingly, however, was a slight calming of the upper frequencies within the Sterling master that actually improved the clarity slightly, making the Harrison guitar solo more palatable and less wearying to the ear.

Similarly, the Harrison lead vocal delivery was more direct and precise. While the mono masters were, basically, very similar, I did prefer the Sterling interpretation.

The final comparison focused on the George Martin remixes of both 'Help!' and 'Rubber Soul'. The full story of these mixes can be found online in the Hi-Fi World website within my 'Beatles On Vinyl' review.

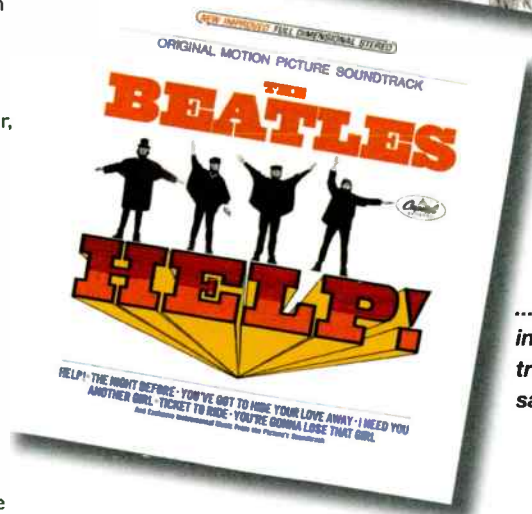
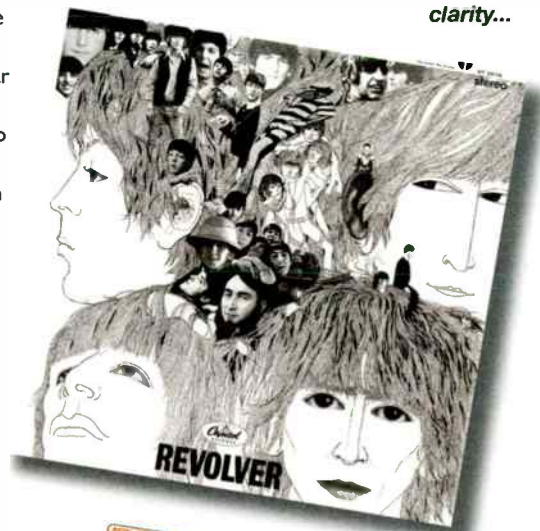
Suffice to say that the relatively recent 1987 mixes have been criticised, by some Beatles audiophiles, as being a touch bright. I personally believe that the accusation of brightness, on these 1987 variants, is overstated. What the new Sterling master does, however, is create a slightly recessed vocal while easing

forward both the Lennon guitar and Harrison sitar in the soundstage, adding clarity to the lyrics. The Sterling remaster also enriches the vocal, giving it body and bulk for a more articulate delivery as well as a wider, richer soundstage and a much enhanced suite of lower frequencies, providing welcome balance to the orchestration.

CONCLUSION

In short? The 'U.S. Albums' box set is an absolute triumph. Not only does the set trounce the original 2004/2006 'Capitol Albums' box sets, relegating both sets to the status of 'interesting curiosities', it actually improves upon Abbey Road's original, slightly flawed, 'Beatles In Stereo' box set and, incredibly, has the audacity to have the edge on the 'Beatles In Mono' box set! The 'U.S.

Sterling's 'Revolver' benefits from enhanced clarity...



...whilst 'Help!' packs in a mighty twelve tracks from those same masters.

Albums' is, therefore, an absolutely essential purchase for all Beatles fans, whether you are interested in the U.S. versions of the Beatles oeuvre or not. What we have here is a true audiophile edition of the Beatles works on the digital format.

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THE UNIQUE MIX LIST

One of the most confusing topics for any dedicated Beatles fan who is looking to buy the 'U.S. Album' box set is just how much of the set features the original Capitol mixes? Browse the internet on this matter and you will find wildly different figures. No one agrees because the official list has, as far as we can tell, not been published before. Until now.

As the 'U.S. Albums' box set co-ordinator and audio supervisor Steve Berkowitz explained, "This list was generated from production notes from the sessions of 'The Beatles U.S. Albums' at Capitol when reviewing and gathering sources and work produced by (mastering engineer) Greg Calbi and myself at Sterling Sound in New York City. The source for the information comes from the notes and files of Michael Murphy (EMI/Universal A&R) who we worked with on this project and my production records and files. I believe this to be the most comprehensive and accurate list that reflects both sources and production".

THE BEATLES 2nd ALBUM MONO

1. 'Long Tall Sally'
2. 'I Call Your Name'

A HARD DAY'S NIGHT STEREO

3. 'I Should Have Known Better' instrumental
4. 'And I Love Her' instrumental
5. 'Ringo's Theme (This Boy)' instrumental
6. 'A Hard Day's Night' instrumental

A HARD DAY'S NIGHT MONO

7. 'I Should Have Known Better' instrumental
8. 'And I Love Her' instrumental
9. 'And I Love Her' vocal
10. 'Ringo's Theme (This Boy)' instrumental
11. 'A Hard Day's Night' instrumental

SOMETHING NEW STEREO

12. 'If I Fell'

SOMETHING NEW MONO

13. 'I'll Cry Instead'
14. 'Any Time At All'
15. 'When I Get Home'
16. 'And I Love Her'

THE BEATLES STORY

17. Used the original U.S. analogue stereo 1/4" tape master - full album

BEATLES 65 MONO

18. 'She's A Woman'
19. 'I'll Be Back'
20. 'I Feel Fine'

HELP! STEREO

21. 'HELP!' (James Bond intro Music only) instrumental
22. 'From Me To You' instrumental
23. 'In The Tyrol' instrumental
24. 'Another Hard Days Night' instrumental
25. 'The Bitter End' instrumental
26. 'The Chase' instrumental

HELP! MONO

27. 'HELP!' (James Bond intro Music only) instrumental
28. 'From Me To You' instrumental
29. 'In The Tyrol' instrumental
30. 'Another Hard Days Night' instrumental
31. 'The Bitter End' instrumental
32. 'The Chase' instrumental

RUBBER SOUL STEREO

33. 'The Word'
34. 'I'm Looking Through You'

RUBBER SOUL MONO

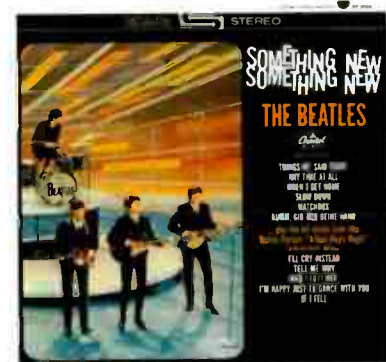
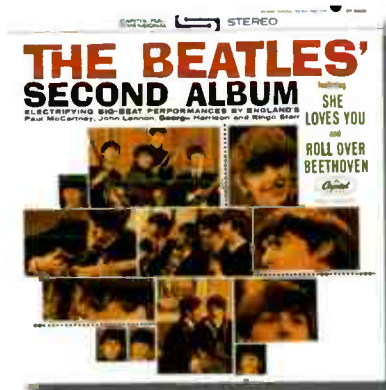
35. 'Michelle'

YESTERDAY & TODAY STEREO

36. 'We Can Work It Out'
37. 'Day Tripper'

YESTERDAY & TODAY MONO

38. 'I'm Only Sleeping'
39. 'Dr. Robert'
40. 'And Your Bird Can Sing'



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

LETTER OF THE MONTH PRIZE



KEF Q100 LOUDSPEAKERS

For more advice see Letters from earlier issues at www.hi-fiworld.co.uk/letters

A pair of KEF Q100 loudspeakers are on their way to **TREVOR MORGAN**, Letter of the Month winner in our June 2014 issue.

Letter of the Month

RIPPING IT UP

I'm considering the purchase of a Cambridge Audio Stream Magic 6, this to be hard-wired to a Network Attached Storage (NAS) device as the data vault. I would be very open to the idea of downloading high-res music files, it's just that to date I have never downloaded music.

Initially at least, I anticipate that my focus would be on down-ripping (or is it ripping-up?) my many hundreds of CDs to the NAS for the greater retrieval convenience over stacks of discs which drive me to distraction. I imagine that it would be usual to copy the CDs, faster than real time, using a computer to speed up the process. But I see a problem here. I'm very alive to the fact that better CD replay equipment sounds significantly better than a computer drive.

For my current CD listening I use for the transport a Pioneer PD-S904 Stable Platter CD turntable incorporating a Trichord Superclock 4 and dedicated Trichord PSU. This runs into an Electrocompaniet F.CD 1 upsampling 24bit/192kHz DAC, which has the bonus of a balanced XLR output connection to my Electrocompaniet ECI 3 amplifier. Although I remain true to my vinyl allegiances, I'm now rather happy with the near analogue sound quality of my CD replay.

But if I transfer my CDs to a NAS using a substandard computer drive, surely some of the quality of musical



The very popular Cambridge Audio Stream Magic 6 network player is a possible choice for Martin Burgess, he suggests.

information which I currently enjoy will be lost. Will it not be a case of garbage in, garbage out? And perhaps something similar will happen over again when all my CD music data is stored on a NAS and when that is being used as a replay transport of questionable quality.

Putting to one side the obvious advantages of non-Red Book, high-res downloads, I suppose in essence I'm asking if all my CD music data stored and played via a network player streamer, will inevitably be inferior to individual compact discs played using a decent quality CD transport/DAC?

And if you're thinking I could improve matters by ripping many hundreds of CDs in real time, using my current replay equipment, I should perhaps add that not many of us have

that much life remaining.

With best regards

Martin Burgess
Kent

Hi Martin. You can make bit-perfect copies that are checked on-line against the AccurateRip database, for example, to ensure fidelity. Check out XLD for Mac and dBpoweramp for PC, both are free. Rip speed is negotiated by the software. You'll get very high quality rips with these programs, for storage on a NAS drive. Replay over ethernet isn't, in my view, ideal, because long cable runs add jitter and electrical interference; I prefer 'sneakernet'.

However, replay quality is determined primarily by the DAC



Audiolab's Q-DAC uses an ESS Sabre32 DAC chip and gives a great sound, especially at its low price.

and you could conceivably stream from NAS to a Cambridge Audio NP30 or Stream Magic 6 and pass their digital outputs through your Electrocompaniet ECD1 to get a sound very similar to that you are already experiencing.

Will it sound better or worse? I can't say. Re-clocking smoothes digital and makes CD rips sound better than the CD, but ethernet can degrade the sound. Whether the degradation will be audible depends upon network conditions, including cable quality (screening etc) and length and your local RF environment.

My preference, however, is to use a convertor like the Audiolab Q-DAC (or M-DAC) with its modern ESS Sabre convertor, with jitter reduction and seven filter options. You can connect this DAC to the S/PDIF digital output of the Cambridge players. Total cost will be around £600 in all – not a king's ransom. The smooth, full bodied sound of the Q-DAC I think you will find deeply satisfying. **NK**

LP12 CONFUSION

I am currently going through the never-ending search through different specs and upgrade options on the lovely Linn LP12 turntable. I haven't got an LP12 so I'm wanting to purchase one but not sure with a £2000 budget which one to go for. Do I go for the Transcription option or the Vivid upgrade package? These aren't too well received on the Linn forum but I read with interest that you actually gave it a glowing review. So in short, Transcription or Vivid? My budget on the latter would give me a Rega arm and Ortofon Blue. Thanks for your help in advance.

Craig Evans

Hi Craig,

I am slightly confused by your term "the Transcription option". I assume by this you mean a standard specification Sondek. Since you don't currently own a Sondek I would suggest buying an unmodified one, getting it properly set up by a Linn agent and spending a month or two playing through your record collection to ensure that you are



Linn LP12 turntable. "Which one to go for – the Transcription option or the Vivid upgrade package?" asks Craig Evans.

familiar with all the nuances of the LP12 sound.

You may well find that the sound that you are listening to satisfies your musical needs and your budget can then be devoted to perhaps a cartridge upgrade and increasing your record collection.

A wide choice of decks is usually available through the adverts in this magazine and on eBay, so take your time and get the best combination of specification and aesthetics that suits your needs and the furnishings of your listening room.

The looks are important since the deck is on display and needs to be visually appealing so that it is something that you are comfortable living with, and that ties in with, rather than clashes with, for instance, the finish of your loudspeakers. (Such considerations also help increase the "Wife Approval Factor", something that must never be underestimated in importance).

If you find, after extended listening, that there are aspects of the sound that you feel could be improved upon then I would suggest booking an appointment with Inspire Hi-Fi (www.inspirehifi.co.uk) and listening to their Vivid upgrade package with a choice of records from your own collection. I would also suggest visiting brianandtrevors (www.brianandtrevors.com) who stock all of the Linn options and also some after-market upgrades from other manufacturers.

With any upgrade option, I would always recommend listening to the standard item first, otherwise it is impossible to ascertain which aspects of the sound can be credited to the strengths of the original design and which are due to the upgrade path that you have chosen.

TB

HOT HANDS

I'm just reading April's Hi-Fi World and am rather alarmed by the photo of the Ming Da 300B MC300. I'm a huge valve amp fan, but exposed valves have always worried me because of the high (potentially greater than 200 deg C) surface temperatures and the fact that all that separates fingers from several hundred volts DC is half a millimetre of fragile glass.

Valve amps can't legitimately carry a CE mark unless the valves are protected behind some kind of grille or cage. Many owners choose to take these off so that the valves are on show - this is of course at their own risk and



Ming Da 300B. "Ming Da has positioned the volume and selector controls under the cage, immediately adjacent to the 300Bs" says Roger Duerden. "Ouch!"

entirely up to them. But Ming Da has positioned the volume and selector controls under the cage, immediately adjacent to the 300Bs, which means that it can't, in practice, be operated with the cage in position.

Your reader may well enjoy the reduced heat production of the MC300, but I doubt he'll enjoy having the back of his hands burnt when he's reaching to turn up the volume. Ouch!

Roger Duerden

I can assure Mr Duerden that all our amplifiers have covers delivered with them, to protect the hot output valves from damage and being touched by accident.

Yes, I accept that it is slightly tricky to adjust the volume on the Duet 300 with the cover in place, but we do provide the remote control for that purpose. However, I can use both the volume and input selector with no problem, even though I do have quite thick fingers!

In addition, both the controls are not set close to any of the valves, so the risk of being burnt while touching either of the controls is minimal.

Better still the 300B does not run very hot, neither do the ECC82 and ECC82 input and driver valves!

Now in terms of CE, all the amplifiers do come with covers and yes they are designed to be used with the covers in place but as Mr Duerden correctly points out, users can remove the covers at their own discretion.

Lastly, if Mr Duerden would like to visit our extensive showroom in Great Malvern, I would be very happy to put his mind at rest and demonstrate to him

that safety is very much at the top of our agenda!

Kind regards,

Mark Manwaring-White
Ming Da UK

SLATE MATE

Mark Richards ("Two Heads" - letters, April '14) considers changing from a modded RB300 to an SME 312. I took a similar route two years ago ("Track Issue" - letters, August 2012) and had to deal with the problem of drilling out a new slate arm board. Slate Audio may be able to help but if not, Aqua Dynamics of St. Albans (run by Brian Hatch, a vinyl enthusiast himself) would be the place to go.

It is worth mentioning that the easy option of dropping in a 9" SME V will not work. The RB300 is a longer arm so the geometry doesn't work for the SME arm.

Best wishes,

Dave Clewlow

MORE FROM MARIO

Though I've been a keen music and audio reproduction systems enthusiast for over 40 years and a very interested reader of Hi-Fi World for, at least, 15 to 16 years, I keep dropping you a line whenever my omnipresent doubts arise and insist in taking a first row seat as I face any new or recurring audio problem.

That is how I got to write to you, recently, putting a lot of questions regarding the reproduction of 78 rpm records (very old and less old ones) and of mono LP. You gave me a very comprehensive set of answers and I've been thoroughly following your advice with top-notch results, namely in what respects the need of a proper phono pre-amp, with enough different settings to allow the system to follow the correct equalisation curve used by the different

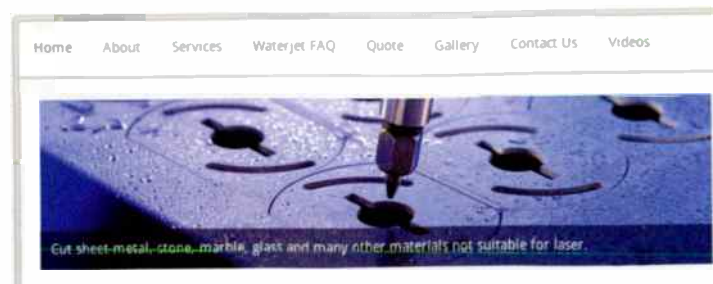
record factories and labels. I can't find words to adequately thank you for your invaluable help.

Having listened to the equipment items you suggested I ended up reaching a slightly different path as I better understand now some very important nuances of shellac and vinyl reproduction. When reproducing analogue discs one must bear in mind, for a start, some very simple things:

1. Avoiding surface noise and protecting record and needle from unnecessary wear. The discs must be thoroughly clean and you must use different cleaning products for vinyl and shellac. Never use alcohol-based products on shellac and always use the right needle for the right groove. After washing any record stick it into a new sleeve. If possible avoid all-paper sleeves.

2. Getting the best of your mono Shellac records. Use the correct equalisation curve for each label and historic period. Use the right needle for each record (there is no rule. You have to find out the right one, using your ears and subjective expectations). Have a few wands or shells pre-loaded with your option needles. Keep a record of the cartridge and needle you prefer to play each record with. Don't play damaged records. Get rid of them. Use the correct playing speed. Sometimes, for this purpose, you may refer to the record's label; most of the times you can only rely on your ears.
3. Getting the most off your vinyl records. Beware of equalisation curves for mono records prior to the late fifties. Use a modern mono cartridge with mono LPs. Do not use a stereo cartridge to play a mono record.

I told you above that I followed a slightly different path than the one you suggested. Instead of buying a different phono preamp I got myself a REK-O-KUT Re-equaliser II from eBay.com at the pricey sum of U\$80.00, plus



"Aqua Dynamics of St. Albans (run by Brian Hatch, a vinyl enthusiast himself) would be the place to go" to drill out a slate arm board, says Dave Clewlow.

US DECCA OLDER MATRIX

US DECCA NEWER MATRIX

US Decca has a similar distinctive matrix identification. Also note the higher "Take Number," or "Stamper Number." Usually, smaller Take Numbers are associated with pre-RIAA records. The record on the left requires 800/-8 dB equalization in order to make it sound like the RIAA on the right.



US COLUMBIA OLDER MATRIX

US COLUMBIA NEWER MATRIX

US Columbia follows similarly. Note that both matrix numbers are the same. The RIAA issue, however, has smaller Arial font, and also larger Take Numbers.



US COLUMBIA OLDER MATRIX (Version 2)

US COLUMBIA NEWER MATRIX

Sometimes font characterization is not enough. Above, only the take number and label are different.



Labels can tell a lot about a record's age. These US Decca labels are from the same recording of show music. On the left is the earlier, pre-RIAA version. On the right is the later, RIAA version. However, this is not a guarantee of a records age, but one of several indicators. It was the Matrix Numbers that confirmed this equalization choice.



Page #4

The Operating Manual for Rek-O-Kut re-equaliser has detailed information on 78rpm shellac record equalisation curves. Go to <http://www.esotericssound.com/Electronics/REQ2MAN.pdf>.

customs taxes and postage. It ended up costing me something like \$100.00! I also bought two Ortofon 2M cartridges (78 and mono). I'm looking forwards to buy the Technics RA fully equipped and a second SME M2 12R to replace the old 3009.

I hope to purchase adequate new cartridges for mono LPs and 78rpm replay, including a set of stylus for 78rpm only and a couple of adequate Stanton cartridges. I'll give you feedback in a year's time.

Apart from the combination ASR Basis Exclusive-VTL 5.5, I currently use a second one that includes a JG Audio T5 preamp/ JG Audio phono stage C (on the side I keep a Graham Slee Elevator EXP just in case I'm in the mood to listen to the Dynavector 17D3).

Of course, I forgot to tell you what cartridges I am currently using to play my modern LPs. It is time to give you

the information, as I am using three turntables depending on the record I want to listen to

With a Well Tempered Labs Amadeus GTA I am using a Dynavector DV XX2 Mk2.

With my father's Garrard 401 and the SME 3009 I use a Koetsu Rosewood Signature 3.

With my heavily modified Technics SL1210 Mk2, sporting a Funk Firm fxr II arm, I use an Ortofon 2M Black and have a Dynavector Karat 17D3 on standby, just in case.

Best regards,
Mario Kopke Tulio
Portugal

Hi Mario,
it is good to hear from you again and thank-you for the updates. It is gratifying to know that our advice is followed with such positive results.

I would suggest using L'Art Du Son cleaning fluid for all of your records since it is highly effective on vinyl as well as shellac discs and using the same fluid for both types eliminates any risk of getting an alcohol-based fluid onto your 78s. There are also some who query using alcohol on any record whatsoever since it has been suggested that there can be a slow degradation of the vinyl record surface once it has been exposed to this substance.

I have not yet heard the REK-O-CUT Re-Equaliser but since you seem to find that it gives good results I shall do my best to get hold of one and have a listen. I am sure there are other readers who would be interested in such a review.

I do envy you having the space to allow you to have three turntables

Letters On-Line!

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

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World Mail June 2011 issue

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permanently set up and I think most people reading this letter will feel the same way. You also have a fine collection of decks and cartridges that each offer a different way of presenting sound. Providing you can get hold of the correct arm mountings then I would be tempted to have some fun by trying swapping the arms and cartridges around your collection of turntables. It is a very good way of isolating which sonic characteristics are due to the deck, arm and cartridge respectively and thus building yourself a better knowledge base from which to direct the course of your future purchases. Please let us know of the results if you try this.

I also look forward to hearing how you get on with the Timestep RA turntable and the SME M2-12R arm. **TB**

USB DACs

My query is straightforward (I hope). After much procrastination I have decided to dip a toe in the water of digital downloads; the way I would prefer to do it is by transferring digital files from my PC to a DAC via a USB memory stick as memory is relatively cheap and I like the idea of having separate memory sticks for different music genres for example. So I guess what I am asking for is a DAC with a USB socket that can play music directly from the memory stick and then to my Primare amp.

I was looking at an Audiolab DAC but as far as I can tell it does not offer this facility as it needs to be connected directly to a PC, something I am loathe to do as I don't wish to have a computer connected to my hi-fi system. Any advice will be gratefully received.

On another note my system comprises a Primare amp and CD player using Triangle Antal 30th Anniversary speakers and although I am happy with the sound I feel the bass is over-damped so I am considering swapping the Primare amp for a valve amp (your love of valves is compelling) or maybe a solid state amp which has a lower damping factor. There does not seem to be much information regarding damping factors in the manufacturers info so any advice you can give me will also be gratefully received. I should point out the listening room is 30sq m, lightly furnished with solid stone walls and carpet to the floors. I hope you can offer me some solutions and thank you in advance

Best Regards

Gareth Williams
Cornwall



Pro-ject's diminutive Media Box 3 plays music from memory stick and SD card.

Hi Gareth. The solutions are easy enough. A Cambridge Audio Stream Magic 6 plays from front or rear panel USB sticks. I use rear for long-term storage and front for short-term. As you say, different sticks can hold different music sets. Just don't use the network connection to your computer, but you will need it to for the internet tuner should you use this.

Alternatively, and perhaps better still, you could get a Pro-ject Media Box S. This fascinating little device is inexpensive but does just what you want. As you say, a network connection to a computer is an unnecessary complication and playing from memory stick sounds better as well as being easier.

Naim amplifiers have a low damping factor, around the 17 mark, as well as plenty of bass punch, so any Naim would do. Alternatively, you might like to listen to – and look at – an Icon Audio Stereo 845 PP. **NK**

A SPECIAL DAY

Having just experienced Record Store Day 2014, or as it should be labelled, Record Store Two Weeks, as records cannot be sold online or reserved until two weeks have passed, I find myself really stoked that the good old vinyl record still shines brightly. And that Hi-Fi World still has a dedicated little section at the rear of the magazine.

I personally enjoyed buying the new Pixies record, which is so much better than many reviewers give it credit for. I also bought a 10" record, first 10" in a while, from John Peel favourites The Wedding Present. I wonder if there will ever be a day, when downloads or streaming will be out of favour with most people and business gets together to remind folks of its existence, with Computer Download Day or Streaming Saturday or some such.

Many LPs these days come complete with a CD copy of the album and/or a download code for a digital copy but even this I feel somehow cheapens the whole deal. I suspect that



A valve amplifier like Icon Audio's Stereo 845 PP has a low damping factor and will pep up well-damped loudspeakers like Triangle's Antal 30th Anniversary. The Icon's sensitivity (feedback) switch gives two damping settings in effect.



"The song is called Effigy and the band are Creedence Clearwater Revival. The original is awesome" says Neil Porter. 'Effigy' comes from the band's Willy and The Poor Boys album, still available on vinyl today.

not many people want or feel they need all the alternatives in real everyday life. I know it's an idea designed to generate business and maybe I'm just a bit staid but hey, if it works, I guess.

Finally, one of the artists involved in making a recording for Record Store Day 2014 produced a cover version of a song and, thanks to that, I have now discovered a band that I have never listened to before. That song is called Effigy and the band are Creedence Clearwater Revival. The original is awesome and the cover in 2014, I love it. Long live Record Store Day and all who sail in her.

Best,
Neil Porter.

Ah, Neil, a most opportune time for you to write. Allow me to direct you immediately to my feature on Record Store Day on page 91.

I seriously doubt that downloads or streams will ever build the same level of affection afforded to vinyl (and, increasingly, CD) because, by their very nature, downloads/streams have no physicality, no value for money and no re-saleability.

I disagree with your point about vinyl being 'cheapened', though. Although I favour vinyl, I use all formats in a typical day. In fact, the night before I wrote these words, I spent a couple of hours deep cleaning vinyl while listening to a

hi-res download on my Astell&Kern AK120! There is space for all formats in this multimedia age.

Glad you discovered CCR, a band that brought rock back to its roots when others were moving far (possibly too far) away from their own influences and who did so with both economy and power. On that same point, I know of music fans who, because of Record Store Day, have newly discovered artists such

as the electronica-meister John Foxx (ex-Ultravox), innovator Captain Beefheart and one youngster who is now mad keen on T.Rex! Yes, Record Store Day is a wonderful thing. PR

You have never heard Creedence Clearwater Revival? Oh mother, pass the smelling salts! You remind me that I heard Creedence drifting out of Yamaha's room at the Bristol Sound & Vision Show, 2013, where a very affable young man was also enthusing about hearing them for the first time.

Check out John Fogerty and be prepared for a tough dude. Their songs were socio-political and still resonate today. At the time Creedence were called the world's greatest rock-and-roll band, but they were more than just rock-and-roll. Johnny Rotten would have been proud: they didn't do love songs.

All their albums are strong and worth buying, and get their remastered LP box sets to hear them at their best. A brilliant band; rock at its greatest: simple, clever and forever captivating. **NK**

SCREENED CABLES

I see that several of the leading loudspeaker cable manufacturers are now beginning to see the advantages of shielding their cables from RF and mains-borne interference. The Chord Signature are a shielded version of the Epic, I believe. With this in mind, I wondered what would be the effect on my own speaker cables.

Normally I use Chord Company



Chord Signature loudspeaker cables are screened to resist radio interference. Mike Bradbury says this makes a difference.

Carnival Silverscreen, but I had a set of Deltec DPA50 cables lying around somewhere, so I decided to experiment with these. Although once retailing somewhere in the region of £250 for a 4 metre pair, I found that although they gave areas of improvement over the Carnival Silverscreen cables (detailing, transient attack, more 3-D), they didn't have the stage width I liked from the Carnivals.

I read up about cable shielding techniques, and subsequently purchased rolls of pure copper tape (20mm width) and pure aluminium tape (40mm) from the internet. Pure copper tape may also be found in garden centres as it is used as an anti-slug and snail device.

Starting with the copper tape, I wound and overlapped the whole length of the pair of DPA cables. I then repeated the process with the aluminium tape. I then covered the cables with a new skin of shrink-wrap PVC which is readily available in any colour you choose. I chose blue. The end result was a hosepipe sized cable somewhat stiffer than before, but I was keen to hear if I had made any improvement to the sound. I also earthed the copper tape at one end to the chassis of the amplifier to give a floating earth.

Gone was the narrow soundstage of the standard DPA wire; it was now as wide as the room could accommodate. The sound was altogether more real, more 3-D. Images became more focussed. Suffice to say, the modified cables have remained in place ever since.

I then applied this twin shielding procedure to all my mains cables with further, if more subtle, benefits. Floor noise was reduced, allowing a blacker background for the music to perform upon.

Many of the dedicated mains filter systems use shielded mains leads, some of which I had previously bought, such as the Tacima but my DIY method has allowed me to double shield my entire system for less than £20, although the procedure is time consuming on speaker cables. It took me an hour to do each five metre length, but only ten minutes to do a metre length mains wire. I await your comments, and hope that readers and DIY-ers find the my experiences interesting.

**Mike Bradbury
Walsall.**

Hi Mike. Noise of all sorts does seem to be crystallising as a deep stain on sound quality that perhaps has more influence than we understand. And



Wi-fi transmitters now dot the domestic landscape, pumping out digital radio signals that can pollute your hi-fi with noise.

RF (radio frequency) noise is being held up as a modern day culprit. It has been, for a long time, obviously influential in the way that radio waves from radio and TV transmitters could end up as speech or frame buzz coming from the hi-fi, and long loudspeaker cables were the biggest culprit. This suggests you are on the right path. In the past, radio would feed back to the first amplifying device, overload it and be 'rectified' then appear as speech or frame buzz over the loudspeakers.

Modern RF is different from old-fashioned RF. Shorter wavelengths are used, the interference more random and less deterministic (i.e. digital). But it does seem to exert influence all the same, degrading sound quality. And of course nowadays we have wi-fi transmitters all around us, often scores of them. So pick-up in the loudspeaker leads may be considerable. Screening will help, but may be more effective in urban rather than rural areas (mains supplies are the converse).

Your choice of materials looks good. Aluminium is effective for RF screening and copper good at lower frequencies. Copper chassis valve amplifiers are considered the best sounding and the same applies to transistor amplifiers, but because copper is soft and deforms permanently, unlike steel, it is rarely used.

The insulant matters too and PVC, that is cheap, is usually replaced by PTFE in more expensive cables, often with a foamed structure to introduce pockets of air.

If you screen loudspeaker cables,

as you have done, you are sort of giving them screened balanced cables – and they are acknowledged as sounding better than unscreened/unbalanced. So all the indicators are that your mods should be effective.

Just a few observations. If you can, open up the loudspeakers, then the screen could be connected to the metalwork of the drive units, Tannoy-style. At this point you may also consider moving the crossover network out of the cabinet and onto the floor behind the speaker to eliminate vibration. Once outside the cabinet you can put it into a copper or aluminium case (but not steel) to screen it from RF.

I hope other readers experiment; if so please write in.

NK

OUR BOO BOO

I refer to Hi-Fi World Vol.24, No.4, June 2014, and specifically to the review titled "Studio Sounds" of the JBL Studio 230 loudspeaker.

The frequency response and impedance plots published in the "Measured Performance" section on Page 57 are not of the loudspeaker, but are identical to the plots published on Page 43 for the YBA iA3 integrated amplifier. Please publish the correct frequency response and Impedance plots for the JBL Studio 230 loudspeaker in an upcoming issue of the magazine because it will be very interesting to see the effect of the semi-horn loading of the tweeter, and also the port tuning, plus the degree of the lower midrange resonant energy through the port.

In addition to the usual two plots published in loudspeaker reviews,

it would be useful to have also an impulse response plot published, so that technically knowledgeable readers can see the degree of time alignment of the drivers and whether one of the drivers is connected in the same or in the reverse polarity to the other driver(s).

Regardless of measured flat frequency response through the crossover region, same polarity and inverted polarity of one driver each causes distinctly different characteristic sounds which some types of listener brains allocate priority to over other audible phenomena.

Also, the vertical axis which causes closest to perfect time alignment for the drivers could be the one to publish the frequency response plot for.

My listening experience of many loudspeakers has resulted in hearing better coherence of the music for those loudspeakers where equal signal arrival time from the drivers has co-incided with seeming close to flat frequency response through the crossover region, at least with classical music and various folk music and some Jazz that has not been subject to large amounts of electronic production manipulation during preparation of the master tape. It is very audible with naturally recorded human voices that have not had pop production treatment during mixing of the recorded tracks.

Yours Sincerely,
Chris Logan,
Australia

Whoops! Sorry about that mistake. Please see the JBL Studio 230 plots here. You can see the tweeter is well matched to its physical surroundings by the shallow horn in the smoothness of its treble response. What you cannot see is that dispersion from the horn was excellent, this response being maintained a long way off lateral axis.



JBL's excellent value Studio 230 loudspeaker. Clean and punchy, we liked it – but published the wrong graphs in the June 2014 issue. See what we should have published below. Our apologies to all the eagle-eyed, technically savvy readers who spotted our deliberate (cough!) error.

The port is narrow tuned, like so many are. This gives bouncy, or enthusiastic sounding bass. Broader port tuning is becoming preferred by designers these days because it plays a bass tune better, but such ports don't sound so lively. The JBL is what you'd expect it to be in this respect.

If the drivers were out-of-phase a sharp dip would appear between them, so time information is intrinsic to the frequency response plot.

There isn't enough space to publish any more than two graphs even though we run very interesting decay plots over 200ms.

The vertical position of the measuring microphone is invariably between the drivers of a two-way 'speaker, and on mid-range axis of a three way.

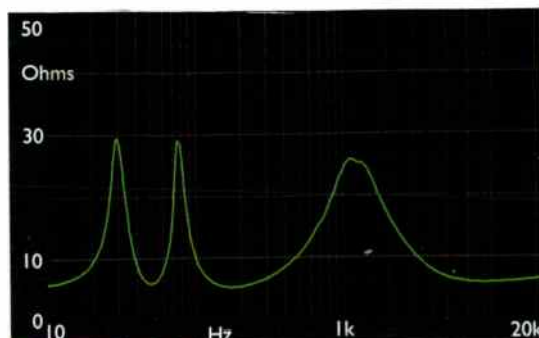
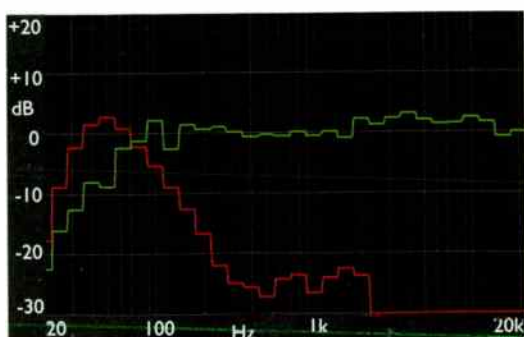
This is how they are designed,

so no surprise it gives the best result when 'speakers are tested. Panels are a different ball game. The microphone is positioned at a sensible listening height, around 3ft from the floor, typical ear height when seated.

As you say, loudspeakers sound best when their drivers are well phase aligned, and the crossover is designed to give a net flat result.

The only observation I'd make here is that very flat loudspeakers can seemingly lack character on first listen. Removing the 'zing' or bounce of a resonant system is a true improvement, apparent in both time and frequency domains under measurement, but it doesn't always sound like it. Careful long term listening will tease out the agnostic nature of such loudspeakers however.

NK



At left is frequency response of the JBL Studio 230 using pink noise with the microphone between the two drive units. The red trace shows port behaviour and this correlates with the impedance curve (right), its peak coinciding with the frequency of the sharp dip in the latter.

Big Spendor

Spendor's new D7 floorstanders feature a host of new technologies and can go loud with little power. Jon Myles takes an extended listen and comes away suitably impressed.

Never judge a book by its cover. Nor, it must be said, a loudspeaker. Take these new Spendor D7s for example. At first glance they're a traditional slim two-and-a-half-way floorstander not too different from previous Spendor products or models from no end of other manufacturers. Look beneath the surface, though, and things get distinctly more interesting.

There's the specification for a start. Spendor quotes a dB sensitivity allied to an 8 Ohm impedance (our Measured Performance gave an overall 6 Ohm figure) – meaning the D7s could be just the thing for those who revel in the joys of low-powered valve or Class A transistor amplifiers.

Then there's the drive units – which is where things get even more interesting. For this is the first loudspeaker to use Spendor's new Linear Pressure Zone (LPZ) tweeter design, which has been several years in development.

Essentially this consists of a stainless steel mesh cover sitting in front of a 22mm polyamide fabric dome. This forms a damped acoustic chamber which equalizes the pressure on both sides of the tweeter, meaning the dome can operate in a completely balanced linear mode.

It's an interesting and innovative

design – and one that is likely to find its way into other of the company's models over the next few years.

Below the tweeter sits a bespoke 180mm mid/bass driver using a new formulation of Spondor's own engineering polymer called EP77 and said to possess high natural damping and rigidity. This is complemented by a similar-sized Kevlar bass driver which operates up to a relatively high 900Hz.

Look around the rear and you'll probably jump to the conclusion the D7s are infinite baffle units. You'd be wrong.

Instead the latest version of Spondor's linear flow port exits at the base of the speaker and features an aerodynamically-profiled twin Venturi port to promote airflow speed and reduce turbulence.

A single pair of good-quality speaker terminals sit just above (Spondor are no great fans of bi-wiring) while the cabinet itself uses the company's tried and tested dynamic damping whereby special polymers are employed in the construction to convert vibration into heat at key points inside the cabinet.

That cabinet, by the way, measures 950/192/320mm (H/W/D) so it's not going to dominate the average living room.

In standard form the D7 costs £3495 and is available with black ash, cherry, light oak or dark walnut. An extra £500 buys you a premium finish model such as the ones under review here with a mirror-like gloss finish.

Whichever you choose, standard of fit and finish is up to Spondor's traditionally high standards with neat touches such as reinforcing metal plates in the base to accept the coupling spikes, adding to the perceived value.

SOUND QUALITY

Unpretentious in looks they may be – but the D7s are anything but that when it comes to the crucial matter of sound quality.

First off, it's obvious these loudspeakers can go loud from little power. Hooked up to Sugden's Class A FPA-4 power amplifier – which barely touches 30 Watts into an 8 Ohm load – and the Spondors manage to pump out Lady GaGa or Led Zeppelin to neighbour-bothering levels.

What's more, they do so with a smooth authority and suppleness

that eludes many rivals — managing to sound both fast and detailed yet without introducing any unnatural zing or edge to their presentation.

Sliding Get The Blessing's latest 'Lope and Antelope' CD into our resident Cyrus transport/Audiolab M-Dac front-end, the D7s immediately latched onto the music's rhythmic pulse – easily capturing all



The treble unit has a perforated cover that smoothes and disperses its output. Below sits an EP77 polymer cone bass/midrange unit and, at bottom, a Kevlar cone bass unit.

"Spondor's D7s treading a fine line between extremes to reveal the complexity and rhythmic propulsion of the track"

the microdynamics at work as the band play infectiously off each other.

Bass was full and rich when it needed to be without any hint of bloat or bloom. The new port design is obviously playing a part here. Low-end has power and punch but is always tight and tuneful without any wallow so does the intended job of providing a firm foundation for what's going on higher up the frequency spectrum.

Take The Chemical Brothers' 'Block Rockin' Beats' – which combines plunging slabs of bass

with shrill synthesizer lines. It can be a bit of a torture track for some loudspeakers – either sounding too plodding and dirge-like or alternatively a howl of screeching dissonance. Through the Spondors it was neither – the D7s treading a fine line between the two extremes to reveal the complexity and rhythmic propulsion of the track. It wasn't harsh but nor was it overly laid back, displaying tremendous separation between instruments.

Playing Giuseppe Zinola and the New York Philharmonic's 'Thus Spake Zaustra' showed the Spondors' ability to go from almost near silence to bone-shaking crescendos without missing a beat.

The only criticism on offer here is that I've heard other loudspeakers with a wider soundstage. The D7s have height and depth but the sound doesn't seem to extend much beyond the outside boundaries of the cabinets.

But that's a small price to pay for the other benefits. Chief of which is the fact that there is no obvious artifice on offer here, bass, mid-band and treble seeming in perfect harmony.

It makes the D7 an extremely accurate loudspeaker at the price and means it is just at home playing rock, pop, jazz or classical. It also seem to possess a greater rhythmic ability than some previous Spondor models — which at times could sound just a little laid back.

But a slice of acoustic jazz in the shape of Charles Mingus's 'Mingus Ah

Um' reveals just how good the new D7s are at locking into a groove and going with the flow. Give them a hint of a beat and they'll find it and lock on with unerring accuracy.

They'll also reveal the tonal differences between instruments. Listen to various John Coltrane tracks and it is clear where he switches between tenor and soprano saxophone on the likes of 'Crescent' or 'Live At Birdland' – subtle changes but nonetheless vitally important to a true appreciation of the music.

Slide from Coltrane to the very



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different – but no less emotional – vocals of Sinead O'Connor on the 'Sean Nos Nua' CD and the rendition of 'Peggy Gordon' has all the delicacy and atmosphere to make the hairs on the back of your neck stand up.

This track showcases above all the excellence of Spendor's new treble unit — and it is very impressive.

Indeed, the LPZ tweeter is a bit of a revelation. In absolute terms it doesn't have the outright extension of some of the best ribbon designs on offer nowadays – but it makes up for it with a seamless integration with the accompanying drive units.

They hand over to each other like a well-drilled relay team and as such avoid that dreaded mid-band suck-out which can rob music of much of its vibrancy and detail. Instead, it quickly becomes clear that these loudspeakers provide a wide, clear and open window on partnering equipment.

Switching to Naim's new Supernait 2 for amplification (watch this space for a review soon) proves



A twin venturi floor port with central aerofoil section smoothes and damps the bass cabinet. Our measurements show it was effective in improving bass damping.

the point.

Get The Blessing's 'Viking Death Moped' has appreciably more thrust and drive to it through the Naim than the Sugden. There's still the same detail and overall cohesiveness which seems to be a hallmark of the D7s but the Naim grips them a little

tighter and digs a little deeper.

Then again, you lose some of the crystalline quality that a pure Class A amplifier can bring to the proceedings.

There's no right or wrong here – just a different presentation depending on how you care to pair these D7s with your amplifier of choice.

CONCLUSION

Spendor has a well-earned reputation for producing quality loudspeakers – but they have excelled themselves with the D7s.

Sensitive enough to be paired with all but the most feebly-powered single-ended triode amplifiers they are also impressively even-handed yet innately musical, combining power, punch and precision with foot-tapping timing.

They do not discriminate between musical genres nor attempt to impose any sonic signature on the music – simply letting it flow with unimpeded ease. As affordable high-end loudspeakers go there's little to touch them.

MEASURED PERFORMANCE

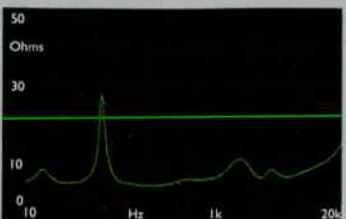
Frequency response of Spendor's D7 was smooth and flat to 16kHz, above which output falls away rapidly, likely due to the mesh dimensions in the front grille over the tweeter. However, this dispersion grill does an impressive job, keeping output smooth and peak free, whilst at the same time maintaining wide dispersion. Our measurement is on-axis, but off-axis

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



treble fell little. You cannot with the D7 get a brighter sound by aiming at the listener; it is designed to be academically flat.

The treble unit hands over to the EP77 polymer bass/midrange unit smoothly, with no crossover dip, so midrange detailing will be strong. The smoothness of our pink noise frequency response analysis suggests the D7 will sound tonally balanced, smooth and unemphasised, but also not bright; this is not a subjectively enhanced loudspeaker, but a neutral one.

The low frequency drive unit is loaded by an interesting floor port with a wide mouth area and an internal flow regulator. Tapered ports are in truth horns, matching the internal air load to that of the room, albeit imperfectly. All the same, a broad mouth and tapered profile does a better job than a simple tube and measurement showed the benefits of Spendor's port. Our red port trace shows port output extends smoothly from 100Hz down to 25Hz, a very wide range. This is a well damped, de-tuned system that will not sound 'bouncy' but will play deep bass notes smoothly. Broad acoustic damping reflects back into the impedance curve, which is almost flat at bass frequencies, the narrow peak being a

residual that does not affect the acoustic response. The D7 will play a bass tune better than most. However, it does not have heavy bass, port output being lower than that of a narrow tuned port and the forward response unemphasised. As Spendor claim, the D7 will drive rooms consistently well.

The D7 produced a very loud 90dB sound pressure level from one nominal Watt (2.8V) of input, so it goes loud with little power and needs amplifiers of around 40 Watts or more for high volume. It is a relatively easy load for an amplifier, measuring 6 Ohms overall, with pink noise.

A 200mS decay analysis showed very low levels of coloration across the midband and treble, down to 200Hz. Below that frequency there are some overhangs that may slightly soften deep bass impact or add a little colour.

The D7 is technically a very interesting loudspeaker that measures unusually well in most areas, better than most. It is superbly accurate, has very well damped and acoustically even bass and needs little power to go loud. It will sound a tad mild or warm by general standards, because it uses a polymer cone lacking metallic zing, but this is correct. **NK**

SPENDOR D7
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OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Smooth, refined yet wonderfully open. Bass punch allied to tremendous mid-band and treble insight makes for a winning combination.

FOR

- clean, clear treble
- bass punch
- musical insight
- price

AGAINST

- not the widest soundstage

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World Radio History

Primary Function

Tony Bolton revisits Meridian's Prime Head Amp with the optional extra power supply unit.



In the February 2014 edition of this magazine I reviewed the Meridian Prime Headphone Amplifier. Unfortunately I was not able to try the matching outboard power supply unit at the time. So here I am revisiting the Prime but now with the PSU option.

Costing £800 (the Prime Head Amp is £1200) the Prime Power Supply is supplied in matching casework that displays the exemplary finish that should be expected at these price points but is not always attained. The front contains a power button that has a small LED in its centre that glows white when in standby mode and blue to match that of the Head Amp when switched on.

The back is well populated with five power outputs which allows it to energise Meridian's Audio Core 200, Meridian Director and Media Source 200 as well as this unit. Above

the power outputs are USB pass-through inputs and outputs. The mains input is via a C5 (otherwise known as a Cloverleaf or Mickey Mouse) connector. Some cable companies accommodate this design so if you wish to use an upgraded mains lead. For this component I'd advise contacting your chosen cable supplier and making enquiries.

After reconnecting the Head Amp to the Leema Acoustics Tucana II amp and my MacBook Pro as per the original review, I refreshed my memory with the sound of the Prime running from the standard 'wall wart' power supply. I then plugged in the PSU and ran through the same songs from Morcheeba's album 'Big Calm' and a selection of tracks on YouTube.

The difference in the sound quality was not subtle and I would not hesitate to describe the change as vast as the gap between "night and

day'. Every aspect of the sound displayed an improvement. To me the most obvious was the vastly increased spaciousness of the soundstage that I was experiencing. It seemed to have grown in all dimensions. This was accompanied by a seemingly wider and more evenly presented bandwidth which provided more detailed shape to bass, midband and treble sounds.

Even though the soundstage seemed bigger, close detail, such as Skye's voice in some of the more intimate moments of the music, felt closer to me and the details of her enunciation more obvious.

The ASP (Analogue Spatial Processing) controls which had previously won a guarded response from me, now seemed to be more effective. I still query the term "out of my head" listening that is used in the literature but the effect was certainly more spacious and seemed to project the music further forward and into a more conventional shape than is usually obtained through headphones.

Although £800 is a lot of money, the Prime Power unit is worth the investment. The increase in performance from the Head Amp is such that after hearing it once it would be impossible to listen with any satisfaction to the sound with the normal power supply.

The Meridian Prime headphone amp can be used with a 'wall wart' type power supply but benefits from being plugged into the Prime PSU.



The five power output sockets on the lower right can be used to energise a range of Meridian products as well as the Prime Headphone Amp. The USB pass-through offers easy computer connectivity when the PSU is in use.

MERIDIAN PSU £800



OUTSTANDING - amongst the best

VERDICT

A useful and effective upgrade to the Prime Headphone Amp that will also supply power to several other Meridian products.

FOR

- spacious sound
- wider bandwidth
- better soundstaging

AGAINST

- nothing except price

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DSD delight

Sony's HAP Z1ES hard disc player not only plays DSD but even remasters your files to the format. Noel Keywood investigates.

Sony have their own way of doing things, for better or for worse, and the HAP Z1ES high-resolution digital player reviewed here is an example that is - er - 'interesting'. It's strongly built, and sounds lovely, but why it does what it does I found puzzling at times.

The HAP Z1ES is a hard-drive based player for a hi-fi system: think of it as a CD player that stores music on-board. It must have an ethernet or wi-fi connection to a computer to load music files; it cannot be loaded any other way, notably not from a memory stick. It does not play from the download computer by streaming; instead it copies music files from any specified folder, the idea being that you download to a folder and the Sony automatically uploads from that, without any effort from the user. Songs sort-of magically appear on the player, after you've bought them. Working with the

Gracenote on-line database, so do artist's names, track info etc.

To achieve this a small HAP loader programme must be installed on the computer; Sony quote Windows XP through to 8 compatible, and Mac Snow Leopard (OS-X 10.6) and onward, compatible. However, HAP did not work with Snow Leopard. In our tests, but was fine with Apple's latest OS, Mavericks (10.9), as well as Windows 7, both in a multi-boot environment (Bootcamp) that Sony say is not compatible! Look at www.sony-europe.com/support/emanual/HAP_Z1ES for compatibility data; Sony's user manuals say little. Files can also be loaded manually from computer to player.

The HAP Z1ES cannot be used as a DAC; it has no S/PDIF or USB inputs, only ethernet for a network connection; it must see the internet in order to work with Gracenote.

Inside this player is a 1TB hard

disc that stores up to 20,000 songs Sony say (methinks they mean MP3s; at 200MB a pop, 1TB will hold 5000 hi-res songs). An external USB drive can be added to boost storage.

Inside the HAP Z1ES lies a DSD re-mastering engine that converts PCM to DSD and thence out through a DSD DAC. There's also optional DSEE to make compressed MP3s sound better, and an on-line tuner too, vTuner. Gapless playback is selectable.

Compatible music file formats are WAV and FLAC; Apple formats AIFF, ALAC, AAC; Sony's own and outdated ATRAC and Windows Media Audio or WMA. And also both Direct Stream Digital (DSD, as used on SACD) format extensions .dff and .dsf. Even lowly MP3 is supported.

The player is large, measuring 430mm wide, 130mm high and 390mm deep, and heavy at 14.5kgs. It comes with a small remote control that has volume and track skip



functions etc, but there's an App for smartphones and tablets. The rear panel carries unbalanced phono outputs and balanced XLRs for connection to the hi-fi.

The on-board screen is small for a £2k player and the control scheme awkward; best to use the App.

Our standard measurement files, compatible on all other devices, were rejected by the player as an 'unsupported format'. It took Sony Japan to sort out this mystery: the HAP ZIES cannot play single channel (mono) digital files; it only supports L&R (left and right). It will not play home recordings, if a mono recorder is used. It did play our in-house generated L&R test files.

In discussion about all this, Sony said, "The reason why we don't process a single channel file is the need for some kind of device to effectively mix down the data. It was a design choice and we believe the circuit performance is optimised".

"The DAC is by Burr Brown - PCM 1795. There are effectively 4 DACs per channel in a one-clock delay arrangement - this allows us to create a moving average filter".

"Basically, if the DSD re-mastering is turned off, the PCM signal is processed directly to the IC and the on-chip multi-stage over-sampling digital filter is bypassed (the DAC behaves as a multi-level type)".

"When DSD re-mastering is on, via use of an FPGA, we are able to convert a 32bit PCM signal to 128Fs DSD signal in this engine. Then, as with an original DSD signal, the DAC processes data as an analogue FIR type with current segmentation conversion. The design enables good attenuation of very high frequencies and improves linearity".

I have included Sony's techy explanation of the player's design topology to give buffs a better understanding of what goes on inside; the HAP ZIES is a solid piece of digital technology.

SOUND QUALITY

The HAP ZIES had a smooth yet forceful quality with all it played. Mostly I used it with 'DSD Re-mastering' switched on, as this gives a fuller bodied and slightly less sterile quality than unadulterated PCM; switching like this is an option on the App, so it can be done from the settee.

Drums and bass had a big, firm quality with Blood Sweat and Tears 'Spinning Wheel' and the cowbell



Inside the large chassis sit three mains transformers (at left), explaining the player's weight. Independent power supplies provide isolation between analogue and digital, improving sound quality. Sony told us a Burr Brown PCM 1795 DAC is used.

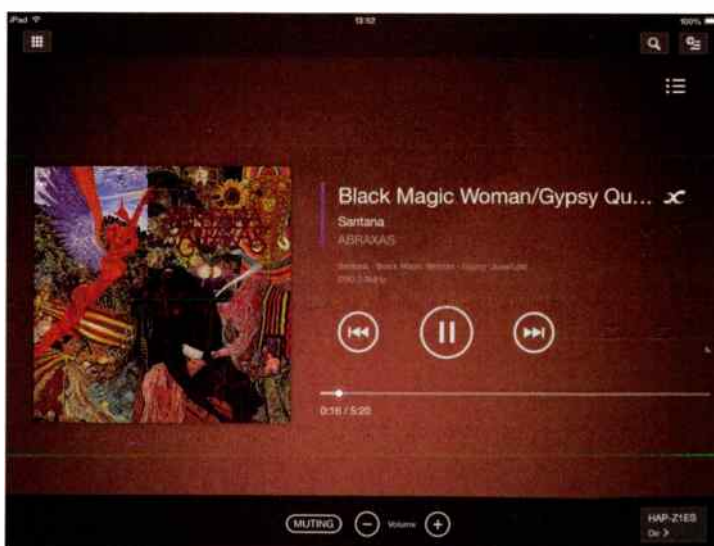
they use came out of our Quadral Aurum Wotan VIII 'speakers like a canon shell.

We all know Santana's 'Black Magic Woman', a Peter Green number covered by all the greats, so hearing Santana's scorching version running in DSD2.8 was an experience, one also enjoyed by my neighbours! With a thundering bass line, rapid intense percussion and the man's blistering guitar work coming from our Wotans in a forceful wave, helped by a McIntosh MA8000

amplifier's push, I was more than impressed: this is exciting hi-fi.

Can digital ever be better than how you remember the LP, I thought whilst listening to this track - in my case Abraxas being played through Leak 3090s many moons ago; which brought me to thinking how I'd like to use headphones before the police arrive - but the Sony has no headphone socket. Oh shame; back to the AK120.

Bach's 'Tocatta and Fugue' (24/192, FLAC) shook our listening



A small remote is supplied, but the control App is best.

Lucky Seven

Martin Pipe won't be parted with his B&W DM7s. This is their story.

During the 1970s, great strides were being made in the technology of loudspeakers. Among them were cutting-edge cone materials, rare-earth magnets, ferrofluid voice-coil cooling and the science of laser interferometry, which enabled the behaviour of the cone or diaphragm to be examined for nasties like 'breakup'.

Possibly most radical of all was the introduction of the computer, which enabled the designer of a speaker to 'model' its performance - even before the prototyping stage. A whole range of different approaches could thus be tried for nothing more than programming time.

This was before 'microcomputers' - the microprocessor-based forerunners of the desktop PCs - gained momentum. Speaker companies instead installed 'minicomputers' - which dwelt somewhere between the giant mainframes of big businesses and those early microcomputers.

One of the first speaker manufacturers to take the potential of computing under its wing was Bowers and Wilkins. B&W, as it is also known, started life as an electrical store. By 1966 it had started building its own speakers and by the mid-1970s the Sussex-based firm had gained an enviable reputation for its products both at home and overseas; indeed, it received a Queen's Export

Award in 1973 (a second such award came B&W's way in 1978). Particularly popular was its Domestic Monitor ('DM') range of products. The most famous early member of this distinctive family, launched in 1970, incorporated an eleven-section electrostatic midrange/upper-frequency drive unit that curved around the top of the front panel. And to this date, the look of the DM70 remains unique.

Research and development were seen as instrumental to success and growth; with this in mind the company installed a PDP11/35 minicomputer - complete with interactive graphics terminal - in the mid-1970s, and immediately put it to work. These initial forays into computer-aided design culminated in the DM7 speaker which was released in the Queen's Silver Jubilee year of 1977. With its top-mounted tweeter visible through a hemispherical gauze, the £400-per-pair DM7 (approximately £2500 of today's money) was quite unlike any

other speaker system of the time. It has to be said that the heavy 40-litre box still looks remarkably modern today. The isolated 'tweeter on top' found its way onto 1979's 801 (a popular early-80s choice for studio monitoring) and continues to be a feature of upmarket B&W speakers, including the Nautilus range.

As with other B&W speakers of the time, each pair of DM7s was supplied with calibration certificates (with anechoic-chamber frequency-response plots). You also got a sizeable instruction book that covered positioning and the listening room in some depth, and even included a list of recommended





4mm sockets accept the output of your amplifier - no bi-wiring here. To protect the drive units, B&W specified fuses - and their holders (which can accept either 32mm or 20mm cartridges) can be seen here. Between these, and covered by tape since new, is a 2-pin DIN socket of the type that was a common sight on European equipment during the 1970s.

recordings to try.

The latter were, hardly surprisingly, LPs – among them a Denon (sic) disc that was praised for its PCM recording process amongst other things.

Nearly all of the records were classical, but that comes as no great surprise when you realise that such music was instrumental to B&W's birth; in 1966, the company's

co-founder John Bowers was left £10,000 in the will of an elderly Miss Knight, who was impressed not only with the speakers he had made for her, but also his knowledge of classical music!

"Used stereophonically or quadrophonically", says the instruction manual, your new DM7s would "achieve the very highest standards of fidelity in the reproduction of original sound".

To meet this objective, B&W employed various design criteria. The DM7's TS26 dome tweeter was rotatable so that it could fire directly towards the listener. Also unusual at the time was the 145mm BM220 bass/midrange drive unit, which employed a cone fashioned from a matrix of Aramid (aromatic polyamide) fibres. This material is better known as Kevlar, the synthetic stuff that bulletproof vests, racing sails, wind-turbine blades and drumheads are made of. It combines an enormous tensile strength with minimal weight, properties that are beneficial for all of these very different applications.

The two drive units are driven by a complex 13-element crossover that incorporates a 'contour' control – visible on the rear-top of the aluminium-finished enclosure. This four-position rotary switch modifies the frequency response slightly so that room acoustics could be accommodated. In addition to the three modified curves (A, B and C – combinations of cuts below 150Hz or above 3kHz) is a neutral 'flat response' setting.

The crossover also has fuses to protect the drive units against amplifier failure – their holders are accessible from the rear panel which also incorporates 4mm and DIN sockets. The slightly-restyled Mk 2 version, which dispensed with the contour control, replaced the fuses with a relay-driven protection system. The DM7 isn't particularly efficient (95dB/1m with 10 volts RMS input) but it can handle large amounts of power – it's rated at 200W. During the 70s, we should remember, transistorised muscle-amps (notably models from Japan and the US) were in vogue; low-powered valve amps were about as fashionable as Garrard 401s...

Below the BM220 is an auxiliary bass radiator (the ADR220 'acoustic drive radiator'). Intended to augment the response below 100Hz, this type of system was at that time

familiar to anyone who had listened to a Celestion Ditton 15 – a budget speaker that even organ-music enthusiasts could be proud of!

All of these goodies are built into a solid and reassuringly-inert 29kg cabinet built from high-density particle board with 12mm-thick bituminous panels to damp unwanted resonances. The baffle the drive units and ABR are securely screwed into with Allen-head bolts is itself made from a tough polystyrene structural-foam material.

Supplied with each DM7 was a matching stand that bolted to the base. It consists of an aluminium column of 100mm mounted on a



Set into the top panel of the DM7 is this 'contour' control knob. In addition to the 'flat response' position are bottom-cut 'A' (a 2dB attenuation at 150Hz, rising to 5dB at 50Hz, to accommodate floor/ceiling resonances), top-cut 'B' (a 2dB attenuation at 3kHz, rising to 5dB at 20kHz, to tame bright recordings) and 'C' (a combination of 'A' and 'B')

substantial baseplate with plastic 'carpet gliders'.

My own pair of DM7s, which have been in my possession for nearly thirty years, did not alas arrive with the stands. In fact, the only hint to the existence of such a base were a number of threaded holes in the bottom of the speaker cabinet; it was only after a few years that I came across a copy of the DM7's owner's manual and its assembly instructions. I knocked up my own spiked stands, and although they didn't match B&W's lofty engineering standards they certainly did the job.

At the time, I was a student and was only too happy to have come across these particular DM7s at the local Saturday market. The trader was of the opinion that they were 'disco



The dome tweeter, which is usually protected by a hemispheric wire gauze, is mounted outside the cabinet - experiments showed that cabinet-mounted tweeters set up standing waves that impaired frequency-response and phase characteristics. The 30mm diaphragm of the tweeter weighs only 350mg to improve efficiency and transient response.

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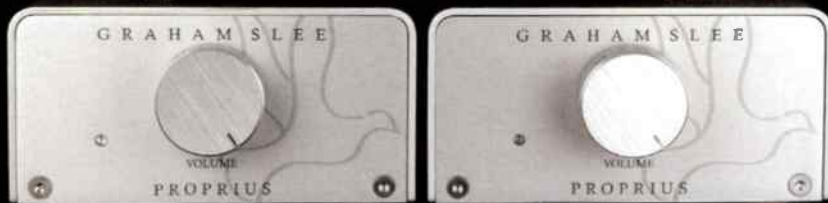
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speakers'. But for £20, I certainly wasn't going to argue – even though they were rather tatty.

Fortunately, the drive units were all in order, although both the tweeter (500mA quick-blow) and woofer (2A quick-blow) fuses needed replacement. Purists may scoff at such a primitive form of protection, and it should come as no surprise that some DM7 owners have internally-bypassed the fuseholders. Given that replacement drive units are almost certainly going to be, at the very least, difficult to obtain, though, I'm quite happy to sacrifice a (slight) sonic penalty for front-line defence.

The DM7's polystyrene-framed front grilles were also handed to me by the market trader, the lugs clipping them to the baffles having all been broken. I got around this problem, which is apparently quite common, with the judicious use of Velcro strips. Unfortunately, the wire-mesh tweeter grilles were missing. Because the speakers were little more than a decade old, though, B&W was able to inexpensively sell me replacements.

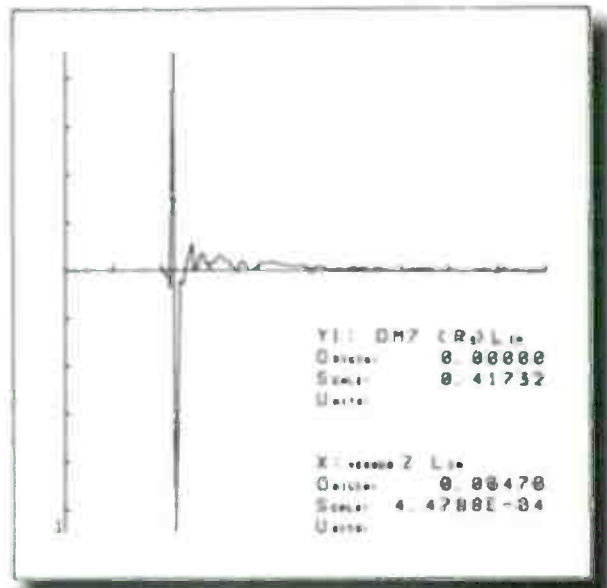
Before the DM7s came my way, I had been using a variety of speakers, all of which had been obtained cheaply from various second-hand

been using a pair of Celef Domestic IIs for nearly two years. These were by far the most musically-satisfactory speakers I had heard at home, having a broad frequency response and smooth, uncoloured presentation.

The DM7s, however, were found to improve significantly on the Celefs. In particular, the stereo imaging was incredibly good. Even now, with the DM7s installed in my bedroom, I continue to be amazed at the realism of the soundstage and ambience that can be set up from suitable sources (notably Radio 3's live classical fare).

The treble is, however, somewhat subdued leading to accusations of dullness – but back then the amplifier I was using (a high-end Pioneer integrated from the late 1970s) had tone controls to deal with such matters!

This particular amplifier was also something of a powerhouse, helping to compensate for the DM7s' lowish efficiency. But as noted in a previous Olde Worlde, I have satisfactorily driven these speakers with a NAD 7020 – the receiver version of the low-powered 3020 integrated amplifier. Even at fairly high listening levels, this unexpected combination doesn't sound strained. In other



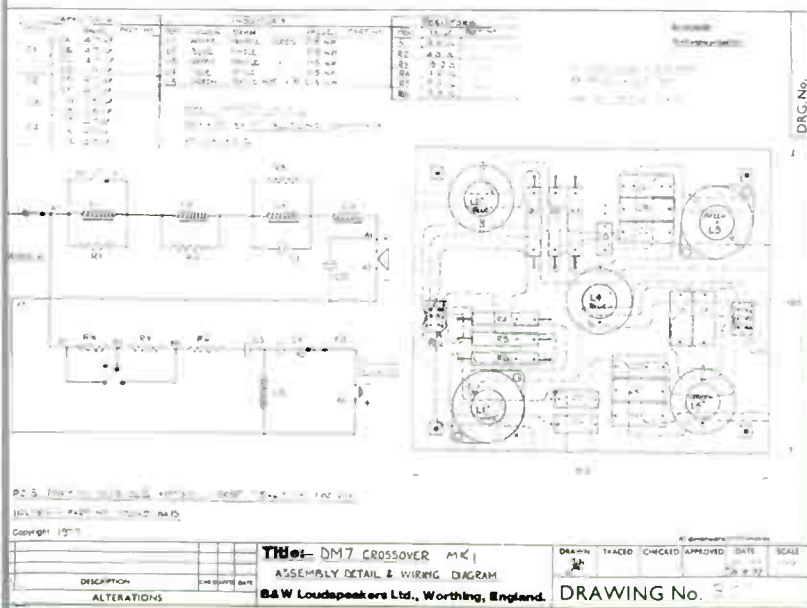
Proof of the computer's role in the DM7's development can be found in this graph, which is a plotted simulation of the speaker's transient response. This, if the graph is to be believed, is excellent. The 'spike' on the left is the original stimulus impulse; there is little subsequent 'hangover'.

noted this with different amplifiers, sources and listening rooms, suggesting that it is a trait of the speaker.

Lower bass is however taut and well-controlled, and although no substitute for a really large enclosure a commendable degree of slam and impact is evident. Indeed, a good few years ago I successfully used these DM7s as the front speakers of a 'subwoofer-free' home-cinema rig.

It may not be perfect, but this nearly 40-year old design can hold its own against modern counterparts. Expect to pay between £150 and £250 for a pair, and if possible, try before you buy. As noted, genuine DM7 spares are going to be almost unavailable; bear this in mind if you come across non-functional specimens (with intact fuses).

If your DM7's drive units have 'blown', you might be able to find 'donor' parts at Audiojumble-type events. An alternative is to adapt the speaker so close replacements can be accommodated. These must have the same electromechanical characteristics; remember that a speaker is a 'system' in which the cabinet and crossover are also important. For cabinet parts, you might need to be equally-creative. The DM7s are definitely worth holding onto; mine have been with me for well over half of my life. A sobering thought in this disposable age...



In 1977, computers hadn't reached B&W's drawing office - if this schematic of the DM7's thirteen-element crossover is anything to go by. As can be seen here, its design is rather complex - thankfully B&W built it with high-quality components (polyester capacitors rather than electrolytics, for example!)

sources. Wharfedales, Richard Allans and Rank Domuses had come and gone. By the time the DM7s were carried over the threshold, I had

respects, the DM7's character is smooth and verges on the mellow; male speech can be tinged by a slight 'plumminess'. Over the years I've

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The Quintet Series also includes a true-mono cartridge, for accurate reproduction of older mono recordings.



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World Radio History

RESONESSENCE LABS HERUS DAC £299

One of the consequences of the explosion in computer-based audio has been the plethora of equipment purposed to help us get the best from our digitised files.

From DACs the size (and sometimes the cost) of a beefy power amplifier to devices little bigger than the size of your thumb, the options get seemingly larger by the month.

Falling firmly in the latter category is Resonessence Labs £299 Herus portable digital-to-analogue convertor.

Fashioned out of a small yet chunky slab of aluminium, the Herus measures just 1.25 inches wide by 2.5 inches long and 0.75 inches high.

On one side is the USB input while the other sports a 1/4inch

analogue headphone output. It may be small it has an impressive feature set – being able to process PCM files of up to 24-bit/352kHz resolution as well DSD 64 and 128.

Power is drawn directly from the USB port on your laptop although Resonessence doesn't include a connection cable so you'll have to supply your own.

But once that's done the little

Herus is a revelation. Connected to a MacBook Pro and driving AKG headphones the sound was rich, crisp and detailed.

An AIFF file of The Killers 'Night And Day' had tremendous depth and three-dimensionality. It's a world away from the sound you'll get by simply plugging headphones into the Mac.

Drums have snap and power, cymbals no longer sting your ears but attain a shimmering presence while vocals are smoother.

Switch to some acoustic jazz and the Herus shows it has a firm grasp of rhythm – showcasing the interplay between bass/drums/piano and sax on John Coltrane's Africa/Brass with supreme confidence. If you spend any time listening to tracks from your computer then the Herus really has to be auditioned. **JM**

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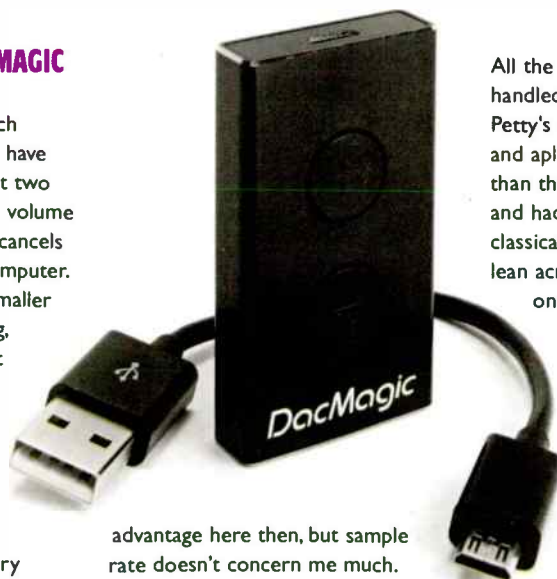
SOUNDBITES

CAMBRIDGE AUDIO DACMAGIC XS £99.95

The DacMagic XS is very much like the tiny Epiphany E-Dac I have enjoyed so much over the last two years, only it has an on-board volume control the E-Dac lacks. This cancels volume adjustment on the computer.

The Cambridge is even smaller though, measuring 54mm long, 30mm wide and 8mm deep. It weighs just 30gms, with its short microUSB-to-USB A lead – and that is light. The XS is typically meant to be used with a laptop or home computer, to improve sound quality. Mini hi-fi DACs are very practical and a real boon.

Hooked up to my MacBook Pro running Mavericks (OS-X 10.9) the Cambridge worked up to 96kHz sample rate, like the Epiphany; my MacBook down sampled 192k material to 96k (as Macs do) to prevent a no-play situation. No



advantage here then, but sample rate doesn't concern me much.

The Cambridge went very loud with my insensitive Philips Fidelio X1 headphones and this was good; it delivers 1.8V output.

In sound quality the Epiphany was a tad darker and deeper in its sound stage than the Cambridge I felt, just a little bit more svelte.

All the same, the Cambridge XS handled the classic rock of Tom Petty's Refugee (24/96) with drive and aplomb and still sounded better than the Mac direct. It was smooth and had good sound staging with classical too. I did not like having to lean across my desk to adjust volume on its Up and Down buttons though.

Critically, when I measured the Cambridge it had 5dB less noise and dynamic range than the Epiphany; the little XS works well but breaks no records.

The tiny DacMagic is magic – it is so small, light and easy to use. It also sounds very good, crisp and clean and punchy. It isn't quite the doggies though, if that's what you are looking for below £100. **NK**

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Clarity has taken over the Luffield Suite, one of the largest suites at the show and inside you'll find Clarity manufacturer members showing off their latest products and technologies. Elsewhere at the show don't miss the Clarity seminars – we are bringing together some of the smartest innovators in the industry who will be sharing their knowledge of audio and hi-fi with you.

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World Radio History

In balance

Astell&Kern's new state-of-the-art top-end portable digital player runs fully-balanced right through to its headphone output. Noel Keywood listens in.

When I reviewed Astell&Kern's AK100 high-resolution digital portable player back in our March 2013 issue it cost a hefty £570. Then they brought out the AK120 at a mere £1120, with dual DACs and "DSD support" – a euphemism for internal DSD-to-PCM conversion it seems. Now Astell&Kern have announced an even more fabulous player, the AK240, at a more fabulous price – £2200 no less. Phew! Here's what you get.

Using an AK120 almost daily, I was baffled as to how iRiver of Korea – owners of the Astell&Kern brand name – could possibly take a

high-resolution player any further, and even why they need to take it further.

The first big difference is that the player now natively processes high-quality DSD music files, rather than turning DSD into PCM. It does this in conjunction with an XMOS DSD support chip feeding dual Cirrus Logic CS4398 DACs, one per channel.

The second difference is that the entire signal path from DACs onward and outward to the headphones is balanced in the AK240. If you want to run headphones balanced, because it sounds better, then you have to re-cable them. A four-pole connector is needed so

Astell&Kern

use a tiny 2.5mm jack socket outlet. Alongside it is a standard 3.5mm jack socket for conventional unbalanced headphones.

There is now no separate DAC input as on the AK100/120 but the player can be used as a DAC via USB from a computer.

The analogue headphone output can now be switched to become a (unbalanced) line output, with level at maximum and volume inoperative, to feed a hi-fi amplifier; this did not work using the slide button under Settings; it did work when using the quick LINE button in the volume control screen, a confusing issue iRiver noted but did not explain when I e-mailed them.

It is also possible to establish a 2.5mm-to-twin XLR balanced connection to a hi-fi amplifier having balanced inputs. Ouch – it all gets a tad complicated once you move into this territory.

Messy too, because a ground line is needed and this means a cable into the 3.5mm jack outlet, to establish ground (the 2.5mm balanced line has no ground). See what I mean?

I hope that explains in outline how the AK240 differs from all else, including its stablemates. To exploit its potential you need high-quality 'phones for which balanced cables with 2.5mm four-pole plugs are available.

Or you must solder up cables yourself. Any 'phones with detachable cables from each earpiece can be so wired. The practical difficulty of this is that 2.5mm jacks are tiny and very weak – as well as rare. I found 3.5mm four-pole plugs and 2.5mm three-poles (stereo) but no 2.5mm four-poles, at Maplin, RS and Farnell. You're more likely to find a live tortoise on the M4.

The AK240 also has a standard 3.5mm headphone output, in which lies a Toslink digital optical SPDIF output, so the player can



be connected to an external DAC through an adaptor. I do this frequently, connecting into an Audiolab M-DAC. This way my AK120 acts as a transport.

The AK240's tough case is machined from Duralumin and weighed 188 gms on our scales. It feels rock solid in the hand and, irrespective of whether you like its Lockheed Nighthawk stealth styling, its going to be an equally good survivor in arduous conditions.

It is larger than the AK100 and 120, measuring 105mm high, 67mm wide and 20mm deep; it fits a trouser pocket but not a shirt pocket like the AK100.

Astell&Kern have equipped the '240 with 256GB of internal storage and a single slot accepts a microSD card of up to 128GB, so you can slot in a different card every day for your commute.

Having said that, the AK240 charges from a computer's USB output and loads easily too, triggering an Android loader on my Apple OS-X Mavericks desk top (unlike the AK120 that simply comes up as mass storage).

It will play whilst tethered to an external supply so can act as a mains-powered transport at home. A USB micro-B socket is situated on the



player's base and a computer lead with micro-B to standard USB-A plug for computer connection is supplied.

The AK240 has a better touch screen than the AK100/120. This AMOLED screen has an active area 70mm high x 45mm wide, making song selection easy. There's an on-board clock and a high-resolution battery charge readout, for which you need good eyesight. And very usefully there is now a swipe-down top menu for fast selection of EQ, repeat and much else.

The menu system has been simplified, for the better I feel. And the Settings menu shows up other new additions. The player can connect via wi-fi now, as well as playback through Bluetooth as before. Wi-fi connection allows music to be streamed from Mac or PC

computers, as well as enabling automatic software upgrade.

The equaliser now has ten bands, stretching from 30Hz to 16kHz: it was fiddly to set, but there's a pre-tuned Pro option. Equalisation is useful to tame bass heavy phones like those from Dr Dre, or give open on-ear phones like my travelling Jays V-Jays a bass boost.

There's also gapless playback and both repeat single song or repeat all, as well as shuffle, in the swipe-down menu.

And finally, measurement showed the main 3.5mm headphone socket delivers a hefty 2.1V output, the same as a CD player, +17dB above that from a typical portable or phone (0.3V).

The point here is that the headphone amplifier has plenty of power and punch, and can drive high-quality, insensitive 'phones like the Philips Fidelio X1s I use, or Audeze LCD-3s, to high volume, although it barely managed with Oppo's insensitive new PM-1 planar magnetics: I often had 70 showing (max 75) on the volume readout.

Set to repeat play, screen off, the battery lasted 10.5 hours. In real life, with the screen being used, life will be a bit shorter. Around 8 hours is enough for a long day, so battery life is adequate, if not the 16 hours or so of

Astell&Kern's other players..

Supported file formats are WAV, FLAC, WMA, MP3, OGG, APE (Normal, High, Fast). Apple formats are AAC, ALAC and AIFF, and for DSD, DFF and DSF file formats. Both DSD64 and high speed DSD128 are supported.

At present, DSD music files are rare but they do give superb sound quality and the AK240 has been highly optimised to play them. I loaded new firmware 1.11 that added the following improvements as this list sent to me by the factory shows -

- Support DXD 384kHz (down sampling to WAV 24/32Bit)
- Support DSD Optical output (converting to PCM 176kHz)
- Support DSD gapless
- Add Database reset function
- Add Balanced Out On/Off quick



The top face carries a normal 3.5mm headphone socket, and also a smaller 2.5mm socket for balanced headphones. Beside sits an on/off button and a guarded volume control knob.

- button on the volume screen
- USB-DAC : Display input signal's sample rate information.
- MQS Streaming : support ALAC, AIFF, DSD (PCM) format and add search function
- Support Bluetooth Remote control (IAA01)

You can see mention of DXD, a 384kHz PCM format used to support DSD – go to 2L of Norway (<http://www.2L.no/>) to learn more.

The point of mentioning all this is to show where the AK240 has been positioned. I suspect it is all a bit much even for ardent audiophiles, and the simpler AK120 that plays DSD or the smaller and far less expensive AK100 are more than enough for anyone wanting a good, high-resolution digital portable. But, undoubtedly, the AK240 is a tour-de-force in current audio engineering.

SOUND QUALITY

To assess this player's potential I had to listen to its balanced output and this raised a slew of difficulties. Four-pole 2.5mm jack plugs are unavailable in the UK, except through e-Bay, so iRiver in Korea sent a batch to importers Computers Unlimited and they sent some on to me; I wired up a balanced cable for Oppo PM-1 planar magnetic headphones.

The plug contacts are so small a workbench solder station with clamp, magnifier and light are essential, and the plugs had cheap PVC insulation that melted with heat (PTFE does not do this), so I had to be quick. Two stereo cables barely fit the 3mm diameter cable entry.

This was no home soldering job; buyers wanting to use the AK240 balanced need to ensure they can get hold of professionally made-up cables first, I'd suggest. At the price Astell&Kern should at least provide a four-pole 2.5mm plug-to-3.5mm socket adaptor lead with the AK240, so it can connect to 3.5mm four-pole plugs that enable balanced wiring to be used with headphones, and are common.

I speculate that a stereo three-pole accidentally inserted into a

Vinyl is black!



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FOR

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AGAINST

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four-pole outlet will short one channel and destroy it if a current limiting resistor is not used and because of forum paranoia about output impedance Astell&Kern are reluctant to do this – hence the 2.5mm socket. Otherwise its use makes little sense to me.

Running in balanced mode cleaned up images across the stereo soundstage, making them firmer and better outlined. It also put extra air and space around them and – especially – bass became punchier and better defined too. This strengthened the solo drum intro to the Eagles 'I Don't Want To Hear Any More' (CD) and added heft to the bass line behind Tom Petty's 'Refugee' (24/96). Running balanced improved sound quality across the board, from CD (16/44.1) up to hi-res, by a useful if not major degree – at least through the Oppo PM-1s.

Through more revealing Audeze LCD-3 planar magnetics, differences may well be greater but I could not butcher our £1700 review samples to run balanced!

This is the sort of quality and price level we are talking about – and note that phones able to run balanced have separate ear piece connections, usually made through 3.5mm mono jacks; fixed-lead and single-side entry phones are not easily adaptable to balanced working.

A 352.8kHz sample rate DXD file played through the AK240 – I thought it might glow hot at this sample rate, but it did not! This was from 2L of Norway, Mozart's 'Violin Concerto in D' (2L-038), a mere 1GB download. I also downloaded and played the DSD 128 version (581MB). Both were excellent but DSD was timbrally richer than DXD and more analogue-like, as usual. I could say DXD was a tad more insightfully concise and more tightly timed too.

So, balanced working gave best results from the AK240 as I expected, but I used it unbalanced, mostly with Audeze LCD-03s planar magnetic headphones.

This player has a tad more volume and slightly stronger dynamic contrasts than my AK120, noticeable in the range over which Amber Rubarth's voice rose and fell singing 'Storms are on the Ocean' (24/192).

The AK240 has more puff, but it was every bit as clean and smooth, displaying the same couth sound that originally attracted me to Astell&Kern players.

The strength of the output

amps was evident with rock like The Eagles 'Somebody' that opened with threatening strength from the swirling Hammond, underpinned by an enthusiastically strummed bass guitar and metronomic drumming.

Running a wide swathe of rock I found it always sounded smooth but powerful, with delicately clear treble and firm bass.

These properties also helped make Bach's 'Concerto for Harpsichord Flute and Violin' (DSD 2.8) sound rich and intense in presentation, violin dancing with delightful agility as the bow made short but strong contact with the strings.

CONCLUSION

The AK240 is a wickedly advanced player, so much so it is difficult to exploit. Little music is available in DSD and DXD formats - yet all this technology sets the player's inevitably high price.

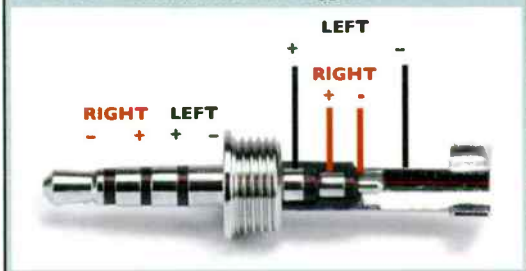
That does not detract from the fact that the AK240 also offers a dedicated balanced output that delivers focus, cleanliness and punch to whatever is played – and this is the 240's real advantage.

If you want a technological feat of modern audio engineering, the AK240 is it. Its balanced output from individual drive amps

BALANCED HEADPHONES

Our picture shows a 2.5mm four-pole jack plug, and the AK240 connections. In effect, balanced mode comprises two discrete mono lines, one to each earpiece; there is no shared ground line. Note that phase is important and easy to get wrong.

There is no earth, so no screening. To connect balanced into an amplifier through XLRs, an earth connection must be made, usually through the cable screens, to ground on the 3.5mm socket Astell&Kern suggest.



offers real-world benefit. But the balanced option isn't especially well thought through, even though it is fundamental to the player's design rationale.

The AK240 is a great player then, a lesson in modern digital engineering – and sound quality wise it is a whisker ahead of all other self-contained portables.

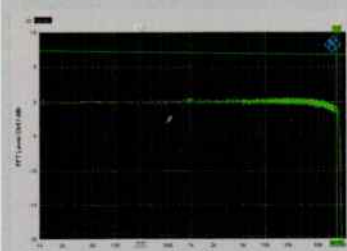
But it isn't quite a perfect blend of real world wants. A fully balanced player without the expense of DSD and with an available and practicable headphone connector would suit real world needs better I feel – but perhaps that's the next model.

MEASURED PERFORMANCE

With 192kHz sample rate files, frequency response was flat to 86kHz (-1dB) our analysis shows, a very wide response in

any hi-res product. This is close to the upper theoretical limit of 96kHz and gives the AK240 plenty of analogue bandwidth in its analogue output amplifiers.

FREQUENCY RESPONSE

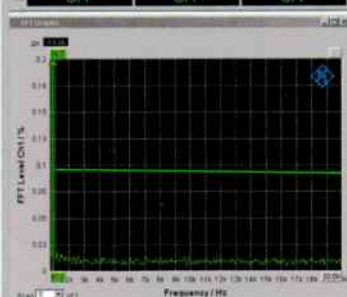


Full output measured 2.15V through both headphone outputs, the same as a CD player and plenty enough to drive even insensitive headphones. Distortion measured 0.0007% at this level. At -60dB the AK240's DAC returned 0.08% with a 24bit resolution digital file, a low value if not as low as possible, around 0.02% being possible from mains powered stand-alone DACs.

DISTORTION

THD @ 0dB	Level @ 0dB	Frequency
0.0799 %	2.1499 mV	997.00 Hz
OFF	OFF	OFF

As portables go it is good, however, and helped towards a high EIAJ Dynamic Range value of 117dB, a tad above other Astell&Kern players like the AK100 and AK120, that manage 115dB. **NK**



Frequency response (-1dB)	
192k SR	4Hz - 86kHz
Distortion (24 bit)	%
0dB	0.0007
-60dB	0.08
Separation (1kHz)	110dB
Noise (IEC A)	-116dB
Dynamic range (EIAJ)	117dB
Output	2.15V

ASTELL&KERN AK240 £2200



EXCELLENT - extremely capable

VERDICT

A fabulously advanced player, but difficult to exploit.

FOR

- balanced output
- clean & punchy sound
- native DSD & DXD

AGAINST

- no 2.5mm plug included
- plug unavailability
- size
- short battery life

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Magneplanars – or Maggies as they are colloquially known in the hi-fi world – are an interesting loudspeaker. They sell in large numbers in their home territory of North America but have never had quite the same success in the UK.

Perhaps that's down to their physical size which doesn't sit so well in many of our smaller living rooms. Or maybe the fact that as they generate sound both from the front and back they need a fair degree of free space to sound at their best.

Whatever the reason, it's a shame – as they offer a genuine alternative to the vast majority of cone and dome designs both in terms of looks and sound quality.

The new Magneplanar 1.7 is an updated version of the company's now 12-year-old 1.6 model. But rather than simply tinker with that design the new loudspeaker represents a radical overhaul.

For the first time in its 41-year history manufacturer Magneplanar has departed from using magnetic planar drivers for the bass and mid-range and employed quasi-ribbon technology throughout instead.

As the name suggests, quasi-ribbon refers to a fabrication technique that differs from a true ribbon in that the conductive metal is laminated to a thin sheet of Mylar film. Just as in an electrostatic 'speaker, the sound is produced by energising the Mylar film membrane to generate pressure waves.

But unlike an electrostatic the Magneplanar does not require a hi-voltage charge to set the Mylar film in motion.

In the 1.7s there are three separate quasi-ribbons – a bass/midrange, tweeter and super-tweeter – the latter achieving its higher frequencies by bonding the conductive aluminium foil to a much thinner sheet of Mylar film.

Just as in an electrostatic the Magneplanars are dipole loudspeakers – meaning the sound radiates in equal measure from both the front and the back of the panels.

This means set-up is crucial. Too near a rear

Magneplanar has turned to quasi-ribbon technology for its latest loudspeaker – and Jon Myles finds it makes for a lifelike musical experience.

Magnificent Maggies

wall and reflections will muddle the sound, so time spent on positioning is crucial.

The 1.7s are a 'handed' design (left and right speakers) and Magneplanar advises siting them with the tweeter on the inside while angling them slightly towards the listening position.

Also supplied are a pair of 1.2 Ohm resistors which can be used to replace the tweeter jumpers on the rear of each panel to attenuate high-frequency response if the overall balance is deemed too bright.

Each speaker sits on a pair of T-shaped screw-on metallic feet. They provide admirable stability – but in truth look a touch utilitarian for what is, after all, a £2750 product.

On the plus side, though, while the Magneplanars may look large – standing just over five feet tall and measuring 19 inches across – they are relatively light and easy to move so accurate positioning need not be a two-man job.

SOUND QUALITY

For anyone used to the sound of conventional box loudspeakers, then the Magneplanars may take a period of adjustment at first.

That's because the sound seems to flow from the panels in a totally natural, organic and colourful-free manner; there's no box boom.

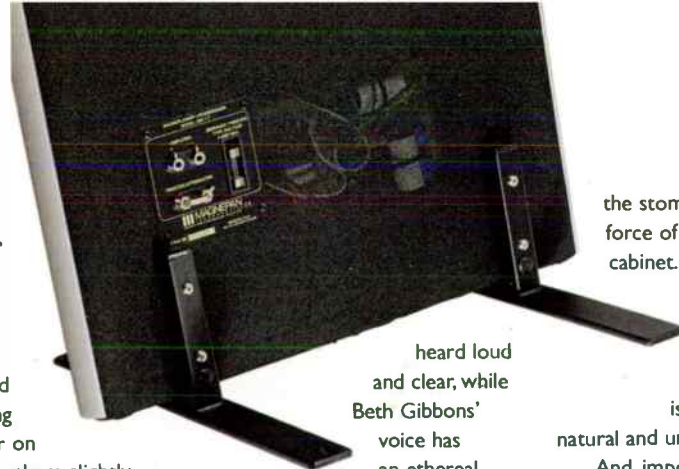
Even more impressive is the sense of width, height and depth they convey, music swelling to fill the room.

As our Measured Performance shows, they do require plenty of power to go loud – and luckily we had the ideal amplifier on hand in the shape of the mighty McIntosh MA8000 and its 300-plus Watts per channel of pure muscle.

Play the Mahavishnu Orchestra's 'Birds Of Fire' through this combination and it's as though the band are right there before you.

Most impressive is the air and space around individual instruments and a transient speed that opens up the soundstage to a remarkable degree.

In absolute terms the overall sound has a slight warmth to it – but not so much as to rob the music of any vitality. Instead, the Maggies are adept at throwing up minute details in recordings. Listen to something like Portishead's 'Dummy' and every little studio embellishment can be



heard loud and clear, while Beth Gibbons' voice has an ethereal, haunting quality.

There is an intoxicating realism here that makes you believe you are listening to a living, breathing human being instead of a digital reproduction.

Most of that comes from the exceptionally smooth and silky mid-band and the exceptional image size thrown out by the big panels.

The big, thin panels and lack of any cabinet means the Magneplanars sound fast – with little obvious colouration to smear the sound. Play something with any sense of a beat and they charge into it with verve and tempo.

In absolute terms, hardened rock or dance fans may bemoan a certain lack of low-end attack on more up-tempo material. It's obvious the Maggies are never going to hit you in

the stomach with quite the same force of a 12-inch cone in a big cabinet.

But spend some time with them and you quickly come to realise that the bass is actually completely natural and unforced.

And, importantly, once you start to turn the volume up the 1.7s simply soak up the power without any sign of undue strain.

CONCLUSION

The new Magneplanar 1.7s are innovative and impressive loudspeakers.

Yes, some may prefer the more up-front and punchier sound of dynamic box loudspeakers.

But few of those at this price can match the overall cohesiveness, lack of colouration and simply lifelike soundstage that the Maggies are capable of.

If you crave a loudspeaker that manages to make music sound as though it's being played live in your listening room then the Magneplanars may be just your thing.

MEASURED PERFORMANCE

Frequency response of Magneplanar's Magneplanar MG 1.7 has a plateau lift of lows over highs, our analysis shows. This will give the loudspeaker a full-bodied or warm demeanour. Output was consistent across the full height of the panel and far, far off axis too; measuring microphone position made little difference. The MG 1.7 has unusually consistent output, right up to 18kHz.

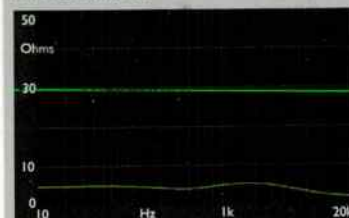
Our response graph also

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



shows it has very smooth output, especially across high frequencies and this suggests very low coloration.

Sure enough, our 200mS decay analysis backed this up, showing the panel to be especially uncoloured down to 500Hz or so. Below this the picture changes a little: at 30Hz and 60Hz there are some sharp resonances in the panel, likely 'drum head' resonances, that result in considerable overhang, and there is a little overhang at 300Hz, but this is small. Otherwise the MG 1.7 is impressively clean in its output.

As a load the speaker behaves like an almost perfect 4.5 Ohm resistor, our impedance graph shows. This means the panel stores no reactive energy – a good sign. The only downside is very low sensitivity of 82dB Sound Pressure Level from one nominal Watt of input (2.8V) so the 1.7s need a lot of power to go loud – and that's real power, not just volts. This could tax amplifiers if loud volume is maintained over a period. At least 100 Watts is needed.

The Magneplanar MG 1.7 measures unusually well in most areas, even if it does have a few obvious weak points. Measurement suggests, however, impressively smooth but warm sound, coloration free and likely with silky treble. **NK**

MAGNEPLANAR MG 1.7 £2750



OUTSTANDING - amongst the best

VERDICT

Superb soundstaging allied to a smooth, detailed and lifelike musical presentation make for a thoroughly enjoyable loudspeaker.

FOR

- natural, open sound
- silky mid-band and treble
- room-filling sound

AGAINST

- not the most dynamic bass
- need plenty of power
- not for small rooms

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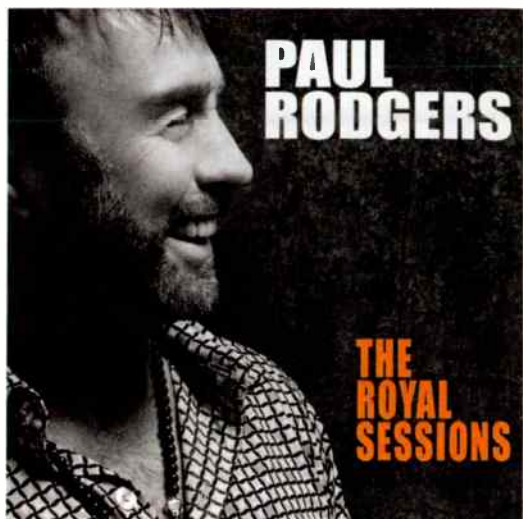
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PAUL RODGERS

The Royal Sessions
Pie Records

It's been quite a career. Spanning four decades, Paul Rodgers has fronted bands such as Free, Bad Company, the Firm, the Law and also found the time to become a temporary frontman for Queen and still have a flourishing solo career.

The Royal Sessions sees Rodgers celebrating his love for Southern soul. So, where better to indulge than in Memphis with the musicians of Royal Studios? Opened in 1956, it has recorded greats such as Al Green and Chuck Berry.

"We had such a blast making the album", said Rodgers. "It was a dream come true. This was the music I listened to when I was a teenager and it really powerfully influenced me."

"In everything I've done, it's been the inspiration for it all. So, when I walked into that studio and met the guys and we started playing, it was really like coming

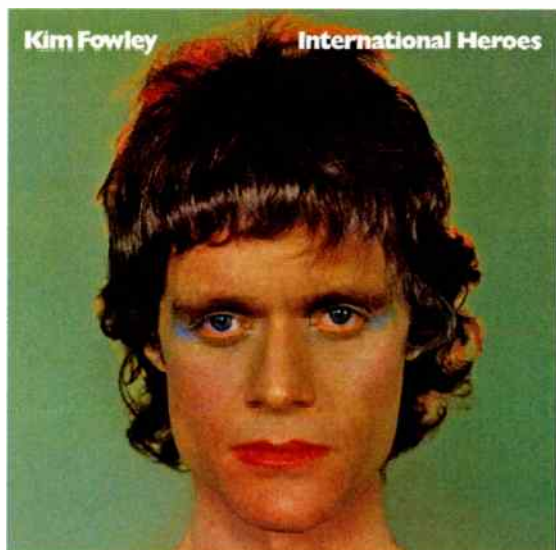
home". "Everything was analogue in the Royal Studios, so the sound was just that beautiful, deep, lovely spaced sound. Anything analogue is such a beautiful sound."

The songs featured on the album included tunes recorded at Stax and Muscle Shoals but Rodgers has made sure to retain the spirit and arrangements of the originals which is to his credit.

Even 'Walk On By', which most people associate with Dionne Warwick, has plugged into the version sung by Isaac Hayes.

Rodgers also retains a vocal balance here. He never beats the life out of the songs, in a crude effort to prove his chops. He backs off, respects the songs but still gives the listener a reminder of the power of his delivery with that trademark rasp.

Rodgers clearly had a great time recording this album and I've no doubt you will have a great time listening to it too..



KIM FOWLEY

International Heroes
Vinilissimo

Afascinating figure, Kim Fowley was a true maverick, a cult figure and a talent that lay behind a wealth of the music that stemmed from the Los Angeles area of both the sixties and seventies.

On any given day you could find Fowley writing poetry, singing, writing songs for himself and for others, penning prose, producing music for others as well as managing groups and even keeping his hand in during a spell as a DJ.

He appeared on Frank Zappa and the Mothers Of Invention's 'Freak Out', wrote songs for The Byrds, Beach Boys, Soft Machine and Cat Stevens, produced Gene Vincent, Warren Zevon, the Runaways and Helen Reddy and produced several of his own albums including this from 1973.

Seen as the man's glam rock piece, it doesn't pigeon-hole itself into that genre because it also offers

folk rock and 'Hunky Dory'-like Bowie interludes.

The lyrics are wonders to behold as they infuse an outwardly sleazy subject with plenty of wit, even if that wit is pushed to extremes during the likes of the Dylan-esque 'World Wide Love', along with broader subjects such as statements about the media on 'Ugly Stories About Rock Stars and the War'.

The essence of the LP is one of introspection – despite the rock'n'roll flavouring on tracks like 'Dancing All Night'. The album is proficient with a tight, sharp studio backing outfit and highly imaginative arrangements..

Also look out for another Fowley release on the same label, 'I'm Bad', which sees the barking mad turn into Howlin' Wolf, such is his fuzz-lead guitar-infested proto-punk.

You're never too sure if the eccentric Fowley is serious or not on this one.

The ECM label has been the home of important, influential and significant artists and albums for many years (as you can see at the end of this review).

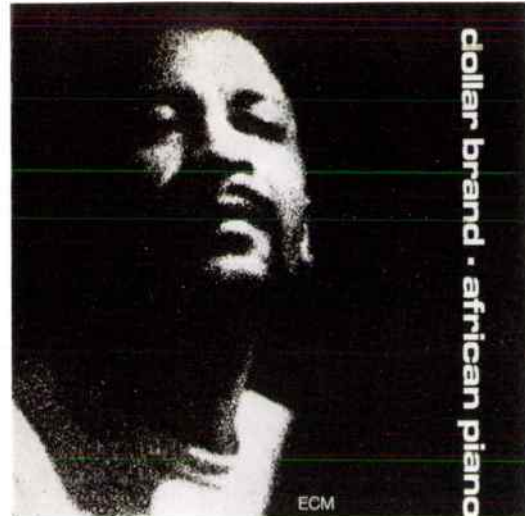
Ibrahim (previously Dollar Brand, before he converted to Islam) is certainly one of those important artists. If you are unaware of him, then you need to get to know the guy. Having played in numerous jazz outfits in Africa, accompanying Hugh Masekela amongst others, he ventured forth and was 'discovered' by Duke Ellington in 1962, later working with bands headed by Elvin Jones, Gato Barbieri and Don Cherry.

Many jazz musicians are noticed and their talent blazes briefly. They then mooch around for many years, their significance as an artist severely diminished. Not Ibrahim. He is what's known as a slow burner. His talent steadily intensified from those early sixties beginnings, hitting the true heights in the mid-

eighties with several peaks in the nineties and noughties.

This 1973 release from a 1969 session is important to know the man and appreciate what is to come. A continuous live performance, the LP explores eight of Ibrahim's originals. You can tell that he hasn't quite found his own voice here, his own sound and direction. That said, you share his adventure, especially via improvisations that feature effective repetitions.

Other ECM releases worth looking out for are: tenor saxophonist Sam Rivers' 'Contrasts' (1979), offering complex yet logical melodic constructions; bass fusion pioneer Miroslav Vitous's 'Miroslav Vitous Group' (1980) offers a patchy release, although John Surman provides highlights; Keith Jarrett's 'Arbour Zena' (1975) is a jazz/neoclassical outing that is rambling but idyllic while Ralph Towner and John Abercrombie's 'Five Years Later' provide a subtle brand of passion.



ADULLAH IBRAHIM

**African Piano
ECM**

A highly significant hip-hop 'band' and a significant album from 1999. The

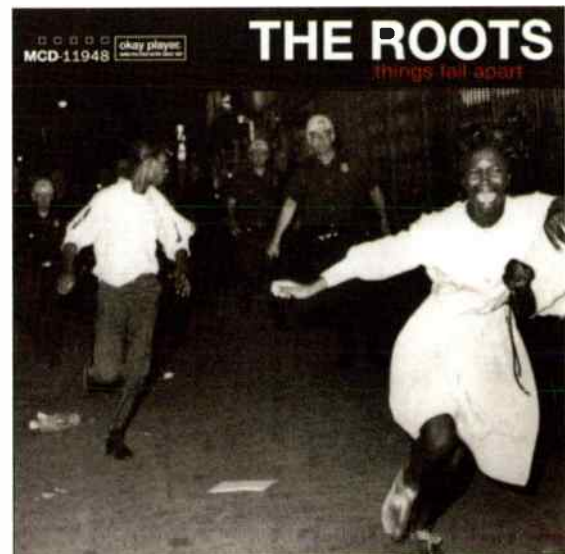
Roots might not be megastars in their field but they certainly entertain lots of respect for what they do and how they do it.

Featuring live instrumentation, unusual for any hip-hop outfit to begin with. The Roots have sometimes struggled to maintain consistency when producing albums, enjoying more the live stage on which they are powerful and something to behold. That live music began in 1987 as a duo but grew to a four piece and now features seven members. Their drive for purity and direction was sealed on the major label release 'Do You Want More!!!!!!?' (1995) in which the music eschewed samples or previously recorded material. This made for a comparatively difficult listen and the band was ignored by mainstream rap.

This album, the band's fourth, was their most successful to date. It was where the band's vision and implementation was finally organised into a coherent whole.

Taking its title from the Chinua Achebe novel credited with revitalising African fiction, the album rests on the assertion that hip-hop records are treated as disposable, that they aren't maximised as product or as art. This forthright philosophy gained the outfit a new audience. Meanwhile, the backing is rather jazzy in tone with a certain neo-soul vibe running through the album. They, in fact, helped to start the movement, working closely with Erykah Badu. In fact, Badu appears on this LP on the single, 'You Got Me', with co-writing from Jill Scott.

Also listen out for Mos Def on 'Double Trouble', a real rhymefest, Jay Dee appears on 'Dynamite!' and DJ Jazzy Jeff pops up on 'The Next Movement'.



THE ROOTS

**Things Fall Apart
Music On Vinyl**

Plane sense

Oppo recently released their first planar magnetic headphone, the luxurious PM-1. They are different – but make a lot of sense, Noel Keywood thinks.

I was excited by Oppo's launch of their new PM-1 headphones, because they use planar magnetic drivers like Audeze headphones, but cost half as much – well almost. That still means £1000, but as Audezes shade other 'phones and are my personal favourites (ignoring Stax electrostatics) the Oppos still looked like a sort-of bargain. But are they?

Disappointingly, I think not. I have Audeze LCD-3s beside me as I type, as well as Oppo PM-1s running from an Astell&Kern AK240 high-resolution digital player and the LCD-3s have it. But the Oppos are still very, very good.

The PM-1s weighed 395gms on our scales, without cables, exactly as their manufacturer's quote. A short 1m lightweight cable is supplied for use on the move terminated by a three-pole 3.5mm stereo jack plug at the player end and 2.5mm two-pole plugs to each earpiece, the lead splitting into a Y; it is not single-sided. This allows individual cables to run to each earpiece in balanced mode.

Oppo also supply a 2m cable terminated with a 1/4in (6.35mm) three-pole jack plug, for domestic use. The 2.5mm sockets on the earpieces sit in a small diameter recess that prevents the use of normal 2.5mm mono jack plugs I found; Oppo's

2.5mm earpiece plugs have a small 6mm diameter body that fits the recess whilst standard 9mm plugs do not, a point to note if re-cabling.

Both soft lambskin and velour ear pads are supplied and velours measure better (see Measured Performance), believe it or not. You also get a re-cycled denim carrying case that is 220mm long and has a carrying handle, something I found handy.

Planar magnetic drive units have a thin, flat conductor attached to a tough, lightweight Mylar film, with

magnets either side.

Running a signal through the conductor creates a magnetic field that interacts with the static field of the magnets, causing the film to vibrate in sympathy with the music.

It's been done before, by Wharfedale (UK) and Magnepan (USA) in the 1970s, and shortly after by Yamaha (Japan). It works well, but in linear push-pull form, front magnets shield the film and affect treble. HiFiMan of China use magnets on one side to avoid this, but the motor is less linear.

And this brings me to sound quality. The PM-1s have a decidedly warm balance, even against the mild mannered Audeze LCD-3s and after





With ear pads removed, the magnetic planar drive units are exposed. The headband adjusts for length and each ear-piece swivels. Comfort is good.

long use I had reservations about this. Most dynamic headphones, like the Philips Fidelio X1s I also use are obviously brighter and even Audeze have modified the LCD-3 motor front magnet assembly ('Fazor' technology) for a brighter balance, tacitly acknowledging the LCD-3 hasn't got enough top end bite for some listeners, especially those used to lightweight on-ear phones like Jays V-Jays.

However, planar magnetics have a smooth, cohesive quality dynamic headphones lack, as well as firm, punchy bass – and here the Oppos scored; my Fidelio X1s were more revealing and a tad more insightful, but they were not as smooth and all-of-a-piece, sounding slightly coarse by way of contrast.

Soundstaging was very good, but I noted it had limited lateral extension, much like Audeze's closed-back LCD-XC headphones and, sure enough, even though the backs are perforated, placing my hands over the PM-1 backs did not affect the sound stage, whereas it did with the open-backed LCD-3s. So acoustically, they are more closed-back than open-back.

Using balanced mode with the Astell&Kern AK240 high-resolution digital player I got a cleaner sound and massively fast bass impact from kick drums.

Our Audiolab M-DAC also gave the Oppos a stronger kick and more apparent dynamic range, whilst a Chord Hugo added a smidgen of welcome brightness.

Note that the PM-1s are



Velour (front) and lambskin earpads are provided, that push-fit to the earpiece body, help by four spigots.

insensitive and need at least 1V to go loud, more than the 0.3V most portables deliver. An Apple iPad delivers 1V and portable hi-res players around 2V.

Oppo's PM-1s have all the smoothness and cohesiveness of magnetic planar transducers.

Put them on after conventional phones and you'll coo at this; but you might wonder why they're so warm sounding. They also lack the resolution of low-level detail that distinguishes the more expensive Audezes.

All the same, whilst they are not quite top of the class, Oppo's new PM-1s are still impressive in their own way and – if their balance appeals – worth their asking price.

MEASURED PERFORMANCE

Frequency response of the PM-1 was smooth, our response analysis shows, with upper treble in particular very flat (no HRTF), if low in level. This is the best result, achieved with the velour covered

ear pads. Treble dropped with the lambskin leather pads and was bumpier, so they will sound a tad warmer in balance.

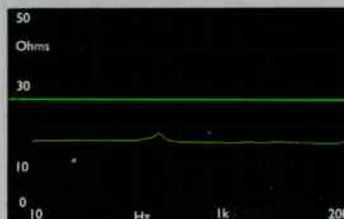
FREQUENCY RESPONSE



By any standard the PM-1s were smooth, and by headphone standards very smooth, although treble is not strong.

As a load the PM-1s were purely resistive, all the way to 20kHz, measuring 31 Ohms – a low value. Sensitivity measured 85dB with a true 1mW input (0.18V), which is relatively low and inadequate for a typical portable player or phone with 0.3V out maximum. With dedicated headphone amps that produce 2V, the PM-1s will produce 22dB more sound pressure, making 107dB SPL possible – very loud.

IMPEDANCE



The Oppo PM-1s measured very well, but they are insensitive and best suit high-quality headphone amplifiers and hi-res players that produce 2V. **NK**

OPPO PM-1 HEADPHONES £1000



EXCELLENT - extremely capable

VERDICT

Smooth, warm sounding phones that have charms.

FDR

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- changeable earpads

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"An artist with life experience is always worth listening to"



Paul Rigby

How can you bring anything to a vocation if you haven't lived or been affected by life? I use the word 'vocation' advisedly, I don't mean 'job'.

Being a vicar is a vocation. I would also class politics in the same mould. When Winston Churchill, a privileged individual there is no doubt, became a politician he had certainly lived life, including being shot at in Cuba and escaping as a POW from a Boer prison in South Africa.

On the opposite benches, Nye Bevan worked in a colliery, knew what it was to be unemployed and learnt how to generate food supplies for striking miners. Both men had seen life before entering politics.

Many current politicians leave university and then immediately enter politics and then dare...dare, to preach to you and me about how we should live our lives and, with the well practiced air of an Old Vic actor, feign sympathy when encouraging sacrifices. It's like being told off by a five year old kid.

Most of their opinions are constructed from politically-biased lecturers, Party theorists and political textbooks. Such scholastic tomes and concepts are inherently invaluable in enriching experience. For those with life experience, these edifying words can provide context and help build wisdom. For those with no life experience, though, these same words are like a set of instructions for an IKEA bookshelf: worthless, empty templates offering nothing but a means to an end.

How can you hold a responsible position successfully or speak with authority on anything, until you have lived 'life'? Where are your reference points? Your boundaries? Where are the mistakes?

As in politics so in art because art preaches to us. It does so in a

myriad of different ways and degrees but it remains didactic. That includes music.

I get a lot of music passing through my hands and you instantly know which voices, which artists, to listen to. You don't have to agree with them but an artist with life experience is always worth listening to.

Looking through a batch of new releases from Ace, for example, illustrates what I mean. Just listen to 'Rhythm'n'Blues in by the Bayou: Rompin' & Stompin', for example. This compilation is full of people with something to say. Take James 'Sugar Boy' Crawford, singing the song 'Round And Round'. Sugar Boy and his band were on their way to a job in North Louisiana in 1963, when state troopers pulled him over for the then-crime of being a black man in a flashy brand-new automobile.

One of Louisiana's "finest" took exception to Sugar Boy's attitude and proceeded to pistol-whip him by the side of the road. Sugar Boy spent three weeks in the hospital and was incapacitated for two years. He had pain enough to sing his blues.

Another compilation, 'You Talk To Much: the Ric & Ron Story Volume 1' features the turbaned Eddie Bo, an adept singer and pianist, singing 'You've Got Your Mojo Working'. He began life as a bricklayer. More recently, his house in New Orleans was hit by Hurricane Katrina. Bo's house needed a new roof and wall repairs. You know what? He did the repairs himself!

Imagine a politician being afflicted in the same way. They would be crying to their insurance company, a local builder and their mother, although not necessarily in that order, before waving their arms above their heads in bemused helplessness and then flipping open a credit card and heading to the nearest five-star hotel.

Ok, let's move away from poor black families to a relatively wealthy middle class white guy: Lou Adler — superstar producer and/or manager for the likes of Johnny Rivers, Sam Cooke, Carole King, the Mamas & the Papas and Jimi Hendrix — who appears on a new collection called 'Lou Adler: A Musical History'.

Adler started out managing a clothes store and even sold insurance policies. "I think I sold one to (famed trumpet player and song writer) Herb Albert at one point", he says.

Too safe? How about French l'enfant terrible Serge Gainsbourg? He appears in a new collection called 'Vamps et Vampire: the Songs of Serge Gainsbourg'.

Lucien Ginsburg, his given name, was the son of Jewish immigrants, his father was a talented pianist in theatres and clubs in Paris. Gainsbourg was eleven years old when the Nazis occupied Paris, forcing him and his family to wear the yellow star with the word 'Jew' written on it. An experience that hurt and scarred him.

"It was like you were a bull, branded with a red-hot iron", he said. "Even at thirteen, fourteen years old, I had already become an outsider, because the tough guy thing wasn't me".

Gainsbourg's life education arrived at an early age. Too early, some might say.

I'm always suspicious when listening to rhetoric from individuals with no life experience but when a person with knowledge of life speaks out then I'm all ears.

Such people tend to want to talk about matters that they believe in and are, hence, passionate about their topic.

There is nothing finer than listening to a passionate person spout about a subject they love. Why? Because then I learn from them. ●

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"Is there part of our anatomy through which we detect hypersonic sound?"



Tony Bolton

In the January 2014 issue of this magazine I mentioned that I had been using a pair of Townshend Maximum Super Tweeters on my upstairs system and that I had started exploring various bits of research that were looking into whether we could actually respond to sonic stimuli that existed above the alleged upper limits of human hearing at 20kHz. Having been using the Super Tweeters for a couple of years now I was sure that there was something going on at these stratospheric levels that I was responding to – and Max Townshend pointed me in the direction of some research by James Boyk of the California Institute of Technology.

Boyk established that there was high frequency sonic energy present in everything from the sound of conventional musical instruments through to the human voice. This then led onto some research by Tsutomu Oohashi, Emi Nishina, Norie Kawai, Yoshitaka Fuwamoto and Hiroshi Imai entitled "High-Frequency Sound Above the Audible Range Affects Brain Electric Activity and Sound Perception" (Audio Engineering Society preprint No. 3207 - 91st Convention - Abstract page 2.). This established that although we may not perceive our response to ultrasonics as 'hearing' them we are aware of them and do respond to this form of stimulus.

Further on, I referenced a paper published in "Science" where Lenhardt et al. report that "bone-conducted ultrasonic hearing has been found capable of supporting frequency discrimination and speech detection in normal, older hearing-impaired and profoundly deaf human subjects".

At this point my research ground to a halt until recently, when chatting with Lee Taylor, co-founder of Leema

Acoustics, who has explored this subject himself. He sent me an email containing a link to the "Journal of Neurophysiology, Vol. 83 No. 3548 to 3558", published 1st June 2000. The article is entitled "Inaudible High-Frequency Sounds Affect Brain Activity: Hypersonic Effect" (<http://jn.physiology.org/content/83/6/3548>).

I will try and summarise the findings here but it is a complex document so I would suggest interested readers follow the link above and also follow the links to other research found within the article.

The study involved using Balinese gamelan music, which is extremely rich in high frequency content (HFC), to see if sounds significantly above the perceived range of human hearing affected brain activity.

The sound was divided into two components, that containing energy below 22kHz (referred to as Low Frequency Component or LFC) and that containing energy above 22kHz (HFC). Brain electrical activity and regional cerebral blood flow (rCBF) were measured as markers of neural activity while the participants were exposed to various sounds.

It seems that none of the subjects responded to HFCs alone but did respond when exposed to combined LFC and HFC. The increase in brain activity being described as statistically significant when the subject was exposed to both HFC and LFC compared to just LFC alone.

It was also found that when exposed to just LFC there was no enhancement of brain activity compared with the response to just HFC. Measurements revealed that when an HFC and LFC were presented together, the rCBF in the brain stem and the left thalamus increased significantly when compared to the response to a sound lacking the HFC above 22kHz

but that was otherwise identical.

Psychological evaluation of the subject's response was also carried out and revealed that the participants felt that the sounds containing both LFC and HFC were more "pleasant" than those containing just the LFC up to 22kHz.

The Abstract closes by saying, "These results suggest the existence of a previously unrecognised response to complex sound containing particular types of high frequencies above the audible range".

I had a go at replicating these experiments using an LP of solo piano and blind testing a couple of my friends by playing it with the Super Tweeters in circuit, separately and out of circuit. Even though no one could hear the Super Tweeters running separately everyone agreed that the sound benefitted by having them running.

This raises the question of how we are actually absorbing these high frequency stimuli. It is generally accepted that the human ear has a finite frequency response that gradually reduces due to age and environmental factors. We know that we can respond to subsonic frequencies through our bodies, so is there a part of our anatomy through which we detect hypersonic sound?

I have come across the theory that we absorb HFC through our skin, while other suggestions are that we absorb it through our eyes. This latter theory would tie in with most people's experience that listening to music in lower lighting, when the eyes and the brain's response to their input are not distracted by visual stimulation, produces a more intense and involving listening experience.

If anyone has any information on the subject please contact me via the magazine.

I will, as always update you on any further findings. ●

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"how could Sony grab a slice of the iTunes action? By promoting DSD"



Noel Keywood

Just when I thought digital was becoming easy – easy to use that is – along comes DSD. It is not easy to use and there are not even agreed standards for its transmission. Yet already we have DSD2.8 and double speed DSD5.6, in both .dff and .dsf file formats.

I suspect most people would like to step up to ordinary, everyday, mundane hi-res digital, namely 24/96, first, without being faced by yet another confusing format. Has the industry gone mad? Or is there a subtle reason for this, I'm wondering?

DSD is Direct Stream Digital, an unusual form of digital that is totally different to your everyday stuff, otherwise known as PCM which is short for Pulse Code Modulation (e.g. WAV files). Sony started using it for archiving music some time ago, giving it cache as a high-quality medium.

At the same time, music was issued in DSD form on SACD discs – and we all know where that went. Or perhaps most people don't, because they never heard of SACD nor understood its benefit.

Sony never got behind it, likely because an AV disc able to compete with DVD looked a better option commercially, so Blu-ray became the focus of Sony's attention. Lest we forget, AV was the big thing not so long ago, music without pictures making little apparent sense.

Then along came Apple with iTunes, downloads and a whole new world of stereo – or should I say a revived world of musical appreciation, a world quite different to AV, that in reality was about selling Hollywood films, which suited Sony Pictures.

It was Apple who brought back music. Steve Jobs famously loved music, had a serious hi-fi system and injudiciously named his company after the Beatles 'Apple Corp' it was once said (now heavily denied!).

In this new firmament, dominated by iTunes, sound quality was worse than Steve Jobs had enjoyed from his LPs back in the 1970s so quality was always going to be an issue – a weak point Sony now seek to exploit I suspect.

How could Sony – who have a music download site remember – grab a slice of the iTunes action? Well, by promoting and using DSD, their own format. Guess what, the licence for use is now free!

To this day, Apple portable products don't play hi-res. You won't get 24/96 into an iPhone, or an iPad. You will into Samsung Android-based products. But none of them play DSD and it isn't easy to do so.

Firstly, you need a dedicated DSD player, meaning software that can select and play the file, sending it (preferably) to a DSD digital-to-analogue converter. Forget iTunes or Windows Media Centre: think Audirvana, J River (PC only) and PureMusic.

I use Pure Music at present. Yes, it is quirky and unstable, as people say, but it plays DSD from memory and sounds good. Initially, I found re-booting to purge memory (4GB) got a track playing on my Mac Mini, after Activity Monitor (in the Utilities folder) showed the memory was jammed. Subsequently, this issue has receded; perhaps the Mac re-allocates between static and dynamic memory.

There are other issues. No agreed transmission protocol exists for DSD. It cannot be sent over digital audio S/PDIF links, electrical or optical, since there is no agreed way of doing this via S/PDIF. The same situation exists via USB where audio is packetised and transmitted at 1kHz Intervals, although DSD-over-PCM (DoP) is what everyone is using and works fine in my experience.

Then there is the peculiar issue of the digital-to-analogue convertor.

If DSD is to be fully exploited it must pass through a DSD DAC, which is basically a low pass filter. And this is why DSD looks so good to engineers; PCM DACs needed a resistive ladder network that introduced errors and distortion (digital never was 'perfect'); DSD DACs need no such thing. In fact, in that DSD data does not have a numeric value, it is as much analogue as digital!

A DSD DAC is basically simple and pure and imposes no errors in the conversion process. All the same, to avoid hardware complexity manufacturers commonly convert DSD to PCM and then send it through a PCM DAC - advantage lost!

Nowadays most PCM DAC chips, like those from Wolfson or ESS, have native DSD conversion on board, but still manufacturers prefer to convert to PCM to avoid external circuit complexity.

So you'll see little notices, like the one on the Astell&Kern AK240 box that sits beside me as I type, that says 'NATIVE DSD'. This means DSD is not converted to PCM anywhere in the signal chain.

There are other issues to be aware of. I said DSD cannot be sent via S/PDIF – but it often is! To do this it is converted, in most cases, to 176.4kHz sample rate PCM. This isn't to deceive users, but to avoid a no-play scenario. In my experience it is no sonic disaster so I'm not a critic of this.

So DSD is complicated, yet we seem to be careering into it.

Why? Well, it always sounded good and it can be downloaded and Sony have a big interest in it they can use against Apple.

Do I sense a hidden agenda here? I do! DSD will likely be coming to a device near you soon, with the hand of Sony behind! ●

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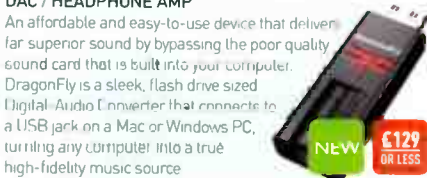


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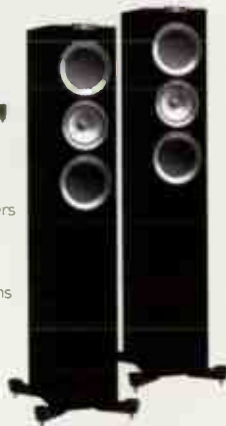


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Standing just 17cm tall, the MR1 speakers feature 20W of Class A-B amplification, a 75mm mid/bass unit and 20mm tweeter in each enclosure. The handcrafted cabinets are finished in a choice of rich walnut veneer, soft white or soft black lacquer.

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The Greats Of Roth

Roth Oli RA2 loudspeakers won't break the bank – but they will give you a refined listening experience. Jon Myles hails the birth of a budget bargain.

Here's a question: exactly how much do you expect to pay for a pair of decent loudspeakers? Perhaps start from the £300 mark for standmounts. Maybe double that amount for floorstanders due to the extra cost associated with the bigger cabinets.

If so, then the chances are you won't take a second

glance at the Roth Oli RA2s. After all, they cost just £150 and – if you turn to a certain volume retailer – can be had for a penny less than £100 at the moment.

Surely no manufacturer can produce a musically-coherent, thoroughly satisfying and well-tuned transducer at that price?

Well, it seems Roth think they can with this model. And you know what? They've managed it.

What you get is a standard two-way standmount comprising a

1in silk dome tweeter allied to a 5.25in woven fibreglass hybrid

mid-bass.

Both drivers are contained in custom waveguides – which are said to aid dispersion and give a wider soundstage.

All this is housed in a 290mm/180mm/205mm (H/W/D) cabinet that has subtly rounded corners to add a touch of class to the look.

The rear panel contains a small bass port and a single pair of speaker binding posts. Roth also supplies a pair of brackets to allow wall mounring if desired.

Fit and finish is good with no obvious seams or joints while the



grilles attach magnetically so there's no unsightly attachment points to spoil the clean lines if you choose to leave them off.

SOUND QUALITY

Refined is not normally the word you use when reviewing a pair of £150 loudspeakers. But in the case of the Roths it's fully justified.

They have an ease and assurance to their sound which could shame some more expensive competitors.

Most importantly they are all of a piece – meaning they don't try to exaggerate any element of the sonic spectrum to the detriment of others.

With Charles Gayle's 'Touchin' On Trane' CD – which is not the easiest task for a loudspeaker with its honking saxophone, syncopated bass and complex drums – the Roths did a commendable job of separating the instruments whilst allowing them to meld together into an easy flow.

With something even more difficult, in the shape of James Blake's bass-heavy 'Limit To Your Love', they continued to shine. The little RA2s cannot achieve the earth-shaking low-end this track is capable of producing on bigger loudspeakers, but they don't shirk from trying.

Here, the Roth's bass had both texture as well as dynamic punch, with no obvious boominess from the port.

The real highlight, though, is through the mid-band and treble where they are open and clear without any hint of harshness or top-end shriek.

ABC's 'The Look Of Love' was as smooth as silk and replete with detail while the Roths also managed to capture the edge and urgency of Jacques Brel's 'Dans Le Port D'Amsterdam' without missing a beat.

The soundstage is exemplary – with both width and depth while vocals, piano and acoustic guitar hang in the air right in front of you.

Impressively, they also seem to thrive on a good dose of power. Hooked up to my resident Naim

Supernait 2 (which at £2,750 would at first would seem a bit of a mismatch) and turning the volume control up to the 12 O'clock position elicited absolutely no hint of rattle or strain from the cabinet.



And the chances are you will be tempted to turn the volume up once you have the Roths in place because they reproduce music with such fun and bounce that they quickly become addictive.

The highest praise I can give them is to say I moved from

a considerably more expensive pair of loudspeakers to the Roths and didn't feel I was losing too much.

Absolute detail, total low-end punch and ultimate volume were not quite to notch, of course – but in

terms of musical communication and enjoyment, they give away very little.

CONCLUSION

Sound-per-pound these loudspeakers must rank as one of the biggest bargains out there at the moment. They are unerringly smooth yet have a dynamic punch and musicality capable of shaming some competitors costing at least twice as much.

Anyone looking to build a thoroughly musical system without breaking the bank really should audition the RA2s. They are a real revelation.

SIMPLE SYSTEM

Combine the Roth OLI RA2s with the right ancillaries and you have the makings of an impressive sounding system for less than £700.

Given a choice we'd look to pair them with a NAD D 3020 amplifier/DAC at £399. It offers a beefy 66 Watts per channel of Class D amplification – more than enough to drive the RA2s to decent levels. What's more the NAD has a sophisticated yet energetic presentation that plays to the Roths' strengths.

Add the superb £150 FiiO X3 digital audio player – which can handle files up to 24-bit/192kHz – for your front end and you'll be hearing some sweet sounds.

What's more, if you have a CD player with a digital output it can plug straight into the NAD to take advantage of its rather impressive DAC module.

Who said hi-fi had to be expensive!



MEASURED PERFORMANCE

Not only did the Roth OLI RA2 measure very flat, but the two drive units were well integrated, with no peaks or dips in the crossover region. Better, dispersion was good, this response holding over a wide vertical and horizontal angle. They can be pointed down the room or toed in, with little alteration of the sound. The small treble peak at 16kHz will have little audible affect, serving to ensure treble has a little sparkle and is not dull or

recessed.

Bass rolls down sharply below 80Hz, below which the port takes over. It peaks at 60Hz but reaches down to 40Hz so low bass is well covered. Since port output was +13dB SPL above the bass drive unit at 80Hz (+6dB is a common figure) the port contributes strongly to bass, so the RA2 will not lack quite fast and dynamic bass, if not subsonics.

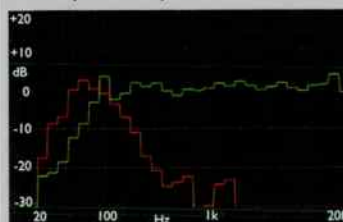
A 200mS decay map shows a clean midrange and treble performance, but some bass overhangs, especially at 80Hz, but this is to be expected in a small cabinet, especially one that produces strong bass.

Sensitivity was about average, the RA2 producing 85dB sound pressure level from one nominal Watt (2.8V) of input; it needs 60 Watts or more to go loud. This was attributable to high overall impedance that measured 8.8 Ohms with pink noise and our impedance graph shows this. As a load the Roth is easy enough on amplifiers.

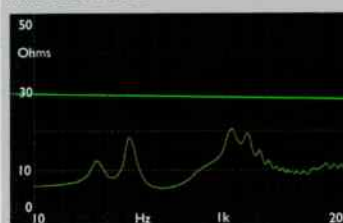
The RA2 measured well in all areas, only sensitivity being a tad below par, but this demands little extra power. Otherwise this is a very well engineered loudspeaker and should give a fine sound. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



ROTH OLI RA2
£150



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Superb loudspeaker at a bargain price. These Roths really do have to be heard to be believed. A true bargain.

FOR

- smooth, detailed sound
- impressive bass for their size
- price

AGAINST

- absolutely nothing

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vinyl section

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JULY 2014

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news



MOBILE FIDELITY

A selection of high-quality releases from this US-based outfit starts with Bob Dylan's 'Desire' (1976), messy in concept covering topical subjects and folk tales but that has a charm of its own. An intriguing LP.

Mo-Fi has released another Pixies LP, this time the final band release 'Tomme Le Monde' (1991), essentially Black Francis' solo debut, adding a lot of SF and removing a lot of Kim Deal. It is a rousing swan song, however.

Also check out Carol King's classic Tapestry (1971), a crafted album of superior pop including 'Will You Still Love Me Tomorrow' and '(You Make Me Feel Like) A Natural Woman' plus Foreigner's 'Head Games' (1979), an arena rock classic, slick and non-threatening.

MOV LATEST

Licensed from Bear Family is Jerry Lee Lewis's 'Up Through the Years' collecting twenty-four tracks from the 1958-1963 catalogue. A great introduction to his work.

Unfairly ignored, Bill Withers' '+ Justments' features melancholy musings but, more importantly, it's the last album where he is out front, free of over production. Finally, The Meters' 'Fire In The Bayou', was their best funk outing for Reprise (1975): focused performances, classy songs and a gritty presentation.

JUMPING JAZZ FEVER

New from Music On Vinyl's jazz section (www.musiconvinyl.com) is Thelonius Monk's 'Solo Monk' (1965), a collection of originals and covers of angular beauty, sometimes highly complex, but always emotional.

New from Impex (www.impexrecords.com) is a beautifully produced, well mastered edition of Miles Davis' 'E.S.P.' (1965), that helped define modern jazz. Hard bop with elastic tonality.

Over to Pure Pleasure (www.purepleasurerecords.com) and bassist Oscar Pettiford's 'Volume 2' or 'Another One' who, as band leader, provides bebop, calypso and a little Duke Ellington. Lyrical sounds and lyrical bass playing.

On Waxtime (www.discovery-records.com) are Chet Baker and Bill Evans' 'Alone Together'. A re-badged 'Chet' (1959) but replacing 'Early Morning Mood' with 'I Could Have Danced All Night' plus John Coltrane & Kenny Burrell's self-titled piece (Coltrane's last as a sideman for Prestige) from 1963 on sax and guitar respectively. A one-off partnership offering intimacy and focus.





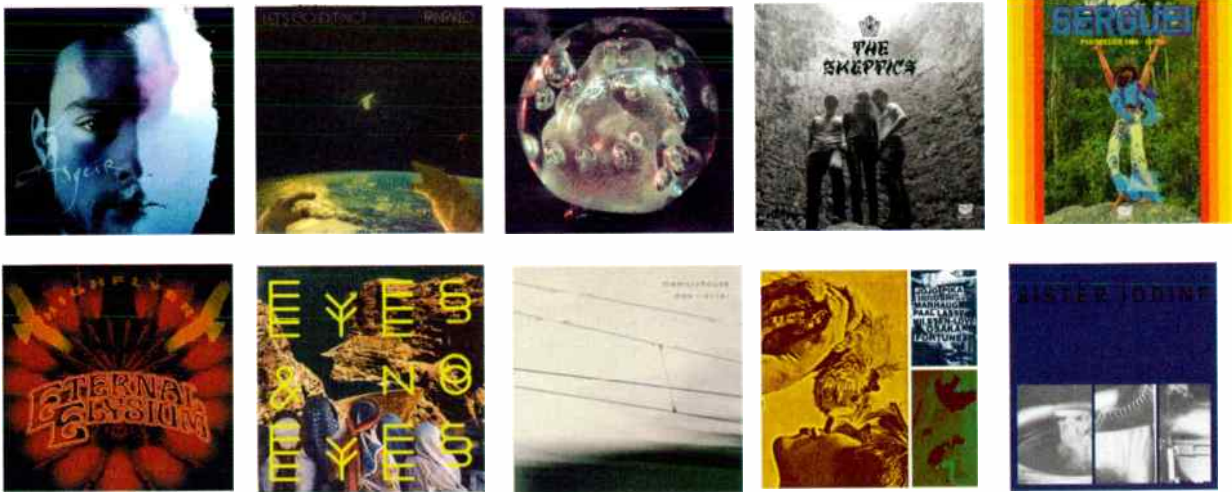
R-R-R-ROCK!

Two classic rock outings from Polydor's Wax Cathedral. Firstly, Rainbow's 'Rising' (1976) is the band's best album, offering quality songs and execution: tight and colourful. Rainbow's live double album, 'On Stage' (1977) might feature excellent material but the performance is somewhat lacking.

Hammercult is an Israeli thrash metal band. 'Steelcrusher' (SPV; www.spv.de) is a vulgar, no holds barred, throat vocalled, brutal outing with blast beats.

If ever a band could tackle greasy, dirty rock'n'roll it's Nashville Pussy. In the new LP, 'Up The Dosage' (SPV), they turn it up to eleven and threaten your daughters (plus everyone else in your family, incidentally).

Also look out for Stryker's 'No More Hell To Pay' (SPV; 2013), Christian metal rock (oh, yes). Heavy with minor chords and oh so reverent; Alex Rudi Pell's 'Into The Storm' (SPV) is a strong release offering solid vocals, top-quality guitar playing, mystical metal and haunting ballads; Pestilence's 'Obsideo' (2013; Back On Black, www.backonblack.com) shows a death metal band struggling with match fitness since they reformed in 2008. Interesting components but no real direction.



...AND FINALLY

Icelandic chappie Asgeir produced a wildly successful debut album in his home country. 'In The Silence' (*One Little Indian*; www.indian.co.uk) should repeat that success here. It is a devastatingly beautiful new LP, full of heart-wrenching minor chords and Coldplay-like uplifting songs.

Fanfario's new 'Let's Go Extinct' (*New World*; www.newworldrecords.org) has a distinct Simple Minds-like vibe. Bouncy, up-tempo although a bit too eighties pop.

Nicolas Jaar and Dave Harrington's new Darkside project has produced 'Psychic' (*Matador*; matadorrecords.com), a moody electronic dance LP with prog infusions that leans towards pop semantics.

On Groovie (www.groovierecords.com) is 'Black, Lonely & Blue', a new release by The Skeptics, a straight-ahead garage band oozing punk aggression and in-your-face, treated vocals.

Also on Groovie is 'Psicodelico 1966-1975' from Serguei (a frustrated Russian flight attendant turned hippie). Offering fuzz, tropicalia, garage and psych this eccentric, obscure rarity is a total freak-fest.

New release from Eternal Elysium, the Japanese stoner metal band. 'Highflyer' (*Headspin*; www.clearspot.nl) is a mini-LP of intense rock set at a good pace with vocal variation. Classy doom.

Over to Eyes & No Eyes latest self-titled LP (*Willkommen*; www.willkommenrecords.co.uk) offering pastoral indie rock, a sort of folk-rock amongst the daisies fronted by a lazy, fragile vocal.

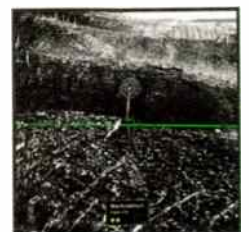
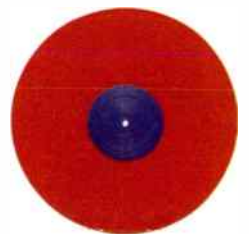
From Max Richter comes 'Memoryhouse' (2002), his then debut, a superb piece of neoclassicism from Fat Cat (www.fat-cat.co.uk). An elegant journal of soundscapes plus some restrained post rock.

Violent, chaotic, destructive noise from Jojo Hiroshige, Paal Nilssen-Love, Pika and Lasse Marhaug on 'Osaka Fortune' (Premier Sang). A soundtrack to a passing war.

Also on Premier Sang and more strangeness from no wave/experimental outfit Sister Iodine and their new album 'Blame'. A collision of electrical static and screaming industrial pain.

Onto more playful electronica from Evol and 'Something Inflatable' (*Alku*; [alkualkualkualkualkualkualkualku.org](http://alkualkualkualkualkualkualkualkualku.org)). The clue is in the title. Springy, bouncy, boingy noises plus a few blips to add variety.

Finally, take a peek at Ninja Tune (www.ninjatune.net) artist Machinedrum's 'Vapor City' offering atmospheric beats and playing with frequency patterns over dry bass percussion.





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MISCELLANEOUS

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Good enough to EAT...

Tony Bolton finds himself seduced by an elegantly styled phonostage from the Czech Republic.

Based in Prague in the Czech Republic, the European Audio team (EAT) have built up a business manufacturing high-quality turntables, an arm and a cartridge as well as valves. At last year's High End Show in Munich they introduced the E-Glo phonostage, which we now have for this review.

As befits a product that retails at £5300, the visual first impressions of this two-box phonostage are commensurate with that price point. The power supply is housed in a brushed alloy case that measures 435 x 85 x 280mm (h x w x d). At the back

is the IEC mains input, alongside the power switch and a tethered lead that connects it to the phonostage.

The front contains two nicely subdued LEDs, one of which indicates that power is present, the other glowing when current is flowing into the phonostage.

Inside the PSU is a custom made toroidal transformer which features double shielding between the primary and secondary windings. This is claimed to stop the intrusion of RFI and to act as a mains filter. EAT have fitted special diodes with noise suppressing resistors to the rectifying circuitry, along with high-quality electrolytic capacitors, followed by

a voltage regulator with capacitor multiplier. The power component is an FET transistor. Separate power supplies for each channel then feed into the phonostage.

This is housed in a case of similar dimensions that has some striking styling touches. The ends are covered in highly-polished wooden fillets that have a pleasingly retro appearance to them, while the top contains two large, round, layered discs mounted to resemble the reels on an open reel tape recorder. These are the heat sinks for the two ECC83 and one ECC88 valves on each channel that provide the amplification. The valves are encased in valve coolers which



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Bel Canto SEP 2 upgraded to 1 valve remote control	£795	Michell Gyro SE special order black finish brand new in a box, sealed box	£995
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EAR 802 classic valve with pre amp phono stage (just serviced)	£1195	SME series 3 tonearms various	EPOA
Eastern Electric M size 20 integrated amp with remote	£895	SME 309 boxed	£695
Harmon Kardon HK990 top of the line heavy weight integrated amp 12mths old	£595	SME 3009 series II rebuilt & rewired by Audio	
Harmon Kardon 930 twin powered receiver	£195	Origami detachable headshell	£325
Harmon Kardon HK770 power amp	£195	Sony PS6750 turntable	£345
Mark Levinson 335 power amplifier	£2995	Synrx LE1 tonearm recently wired with cardas cable fitted and checked by Audio Ongami	£275
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Meridian 201 MKIII pre amp remote	£195	Thorens TD125 MKII in plinth	£275
Mentmore M200 valve mono bloc 200wpc designed by Tim de Paravicini awesome driving power	EPOA	Thorens TD160	£195
Mission 776/777 pre and power amplifier 100w cast case work a real classic	£795		
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Phase Linear 700 power amp	£495	Marantz CD50 multibit dac	£95
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Quad 34 pre amp phono version	£225	Marantz CD17 MKII	£395
Quad 306 power amp with phono input	£245	Meridian 506 20 bit CD player	£395
Quad 405	£195	Meridian 518 digital audio processor	£345
Quad Forty monoblocs	£1995	Meridian 207 disc player 2 boxed pre amp & transport	£375
Red Rose 5 integrated valve amp Mark Levinson design new E7000	£2995	Musical Fidelity A308 24bit up sampling boxed	£695
Roksan Kandy MKIII integrated amp	£395	Nakamichi CD player 2	£175
Rotel PB971 power amp	£195	Nakamichi MB10 5 disc music bank cd player	£175
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Rotel RA840BX integrated amp	£125	Naim CDS with PSU (with brand new laser)	£1995
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The red rings around the valves are valve coolers which also help reduce any tendency for the valves to pick up and amplify spurious vibrations.

should also stop any microphonic intrusions into the audio spectrum.

Internally there is a fully balanced input stage fitted with a Lundahl step up transformer with an amorphous core. The unit's gain is 45dB plus the voltage gain of the step up transformer. The equalisation section of the 'stage is fully passive without any global negative feedback loop. The output capacitor is a Mundorf and all others are supplied by WIMA. The connectors are also by Mundorf and Teflon insulation is specified throughout.

The front of the phono stage contains rows of LEDs that display impedance settings. These are chosen by the rotary switch on the top of the casework. Beside this is another, matching dial which controls the capacitance settings for use with MM cartridges.

The selection between MM and MC is carried out by a switch on the top right of the case, which sits alongside the subsonic filter control and a muting switch. The back contains dip switches to set the choice of gain and a selection of phono sockets for MM and MC input and line level output.

Having connected it up to my downstairs system I started listening with the classic Stone Roses 1989 eponymously named LP. My first reaction was to lower the volume control a couple of notches from its customary position since the music barreled out of the loudspeakers at

a considerably louder volume than I was expecting.

The second thing that I noticed was the punch of the drums. The attack was lightning fast and the introduction of the guitars seemed to have a quite vivid energy about the way in which they were portrayed. Ian Brown's laid back vocal style stood in contrast to this, making for

played to do anything else.

A day or two later, with my listening schedule thrown out of the window, I had got to the classical section of my record collection and got lost in 'Scheherazade'. I like this 1958 Beecham recording of it. He conducted the RPO with a focus on the rhythm that helped the music conjure up images of Eastern

"the sound was so enjoyable that it almost seemed discourteous to the music being played to do anything else."

a very involving listening experience.

Having discovered that the E-Glo seemed to transmit rhythmic energy in a powerful way I moved onto Massive Attack's 1994 opus 'Protection'. The loping flow of 'Karmacoma' was a delight to listen to, and impossible not to find involving. Tricky's voice held centre stage some way in front of the speakers and I found myself listening to a performance taking place on a quite expansively deep soundstage. This mixture of electronica, guitars and drums seemed to have a naturally rolling gait that was both relaxing and totally involving and instead of wandering on to other tracks I found myself settling in for the entire LP.

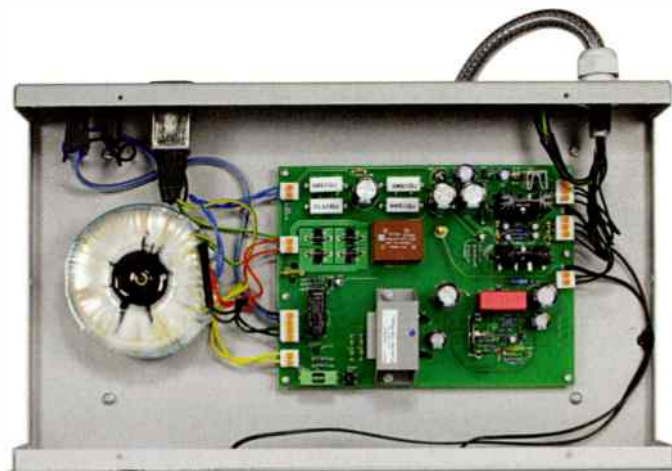
This turned out to be a regular feature of my listening with this phono stage. LPs that I would normally cherry pick one or two favourite tracks from were played in their entirety. The sound was so enjoyable that it almost seemed discourteous to the music being

promise. The tonality of the various strands of the orchestra seemed to me to sound correct. Although this phono stage has excellent sonic manners it avoided the traps that



so many phono stages fall into of smoothing out the sounds of violins and brass. They still had a defined edge to them and had a bite when required.

I tested out the E-Glo's manners by playing Edith Piaf, a singer whose



The power supply has a toroidal transformer with double shielding between primary and secondary windings. This helps prevent RFI and acts as a mains filter.

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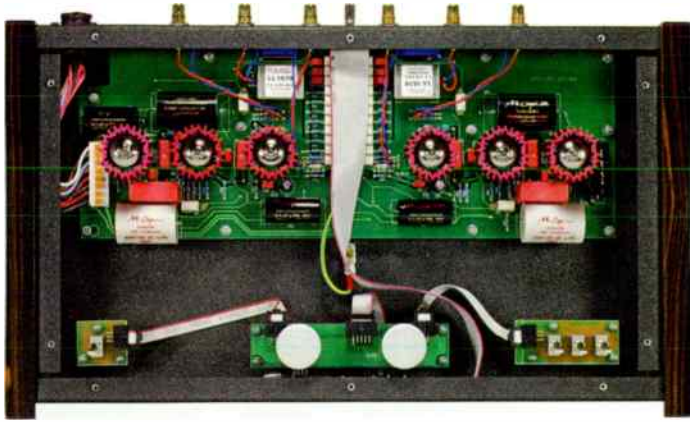
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The fully balanced circuit uses Mundorf capacitors in the output stage. All other capacitors are made by Wima. Each channel boasts two ECC83 and one ECC88 valve, seen here with their valve coolers fitted.

vocal style can be very difficult to reproduce without sounding as though she is gargling glass. The phonostage stepped up to challenge and passed with flying colours. I was presented with an almost holographic image of a little figure in her trademark black dress (I could hear the odd rustle of material as she moved within it) against an absolutely inky black background. Despite the focus of the recording being on her vocals, I was still aware of listening to a recording made in a large venue (the Paris Olympia music hall) and almost felt that I could have described the shape of the inside of the building from the sound of it.

I finished my listening a couple of days later with Dinah Washington swinging her way through 'You're Nobody 'Til Somebody Loves You'. This mono pressing is in good condition but I would normally hit the mono switch just to tidy away any odd bits of surface noise. However the E-Glo is not fitted with such a device. Normally I would find this irritating but for once I found myself listening to a phonostage

where this did not seem to make an audible difference. The image was wide and deep and totally believable in creating the impression of watching a singer strut her stuff to the beats of a jazz band. Although Dinah has a determined vocal style, it did not sound forced, merely

assertive and made for mesmerising listening.

I am thoroughly impressed with this phonostage. At this price I expect absolutely first class performance and the E-Glo did not disappoint at any time during a very extended listening period. Rhythms flowed with that natural gait that only valves can accurately reproduce and all aspects of the tonality of everything that I played, from electronica to orchestral sounds, were just right. It made music seem natural rather than being reproduced with the accurate but uninspiring air of 'high fidelity' that can sound technically correct, but is uninvolving.

The E-Glo has enough gain and choice of settings to accommodate most cartridges, it looks good and sounds wonderful. I think I may have just fallen in love!

MUSIC USED

- Rimsky-Korsakov. 'Scheherazade'. Royal Philharmonic Orchestra conducted by Sir Thomas Beecham Bart. C.H. EMI Records Ltd (HMV). ASD 251. 1958.
- Edith Piaf. 'Recital 1961'. Columbia Records (France). SCXF 102. 1961.
- Dinah Washington. 'Dinah '62'. Columbia Records. 33SX1453. 1962.
- The Stone Roses. 'The Stone Roses'. Silvertone Records. ORE LP 502. 1989.
- Massive Attack. 'Protection'. Circa records. 7243 8 39883 1 0. 1994.

SYSTEM USED

- Clearaudio Master Solution turntable/ Magnify arm/ Benz Micro Wood SL cartridge.
- Leema Acoustics Tucana II amplifier, Chario Ursa Major loudspeakers.

MEASURED PERFORMANCE

Gain through MM measured x200 (46dB), a usefully high value for low output MMs, and with 27V output swing overload is not a problem with high output MMs. With 35mV in, about the maximum from an MM, the EAT E-Glo will give 7.3V out.

Very high gain was available from MC too, measuring x 3471 (71dB) at the low gain G2 setting, and a massive x6734 (77dB) at the high gain G1 setting. If an MC was to give 4mV out, around the maximum possible, then this stage will swing its maximum output of a massive 27V. It seems a bit extreme, but

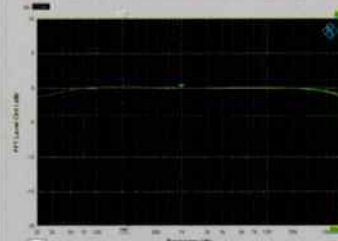
very low output MCs cruise at 0.1mV output and the E-Glo will deliver 670mV output from this, about right for 400mV input sensitivity of many amplifiers.

Frequency response was wide with MM, stretching from 12Hz to 100kHz. With MC at low gain (G2) it ran from 12Hz to 100kHz and with MC at high gain (G1) bass rolled off prematurely, below 100Hz at 300 Ohms input load selected; MC at G1 must be used with input impedance set low, best at 2-10 Ohms, which is high enough as most low output MCs have a generator value well below 1 Ohm. The warp filter worked very well, rolling off output sharply below 27Hz, as our analysis shows.

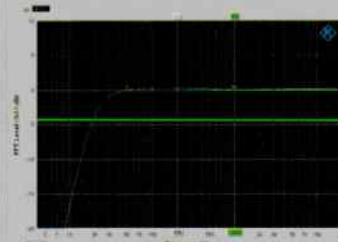
Noise was curiously unaltered by gain, so high MC gain (G1) gives lowest equivalent input noise (that takes gain into account), measuring 0.1µV IEC A wtd – good if not quite as low as possible with input transformers (0.08µV).

The EAT E-Glo works well. It has enormous gain and can deal with very low output MCs, for which it is designed. Noise is low, frequency response wide, distortion low (0.1%) and the warp filter is very effective. NK

FREQUENCY RESPONSE



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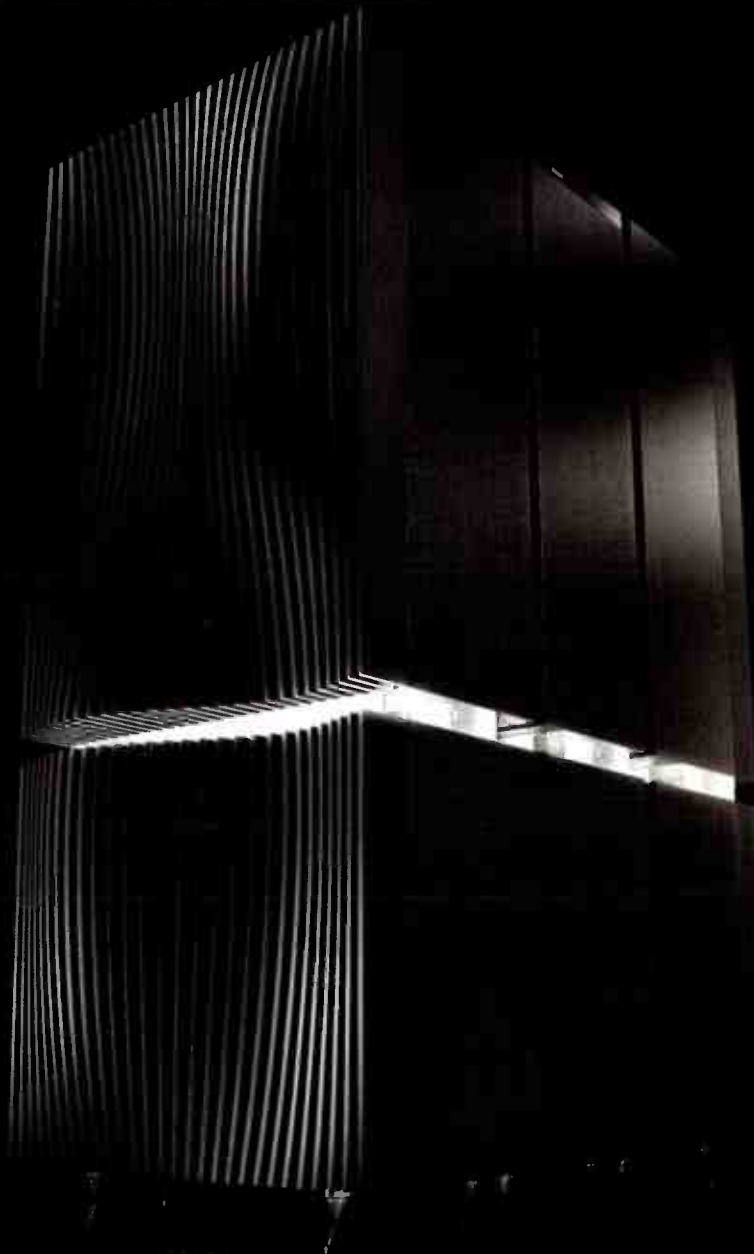
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Each channel is equipped with dip switches to set G1 or G2 levels of gain.



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ORIGIN LIVE UPGRADE BELT £29.60

The drive belt on a turntable is one of those components that is generally forgotten about until it needs replacement due to stretching or degradation through age.

However, that innocuous looking piece of rubber has a far greater effect upon the sound of a turntable than most of us realise. After all, a drive belt is just a drive belt right?

Well, unfortunately, the answer is no they are not.

Origin Live have recently

introduced a new range of upgrade belts to fit their own series of decks and a lot of other designs as well.

After a great deal of research they are understandably tight-lipped about the choice of material for their new product – only saying that it is a special rubber not normally found in drive belts.

When I took it out of the box I was aware of a different texture to that of my standard Linn belt but could not identify any other difference.

I fitted it to my Sondek and started listening. My first impression

was that the sound was smoother but it seemed lacking a little in dynamic range so I left it running for an hour and came back.

This time I found that the sound had noticeably changed with a more expansive bass, more spacious mid-band and smoother treble. Imaging seemed improved with a larger and more defined soundstage and surface noise seemed reduced. I assume that this is due to the lack of snatch from a belt that doesn't stretch and flex as much as a standard one meaning the platter rotates more smoothly.

The Upgrade Belt costs £29.60 and is one of the most cost effective changes that I have made to this deck. Changing back to the original belt left me with a sound that felt jagged and almost uncouth in comparison. I suggest you buy one and try it. I am both amazed and impressed at the improvement it makes to the sound of my Sondek.

TB

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SOUNDBITES



ORTOFON LW-7N HEADSHELL CABLES £45.00

Although it is generally accepted that better quality interconnects, speaker cable and mains leads all play their part in improving the sound from our hi-fis, the short cables that connect the cartridge to the headshell pins in a pick-up arm are rarely given much consideration.

Since this is the first wire that

the very delicate signal from a cartridge passes through it is something of an oversight to spend money on good leads from the base of the arm and not to include the headshell leads in this upgrade process.

Ortofon have recognised this and offer a range of three headshell leads priced from £35 to

£85 a set.

The £45 LW-7N leads under review here are a hybrid design consisting of ultra high purity copper wire of both 6N and 7N purity (99.99999% purity for the 7N).

The blend is made up of 3 x 0.26mm strands of 7N and 16 x 0.10mm of 6N copper. The end of the wire is fastened by a rhodium-plated terminal.

I tried these out on my Linn Ittok LVV arm. Replacing the original components took a matter of moments with a pair of small pliers.

Once in place the initial sound was a definite improvement over that provided by the original leads and improved quite drastically over the next few hours of use.

I felt that all aspects of the sound improved, with the blackness between sounds being darker and more consistent.

Singers seemed to be more of a three dimensional entity and the micro-detailing that fleshes out a sonic image was improved.

If you have an arm with headshell leads then it is a very worthwhile and cost effective exercise to upgrade them.

I am now sitting here wondering why I never thought to do something as simple as this before.

TB

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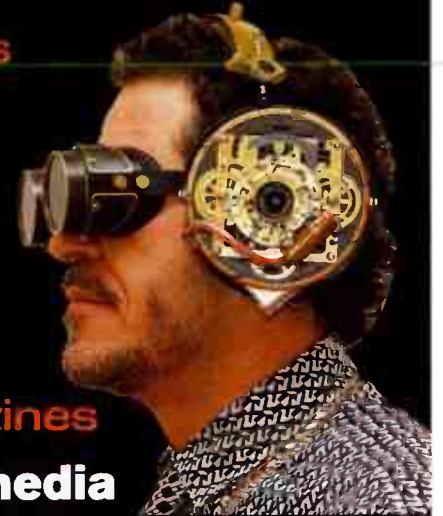
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Record Store Day

Beleaguered High Street record shops are striking back with the help, says Paul Rigby, of Record Store Day which offers vinyl rarities and live performances.

Created in 2007, Record Store Day (RSD) initially saw the coming together of hundreds of independent stores in the USA and almost as many in the UK and Europe to celebrate...well, partly that they still existed in this internet-dominated retail sector, but also to commemorate their status and history.

They do this by working with artists to rejoice in the art of music. On a single designated day every year you can buy limited edition, special vinyl and CD releases and various promotional products made exclusively for the day and for High Street retailers only (internet retailers are not supposed to sell them on the day – many try, though)

Meanwhile, hundreds of artists appear and perform at stores to aid the shops in drumming up a bit of extra business.

Many shops see long queues trailing from their door before opening time as eager record collectors aim to purchase their particular rarity of choice

The atmosphere is often one of a rather desperate January sale, as the opening of the shop signals the frantic scramble to the RSD goodies. The value for many of these rarities can grow immeasurably.

So what sort of goodies do these collectors go for?

There are dozens to choose from. We decided to wait until after the event in order to show you a small, vinyl-related, selection because there tends to be little information available before the actual day.

This year, RSD (www.recordstoreday.co.uk) took place on April 19. Book your place in the queue for next year's event!

RECORD STORE DAY RARITIES

THE ACTION! The Singles Box set (Demon)

Current value: £140

A box set featuring eight 7" singles within picture sleeves, a 28-page booklet including previously unseen photographs and memorabilia, an A2 poster and sticker and download card. British Mod band of the 1960s, they enjoyed little success but influenced many.



TIM PARIS Dancers (My Favourite Robot)

Current Value: £25

Contemporary DJ, producer, musician, Paris populates this white vinyl release with electronica-infused dance grooves.

HALF JAPANESE Volume 1: 1981-1985 (Fire)

Current Value: £55

Following on from the deluxe reissue of cult band Half Japanese's first album 'Half Gentlemen Not Beasts' for last year's Record Store Day, this box set is the first of four containing three vinyl LPs of the next set of Half Japanese albums: 'Loud' (1981), 'Our Solar System' (1984) and 'Sing No Evil' (1984).



SEX PISTOLS Never Mind The Bollocks Alternative Takes (Universal)

Current Value: £100

A numbered box set, including seven 7" singles sporting rare sleeve art and featuring alternative album takes, plus two 1977 studio mixes of Belsen Was A Gas, including an unreleased version.

PLACEBO 1973 (Music On Vinyl)

Current value: £20

Not the nineties rock band but a Belgian seventies jazz fusion outfit signed to Harvest and CBS. Lead by Marc Moulin (the first in his country to own a Moog synthesiser) Think Herbie Hancock and Miles Davis.



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ALMARRO 5012A VALVE IN INTEGRATED AMP	Suffolk	£1,500
ANATEK CM0.5 PASSIVE PREAMP WITH REMOTE CONTROL	Suffolk	£450
ARIAND PRO845 MK 1V SINGLE-ENDED INTEGRATED VALVE AMPLIFIER	Kent	£699
ATMA-SPHERE S30 MK1 OTL VALVE POWER AMP	Wales	£1,750
AUDIO INNOVATIONS 500 INTEGRATED VALVE AMPLIFIER WITH BUILT IN PHONOSTAGE	Suffolk	£600
AUDIO NOTE M2 PHONO VALVE PREAMPLIFIER	Kent	£1,650
CANARY AUDIO CA-608 VALVE LINE INTEGRATED AMPLIFIER	Suffolk	£1,050
CEC AMP3300 INTEGRATED SINGLE-ENDED AMPLIFIER	Kent	£350
COPLAND CSA 29 INTEGRATED AMPLIFIER	Suffolk	£950
COUNTERPOINT SA20 HYBRID 220 WATT MOSFET VALVE POWER AMP - UPGRADED	Suffolk	£900
CYRUS XPD AMPLIFIER IN QUARTZ	Suffolk	£700
EAR 834 L LINE VALVE PREAMPLIFIER	Kent	£575
GAMMA AEON REFERENCE- ANNIVERSARY EDITION SINGLE-ENDED VALVE AMPS	Suffolk	£1,950
GAMMA ERA REFERENCE VALVE PREAMP	Suffolk	£850
GAMMA SPACE REFERENCE VALVE AMP 300B	Suffolk	£1,400
GRAAF GM 13.5B MK1 - LINE VALVE PREAMPLIFIER	Wales	£1,400
HEART BEAT 300B SINGLE ENDED VALVE MONOBLOCKS	Suffolk	£950
HEART LINESTAGE VALVE PREAMP	Suffolk	£400
KRELL KRC2 PRE-AMPLIFIER WITH KPE PHONOSTAGE, ALL RECAPPED AND BOXED	Suffolk	£1,500
KRELL KSL 2 PREAMP, BOXED	Suffolk	£985
PAIR OF LEAK TL12+ POWER AMPLIFIERS, SERVICED AND WORKING	Suffolk	£1,000
LEAK STEREO 20 VALVE AMPLIFIER WITH MAJOR UPGRADES	Suffolk	£800
LEAK TL12 1 MONOBLOCKS, SERVICED	Suffolk	£5,000
MARK LEVINSON ML 380 PREAMP	Suffolk	£1,950
MICHELL ALECTO MK1 MONOBLOCKS	Wales	£750
MICREX M1 VALVE/MOSFET HYBRID MONOBLOCK AMPS	Suffolk	£1,200
MUSICAL FIDELITY M6i INTEGRATED AMP- NEW, UNUSED	Suffolk	£1,700
NAIM NAC 62 PRE AMPLIFIER	Suffolk	£300
NIGHTINGALE ADM-32 INTEGRATED VALVE AMPLIFIER	Suffolk	£2,000
NVO SPA ONE PHONOSTAGE	Suffolk	£2,222
PARASOUND MC275 POWER AMP	Suffolk	£375
PERRAUX SM3 PREAMP WITH BUILT-IN PHONOSTAGE	Suffolk	£500
ROGUE 99 VALVE PREAMPLIFIER WITH REMOTE CONTROL	Suffolk	£995
ROKSAN KANDY KMA 2/3 MKIII POWER AMPLIFIER	Kent	£450
TECHNICS SU-C800UM2 PRE AMP & SE-A900SM2 POWER AMPLIFIER	Suffolk	£500
TRAFOMATIC EXPERIENCE ELEGANCE 6550 VALVE AMP	Suffolk	£2,300
TRAFOMATIC EXPERIENCE LINE ONE VALVE PRE-AMP	Suffolk	£1,400
TRI TRV-84HD HEADPHONE AMPLIFIER	Suffolk	£750
TRILOGY 900 VALVE PREAMP WITH BUILT-IN MM PHONO STAGE	Suffolk	£350
TRILOGY 948 POWER AMP - VALVE AMPLIFIER	Suffolk	£750
VERITAS P400 240WATT POWER AMP	Suffolk	£700
YAQUIN MS 300B SINGLE ENDED INTEGRATED VALVE AMP	Suffolk	£980
WLM PASSIVE CONTROL	Suffolk	£500

CD PLAYERS

AUDIO NOTE CD 2 1X/II CD PLAYER	Suffolk	£1,750
AUDIO NOTE CD ZERO VALVE CD PLAYER	Suffolk	£900
AUDIONOTE DAC 1 SIGNATURE	Suffolk	£550
CALYX AUDIO 24/192 DAC	Wales	£1,200
CARY DAC 100T	Wales	£1,900
CLASSE 5 CD PLAYER	Suffolk	£500
COPLAND CDA823 CDPLAYER	Suffolk	£1,000
EASTERN ELECTRIC MINIMAX VALVE CD PLAYER	Suffolk	£800
LECTOR CDPO-6T VALVE CD PLAYER	Kent	£650
LECTOR DIGITUBE 24/96 VALVE DAC	Suffolk	£795
MERIDIAN 500 CD TRANSPORT MKII	Suffolk	£500
MICRO SEIKI CD PLAYER	Suffolk	£800
NEODIO NR22 HD CD PLAYER - LATEST SPEC- USB SOCKET	Suffolk	£5,000
PINK TRIANGLE ORDINAL DAC	Suffolk	£340
AUDIOLAB 8200CD CD PLAYER OLED DISPLAY	Suffolk	£450
SIM MOON EQUINOX CD PLAYER	Suffolk	£600
STELLO DA220 DAC NEW OLD STOCK- 1 YEAR GUARANTEE	Suffolk	£1,000
WADIA DIGIMASTER X32 DAC	Suffolk	£400

MISCELLANEOUS

NAGRA IV-S STEREO REEL TO REEL	Suffolk	£1,400
REVOX A700 4 TRACK REEL TO REEL	Suffolk	£750
REVOX B77 2 TRACK REEL TO REEL - SERVICED	Suffolk	£500
FANFARE FT1 TUNER WITH REMOTE CONTROL	Suffolk	£300
KRELL HTS HOME THEATRE STANDARD	Suffolk	£850
STAX LAMBDA SIGNATURE HEADPHONES WITH SRM-T1 VALVE ENERGISER/AMP	Suffolk	£900
TRY TRV 84HD VALVE HEADPHONE AMP	Suffolk	£750

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STAX SR-007 Omega Reference System. i.e. SR-007 electrostatic ear-speaker with matching SRM-00711 direct coupled dual triode vacuum tube energiser. Original owner, absolutely new. £1800. Tel: 01505 346 791 Renfrewshire)

HI-FI NEWS magazines. First 4 1/2 years from issue one June 1956 to Jan 1961. In excellent condition. £100. Tel: 07946 522 2644

MISSION FREEDOM 752 cabinet and drive units in first class condition. Flawless 90dB efficiency. Room too small. £345 ono. Tel: 020 7263 5702 after 7pm.

PURESOUND A30 valve amp. Dealers demo model. Excellent condition. New driver input and rectifier valves fitted. £630 for quick sale. Tel: 07716 139 026

ARCAM FMJ CD33, boxed, £500. Focal Profile 908 standmount speakers (£1300) £450. Exposure Classic 7/8 amp, £250. Exposure 17/4 amp, £500. Tel: 07531 835 575 (Glos)

PS AUDIO GCC 250 watt Class D stereo control integrated amplifier. Cost £2695. Bargain, £500. Jolida JD102B, 25 watts, EL84 valves, integrated amp. £300. Wilmslow Audio Design stand mounted speaker. Fostex full range unit, 94dB. £200. Wilmslow Audio Rhythm King speaker, £500. Tel: 020 8531 5979

SPENDOR S3/5R2, black, £400. REL T3 sub, black, £200. Sugden A21a Class A £950. Linn Pekin tuner, black, £150. All unmarked and working gloriously. Tel: 01952 728 773 (Shropshire)

LUXMAN WL313 tuner, £70. Musical Fidelity E100 Electra amplifier, E600 CD, E50 tuner, £575. Nakamichi BX2 cassette, £80. DBX 224 NR decoder encoder. JVC AG 7330P SVHS professional VCR, £50. Tel: 01708 457 691

WANTED: WORLD Audio Kel 80 amp, working or not. For sale or Ex. N.O.S. boxed, tested power valves. 3 unused 6C33C/B, £20 each. 2 pairs 6C33C/B used, £25 the pair. Pair N.O.S. GE6AS7GA triodes, £30 pair. 2 Quads N.O.S. S.T.C. 12E1, £40 Quad. 2 pairs N.O.S. S.T.C. 12E14, boxes, £25 pair. 4 Mullard N.O.S. PZ30 F.V. high current rectifiers, £7 each (boxes). The STC replace Mullard EL34, 15% more power, adjust bias to suit. (Ruggedised) Might P/Ex for valve amp parts. W.H.Y? Any transformers pair? Monoblocks chassis? Amp mad Stan: Please Tel: 020 8451 0353 (London)

MIRCO MEGA Stage 6 CD player. Excellent condition. £199 ovno. Meridian CD player, working (just) with remote. Model 207. Offers. Sony TC-WE 475 cassette £25. Pick-up only. Tel: 01928 725 877 (Chester)

ESOTERIC CD/SA/Player, 3 years old, mint, silver, Hi-Fi World standards rated. New, £4500. Sell for £1495. Superlative sound. Tel: David 07729 600 847 (West Sussex)

AKG Q701 Quincy Jones Signature Line headphones in white. 1 1/2 years old. Mint condition. Boxed. (£340) New. £170. Tel: 07905 348 812 (Watford)

HI-FI MAGAZINES: Stereophile, year 2001 to 2012. Hi-Fi News, year 1992 to 2010. Hi-Fi Plus, issue No.8 to 84. Hi-Fi World. Hi-Fi Choice. Almost 600 total issues. Bargain at £150. Tel: 01782 615 420 (Staffs)

AUDION SILVER Night 300B single ended integrated five line input with Border Patrol power supply. T.J Mesh plate valve. £950. Mission Freedom 752, 90dB, £350. All excellent. Tel: 020 7263 5702

FOR SALE: Set of classical 78rpm records. Visually ok, appear to be fine. Set consists of 23 12" discs. (A set of 4, a set of 5 and a set of 2, sets boxed but boxing not brilliant.) And a further 4 discs at 10". Best offer gets them. Collection only, due to the weight and fragility, from Stratford-upon-Avon. Cash on collection. Please send SAE for full list of discs. Harry Lomax, 2 Lea Court, Sandfield Road, Stratford-upon-Avon, CV37 9AJ

MUSICAL FIDELITY A308CR CD Player £695: As new (except the price!) Attractive all silver appearance. These were £2000 when new. Owned by me from new, less than 100 hours use, still pristine, unmarked (kept covered by a dust sheet) as new, with original box, remote and instructions. Protected in an audio rack in my smoke and pet free home. Very happy to demonstrate. Mike (Cheshire) 07500 804700 michael.yates7@ntlworld.com

ATACAMA EQUINOX hi-fi rack in piano black with glass shelves, 5 shelves and not 4. In mint condition. Cost £430. £150. Tel: 07905 348 812 (Watford)

WANTED: DENON remote RC-646, Pioneer remote ADX 7456. Remote for Teac mini system CR-H227i. Tel: 01708 457 691

MUSICAL FIDELITY A3.2 RDS Tuner £295: As new (except the price!). Attractive all silver appearance. Owned by me from new, less than 100 hours use, still pristine, unmarked (kept covered by a dust sheet) as new, with original box, remote and instructions. Protected in an audio rack in my smoke and pet free home. Very happy to demonstrate. Mike (Cheshire) 07500 804700 michael.yates7@ntlworld.com

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SOLID STATE AMPLIFIERS

MUSICAL FIDELITY A3CR POWER AMP 1 OWNER	MINT/BOXED	£595
MICHELL ARGO PRE AMP 1 OWNER 12 MONTHS OLD	MINT/BOXED	£299
DPA 50S 3 BOX PRE AMP/PHONO STAGE/PSU	EXCLT	£895
DPA 50S SINGLE BOX PRE AMP	GWO	£395
DPA 50S POWER AMP LATE MODEL EX.DEM	BOXED	£795
CHAPTER AUDIO 2+ POWER AMP	BOXED	£2750
PRIMARE I-21 INTEGRATED (TITANIUM)	MINT/BOXED	£595
KINGREX V3 DIAMOND BUFFER PRE AMP 1 OWNER	MINT/BOXED	£199
SONY TA-N220ES 2/3/4 CHANNEL POWER AMP 1 OWNER	EXCLT	£275
KRELL EVOLUTION 402 STEREO POWER AMP LITTLE USE	EXCLT/BOXED	£6750.
DENSEN B200 PRE/GIZMO & B300XS POWER AMP (ONE OWNER)	MINT/BOXED	£1850
MARANTZ PM11 S2 INTEGRATED (£3300)	EXCLT	£1795
DENON PMA-QS10II 30 KILO INTEGRATED (ONE OWNER)	MINT/BOXED	£995
BEL CANTO PRE-3 & S300 POWER AMPLIFIER	MINT/BOXED	£1750
DENSEN B200 PRE AMP & GIZMO REMOTE (ONE OWNER)	MINT/BOXED	£895
LYNGDORF SDAI 2175 INTEGRATED	EX.DEM/BOXED	£1249
H-CAT P-12A PRE AMP (£2500?)	DEM	£1250
PS AUDIO GCA 100.5 POWER AMP	MINT/BOXED	£1795
BEL CANTO PRE-1 & REMOTE	EXCLT/BOXED	£995
AUDIO INNOVATIONS 1000 SILVER PRE-AMP	EXCLT	£695
TRIO L07-C PRE AMP WITH MM/MC/STAGE(RARE)	EXCLT	£695
TRIO L05-M MONOBLOCS (VERY RARE)	DEM	£695
ADVANTAGE i200 INTEGRATED AMP (£1800?)	EXCLT/BOXED	£895
MARANTZ MA-700 MONO'S VERY RARE FEW HOURS DEM USE	EXCLT/BOXED	£495
MERIDIAN 501 PRE AMP	MINT/BOXED	£395
JOHN SHEARNE 2.5 INTEGRATED AMP	EXCLT/BOXED	£395
JOHN SHEARNE 3.5 POWER AMP	EXCLT	£395
DENON AVC A11 SR AV AMP (GOLD) (ONE OWNER)	EXCLT/BOXED	£495
MARANTZ LAYLA ALL IN ONE (ONE OWNER LOVELY!)	EXCLT	£295
MARANTZ ARCH ALL IN ONE INC.LOUDSPEAKERS	EXCLT	£275
NAKAMICHI AMPLIFIER-2	EXCLLT	£149

CD/TRANSPORTS/DACS

LINDEMANN 680 SACD/CD PLAYER (SUPERB)	EXCLT/BOXED	£2650
MUSICAL FIDELITY A1008 CD PRO 1 OWNER	MINT/BOXED	£1150
ALCHEMIST KRACKEN 2-BOX CD PLAYER 1 OWNER	MINT	£750
DPA TRANSPORT WITH DELTRAN	GWO	£475
AUDIO ALCHEMY DDE V 1.0 DAC	EXCLT/BOXED	£99
KENWOOD DX-9010 HEAVYWEIGHT TRANSPORT 1 OWNER (RARE)	EXCEPTIONAL	£595
STELLO CDA-320 24 BIT/44/96/192 CD PLAYER WITH DIGITAL INPUTS	EXCLT/BOXED	£695
TECHNICS SL-PS7CD PLAYER (ONE OWNER)	EXCLT/BOXED	£395
INCA TECH KATANA RCA/XLR OUT	VGC	£395
THETA CARMEN CD/DVD TRANSPORT	EXCT/BOXED	£795
THETA DSP PRO GEN III RCA/AES/& GLASS IN RCA/BALANCED OUT	EXCLT/BOXED	£795
THETA DATA UNIVERSAL CD/DL PLAYER AT&T(ONE OWNER RARE)	EXCLT/BOXED	£495
MERIDIAN 500 TRANSPORT	EXCLT/BOXED	£395
SONY XA-1200ES MULTI CHANNEL SACD PLAYER	GC.	£299
VACCUUM STATE JLTI SACD/CD PLAYER (LAST ONE £1300)	NEW/BOXED	£695
VACCUUM STATE LOGIC JLTI SACD/CD PLAYER	DEM/BOXED	£595
MICROMEGA STAGE 2	EXCLT	£249
MERIDIAN 203 DAC	EXCLT	£175
PIONEER CLD 925 LASER DISC PLAYER (ONE OWNER FROM NEW)	MINT/BOXED	£249
CAMBRIDGE AUDIO 740C CD PLAYER (ONE OWNER LITTLE USE)	EXCLT/BOXED	£275

VALVE AMPS

ROGUE AUDIO M-150 MONOBLOCS BOXED	N.O.S	£2995
ART AUDIO INTEGRA EL-34 INTEGRATED AMP (ONE OWNERSUPERB)	EXCLT	£1150
AUDIO RESEARCH VS-110 POWER AMP LITTLE USE (ONE OWNER)	MINT/BOXED	£2195
PAPWORTH M-100 MONOBLOCS ONE OWNER FEW MONTHS USE	MINT/BOXED	£2750
MATISSE REF.2 BOX PRE AMP MM/MC (ONE OWNER.)	EXCLT	£2995
PATHOS INPOWER CLASS A HYBRID MONOBLOCS (SUPERB £9K?)	EXCLT	£4250
AUDIBLE ILLUSION MODULUS 3a 2 BOX PRE LITTLE USE	MINT/BOXED	£2195
ROGUE AUDIO 66 MAGNUM REMOTE CONTROL PRE	EX.DEM	£795
ANTIQUE SOUNDLABS A-1009 845 MONOBLOCS EX.DEM	SERVICED/VALVED	£2995
ANTIQUE SOUNDLABS LH-01 PRE-AMP H/PHONE AMP	EX.DEM	£375
ANTIQUE SOUNDLABS MINI PHONO 2 BOX	VGC	£295

VINYL

NOTTINGHAM ANALOGUE MENTOR T/TABLE WITH HEAVY KIT	EXCLT	£1695
WILSON BEN. CIRCLE TURNTABLE (1 OWNER 25 HOURS USE)	AS NEW/BOXED	£895
NOTTINGHAM ANALOGUE MENTOR TONEARM & COLLAR	DEM ONLY	£495
MISSION 774 ARM TWO WANDS SILVER WIRED ETC	EXCLT/BOXED	£425
AUDIO INNOVATIONS 1000 MC STEP UP	EXCLT/BOXED	£475
CARTRIDGE MAN MUSIC MAKER II FEW HOURS DEM USE	EXCLT	£450
PINK TRIANGLE LPT/RB-250/CART EXPORT SPEC WITH PSU	VGC	£595
LINN LP-12 CIRCUS/TRAMPOLIN/VALHALLA (JUST SERVICED)	VGC.	£695
VOYD VALDI 2 MOTOR AND HUGE SPLIT PHASE PSU	BOXED	£695
DENON DP-1200 LTD./SHURE CARTRIDGE DIRECT DRIVE CLASSIC	VGC	£595
MICHELL ISO PHONO STAGE & HERA HUGE POWER SUPPLY	EXCLT	£345
TOM EVANS MICRO GROOVE	EXCLT	£345
MISSION 774 TONE ARM UPGRADED LEAD	VGC	£345
ANTIQUE SOUNDLABS MINI PHONO (2 BOX WITH NOS MULLARD VALVES)	EX.DEM	£349
DENON DL-30L TURNTABLE ARM AND CARTRIDGE	EXCLT	£199

LOUDSPEAKERS

AUDIO ARTISTRY DVORAK 2 PANELS 2 SUBS & CROSS OVER (SUPERB)	EXCLT	£1850
MISSION CYRUS CLS70 ICONIC STANDMOUNTS 2 OWNERS	MINT/BOXED	£475
ALR JORDAN CLASSIC 2 BIRCH VENEER (NEW BOXED £800+)	NEW BOXED	£475
TANNOY CPA-12 PROFESSIONAL SERIES	EXCLT	£895
B&W 802 MATRIX SERIES-3 & SOUND ANCHOR STANDS (ONE OWNER)	EXCLT	£1795
FAB AUDIO FAB-1 FERRARI RED (DEM USE ONLY)	BOXED	£4795
ROGERS LS35A 15 OHM MATCHED PAIR	VGC	£995
SPENDOR LS35A 11 OHM MATCHED PAIR	EXCLT	£995
ART AUDIO PRECISION MONITOR (FLOORSTANDERS PIANO BLACK 6K+)	EXCLT/BOXED	£2795
B&W 801 MATRIX SERIES-2 IN WALNUT (ONE OWNER)	EXCLT	£1995
MARTEN MILES CHERRY (8K+ ONE OWNER FROM NEW)	SALE!	£2995
SNELL C MKIV AMERICAN WALNUT (SUPERB)	EXCLT	£1095
PODIUM 1s FEW WEEKS USE ONLY (£6000? NEW)	MINT	£2295
ENSEMBLE FIGURA (SOLID ALUMINIUM £5800?) (ONE OWNER)	EXCLT	£2995
HALES TRANSCENDENCE 5 HUGE FLOORSTANDERS (2 OWNERS)	EXCLT/BOXED	£1795
AURUM CANTUS VOLLA (LAST PAIR)	DIS.BOXED	£1695
PROAC STUDIO 150 (PREMIUM YEW FINISH)	VGC	£595
ACOUSTIC REFLEX (CONCRETE BAFFLE HORN LOADED MONSTERS)	EXCLT	£495
AURUM CANTUS MUSIC GODDESS (£2500)	DEM	£1595
AURUM CANTUS LEISURE 3 SE BRAND NEW BOXED (LAST PAIR £1350)	NEW/BOXED	£895
AURUM CANTUS BLACK ORCHID BRAND NEW BOXED (LAST PAIR £1300)	NEW/BOXED	£895
AMPHION NEON 1 (1 OWNER)	EXCLT	£795
THEIL CS 1.5 (ONE OWNER FROM NEW)	MINT BOXED	£995
MIRAGE M6 SI HUGE BI-POLAR FLOORSTADERS (£6.5K?)	VGC	£1995
MIRAGE BPS-200 SUBWOOFERS (2 OFF) & LX-3 CROSSOVER UNIT	VGC	TBA
HARPER QUARTETO FABULOUS FLOORSTANDERS (£4000)	SALE!	£1695
BOLZANO VILLETTRI BV3003 & BV SUBWOOFER FANTASTIC!	SALE!	£2995
CURA CA-30 FLOORSTANDERS (£3000 ONE OWNER FROM NEW)	EXCLT	£995
T&A TMR-100 SIZEABLE GERMAN TRANSMISSION LINES	SALE!	£495
SEQUENCE SONATA-300 FLAT PANEL WALL/FLOOR SPEAKERS	NEW/BOXED	£295

TUNERS/TAPE/STANDS/MAINS

MUSICAL FIDELITY A5 DAB/FM TUNER (£1500) 1 OWNER	EXCLT	£599
RICHARD GRAYS POWER COMPANY. MODEL 1280 240V UK MODEL		
8 OUTLET (RARE)	EXCLT	£1295
BLACK RHODIUM SUPERMAINS 25 BRAIDED POWER CORD	BRAND NEW	£85
BLACK RHODIUM SUPERMAINS 25 BRAIDED POWER CORD/RHODIUM		
EASY PLUG	BRAND NEW	£125
TECHNICS ST-GT650 RDS TUNER	VGC	£99
TECHNICS ST-GT550 RDS TUNER	VGC	£75
MUSICAL FIDELITY X-CANS V-3	MINT/BOXED	£275
SOUNDSTYLE ST-150 5 TIER HEAVYWEIGHT STAND (£425+)	MINT	£175

LOUDSPEAKER CABLE

BLACK RHODIUM POLAR NINJA DCT 2.9 METRE BI-WIRE PAIR	EXCLT	£650
XLO 5.2 SIGNATURE-1 4FT PAIR	DEM	£495
SONORAM PLATEAU 4 METRE VERY HEAVY HI END PAIR	EXCLT	£475
XLO REF.2.5 METRE PAIR	EXCLT	£375
BLACK RHODIUM S-300 BI WIRE 4 METRE PAIR (£240)	NEW	£175
BLACK RHODIUM S-300 BI WIRE 2.5 METRE PAIR (£200)	NEW	£100

INTERCONNECT CABLE

XLO ULTRA 0.5 METRE PAIR RCA	MINT	£149
CHORD CO.SIGNATURE 1 METRE PAIR BNC TO BNC	UNUSED	£225
ACOUSTIC ZEN SILVER REF 2 METRE XLR	VGC	£595
ACOUSTIC ZEN MATRIX REFERENCE II 1 METRE RCA	VGC	£275
ACOUSTIC ZEN MATRIX REFERENCE II 1 METRE RCA	VGC	£275
HARMONIX HARMONIC-STRINGS HS-101 1METRE XLR	DEM/BOXED	£299
ANALYSIS PLUS SOLO CRYSTAL OVAL 0.5 METRE	EXCLT	£225
VAN DEN HUL MCD102 MKIII 1 METRE XLR TO RCA	EXCLT	£75
VAN DE HUL MCD 102 MKIII 1 METRE RCA	EXCLT	£65
AUDIOQUEST/AUDIOTRUTH EMERALD 1 METRE PAIR	EXCLT	£149
MERLIN CHOPIN 1 METRE RCA	MINT	£75

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MUSICAL FIDELITY
A308CR Pre-amplifier
£695: As new (except the price). Extremely well reviewed. Attractive all silver appearance and was excellent value even when new at £1500. Owned by me from new, less than 100 hours use, still pristine, unmarked (kept covered by a dust sheet) as new, with original box, remote and instructions. Protected in an audio rack in my smoke and pet free home. Very happy to demonstrate. Mike (Cheshire) 07500 804700 Email: michael.yates7@ntlworld.com

NAKAMICHI CR2E cassette deck £110 ono. everything works as it should. lovely sound. phone John on 07788174437 after 7pm. Kettering. Northants. buyer collects. can be demonstrated before sale.

AUDIOSMILE KENSAI speakers for sale. Immaculate and in beech. Kudos speaker stands included in the price of £800. Call Martin on 07722 871945 or email me at martin.summers@me.com

ART STILETTO speakers (pair), slim floorstanders in maple finish, wonderful sound and in excellent condition with original packaging, grills etc. £475 ono. Tel: 01925 572936 or Email: whites13@sky.com (Cheshire).

TECHNICS BX404 cassette deck never really used, in storage, works fine, Dolby C, 2 mic inputs etc £70. DPA Deltec interconnects, half metre pair in white £40 Rothwell attenuators -6dB gold plated barrels, rare, £30. Sherwood 9 band stereo graphic EQ £30 Tel: Mike 01902-636302 Walsall, J10/M6

POWER SUPPLY for Class A amplifiers, self contained, suits John Linsley Hood's or any low power class A amplifier, £279. Pair of used SEAS 10 inch drivers, £99. Tel:- 0207 499 8729.

1X QUAD 303 capacitor set, 4xQuad gold speaker banana sockets, 1xQuad main psu upgraded board. all unused and mint condition. £50 including postage. 1xRega R200 arm excellent condition needs re-wire plus 1 R200 for spares inc 4 headshells. £65 including postage. Tel: Will 01382 644815 Dundee

REGA P7 Turntable with Rega RB700 arm Rega power supply and Reson Mica cartridge. Original packaging £575.00 . Telephone Mark 01392 420316

VPI SCOUT 2/JMW 9T/ Linn Klyde. £1,750 o.n.o. 02084649055

SEPARATES SYSTEM. Pro-ject turntable, Yamaha TX590RDS tuner, Onkyo DX7333 CD player, Yamaha KX393 cassette player, Rotel amp RB971 and 2 Quad 77-111 speakers. £600 01380 830463 (Wiltshire)

WORLD AUDIO WD25T EX Loudspeakers. SEAS Millennium tweeters. Can demo, collection only. £600. Quad FM4 tuner £90. Goldring 1042 £95. All ono. Birmingham 0121 423 1576, or 07790 009854

WANTED: TOP quality Hi Fi separates and complete systems, Naim, Linn, Cyrus, Meridian, Audio Research etc, fast, friendly response and willing to travel/pay cash Please call/text me on 0781 5892458

MISSION 753 FREEDOM speakers in rosewood, i have had these from new, they are a matched pair in perfect working order and condition £ 349. Tel: Derek 07711741860 West Sussex .

HARBETH P3ESR finished in beautiful eucalyptus. They come with Something Solid stands, the ultimate setup for P3's. Sonically perfect and aesthetically stunning. £1000 ono Contact Mike 01597823624

IXOS GAMMA Encore 1002 silver plated oxygen free copper phono leads 1 metre, as new £20. Tel: Derek 07711741860 (West Sussex)

CLASSIC GALE 401 speakers with chrome ends. Fully reconditioned. Original paperwork and boxes. First reasonable offer secures. Sadly they must go. Tel: 01825 722936 (Sussex) Email: spartridge37@btinternet.com

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ARCAM CD37 CD/SACD player (black) £699. Roksan Kandy K2 integrated amplifier (silver) £550 and K2 CD player (silver) £550. Both only months old with latest remote control RMX-111. Denon TU1800 DAB/FM tuner (silver) £175. All items in immaculate condition with original boxes. Tel: 023 8073 8935 or Email : golf3385@hotmail.co.uk

NAIM NAIT 5si bought 30/8/13 for use in second system Hardly used as new Boxed instructions Remote 600-00 Marantz 331 professional CD player good condition and working order instructions remote 150.00 0772 962 0621.

SONY MINI Disc player. MDS JB 930 (UK Special Edition) with remote and manual in mint condition £120. Tel: Derek 07711741860 West Sussex.

EAR 509, Mk2. Pair of mono valve amps, 100W per channel. Very good condition, late 1980's, little use. Can demonstrate. Buyer to pay postage or collect from Berkshire. £2000. Tel: 07527567829 E-mail abaird2011@btinternet.com.

CYRUS CD8X. Mint condition and it is in perfect working order. Smoke, children and pet free environ. Quartz / Silver. Boxed in manufacturer's original carton and packaging. Power lead and Phono leads unused. Remote control. In the late 00s this CD player won successive 5* accolades and Best CD Player awards from What HiFi, and was an enhanced version of the CD8. Nottingham. 07783 327 689 & 01159 877 567. £290 ono (P&P £20). Email: rayspink@supanet.com.

WANTED FAULTY or non working Quad 34 and 44 preamps, Denon MC transformers AU310 or AU320. Contact Mike 01758 613790.

QUAD 405 II refurbished & up-graded by DaDa Electronics £350 ono. Musical Fidelity A1 good condition new volume pot and re-capped £175 ono ring Andrew on 07791529128 or 020 72528122.

NAKAMICHI DR-3 cassette deck (only 6 tapes ever played/rec.) including 10xTDK SA90-2xTDK MA90 blank tapes unopened & 2x1m pairs of QED silver spiral interconnects (for play/rec.) £165 contact John on 01202 515474 or email johnlangley17@talktalk.net

MUSICAL FIDELITY F15 100W Class A power amp £550, A5CR pre £450. In full working order with remote, interconnects boxes & manuals. can demo. Buyer collects. Tel 07712718973 (Epsom Surrey)

REGA P7 Turntable with Rega RB700 arm Rega power supply and Reson Mica cartridge. Original packaging £575.00. Telephone Mark 01392 420316 (Exeter)

NEXT MONTH AUGUST 2014 ISSUE

QUAD 9AS ACTIVE LOUDSPEAKERS

Quad's latest active mini-monitors are nothing if not versatile - boasting 100 Watts of Class A/B amplification per speaker, volume control, a 24bit/192kHz DAC as well as USB, S/PDIF digital and RCA analogue inputs. But does their sound match the comprehensive specification? Read our review in next month's Hi-Fi World to find out.



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.

Also, we hope to bring you –

SONY WALKMAN NWZ-ZX1
YAMAHA SOAVO LOUDSPEAKERS
ORTOFON QUINTET BRONZE MM CARTRIDGE
JADIS I-35 VALVE INTEGRATED AMPLIFIER
NAIM SUPERNAIT 2 INTEGRATED AMPLIFIER
AUDIOLAB Q DAC/MCRU LDA LINEAR POWER SUPPLY
CENTRANCE MASTERCLASS 2504 LOUDSPEAKERS/DACMINI PX DESKTOP SYSTEM

...and much more.

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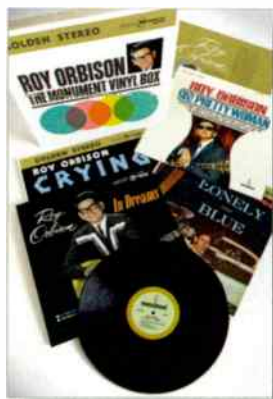
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AUGUST 2014 ISSUE - 4TH JUNE

SEPTEMBER 2014 - 8TH JULY 2014



"his appeal stemmed from his operatic-like voice mixed with rock'n'roll that talked of the romantic loser"

ROY ORBISON

THE MONUMENT VINYL BOX MUSIC ON VINYL

"I used to be asked", recalled Roy Orbison, "how would you like to be remembered? My answer was I'd just like to be remembered" He needn't have had any fear on that score, need he?

You couldn't really call Orbison a heart-throb. Not in the photogenic sense, at any rate. His appeal stemmed more from his operatic-like voice and his own blend of country/pop mixed with rock'n'roll that talked of the romantic loser, the underdog...in short, most of the frustrated young men who were listening to his music.

"I always wanted to be a singer" said Orbison of his wish for vocal success. "My father asked me when I was about six or seven, 'Do you know what you're going to be when you grow up?' I said I'm going to be a singer. It's something that gets inside of you and you don't have a lot of choice after that".

This sense of destiny lead, after a failed stint as a rockabilly singer for Sun, to Monument where he hit pay dirt with the brooding 'Only The Lonely' (1960) – where his vocal trills immediately set him apart from his competition.

"I didn't create the voice", said Orbison. "God gave me the voice, I didn't have a lot to do with that. It was just a nice gift. A very nice gift. I thank him quite often".

Monument was a large part in Orbison's success. Its large-scale, string-surgng production techniques provided an ideal base for Orbison to hit you with a tear-jerking ballad or a bluesy, up-tempo number.

Of course, his moody, shades wearing, image helped to market such songs well. That image was accidental, however.

As Orbison explained, "I was on my way to Delphin, Alabama, to play a concert and the sun was very bright. So I put on my sun shades and put the clear pair to the side. When I got to Delphin, I got off the plane and left the clear pair on the aeroplane and didn't realise it until the sun went down.

I was busy rehearsing. All of a sudden, there I was, going to perform at night in sunglasses and I felt very embarrassed. I got through the night and then, the next day, flew to Atlanta, New York and London and opened the Beatles tour (in 1963) that evening with the same pair

of sunglasses. I was still worried about that. But no-one sort of minded. That tour made The Beatles and myself in Europe and internationally, I guess. It was a really important tour. With all of these photographs, around the world, with the sun shades I was sort of stuck with an instant image".

It was while bearing the full-blown image that Orbison recorded his best known single, 'Oh Pretty Woman' (1964), written by Orbison and Bill Dees (apparently that growl, mid-song, was inspired by Bob Hope!).

This iconic track has now been utilised in the title track to an LP that has been recently curated by Orbison's sons, using old Monument-era tracks, to form the twelve song content.

It's an excellent choice of songs. 'The Crowd' (1961) and 'Leah' (1962) sees Orbison's famous singing style blossom while other tracks such as 'Bore On The Wind' (1963) and 'Evergreen' (1962) are comparatively rare as they were targeted for 'foreign' issue in markets such as the UK and Australia.

Other rarities that are also present within the package includes 'Yo Te Amo Maria' which was the original B-side to 'Oh Pretty Woman'.

The album itself, 'Oh Pretty Woman' can be found as part of a four-disc box set produced by Music On Vinyl (www.musiconvinyl.com) which was part of the Black Friday, independent record retailer day in the USA.

Despite that, copies have appeared in not quite so independent outlets such as Amazon. The slip-cased set also contains classic Orbison original LPs. 'Lonely And Blue' (1960) was, in its time, a significant LP release as it was one of the pioneers of the LP format.

Here was a white rock'n'roll artist combining that basic beat with a Nashville sound and that unique voice. It demanded attention.

'Crying' (1962) is sentimental in tone, featuring a host of quality cuts from 'Love Hurts to 'Let's Make A Memory'. Finally, 'In Dreams' (1963) is a brilliant compilation. Orbison is in great form and the track selection is superb.

A perfect combination of classic albums and limited and rare tracks, this numbered, limited edition is an instant classic collection.

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