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MAY 2016

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headphones



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BRISTOL SHOW & HI-FI WORLD AWARDS FEATURE

MAY 2016



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Paul Rigby, Jon Myles, Martin Pipe,



Don't mention black boxes. They're bringers of mass produced, nondescript hi-fi product turned out heartlessly in some corner of the world we know little about. We're inevitably talking about product that may work well and cost little, but it lacks style of any description, it is shoehorned into a cheap metal case and it sounds much like – well all its rivals that are built in exactly the same way.

Then there's Icon Audio's PS3 MkII valve phono stage. This is just the opposite. Designed in

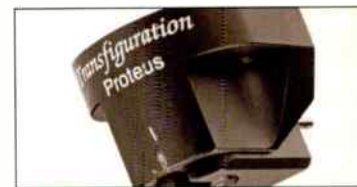
Leicester by David Shaw it is all discrete, has no transistors – and form strictly follows function. And it has form, akin to that of a MkI Land Rover. Tough, built to do a job - and do it well. Do it like no other in fact. You can see and read much more about this almost-unique phono stage on p98 of this issue. I hope it throws light – a warm glow that is – on what is possible today with vinyl.

No apologies for nostalgia, of a sort, in this issue, when we feature Spendor's new SP200 loudspeakers. Phil Swift, MD, knew we would take to these giants with not one but two 12in bass unit apiece. What you have to bear in mind here is that they produce prodigious bass as a result and need a big room to work properly, the assumption being that if you can afford their £15k price tag then you have a home large enough for them too. We have a massive 6000 cu ft listening room specifically for monsters like the new SP200s and loved every minute of having it re-arranged by them. See what Jon Myles felt on p10.

As vinyl sales spin steadily upward Paul Rigby continues to steadily spin LPs round and round, playing them with an ever increasing number of quality pickup cartridges. This month he reviews the Transfiguration Proteus MC cartridge - and you can read about it on p103.

Britain's economy is, we are told, quite healthy and this is giving inhabitants of UK plc a feel good factor that was evident at this year's Bristol Sound & Vision Show. Attendance from exhibitors and from the public were both up this year, quite markedly. And with more hi-fi and less A/V than for a decade I would guess, music remains popular with us all. And that can't be bad. I hope you enjoy reading about it all in this busy issue.

Noel Keywood Editor.



hi-fi world

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verdicts

●●●●● OUTSTANDING
●●●● EXCELLENT
●●● GOOD
●●● MEDITOCRE
●● POOR
£ VALUE

amongst the best
extremely capable
worth auditioning
unremarkable
flawed
keenly priced



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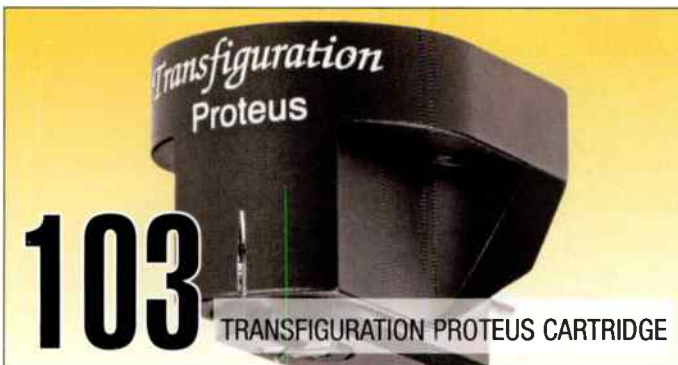
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Hi-Fi World measurement

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

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

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

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



The Icon Audio PS3 MkII phono stage under test, connected to our Rohde&Schwarz UPV audio analyser at top left, with a repeat screen beneath it.

On screen is the PS3's frequency response, produced by feeding in a pseudo-random, wideband noise signal that the analyser can either pre or post-equalise digitally, utilising our own mathematically correct RIAA equalisation time constants, to give a net-flat on screen display (rather than an RIAA curve). The UPV analysis extends from 3Hz up to 20kHz and is accurate to within 0.1dB.

The UPV also measures distortion, noise and overload levels.

Measuring the Transfiguration Proteus moving coil cartridge. It is fitted to an SME309 arm on a Timestep Evo modified Technics SL-1210 Mk2 turntable with improved servo circuitry and external power supply. The red output leads feed an unequalised measurement pre-amp – our own design – that in turn feeds a custom equalisation necessary for the JVC TRS1007 test disc (left). This half-speed cut test disc is the only one considered, around the world, as accurate and is obligatory for meaningful cartridge measurement. Third-octave analysis of a lateral sweep is made using the Clio test system.



email:news@hi-fiworld.co.uk

news

ROKSAN RADIUS 7

Roksan Audio has announced the Radius 7 turntable with Perspex construction, decoupled dual-layer plinth design and a new 'glass-effect' finish.

The decoupled drive motor employed in the Radius 7 is a new design, using trickle-down technology from Roksan Audio's flagship speed control for the Xerxes record player, the RPM. The benefit of this new system is shown by the new single diameter aluminium alloy pulley: the Radius 7 now has automatic speed change. An LED is built in beneath the motor assembly and illuminates either blue (33rpm) or red (45rpm) to show the current platter speed.

The Radius 7 boasts the same acrylic platter as the Radius 5.2 and rotates on a hardened steel bearing ball that sits within a brass housing that contains Roksan's L-7 bearing oil.

In the UK, the Radius 7 is supplied as standard with the Roksan Nima tonearm. Price is £1,900. For more information call 01235 511166 or go to www.henleydesigns.co.uk



ARCAM iRDAC-II

Arcam has released a new asynchronous USB DAC, the iRDAC-II, that can be connected to a host of different types of digital sources including asynchronous USB, Bluetooth, optical and coaxial digital. All inputs can be controlled through an included IR remote.

Replacing the original iRDAC, the new iRDAC-II sits in cast aluminium anti-vibration casework and adds Bluetooth aptX connectivity, a headphone amplifier (taken from the A49 amplifier), sample rates up to 24bit/384kHz (via USB) and DSD 128 support. Digital decoding is handled by an ESS Sabre ES9016 DAC.

Both fixed and variable line outputs are also available. Price is £495.

To discover more go to www.arcam.co.uk.



MCINTOSH PROCESSOR

McIntosh Laboratory's new MX122 processor features Dolby Atmos and will be upgradable to support DTS:X and Auro-3D. In addition to 3D audio, existing formats such as Dolby TrueHD and DTS-HD Master Audio are supported for legacy disc collections.

The MX122 is also fully compatible with modern 4K Ultra HD video sources – it can also upscale lower resolutions to 4K Ultra HD. Connections include: seven HDMI; four digital; one balanced and eight unbalanced analogue stereo; an unbalanced 7.1 multi-channel audio; three component and four composite video along with USB. Price is £6,995

For more information call 01202 911886 or go to www.jordanacoustics.co.uk



MISSION LX

Mission has announced the LX-2 standmount speaker and LX-3 floorstander – the first loudspeakers from its new entry-level range.

Both the LX-2 and LX-3 are two-way designs, combining a 25mm tweeter with one 130mm mid/bass drive unit in the LX-2 and two such units in the LX-3. Mission has designed a tweeter with a neodymium magnet and a 25mm microfibre dome, while the mid-bass unit sport cones fashioned from an "advanced fibre formulation", including a high-strength ferrite magnet.

In traditional Mission style, the LX-2's tweeter is positioned below the mid/bass drive unit. The Mission LX-2 and LX-3 are priced at £199.95 and £399.95 respectively per pair. Both models will be available in black, initially, with further finish options to follow. A smaller standmount speaker, the LX-1 and two larger floorstanders, the LX-4 and LX-5 will join the LX Series later in the summer, along with a centre channel speaker for home cinema use.

To find out more call 01480 447700 or go to www.mission.co.uk





ACT ACTIVE

ATC Loudspeaker Technology's new SCM19 Active Tower speaker system is 370mm wide and under a metre in height with a braced, sealed and curved multi-layer laminated cabinet, finished in cherry or black ash real-wood veneer.

The tweeter employs a dual suspension system with a short edge-wound voice coil in a long, narrow magnetic gap. A complex-shaped, soft-domed diaphragm is partnered with 15,000 gauss (1.5 tesla) neodymium magnet plus a black heat-treated top plate. A 5.5mm rigid alloy waveguide is also included.

The 150mm ATC SL mid/bass driver utilises a weighted, doped fabric cone with a 75mm soft dome.

The 19AT's proprietary two-way on-board amp includes protection circuits for both DC offset and thermal overload. ATC's Grounded Source output stage modules are fed by a newly developed two-way active crossover section.

The Price is £4,990 per pair and for more information, call **01285 760561** or see www.atcloudspeakers.co.uk

PUCCHINI ANNIVERSARY

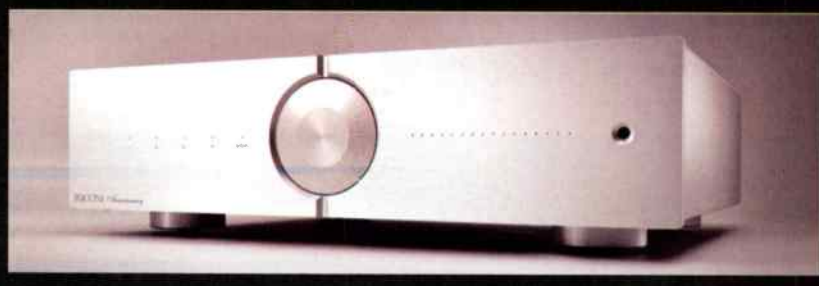
Audio Analogue has created the Puccini Anniversary, a zero feedback design developed by the AirTech R&D department within Audio Analogue.

A dual-mono design, the 700VA transformer, together with three pairs of power transistors for each channel, enables it to deliver 80W into 8 Ohms, rising to 300W into 2 Ohms.

The 7N OCC copper wiring along with gold-plated pure copper binding posts are featured. Switching and contact noise are minimised by using relay-controlled inputs with gold-plated pure copper RCA sockets, soldered directly onto the input circuit board. Separate boards are used for each stage of the amplifier with double-thickness gold-plated pure copper tracks for optimal current flow.

The central control knob serves a variety of functions: it has a push function for power and input selection and also activates an encoder that communicates with four digital, high-precision potentiometers (two per channel) for the volume. A choice of four volume 'curves' are selectable according to the speaker sensitivity. Available now, in black or silver, the price is £2,999.

For more information see www.audioanalogue.com or call 05602 054 669.



NOBLE AUDIO ROSE GOLD LIMITED

Noble Audio's top-of-the range, universal-fit, in-ear monitor, the K10U is now available for a limited time only in a black and rose gold finish. Hand-made in the USA, the K10U B&RG (Black & Rose Gold) will be strictly limited to 100 pairs and available on a first come, first served basis.

The K10U B&RG uses Noble's ten-driver configuration plus an aluminium chassis. The body comprises two finished parts: a flat black ear section and a rose gold-plated main body, featuring the Noble Audio logo. The K10 U B&RG is priced at £1,325.

To learn more see www.nobleaudio.com



DYNAUDIO EMIT

Offering a range of budget speakers with proprietary drivers, the M10 is the most compact model of the new Emit range and features a 28mm soft dome tweeter and a 140mm MSP (Magnesium Silicate Polymer) mid/bass driver, mated to a first order crossover.

The Emit M20 is a traditional bookshelf loudspeaker, featuring a 28mm soft dome tweeter but, this time, a 170mm MSP mid/bass driver, mated to a first order crossover.

The Emit M30, Dynaudio's floor-standing loudspeaker but with a relatively compact footprint, has the same 28mm soft dome tweeter but dual 170mm MSP mid/woofers with 75mm lightweight aluminium voice coils.

Finally, the compact centre channel loudspeaker, the Emit M15 C, comprises a 28mm soft dome tweeter and dual 110mm MSP mid/bass drivers. The M15 C is supplied with a detachable metal plinth that facilitates angling the speaker's dispersion upward or downward towards the listening area. To read more see www.dynaudio.com.

ASTELL & KERN TRIO

News from Astell & Kern. First the AK500 Series system which comprises AK500N network player, AK500A power amplifier and AK500P power supply. It offers CD ripping, up to 4TB of music storage, streaming from its own or external drives/devices, Internet radio, a wide range of connectivity, PCM to DSD conversion and 1000W of power output. Prices start from £13,000 for a 1TB SSD model.

Astell & Kern has also launched a limited Copper edition of its AK380 flagship DAP. Each AK380 casing is milled from a solid, 1.7kg block of copper and costs £3,299. The company is also releasing a series of IEMs via Jerry Harvey Audio. They include the Layla II at £2,299, Roxanne II at £1,599, Angie II at £1,099 and Rosie at £799.

For more information, click www.unlimited.com or call +44 0208 200 8282.



UNISON RESEARCH UNICO DUE CD

The Unico CD Due supports Bluetooth streaming and acts as a DAC, while also offering a stand-alone CD player.

The DAC portion of the CD Due is equipped with USB, S/PDIF, AES/EBU and Toslink inputs, which all route through the built-in ESS Sabre ES9018K2M DAC chip. The USB input uses XMOS technology to handle PCM signals up to 384kHz and DSD signals up to 11,2896MHz (DSD256). The more "traditional" digital inputs handle 24bit/192kHz (24bit/96kHz via Optical) PCM signals.

The CD Due's Bluetooth functionality allows for wireless streaming from any Bluetooth-enabled smart device via aptX. Internally, the CD mechanism is shielded by a thick metal cover, to avoid interference.

The valve stage includes four ECC83 valves configured in a totem-pole arrangement with balanced input.

A RC2 system remote and OLED screen is also supplied. Price is £3,200.

For more information call 01235 511166 or see www.henleydesigns.co.uk



AUDEZE EL-8 TITANIUM

Audeze has announced the UK release of its new EL-8 Titanium headphones, including a fully integrated Apple Lightning cable. There is a built-in headphone amplifier and 24bit DAC, ready for future iPhones, iPads and iPods that may have no headphone socket. Does Audeze know something we don't?

The EL-8 Titanium headphones are Apple MFi (Made For iPhone, iPad, iPod) certified.

The new headphones use Audeze' planar magnetic technology and come with an exclusive 'Cypher' Lightning cable that streams a complete 24bit digital signal through a DSP and DAC.

The built-in microphone can be used for phone calls and is Siri compatible. An accompanying Audeze app can be used to apply EQ and sound presets.

For non-Apple device compatibility, the headphones also include a standard analogue 3.5mm cable. Price is £699.

For more information see www.unlimited.com or call +44 0208 200 8282.



CABASSE MURANO

The Cabasse Murano is the smallest full range speaker in the company's Artis series.

The featured 170mm woofer is joined by a BC13 co-axial midrange-tweeter, with a 27mm dome, developed from the three-way TC23 which is fitted to the flagship speakers, La Sphère and L'Océan. The new speaker comes fitted with a new aluminium wave-guide.

The Murano is available in three different colours: glossy black, glossy wild cherry and glossy mahogany. Price is £3,499.

For more information go to

www.connecteddistribution.com or call 01242 511133.



BACKS TO THE WALL

Larsen is a Swedish loudspeaker brand whose models are designed to stand flush against the rear wall of the listening room, using it to enhance bass. This placement combines with angled drivers flanked by absorption material.

John Larsen, the designer behind the Larsen range, worked with Swedish engineer Stig Carlsson for sixteen years until Carlsson's death in 1997. Carlsson invented the patented design principle used in Larsen's speakers and was the man behind Sonab's speakers in the sixties and seventies before creating his own line, Carlsson Ortho-Acoustic.

Larsen has since expanded upon and enhanced the original Carlsson designs to produce three successor models: the entry-level Larsen 4.2 floorstander (£995), the Larsen 6.2 floorstander (£1,995) and the flagship Larsen 8 floorstander (£3,995). A range of SC surround sound/centre speakers completes the Larsen line.

To read more go to www.larsenhifi.com or call 0118 981 4238



CLEAN & CLEAR AUDIO

Clearaudio's latest addition to its Matrix series record-cleaning devices combines the same double-sided vacuum cleaning technology with a new sonic component. The effect is twofold: sonic vibrations loosen embedded groove dirt, which the vacuum element then sucks away, while adaptive cleaning brushes automatically adjust to different record diameters and thicknesses. It is also double-sided, hence the machine cleans both sides of a record simultaneously and manual functions allow you to operate the whole cleaning process at the touch of a single button or to custom select your own cleaning parameters via an operating panel. The Clearaudio Double Matrix Professional Sonic is priced at £3,250. Go to www.clearaudio.de or call 0118 981 4238 for more information.





Classic Power

Spendor has a new flagship loudspeaker in its Classic range – the SP200 floorstander. Yes, those are 12in bass units! Jon Myles gets blown away.

Hi-fi heritage is a precious thing – and not many UK brands can boast an unbroken manufacturing tradition stretching back almost half a century.

Fortunately, Spendor is one of them. And while the company may have undergone a few transitions since it was founded by Spencer and Dorothy Hughes in the late 1960s, its current head Philip Swift has a firm grasp of the company's traditions.

Which is why the Classic range of loudspeakers stands as one of its flagship products. They are truly retro in looks but use the latest developments in drive units and cabinet construction to produce their sound.

I first encountered the series when I reviewed the range-topping SPI00 R2 some three years ago (Hi-Fi World May 2013). They measured 70cm x 37cm x 43cm (H/W/D) and weighed 36kg per cabinet. Two healthy people (or a hoist) were needed to get them onto suitably sturdy and low-profile stands. But once done they sounded sublime. Tonally accurate? Not really. Thoroughly enjoyable? Definitely.

So, considering the SPI00 R2's profile and size, it was not surprising that customers repeatedly asked if they could come up with a floorstanding version. Which sounds easy in theory – but is rather more difficult in practice. Simply increasing the cabinet size can work but adds the danger of throwing the whole balance of the design out of kilter. And what would be the point if it didn't improve on the original design?

Which is why it's taken some years to develop the SP200 – that is, in essence, an entirely new addition to the Classic line-up. It sits above the SPI00 R2 and adds something different to the range without altering the overall look of the series.

So this loudspeaker still has that retro look with the cloth grille slotting into the recessed fascia of

the wooden cabinet for a flush fit. Behind the grille lies an interesting driver line-up. This is a true three-way loudspeaker, with two 12-inch bass units below a 22mm tweeter, the 7-inch mid-range unit sitting at top.

The important mid-range unit uses Spendor's EP77 polymer cone material which is claimed to be rigid but non-resonant, whilst providing a smooth frequency response. The bass units are made from Bextrene, fitted with Kevlar composite dustcaps.

This line-up requires a large cabinet and the SP200 measures 110cm x 37cm x 43cm (H/W/D) weighing in at 52kg per unit. Spendor say they use a thin wall construction, allied to a rigid baffle with carefully positioned visco-elastic damping material inside to absorb the energy from standing waves and prevent them from transferring reverberations to the cabinet.

Positioning is not that difficult – the SP200s are a sealed-box design so they can be placed close to a back wall without unduly affecting their sound. They also have three pairs of sturdy speaker connections on the rear to enable tri-amping if that suits.

SOUND QUALITY

Big loudspeakers have many benefits. Most are easy to drive, so from the start I partnered the big Spendors

with our trusty Quad II-eighty valve monoblocks. Their cabinets were aligned to fire straight down the room.

Call it luck or mere happenstance, but this was a match made in heaven. The SP200s were smooth but able to dig out detail few other loudspeakers can manage.

Playing Mahler's 'No 2' by the San Francisco Symphony, their deep low frequency clarity was impossible to fault. Bass drums didn't just rumble, they started and stopped with precision, punching me in the chest – but then receding without overhang.

Such a solid foundation allowed



Spendor's midrange unit employs the company's EP77 polymer in a cone that, they claim, is rigid but non-resonant, providing a smooth frequency response. It gives an easy sounding midband.

pianos, violins, cellos and vocalists to have strong presence. There was a little warmth on display but it wasn't overly rich or cloying – I heard a natural, enveloping sound where crescendoes appeared from seemingly nowhere, while quieter passages retained their natural space.

The SP200s were also pacy and rhythmic for their size. Those two big

Tellurium Q®

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



"The Stereo Times Most Wanted Components 2015 Award" (USA) - **Stereo Times**



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

- Jon Myles, Hifi World 2015

"But perhaps their reticence is understandable when the product sounds as good as this - after all, why let others in on the secret? Used in a variety of systems the Black Diamonds consistently revealed a wider perceived bandwidth, bigger soundstage and the ability to present transient details in an effortless fashion."

- Awards Edition, Hifi World 2015

"The Tellurium Q company has once again proved their products belong at the top of current cabling offerings. No matter how secretive or even mystic their approach may seem, the indisputable fact is their cables show a level of reproduction quality so far unheard of."

- Mono & Stereo, 2015

Find out why Tellurium Q® cables are achieving an audio cable grand slam from the publications below. Why not contact Tellurium Q or one of our many dealers, now.



Stereo Times
The Complete Audio Magazine

BEST High Fidelity PRODUCT 2015

HI-FI WORLD





Three sets of 'speaker binding posts allow for tri-wiring.

12-inch bass units came in just when needed and did not dominate. Playing James Blake's 'Limit To Your Love' their sub-sonics were not just heard but also felt.

With the subtle interplay between piano and saxophone on Thelonious Monk and John Coltrane's 'Live At Carnegie Hall' the SP200s were remarkably fleet of foot.

Monk's piano is resonant but also propulsive, while Coltrane's phrasing weaves a magical spell around his partner's keyboard. I've heard other loudspeakers bring out more detail on this performance – but none sounded quite so fully-formed as the SP200s.

Switching from Quad amplification to a Naim NAP 200DR showed the Spondors are not totally resolving. I'd expected a complete change in balance from the valve input to the resolutely transistor-based Naim – but it didn't quite happen.

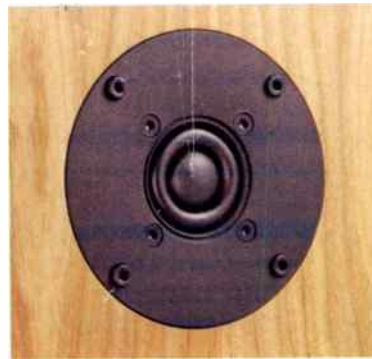
The Naim brought more grip, added a little bit of tightness to the high-end – but it wasn't a night and day difference, indicating the SP200s were bringing their own characteristic to the party.

That characteristic is an exceptional low-end response, smooth treble and true, but not over-extended treble.

So via the Naim and The Flaming Lips 'Fight Song', the SP200s revealed an interesting conundrum. Opening crowd noise panned wide right and left, and when the bass kicked in a smile crept across my face. Wayne Coyle's vocals arrived with verve and definition but – and here's the one caveat – the SP200s did not have the sharpness of rivals boasting ribbon tweeters. Instead they gave a richer, warmer presentation. Not that there's anything wrong with this – just something to bear in mind.

Because once fired up I found it hard not to be beguiled by the sound these loudspeakers produce. It was big, detailed and – most importantly – easy to listen to over long periods of time.

Putting on Bruce Springsteen's epic 'Backstreets' I was immediately transported to the streets of New Jersey. The piano intro was sweet and tonally accurate, but as the guitar and drums came in, the music naturally swelled in seamless fashion. There was no evidence of stress or strain, just the feeling that the Spondors were driving the room with effortless ease and control. It was the sound of a big, confident loudspeaker doing exactly what it should.



Spendor's 22mm tweeter sits between the 'speakers two 12" bass units and the midrange unit.

OK, you are going to need fairly deep pockets to gain entrance to this level of sound, the Classic SP200s starting at £15000 for the standard cherry finish and rising to £17500 for special order dark ebony or rosewood cabinets. But for that you are getting a very special loudspeaker indeed – and one that you probably wouldn't want to change for the rest of your life.

CONCLUSION

Yes, they are big and yes, they are expensive. But the Spondor SP200s are also an absolutely glorious listen. What they do is make listening to music fun no matter what genre you prefer. As such they come unreservedly recommended.

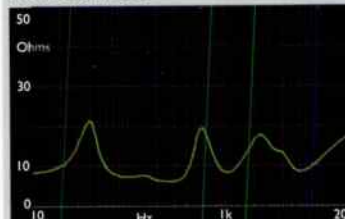
MEASURED PERFORMANCE

In spite of its size and many drive units, frequency response of the SP200 was surprisingly smooth and flat over most of the audio band our analysis shows, when measured on the tweeter axis. With good dispersion and phase matching it did not vary much over a wide forward angle either.

FREQUENCY RESPONSE



IMPEDANCE



Absence of small perturbations suggests well damped drive unit cones and low coloration. The tweeter is especially smooth and peak free and there's no crossover dip, so rendition of detail will be strong.

At low frequencies the two 12in bass units do, however, lift output substantially by +5dB, giving the SP200 obviously strong bass. Output is maintained down to a low 30Hz, ensuring strong subsonics from the two 12in bass units; there is no port. Below this frequency output falls quickly.

Sensitivity was high at 89dB from one nominal Watt (2.8V) of input but since the SP200 has an unusually high impedance of 10 Ohms it actually draws little power. Our impedance curve shows this clearly, sitting around the 10 Ohm datum.

In spite of its size the SP200 is both smooth and accurate under measurement, ignoring raised bass output from the two large bass units. It is easy to drive, needing little power, around 40 Watts being ample. **NK**

SPENDOR SP200 £15000



OUTSTANDING - amongst the best .

VERDICT

Powerful bass and smooth treble, allied to a propulsive thrust that just draws you into the music.

FOR

- bass response
- tonal balance
- sheer musicality

AGAINST

- deep pockets needed

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Kal Rubinson, Stereophile, USA

"It combines the flexibility of a Swiss Army knife with the precision of a surgeon's tool in an easy-to-use package. There's simply not enough room here to even pretend to detail what you can do with this processor. It's just awesome."

Theo Nicolakis, Audioholics.com, USA

"But most impressive is the sound quality. This is real high-end at a price that must be considered reasonable. And the step up from the traditional home cinema receivers is nothing but huge."

Ludwig Swanberg, HemmaBio, Sweden

"Oh my, what a wonderful system Classé has provided with the Sigma range. It shows that audiophile sound is not the sole preserve of stereo and equally that it is not incompatible with reliable and convenient operation."

Stephen Dawson, Audio Esoterica, Australia

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

Adrien Rouah, Québec Audio & Video, Canada



The Unison Research Preludio may lack power, says Martin Pipe, but it does have other virtues.

The Italian job

Once upon a time, all amplifiers were 'tubed' – and in the era before developments like negative-feedback and push-pull ushered in high-powered designs, 'single-ended' ruled the roost.

A single triode, operating in Class A, could (and still can!) give excellent results. However, low power output means you need efficient speakers.

The baby of the Unison Research tubed range, the Preludio I'm reviewing here, takes this old concept into modern-day territory. It's an ultralinear, single-ended Class A stereo integrated amp, based around KT88/6550 beam tetrodes rather than triodes. Another classic valve, the ECC82 double-triode, performs preamp and driver duties. Output is claimed to be 14 Watts per channel – but see our test results.

The Preludio is evidently aimed at those who would like to experience a high-end 'tube sound' on a modest budget – and at modest listening levels unless you're using horns, or other speakers of good efficiency.

That said, the Preludio ain't particularly cheap at £2,500. Well, it is an Italian baby. With its sculpted curves and cherrywood finish, here's an amp that gives you that feel-good

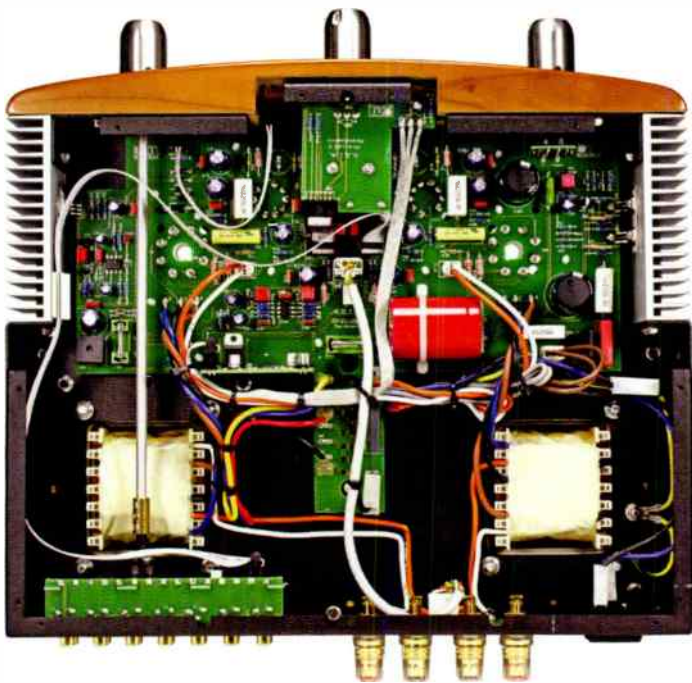


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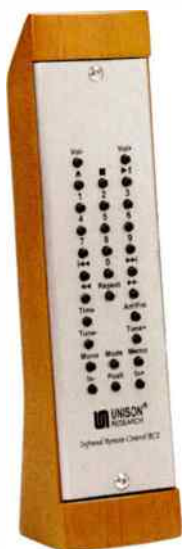
Bowers & Wilkins

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Internal construction is excellent. Note that the input-selection switch is located at the back, alongside the inputs. It's driven from the front-panel knob via a mechanical shaft. The output transformers can be seen at bottom left and right. Transistor circuitry with heatsinks is also evident.



Unison's chunky RC2 remote may have fiddly little buttons but that rose-wood rocks! It will adjust volume, but no remote selection of sources is possible. It will also control some Unison sources.

factor before the music plays.

Even the handset, which will control functions of other Unison components (notably the Unico CD players), in addition to amplifier motorised volume control, has a cherrywood jacket.

The presence of remote control means there's a remote receiver and associated volume control somewhere in the works but that – apart from the 21st-century components and materials – is the

main concession to modernity. This is reflected in the eminently-sensible connectivity, which makes use of gold-plated terminals.

You may not get an integrated phono stage but on offer are no fewer than four line-level inputs, which are augmented by a genuine tape loop – complete with front-panel tape monitor switch.

Now that's what I call old-school...a vintage reel-to-reel begs to be connected!

The Preludio is intended for use with 6-ohm speakers; there are no 'multi-taps' for multiple load impedances as with many other valve amps. The terminals they connect to are robust and will accept bare wire or binding posts.

Parallel to these is a subwoofer output, which may be useful if you want the lower octaves played by a 'third party' to ensure the Preludio's modest delivery is focused on the mids and treble.

Note that the absence of a headphone jack rules out personal listening with the Preludio.

As one might expect for £2500, the build quality of this 18kg unit is excellent. The top plate acts as a shield to prevent valve heat from affecting the circuitry beneath. Unison has specified a low-leakage toroidal mains transformer to avoid contamination of the audio by hum.

Then we have the subsonic filtering, eliminating anything below 10Hz that could saturate the output transformers.

There are no bias settings for the user to worry about; just plug in the tubes and go!

Unison's recommended 'warm-up' time is 15 minutes. In short, the Preludio is joyously hassle-free for a valve amp.

SOUND QUALITY

Source duties involved a Cambridge CXN streamer coupled digitally to a Chord Hugo TT DAC. The latter's unbalanced phonos fed one of the Preludio's line inputs. The speakers I used in my 15' x 12' listening room were Quadral's Aurum Wotan VIIIIs, which at 88dB/1m/1W are reasonably efficient. All music played was stored in lossless form, on a NAS.

Let's start with something the Preludio might conceivably struggle with – Fela Kuti's 'Coffin for Head of State'. There was a good sense of rhythm and timing and the richness of the brass was pleasantly conveyed. Bass guitar proved to be well-defined, although on a smaller scale than what



Tubes used on each channel are an ECC82 double-triode (preamp/driver) and a 6550 beam power-tetrode (output). Both of the Tung-Sol branded tubes supplied are made in Russia by the New York-based New Sensor Corporation.

A black and white portrait of Sascha Reckert, CTO of quadral, looking thoughtfully to the side with his hands clasped. The background features abstract circular shapes in shades of grey and white.

„We wanted one of the
best tweeter on earth.
So we build it!“

Sascha Reckert
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On the right are the (unbalanced) audio inputs, which take the form of gold-plated phono sockets. Note that the windings of the output transformers are optimised for 6-ohm speakers – connected here via high-grade binding-posts that will also take standard 4mm ‘banana plugs’.

I’m used to with the Arcam A49 (a solid-state powerhouse).

But if the volume was turned up high audible congestion became apparent. The bass became dirty while vocal ‘pops’ and sibilance were more noticeable.

Going even further the resulting distortion was unpleasant. At this point, it should be made clear that the volume levels I am talking about were subjectively very high – to the point of discomfort, in fact! So don’t expect super high volume, but at ‘loud’ the Preludio sounds fine.

At normal listening levels, the Preludio was far cleaner than I would expect from an amplifier that we measured as a mere 4.5 Watts per channel (far short of the specs claimed in the frankly-inadequate instruction manual, although it is telling that no measurement parameters are given). I wouldn’t nevertheless want to use one in a large hall; in the lounge of a typical UK semi, though, you would be unlikely to run into problems with well-chosen speakers.

Next up was the 2005 remaster of ‘Voyage of the Acolyte’, the 1975 solo debut from Genesis guitarist Steve Hackett. The fast-paced ‘Ace of Wands’ piercing monosynth lead emerged from its instrumental backing, while Hackett’s guitars were bestowed with the filigree detailing they deserve. ‘A Tower Struck Down’ is a dense and driven track marked by a prominent bassline and sequenced synth. It was delivered with plenty of body.

And so to Joe Jackson’s ‘Steppin’ Out’. Its percussion backdrop sounded crisp and well-defined, and definition was such that the Hammond organ’s contribution – frequently buried in the mix – could

clearly be heard. This was Class A working well.

I was given similar insight into the work that must have gone into designing the electronic percussion of C. J. Bolland’s ‘Sugar is Sweeter’ (here, the effects-laden and bottom-

heavy Armand’s Drum ‘n’ Bass Mix from the CD single). Reproduction was tight and detailed. The Preludio also coped reasonably well with the 1996 dance track’s famous bassline, although it – understandably – lacked impact.

Finally, we turn to a classical work – a BIS recording of Mozart’s Clarinet Concerto. The timbres of the clarinet and strings came across well, and the accuracy of instrumental positioning reflected the Preludio’s sound staging properties. A tendency to ‘bloom’ was evident during louder passages, but such instances don’t stand in the way of a lush and engaging musical delivery, typical of valve Class A.

CONCLUSION

Low output is offset by a rich timbral quality in this amplifier and it made the Preludio a joy to listen to. Sensitive loudspeakers are needed, though.

MEASURED PERFORMANCE

Being a single-ended (SE) amplifier using standard, inexpensive 6550 power tetrodes, the Preludio wasn’t going to deliver much power – and it didn’t – just 4.5 Watts. And that was using a fairly high 3% distortion limit.

Like most SEs, the Preludio overloaded gently and progressively, so in use it can be pushed hard without turning nasty. Amplifiers like this get congested at high volume when run into heavy overload, rather than sounding ‘distorted’ in the chainsaw sense. All the same, 5 Watts or so is low, but with reasonably sensitive loudspeakers (87dB SPL or more from 1 Watt) this is still

enough to go quite loud – loud enough to cause complaint for example.

Distortion figures were poor, typical of SE working. At 1 Watt the Preludio produced 1.4% distortion, primarily second harmonic, and level progressively increased to full power of 3% distortion at 4.5 Watts – huge levels by modern transistor standards. Our distortion analysis shows that second harmonic distortion dominates and this isn’t easily obvious until high levels of around 5% exist, when slight timbral lightning occurs and congestion sets in.

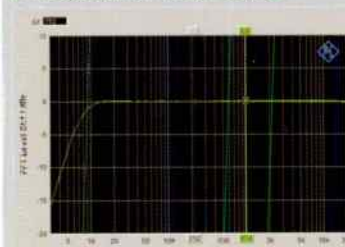
Gain was high, so a small 150mV input was needed for full output, allowing the use of all portables etc.

Again like all SEs, output impedance was high and damping factor low, as a result giving soft bass. Bass distortion measured 2% at 1 Watt (second harmonic) and 4% at full output, on the high side but it is difficult for an output transformer to withstand the d.c. that passes through it in SE mode, so this is always a problem.

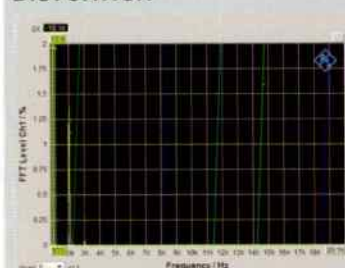
Frequency response was wide, measuring flat from 20Hz to 60kHz, unaffected by volume control position. Our analysis shows there is a high pass filter at 10Hz to remove subsonic bass – always a good idea to avoid saturation.

The Preludio is a simple low power SE that measures like one. All the same, with reasonably sensitive loudspeakers having good acoustical damping this type of amplifier, with its absence of crossover, will still have sonic merit. **NK**

FREQUENCY RESPONSE



DISTORTION



PRELUDIO INTEGRATED AMPLIFIER, £2,500



EXCELLENT - extremely capable

VERDICT

What it lacks in slam, the Preludio more than compensates for in musicality

FOR

- very musical delivery
- tape loop provided
- looks as good as it sounds!

AGAINST

- not a good choice for large rooms
- lacks low-end depth and slam

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M for mini

Below their X series hi-fi players FiiO market the mini M3, a flyweight portable. Noel Keywood takes a close look.

The new M3 from FiiO is a mini portable digital player with a mini price – just £49. That's half the price of their small but excellent X1, price £99, or the X3 at £150, both of which I have reviewed and been impressed by. But experi-

ence tells me you can't easily produce an effective player at this price, even in China where FiiO are based – or can you?

The M3 is both small and light, just 75mm high 40mm wide and 10mm deep. On our scales it weighed 41gm - flyweight; portable players

typically weigh 180gms, some much more. Light weight as well as low price are aided by the use of a plastic case that felt strong and durable. The M3 comes in a pack with ear buds and a USB-to-microUSB cable plus a Quick Start leaflet in Chinese and English, a User Manual being available on FiiO's website. It charges through the USB lead, with up to 24 hours playing time FiiO claim, and music files can be transferred via USB, more of which later.

The M3 has 8GB of memory on board and addresses up to 64GB microSD cards, having a single card slot – enough for 360 or so hi-res tracks at 200MB apiece. Since it doesn't play 24/192 of any encoding, nor 24/96 FLAC I found – a surprise – files aren't likely to be large. It will play 24/96 WAV, tests showed.

Small size means small screen, in this case measuring 40mm x 30mm – and I had difficulty reading the smaller text on this screen; good eyesight is needed to read the text unaided – inevitable in such a small player.

The M3 is very simple in its control layout. A panel beneath the screen has six touch positions, most important being Select (OK) and Back (Menu), then there's Up and Down volume, and Forward and Back for both track and menu selection.





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HI-FI WORLD
VERDICT ●●●●●





A simple file list on the small screen. Battery charge is at top right, and volume setting at left. Single track repeat is selected here.

Settings are only available through the Play screen, which baffled me at first. As did inability to step back from a track to an album's file listing; instead the M3 took me back to the root, meaning numerous selections to return to the music file list.

Socketry is minimal: there is a microUSB port, a 3.5mm stereo headphone jack and microSD card slot on the bottom face of the player – and that's it. The M3 has no digital output, nor an analogue Line output that bypasses the volume control. No special provision has been made for connecting to a hi-fi or improving sound quality. You can of course connect the headphone output to any hi-fi amplifier through an adaptor lead, since it delivers a high IV out



The amusing Play screen, where digital is depicted as analogue by a tone arm of rather peculiar geometry.

at full volume, meaning the M3 can drive most power amplifiers, but it isn't purposed for this and its small controls make it fiddly to use. There's no Bluetooth comms. link of course.

And now to the On/off button and one of this player's difficulties. Sometimes the M3 would turn on immediately, other times it would not. The player was also reluctant to register as mass storage on my Mac's desktop (OS-X 10.11.3, El Capitan), or my PC (Windows 7). In the end, after days trying to pin down the problem it seemingly cleared, and at the time of writing our review sample switched on and off, and came up on the Mac's desktop. It was running latest firmware FW1.4 I will note, and was fully charged. I have not encountered erratic behaviour like this before on FiiO players, and it made the M3 difficult to use.

FiiO's X-series players are compatible with most digital file formats, and the suggestion on their website is that the M3 will play APE, FLAC and WAV to 96kHz sample rate maximum, but our review sample rejected 24/96 FLAC. Although the website's main page suggests the M3 plays all 24/96 files, looking carefully at its Specification page more clearly states 24/48 is the limit for FLAC – and this is too low for a hi-res player, placing the M3 into context.

Tests showed the headphone

socket delivers 1V output, which is enough to go very loud. However, the output amp had a low dynamic range value of 96dB, and high 0.6% distortion; FiiO's hi-fi players, have much less noise and distortion.

In sound quality the M3 was undistinguished. It had a slightly hard edge and seemed 'fast' but there was some coarseness to the sound and no feeling of hi-res clarity or dynamic punch.

CONCLUSION

Our review M3 was initially erratic in behaviour, but seemed to settle down after days of testing. All the same, even at a low, low price of £49 and assuming correct and stable behaviour, performance was still unimpressive and below hi-fi standards. This player not in the same league as FiiO's excellent X series models.



The bottom face carries a microSD card slot (right), a microUSB port for charging and file upload (left) and a 3.5mm stereo headphone jack.

MEASURED PERFORMANCE

FREQUENCY RESPONSE

The FiiO M3 produced 1V from its headphone socket at full volume, with a full level (0dB) digital input. It's enough to drive headphones loud or drive a hi-fi amplifier via an Aux or CD input.

With 96kHz sample rate digital, frequency response reached 47kHz (-1dB) our analysis shows, before rolling off sharply due to anti-alias filtering.

The presence of both noise and distortion limited dynamic range to a poor 97dB, and our distortion analysis shows that distortion measuring a high 0.6% was part of the problem.

The M3 has an unexceptional performance by current standards. **NK**

DISTORTION

Frequency response (-1dB)	20Hz-47kHz
Distortion (%)	
0dB	0.01
-60dB	0.6
Separation (1kHz)	86dB
Noise (IEC A)	-95dB
Dynamic range	96dB
Output	1V

FiiO M3 £49

MEDIOCRE - unremarkable

VERDICT
Mediocre sounding music player with operational difficulties - unimpressive.

FOR
- small
- light
- simple

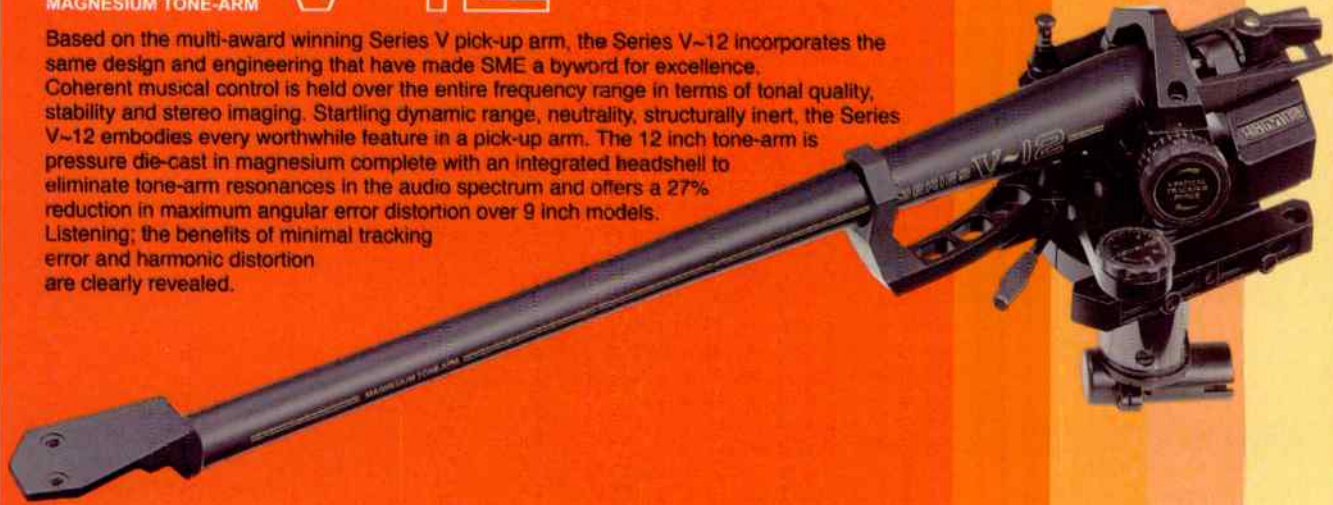
AGAINST
- poor sound
- no 24/96k FLAC
- no 24/192k

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Here's your chance to win the superb Mass Fidelity Core we review this month. Read the review excerpt below and answer the questions.

"Surely something measuring 4in x 6in x 6in (H/W/D) cannot produce anything approaching hi-fi sound, can it? Especially when it also has 120 Watts of Class D amplification packed into that small form factor.

Which were exactly my thoughts when I unpacked Mass Fidelity's Core wireless 'speaker. Yes, it really is that

small – but Mass Fidelity are not thinking traditionally in terms of how it sounds.

It instead uses a proprietary sound processing technology called 'wave field synthesis' which is said to recreate a stereo sound stage no matter where you place the unit or whatever your listening position is.

Let's get to the basics. Yes, it's small – but it also comes with a full range of inputs. So, you get Bluetooth connectivity (including apt-X for suitably equipped 'phones) plus, on the rear, a digital optical input, USB for charging a smartphone and a 3.5mm analogue input.

There's also an internal battery with a claimed 12-hour life meaning you can move the unit from room to room without worry or wondering whether it will cut out. Charge time is quoted as 2 hours. You can run it from its external charging unit (110V-240V), as well as internal battery.

Inside are five drivers – one on each side plus a pair at the front, a downward-firing bass unit giving some low-end heft. Mass Fidelity also makes a partnering sub-woofer for £299".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 6th May to:

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QUESTIONS

[1] What is the amp Class?

- [a] high Class
- [b] Class A
- [c] Class A/B
- [d] Class D

[2] What connectivity is there?

- [a] wi-fi
- [b] telephone
- [c] Bluetooth
- [d] morse

[3] The digital input is -

- [a] optical
- [b] electrical
- [c] AES/EBU
- [d] I2S

[4] Battery life is -

- [a] eternal
- [b] 55 hours
- [c] erratic
- [d] 12 hours

entries will be accepted on a postcard only

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Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q100 loudspeakers.

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

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 **GRAHAM SMITH**, Letter of the Month winner in our April 2016 issue.

Letter of the Month

UNITI UPGRADE

I've been building up my hi-fi over a few decades and am now generally happy with my system, comprising a Naim Uniti (24/96), a Unitiserve (2G) and PMC twenty21 loudspeakers. However, I am tempted to upgrade the Uniti to 24/192, but am in a bit of a quandary.

I can, and do, appreciate the improvement in sound bought about by 24bit coding, even when accompanied by "steam" 44.1kHz sampling. I can also appreciate that 96kHz sampling will shift any nasty filter ripple etc. well out of the audio band. But what is all the hype about 192kHz and above? Surely, 96kHz sample rate will, in theory at least, provide a bandwidth of 48kHz, well above the audio band, and well above what most loudspeakers are specified to reach!

In addition, I have seen a number of amplifier reviews where a bandwidth of just 20kHz is achieved, in particular some of the "Class D" amplifiers which have to kill the ultrasonic mush created by the technology. Even the likes of Naim roll the response off above 20kHz so, by 48kHz, there can't be much content to escape the loudspeakers, which themselves are probably several dB down from flat by then.



Should I upgrade my Naim Uniti to 192kHz sample rate, asks Denis Holliday?

We have a saying in our family, "what will do a lot, will do a little" and I would guess that a DAC, originally specified for 96kHz, might be running at the limit of the technology available at the time, so upgrading to a DAC that can cope with 192kHz, or even 384kHz, might well result in better sound, especially if it is "coasting along" at 96kHz.

So, should I upgrade my Uniti to 192kHz in anticipation of an improvement in sound when listening to my 96kHz downloads? Are you aware of any system, cost no object even, that can be proved to put any sound into a room above 50kHz – and who would hear it, unless it enters through their eyes, which is another story I believe!

**Regards,
Denis Holliday**

Hi Denis. Being the owner of a Naim Uniti myself with multiple high-resolution files on a NAS drive, I have to admit I struggle to hear any significant difference between 24bit/96kHz and 24bit/192kHz material. I've listened repeatedly to the same tracks recorded in both resolutions and find the difference to be minimal at best. The big leap is undoubtedly from standard Red Book 16bit/44.1kHz to 24bit where improvement in quality is palpable.

I would say, however, it's worth remembering that as 24bit/192kHz capable machines are now becoming standard, having your Uniti upgraded could pay dividends in the future if you ever come to sell the unit, as the latest specification will inevitably attract a higher price. I

presume you are looking to have any upgrade done through Naim – whose excellent customer support department would happily supply you with a price.

If you are happy with your set-up, though, and not thinking of selling or trading up in the next few years then it might be best to stick with what you have and spend the money on more music instead! **JM**

Yes Denis – quite! There are a lot of contradictory situations in digital and a fair bit of disagreement about them, as you suggest.

At present I can detect little difference between 96kHz and 192kHz sample rate digital files, so it would be easy for me – and others who hear much the same – to claim there were no differences. As you say, to the absence of musical information above 20kHz apparently supports and explains why this should be so – and why we do not need sample rates higher than 96kHz.

But not everyone agrees and since one dissenter is digital engineer Rob Watts, designer of what is now one of the world's most advanced DACs, used by Chord, I have to be circumspect. Rob has always said 384kHz minimum is needed and DXD is PCM at 352.8kHz, so there are others out there that think differently – and they know a thing or two!

What worries me about digital is that the conversion of analogue into it has always been deeply flawed – and remains so. Much of what we

suffered in early CD in particular was likely as much down to poor ADCs (Analogue to Digital Convertors) producing poor recordings, as it was down to poor CD players.

In other words it was never a consumer problem, so much as a recording industry problem. From them came poor CD and now from that end of the business come 192kHz recordings that may just be up-sampled 44.1kHz files (to 176.2) from CD – oh horror!

All of which is to say that with things as they are, few recordings on the market being derived from high quality ADCs, we are unlikely to hear differences between 96kHz and 192kHz sample rate files, but that is not to say they would not exist if equipment of suitable quality was in use.

Since super high quality ADCs



Spotted at the Bristol Sound & Vision Show 2016, a Tannoy Kensington fitted with a super tweeter able to reach up to 50kHz or thereabouts. Do we need 'speakers like this to appreciate 192kHz sample rate recordings?

are on the design agenda of ESS in California and Rob Watts in the UK it's fair to say that we seem to have a way to go before decent digital arrives. Current ADCs manage a mediocre 96dB dynamic range or so, a pro chip like the Texas Instruments PCM4222 reaches 122dB. Even Mojo, a budget DAC, manages better. In the meantime DSD seemingly offers better sound than PCM and Meridian are claiming that MQA cleans up digital too – it all gets very confusing!

Am I aware of any system that can put any sound into a room above 50kHz? Not specifically, but it is easily possible. If musical instruments produce such supersonic information then we have mics and ADCs able to capture it; the PCM4222 reaches 96kHz for example. Loudspeakers can be made to reach 50kHz if a super-tweeter is added, whereupon we get an entire record/replay chain able to convey such musical information from source to listener.



The awesome Technics RS-1700 open reel tape recorder, now being sought and bought by those keen to get back to high-quality analogue. It was one of the last super high quality, semi-pro open reel recorders with DD capstan motor, isolated dual-capstan driven tape loop and 1/2 track, 15ips ability.

Perhaps with such a system the differences between true 96kHz and 192kHz sample rate recordings would be audible. But at present few digital recordings reach past 20kHz due to the presence of anti-aliasing filters. Oh what a confused and confusing mess digital has become!

It's enough to send anyone back to analogue – and that is why there's renewed interest in high speed professional tape recorders. One solution is to not go digital in the first place. **NK**

GHOST OF CD

My CD player has recently given up the ghost but still has an impressive DAC that I can utilise, but after reading Noel's view on the lack of any future for CD players in the light of hi-res, I would be interested for some advice as to which way I should go in the future?

The CD player is a YBA WM202 and I will have a budget of around £300-400. Should I get a transport or go for a DAP?

David Prior

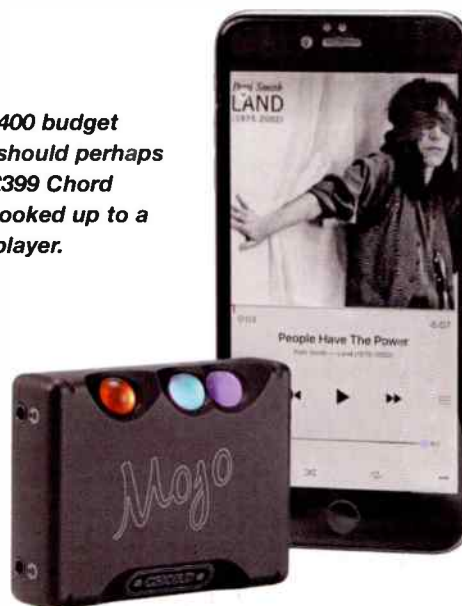
If you have a CD collection and want to spin them 'au naturel', then I suggest you get a transport and DAC – and within your budget the obvious choice of DAC is Chord's Mojo. If your YBA has failed mechanically and has no digital output, get a second-hand CD player with digital output to act as a transport I'd suggest. This should keep you within budget and you'll still be playing CD with one of the highest spec'd DACs in the world!

An alternative is to rip your CD collection to digital files on a computer using bit-perfect ripping software such as AccurateRip, Exact Audio Copy, dBpoweramp or XLD (for Mac). This usually improves their sound quality a little, through re-clocking, adding a slight smoothing effect. You can then either play these out of the computer through an external hi-fi DAC, again Mojo, or transfer them to a portable Digital Audio Player (DAP), or even a 'phone.

A DAP will allow you to carry around hundreds of CDs, playing them over headphones or the hi-fi. If you get a DAP with Bluetooth then you can lie on the settee and play music over the hi-fi through a Bluetooth receiver, like the Cambridge Audio BT100. There are so many options nowadays!

A CD transport with remote control is one way to go but a DAP that can also play hi-res files would

With £300-£400 budget David Prior should perhaps consider a £399 Chord Mojo DAC hooked up to a budget CD player.



be my preferred option: it has more to offer, if being a tad less convenient than CD with a remote. **NK**

RADIO 3 STREAM

I would like to thank Martin Pipe for his interesting and informative piece on receiving Radio 3 via the internet in the current (March) issue of HFW. I have tried his suggested means of accessing the 320kb/s stream and have found it works well - once you type in the 123-character-long URL correctly: I was much relieved to find this is stored once entered! Using Martin's method, I haven't encountered any of the glitches or drop-outs I've previously experienced while listening to Radio 3 via the 'net. If this continues it will be a big plus.

I have also tried Martin's instructions for time shifting, but in this

case without success. When I click on Start, the media player keeps telling me "VLC can't recognise the input's format". I would be much obliged if he could give further guidance as to what I might be doing wrong.

Thanks.

David Lord

Martin Pipe replies:

Many thanks for your kind words, David. Are you definitely capturing the audio? In other words, is a capture file being created in the specified location? View its 'properties'; if it's still 'empty' (0KB) after several such checks, something's wrong and you should check the capture settings – the URL entered in the open network/open media/network URL box, your network, firewall settings, etc.



Quad's ESL-63, introduced in 1963. It was a full range electrostatic panel loudspeaker. Still available today from Quad Musikweidergabe of Germany, see <http://www.quad-musik.de>.

Don't forget to ensure the 'convert/save' menu's 'dump raw file' option is checked, and give your capture file the .flv filename extension (as this should be 'understood' by most compatible players – among them VLC itself!). To ensure everything's working, open up another instance of VLC during a capture session. Drag the file currently being 'dumped' to its program window and playback of the captured stream should start from its beginning. This will prove the 'front end' of your setup is working; if your streaming player can handle this codec, it should deliver audio too. Naturally, your capture file should be stored in a location that is 'read-accessible' to your player. **MP**

LOUDNESS THING

I have had my One Thing Audio refurbished Quad ESL-63 loudspeakers for a few years now, but if I could change anything, it would be the cut-out volume levels on them.

Now, I am very much aware that the type of amplifier is key: it is a WAD 300B push-pull stereo. I know that Noel uses this amp and also know that he owned the 63s too. I have visited Ron & Steve at One Thing, and the speakers tested accurately, but they didn't/wouldn't drive them to the volume level that I sometimes listen to. I told

them that I listened at louder levels, but they only use solid state equipment to test their work and were unable to provide any clues.

I have also spoken to Quad and they are at a loss for why this seems to be happening but stressed the importance of a suitable amp and the fact that One Thing Audio have modified the speakers so there are a lot of what ifs... the only way they could try to identify the problem would be to test them.

When friends (who are also enthusiasts, not head-bangers) come over to listen they sometimes turn the volume to this same level, so it seems that I'm not isolated in this thinking. My experience of listening to these 63s (with similar valve amplification) at hi-fi shows also seem to lead me to the same conclusion.

What was your experience of this amplifier/speaker combination? Does this problem sound familiar to your own experiences? (No pun intended) and, I am aware that you listen to volume levels which are probably not too dissimilar to my own...

Of course, it's not all of the time, it's just those moments when my wife is out of the house and I get the chance for some serious listening! Any insight would be greatly appreciated.

**Justin B. Brown
Great Shelford,
Cambridgeshire.**

Hi Justin. ESL-63s have always had protection circuits that limit volume, to prevent arcing in the electrostatic panel. Early models had a self-powered compression circuit that muddled the sound and later ones high-voltage diodes in the secondary that acted as hard volume limiters – and it sounds like you have the latter.

My ESL-63s



Quad ESL-63 electrostatic loudspeaker atop a Celestion SL-6000 subwoofer (1995). A special crossover was needed to match them, removing bass from the Quad.

went loud, but only because I used a high pass filter to remove bass from them. Bass was derived from a low pass filter and went through a solid-state power amplifier and Celestion SL-6000 dipole (open baffle) subwoofers. With no box this had no lower frequency limit and gave seismic bass, whilst matching the dipole radiation pattern of the Quads, but there are no commercial equivalents I'm sorry to say.

Whilst I do still run 'our' lovely World Audio Design 300B push-pull, do bear in mind that I also use many other amplifiers to keep abreast of what is happening out there. And loudness via your Quads isn't really an amplifier issue: the speakers can only take so much.

What to do? Get a subwoofer that has a high pass output, meaning it does not feed bass to the Quads. Unfortunately, they are rare. The REL Gibraltar series do this but you need one per channel – expensive. Although technically quite simple to achieve, a high pass output is a rare option on subs. But take a look at Quad subwoofers at <http://www.quad-musik.de> (Quad Musikweidergabe of Germany).

Alternatively – dare I mention it – you need a loudspeaker that goes louder and I would direct you toward the Martin Logan range of hybrid electrostatics for this. Guess what I use these days? **NK**



Times move on - these days we have the Martin Logan hybrid electrostatic series loudspeakers where bass is handled by an integral subwoofer. Here's their top Summit X model.



Connect a Hard Disk Drive to the Oppo BDP-105D's front USB port says David Rogers.

ADD A NAS

I was interested in Ian Napier's letter about the Oppo BDP-105D Blu-ray player and his desire to use it as a streamer. I also own this excellent device but have a simpler solution. I have a small-ish HD (500GB) in a caddy powered via its USB connector. The Oppo has more than enough power to drive the HD directly. I have downloaded a selection of HD music and copied it onto the HD. I simply plug the caddy into the USB on the front of the Oppo and play. Much simpler than monkeying around with networks.

David Rogers

Hi David. Yes, that is an eminently simple and alternative way of playing high-resolution music via the Oppo – and also, incidentally, some other players if they have a suitably-powered USB port (not all have enough to drive a hard disk and will only work with thumb drives).

Personally, I do enjoy the extra functionality that a NAS drive can bring in terms of cover art, expanded metadata and the ability to research albums and artists while listening – although this is merely a personal opinion and some people do find the job of adding their hi-fi to a network more trouble than it's worth. As you say, it is a matter of what suits you best. **JM**

DON'T ADD A NAS

I read with interest Jon Myles' response to reader Ian Napier's enquiry about streaming with an Oppo BDP-105D. Jon waxed lyrical about using the Oppo 105D with a NAS.

I have an Audiodom Signature modified Oppo 105D, which is truly stunning as a Blu-Ray, DVD-Audio, SACD and hard disk player. What it is not good at is playing from a NAS.

The reasons are several. Used with a NAS, the sound is excellent. However, there is no gapless playback and each track is played individually. By individually, I mean, if you watch what is happening on your TV screen, or the Oppo app, the main menu pops up,

before the next track is selected. There is actually quite a gap. If you use the on-screen menus, the Oppo does not appear to read the meta data on the NAS direct, it collects it on the Oppo, from where you have to navigate.

If 'Folder View' is utilised, often no music is found in the folders. I have raised this with Oppo, but they make it fairly clear that gapless will not be a feature when using a NAS, and the other issues they simply do not recognise.

I think, on this occasion, that Jon is guilty of assuming a functionality, without actually trying it out for himself. If Mr Napier follows Jon's advice, he may be disappointed. The Oppo remains a stunning player, despite these issues.

**Yours sincerely,
Stephen Crowe**

Hi Stephen. Thanks for pointing that out. It seems the Oppo will play gaplessly via USB on the sort of set-up David Rogers (above) is using but not via a NAS. You do need to ensure all the files are of the same format (FLAC, ideally in my experience) and have the gapless function enabled.

I do still find the BDP-105D an excellent network player as long as this feature is not essential for you. I've also contacted Oppo to see if a future firmware release may solve this and am awaiting a reply. **JM**

STRICTLY CD

I need to buy a new CD player. The goal is the ultimate neutrality and accuracy. I don't like colourations in sound quality. I would prefer to hear what is on the disc (good or bad). Can you recommend two or three models that I should listen to?

**Kind regards
John Michas**

With no budget and no other guidance it is difficult to be specific here John. Your letter has been placed after two that rightly praise the Oppo BDP-105D Blu-ray player that makes a fabulous job of playing CD but it is £1000 and a lot more than just a CD player, so it doesn't strictly fit your criteria.

Similarly, a transport and a DAC are not the strict definition of a CD player, so I won't recommend a CD transport and a new Audiolab M-DAC+, especially as it is not yet available. No matter that it will likely be a candidate for top CD quality!

With trad CD players you may well like to consider a Cambridge Audio Azur 651C. It does a good job at a good price and I suspect it might suit you more than a Chord Red Reference or Meridian 802 – or the CD player Chord must now be designing that combines their new top DAC 'Dave' with a CD transport, all in a machined alloy case with comprehensive and complex arrangements of lights and windows.

Your request for a CD player touches on many possibilities. **NK**

ON OR OFF

I have an Esoteric P-03/D-03/G-0Rb CD player, YBA Passion Pre 550/ Passion 650 amplifier and Tannoy DC10T speakers.

Other stuff – Yamaha S-2700



Wanna top CD player? Get a Chord Red Reference! Well, it's nice to look at.



Cambridge Audio Azur 651C CD player: CD and only CD in a well engineered package costing £280.

universal player, Musical Fidelity A5 tuner and M.F. X-cans headphone amp., Atlas power leads, interconnects and speaker cable.

I have the CD player, DAC and master clock switched on all the time, as well as the pre-amp, but I only switch the power amp on about half an hour before listening. The other stuff is only switched on when needed.

Is this approach acceptable, or would you advise turning everything off when not in use?

Thanks for your help.

Tom Auterson.

This is a matter of safety versus sound quality. These days consumer electrical equipment is pretty safe and can be left on but there's little point if you feel it adds nothing to sound quality: it really is up to you.

Technically, electrolytic capacitors change with use and I've recently heard that 1970s transistors were subject to a long chemical ageing process that eventually lead to failure, all of which suggests you should switch off. Do by all means allow 30 minutes before use though, so circuits can settle, even though technically they manage this in the first few milliseconds after switch on. But I feel there is commonly a slight improvement after warm up. **NK**

GREY GARRARD

As a user of a Garrard 401 since my late teens – I am now 65 – I was interested in the review of the SMD Acoustics turntable.

The 'greyness' to the 401's midrange I have found stems from using the rubber Garrard platter mat. I have been using for some years a Ringmat with great results. The MRA is the system I bought. See <http://store.securehosting.com/stores/sh204409/shophome.php>.

I would urge all Garrard 401 users to give it a try. Adam Smith sometime ago tried it on his 301 and wasn't impressed, I don't know what he did wrong!

The Ringmat releases life and clarity from the turntable unlike the rubber

mat which, to my ears, seems to suck the life out!

Mike Bickley.

Thanks Mike. I know it is colour from the platter in truth and I should use another mat and/or treat the platter with damping material, but since my Garrard is a much loved original I bought from them direct a long time ago, I treasure its authenticity (sorry for the nostalgia!) and like to keep it that way.

Methinks I may buy a new generation Direct Drive soon, likely



Noel's unreformed Garrard 401, in Martin Bastin Plinth. It's original down to the deficient platter mat!

a Technics SL-1200GAE modified by Sound Hi-Fi, since Dave Cawley knows about servo-systems in turntables and is able to rectify conceptual design errors, both in the motor electronics and the use of what looks like a fairly pedestrian tonearm.

I'm not saying a DD is more exciting than a Garrard 401 but it is technically more capable, whatever you might want to make of that. As a reviewer I need a good source that is also technically defensible and I strongly suspect that Technics new SL-1200GAE is more a hi-fi turntable

than a disco machine revered by the John Travolta generation (so 1980s – but he does have his own Boeing and airfield to go with it). So I hope that the new Technics DD turntable can finally offer us more than the infinitely wonderful Garrard 401, nostalgia apart. **NK**

PLAYING WITH CARDS

First, thank you for your advice concerning which headphones to get for my Q-DAC/Fiio X3 2nd Gen combination. I now have had (the surprisingly large) Fidelio X2s for almost a week now and have given them 100 hours (or so) of running in. Yes, they are impressive, and possibly a tad bass heavy. Lady GaGa's *Bad Romance* goes suitably deep, and the soundstage is quite wide. Great stuff!

It's interesting that all three of the Fiio players have received very good reviews in *Hi-Fi World* (and elsewhere). Mine is a very solid piece of kit (in all meanings of the word 'solid') apart

from the album display – I'd like to see the whole album cover, even if it means black bars left and right (maybe a simple software switch in the next firmware update?).

Getting back to the X2s/Q-DAC/X3 combo, I now regard myself as satisfied with my music-producing hardware, with any significant upgrades so far out of sight (and out of reach of my severely depleted saving – because of the X2s!) and so financially out of reach as to be (a) not worth thinking about, and (b) not justifiable due to cost – the law of diminishing returns. In other words, I've reached my sweet spot, and here I will



Philips Fidelio X2 headphones, very nice if "possibly a tad bass heavy" says John Malcolm.

stay/rest.

Changing the subject; is Hi-Fi World on a mission to get us to buy/try old technology? I refer to the recent excellent (if too brief) series of articles on quadrophonic sound, as well as the article in March '16 on the microcassette, which may send me off to eBay – just to investigate, you understand... I still use MiniDisc as a background source, and actually buy physical CDs, DVDs, Blu-rays – despite a severe lack of storage space.

And that brings me to my final subject; microSD cards. I have a simple system with them, in that each card has either a unique size or manufacturer. So I have a Kingston 64GB, a Kingston 32GB, a Toshiba etc., all different. Now with my printed lists of contents (artists



FiiO X-3 hi-res digital player. "I'm satisfied" says John Malcolm.

listed only) and a unique name for each card (Synth64, Rock&Pop64, etc) I have a reasonable system which works. The main problem is loading them to/ejecting them from the X3, as it's not the easiest of slots to access. However, having a little wallet/case of the things also means that (a) this can become expensive, and (b) it's a lot to lose... The perils of miniaturisation eh?! You don't have this trouble with LPs! Eeee, when I were a lad even the 7" single centres were bigger than a 64GB microSD card...

**Yours sincerely
John Malcolm**

Hi John. And thank you for your observations on the problems of herding microSD cards. No one else has made any mention of this since my complaint about it in my column. I think it is the "wallet/case" bit you mention I need to get sorted: it has to be portable, protective, with an index and easily accessible. I'm sure there are lots out there...

Yes, ironic that the bit you pressed out and chucked away, if you owned a radiogram (which no one did!), would today house a complete record collection. But has it not de-valued music? I still so value my collection of singles, bought when that was all I could afford. What excitement and pleasure they gave.

Funny how Martin Pipe's in-depth look at old formats, including quadraphonic, has aroused interest from readers near and afar, even Argentina. I guess they've provided pleasure around the world and are unforgotten. Great that Martin can write so knowledgeably and enthusiastically about such things, in a way we can all understand. **NK**

A LOAD OF URLS

In Martin Pipe's opinion article, he says 'he will reveal how all national BBC radio services are available as 320kbps streams' in the March edition. Could you publish a list of the URLs please?

Mike Bickley.

Martin Pipe replies:

Here we go, Mike!

BBC Radio 1

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_one.m3u8

BBC Radio 1Xtra

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_1xtra.m3u8

BBC Radio 2



How do you control microSD cards once they escape from their packaging?

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_two.m3u8

BBC Radio 3

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_three.m3u8

BBC Radio 4

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_fourfm.m3u8

BBC Radio 4LW

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_fourlw.m3u8

BBC Radio 4 Extra

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_four_extra.m3u8

BBC Radio 5 Live

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_five_live.m3u8

BBC Radio 5 Live Sports Extra

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_radio_five_live_sports_extra.m3u8

BBC Radio 6 Music

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_6music.m3u8

BBC Asian Network

http://a.files.bbc.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr_high/ak/bbc_asian_network.m3u8

MAGIC BOSE

Towards the end of October 2015 I was lucky enough to come across three items of 'classic' audio for sale in a charity shop in one of our neighbouring towns:

1) JBE 'Slatedeck' with Alphason Xenon arm/Nagaoka MP-50 Super, original record clamp, outboard PSU, manuals and protractors.

2) Technics SL-1210 Mark 2 with Linn



Technics SL-1210 turntable fitted with Alphason Xenon arm by John Taylor-Hartwell.

LVX arm/Ortofon OM20, LP12 mat, Michell clamp and manuals.

3) Mission 751 standmounting loudspeakers in faux Rosewood with original stands and owner's manual.

The above items cost me £150.00 in total, are fully working and in mint condition; I wouldn't have bought them had they shown the slightest signs of abuse. There was a Sony 'Esprit' amp too, but frankly I'd never even consider another two channel amp.

Both the pickup arms have a Linn fitting, so I swapped them over, a very easy operation taking around an hour to remove the LVX and fit the Xenon to the SL-1210 and a further hour or so to set it up using HFS72, Decca 'Stereo Workout' and the supplied protractors. The result? Well, it's made our entire record collection sound as if it has been remastered overnight.

Could you answer these few queries::

1) Should I shell out £150-£175 for a replacement stylus for the Nagaoka? I've checked it out under an Olympus binocular microscope, and it seems fine at present. Or is there a current Moving-Magnet pickup that would give me an improvement in sound quality over the Nagaoka?..although I doubt that's possible. I'm definitely not interested in moving coils, as I'm not keen on their sound or fixed stylus assembly.

2) I'm not too enamored by the JBE/LVX/Ortofon combination; neither it's sound nor it's construction do anything to recommend it. However, should I hold on to it or sell it on? I have no idea of its worth.

3) What are your opinions re the Mission 751? Mine are that for sure they're no Bose 205! These quirky paper-coned standmounters used to adorn the walls of just about every pub, club and bar in these islands; yet they just get better with every equipment upgrade one makes and never cease

to amaze both myself and my wife. Whatever genre of music you throw at them they will reproduce it so well and with such detail. Listening to them tackle the incidental music, especially the tuned percussion and analog synths, that run through 'Stargate Universe', which is being aired on DVB at present, is a delight; they just should not sound that good!



JBE Slatdeck with Linn LVX arm.

The rest of our system consists of: Yamaha DSP-A1 theatre amplifier and matching multi-purpose disc player, Bose 205 fronts on four column Atacama stands, Bose Redline cubes rear on Alphason stands, REL Strata subwoofer and Tom Evans 'Groovebox' plus Sennheiser HD600, AKG (now Harman) K550 and the usual mains cleaners, sand filled stands, together with Russ Andrews plugs, sockets, cables, etc.

Oh, mustn't forget the Panasonic RX-ED90, the best 'ghetto blaster' made...ever. You really should include it in your classic equipment spot some time.

Regards
John Taylor-Hartwell BA(Hons)
FRPS AFIAP.

Hi John. It is impossible for us to know whether your MP-50 Super stylus is worn or not. You need very high magnification to see in useful detail the contact surface of a stylus, and then the depth of field is so small much of the image is out of focus and blurred so I wonder whether the Olympus binocular microscope had enough magnification to be useful for assessing your stylus.

Nagaoka cartridges are superb: I have used many and admire what they do. The MP-50 with its boron cantilever is hard to improve upon so stick with it I would suggest. Get a new stylus perhaps, see whether it offers a better sound when fitted, and if not store it for future use – always bearing in mind that new styli need 30-50 hours running in, so you will need to run it before making a decision.

We have no experience of the Bose 205 loudspeaker, so your experience with them is interesting to us and readers. **NK**



Bose 205 loudspeakers – “quirky paper-coned standmounters used to adorn the walls of just about every pub, club and bar in these islands; yet they just get better with every equipment upgrade” says John Taylor-Hartwell.



**Jordan
Acoustics**

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Bristol Sound & Vision Show 2016



Held at the end of February, the Bristol Sound & Vision Show can be victim to winter weather, but the 2016 show was blessed by sunny days. Helped by an equally sunny economy acting as a tail wind I suspect, this premiere UK show – one that attracts nearly all UK manufacturers – was bustling over its three day duration from Friday 26th to Sunday 29th February.

AV seems to have had its day, leaving four floors of mainly traditional stereo, just a few rooms suffering screens and explosions. Otherwise there was plenty to see and hear, with all things vinyl, portables and headphones prominent. Noel Keywood reports...

TECHNICS SL-1200GAE

High on my list of 'must see' items was Technics new Direct Drive turntable, the SL-1200GAE. Fans of its predecessor, the SL-1210 Mk2, petitioned Technics from around the world to re-start its manufacture. Instead, they recently introduced this new design with improved high torque motor, heavy platter and three speeds: pressing 33+45 initiates 78rpm our top shot shows. You can clearly see it has a traditional S shaped arm with removable headshell. Timestep, also at the show, told me they already have plans to offer an SME arm as an alternative and were talking to Technics about after-market mods.



LARSEN 8 WALL LOUDSPEAKER

The Larsen 8 wall standing loudspeaker. This Swedish loudspeaker builds on the ideas of Stig Carlson and Sonab loudspeakers. At low frequencies it drives room modes for deep bass from a small cabinet, whilst rear high-frequency absorption avoids wall reflections affecting direct sound to the listener. Best of all, a wall stander like this intrudes little onto floorspace. It sounded good.

SONY HP-S1

Sony's High Definition music centre with 500GB of music storage, the HAP-S1.



MALVERN AUDIO RESEARCH

When I told an experienced engineer that the most interesting product at the show was a headphone amplifier that used car ignition coils he looked at me disbelievingly.

But it was true: I heard it working – and it sounded good! The ever-imaginative Mark Manwaring-White of Malvern Audio Research (importer of Ming Da) was driving the coils in reverse, as it were, using the secondaries as anode loads for Soviet EL36 power valves and the primaries as output windings for headphones.

Eye-popping was the presence of bare top caps but, said Mark, there was only 120V there. I quaked all the same, since top caps are usually beyond lethal, as it were. Oh... and those beads are insulators around a top cap-to-grid connection. Imaginative.



iFi STAND

A stand of mini components on the iFi stand, with iCan headphone amplifier (top), then an iTube, iDAC2 and a USB Power, all in a mini iRack. Very neat – and innovative.



QUAD Z4 LOUDSPEAKER

Top of the new Quad floorstanding range is the Z4, with a double chamber bass reflex system, glass fibre cones and a large ribbon tweeter. The same tweeter is to be found across the Z range, including the bookshelf Z1.



DAVID GRIFFIN WINDING A GOLDRING MC

A fascinating exhibit – well, for me – was Goldring's display of coil winding an MC (moving coil) cartridge. This is done at their Bury St Edmunds headquarters, by David Griffin seen here, who succeeded his father in the task. A stereoscopic microscope with camera and monitor is used to wind wire so fine it is barely visible.



WHARFEDALE DIAMOND ACTIVE LOUDSPEAKERS

Wharfedale Diamond Active A1 loudspeakers are connected to a central control unit by a Bluetooth wireless link. Each speaker has a 60 Watt power amplifier on-board. Coming soon.

AUDIOLAB MDAC+

The much anticipated Audiolab M-DAC+, a replacement for the original M-DAC, but now with internal power supply and DSD conversion ability to further strengthen the powers of its ESS 9018 Sabre32 DAC equipped with seven Audiolab-designed digital filters.



CUSTOMER SERVICE

This customer was looking to get his laser gun fine-tuned at the iFi stand. The staff were warned to stand back to avoid radioactive contamination from his plutonium shield. Service was quick.

MBL LOUDSPEAKER

From Germany came MBL's elegant mbl120 Radialstrahler loudspeaker, an omni-directional design that fires sound all round. This is the baby of their range: the big 101 Extreme is an awesome device.



ROKSAN RADIUS TURNTABLE

A Roksan Radius 5 belt-drive turntable with Nima arm and Ortofon 2M Red MM cartridge looked pretty, its acrylic plinth capturing light from all round.

LEEMA ACOUSTICS PULSE IV AMPLIFIER

This new amplifier/DAC offers 200 Watts of power from a modern digital source Leema's Lee Taylor told me. Note the wi-fi aerials.



ABIS TONEARM

A new-to-the-UK Abis SA-1.2 tonearm from Japan, imported by Air Audio. It is machined from a solid aluminium billet to achieve high rigidity and freedom from pipe ringing modes. Precision ball races with zero play are also used. The arm is aimed at medium to low compliance MC cartridges.



HD PLUGS

Air Audio were also showing these UK style 13A mains plugs and IEC connectors (from Hong Kong) with translucent blue cases and gold, silver and rhodium plating options for those who want to make up their own mains cables.

ICON AUDIO 845 amp

A big, glowing Icon Audio Stereo 845 amplifier and new KT150 single-ended amplifier to its right. Valve amplifiers were scarce at this show, putting Icon into a place of their own.



PMC MIDRANGE DOME SPEAKERS

PMC Fact range loudspeakers, with Fact Twenty.26 at rear possessing midrange dome drive units, whilst the Fact Twenty.24 is a more conventional two-way floorstander.

OPTICAL CARTRIDGE

DS Audio DS-W1 optical cartridge, with red led 'headlamp'. This little unit is the only optical cartridge currently available. It detects stylus vibration by a beam of light, they say, using a boron cantilever and Shibata profile stylus. A special preamp is needed.





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World Awards 2016

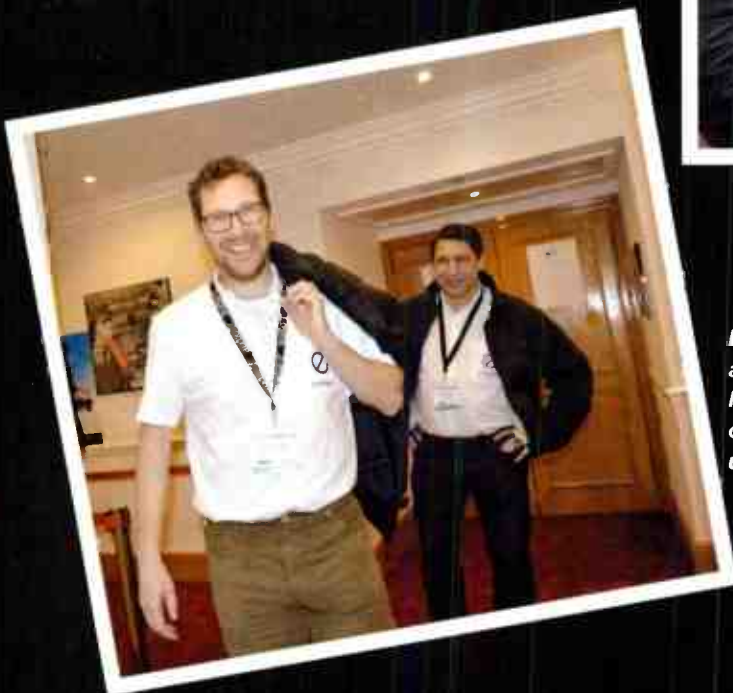
Hi-Fi World's annual awards ceremony was once again one of the highlights of this year's Bristol Sound and Vision Show.

The great and the good of the hi-fi world were out in force as the Bristol Sound and Vision Show once again hosted the prestigious Hi-Fi World Awards presentation night - where we paid tribute to the best products that passed through our listening rooms during 2015.

Hi-Fi World Editor Noel Keywood presented the awards while Richard Stevenson compered the evening - held in the Bowers & Wilkins room at the show.



All smiles! Prize-winners and guests gather for food, a few drinks and a chat about all things hi-fi before the start of the ceremony.



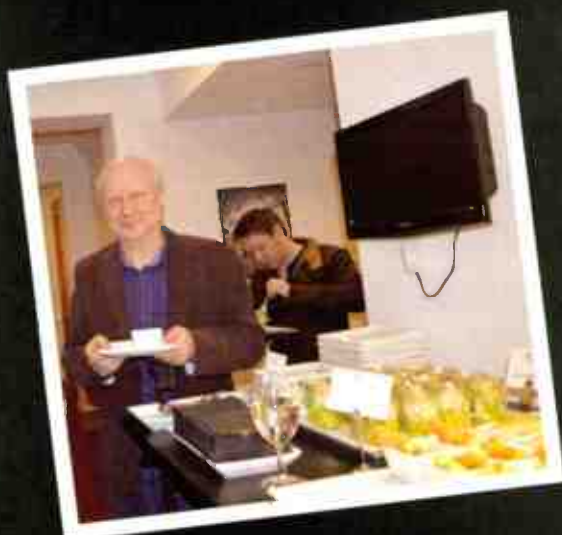
Entotem's development director Dave Belcher (front) and the firm's commercial director Ian Grostate headed down from the Midlands to Bristol to show off their innovative Entotem music system and pick up an award.



Geoff Merrigan from Tellurium Q receives the Best Loudspeaker Cable Award for the outstanding Tellurium Q Silver Diamonds.



Hi everyone. Former Hi-Fi World editor David Price breaks off from chatting to Laurence Armstrong from Henley Designs at the pre-ceremony reception.



Tim Lount from Tannoy who received the Best Loudspeaker Award for the Tannoy Definition DC10Ti floorstanding loudspeaker.



Hi-Fi World Editor Noel Keywood hands over the Best Network Player Award to Dave Belcher of Entotem for the company's Plato device.



Nick Fuller from Henley Designs collects the Best Cartridge Award for Ortofon's A95.



Dan George from Dan George Communications received the Best Amplifier Award, Best DAC and Best Headphones Awards on behalf of McIntosh, Chord and Noble Audio for respectively the McIntosh MC152, Chord 2Qute and Noble K10s. Dan was one busy man!



Shaun Gostelow from KS Distribution shares a nibble and a glass with Ryan Sheen from Tannoy.



Laurence Armstrong from Henley Designs collects the Best Turntable Award on behalf of Pro-Ject for their Essential II Digital model.



Noel Keywood presents the Best Portable Hi-Res Player Award to Shawn Gostelow from KS Distribution for the Lotoo PAW Gold.



The Entotem team of Ian Grostate, Dave Belcher and Andy Hughes celebrate winning their Hi-Fi World Award.



A surprise award went to Richard Stevenson - for Best-Looking Host! Something that caught even him by surprise judging by his expression!



David Shaw from Icon Audio receives the Best Valve Amplifier Award for his company's mighty MB81 monoblocks.

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Research in motion

Acoustic Research is back with a new, high-quality DAC/headphone amplifier. Jon Myles puts it through its paces.

Acoustic Research has a hi-fi manufacturing tradition going back more than half a century but has been absent from these shores for the past few years. Now, however, it's back - initially with the £900 AR-M2 portable digital audio player which has now been joined by the AR-UA1 high-resolution DAC/headphone amplifier on review here.

Priced at £400 it faces some stiff competition from the likes of Oppo and, more importantly, Chord's excellent little Mojo. But its paper specifications are good and out of the box it makes an immediate impression with its looks and build quality. Constructed of aerospace grade aluminium it's relatively weighty at 338g and measures 135mm x 82mm x 24mm (length/width/height).

The front contains a 6.3mm headphone jack alongside a solid metal volume control knob on a high-precision Alps potentiometer, while on the rear are an asynchronous USB input as well as a Toslink digital output and gold-plated RCA analogue connections.

Inside the AR-UA1 is built around the well-respected Burr-Brown PCM1794a digital convertor allied to a Texas Instruments TPA6120A2 headphone amplifier chip. Most popular file formats are supported (WAV, AIFF, FLAC and ALAC) up to 24bit/192kHz while the UA1 can also handle DSD64/DSD128 and DXD. Acoustic Research even bundles in a free copy of the popular JRiver Media Centre digital playback programme for both Mac and PC which is an added bonus.

The only other feature is a small

LED on the fascia which changes colour to indicate incoming sample rate - so you get white for 44.1kHz, Cyan for 48kHz etc. going all the way up to yellow for 192kHz. It's not as simple as a straight digital readout but serves its purpose once you've memorised the colours.

Being fairly heavy the UR-A1 sits firmly on a desk and two damped rubber feet on the underside prevent it from slipping around when in use. All in it's a quality-looking unit which in terms of construction fully justifies its price. But does its sound also measure up?

SOUND QUALITY

Acoustic Research says the AR-UA1 has the power to drive just about any headphone you care to choose - and that's no idle boast (see Measured Performance for full





Project

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details). Connected to a MacBook Air and using a range of 'phones including Oppo PM1s, Sennheiser HD 700s and my reference Noble K10s, there was never any need to push the volume knob past the 10 o'clock position to get very loud levels indeed.

This was allied to a fulsome, punchy presentation with deep but well-controlled bass. With Massive Attack's 'Blue Lines' the opening bass refrain of 'Safe From Harm' positively thundered from the Sennheisers. The drums also had a real crack to them with admirable power and presence.

But it's a balanced sound - with no bloat to drag or slow the music down, but instead a natural agility that suits the propulsive nature of the track.

Moving on to TV On The Radio's

"It's a balanced sound - with no bloat to drag or slow the music down but instead a natural agility"

'Seeds' and the Acoustic Research does a good job of separating out the various complex instrumental strands. There's a slight softening of the treble but not so much as to mask detail. Instead it's easy on the ear which means the AR-UA1 doesn't grate over long listening sessions.

There's a sense, though, that the unit doesn't have the resolving power of Chord's excellent Mojo - a fact most evident on higher resolution material.

Playing a 24bit/192kHz recording of the Grateful Dead's 'Dark Star' (from '30 Trips Around the Sun: The Definitive Story 1965-1995') there wasn't quite the air and atmosphere around the guitars the Chord can muster, nor is there the same element of bite to the leading edge of the notes.

On the plus side, however, the AR-UA1 does time very well with a natural sense of rhythm and flow so music is never less than enjoyable. Playing the syncopated jazz/electronic fusion of Sex Mob's 'Sexotica' the offbeat phrasings and unusual time signatures never veered into an incomprehensible mess. Instead they melded into one, so the album passed by in the blink of an eye.

Which at the end of the day is



The rear panel features a digital Toslink output, USB input and two gold-plated RCA analogue out connections for hooking up to a hi-fi system.

treble but presents music in a smooth, organic manner.

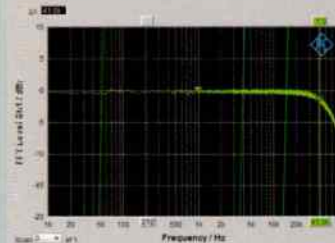
CONCLUSION

The AR-UA1 marks a welcome return to these shores for the Acoustic Research brand. It faces some tough competition in its price bracket and can't match the likes of the Chord Mojo for outright detail and dynamic range. But given its propensity to drive almost any headphone, it is well worth auditioning if you are looking for a quality DAC/headphone amplifier.

MEASURED PERFORMANCE

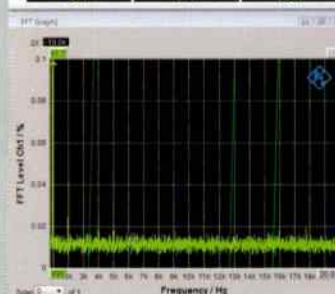
The UA-1 produced 4V from its front headphone socket and 2V from the rear phono sockets, for a full level (0dB)

FREQUENCY RESPONSE



DISTORTION

THD @ 0dB	Level RMS	Frequency
0.1096 %	3.6298 mV	997.05 Hz
OFF	OFF	OFF



digital input. That's enough to drive headphones very loud or, acting as a digital source, feed a hi-fi with a CD player level signal.

With 192kHz sample rate digital, frequency response reached 41kHz before rolling off slowly to the upper 96kHz limit, our analysis shows. There was some noise and distortion in both outputs, limiting dynamic range to an unexceptional 107dB, a little better than CD at around 102dB but well below Chord Mojo (125dB) or Audiolab Q-DAC/M-DAC (122dB).

The UA-1 is a simple USB headphone amplifier with a good, but unexceptional performance by latest standards. **NK**

Frequency response (-1dB)	10Hz-41kHz
Distortion	
0dB	0.002
-60dB	0.1
Separation (1kHz)	88dB
Noise (IEC A)	-106dB
Dynamic range	107dB
Output	2V/4V

ACOUSTIC RESEARCH AR-UA1 £400



EXCELLENT - extremely capable

VERDICT

A well-built, nicely-balanced DAC/headphone amplifier with a rich bass and plenty of driving power.

FOR

- power
- nice tonal balance
- punchy low-end

AGAINST

- tough competition

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Tune to fit

Kennerton's flagship Algiz in-ear monitors feature interchangeable filters to tune the sound to your requirements. Jon Myles tries them out for size.

Anyone looking for a pair of quality in-ear monitors (IEM) to pair with a mobile 'phone or high-resolution digital player is spoiled for choice nowadays with new models seeming to arrive on a weekly basis.

Search around the £400 mark and there's an array of products offering different options of fit, finish and sound signature.

Latest to join the market is Kennerton - whose Algiz IEM is on review here. If the name is new to you it's the newly-formed luxury arm of the Russian Fischer Audio brand - which was formed in 2006 with the aim of building quality earphones and headphones with value-for-money prices.

The Algiz is Kennerton's flagship in-ear monitor and so comes packed in a hard-case presentation box with a full complement of eartips including soft rubber and dual-flanges to ensure a good seal (essential for ensuring good bass reproduction).

Two 1.4 metre connection cables are supplied - one with an in-line microphone for mobile phones. These use a proprietary two-pin connector but are a tight fit and need a really firm push to seat correctly. Care is needed here not to bend the small pins when attaching.

Also in the case are two interchangeable sound tuning filters - a stock one that gives a relatively neutral balance and an alternative that gives brighter treble.

The earphones themselves are a long(ish) barrel-shaped design employing a single 10mm dynamic driver in an aluminium housing with

gold-coloured tips. Fit and finish is good and they sat easily in my ears without slipping, even when moving around.

SOUND QUALITY

With the stock filter in place the first thing I noticed about the Kennertons was their punchy, fast bass. There was definite low-end emphasis, but the notes were rounded and tuneful so on the likes of Charles Mingus's 'Mingus Ah Um' the double bass provided a firm foundation for the saxophone and piano parts above.

Moving on to Siouxsie And The Banshees' 'Kaleidoscope' heard a notable warmth to the midband and treble was not over-extended. This gives a nice smooth balance to the sound, helping avoid fatigue on extended listening sessions. It does mean, though, that vocals can sound a little recessed and ringing guitar work lost some of its impact.

Switching filters helped here, the sound opening up appreciably in the higher registers and generally sounding more detailed. Bass was still solid, if having a shade less impact, but overall there was more space and presence around instruments.

Brash recordings such as The Pixies' 'Debaser', however, could start to sound a little unruly when the volume was pushed up. It was never unpleasant

but certainly had a strident edge to it that left me wishing for some intermediate level between the two filters.

This is where the Kennertons aren't quite as naturally balanced as something like Noble Audio's Savant model that have a more organic feel to the sound.

Having said that the Algiz does have punchier bass that digs deeper without ever sounding artificially inflated the way some IEMs can. I imagine fans of dance or rock loving this side of their presentation and the two sets of filters does mean you can experiment, altering the sound to suit different genres of music.

CONCLUSION

The Kennerton Algiz is an enjoyable addition to the ranks of £400 in-ear monitors. It does many things well and its sound-tuning options are a handy feature. However, it faces some stiff competition at the price.

A choice of sound tuning filters enables you to tailor the Kennertons to fit your tastes.



KENNERTON ALGIZ £399



EXCELLENT - extremely capable.

VERDICT

Good bass reproduction and choice of filters are the standout features. Slightly inconsistent treble is the only drawback.

FOR

- tuneful bass
- sound-tuning filters
- good build

AGAINST

- fiddly connections
- tough competition

NuNu Distribution
+44 (0)203 5442338
www.nunudistribution.co.uk

WORLD STANDARDS

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

TURNTABLES

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



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



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



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

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



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



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

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



TO NEARMS

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

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

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



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

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



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

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

CARTRIDGES

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



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

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

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

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



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



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



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



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

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

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

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



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



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

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

PHONO PREAMPS

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

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



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



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



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



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

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

PREAMPLIFIERS

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



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

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



INTEGRATED AMPLIFIERS

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



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



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

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



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

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



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



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

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



POWER AMPLIFIERS

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

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

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



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

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



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

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



LOUDSPEAKER FLOORSTANDER

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

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



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

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

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

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



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



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

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



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

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



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

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



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



LOUDSPEAKERS STANDMOUNT

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

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



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



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



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



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

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



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



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



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



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

HEADPHONE AMPLIFIERS

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

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



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



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



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

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



CD PLAYERS

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



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



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

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



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



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

ELECTROCOMPANIE EMP-1/S £4,650

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



OPPO BDP-105D £1200

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



REGA APOLLO-R £550

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



ROKSAN KANDY K2 £900

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

TUNERS

CAMBRIDGE AUDIO AZUR 651T £299

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



CREEK DESTINY 2 £550

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



MAGNUM DYNALAB MD-90T £1,900

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



DACS

AUDIOLAB M-DAC £600

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



AUDIOLAB Q-DAC £250

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

ANTELOPE ZODIAC GOLD/VOLTIKUS £3,095

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



CHORD 2QUTE HD £990

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



DCS DEBUSSY £8,000

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

NORTHERN FIDELITY DAC £650

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



METRUM OCTAVE £729

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

NAIM DAC £2,400

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



TEAC UD-501 £699

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



RESONESSENCE INVICTA MIRUS £4,499

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



NETWORK PLAYERS

CHORD DSX100 £7,500

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



CAMBRIDGE AUDIO NP30 £399

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

CYRUS STREAM X £1,400

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



ENTOTEM PLATO £2999.00

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



NAIM NDX £2,995

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

NAIM ND5XS £2,175

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

NAIM NAC-N172 XS £1,650

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



PRO-JECT STREAM BOX RS £1,095

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

QUAD PLATINUM OMP £2,500

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



DIGITAL SOURCES

ASTELL&KERN AK100 MKII £569

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



FIIO X3 £150

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

LOT00 PAW GOLD £1,500

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



NAIM HDX £4,405

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

NAIM UNITILITE £1,995

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



PORTABLE SPEAKERS

BAYAN SOUNDBOOK £149.99

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



IRIVER IBA-50 £69

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

CABLES

BLACK RHODIUM TWIST £71/3M

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



MAINS CABLES R US NO.27 £95

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



CHORO SIGNATURE REFERENCE £900

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



TELLURIUM Q BLACK 280/3M

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

TELLURIUM Q SILVER OIAMOND £804/M

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



HEADPHONES

AUDEZE LC0-3 £1,725

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



B&W P3 £170

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



JAYS V-JAYS £49

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

NOBLE K10 INC. FITTING £1,279

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



PHILIPS FIDELIO X2 £260

Aimed firmly at the upper end of the market, these X1 updates are super-accurate 'phones that match the best. Hear them before anything else.



ONKYO ES-HF300 £180

Detailed and fast sound with good bass and finely-etched treble. Have great presence without colouration.

OPPO PM-1 £950

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

SENNHEISER H0700 £599

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

YAMAHA HPH-MT220 £150

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

Revolution starts from within.

Look at our new range of power amplifiers and you'd be forgiven for thinking not much has changed. Only the DR badge on the rear panel hints at the revolutionary technology within. Inside, our new Naim DR (Discrete Regulation) power supply circuitry and the radical new NA009 transistors developed for our flagship power amplifier, the Statement NAP S1, enhance the fundamentals of pace, rhythm and timing for which the originals are so renowned. The result is an even more immersive and involving music experience. Listen and you'll feel the difference immediately.

Discover more and book a demonstration with your nearest specialist retailer at naimaudio.com



Go Deeper



Wave Rider

The small Core powered loudspeaker from Mass Fidelity uses waveform synthesis to produce a huge walk-around sound. Jon Myles and Noel Keywood find it a thrilling listen.



'Small is beautiful' isn't a phrase that gets bandied around much in the world of hi-fi... especially when you are talking about loudspeakers. For much as we'd all love a big sound from a compact cabinet, the laws of physics don't make that easy.

Good bass, a smooth mid-band and extended treble require a loudspeaker of a certain size – or so traditional thinking would have you believe.

And surely something measuring just 4in x 6in x 6in (H/W/D) cannot produce anything approaching hi-fi sound, can it? Especially when it also has 120 Watts of Class D ampli-

cation packed into that small form factor and costs just £479.

Which were exactly my thoughts when I unpacked Mass Fidelity's Core wireless 'speaker. Yes, it really is that small – but Mass Fidelity are not thinking traditionally in terms of how it sounds.

It instead uses a proprietary sound processing technology called

NOEL KEYWOOD SAYS -

We were all surprised and immediately impressed in the office by the little Core, simply because it threw out a massive stage of sound that seemed quite divorced from it. I was going to say 'panorama', but that isn't quite the word – and exactly what the Core does and does not do I'll try to be succinct about. It seemingly generates a small hall, if you can imagine that, in which a performance takes place. There's a stronger sense of space and proportion than you get from a small conventional stereo system of similar price, plus a nicely solid sense of embodiment to singers and instrumentalists. With Fleetwood Mac's *Go Your Own Way* (24/96) from an Astell&Kern AK120 connected up optically, Christine McVie floated full size, it seemed, just above the little box - wow! I couldn't pinpoint the other band members but they too had strong stage presence all the same.

What I was hearing was massive mono I realised – and I'm not trying to be pejorative. Quite the reverse: some argue that we don't hear pinpoint stereo in real life – we can't for reasons of acoustics – and that pan-pot stereo isn't real, it's a contrivance. That's what Mass Fidelity say too – and there's a strong argument in there. The tiny Core just gave a small hall of sound that could have come from our recently-departed Tannoy Westminster Reference GRs it was so big and three-dimensional – and believable. And this I feel is where the small and inexpensive Core scores: think big, believable sound from almost ridiculously small device. That's why we were all impressed.

Well one reason. The other was that – as our acoustic measurements show – the small Core is nicely accurate in tonal balance: it reaches low and high smoothly. So cymbals rang and bass had weight.

Being used to stereo at a definitive quality level – think Martin Logan Summit electrostatics and Tannoy Westminster Royal GRs – the Core was intriguing. It sounded unbelievably large and spacious in its sound, yet focused too – unlike simpler devices where sound is dispersed off walls and ceiling – common in the past. Our 6000 cu ft room has no near walls or ceiling (it slopes from 12ft to 18ft) to support the Core in this fashion, so what we were hearing wasn't down to strong acoustic reflections, it was down to waveform synthesis. However, the unit needed space around it to project.

The subwoofer adds weight and is adjustable to aid matching. You get gain, phase and crossover frequency settings. Like all small subwoofers it works manfully to do its allotted task.

'wave field synthesis' which is said to recreate a stereo sound stage no matter where you place the unit or whatever your listening position is.

It's rather a bold claim – but, as ever, hearing is believing and this is where the Core really started to impress.

Before that, though, let's get to

"I was immediately struck by the large sound being produced. And it wasn't merely big - but detailed and nuanced"



Rear inputs include a 3.5mm stereo jack for analogue, digital optical, subwoofer out, plus a USB to charge/power mobile devices.

the basics. Yes, it's small – but it also comes with a full range of inputs. So, you get Bluetooth connectivity (including apt-X for suitably equipped 'phones) plus, on the rear, a digital optical input, USB for charging a smartphone and a 3.5mm analogue input.

There's also an internal battery with a claimed 12-hour life meaning you can move the unit from room to room without worry or wondering whether it will cut out. Charge time is quoted as 2 hours. You can run it from its external charging unit (110V-240V), as well as internal battery.

Inside are five drivers – one on each side plus a pair at the front, a downward-firing bass unit giving some low-end heft. Mass Fidelity also makes a partnering sub-woofer for £299 – which I'll come to later.

The optional subwoofer available for the Core, that we also reviewed, connects wirelessly; the wired output is for alternatives, such as the powered sub-woofers used in AV systems. Note that there's no wired ethernet connection, no USB computer input and no control app. The Core is a straightforward, easy to use powered speaker, waveform synthesis being a major differentiating feature.

A small, light remote control alters volume, provides input selection, mute and on/off. Cores inter-communicate using Bluetooth and can be used around the home to distribute music.

SOUND QUALITY

To start with, I placed the Core on a glass hi-fi shelf, paired it with an iPhone and sat back to listen. Which is when it became apparent that this little unit was doing something rather special.

I was immediately struck by the large sound being produced. And it wasn't merely big – but detailed and nuanced.

Listening to Patti Smith's 'People Got The Power' there was a drive and bounce to the track which ideally suited the music. It's a hard-charging



The Core subwoofer pairs wirelessly with the main unit, for stronger low-end output. Taking time with set-up, it can prove highly effective.

THE SUBWOOFER

Mass Fidelity supply a sub-woofer to partner the Core, for those who want more bass impact. They wirelessly communicate – but the sub does need some careful set-up.

It has both crossover and gain controls and once paired using Bluetooth takes over all bass duties, the Core then handling mid and treble.

Some time needs to be taken in getting subwoofer settings right. With gain too high or the crossover frequency wrong you hear a rather nasty bass thump.

Once done, though, there's a synergy at work. The sub cuts in when needed and seems to free up the Core to concentrate on what it does best - which is reproducing an immersive sound field in the mid and treble.

With Leftfield's bass-heavy 'Dusted' I heard low-frequency impact – but it wasn't dirge-heavy. There was impact and slam – and the sort of sound that made me smile. It doesn't dig quite as deep as some other subs I've heard from the likes of REL but then again it only costs £299.

Taken together with the Core, you are getting a rather tasty Bluetooth combination here for less than £800.

song which just begs you to turn the volume up – and here the Core didn't disappoint, going loud without any sense of strain.

Wandering around the room while I listened also revealed one of the Core's main strengths – there really doesn't seem to be any obvious sweet spot.

I moved it from the glass shelf onto a desktop and the same qualities were apparent – there's a room-filling sound that doesn't appear to depend on positioning.

Reining back on the tempo with Bruce Springsteen's stark acoustic guitar and harmonica of 'Mansion On The Hill' also displayed a remarkable degree of subtlety. It's a haunting track and one that doesn't always translate well via small Bluetooth

speakers – but the Core conveyed it with atmosphere and air around Springsteen's gentle guitar. The same as a pair of large loudspeakers? Mmm...maybe not but the difference isn't as large as you might think.

And actually that is the great thing about the Core. It provides a great deal of musical entertainment from a very small package.

CONCLUSION

Judged by its size the Core really shouldn't work in pure hi-fi terms. Yet it does. It has a nicely balanced sound that combines thrust with a good degree of detail.

It is an ideal Bluetooth loudspeaker for those looking for music around the house – offered at a low price,

MEASURED PERFORMANCE

The basic tonal balance of the Core, on its forward axis, is shown in our third-octave frequency response analysis. The forward facing units have reasonably even output across the audio band up to 18kHz, with some slight roll down above 8kHz. All the same this unit does produce high treble and this helped toward a well etched sound.

There are no major dips or suck outs and only two quite well controlled peaks, likely due to internal reflections within the small cabinet – common with small speakers.

Bass output rolls away slowly below 70Hz, quite a low frequency for a small cabinet. There is even a small restorative peak at 40Hz to add a little deep bass weight.

Our analysis of subwoofer output shows a very smooth characteristic, extending from 150Hz down to a low 30Hz (green trace) with the upper crossover frequency set at maximum. This subwoofer produces deep bass and it is tonally very accurate.

Setting the upper crossover frequency to minimum pulled response right down to that shown in the orange trace, and this closely matches output of the Core, extending bass down to a low 30Hz.

The Core has a respectably smooth and even tonal balance across the audio band, and the optional subwoofer extends this down to a low 30Hz to give solid deep bass. It's an impressive performance: both units are well engineered in acoustic terms. **NK**

FREQUENCY RESPONSE



FREQUENCY RESPONSE SUBWOOFER

Green - max bandwidth
Orange - min bandwidth



The supplied remote enables volume control, input selection on/off, plus pairing with other Core products for multi-room playback.

MASS FIDELITY CORE £479



OUTSTANDING - amongst the best.

VALUE - keenly priced

VERDICT

A small powered loudspeaker with a big sound. Impressive.

FOR

- small form factor
- ease of use
- big sound

AGAINST

- nothing at the price

Air Audio
www.airaudio.co.uk/brands/mass-fidelity



Sinfonia

The Sinfonia integrated amplifier from Unison Research boasts a dual-mono, single-ended, pure Class A valve design that performs to the highest audiophile standard.

Designed and manufactured in Italy, every part of the Sinfonia's stylish, yet sophisticated, design has been meticulously engineered.

The circuitry and purpose-designed bias settings of the amplifier's power stage have been tuned to perfectly accommodate the four 6550 valves. Equally, the ECC83 and ECC82 valves used in the pre- and power-drive stages have been selected due to their superior characteristics. The end-result is a rich valve sound that puts musical enjoyment first.

Available across the UK now.

Technical Information

- Dual-mono stereo integrated amplifier
- Single-ended parallel Class A design
- 4 x 6550 valves (two per-channel)
- 2 x ECC82 valves (one per-channel)
- 2 x ECC83 valves (one per-channel)
- 25W Output
- Frequency Response: 20 - 30,000Hz
- Built-in power supply output for Simply Phono phono stage.
- System Remote included

Sinfonia Anniversary, with Gold Lion valves (pictured), also available.



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Jumbling it Up



Martin Pipe makes tracks to Kent to take in all the joys of the Audiojumble Hi-Fi Fair and comes away with absolute bargains!

This year's February Audiojumble took place towards the end of the month and we were lucky that weather conditions were clement. black ice has been a problem on the A21 that leads to this event. Good weather or bad, many make tracks for Tonbridge to visit an event packed with interesting people and items. You can find a long-deleted jazz LP, everything you need for an inexpensive 'starter' system or a piece of true esoterica.

2016's major change is that the event's founder John Howes has 'retired' from the organisational aspects of the show, allowing him to chat with attendees and run a stall; the reins have now passed to his three children. John told me that February's show was the largest to date, with over 145 stalls and more visitors than ever before. Both main halls were packed, as were corridors and a pair of ante-rooms.

So what can you expect to find? Music of numerous genres, on just about every format going – mostly LPs and CDs but tapes of various types are frequently seen.



This is the legendary John Howes - Audiojumble's founder, and a true audiophile - accompanied by his delightful missus Brenda. After running Tonbridge Audiojumbles for 23 years, he's passed organisation to the younger members of his family. As a result, John was 'freed up' to man a stall and circulate among the throng.

Blank media, both used and new are a common sight too. Piles of chassis good for spare parts are available - useful for restorers. Then there are the electronic components; valves, semiconductors, capacitors, resistors, drive units and so much else.

Vintage wireless sets from the 1930s jostle for space on groaning tables with wind-up gramophone motors, test equipment, cassette players, books, service manuals and media streamers. And then there's all of the hi-fi gear, old to new, budget to high-end.

As ever, there were two entry times. Queues started building from 9am and snaked around the building. Those wanting a good chance of getting the better items, though, could get a 9.30-entry 'early bird' ticket (a fiver more than the £5 10.30 'regular' variety). Prices can be high at this time though.

Sellers are more amenable to offers as the event proceeds. I found a Sonifex NAB cart machine as used in analogue-era radio stations to play jingles and 'spots', for £20. Its seller was an ex-BBC man, and we had

an enjoyable chat about audio and related subjects. Just one of many I had that day...

The next Audiojumble takes place on Sunday 2nd October 2016 at the Angel Leisure Centre, Tonbridge, Kent TN9 1SF. See www.audiojumble.co.uk Hope to see you there!

Words and Pictures: Martin Pipe



Here we have one of the first Rega products - the Planet turntable, circa 1973. Its influence on that infamous Amstrad turntable is obvious! This pristine £150 example comes complete with contemporary Acos Lustre arm (hence the 'Acos Rega' moniker) and a much more modern Ortofon Concorde cartridge.

A complete Bang and Olufsen system from the late 1960s - Beomaster 1000 2x15W FM-only stereo receiver, Beogram 1000 belt-idler hybrid turntable (with proprietary cartridge) and Beovox 1000 2-way speakers - was being offered for £20. Many have written off B&O as style over substance, but the Danish firm conducted a lot of original research and development in its Struer lab. Many of its products work exceptionally well. That they look good too is merely an added bonus!



£150 would have bought you this Decca stereo tone and gain control unit. According to the seller, this solid-state piece of equipment was originally used for the tonal-correction of older material (such as 78s) prior to their transfer to LP. Note the scales on the controls which allowed settings to be accurately noted down for future use. The unit on top is a home-constructed power supply; I'm not sure a phono socket was the best choice of connector.



The Elcaset format was designed to combine reel-to-reel sound quality with cassette convenience. Featured a while back in Olde Worlde, it performed superbly but was expensive and arrived too late to make an impact. Few decks were sold and it's uncommon enough to find one machine - never mind the two you see here! This is the 1976-vintage Sony EL-5, a 'budget' two-head brother of the (slightly!) better-known EL-7. £150 was being asked for each one.

Another pair of Sonys - in this case TC-765 reel-to-reel tape decks being offered for a fair £250 each. These monster machines were aimed



at the Revox end of the tape market. They have a robust closed-loop, dual-capstan transport capable of operating at 9.5cm/s or 19cm/s, long-lasting ferrite heads and quarter-track recording.

Whenever Technics linear-tracking turntables are mentioned, we usually think of designs like the classic SL7 and SL10. Those were expensive, and so Technics also sold the more affordable SL-DL1 shown here. Its direct-driven platter isn't quartz-locked, but you get the same freedom from mis-tracking. At £30, a good deal.



Quad electrostatic speakers are unique and since the first ESL was launched back in 1957 they've built a well-deserved reputation for detail, transparency, smoothness and imaging. Here we have the early-60s ESL63. This pair could have been yours for a mere £275, the caveat being that servicing was required.



A sight replicated up and down the country in record fairs, which offer few if any of an Audiojumble's hardware goodies. LPs are organised by genre, and there's a £2 'bargain-bin' too. Discs in poorer condition could be had elsewhere for as little as 50p, and if vinyl's not your thing then you could choose from CDs, reels, cassettes, DATs, 8-tracks and Minidisks amongst other formats.

What we have here is the Sony WM-DD9 circa 1989 considered by some as the Holy Grail of play-only Walkmen. It boasts quartz-locked disc-drive, Dolby B and C, auto-reverse and amorphous head. Some reckon it to be on a par with the legendary WM-D6C in terms of sound quality. This one (claimed to be working) was offered for a bargain £40.



The Little Bear P5-1 shown here consists of a couple of 6J1 pentode buffers - one for each stereo channel. This budget device is intended to 'smooth over' the edge so often claimed of digital audio while adding tube 'warmth'. You can buy them new on eBay for £33 which makes this used one's £25 asking price seem a little optimistic!



In many quality mid-range systems of the late '80s and early '90s lurked a NAIT 2 amplifier - Naim's 'entry-level' amplification - like the one being offered here for £325. Effortlessly musical and rhythmically-capable, the unassuming NAIT 2 can do justice to decent sources and speakers even today.



Radford made not only amplifiers but also the test gear needed to design and service them. This LDO (Low Distortion Oscillator) Series 2, offered for £65, dated back to the 1960s. Built around tubes and a parallel-T feedback network the LDO S2 could operate from 5Hz to 500kHz.



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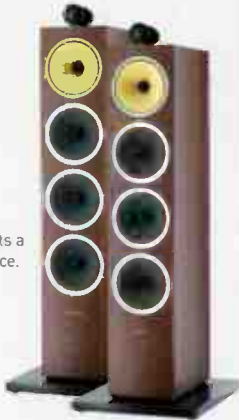
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MADELINE BELL

Blessed With Your Love
STS

A real audiophile production, this one. STS (www.airaudio.co.uk) is active in releasing original reel-to-reel tapes for discerning fans, but it also produces vinyl versions of the same. This copy, whose sleeve is covered with hi-fi brand names and images of an audiophile nature, is a smoothly delivered example of this classy LP.

Originally a combination gospel singer and meat wrapper for a local supermarket in the late fifties (she was the fastest chicken wrapper in the company), Bell would later move from gospel group to (while on tour) friend of Dusty Springfield, to successful backing singer to the stars, a singer with the group Blue Mink (remember 'Melting Pot?') then a successful solo career with strong connections in Holland. This album, originally called 'Blessed' and her fourth release for the Dutch 'Challenge' label, was initially released in 2000 but has now been

reissued as an audiophile disc.

Bell begins the LP with the classic Bacharach & David song, 'The Look of Love'. I pumped up the volume on this one to high levels but such was the quiet cut and the dynamic range of the same that the higher volume was merely converted into rich detail rather than any obtrusive or harmful sonic frequencies.

There is a real sense of maturity about the album and the master. Bell's delivery offers a slight huskiness that adds a fine texture to the overall track. She sashays throughout the song, quietly followed by a detailed yet confident piano and a sultry, rather sexy saxophone. Percussion rolls over the soundstage in a characterful manner, along with significant secondary percussive affects such as tinkling bells and bongo surrounded by lots of subtle reverb. The audiophile qualities of this production ooze all over your hi-fi.



BILL FRISELL

When You Wish Upon A Star
Music on Vinyl

If you like your jazz, then you will be familiar how much control certain players have over their instrument. Some talented artists look as if they are holding a live animal which they have trained to a tee. It's easier to attain with some instruments: the saxophone, for example. Maybe that's why you hardly ever see that happening with guitar players. Many sound the same as each other. Then there is Frisell. A man of multi-genre tastes (despite being seen as a jazz guitarist) who transform's his guitar at a whim.

Even Frisell's skill and talent can be muddled and masked by a production that is not sympathetic. The risk of that occurring here, on this new, rather easy listening outing, is reduced to zero after the first few seconds of 'To Kill A Mockingbird Pt. I' as the almost folkish rhythms of the instrumental music takes an initially introspective

presentation until Frisell appears, almost hovering over the upper edges of the musical soundstage. His sparse, simple yet well placed plucked strings rain down upon the soundstage like light rain on a sunny afternoon, adding sparkle to the production. It is this style of play that is noticeable throughout the LP, an unrestricted approach that only talks when it has something meaningful to say. Even when Frisell has his busy moments, he never 'gets in the way' of the rest of the instrumentation. He has a knack of being dominant while also being democratic in sharing the limelight.

The cut itself is very quiet with no booming of the bass or smearing in the upper mids. Detail is fine and crisp, never masked and always abundant in nature, while good bass heft gives the album solidity.

Influenced by the great John Coltrane, Wayne Shorter's tenor then soprano sax playing slowly became more efficient, spare and delicate as time wore on. Initially a member of Art Blakey's Jazz Messengers, Shorter shot to fame as part of Miles Davis' collectives, running through Davis' post-bop to electro-fusion periods. In 1970, Shorter joined Joe Zawinul to form the fusion outfit, Weather Report.

Initially released in 1974, this solo LP was produced in his Weather Report period and is a real show-stopping, star-studded album, one of his best releases of that time, packing in the likes of Herbie Hancock, Airto Moreira and the brilliant vocals of Milton Nascimento which are immediately evident on the first track, 'Ponta de Areia'.

German-based Speakers Corner has been one of the most impressive record labels in terms of its care and attention and

maintaining audiophile principles, over the years. I have yet to hear a sonic problem with its releases. It is possibly the most consistent record label in the world today in terms of its high quality output. This release is no different as the master impressively allows a wealth of detail to stream from the grooves.

Shorter's soprano sax on 'Beauty And The Beast' offers a brassy air but there is an emotional and physical resonance there too. You really know that a human being is behind this instrument as it provides a sense of unpredictability. Jay Graydon's bass successfully provides a reliable foundation and rhythmic beat to the track while the almost chaotic effects of Herbie Hancock's piano releases the great man to 'freak out' in that rather stylish manner Hancock has, of course.

A beautiful pressing that is quiet and even, and packed with dynamic abilities.



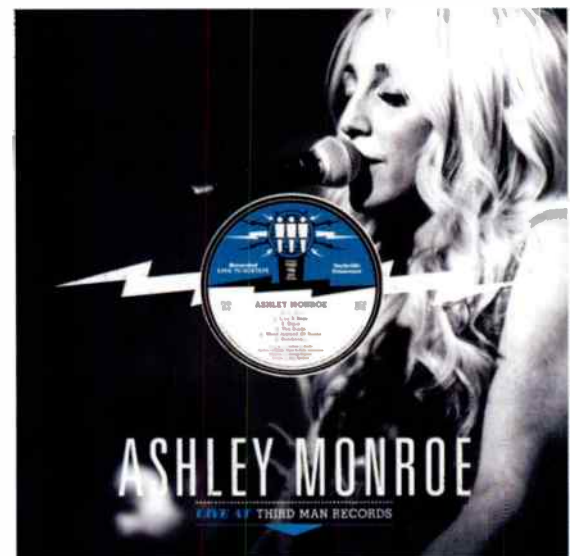
WAYNE SHORTER

Native Dancer
Speakers Corner

For me, Third Man Records has solved the issue of how to produce a top quality live album. When you listen to a live album, you do not want a clinical or a studio feel. You want emotion, passion, drive and to feel uplifted if the artist allows you into their creative soul. It's almost an honour to be in such a presence if an artist opens up to you. There are exceptions, sure, but you tend to get that result more often in a live arena. The problem is that most live cuts mask a lot of that emotion with poor sound quality and a muddled soundstage but Third Man increases the probability of touching the lodestone by recording its music live, in front of an invited audience and then recording that performance directly to disc, which sits isolated in the next room, in view of everyone who can see the lathe doing its thing through a sealed window.

Also, the very fact that the artist and the audience knows that this is a 'one take' scenario adds an extra frisson to the performance, an extra edge that lifts the performance a few extra and very essential percentage points.

This is what you can hear here, despite the fact that, contemporary solo country singer (and occasional Pistol Annies band member) Monroe is ridiculously relaxed about the whole thing. Yet her vocal delivery is infused with romance, drama and a passion that transcends the performance itself. Despite the fact that, if I was being picky, I believe that the vocal is set too far into the rear of the soundstage which partly masks her delivery, there is still much to admire in terms of sound quality and the directness of Monroe's performance.



ASHLEY MONROE

Live At Third Man Records
Third Man



Is your music system listening into the police radio?

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the hidden menace
that's spoiling your
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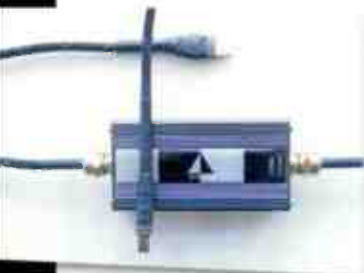
"But there's no Chris Evans or Woman's Hour, or villains being chased, coming out of the speakers! I don't hear anything."

Actually, you do, it's that hard edge on higher frequencies, particularly if you turn up the volume. It's Radio Frequency Interference (RFI).

Are you playing CDs or streaming files from a hard drive? Round a network? Then you are especially vulnerable as DACs process the RF along with the music. RFI becomes part of the signal.



These Yushan blocks absorb RFI and vibration from the cables. As a bonus they lift cables off the floor, another source of vibration.



This USB interconnect is both screened and shielded with 'stealth' material to absorb RFI and other electrical noise, incoming and radiated.

The damage creates a haze that wraps round every note you play, rather like the halo you see around a street lamp through a rain-spattered window.

That "hash" blurs imaging, spoils separation and destroys detail. There's an underlying noise floor that intrudes into "quietness".

Removing the hash creates greater dynamic range and "blacker" backgrounds – you will have read that comment in some reviews.

RFI is pernicious, the hidden menace. It seeps in at every possible point – through the air into circuits, into cables and via the mains. It then merges with the digital music signal and the mixture is processed by the electronics. **That analogue output cannot now be "cleaned".**

Two recent incidents:

- A customer with a high-end all-digital system, a NAS drive feeding into speakers with built-in DACs and amplifiers. He'd been delighted with the progressive release of detail and realism as he installed Vertex mains cables and Pico Grounding Blocks.

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A recent set of Yushan blocks under digital cables gave him another lift.

- Another customer with a large Naim system and several Vertex components at strategic points. But it was Yushan blocks under puny mains leads to the NAS drive and switch that lifted him from his seat, shouting "Awesome!!"

Is RFI the "final frontier" in hifi? – now that mains cables, supports and system cables have all been accepted?

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Loudspeakers: Avalon, Kawero! – Vivace & Chiara, NEAT, Totem. Cables: Chord Co., DNM, Nordost, Siltech, Tellurium, Vertex AQ.

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"CD is no candidate for the rubbish bin - but the bell curve says otherwise"



Noel Keywood

Since people around the world use CD, enjoy it and have collections of it, why should it be peremptorily consigned to the rubbish bin? Millions of us must have invested significant sums into buying players and discs, building up collections and all else so we could, at the end of it all, enjoy music. Why should we – all of us – be suddenly denied that ability, one we have after all paid for?

Standing back and asking such a simple question does make me wonder what on earth is going on at times. We had LP and threw it away, then came cassette that – well, lasted as long as a cassette – and finally came the perfect medium with lasers and all, that would last us forever – except it hasn't.

The simple yet baffling explanation is that CD is suffering a natural death, as I'll describe it. Let me explain. A long time ago a clued-up marketing man from Philips told me that LP would inevitably die and Philips were readying its replacement. At that point in time I had spent my youth (and more!) listening to music from LP, saw no reason not to continue doing so and was horrified all this should be taken from me.

How do you know it is going to die I asked? Because sales of goods follow a bell curve, LP is over the peak of this curve and from now on sales are downward. It will die, I was being told in effect – a bit like we will all die I thought to myself – and with the same grim inevitability. But it's hard to link CD to human existence and imply some mystical link – and I'm not about to try to.

I think we're looking at something else here, something altogether more prosaic, perhaps our subconscious attachment, and then detachment to physical possessions, irrespective of their real value to

us. Think an old car that gets you effectively from A to B, but you still want a shiny new one. The question then becomes why – and the answer isn't so obvious.

All the same – what a depressingly glib explanation of the death of LP! I was going to be robbed of something that had provided me with endless pleasure, reflection, excitement and all else because of a "bell curve" – its value to me as a source of pleasure had nothing to do with it.

Similarly, millions are now to be robbed of CD. It came as no worthy successor to LP in my eyes, or should I say ears, but now that CD faces the same fate even I am beginning to feel that there's an injustice here.

Perhaps, as I've read, what I and most others don't understand is that music never was meant to be anything other than a passing experience, like a delicate scent on a warm evening breeze. When we tried to eternally capture it, it would inevitably break away from such a mechanical bond. We've now had wax cylinders, shellac discs, vinyl discs and laser discs – all of them falling victim to the bell curve, or so it seems.

Having just had a conversation about how Hendrix never played – never bothered to play – a song as it was captured on an album, endlessly re-interpreting its basic theme to defeat any notion of a definitive version, so perhaps trying to pin down music into hard form is going against what it is all about – and anything that attempts to freeze a moment in time, or artificially create it as such in a studio, is doomed by its very nature.

Yet somehow, I don't think so. It's an interesting argument and I can see how capturing moments in time for later recall is a strictly modern phenomenon that started with photography and the wax cylinder,

but I still don't see it as a hopeless task, a process that's somehow doomed to failure.

Somewhere in there I suspect the reason is we all, nowadays, expect our lives to move on, to progress and the goods around us are symbols of our success or failure in this process. So if I live in an old house and drive an old car – which I do – then that, seemingly, is a strong reflection of what I am. No rude comments please!

No matter that it may not be; it simply makes sense to drive an old (read: inconspicuous) car if you want a quiet motoring life on London's streets, as well as shrug off damage from waywardly-driven builder's vans, Murphy trucks and the like.

But who doesn't want the latest and shiniest vehicle, even if it doesn't make sense? I'd love to own a brand new Range Rover – all that bling! – even though I have no use for it. And I can't help wanting a brand new Triumph Thruxton R outside the front door, even though it would get me nowhere fast other than the nearest traffic jam.

On such whimsy like this formats rise and fall, victim to the bell curve of lust then rejection, I suspect. Perhaps it is boredom that sets in and we just want a new toy.

Whatever, I'll forever see CD as a very neat bit of work, technologically, if now outdated in sound quality as far as domestic use is concerned. It could have been made smaller and sexier in a new updated form; SACD never addressed the size/portability issue. But handy size makes CD wonderfully easy to use, and it is foolproof too, I will say in its defence, now that I've become one of the millions worldwide to move on to hi-res, and back to LP.

It's no candidate for the rubbish bin I feel – but the bell curve says otherwise. ●



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"Once you've hit jazz you realise what being a musician is all about"



Paul Rigby

I was talking to a friend of mine recently. Based near Nottingham, he's in his seventies and has been listening to music, specifically jazz and blues, all of his life. He would undertake all-night jazz listening sessions during the sixties in London, flitting from one jazz club to another as the evening progressed, listening to many jazz greats along the way until the early hours of the morning whereupon he would fall asleep on a railway station bench as he waited for his train home. His love for the genre is total and he rightly sees it as the epitome of any musician's skill – the height of his or her expressive talent. There's plenty of other musical genres present in the world, of course, but once you've hit jazz you suddenly realise what being a musician is all about. Or do you?

I only venture this comment after breezing through a batch of releases from the superb, German-based, jazz label, ECM. You cannot point a finger at this label and accuse it of being boring, staid or unimaginative in its approach to music. It features – and has featured – some of the best and most proficient artists in the world.

What I have noticed more from this label and from others is that musicians get to a point where actually playing the instrument is no longer something to consider. Pushing other boundaries than technique is utmost.

Interpretation of mood, thoughts and surroundings become more interesting. More than that, once musicians command the tool of their musical expression, they start listening more to silence and how that interacts with the music that they are playing...or not playing.

In a perverse contrast to, say, the punk genre which demands that artists make as much noise

as possible, many jazz musicians wonder what happens when they don't play and don't make a noise – and how that interacts with their surroundings.

Take Mette Henriette who is obviously proficient with her saxophone yet feels confident enough to allow sparse moods and feelings to dominate her music. A work of delicacy, her self-titled album arrangements are subdued and sparse. This is music on a large canvas. As Henriette herself says, she likes sound because it is invisible. Just. "...like scent. It finds its way under your skin and takes you to places in time and space."

The idea is to allow sensory experiences to influence the artist. This is something that the Stefano Battaglia Trio does on their new album 'In The Morning'. Playing the music of Alex Wilder, this piano trio is never afraid to allow the notes to linger and to encourage the ear to search for answers in the music instead of the message being pushed down your throat.

Of course, this is why soundscapes exist. To send the ear onto a journey. One example of that is Tigran Hamasyan's 'Luys i Luso', a collection of Armenian sacred music scored for piano and chamber choir. This is music that spotlights restraint and focuses on potential – and lets your brain fill in the gaps.

Do you see the theme here. The thread? Some music out there assumes that you have the intelligence of a Big Brother-watching, Sun-reading, McDonald's chomping denominator of the lowest classification and offers you no more than a single emotional prod with cloned lyrical sentiments.

Then there is music that, as it were, leaves as much out as it provides, assumes you have a brain to use but never targets you in

elitist, parvenu-pushing tones.

Music without an agenda, secret signs, phrases, words, uniforms or expectations.

Enrico Rava's Quartet via the album 'Wild Dance' does just that with a range of moods and forms. His improvisation is both sensitive and rather fragile, yet it is mature in outlook, very 'grown up' as it were.

Even the new album by Food (featuring saxophonist Iain Ballamy and drummer Thomas Strønen plus electronics player Christian Fennesz), 'This is Not a Miracle', which introduces electronics into the mix, palpably ignores the instruments and, instead, presents you with a feeling of open and easy jazz.

This feeling of exploration is best found in the 3CD box set devoted to the compositional work of Stephen Sondheim (the most highly regarded theatrical composer/lyricist in his generation). 'Liaisons' features reimagined instrumentals from the man himself, from artists as diverse as Steve Reich and Wynton Marsalis to William Bolcom and Jake Heggie.

Sondheim is normally not a fan of retrospectives but, as he said himself, "...they're written by composers, not arrangers, and they aren't decorations of the songs. They're fantasias on them, responses to the melodic lines and the harmonies. All of the pieces in the collection surprise me, they take approaches that would never have occurred to me".

If your listening experience reveals that the players are more concerned about getting their solos right or keeping a rhythm, or are concentrating a little too much on finishing at the same time so that the lead singer's big jump – off the band stand – hits the stage at exactly the same time as the song's final note, then you might want to think about listening to this music instead. ●

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“Perhaps what’s needed is a new punk rock revolution to stir everything up again”



Jon Myles

I grew up in the punk era - that incandescent collision of art, music, politics and disaffected youth. If you weren't part of it, it's hard to describe just how exciting it was at the time.

Strange to think that way back then a group of four young men barely out of their teens would be banned by local councils up and down the land from playing their music because they had sworn on air at a local TV presenter because he'd, well, asked them to say something outrageous.

Those of us living in Manchester never got to see the interview that made the Sex Pistols a household name as it only aired in London (there was no YouTube then). But heard all about it the next day through the press - and found it all quite amusing. Especially as we'd never heard of Bill Grundy.

Even stranger, in retrospect, was that these self-same corrupters of the nation's youth (© various tabloid newspapers) would make their last UK appearance playing a gig for the children of striking firemen in Huddersfield and being pelted with Christmas cake. But that was just one more example of the all the glorious incongruities of punk.

The movement didn't just produce some great music, though - it also influenced fashion, art, politics and spawned some of the greatest rock journalism.

Crucial to punk's success was the influence of the music press - especially the NME and Sounds (Melody Maker stood aloof at first still championing the likes of Yes and Emerson, Lake & Palmer until it realised it had better join the fray for the sake of both its credibility and sales).

The NME had Tony Parsons and Julie Burchill (hired after the magazine advertised for “two hip,

young gunslingers) while at Sounds there was Jon Savage - whose book England's Dreaming remains the definitive account of the times and punk's enduring significance.

Then there was Paul Morley who seemed to be intent on creating his own form of weird music journalism. At times his articles read like unconnected words randomly scattered on the page. But somehow they made sense.

What they all had in common was an urgent, vibrant style that reflected the music they were writing about and connected with the audience they were writing for. Exciting times produced exciting journalism.

It was also complemented by some superb photography from the likes of Denis O'Regan, Anton Corbijn and Pennie Smith - whose shot of Paul Simonon smashing his bass guitar on stage in fury became the cover for 'London Calling' and remains one of the iconic images of the era.

The NME, in particular, blended words and pictures together into a fantastically energising weekly package that wasn't just enjoyable but well-nigh essential. If you hadn't read the NME, you didn't know what was going on.

I was reminded of all this when handed a free copy of the latest incarnation of the magazine outside my local Tube station recently. Falling circulation and the rise of the internet as the main source of news has seen the venerable publication being forced down the giveaway route to attract sufficient advertising to survive.

Smaller and more compact than in its glory days of the 1970s - and of other free magazines being pushed at me outside transport terminals - a Stylist or Shortlist for music-lovers so to speak.

Unfortunately, it also looks and reads like them too. That's not to

denigrate the people working there, more that the music scene has changed beyond all recognition since the days of punk rock. Back then the BBC banned the Pistols' 'God Save The Queen' from the airwaves and was accused of employing dark deeds to prevent the single making it to No. 1 on the official music charts (ironically, it was beaten to top slot by Rod Stewart's 'I Don't Want To Talk About It').

Thirty-five years later the song featured at the opening ceremony of the 2012 London Olympics - with Her Majesty herself in attendance. Where punk was once dazzling, dangerous and a direct threat to the established order it's now decidedly mainstream.

It seems rock has lost its capacity to shock or shake-up our sensibilities and that's reflected in the publications that write about it. I'm sure even the likes of Tony Parsons and Julie Burchill in their pomp would have found it hard to construct a 1000-word call-to-arms around the latest album from Coldplay or Bruno Mars.

And a colour photograph of Beyonce descending a staircase at another impersonal stadium can't compete with a picture of Debbie Harry lying sprawled on the stage of the Hammersmith Apollo.

Perhaps what's needed is a new punk rock revolution to stir everything up again. A new big, bad, beautiful noise that scares us oldies and inspires both writers and musicians alike.

* If you are interested in seeing some classic rock photography featuring the likes of Debbie Harry, Joe Strummer, The Ramones and David Bowie try to catch Denis O'Regan's exhibition 'Rock Through The Ages' which is touring a number of mainline railway stations. Log-on to www.generation-musicclub.com for more info. ●

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"These days, it's not just professional audio catering for balanced connections"



Martin Pipe

Recording studios, radio stations and similar audio environments contain an incredible amount of cable. Miles of the stuff. Let's take a recording studio. The performance room (the large space in which the musicians play) will be dotted with boxes containing the audio inputs for the musicians' mikes and other gear. These boxes are linked via lengthy bundles of cables to the mixing console in the control room, where the engineers and producer work. Further cables link the console to other devices in the performance room. It all adds up to a lot of copper...

The signal output of a microphone is tiny. We're talking about millivolts here. In recent years, there has been a move to building signal-boosting preamplifiers (and even analogue-to-digital converters) into the mikes, or at least bring them closer to where the signals are at their tiniest – and most vulnerable. This is no surprise; at a very low level they can be 'contaminated' by other signals ('crosstalk') or even more objectionable noise like mains hum or radio interference. And the chance of such contamination rises with longer cables. Annoying if you're a listener at home – but disastrous if you're a recording professional.

A 'normal' audio signal is carried via two wires. One contains the signal 'proper', while the other is at ground potential. Cables intended to transmit low-level audio are usually screened. Here, the ground connection consists of a braid that's wrapped around the signal-carrying core. The design of such cabling has to be careful, or the cable will have an unwanted capacitive element that could result in high-frequency losses.

The grounded shield is valuable, since it helps to protect the audio signal from unwanted noise. Such

cables are fine for hi-fi installations – a distance of less than a metre from CD player to amplifier, for example.

They also suffice for conveying signals from a turntable's moving-magnet or moving-coil cartridge over short distances. In level terms, the signals from these are similar to those from microphones. And noise is seldom intrusive, despite the bass boost of the RIAA curve.

A CD or tuner's output is at a much higher 'line level' – typically a volt or two! If you get hum when listening to such a source, and your audio cabling is kept at a distance from mains wiring then you have an equipment or cabling problem. This two-conductor connection is known as 'single-ended'. And it's fine (especially at line-level) for distances of a few metres.

But tens or hundreds of metres, possibly in the unpredictable environment of an outside broadcast truck or mobile recording unit? Forget it! Many years ago, 'balanced-lines' were introduced to solve the problem. Here three wires are employed, the first of which is ground. The other two carry the audio signal. One is inverted with respect to the other. Basically, any noise picked up along the cable run will equally-infect both inverted and non-inverted signals.

At the receiving end, any noise effectively becomes 'equal and opposite' on the two lines so when the two are added together what is termed 'common-mode noise' cancels out!

The term 'balanced' arises from the fact that the two signal-carrying conductors have an equal impedance relative to ground. The single-ended connections cannot and don't, thus the use of the term 'unbalanced'. These balanced 'mirror-image' signals are usually associated with two connectors. One is the quarter-

inch or TRS (tip/ring/sleeve) jack. TRS connectors are also used for amplifier headphone sockets, only here the second and third 'poles' are used to carry the non-inverted ('+') and inverted ('-') signals of a balanced connection rather than left and right headphone audio.

The other is a more substantial connector known as 'XLR', after the part number ascribed to it by its inventor Cannon Electric. You can buy XLRs in different configurations, but those used for balanced audio are 3-pin. Such connectors are also specified for AES/EBU (AES3) professional digital audio connections.

XLRs have the advantage of being securely 'locked' into position. The advantages are obvious; imagine the repercussions if someone was to trip over a mike cable during a live performance! In the 'good old days', a transformer was used at either end of the cable to convert audio between its natural single-ended state and differential signals. Transformers also provide useful isolation. Decent ones are expensive to build and so these days circuits known as balanced line drivers and receivers are used instead. These can be built from op-amps and dedicated chips are available.

These days, it's not just professional audio equipment catering for balanced connections. An increasing amount of consumer gear is doing so.

But over the short connections of domestic use, is there any point? In most cases the signal starts and ends in single-ended form, and so you have deliberately-introduced electronics that strictly speaking isn't necessary. Some reckon that, despite the added complexity, balanced connections sound better than their unbalanced equivalents – even over short distances. Do you have any opinions or explanations I wonder? ●

Zeppelin Rising

Jon Myles checks out Bowers & Wilkins new Zeppelin Wireless standalone loudspeaker.

Bowers & Wilkins (B&W) started a trend with the launch of its Zeppelin loudspeaker some eight years ago. An unusual shape reminiscent of a Zeppelin airship, with a front-mounted silver iPod docking station, made it one of the first 'speakers to exploit the musical capabilities of Apple's now-iconic music storage device.

Unsurprisingly given B&W's expertise in loudspeaker design, the company's first powered one-box speaker also sounded good - with excellent detail and a clean, crisp delivery allied to plenty of low-end power.

But things move on and iPod docks are now becoming increasingly old-fashioned - replaced by wi-fi and Bluetooth systems that can connect to all manner of digital devices (mobiles, laptops, digital audio players etc).

So welcome the new £499 Zeppelin Wireless. Looks-wise it retains the same classy curved

cabinet, measuring a substantial 18.8cm x 66cm x 18.3cm (H/W/D) and weighing in at 6.5kg.

Gone, however, is the iPod dock with, as its name suggests, the new model majoring on wireless connection via Apple AirPlay, Bluetooth (including aptX) or Spotify Connect. You can still connect an auxiliary device via the 3.5mm input on the rear panel but arguably this would be missing the point to some degree - this product is very much aimed at the wireless generation.

Under the hood B&W's engineering team have also completely reworked the driver array - which consists of two 25mm metal-coned tweeters derived from the company's CM series of loudspeakers, a pair of 90mm midrange drivers that employ a foam surround to improve damping, and a single front-firing 150mm woofer.

All these are housed in a strengthened chassis assembly featuring glass fibre ribs to eliminate vibration, and power is provided by

150 Watts of Class D amplification - 25 Watts a piece for each tweeter and midrange and 50 for the bass unit, via B&W's own digital signal processing technology.

The Zeppelin can be controlled by four discrete buttons or the top of the device (play/pause, skip forwards/backwards plus volume up/down), via the free Bowers & Wilkins Control software for Mac and PC, or direct from a mobile device with Bluetooth and Spotify Connect.

What you don't get, however, is any form of UPnP networking capabilities as offered by, say, the £595 Naim Mu-so QB (see review *Hi-Fi World*, April 2016). This may be an issue for those with an existing UPnP-based home music system but there are other solutions out there if that's what you need.

On the plus side, though, the Zeppelin is undoubtedly one of the classiest-looking standalone wireless 'speakers on the market. The removal of the iPod dock has accentuated its clean, uncluttered lines and the whole



unit is reassuringly weighty and well-constructed.

Pairing with iPhones, Android devices and a MacBook Air was easy and fuss free, the whole operation taking no more than 10 minutes.

SOUND QUALITY

The biggest challenge facing any one-box 'speaker is trying to reproduce a sense of realistic stereo separation from a single chassis.

And it's here that the Zeppelin Wireless really shines. It's elongated form factor means it pushes out an expansive sound that never struggled to fill my listening room.

Given its name, I couldn't resist starting the testing with a healthy dose of Led Zeppelin (call me predictable) and the B&W responded with a tight, well-defined sound. John Bonham's pounding drums on 'When The Levee Breaks' had both punch and power but without any sense of unnatural thump. Above that the wailing harmonica was easy to distinguish while Robert Plant's vocals were crisp and clear. It's a thundering track but the Zeppelin never threatened to get overwhelmed or lose control - even with the volume pushed hard.

It's not all about power, though. There's also a decent amount of detail on offer and the Zeppelin can sound extremely refined when the occasion demands. Listening to Sinead O'Connor's lilting 'Peggy Gordon' I could make out every catch in the Irish singer's voice, while there was air and space around the delicately-plucked guitar backing.

Compared to the previously mentioned Naim Mu-so QB the Zeppelin seems to have a slightly more open and wider soundstage,



Pairing the Zeppelin with Bluetooth devices requires a single push on the stand-mounted switch.



The Zeppelin Wireless driver array consists of two 25mm metal-coated tweeters, a pair of 90mm midrange drivers and a single front-firing bass unit.

although the former beats it on outright bass depth.

This B&W will also go very loud without strain. Throughout the listening tests I rarely exceeded the halfway point on the volume dial and you have to crank it up very high indeed before any sense of harshness sets in.

Sensibly, as well, the Zeppelin is a sealed-box design with no rear-firing ports so it can be used close to a rear wall without deterioration in sound quality. I tried it in a variety of locations, from well out in the

room on a hi-fi stand to placed at head height on a bookshelf and performance remained consistent - refined, cultured and with a wide soundstage.

CONCLUSION

The Zeppelin Wireless is a fine upgrade to the original one-box 'speaker concept. It blends great design with a highly-entertaining, musical sound and superb ease of use. Those looking for a room-filling sound from a (relatively) small package should take a listen.



Rear panel connections consist of an ethernet socket, power input, 3.5mm analogue input and USB - although the latter is merely for service purposes.

MEASURED PERFORMANCE

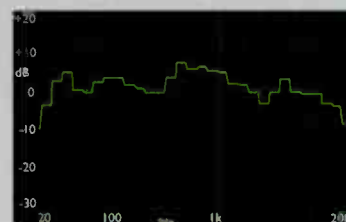
The Zeppelin's frequency response, seen in our third-octave pink noise analysis, is very wide for a small loudspeaker, reaching right down to 30Hz. That's as low as a big floorstanding loudspeaker, suggesting that bass has been equalised to extend it down so far. The implies the Zeppelin will produce ground shaking low bass - even subsonics - but you have to bear in mind that a single 150mm bass unit cannot produce the acoustic power of a big loudspeaker, so best not to read too much into this. Zeppelin does produce low bass however, and it may well be apparent in medium sized rooms.

A large lift in output across the midband will add to intelligibility,

although it does compromise tonal accuracy.

The metal dome tweeter at either end of the unit extends treble smoothly upward to 16kHz and wherever the measuring mic was placed there was no peaking, so Zeppelin will always sound smooth-to-easy on the ear. NK

FREQUENCY RESPONSE



BOWERS & WILKINS ZEPPELIN WIRELESS £499



EXCELLENT - extremely capable.

VERDICT

The Zeppelin Wireless is one of the best one-box 'speaker systems around. Slick, easy to use and powerful sounding.

FOR

- design
- sophisticated sound
- easy to operate

AGAINST

- no UPnP
- tough competition

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LINKS

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Description

Hi-Fi World brings you the best in hi-fi... from around the world

- We listen and measure products in depth, at our London office.
- Expert opinion from a team of renowned writers, musicians and engineers.
- International standard measurements, using Rohde & Schwarz test equipment.

Information

Developer	audio web publishing ltd
Category	Entertainment
Updated	7 Dec 2014
Version	1.0
Size	9 MB
Rating	Rated 4+
Family Sharing	Yes
Compatibility	Requires iOS 5.0 or later. Compatible with iPhone, iPad, and iPod touch.
Language	English

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DESCRIPTION

EXCLUSIVE AUDIO POWER AMPLIFIER 500
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Armstrong 600

Back in the 1970s, Armstrong Audio's 600 series of components sold very well. Martin Pipe revisits these British-made classics.



Throughout much of the 1970s, regular readers of hi-fi magazines would have found it hard to escape the slew of advertising associated with one range of products - the Armstrong 600 Series of amplifiers, tuners and receivers produced in Holloway, North London.

Launched at the 1973 Sonex trade show, the 600 Series opted for silicon transistors throughout, and inside the tuner you could also find a couple of that era's wonders - integrated circuits! The look was radically new. Gone were the boxy functional lines of the preceding 500s, in favour of a sleek and distinctive slimline style with a row of 'tabs' for selecting various functions.

The 621 amplifier, rated conservatively at 40 watts per channel, has four inputs - disc, tuner, auxiliary and tape-loop - all of which are implemented via 5-pin DIN sockets. A clever 'electronic gate' input-selection arrangement based around diodes keeps the rotary input-selector switch (and any associated noise problems) out of the signal path.

On the base of the 621, you can switch the sensitivity of the MM phono stage between 'high' (6mV) and 'low' (3mV), thereby avoiding 'jumps' in volume when switching between records and, for example, radio. Also here are tape output-level presets, which enable the 621 to be matched to a wide range of equipment - in spite of the DIN standard! This being the 1970s, conventional Baxandall-type bass and treble tone controls formed part of

the design.

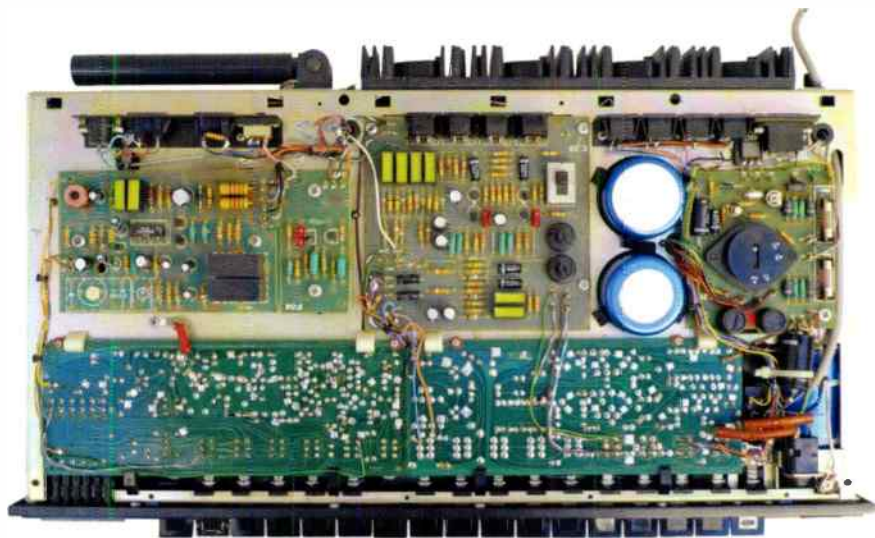
Interestingly, their tonally-corrected audio is fed to the tape output. It is thus possible to compensate (albeit to a limited degree) for HF loss, or bass-shy records, when making recordings. Tabs select loudness-compensation (which attenuates, as well as proving the expected tonal tweaks), two HF filters, one LF filter, the steepness ('slope') of these filters and a mono mode (summing left and right channels). Loudness apart, all affect the tape output.

DIN connectors, of the 2-pin kind, are used for connecting the two pairs of speakers that can be accommodated. Switches determine

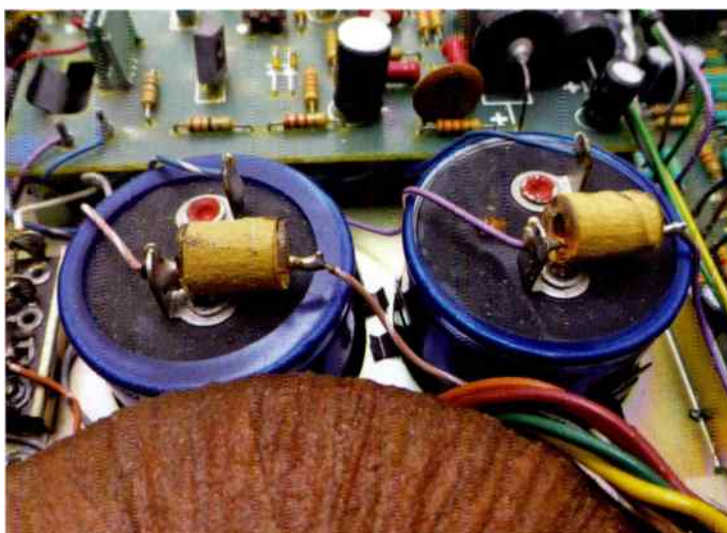
which of them (none, either or both) are active. The ability to turn them off altogether is welcome, given that plugging in headphones doesn't mute the speakers. Armstrong made it quite clear that 600 series gear was unsuitable for use with speakers rated at 4 ohms or less.

If two pairs of speakers are to be used simultaneously, each has to be '8 ohms or greater'. Failure to comply could result in 'blown fuses or, in extreme cases, transistor failure'.

Much of this was down to the circuit design. To spare the expense of a split-rail DC supply, a single 80-volt rail for the power amp was combined with input and output capacitor coupling. This was



The 621's 'lower half', accessed by removing the plastic base cover. From top left to top right are the stereo decoder (the two black 'lumps' are multiplex filters), the preamplifier and the power supply stabiliser. At the bottom is the underside of the switching board.



Here we can see the electrolytic output coupling capacitors, which are rated at 4,000uF 63-volt. Replacement is recommended; I successfully used Elna 4,700uF 100-volt types. They have a smaller diameter, and so self-amalgating tape was wrapped around them to provide 'packing'. I also recommend replacing the 3,300uF power supply capacitor.

surprisingly common in the 1970s, manufacturers from Akai to Nytech adopting the approach. However, Armstrong's designer attempted to mitigate some of the limitations of speaker AC coupling - a double-feedback arrangement, for example.

Then there's the tuner. Two versions were sold - the FM/AM 623 and the FM-only 624. They were very interesting in design terms, and tellingly the engineer (Ted Rule) responsible for the 600 series was a RAF veteran and amateur-radio enthusiast. For a start, the tuners employed varicap diodes in their tuned circuits. Thanks to this, voltage

control of tuning was possible.

Armstrong used this to facilitate a bank of six presets for the quick selection of stations (3 AM/3 FM or 6 FM, depending on model). The associated multi-turn pots are tucked away in the bottom-right corner of the front panel; Armstrong's attention to detail was such that in the shipping carton, you'd find a miniature screwdriver to operate them! Manual tuning involved a high-grade variable resistor that was coupled to the front-panel scale and knob via a traditional cord arrangement.

The FM tuner was designed with sensitivity (1uV, for 30dB signal/to-

noise ratio) in mind, and to this day remains a great 'puller-in' of broadcasts. A CA3090AQ stereo decoder chip, which followed the FM demodulator (a classic phase discriminator circuit) offered channel separation of up to 40dB.

Two front-panel meters are provided on the front panel. The top one, driven from the varicap voltage, indicates tuning range. Beneath this is a meter that indicates signal strength or 'centre tuning', depending on whether AFC is engaged. For weak signals, FM muting is disabled by the 'distant' switch. In short, the 600 FM tuner 'engine' is a classic analogue design. The similarly varicap-tuned AM tuner is also worth mentioning. MW and LW are covered in a single band, and it's a dual-conversion superhet design. This is arguably one of the best AM tuners ever sold to hi-fi enthusiasts.

Combine a 621 amplifier and a 624 tuner in a single case with common power supply, and you get a 625 receiver. With a 623 tuner the result is the top-of-the-line 626 receiver featured here.

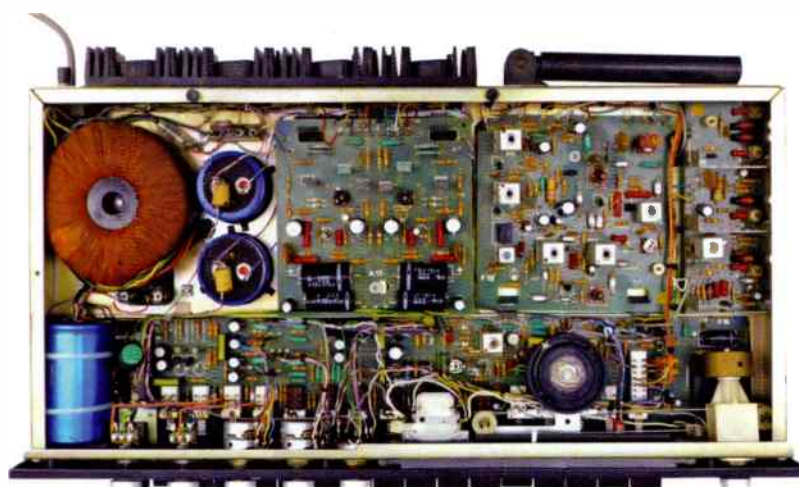
In 1977, you could pick up a 626 for less than £200 - if AM wasn't important, a 625 could be yours for £30 less.

Servicing was made easy thanks to the design's sensible accessibility. You can get to all of a 626 receiver's circuitry either from the top (the wooden cover clipped onto the steel chassis) or the bottom (plastic clips secured the base).

The 600s were finally replaced by the 700 series, but few were sold. By 1983, Armstrong Audio - the hi-fi manufacturer - had faded away. However, the name lives on as a Walthamstow contract-repair facility.

I came across my 626 at a Tonbridge Audiojumble, paying not more than £20 for it. Because they sold so well, they're widely-available second-hand. On eBay, expect to pay £50 or less. Amps and tuners are just as common. 621 amps seem to sell online for £50 or so too; I've seen a 621 and 624 tuner fetch £70. But you have the cost and hassle of postage. They're fairly heavy; a 626 weighs in at more than 8kg.

If your unit hasn't been serviced, be wary. Remember that the only thing that isolates your precious speakers from 80 volts of DC death is a 4,000uF electrolytic capacitor that may be 40 years old! I replaced mine with 4,700uF/100v Elna types (less than a tenner the pair). At the



Looking into the 626 receiver from the top. From top left to top right, we have the toroidal mains transformer, output coupling capacitors, power amplifier and some of the tuner circuitry. The lower board contains the tone controls, filters and the rest of the tuner electronics. On the left can be seen the 3,300uF, 100-volt power supply reservoir capacitor.

same time, the 3300uF power-supply smoothing electrolytic should be replaced. I've heard rumours of these 'exploding', and scattering debris over the rest of the circuitry. It's secured to the case with a pair of cable ties; the capacitor's modern replacement is much smaller, and can be easily-accommodated by pulling those ties tighter!

After replacing these, my 626 had a tendency to blow fuses in the mains plug. This was traced to a leaky Plessey surge-suppressor soldered across the mains switch. It can be removed with no ill effect; indeed, Armstrong stopped fitting it some time into the production run. It's also worth replacing electrolytics in the signal path with new ones - pay particular attention to the A17 (power amplifier) board. Lower-value ones (e.g., 2.2uF) can be replaced by better-sounding and more reliable non-polarised polyester types.

I replaced the 10uF amplifier input capacitors with 4.7uF polyesters, with no noticeable impairment of frequency response (some have successfully tried 1uF plastic film caps). I would also recommend following the service manual's instructions for amplifier



Coupled by drive-cord to the manual tuning system, this is not a variable capacitor. It's actually a precision 100k variable resistor. It's wired as a potential divider, fed from a stabilised 45-volt DC supply. Its output is selected from the switchbank, as an alternative to that from one of the presets, and connected to the varicap diodes that tune this set.

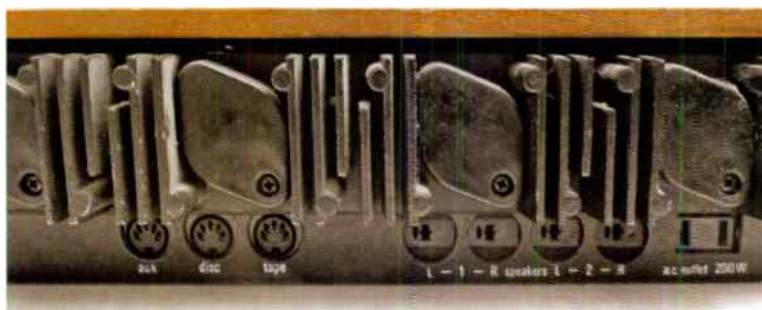
facility worthwhile. And don't forget to stock up on DIN plugs, so you can make up leads...

Is it worth the hassle? Emphatically, yes! The FM tuner is excellent. With Radio 3, it's capable of

there's little 'top' to speak of, the bass end is clean and solid.

The amplifier itself is far better than I expected from an early-1970s design. I have been using mine with Rogers GS6 floor-standers - a British three-way reflex design of 8-ohm impedance, in keeping with the Armstrong 602s - and a Cambridge CXN streamer boasting the sort of digital technology that would have been inconceivable in 1973. Thanks in part to the high damping factor, bass was found to be dry and tightly-controlled when playing contemporary prog favourites like Steve Hackett's *Voyage of the Acolyte*, Godley and Creme's *Consequences* and Man's *Slow Motion*.

The motorik percussion and synthesised tonal colours of Kraftwerk's *Trance Europe Express* also fared well. With classical music - Radio 3 broadcasts received with the on-board tuner, and a selection of CD-sourced works ranging from Tchaikovsky to Philip Glass - I'd make out the presentation as smooth and polite, rather than perfectly-detailed. Maybe that's the effect of all those caps in the signal path. But for all its maverick electronics, I consider the 600 to be a surprisingly-musical performer. It's well worth seeking out if you're after a second system, or have a tight budget. Be prepared for an overhaul, though; some people, myself included, can carry out such work if you're not comfortable doing it yourself.



DIN sockets were used throughout - 5-pin types for the sources, and 2-pin types for speakers. Plugs are still available, from eBay stores and Maplin outlets amongst others. I made a 'terminal box', allowing me to use standard speaker cables. Also visible are a switched American-style mains outlet, the (covered) output transistors and their heatsinks. These transistors are 40636 types (NPN, 70-volt, 15A). Still available, they're not cheap at £7 or so a pop...

quiescent-current adjustment (instruction manuals and circuit diagrams can be found on or linked from www.audiomisc.co.uk - a fascinating repository of Armstrong-related information).

Working contact-cleaner spray into the volume, balance and tone controls and switchbanks would be a good idea too. A future modification worth considering would be to bypass the tone controls altogether, as Armstrong didn't consider a bypass

a convincing stereo spread and fine tonal balance. Noise, with a reasonable aerial, is largely absent; in particular, there's a freedom from the burbles or birdies that I've heard from other vintage British analogue tuners. And while AM is not known for its hi-fi potential, the novel design of the 600 series renders it surprisingly listenable - even with the captive ferrite 'rod' aerial stowed away on the rear panel. Interference, usually an issue with AM, is lower than I'm used to and although

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WORLD CLASSICS

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

TURNTABLES

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



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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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



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

SONY PS-880 1978 £800
First outing for Sony's impressive 'Biotracer' electronic tonearm. Built like a tank with a clean and tidy sound, albeit lacking involvement. Scarily complicated and with no spares support - buy with caution!

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

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

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

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



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

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

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

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

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



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

TONEARMS

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

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

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



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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

PHONO STAGES

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

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



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

INTEGRATED AMPLIFIERS

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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



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

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

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

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

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

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

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



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

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

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

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

POWER AMPLIFIERS

ELECTROCOMPANET NEMO 2009 £4,995 (EACH)

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

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

QUAD II-80 2005 £6,000 PER PAIR

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



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

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

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

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



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

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

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

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

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

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

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

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

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



LEAK STEREO 60 1958 £N/A
Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability rarity value means high price.

QUAD II 1952 £22
The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly



LEAK POINT ONE, TL10, TL12.1, TL/12 PLUS 1949 £28
Early classics that are getting expensive. Overhauling is de rigeur before use, using original parts if possible. Surprisingly crisp and musical. Deeply impressive in fine fettle.

PRE AMPLIFIERS

AUDIOLAB 8000C 1991 £499
Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.



CROFT MICRO 1986 £150
Budget valve pre-amp with exceptionally transparent performance.

CONRAD JOHNSON MOTIV MC-8 1986 £2,500
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden. Something of a curio, but worthwhile nonetheless.

AUDIO RESEARCH SP-8 1982 £1,400
Beautifully designed and built high end tube pre-amplifier with deliciously sweet and smooth sound. Not the last word in incision or grip.

LINN LK-1 1986 £499
A brave attempt to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not bad for under £100.

NAIM NAC 32.5 1978 £ N/A
Classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

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

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



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

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

LOUDSPEAKERS

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



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

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



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

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



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

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

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

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

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

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



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

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

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

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



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

USHER BE-71B 2007 £1,600
Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

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

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



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

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

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



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

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



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

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

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

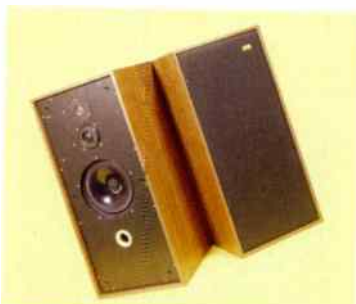
YAMAHA NS1000 1977 £532
High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



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

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

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



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

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

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

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

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

SYSTEMS

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



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

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

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

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



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



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

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

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



TUNERS

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



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

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

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

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

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



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

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

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

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



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

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



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

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

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

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

HEADPHONE AMPLIFIERS

GRAHAM SLEE NOVO 2009 £255

Dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.



MUSICAL FIDELITY X-CAN V8 2008 £350

Open and explicitly detailed sound plus serious bass wallop. A great partner for most mid-to-high end headphones.

CD PLAYER/RECORDERS

MUSICAL FIDELITY TRIVISTA 2002 £4000

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

MARANTZ SA-1 2000 £5,000

The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



SONY MDS-JE555ES 2000 £900

The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.

PIONEER PDR-555RW 1999 £480

For a moment, this was the CD recorder to have. Clean and detailed.

MARANTZ DR-17 1999 £1100

Probably the best sounding CD recorder made; built like a brick with a true audiophile sound and HDCD compatibility.



CAMBRIDGE AUDIO CD4SE 1998 £200

A touch soft in the treble and tonally light, but outstanding in every other respect.

SONY TCD-8 DATMAN 1996 £599

Super clean sound makes this an amazing portable, but fragile.

LINN KARIK III 1995 £1775

The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

NAIM CDS 1990 £ N/A

Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.

MARANTZ CD73 1983 £700

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



MERIDIAN 207 1988 £995

Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

SONY CDP-R1/DAS-R1 1987 £3,000

Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.

CAMBRIDGE AUDIO CD1 1986 £1500

Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.



MERIDIAN MCD 1984 £600

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

SONY CDP-701ES 1984 £890

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

YAMAHA CD-X1 1983 £340

Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

SONY CDP-101 1982 £800

The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!



ANALOGUE RECORDERS

AIWA XD-009 1989 £600

Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

NAKAMICHI CR-7E 1987 £800

The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



SONY WM-D6C 1985 £290

Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

PIONEER CTF-950 1978 £400

Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.

YAMAHA TC-800GL 1977 £179

Early classic with ski-slope styling. Middling sonics by modern standards, but cool nonetheless!

SONY TC-377 1972 £N/A

A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

REVOX A77 1968 £145

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days.

COMPACT DISC TRANSPORTS

ESOTERIC P0 1997 £8,000

The best CD drive bar none. Brilliantly incisive, ridiculously over engineered.

TEAC VRDS-T1 1994 £600

Warm and expansive sound made this a mid price hit. Well built, with a slick mech.

KENWOOD 9010 1986 £600

The first discrete Jap transport was beautifully done and responds well to re-clocking.

DACs

DCS ELGAR 1997 £8500

Extremely open and natural performer, albeit extremely pricey - superb.

DPA LITTLE BIT 3 1996 £299

Rich, clean, rhythmic and punchy sound transforms budget CD players.

CAMBRIDGE AUDIO DAC MAGIC

1995 £99

Good value upgrade for budget CD players with extensive facilities and detailed sonics.

PINK TRIANGLE DACAPO 1993 £ N/A

Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

QED DIGIT 1991 £90

Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

CABLES

MISSING LINK CRYO REFERENCE 2008

£495/0.5M

High end' interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

TECHLINK WIRES XS 2007 £20

Highly accomplished interconnects at an absurdly low price. Stunning value for money.

VDH ULTIMATE THE FIRST 2004 £250

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space.



WIREWORLD OASIS 5 2003 £99/M

Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

TCI CONSTRUCTOR 13A-6 BLOCK

2003 £120

Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

INTRODUCING THE QUESTYLE QP1R PORTABLE MUSIC PLAYER

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Audio Engineering




Patented wide-band, very low distortion 'current mode' amplifier, with 3 gain settings to drive all types of headphone



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Conqueror MK3C Tonearm Review Comments

Perfect 10 award "The most addictive product I've heard"
AUDIO 10 (USA)

"For me Origin Live in the analogue sector is the discovery of the year! ..."
IMAGE HI FI (Germany)

"The biggest improvement I've made in 25 years of listening to music and lots of exchanges of hi-fi stuff! ...breathtaking, big new level! It's like coming to Nirvana."
OWNER COMMENT- FERDINAND ROEHRIG

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Most wanted component award STEREO TIMES (USA)

Best sound at the show award KLANGBILDER (Vienna)

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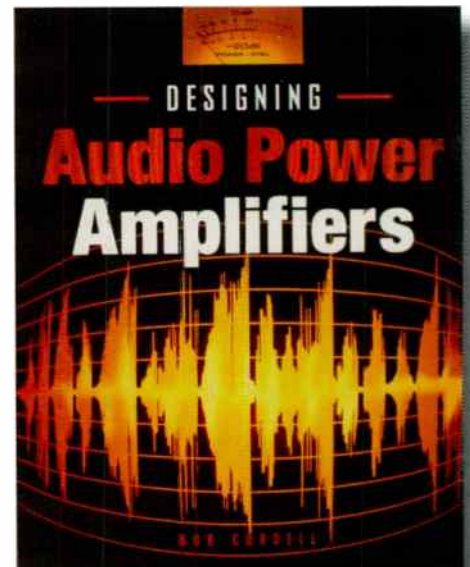


DESIGNING AUDIO POWER AMPLIFIERS

Author - Bob Cordell

Price - £46.93 + £2.80 UK delivery

Available from Amazon.co.uk



Books on audio power amplifier design, and even audio amplifier design in general, are rare beasts. So I was pleased to actually excited to receive this book from McGraw Hill for review. Physically, it is a very large 600 page tome, 188mm wide and 235mm high, and 30mm thick.

Bob Cordell is an engineer of long experience and firm theoretical grounding so he dives into the subject knowledgeably and succinctly. However, this is not a beginners book nor an attempt to teach audio electronics; it is for electronic engineers of some good basic experience who may want to know about and possibly design audio power amplifiers.

In spite of the title, Bob goes into various audio circuit building blocks in useful detail before getting onto power amplifiers specifically. By page 42 a simple, modern solid-state power amp circuit (there are no valves in this book!) is laid out and discussed, which sets the scene, as it were.

Next up is a very interesting and helpful Chapter 3 on power amplifier design evolution that gives good insight onto what looks relatively simple yet is deeply effective in amplifier circuitry today. I will mention here that even by this stage of the book Bob is talking about understanding circuit behaviour through Spice simulation and in fact I have recently been using (and modifying!) his Spice model downloads for some differential pairs that I am using in an LTSpice simulated phono stage that eschews ICs in favour of dedicated discrete devices and fully balanced working.

Why do I mention this right now? Er... because many design engineers still do not use, understand

or trust this approach, and I was quite taken aback to be told by one of the UK's premier amplifier manufacturers that they only started using Spice in 2013 (it was developed at the University of California, Berkeley, in the early 1970s).

So Spice analysis is very much a part of this book - but that is still not to say that Bob avoids running through solid basic theory with supporting equations, for those who still prefer the back of an envelope!

Chapter 4 dives straight into that lovely subject of negative feedback, stability, phase and gain margins and all else, absolutely crucial stuff in audio power amplifiers - and Bob not only covers all the theory but also goes into how to ensure a design is stable in real life.

OK, it isn't difficult if you understand the theory but it is always worth re-stating and discussing, and I know from strange LF peaks that appear in some valve amplifiers that their designers haven't quite mastered all this yet!

The book progresses into ever more abstruse territory including feedback compensation and crossover distortion reduction, Zobel networks and load matching, up to page 215 and Chapter 11 where some will be delighted to know that the specific subject of MOSFET power amplifiers appears.

Getting more down to earth practical by Part 3, Chapter 14, Bob tackles thermal design and stability, heat sinking and what have you, then Chapter 15 (half-way through the book) raises the prodigious subject of output protection circuitry, that Bob says offers an "overview", referring readers to Ben Duncan's High Performance Audio Power Amplifiers for more - a candid approach.

Power Supplies and Grounding is followed by Interfacing The Real

World (Chapter 18) where RF and loudspeakers, loudspeaker cables, ground loops and other horrors are all discussed.

A long two chapters (19 and 20) then follow on Spice Simulation, and Models and Libraries, so you can see where this book is grounded - and rightly so in my experience. Running a Spice analysis gives access to circuit nodes and behaviours head-scratching and measurement cannot illuminate. All the same Bob then reaches measurement by Chapter 21, after which it is all over in effect.

However, the book doesn't lose momentum because Part 5 is entitled Topics in Amplifier Design and covers Negative Feedback Controversy as well as zero feedback amplifiers. Balanced and Balanced Bridge amplifiers (high power) are covered in Chapter 26 then Integrated Circuit power amps.

Finally, the book ends with Class D Audio Amplifiers that are, in effect, analogue switching (Pulse Width Modulation) amplifiers whose output is integrated by a low pass filter. Bob covers the subject but does not go into heavy detail. Nor does the book cover true digital within an analogue amplifier, microprocessors, nor much about digital volume controls and what have you.

No matter. This is still a great book for anyone interested in audio amplifier design, and specifically power amplifiers and all that surrounds them. It has a treasured position on my bookshelf alongside other great tomes. Spice analysis of advanced audio circuitry being an especially worthy and distinguishing feature I feel, as well as the comprehensive nature of Bob's coverage.

This book is a valuable resource and worth its price. **NK**

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Information

Developer: audio web publishing ltd
Category: Entertainment
Updated: 7 Dec. 2014
Version: 1.0
Size: 9 MB
Rating: Rated 4+
Family Sharing: Yes
Compatibility: Requires iOS 5.0 or later. Compatible with iPhone, iPad, and iPod touch.
Language: English

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Paul Rigby takes a read through DeadBase50 - a comprehensive look at the Grateful Dead's legacy.



BLACK CROWES

Four Black Crowes reissues via Back To Black (www.backtoblackvinyl.com) include the debut 'Shake Your Money Maker', a real Rolling Stones-a-like blues rocker, 'The Southern Harmony and Musical Companion' (1992), the band's best album, produces Faces-like, confident rockers; 'America' (1994) provides the band's best songs, though via laid back blues-rock jam fare. Finally, 'Three Snakes and One Charm' is punchy, stripped but appealingly eclectic.

news

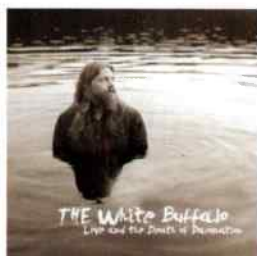


PURE PLEASURE

First up from UK-based audiophile label Pure Pleasure (www.purepleasurerecords.com) is 'Scratching The Surface' (1968) from the Groundhogs, famously recorded live with no overdubs and one of the finest LPs from the British '60s blues boom. The band would produce better LPs, though. Joe Turner, jump blues/rock'n'roll pioneer, released 'The Boss of the Blues: Sings Kansas City Jazz' (1956) as a reunion with fellow jump blues/boogie-woogie man Pete Johnson. It is a fun-filled cut. Harry "Sweets" Edison's 'Sweetenings' (1958) offers an effortless suite of tracks highlighted by the first appearance of 'Centrepiece', a much covered tack in later years.

THE WHITE BUFFALO

Newly released, 'Love and the Death of Damnation' from The White Buffalo (Earache; webstore.earache.com) appears in two limited edition versions: one white and the other black vinyl, each with the same 7" single included. Providing a country, blues, Waylon Jennings-like approach to realism, blended with gritty stories of Americana.



RUSH

Back To Black has also been busy reissuing Rush LPs including: 'Hold Your Fire' (1987), a grower that evolves from ok to great with time; 'A Show of Hands', the 1989 live album mainly features 1982-87 cuts and is an ideal insight to the live band during this time. Look out for the stark 'Power Windows' (1985; again, repeated listening is important) and 'Grace Under Pressure' (1984; which saw the group battling with new technologies).



SUNDAZED

Two corkers from this US-based outfit include The Electric Prunes' 'Singles 1966-1969'. Created along with front man James Lowe this complete Reprise collection 2LP release features, according to the label, "correct mastering" from original mixes.

Also look out for the 2LP 'The Songs of the Everly Brothers', thirty-six publishing demos during the Cadence era stripped to voices and guitars. Amazing stuff.

Next is psychedelic folk outfit H.P. Lovecraft's 'Live May 11, 1966' featuring originals and covers. A great live band, this is an ideal entry point to their vibe.

Finally, look out for The Paisleys' 'Cosmic Mind at Play' (1970) a wonderfully naive 'out there', late psychedelic outing.

ELECTRIC BUZZ

Copenhagen-based musicians/composers Anders Holst and Mads Emil Nielsen have released their self-titled LP on Clang (www.clang.d) featuring found sounds, surprising electronics, avant noise structures and movietone atmospheres. Also on Clang is 'The Revelation According To Frank Benkho' by Frank Benkho, a four track series of improv electronics that utilises resonant electronica of the bleep variety that is both riveting and shocking.

Ex-Kraftwerk man Wolfgang Flur has released 'Eloquence' (Cherry Red), a compilation of his compositions from 2002 to today.

From Tangerine Dream comes a new compilation called 'Out of This World' has been released as a limited, 2LP, tangerine-coloured vinyl edition in memory of the late band's leader Edgar Froese.



...AND FINALLY



Offering an intimate, almost Elliott Smith-like confidentiality to their delivery, Paperface's 'Out of Time' (Daydream Records; www.paperfacemusic.com) offers both simplicity and melodic intent.

There's nine reworked cuts from the 2012 release 'Screws', via avant-garde instrumentalist Nils Fram. 'Screws Reworked' (Erased Tapes; erasedtapes.com) is released as a 2LP set, including the original album.

From the Erik Truffaz Quartet (Benoit Corboz, Marcello Giuliani & Arthur Hnatak), 'Doni Doni' (Parlophone) features a jazz/world hybrid with smooth vocalisations for an easy, laid-back rhythm groove.

The Kooks' 'Inside In/Inside Out' (2006; Virgin) has been reissued as a single disc version.

Pete Aves, 'See How' (www.peteaves.co.uk), delivers folkish edge with detailed guitar lines and roots-based, rather personally revealing lyric angles.

Lost Dawn 'Fever' (Easy Action; www.easyaction.co.uk) offers crunchy rock rhythms with claustrophobic, slightly Bolan-eseque delivery strategies.

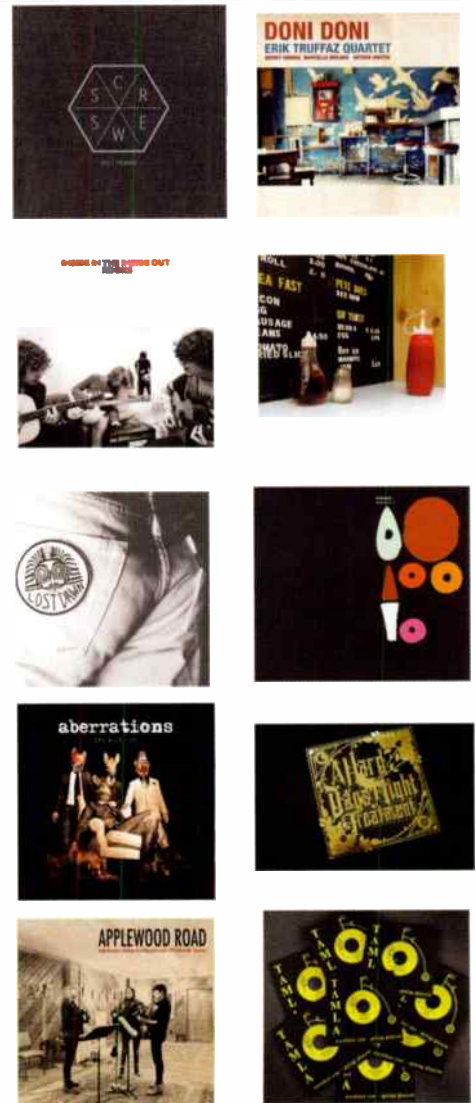
Krokofant II from Krokofant (Rune Grammofon; www.runegrammofon.com) provides madcap jazz rock with divergent melodies that seem to be hanging on to the emerging chaos.

From Aberrations is 'The Wild Life' (Rave; www.t-rave.de) a rather average German reusable rock LP that lacks too many highs and borrows from too many musicians who matter.

'A Hard Day's Night Treatment' was arranged by Lush's music maestro Simon Emmerson. It features Liverpool-based band Stealing Sheep, One Eskimo, Sheema Mukherjee and Jackie Oates amongst others, on a journey of the soundscape. It also contains a USB card with extra tracks.

Gearbox (www.gearboxrecords.com) has released Applewood Road's self-titled LP. A trio of country-edged ladies and three-part harmonies, recorded live to tape around a single microphone. Easy and smooth, an album to while away a spare Sunday.

Finally, behold. Third Man Records! It has just released nine dinked 7" singles featuring early Tamla classics from the sixties including tracks from Marvin Gaye, The Surpemes, The Miracles, Barrett Strong, The Satintones and The Swinging Tigers.



The Glow Of LP



The valves of Icon Audio's PS3 MkII phono stage bring a glow to LP – and to Noel Keywood's face.

If you spin LP, the change in sound from a mainstream transistor phono preamp to a valve preamp is a revelation. The latter are wide and spacious – and dynamically more supple. But few valve phono stages exist, which is why we've given priority to the Icon Audio PS3 MkII in this issue. It isn't cheap at £2500, but it will transform the sound of vinyl. And

that's music to the ears.

What you get in essence is a phono stage with separate inputs for moving magnet (MM) and moving coil (MC) cartridges. The reason is the MC input uses transformers for super-low levels of noise; the PS3 MkII suits very low output MC cartridges like few others, it is so quiet yet has high gain.

At the same time, because the

PS3 MkII uses valves, it is just about impossible to overload, whereas transistor preamps still cannot combine high gain with high overload, hence the need for user adjustable DIP switches to juggle one against the other.

So before I go into the details of this phono stage, you can get what it is about: high-quality amplification that suits low to high output

MC cartridges without running into overload. There are no DIP switches to set gains and such like: the PS3 MkII has a simple rotary MM/MC selector switch on its front panel – and that's enough to suit all cartridges.

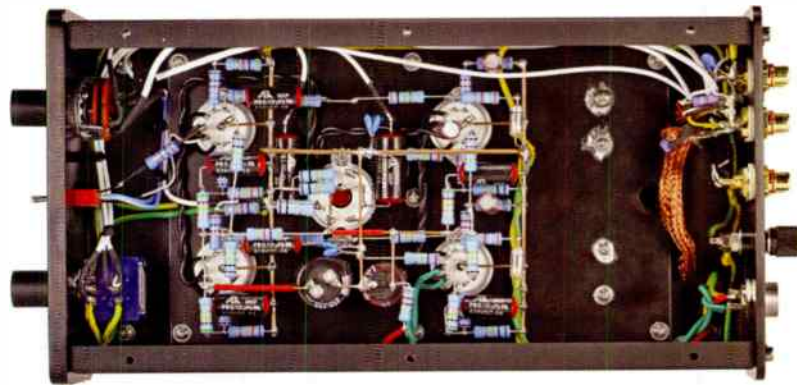
Also, it has an on-board volume control to adjust output to compensate for high and low output cartridges, but more than this, it means the PS3 MkII can drive power amplifiers direct, making for a simple and pure vinyl system comprising PS3 MkII and power amplifier, with no intermediate preamp. And that's how I ended up using our preceding in-house PS3 MkI – as an all-in-one phono preamp, driving various power amplifiers in for review.

It's particularly difficult to combine a mains power supply with a high gain MC preamp without suffering hum, even slight hum, so Icon Audio keep the power supply separate. This also allows them to use a valve regulated supply because – yes – valve power supply units (PSU) sound better. The heater supply is d.c. too, to keep hum from this source out of the system.

All of which is to explain what you see in the power supply and why it is so chunky and complicated – and totally different to today's switch-mode black boxes that litter the floor.

So Icon Audio's PS3 MkII can be seen either as a valve phono stage or a whole preamplifier, albeit with no line input to accept connection of other devices. If you did want to – say – run LP alongside a source like a CD player with a volume control, or a high resolution portable player, straight into a power amplifier, then an external switching unit / passive preamp would be needed alongside the PS3 MkII. All this is becoming more likely as people seem to want to return to LP, as well as play digital files they've downloaded. The thought of combining LP with hi-res digital replay arises here – sort of bizarre – but funnily the PS3 MkII could easily be fitted with a USB 5V power outlet and analogue input to achieve precisely this. How the world of hi-fi is changing!

Anyway, such issues apart, the PS3 MkII sounds as if it might be large and imposing, but it isn't. The preamp itself measures 148mm wide, 342mm deep and 165mm high, so it occupies little space and can sit beside a turntable; weight is 4kgs. Because it possesses no hum



Inside the PS3 MkII preamp all parts are hard wired into place, in traditional fashion – and it sounds best. Note the use of a high quality, long-life Alps Blue volume control at bottom left in the picture.

producing power supply, it can be sited at the right hand side of a turntable, next to the pickup arm and cartridge – another benefit of a separate PSU. Or it could be sited in between two turntables, one with a moving magnet cartridge, the other with a moving coil, since both can be connected to the PS3 MkII at the same time. I can't see why you would want to do this, but it could be to spin 78s and microgrooves separately, using different cartridges. This might sound a little abstruse but I'm hearing more and more about playing 78s and LPs as historic formats, with no division between them, so if this is your interest the separate MM and MC inputs of this preamp could well be attractive.

There are two ECC88 (6922) low noise double-triode amplifying valves per channel, seen at either side of the chassis, arranged front to back and protected by metal rings. They are connected in a cascode arrangement for high gain. A central 6SN7 octal-base double triode, run as a cathode follower, acts as a low impedance output line driver.

The front carries the MC / MM rotary selector switch as well as the volume control and a red

power led. There's also an important – nowadays – mono / stereo switch. At rear are phono socketted MM and MC inputs, plus phono socketted output; balanced XLRs are not fitted.

The power supply has a mains transformer and two chokes in large screening cans. It uses an EZ80 valve rectifier, then an ECC83 and 6SN7 for regulation. The PS3 MkII has d.c. heaters, and to achieve this you have to use solid-state rectification, but it is no horror story; the resultant d.c. is heavily smoothed with



Our rear shot shows gold plated, phono socket inputs and outputs, a ground lift switch to avoid hum, and a ground terminal. The circular canisters are screening cans around the input transformers.

large electrolytic capacitors. There is no option when designing a super-quiet MC preamp because a.c. heaters always inject hum, I know

from experience designing such things.

The power supply output lead is 3ft long, allowing the supply to be kept well away from preamp and turntable. However, the on/off switch is on this unit so it must be accessible. Dimensions are the same as the preamp. 148mm wide, 342mm deep and 165mm high, but weight is higher at 7kgs.

Like all Icon Audio products, both units were sturdily built and well finished. They use discrete components, so are more easily serviced than transistor designs with chips. Small-signal valves have a long life time of around 10,000 hours.

SOUND QUALITY

I used the PS3 MkII with our Timestep modified Technics SL-1210 Direct Drive turntable with external PSU, fitted with an SME309 arm and Ortolon A95 moving coil (MC) cartridge, as well as an alternative Ortolon 2M Black moving magnet (MM) cartridge. It fed both a Creek Evolution 100A amplifier and alternatively Quad II-eighty valve power amplifiers. Loudspeakers were a pair of massive Spondor SP200s, with twin 12in bass units, no less.

Firstly, hum and noise. The PS3 MkII was quiet under test, before



The power supply uses an EZ80 valve rectifier, OA2 voltage stabiliser and both EL84 and ECC83 as voltage regulators.

usage, but valve MC phono stages in particular are difficult to make quiet and I had to run through hum issues before listening could begin. Turning volume on the Creek amplifier up to maximum, with PS3 volume pre-set to maximum, threw up a nasty



Two low noise ECC88 (6922) twin-triodes per channel provide gain, and a big 6SN7 acts as a low impedance line driver. Input transformers at right step up the MC input. MM goes in direct.

buzzing hum. It was from the mains transformer of the Creek affecting the PS3 MkII input 12in away, which shows how sensitive high gain MC preamps are.

Physically re-arranging the system to keep Creek away from both the PS3 MkII preamp and the turntable eliminated all hum. At high volume, I could hear no hiss at all from the speakers with my ear close, and no hum either. The Icon Audio power supply radiated less hum than the Creek amplifier, but it has to be kept at least 1ft away from the preamp. With all units arranged not to interfere through radiating hum fields, the PS3 MkII proved silent and hum free.

Spinning the high cut of a 12in 45rpm single, Alison Goldfrap's 'Ride a White Horse', brought out a spectrum of properties of this phono stage. Firstly think: big and dynamic. Alison Goldfrap had space around her as she sang – and there was both body to the image and space around it. The synth pulsed majestically, moving air in our listening room; bass was strong. The sound was large, fulsome and easy on the ear; the Ortofon A95 sounds fast and hard timed through solid-state phono preamps but the PS3 changed all this, making it sound easy, almost laconic. The PS3 MkII comes over as gentle yet powerful; it isn't fast and hard. In this it reflects the properties oft attributed to valves: smooth and easy.

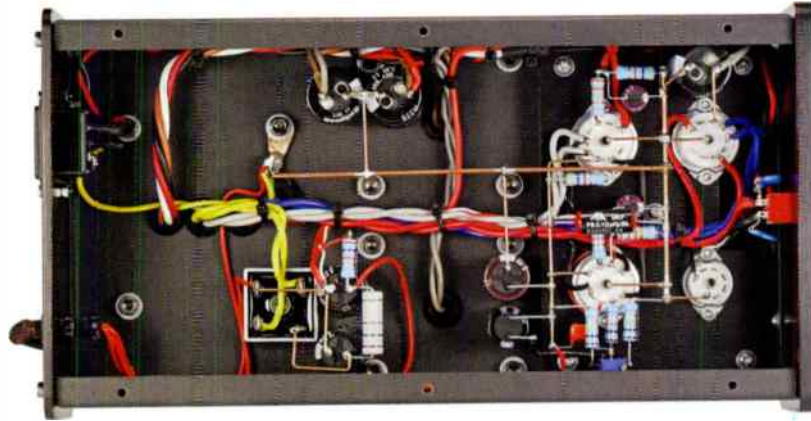
With classical, and Marianne Thorsen playing Mozart concertos with the Trondheim Soloists, a DXD recording from 2L on 180g vinyl, her violin sounded deliciously smooth

and organic against the harder faced delivery of silicon chip stages, deeper silences enhancing the sense of stage depth. There was a lovely natural flow both to Thorsen's violin and the accompanying musicians, far removed from CD and more lifelike. Whilst listening I pondered on the silence of the vinyl and the fact that CD has traditionally been rated best for classical due to absence of ticks and pops. But here LP was almost as quiet, yet more natural and engaging – easily superior to CD in my view. The PS3 MkII is certainly for lovers of classical who use LP; it adds weight and dimensionality. It also breathes life into musicians, making a performance sound less mechanical and contrived.

Moving on from DXD recordings and classical, to the other end of the spectrum, Hendrix at the Olympia Theatre, Paris, France, 1967 playing The Wind Cries Mary, Catfish Blues, live and well recorded onto analogue tape at the time, re-released in the Purple Box set by the Hendrix Estate. This all-analogue live recording fairly took over the room with its massive sense of presence, Hendrix's on-stage quips to the audience seemingly right in front of me, as if he was standing between the big Spondor SP200s. You don't get more dynamic in high fidelity than playing an analogue live recording like this and the PS3 MkII was the perfect way for me to experience Hendrix sounding clear as a bell and larger-than-life in the room, his stage amps blasting me backwards. Beyond awesome.

Although the PS3 MkII has a dark sound against chip based

phono preamps that are, by contrast flat and bright, I was still constantly surprised by the way it threw up detail like the castinets located exactly centre stage of Amy Winehouse singing Tears Dry On The Own, on a 12in 45rpm single. So the PS3 MkII produces strong treble, but not a bright sound – if you see what I mean. We get used to the sound of what we hear everyday, like box loudspeakers for example, taking it for granted. Moving to panel loudspeakers is a challenge. Similarly, moving from a conventional chip-based transistor phono stage (which most are) to a fully discrete valve stage is quite an experience – one well worth having. I use a valve phono stage at home by the way, a World Audio Design KLPP-1.



The power supply is hard wired, making maintenance simple. Electrolytic capacitors are used for smoothing, and a square low voltage, high current heater rectifier can be seen with yellow lead-outs, feeding d.c. to the heaters to eliminate all hum.

CONCLUSION

With its super-quiet transformers, few phono stages are so hiss free with moving coil cartridges as Icon Audio's PS3 MkII.

Together with high gain and very high overload figures that only valves can achieve, this phono preamp better suits low output, high-quality MC cartridges, like the Ortolon A95 I used, than most others.

The power supply rear has an IEC mains input and 3ft long power output lead, with screw lock connector. Note that the mains transformer accepts 230-240V or 110-120V mains inputs.



The presence of a volume control adds to its functionality. It can drive a power amplifier direct – nothing else is needed. So you can run an all-valve system or a hybrid

system.

With fabulous sound quality it sounds big open and spacious like no other – this is a phono stage to hear. And love.

MEASURED PERFORMANCE

Frequency response of the PS3 MkII measured flat to 20kHz at full volume, and at volume settings below half. In the MkII, as in the original PS3, response changed with volume control position, so whilst RIAA equalisation was fundamentally accurate our analysis at full volume shows, at 3 o'clock on the volume control (where treble roll-off was greatest) it measured -3dB at 20kHz – enough to impose a subjectively 'warm' sound, different to that at all other volume control positions. So tonal balance is volume dependent due to simple volume control matching issues. At full volume and at half volume or less, however, the PS3 possessed an accurate balance. Icon told me they would likely reduce the pot. value from 47k to 10k to cure this.

Gain values were high, x300 for MM (50dB) and x2600 for MC (68dB). But with a massive output overload value of 26V, against 10V for solid-state phono stages, the PS3 still has high input overload figures of 96mV for MM and 10mV for MC, so overload is not an issue, as it is with solid-state preamps.

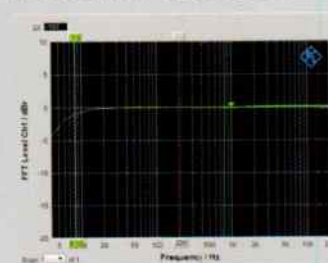
Noise measured a very low 0.08µV with MC, exactly as expected due to the use of (low noise) input transformers. With MM noise was on the high side at 0.65µV, due to direct connection to a relatively noisy input valve, but this is still lower than the noise generated by an MM cartridge, so is not an issue.

The PS3 MkII has plenty of gain and

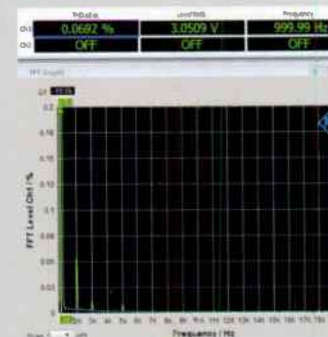
very low noise with MC cartridges, due to the use of input transformers. A small issue is treble roll off at 3 o'clock on the volume control, but other than this the unit measures very well – better than most. NK

Frequency response	8Hz-20kHz
Separation	78dB
Noise (MM/MC e.i.n.)	0.65/0.08µV
Distortion	0.06%
Gain (MM/MC)	x300, x2600
Overload (MM/MC)	96/10mV

FREQUENCY RESPONSE



DISTORTION



ICON AUDIO PS3 MKII £2500



OUTSTANDING - amongst the best.

VERDICT

Fabulous sound from LP and suits the highest quality low output MC cartridges. Free from DIP switches, yet immune to overload. A phono stage like no other.

FOR

- big spacious sound
- no set up
- easy to use
- volume control

AGAINST

- separate power supply
- no balanced output
- no balanced input

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Art Dudley - Stereophile, October 2015

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<p>HEADPHONE AMPS CREEK FIDELITY AUDIO GRAHAM SLEE LEHMANN PRO-JECT SUGDEN</p>	<p>SPEAKERS ACAPELLA EPOS HARBETH Q. ACOUSTICS QUAD</p>	<p>CABLES BLACK RHODIUM IXOS KUBALA-SOSNA PEERLESS PRO-JECT QED SUPRA TRANSPARENT WIREWORLD</p>	<p>HIFI FURNITURE ALPHASON ATACAMA CUSTOM DESIGN HI FI RACKS MUNARI MUSIC TOOLS NORSTONE QUADRASPHIRE SOUNDSTYLE TRACK AUDIO</p>
<p>AMPLIFIERS CREEK EAR/YOSHINO ICON AUDIO QUAD SUGDEN TOM EVANS</p>	<p>CD PLAYERS CREEK EAR/YOSHINO ICON AUDIO SUGDEN QUAD</p>	<p>TUNERS CREEK QUAD</p>	<p>HEADPHONES AUDIO TECHNICA BEYER ERGO GRADO PSB SENNHEISER</p>

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Prophetic Sound

It stands as Transfiguration's top-of-the-range cartridge. Paul Rigby reviews the moving coil marvel that is the Proteus.

Proteus was a man of myth, the son of a sea god who could assume different forms and had prophetic abilities. I wanted to see if Transfiguration's prophecy of top quality sound from this Proteus cartridge would match the myth.

Featuring a dual-ring magnet assembly (both neodymium), the cartridge offers a very low internal impedance of just 1 Ohm. The idea is that, the lower the internal impedance (which is also helped by reducing the coil windings, all made from pure silver, incidentally), the less phase shift, so improving transients. That's the theory, anyway. This cartridge offers a low mass too which should aid the speed and response in mechanical terms.

The chassis is a non-resonant type with a new dampening

material that promised greater clarity. Hanging from it is a 0.3mm diameter solid boron diamond-tipped cantilever with a recommended tracking force of 2g while the cartridge itself weighs in at 7.8g, which is a pretty normal figure, so no arm balancing problems.

Installation was both tricky (the overhang measurement was complicated by the cantilever being positioned well under the body) but also advantageous because unlike, say, a Glider with its protruding cantilever, you won't be flicking off the Proteus' tip accidentally any time soon. I also liked the sturdy stylus guard, useful for initial fitting, and the screw-threaded mounting holes.

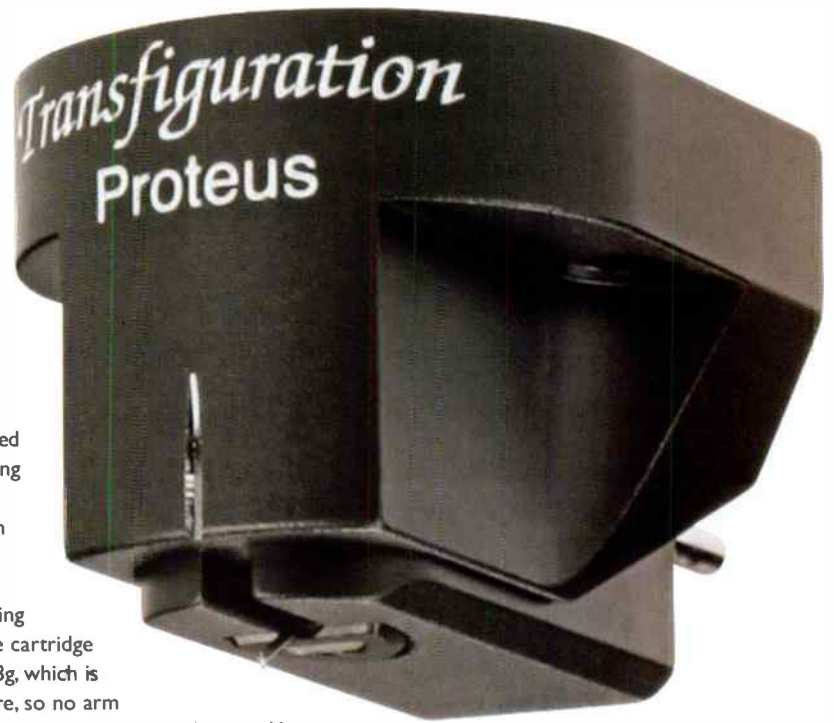
SOUND QUALITY

I began with Neil Young's well pressed 1990 LP 'Ragged Glory' where he is, once more, in cahoots with his favourite backing band, Crazy Horse – and the first track 'Country Home', with Young on lead guitar and generally hopeful lyrics. I chose this LP

because Young spends his time playing a rather 'dirty' guitar while his vocal sometimes drags and slurs, purposefully removing much of the potential precision from his delivery.

As the guitar-dominated parts of the song progressed, the soundstage is drenched in feedback, reverb and other noise which can mask other, more delicate instruments, as well as challenge the tracking abilities of any cartridge, but the Proteus handled this difficult track with ease largely because, I suspect, it has very secure tracking ability. It teased apart Young's lazy and potentially blurring ructions and allowed my ear to easily locate the delicate treble-infused cymbal taps, as well as retrieve complex harmonic backing vocals. This produced an incisive and rather brisk upper frequency content – quite a feat on this track.

Next? I wanted to utilise a Frank Sinatra LP to achieve the ultimate pairing: the most 'honest' of cartridges with the most 'emotionally revealing' and 'public' of singers. I happened upon 'London By Night: And Other Famous Standards'



The cartridge uses a 0.3mm diameter solid boron diamond-tipped cantilever.

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Paul Miller, Hi-Fi News, March 2015



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The chassis uses a non-resonant material and has tapped screw holes.

which, incidentally, appears to be one of the rarer Sinatra LPs out there, one of the few excellent 'T' compilations from England and Australia. To really 'get' Sinatra, you need to closely follow this legendary vocalist's delivery if you want to hear his message in full. This is what the Proteus did, over and over again. On 'Jeepers Creepers', the popular 1938 Harry Warren/Johnny Mercer song, Sinatra sang the ditty with his mouth agape it seemed to me. He really was surprised when he exclaimed, "Where d'ya get those eyes?". The Proteus delivered Sinatra in a startled yet delighted fashion.

Meanwhile, the trumpets and saxophones were allowed to disengage from the vocal, there was enough instrumental separation, air and space to give the impression that the brass was openly arranged around Sinatra. The overall effect was entertaining.

Finally, on Ennio Morricone's orchestral arrangement for 'Metti, uni Sera a Cena' a female 'scat' vocal gently flows over the orchestra. I found it interesting that I could track the exhalation of breath of the singer up to the point where I was thinking, 'Uh oh, she'll need to take a breath in a second, she's pushing that single note too far.' That is, the slight element of vocal tension in this situation was easily conveyed by the Proteus and this gave me further insight into the performance.

That said, the pressing I was spinning, while reasonable, was not the very best and this resulted in some unpleasant groove distortion that it seems was caused by this cartridge's treble lift. This rather

harsh ingredient had to be countered by lowering the gain at times.

Nevertheless, the music content conveyed by the Proteus itself remained fascinating, inventive and incisive in terms of how the detail from a complex conglomeration of instruments was portrayed.

Even simple sounds such as percussive rim shots were both sharp and brisk, managing to remain informative and tonally correct while the guitar strumming on the track 'Sauna' caught each string in turn, adding a rich textural quality to the instrument.

CONCLUSION

If you want a scrupulous, reliable, incorruptible and downright trustworthy account of the music emanating from your vinyl's grooves then this cartridge will give it to you

straight. No messing.

You need to provide the best possible ancillaries to support it, though. My Icon Audio PS3 Mk.II proved to be a little noisy with such a low output cartridge, for example, because I could detect a little hum at the higher volume setting I was forced to use.

And you may have to make some choices about vinyl pressing quality to avoid the cartridge's treble lift being either obvious or obstructive to balanced reproduction. Nevertheless, suitably fettled and managed, the Transfiguration Proteus is likely to add to your musical enjoyment, making music fascinating once more.

SYSTEM USED

Origin Live Sovereign turntable
Origin Live Enterprise 12" arm
Miyajima Takumi
Transfiguration Phoenix
Icon Audio PS3 phonostage
Aesthetix Calypso pre-amp
Icon Audio MB 845 Mk.II monoblocks
Quad ESL-57 speakers with One Thing mods
Vertex AQ & Atlas cabling

MEASURED PERFORMANCE

The Transfiguration Proteus has very low output of 0.21mV at 3.54cms/sec rms, so it must be used with a high gain (65dB+), very low noise MC phono stage. The benefit is very good tracking; few coil turns result in low effective tip mass. And sure enough the Proteus walked through an ultra-high level midband (1kHz) test track on B&K QR2010 test disc that few cartridges are able to traverse; some even fly out of the groove. So it has exceptional tracking ability, at the recommended downforce of 2gms.

Tip mass resonance goes untamed in this cartridge, unlike most modern MCs, and as a result treble rises by +8dB above 15kHz our response analysis with JVC TRS-1007 test disc shows. This is significant, adding sharpness to treble and giving the Proteus a "fast" sound. Inner groove tracing loss is low (red trace), due to efficient stylus profile geometry so +5dB lift exists even on inner grooves. With poor quality discs this will emphasise distortion and add coarseness; treble lift on inner grooves isn't a good idea.

Channel balance was good and separation values balanced, Shure TTR-109 test disc showed, meaning

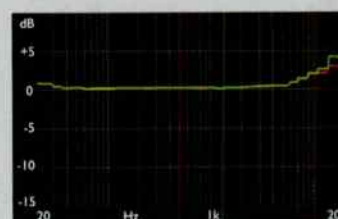
generator alignment is correct.

Lateral distortion was low but a high measured vertical tracking angle (DIN 45542 test disc) of 30 degrees resulted in 6% distortion on vertical modulation (CBS STR-112, 45µm) where 2% or so is possible.

The Proteus is a very low output MC with excellent tracking but a bright sound balance. It measures reasonably well, but more accurate MCs are available. **NK**

Tracking force	2gms
Weight	7.8gms
Vertical tracking angle	30 degrees
Frequency response	20Hz - 12kHz
Channel separation	24dB
Tracking ability (300Hz)	
lateral	90µm
vertical	45µm
lateral (1kHz)	25cms/sec.
Output (5cms/sec rms)	0.3mV

FREQUENCY RESPONSE



TRANSFIGURATION PROTEUS £3295



OUTSTANDING - amongst the best.

VERDICT

Offering excellent tracking abilities, this cartridge is both perceptive and sensitive to even the most delicate nuances of vinyl.

FOR

- midrange honesty
- incisive detail
- dynamics
- effective with all music genres

AGAINST

- accentuated treble

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Cables: Chord Co., DNM, Nordost, Siltech, Tellurium, VertexAQ, Mains Aletheia, Vertex AQ.
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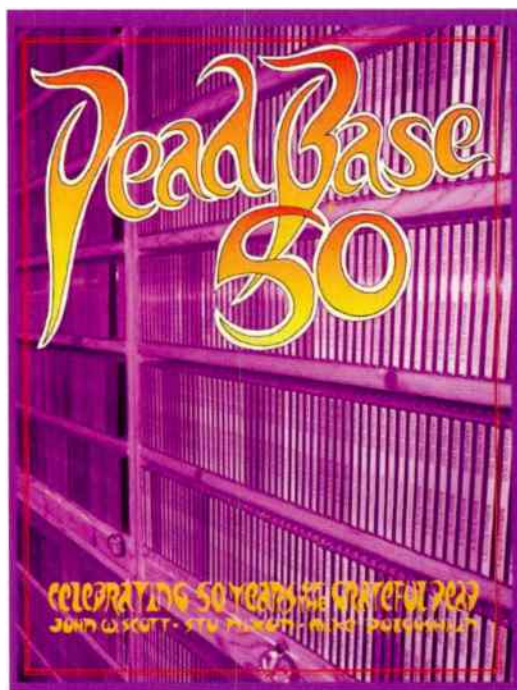


Ace Of Base

Continuing his series on music-related books, Paul Rigby looks at a tome that goes that bit further than the rest in rounding up the history of the legendary Grateful Dead.

DeadBase50

Authors: John W. Scott, Stu Nixon, Mike Dolgushkin
Publisher: DeadBase Too
Price: £47.17 [Kindle at Amazon]
 \$90 [Amazon.com]



Wisden Cricketers' Almanack' has been published annually in the UK since it was founded in 1864. It is seen as a famous sporting reference book. If you want to know anything about the game of cricket in terms of performances, statistics, awards, records, scorecards, rules and regulations and more, then this title is seen as the 'Bible' of Cricket.

The only comparable book in music, that I have seen, is DeadBase. In terms of its scope and attention to detail while focusing on a single band, there really is nothing to compare.

So what is DeadBase50? The core of the book is a hard-backed (and now also Kindle-powered) book spanning 992 pages that contains extensive set lists, statistics, venue information, facts and opinion on the rock band the Grateful Dead from 1965-1995 (plus the final concerts from the Fare Thee Well tour in 2015). You also get the same for each band member's solo careers and post-1995 collaborations. It is seen as an invaluable resource for any so-called 'Deadhead'. That is, the dedicated and (maybe) obsessive Grateful Dead fan.

The very first edition of the book emerged in 1987 and was updated and expanded on a yearly basis up until 1995 when the 'leader'

and totem for the band, Jerry Garcia, died. After that, a further edition of the book was released in 1997 (DeadBase X) and then 1999 as DeadBase XI. Other supplements were issued, plus a stripped down version called DeadBase Jr.

This newly-printed database does feature the odd concert review or essay from fans but the majority of the text seen here consists of chronological lists and facts. This is a true DeadNerd tome.

Hence, on p.6 of the original rear section, there are details of a gig from 14 February 1968 then, on p.29 of the updated front section, there is extra information from that concert and then on p.243 of the original part, there is a long-hand review of the same.

In that gig was played a song called 'China Cat'. On p.161 you can see all of the other gigs that the song had appeared in (400-500 at a rough guess). On p.125 you can see how often, on a year by year basis, that the song was sung (sixty-five times in 1972, apparently) and so on. The facts and figures overwhelm you.

Criticisms? There are a few. As you can guess from the above, the book is a mess in terms of organisation and I question its practical value for anyone looking to quickly find a piece of information.

This 50th anniversary edition (hence the name) is, in fact, two books in one. Hence, the updates

from the last volume are not integrated into the older data but separated at the front of the book with the last edition remaining at the rear.

Each part has its own page numbering range. Hence, if you look up a show, you will then have to look it up again in the first section to see if there were any updates. Also, the lack of a coherent structure and, in navigational terms, tabs printed on the page doesn't help matters either. I recommend users buy the assorted Post-it Notes Markers Pads collection, price at around £6, to create their own tabs to improve navigation.

That said, if you take the time and trouble to get to know the contents of this book and where everything is then it will prove useful, but I wonder if the Kindle version might be the best option for serious users with that device's invaluable search options.

All in all, a mighty, if flawed, tome for an incredible band.

Enjoy the Music.com Readers:

I really enjoy your website and find it very informative (and read it every day).
— Richard Holbrook

I have never replied to online audio reviews but wanted you to know that I have enjoyed several articles.
— Craig Mattice

What a great review!

— Paul Kittinger

Enjoy the Music.com Contest Winner

In fact, the Axiom Audio EP500 works so well that my wife and I both stood mouths open (not kidding!) as it shook the rafters and window glass in our house. Amazing! Love that palpable, tight bass... Thank you again for the awesome prize!
— Jeff Merth



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Final Countdown

From Japan comes Final Audio Design's hybrid driver Sonorous VI headphones. Jon Myles takes a listen and comes away impressed.

Japanese company Final Audio Design initially made its name producing high-end moving coil cartridges and booster transformers way back in the 1970s.

More recently, though, it's become better known among hi-fi aficionados for its range of headphones with an extensive range incorporating both in-ear monitors and full-size over-ear models.

I was most impressed with the flagship Sonorous X 'phones I tested earlier this year (Hi-Fi World February 16) – but with a price tag of around £3500 and embellishments including gold leaf detailing on the earcups they are clearly not for everyone.

But if you are looking for something a little more realistically priced, then sitting around the middle of the company's product line-up are the Sonorous VIs – which share some of the X's design features, but with a price tag of £549.

Unusually, they are a hybrid design, utilising an in-house designed balanced armature driver for the tweeter, allied to a 50mm dynamic unit for the midband and low-frequencies.

These are housed inside an enclosure which utilises what Final dubs BAM (Balancing Air Movement). In essence this equalises air pressure at the front and rear of the main diaphragm, said to give a cleaner, more three-dimensional sound with better definition and deeper bass.

The ear pads are made of high-grade synthetic leather, while a 1.5 metre cable with gold-plated locking pins is also supplied. At 480g the Sonorous VIs are fairly weighty but the padded headband is extremely comfortable and once seated the 'phones never felt overly heavy

even over extended listening periods.

SOUND QUALITY

The Sonorous VIs do need a decent run-in, taking around a week to come fully on song. But once that's done they have a distinctive presentation that majors on a surprisingly expansive soundstage for their price.

While some 'phones seem to be pumping the music into your ears, these give a much better surround-sound experience.

On Massive Attack's 'Angel' via the headphone output of a Naim Supernait 2 the deep bass seemed to be coming from a few inches either side of my head – and it had good depth and power. The VIs were actually more akin to a pair of hi-fi speakers than a set of headphones at times.

There was a slight warmth to the midband but it wasn't excessive: the likes of Miles Davis's 'Bitches Brew' didn't lack bite or detail. Indeed, the Final's sound well-balanced across the frequency spectrum, having a smooth treble that didn't grate even with low bit-rate or strident songs, such as 'Live Forever' by Oasis.

There's not quite the last degree of detail or element of nuance I get from my trusty Sennheiser HD800s, the Sonorous VIs having a more relaxed presentation to them. But in contrast they have a rather beguiling flow to the way they present music. Listening to Jacques Brel's 'Amsterdam' the vocals were at the

fore in the mix but the orchestral backing was given just the right amount of presence, so the whole performance sounded natural.

Similarly, on Acoustic Ladyland's 'Last Chance Disco' the saxophone lines lacked a little bite, but melded so well with the drum and bass backing that it never became a problem. Instead I heard the sound of a band playing as one – just the way you want to hear it.

And that is exactly what the Sonorous VIs do so very well. They are eminently musical and free-flowing, with a large soundstage and sense of coherence.

CONCLUSION

The Sonorous VI headphones are never less than enjoyable, with an easy-going manner that will appeal to many. They may lack the last degree of detail when compared to some others – but that is more than made up for by their wide soundstage and the natural rhythmic flow they bring to music.



FINAL AUDIO DESIGN
SONOROUS VI
£549



OUTSTANDING - amongst the best.

VERDICT

A combined balanced armature/dynamic driver design gives the Sonorous VIs a distinctive wide soundstage which is never less than enjoyable.

FOR

- superb stereo reproduction
- deep bass
- rich midband
- build quality

AGAINST

- some rivals are more detailed

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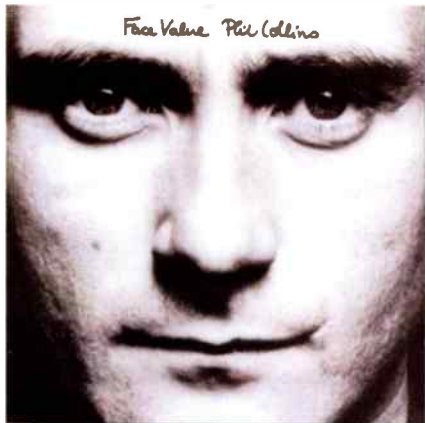
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PHIL COLLINS

FACE VALUE

WARNER/ATLANTIC



"Of all of the solo albums Collins has produced it is 'Face Value' that features his best work"

He has amassed seven Grammys, two Golden Globes, an Oscar and 100 million album sales – but it seems that the fashion of hating Phil Collins has continued unabated. There's been a lot of stories written about Collins, most of which are untrue. His naivety does get in the way, though: allowing himself to be jetted across the Atlantic on board a first-class Concorde seat to play both Live Aid concerts in one day while Africa suffered was not clever in many people's eyes.

That he has produced a host of cheesy music is also unmistakable and that he was at the helm when (for many prog rock fans) the glory that was Peter Gabriel-era Genesis slowly took a nose-dive with Collins at the wheel is a sad fact.

But he's also contributed to many lauded musical projects from Brian Eno, Robert Fripp, John Martyn and, let's not forget, the superb Brand X while he has been recently name-checked as influential by contemporary artists such as Lil Kim, Kelis and ODB. So, love him or hate him, you cannot write-off his musical legacy.

And of all of the solo albums that Collins has produced it is 'Face Value', his first outing, that features his best work: possibly because it was derived from pure emotion.

Collins divorced his then wife Andrea Bertorelli in 1980 after 'bored-with-Phil-touring' Andrea departed with the couple's decorator. As a bitter message to his ex, Phil sang his 1981 solo hit 'In the Air Tonight' on Top of the Pops sitting at his piano with a pot of paint and a brush.

"My marriage broke up and I said that I was leaving to go and live in Vancouver and I told the guys (the other members of the band Genesis) that I was leaving" said Collins, looking back at the creation of the album 'Face Value'. "They said, 'Hang on, don't leave, let's just put things on ice for a bit, we'll do our solo albums.' I had a lot more time and energy, because it was something for me to do".

As for the bitter lyrics displayed in the album's first hit single 'In The Air Tonight', Collins is not in the least contrite..

"I've never had any regrets. It was the first line of the first song that I thought of when the song started. Those lyrics were improvised. I never wrote them down. I was at home, practising, getting my machines working and then I started singing, 'Well if you told me you were drowning, I would not lend a hand'. After I finished singing it, I then wrote them down on some paper so I didn't forget them. And who'd have thought, on the back side of the piece of paper, was the decorator's name and address".

'Face Value' was almost written like a jazz album, said Collins. "I would improvise like a jazz musician. All very organic. I would always start with a demo which I would then transfer to multi-track".

The album itself eschews high concepts and prog complexities and relies more on passionate vocals and pop structures on tracks such as 'Thunder & Lightning' and glossy ballads such as 'This Must Be Love' and the Mark Knopfler-esque 'The Roof Is Leaking' all topped off by singles such as 'I Missed Again' and the star track 'In The Air Tonight', which starts in very Peter Gabriel fashion.

Oh, and the last track 'Tomorrow Never Knows'? Despite what Rolling Stone says, this is not a bad rendition. This was 'Beatles Goes Prog' and Phil has cache to burn here.

Now 'Face Value' has undergone a reissue that includes a bonus disc of rarities, live cuts and B-sides.

"It's basically an opportunity to rediscover and reassess my stuff" said Collins.

"You realise along the way that a lot of people think they know you. They think they know you by the songs that they are plied with on the radio: 'In the Air Tonight', 'I Missed Again' and so on. That is what Phil Collins has become, over the years. Hence, this reissue sequence is an opportunity to let people hear what they may have missed. When you wrote an album, back in my day, you wrote eleven or twelve strong songs. CD meant that you cherry picked the best three or four and filled in the rest but one was as good as another, as far as I was concerned. Hence, one hopes that people will rediscover a whole bunch of material that they missed". **PR**

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