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



Meridian were keen for us to look at their new 808vS CD player and preamplifier, in conjunction with DSP7200SE active loudspeakers. And what a process it turned out to be! In truth it is a complex system with a bewildering array of options; what we do not have space to explain is that both items can be set to work independently, although the 'speakers must have a digital input; there is no analogue alternative. The network setup option was interesting but offers little over and above what is available on the menus. A system of this cost and complexity is usually installed by Meridian

engineers, so owners would never grapple with the many menus and settings we pored over; but to measure performance meaningfully all options had to be carefully set beforehand. The system spent a long time with us, being used in-house in a large 4800cu ft room, and it acquitted itself well.

What Meridian offer here is an incredibly clean and concise sound, that is truly accurate measurement shows, but also one that is svelte and easy on the ear. Their new tweeter is a help here: it was delightfully neutral. And correction is applied to the bass section in order to cope with differing room conditions and extend bass downward for powerful subsonics; the DSP7200SEs had heft. In all this made for a sense of poise and ultimate accuracy. OK, the price made me sweat too, but you have to admire the knowledge and technology that has gone into this system.

I think it was coincidence that I also, this month, joined the world's press to hear Meridian founder, Bob Stuart, announce the launch of MQA digital signal processing. I hope we will be able to get a deeper technical insight soon, in order to better explain how it works. Digital moves ahead and Meridian are a part of this.

At the other end of the technology scale, where a piece of vinyl spins around and around, I was worried about changing the bearing in our Technics SL-1210 Mk2 Direct Drive turntable. But it turned out to be a surprisingly easy DIY job - and it was fascinating to get a closer look at Technics DD motor, with its sensors. This is the fun end of hi-fi for spanner men and seemingly more understandable than Meridian's 808vS, but that's only if you ignore 1970s servo-feedback theory and circuits within the Technics. Hi-Fi is never boring and commonly challenging!

Noel Keywood

Editor



hi-fi world

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verdicts

- ● ● ● ● OUTSTANDING
- ● ● ● EXCELLENT
- ● ● GOOD
- ● ● ● MEDIOCRE
- ● POOR
- £ VALUE

amongst the best
extremely capable
worth auditioning
unremarkable
flawed
keenly priced

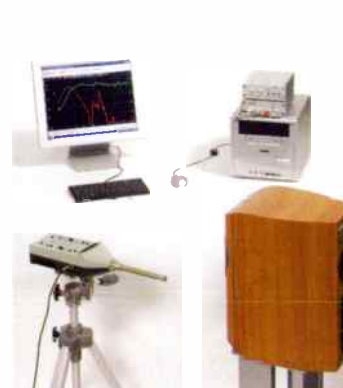
testing (see www.hi-fiworld.co.uk for full explanations of all our tests)

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

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

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

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



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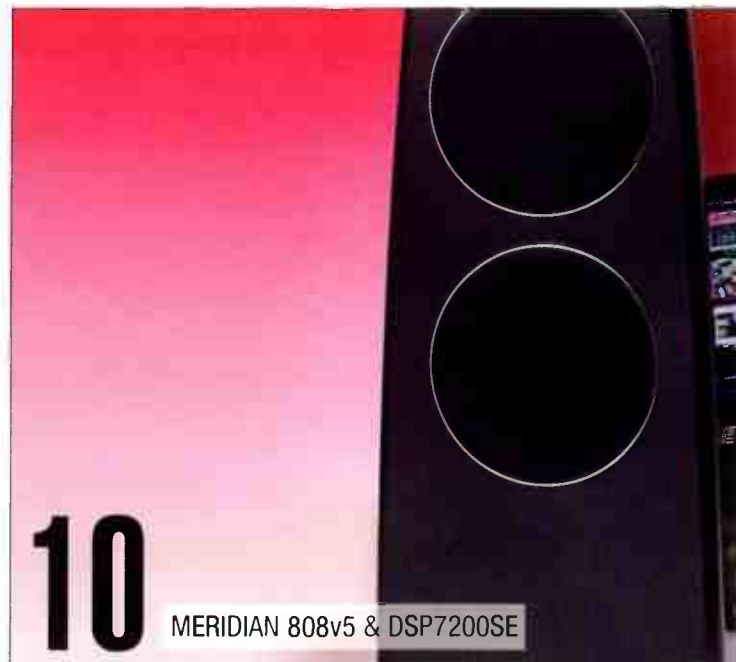
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“Superb”

★★★★★

*What Hi-Fi Sound and Vision,
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“A landmark digital product”

★★★★★

Editor's Choice, Hi-Fi Choice

“Chord’s best-ever DAC”

Hi-Fi +

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Ken Kessler, The Telegraph

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MERIDIAN MQA PRESS CONFERENCE

In a well attended press reception held at the Shard, London, Meridian announced MQA, a new digital processing scheme. Bob Stuart, founder of Meridian, explained that it improved digital sound quality, yet reduced file sizes at the same time. This was not, he said, a system that simply increased sample rate or bit depth, but rather looked at, and worked with, digital data in the time domain.

Since Bob talked about pulse shape and ringing, it appears that MQA cleans up digital by improving its time-domain signature. It may also losslessly compress by tracking dynamics, since it wastes no space, he said.

Bob told the assembled audience that early digital recordings could be processed to sound better, but MQA could also be used to improve new digital recordings. MQA will improve digital audio quality for all listeners, whilst imposing no overhead in storage or transmission. It would appear to require digital signal processing hardware and software. Additionally, as in Meridian Lossless Packing - an early form of lossless digital compression used on DVD-A - MQA is able to provide a check-sum to ensure the process has been fully completed, and quality assured. That's why it's called Master Quality Authenticated - MQA.

For more information go to www.meridian-oudio.com.



NEW AUDIO RESEARCH AMPLIFIERS

Audio Research of the USA have launched a new range of amplifiers, the G Series, named after Galileo they say. We got first sight and pictures of the new 150 Watt per channel GS150 valve power amplifier, Friday 5th December at KJ West One. The GS150 power amplifier you can see in the picture uses a hybrid FET/tube input that feeds 6H30 driver tubes that couple to the new KT150 power output tubes, four of them working in parallel push-pull. The 150 Watts power figure of the GS150 is obtained by using fixed bias, like all Audio Research tube amplifiers - which confusingly means bias need occasional adjustment. The meters facilitate this task, or can be switched to show power output. Price is £16998.

The GSPre is again a hybrid design, but it predominantly uses 6H30 tubes in its line stages, and in a tube phono stage, where Audio Research use an FET input for low noise, important for MC cartridges. The preamp has balanced inputs and outputs and it feeds the GS150 through a 6H30 balanced, tube line drive stage, Audio Research say. Again, there's full home automation control via RS232, as well as infra-red control. Price is £12250.

Audio Research comes into the UK through Absolute Sounds, who organised this event and provide service and backup. A 75 Watts per channel integrated is due next year, but price is not yet set.

For more information go to www.absolutesounds.com.



SME: ARM IN ARM

Timestep has announced the M10-DP dual tonearm mounting plate for the SME Model 10 turntable. The plate is manufactured from the same material and to the same thickness and profile as SME's primary arm mounting plate and is carefully designed not to affect the turntable suspension.

The M10-DP dual tonearm mounting plate is fully compliant with all 9" SME tonearms and others with an SME base. It comes with a complete set of tools and easy-to-follow fitting instructions in full colour. Price is £199.

Call 01803 833 366 or click on www.timestep-distribution.co.uk for more information.

TOUCH AND GO

A wireless, portable speaker for phones that are able to utilise NFC technology (including many Android phones and the new iPhone 6 models from Apple), you choose your song and then place your phone onto the speaker to play. Offering 3W of power, the speaker provides battery or USB powered options. Price is £27.

Click on www.internetgiftstore.com for more information.



TEAC TN-300 TURNTABLE

Presented with a heavy MDF plinth, the TEAC TN-300 includes a substantial die-cast aluminium platter with a heavy rubber mat, driven by a high-torque DC motor and a durable Neoprene belt. Changing between 33/45 speeds is all done electronically, via a speed selector on top of the plinth.

A straight tone-arm (with manual arm-lifter) is employed and comes pre-fitted with an Audio-Technica AT-95E moving magnet cartridge (with replaceable stylus).

TEAC has built a phono amp into the chassis. Owners can plug the deck into the CD, auxiliary or line input of any stereo amplifier, hi-fi system, active speaker or smartphone speaker dock. If you've already got a separate phono stage, perhaps built into your amplifier, the one in the TEAC can be bypassed at the flick of a switch.

Owners who want to archive their vinyl to their PC or Mac (perhaps so they can also listen to it on the move via their smartphone) will also be pleased to discover that there's a USB port on the rear of the TN300 that lets you send a digital output to your computer where it can be saved into your preferred music format.

Available in four finishes: black, red, cherry and white, it is priced at £300.

Click on www.teac-audio.eu for more information



EVO3 MOSAIC GENESIS

The new EVO3 Mosaic Genesis is a five-way mains conditioning unit featuring three outlets for front-end source components and preamplifiers and two for high-current amplifiers, subwoofers and the like.

The front-end is a sine wave generator that builds a completely new waveform. The signal is amplified and fed to an output transformer, resulting in a continuous output of 150W (300W peak) of newly generated power.

The EVO3 Mosaic Genesis also controls the mains voltage, ensuring it is maintained at 230V +/- 2%. The unit also guards against the effects of power spikes and surges. It is priced at £5,995 (including VAT).

Click on www.soundfoundations.co.uk or call 01276 501 392 for more information.



MHP1000 HEADPHONES

McIntosh has launched its first ever headphone. The new MHP1000 features a bespoke headphone driver. Its closed back, circumaural, lightweight design with soft leather pads, requires minimal pressure to secure them on the head and ear.

Two cables are also included: a 1m lead with a 3.5mm stereo connector plus a 3m cable with a 6.3mm stereo connector. Both cables feature gold-plated, McIntosh custom-designed connectors and shielded wiring.

For more information call 01202 911886 or click on www.mcintoshlabs.com

AUDIO QUEST PRESSIE

AudioQuest will be giving a special present to 500 lucky customers. Namely, a complementary album in high resolution. Customers buying the DragonFly v1.2 USB DAC in the UK, The Netherlands and Germany may find a voucher inside the packaging of their DragonFly. This voucher includes a unique code to download a complementary 24bit/96kHz album.

AudioQuest has partnered with rock guitarist Steve Rothery to give away a copy of his 'Ghosts of Pripyat' album. Steve is probably better known to many as a founder member and lead guitarist of the rock band, Marillion. 'Ghosts of Pripyat' is his new solo project, which was released in September 2014, it features Steve and a group of virtuoso musicians.

For more information click on www.audioquest.com or for more information on the album, click on www.steverothery.com.



FURUTECH SK-III

By using the SK-III to lightly brush the surface of LPs, CDs or DVDs in a circular motion, the sound and/or picture quality can be improved due to the effective removal of both tiny dust particles and electrostatic charge.

The SK-III uses a combination of natural goat hair surrounded by patented static discharge fibres made from specially structured and treated acrylic. The goat hair removes tiny dust particles from grooves.

The static discharge fibres are chemically coated with copper sulfide to be electrically conductive and are set back 15mm from the tip of the brush so that only the soft goat hair touches your media.

The SK-III also features a new rhodium-coated metal grounding sleeve for enhanced conductivity.

It comes with a clear plastic cover to keep the bristles of the brush well protected. Price is £110. Call 0118 981 4238 or click on www.soundfoundations.co.uk for more information.



MARK LEVINSON'S NO 585

The No 585 integrated amplifier is the first of a new generation of products to be designed at Harman's Luxury Audio Group engineering facility located in Shelton, Connecticut.

It combines a Class AB amplifier delivering 200W and will accommodate a wide variety of digital music sources including high resolution 32bit/192kHz computer audio and DSD over USB. The No 585 incorporates Harman Clari-Fi processing, which applies proprietary signal-enhancement techniques to restore the sound quality of any compressed file format.

At the heart of the No 585's digital audio processing stage is an ESS Sabre 32bit D/A converter with proprietary jitter elimination and fully balanced, discrete I/V (current-to-voltage) circuitry. The Cmedia USB audio processor is capable of asynchronous data transfer of high-resolution DSD and PCM files at up to 192kHz/32-bit resolution. Price is £10,500

Click on www.karma-av.co.uk or call 01423 358846



EXPLORER2

Meridian Audio has announced Explorer2 a portable, compact USB DAC including compatibility with MQA 'Master Quality Authenticated' lossless audio files supported by a more powerful DSP capability than its predecessor.

Designed and hand made in the UK, Explorer2 employs an all-metal enclosure housing a six-layer circuit board and the compact unit. Weighing just 50g, it up-samples all input signals to 176.4/192kHz and includes Meridian's proprietary apodising filter. The up-sampling and apodising technologies are inherited from Meridian's Reference 800 Series and they 'correct'

errors in the original digital recordings while helping improve the quality of standard recordings.

Explorer2 connects to virtually any computer with a USB port – drivers are provided for Linux, Macintosh and Windows operating systems – and a trio of LED indicators show the status of the unit, confirming the current sample rate. Price is £199.

NOBLE K10

Noble Audio has launched a universal-fit version of its flagship in-ear monitor (IEM).

The new K10 is now available as a handcrafted IEM, a ten-armature model. It is a low-impedance four-way design constructed from acrylic with gold-plated pentalobe screws and features a detachable two-pin cable with a 35 Ohm impedance. Supplied accessories include the Storm Box (crush-proof carry case), twelve pairs of ear tips (four kinds in three sizes), two Noble Audio bands or amp bands, a cleaning tool and Noble cable and an ownership card. Price is £999

For more information click on www.nobleaudio.com



POWERCUBE EXTENDED USB

Ideal for digital users short on space, this power socket is a four-way construction with two USB sockets and a mains lead of either 1.5m and up to 3m. It also features a locking support out to allow fitting to various surfaces including underneath a desk top. Other cubes can be added to form a series of modular building blocks.

Click on www.allocacoc.com for more information. You can purchase examples from Littlewoods and Amazon.



CRITERION AUDIO...ON THE RADIO!

Appearing live on Star Radio (107.9/1 FM), Criterion Audio has sponsored and will feature in a radio show. In fact, the first of its kind in the UK. Called, appropriately, 'The Hi-Fi Show', it will offer a range of subjects including hi-fi industry news, product overviews, interviews with the hi-fi experts and much more.

Broadcast every Tuesday at 7pm and repeated on Sunday at 11am for thirty minutes, listen or even better ring in with your questions for the panel. Don't worry if you miss out on the live broadcast, though, you will be able to download the show via iTunes as a podcast to your computer, tablet or mobile phone.

Call 01223 233730 or click www.criterionaudio.com for more information.

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**THE HI-FI
SHOW**

on Star Radio 107.9/1FM



Digital magic

Meridian's new DSP7200 Special Edition loudspeakers, 808V5 CD player/pre-amp and Control 15 music server will set you back some £59750 - but it's a great system, says Jon Myles.

If any British hi-fi company can claim to have been at the forefront of quality digital music replay over the past three decades then it's surely Meridian.

The combined electronic and design talents of founders Allen Boothroyd and Bob Stuart have seen a myriad of ground breaking products emerge from the company's Cambridgeshire base. Meridian was the first UK firm to produce an audiophile CD player in the shape of the MCD way back in 1983.





The Meridian 808v5 acts as both a CD player and pre-amp. It feeds digital direct to the loudspeakers, and its analogue inputs turn analogue to digital; LPs can be turned to digital.

Then came its range of digital active loudspeakers, followed by the innovative Sooloos network music server which made hard disk-based music storage both practical and eminently enjoyable.

Add in technical innovations such as Meridian Lossless Packing – utilised by Blu-ray, HD DVD and the likes of Dolby TruHD – and it's obvious Meridian boasts an enviable track record.

No wonder, then, that when we were offered a complete Meridian system for review we didn't hesitate before accepting.

What we got is Meridian's 808v5 Signature Reference CD player/pre-amp, the Control 15 server/streamer with its built-in screen and a 500GB hard drive and the new DSP7200 Special Edition loudspeakers – released to mark the 25th anniversary of the company's first digital 'speakers' in 1989.

Taken together the package will cost you just shy of £39,750 - £23,995 for the 'speakers, £11,000 for the 808 and £4,750 for the Control 15. Add in a few hundred pounds for Meridian's own SpeakerLink cables (although you can use your own Cat 5 or Cat 6 connectors) and obviously this is a seriously high-end system.

But unpack the individual pieces of equipment and it's quickly apparent that your money is buying some serious digital firepower.

Take the 808v5 for example. Its connectivity options alone

are enough to shame most other CD player/pre-amps – with six unbalanced phono inputs alongside three coaxial and five optical digital inputs, as well as one USB. In addition there are also both balanced and unbalanced analogue phono outputs, plus S/PDIF digital and AES/EBU together with the aforementioned RJ45 SpeakerLink sockets for linking to other Meridian components such as the 7200 loudspeakers.

The analogue inputs pass through an 24/96 Analogue-to-Digital convertor, and all analogue is converted to digital. This available via USB, so digital recording of analogue sources, like Radio or LP, can be made.

It all makes for a well-populated rear panel but luckily the 808 is big (as in 480mm x 175mm x 411mm W/H/D) so there's plenty of room for making connections.

As for the DSP7200SE loudspeakers themselves, they are a true three-way design featuring a 25mm beryllium tweeter, two 200mm bass drivers and a 160mm polypropylene mid – each transducer driven by its own built-in 150 Watt amplifier.

But – as the acronym in the name suggests – they also include full digital signal processing in

the shape of four 24-bit 128x oversampling DACs as well as proprietary Meridian technology such as Enhanced Bass Alignment (EBA), where bass is delayed digitally, and Enhanced Boundary Control (EBC) which enables the user to tailor the output to compensate for reflective surfaces and loudspeaker placement.

The accompanying Control 15 is a much-refined development of the original Sooloos concept – meaning it is simply one of the best hard disk-based music servers out there.

It will handle file sizes up to 24/96, rips CDs relatively quickly and has a myriad of options for sorting, replaying and searching your music collection. The touch screen interface works like a dream with crisp, clear album artwork while a dedicated free iOS/Android app is available for those preferring to operate everything from the comfort of their armchair.

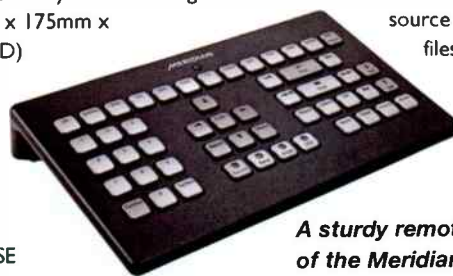
SET-UP

For all its technological complexity, the Meridian system is relatively easy to set-up.

The Speaker Link mode means all information is carried from the 808/Control 15 in digital format - only being converted to analogue once it reaches the DSP7200's control circuitry.

Installation is a matter of plugging in each loudspeakers to the mains, dedicating one as the master unit and the other as the slave and then hooking up to the Meridian 808.

Alternatively, you could by-pass the 808 altogether and simply use the Control 15 as your source - feeding music files straight to the DSP7200's



A sturdy remote gives full control of the Meridian system.

digital circuitry.

Once connected a number of further controls allow you to tailor the sound of the loudspeakers to your listening environment. Enhanced Boundary Control (EBC) gives four options (free, wall, shelf, and corner) for adjusting the bass level, depending

Audio Cable Award Grand Slam

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Black Diamond USB

Blue USB

Black Power Cable

Black Diamond RCA

Black Diamond XLR



"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 wide perceived bandwidth, bigger soundstage and the ability to present transient details in an effortless fashion"

HiFi World, Awards Edition Jan 2015



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on position.

In addition there are also bass and treble controls, as well as adjustment for room height.

All in all, it means there's a wealth of various options you can tune through to tailor the system to your particular listening environment - so experimentation is definitely to be recommended here.

SOUND QUALITY

What immediately struck me about the Meridian system is its sense of clarity. It had an uncanny knack of revealing detail I'd not noticed before from even the most well-played tracks.

Allied to that is a smoothness and dynamic punch which was beguiling.

Playing Tom Petty's 'Refugee' (24/96) via the Control 15 and 808 straight into the DSP7200SEs was a delight. Leading edges on the guitar were taut and vibrant while Petty's nasal vocals were portrayed with air and emotion. Despite all the digital processing going on in the background, the track sounded vibrantly alive and natural.

The EBC



Meridian founders Allan Boothroyd and Robert Stuart are so proud of the 808 their signatures are on each unit.

configuration produced a difference in bass weight. In our large listening room at Hi-Fi World we had it set to Free (off), but experimenting with the other settings showed bass was reduced and this would be useful for those looking to use the DSP7200SEs in smaller rooms with reflective surfaces.

Meanwhile, EBA added a sense of cohesion to the sound that made it seem more natural.



The Meridian 808v5 CD player/pre-amp comes equipped with a full complement of both analogue and digital inputs.

The DSP7200SEs may not be the largest of loudspeakers but they do manage to convey an impressive amount of heft and weight when called upon, due to the digital equalisation used. James Blake's 'Limit To Your Love' is a test for most loudspeakers but the Meridians sailed through it. The bass stayed taut and was powerful, but without any overt flab or thump.

If there's one criticism here is that there is a slight amount of overhang at times - nothing too overt but the suggestion that the cabinet isn't quite as inert as it should be.

But, to be honest, that's probably nit-picking because the overall sound of the Meridian system is nothing less than delightful.

With the Allegri String Quartet's 'Beethoven Quartets', for example, the pitch and tonality of the violins, viola and cello were rendered with supreme accuracy. The polypropylene midrange unit and beryllium tweeter worked together superbly. There was a subtle hint of warmth to the sound that helps keep things smooth and even-handed, without any loss of essential detail.

Meridian are a little coy on exactly what amplifiers are used within the DSP7200SEs - but when called upon they have ample reserves of power.

Led Zeppelin's 'When The Levee Breaks' positively thundered out of the DSP7200SE's cones. Harmonica, guitar and bass all had great presence while the mix - which can be dauntingly dense on some lesser systems - was outstandingly clear.

What's more the DSP7200SEs can go effortlessly loud without losing their inherent musicality.

Their clean, clear presentation

means your eardrums are likely to give up on you before obvious distortion sets in.

So, what's not to like? Well, the only downside is probably the 808v5 being limited to 24-bit/96kHz files - which, given its other digital attributes, seems rather unusual.

Having said that, taken as a whole this Meridian system could most probably be the only set of hi-fi equipment you might ever need for a good few years.

CONCLUSION

Taken together the Meridian 808v5, DSP7200 Special Edition loudspeakers and Control 15 make an extremely flexible and great-sounding package. On its own, the Control 15 is probably the easiest, most refined way to rip and replay CDs on the market at the moment.

Add in the 808v5's variety of input options and the all-round engaging nature of the DSP7200SE loudspeakers and here is one system that simply demands to be heard.

It might be digital at heart - but it has a sound that is breathtakingly natural and alive.

The Control 15 music server is probably the most elegant way to rip and replay CDs available.




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WHAT YOU FEEL
THEY DON'T SEE
WHAT YOU SEE

THEY DON'T HEAR
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World Radio History

MEASURED PERFORMANCE

808v5 CD/PREAMP

The Meridian Signature Reference 808v5 measures flat to 21kHz with CD and distortion is a low 0.2% at -60dB, contributing (together with noise) to an EIAJ Dynamic Range value with CD of 102dB - good figures.

With 24bit hi-res digital via the S/PDIF electrical (Coax) input, distortion sank to 0.04% at -60dB, our analysis shows. This is a good result too, although a little higher than other Meridian products we have tested, that managed 0.02%. An 112dB EIAJ Dynamic Range value is unexceptional for 24bit; up to 132dB, is possible nowadays, from an ESS Sabre32.

The 808v5 accepts 96kHz maximum sample rate; it cannot process 176.4kHz or 192kHz data. Frequency response was flat to 32kHz our analysis shows, before rolling away gently to the half-sample-rate limit of 48kHz, with some extension above this gained by internal processing.

The preamplifier has no Direct function, processing all incoming analogue to digital, then back to analogue through the unbalanced (phono socket) and balanced (XLR) outputs. In spite of

this dual conversion distortion was low, measuring 0.02% at 1V input, and - most tellingly - noise was also low at -102dB below full output (3.2V). Converting analogue to digital through an ADC usually adds noise; AV receivers do this and return around -76dB noise. So the 808v5 offers high quality conversion to digital, measurement shows, having an analogue bandwidth of 32kHz again measurement showed, and this is available through an S/PDIF digital output for digital recording, as well as USB.

The preamplifier has a normal gain value of x3 and a maximum output limit of 3.2V, so it can be used for general preamp purposes.

ANALOGUE INPUT

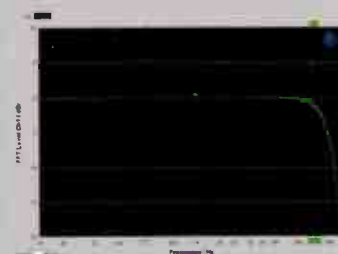
Frequency response	4Hz-33kHz
Separation	91dB
Noise	-102dB
Distortion	0.02%
Gain	x3 (10dB)
Overload	3V out

DIGITAL INPUT (24bit)

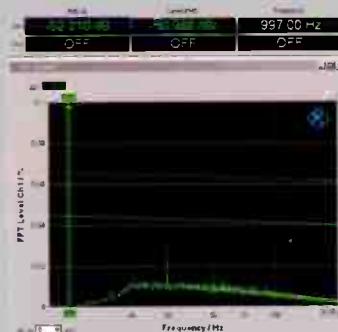
Frequency response	4Hz-32kHz
Separation	67dB
Noise	-112dB

Distortion	0.04%
Dynamic range (EIAJ)	112dB

FREQUENCY RESPONSE



DYNAMIC RANGE, 24bit



DSP7200SE LOUDSPEAKER

Forward output from the DSP7200SE loudspeaker, set to Free (field), reaches down 40Hz, our analysis shows (green trace) but the port extends this down to 20Hz and this will produce subsonics in a big room, exciting our previous 24ft square test room strongly when we tested the 7200 back in 2008, for the May 2008 issue. Our now larger test room has no effect, clearly delineating forward response from port. Overall the 7200 measures fairly flat from 40Hz up to 20kHz. Tonal balance will be even, and detailing strong because there is no midrange crossover dip; quite the reverse in fact, treble rises a little in this region around 3kHz. The new beryllium dome tweeter looks especially smooth, slowly rolling away above 16kHz to ensure there is no top-end spit.

Bass output is lifted by three discrete peaks caused by internal cabinet

resonances, a decay analysis revealed. The compact cabinet is driven to produce strong bass, rear energy emerging through the cones causing overhangs at 100Hz, 70Hz and 40Hz. So bass is strong and extended but will have some character; the bigger DSP8200s will likely avoid this. This phenomenon is, consistently, a drawback of squeezing strong bass from a compact cabinet; passive speakers suffer identically (e.g. Focal). Bass can be reduced progressively by choosing wall, shelf or corner equalisation settings (1, 2 & 3 reflective planes), in that order. The wall setting was usefully subtle, measurement showed, and can be used to dry bass out a tad.

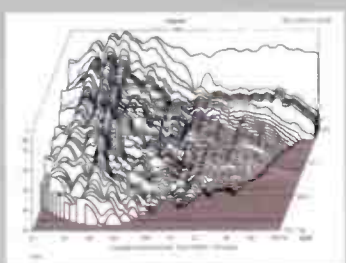
Our 200ms decay analysis showed little delayed output across the rest of the audio band, so the DSP7200SE is a low coloration loudspeaker, as well as a tonally accurate one. NK

Green - driver output
Red - port output

FREQUENCY RESPONSE



DECAY GRAPH 200ms



SIGNATURE REFERENCE 808V5 CD/PREAMP
£11000

DSP7200SE ACTIVE SPEAKERS
£23995

CONTROL 15
£4700



OUTSTANDING - amongst the best

VERDICT
Technically sophisticated system, with accurate sound

FOR
- refined sound
- subjectively concise
- user adjustable

AGAINST
- limited dynamic range
- cabinet overhangs
- 24/96 max

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VERDICT A lovely sound with plenty of power and adjustability. A well developed design.



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Disk delights

Aurender's latest hard disk-based X100 Music Player offers masses of storage at an affordable price. Rafael Todes listens in and is suitably impressed.



It was three years ago that I reviewed the Aurender S10 Music Player. I was highly impressed by it and thought it was, at that point, one of the best non-optical digital solutions that I had hitherto encountered.

I was interested to see the latest offering from Aurender recently at the Whittlebury Show, surprisingly in the Audio Note room. It is half the width of the S10, and has a similar look and feel to it. There are in fact two incarnations of the X100, the small one; X100S with 1TB of storage, and the X100L (L for large), which boasts 6/8TB of storage.

Both models have a 120GB solid state drive, from which music is played. Just before a track is queued, it is transferred from the hard drive to the solid state drive, so there are no moving discs whilst music is being replayed - obviously a useful

prerequisite for silent operation.

The other major difference to the S10 is that output to a DAC is solely via USB. This may not seem an obvious one: most high-quality DACs have a USB input but, as I found a couple of years ago when I listened to a range of different USB-S/PDIF convertors in a group test, these varied widely in quality and the best ones gave out a solid, expansive soundstage.

The worst examples compromised the holography substantially and introduced a fine layer of electronic mush to the sound, which is commonly known as "jitter". So having been through these experiments, I would prefer an output of a music player to be S/PDIF and not USB.

When doing the listening tests, I had at my disposal an Esoteric K-05 CD player, which is currently my

reference, as well as a DCS Debussy DAC, a superior performing digital-to-analogue convertor to the one in the K-05 but somehow less enjoyable to hear. The Esoteric DAC section is a bit more relaxed and involving - the DCS can sound a little academic by comparison.

However when teamed up with the Aurender X-100, the Esoteric gave some disappointing results and it was only when I swapped it for the DCS that the Aurender started to shine sonically. Suddenly control and finesse appeared and the differences seemed to be larger than the differences in the DACs.

When I substituted the Halide Bridge USB-S/PDIF convertor for the internal USB S/PDIF of the Esoteric I noticed a substantial improvement in the presentation of the sound. Thus the offending party was the USB input of the Esoteric K-05 and not

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In terms of compatibility, the Aurender can handle WAV, FLAC, ALAC, APE, AIFF as well as M4a files - and also playback of DSD (DFF/DSF) tracks. Connected to your network it will recognise any attached NAS drives as well, so the internal hard disk doesn't have to be the limit for storage.

An internal switch mode supply is used to supply power to non-audio components and this is contained in a shielded compartment to minimise the risk of interference.

In addition to all this, the Aurender comes with a reliable and solidly-written iPad/iPhone app which at the touch of a finger plays a selected CD.

The app lets you choose category, resolution, as well as searching alphabetically, and is a joy to use. To add a CD to the hard disk, i.e. to rip the CD, you plug in a USB CD reader, and the Aurender picks up the artwork and track details from an online database. It takes a few minutes to rip each disc and the online database seemed to be able to cope with most of the CDs I threw at it.

A few of the more exotic CDs drew a blank and the tracks have to be entered manually. This was a bit fiddly, as the only way to alter the contents of the Aurender in this way requires the use of a PC on the network.

Transferring my digital collection took a day, as network transfer is much slower than via USB hard disk. There are a few buttons on the front of the Aurender to replay a track, fast forward and pause, but basically the unit cannot be operated without an iPad.

So, listening through the USB input of the DCS Debussy DAC (DCS have now taken over the UK distribution of Aurender for synergistic reasons) I had a match made in heaven.

SOUND QUALITY

Starting with a high-resolution LSO 'Live' recording of Brahms' Second Serenade, with Bernard Haitink conducting, the sound is sumptuous, rich, detailed and thoroughly engaging. There is a quietness, a blackness to the silence. The naturally organic recording technique really works here, simple but correct mixing in combination with 24/48 resolution gives the impression of actually being at a live concert. I have rarely heard



The rear view is uncluttered. There is no S/PDIF output, only USB.

this recording sound better and can understand the *raison-d'être* of this series more clearly now. Really fast transients, impressive dynamics.

Over to a hi-res recording I made of the Allegri Quartet, on 24/96 live from the Holywell in Oxford. Again, this produces one of the best versions I have heard of

I feel I'm a few yards removed from the accuracy of the optical disc, the solidity and tangibility of the sound stage, the smell of the performance...

The Aurender X-100 represents a fine solution to the problems of a digital music player. It has been thoughtfully planned and brilliantly

"the instrumental tone is smooth and rich, very believable and organic"

this recording. The instrumental tone is smooth and rich, very believable and organic. The DCS is never as comfortable as when playing well-recorded live concerts, because it captures space so well. There is real solidity to the midrange and a lack of any distortion or jitter that I have heard through lesser equipment. This player is clearly a refined solution for playing back hi-res material.

Now to some ripped CDs and for me The Beaux-Arts Piano Trio encapsulate everything that a great ensemble needs: inspiration, personality, and oodles of musical insight. In their Philips recordings of the charming Mozart Piano Trios, they capture the idiomatic rustic character of the set beautifully. The final movement of the last Trio, the G major, is a Rondo with episodes taking you to different corners of Austria.

On the Aurender, there is beauty, charm, and I am transported on my Austrian journey, but am left with a niggling doubt. The presentation doesn't quite have the same crystalline reality to it as played on the Esoteric K-05,

executed. It is up there with the best music players that I have auditioned. For hi-res material, it excels, and feels to be in its element. The quality of a CD ripped to its internal drive does not quite match the quality of the same disc played directly from the Esoteric K05. It is close, around 90% of the quality, which for most people will be a small price to pay for the massive increase in convenience created.

However for those who have transparent enough systems to hear the small differences between hard disc and direct play from a high quality CD player, and are in pursuit of the last nano-detail, the Aurender may not be all-things to all-people.

REFERENCE SYSTEM

VAC Phi 200 monoblocs
VAC Signature Mk2a Preamplifier
Esoteric K-05 CD player
B&W 802d speakers
PS Audio PS10 mains regenerator
Halide Bridge USB/SPDIF convertor

AURENDER
100XL 6TB £3250
100XL 8TB £3550



OUTSTANDING - amongst the best

VERDICT

A thoroughly well planned and executed music player, capable of playing a wide range of formats to a very high level.

FOR

- convenient
- well-built
- silent operation
- excellent user interface

AGAINST

- the database used to rip CDs is incomplete
- has only USB output
- can be fiddly to transfer files and backup is slow

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'Blind listening could easily convince that this is a much more expensive loudspeaker... a worthy winner and an essential audition.'

KEF R500, Hi-Fi News & Record Review, November 2014



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At 90kg, the NS-F901s are heavy, but not crippling so. Internal bracing aids cabinet strength and rigidity to the 106cm high cabinets (when on their spikes). That figure puts them in the popular 1m high floorstander category, which these days an overwhelmingly large number of loudspeakers occupy, so the Yamaha's fit in with the crowd. Two 6 1/2in bass units can be seen at the bottom of the vertical drive unit array. Above sits a 5in midrange driver with a shallow cone; at top sits a 1in aluminium dome tweeter. Yamaha's bass and midrange units use polymer injected mica diaphragms, hence their whiteness. They are extremely light, Yamaha say, and are rigid and stable for smoothness, a very fast response and good dispersion."

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by February 4th 2015, to:

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Studio 204,
Buspace Studio,
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London W10 5AP**

Here's your chance to win the superb Yamaha Soavo loudspeakers we reviewed in our September 2014 issue. Read the review excerpt below and answer the questions.

"The cabinets have Yamaha's signature piano black finish and are designed by Toshiyuki Kita, whose work is featured in the permanent collections of museums all over the world, including the Museum of Modern Art in New York and Centre Georges Pompidou in Paris, Yamaha tell us.

Brushed aluminium trims and white driver cones contrast well with

the deep gloss black lacquer finish of the NS-F901s to give the eye a treat. OK, they are still big loudspeakers but they do have a classy air about them, making a clear statement of quality. It isn't one subverted by reality either: the NS-F901s feel beautifully made in the flesh.

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QUESTIONS

- [1] Who designed them?**
 [a] Terence Conran
 [b] Richard Rogers
 [c] Toshiyuki Kita
 [d] Donald Duck
- [2] What do they weigh?**
 [a] 3lbs
 [b] 30.5kgs
 [c] 45.5 ozs
 [d] 0.08 tons
- [3] The diaphragms are -**
 [a] mica
 [b] polypropylene
 [c] paper
 [d] aluminium
- [4] The tweeter dome is -**
 [a] titanium
 [b] aluminium
 [c] wood
 [d] plastic

entries will be accepted on a postcard only

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Blue for you

Mo-Fi's new Blue headphones not only look distinctive – they also pack in their own amplifier section. Unusual but actually rather effective, says Jon Myles.

Most mobile devices have a relatively low output – so are not ideal for driving large headphones.

Blue Headphones solution is to pack an amplifier within the headphones themselves that, in theory, should provide more headroom and increased dynamics.

The downside, however, is that their Mo-Fi 'phones are inevitably larger and heavier (466gms) due to the extra electronics and 1020mAh lithium ion batteries inside, charged through a supplied USB cable.

The headband incorporates a dial to adjust the clamping force on your head. It works quite well but adds yet more bulk. Wear these on a bus or train and you will soon notice people staring at you.

But these headphones do have a lot going for them. For a start the amplifier has three modes – standard, bass boost and off. The latter should be engaged if running from an outboard headphone amplifier or hi-fi system and gives an indication of the overall quality of the 50mm drivers.

Played through the headphone output of a Naim Supernait 2 in this mode the Blues had a rich, open tone that was refreshingly free of the artificial bass thump that the likes of Beats major on. The high-end was a little restricted but it was never harsh or piercing and the overall sound is rather smooth.

Connect the Blues to an iPhone

5 and switch in the amplifier section, though, and the rationale behind the design becomes apparent. Now there's a greater sense of dynamics and overall cohesion to the sound. Listen to Beats International's 'Dub Be Good To Me' and there's a great spread on the frequency extremes.

It's a more nuanced presentation than you'd expect and allows your mobile device's volume to be set lower without losing any detail.

However, the volume on a player is best set to minimum before switching in the Mo-Fi's amplifier, so loud do they go.

CONCLUSION

Mo-Fi's Blue headphones are interesting. The built-in amplifier does help boost the performance of sound



via mobile devices such as iPods or Android 'phones.

On the downside, they are large and heavy and can prove taxing during extended listening sessions. If Mo-Fi could slim them down they may well have a winner on their hands.

MEASURED PERFORMANCE

Frequency response of Mo-Fis was very smooth across the audio band; they are almost a flat-response headphone. A small dip above 1kHz and treble lift around 10kHz exist to provide some Head Related Transfer function compensation, if a little less than a lot of headphones. Bass falls away slowly and smoothly in the Detailed setting shown here, but measured flat with Bass Boost applied. The Mo-Fis are quite restrained in bass delivery, so even bass boost will not make them sound bass heavy.

Sensitivity was normal enough, measuring 92dB Sound Pressure Level from 1mW of input, with amplifiers not working. Switching in amplification took

this up to a massive 110dB, so +18dB of gain is applied - a lot. Impedance measured 40 Ohms.

The Mo-Fis were smooth and accurate, but restrained HRT compensation may make them a tad forward. Bass looks good. **NK**

FREQUENCY RESPONSE



BLUE MO-FI HEADPHONES £275



EXCELLENT - extremely capable

VERDICT

A distinctive-looking headphone with a built-in amplifier that really does help free-up the sound of mobile devices.

FOR

- big sound
- distinctive styling
- built-in amplifier

AGAINST

- cumbersome
- heavy

<http://mofiheadphones.com>



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



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Heavenly Spirits

Focal's new mobile headphones prove a potent solution for audiophiles looking for music on the move, says Jon Myles.

Focal have introduced the Spirit One S portable headphones into an already crowded market, but priced at a low £149 they're potentially competitive.

The Spirit Ones are eye-catching. Finished in anthracite grey with brushed aluminium side pieces and hinges, they are a closed-back circumaural design with soft, if not overly large ear pads. Behind the natty bright red mesh in each cup sits a 40mm mylar/titanium driver.

All this makes them look slightly bulky and heavy but despite their size the Focals are surprisingly light at 280gms and a clever swing and tilt hinge makes getting a comfortable fit relatively easy. The detachable cable resists tangling in a pocket and has independent signal lines to a four pole 3.5mm plug so balanced operation is possible, with a large 3 pole 6.3mm (1/4in) adaptor supplied.

Soundwise there's a notably even balance about the Spirit Ones. They're not totally neutral, having more bass than the more expensive Spirit Classic Focal say.

That's not necessarily a bad thing for mobile headphones – helping keep out extraneous noise and giving more punch to the sound. In use I found bass to be firm and deep, but it never threatens to overpower what's going on in the music.

On Massive Attack's 'Safe From Harm' the low-end had power and authority while there was plenty of air and space around Shara Nelson's vocals.

The midband has a slight hint of warmth about it that contributes to an overall feeling of smoothness. Consequently the Focals can sound a little more restrained than some rivals but that does mean they are less fatiguing over long periods.

Feeding them some hi-res material in the shape of Tom Petty's

'Refugee' (24/96) there was masses of detail with the ringing guitar work having good tone and definition.

They also managed that trick of making the music sound as though it was coming from slightly outside your head instead of being pumped directly into the ear canals.

The well-padded cups don't clamp too tightly on the ears. There is an in-line controller and microphone for Smartphone pairing.

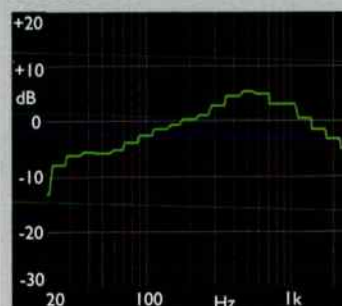
CONCLUSION

As an almost daily user of portable headphones, the Focals are among the best I've heard. Their bass has been well-engineered to provide nicely controlled punch.

Mid-band and treble are also clear and detailed, while the fit and finish are exemplary at their price point. For quality music on the go you'd be hard pushed to find anything better at the price.

MEASURED PERFORMANCE

FREQUENCY RESPONSE



Frequency response of Spirit One S peaks in the midband around 500Hz. Above 400Hz, output is much as expected, dipping down above 2kHz and back up again toward high frequencies like most 'phones (HRTF). Falling bass suggests the Focals will have lighter bass than many. They were consistent in output across the earpiece face so sound will not vary according to position on the ear. Smoothness of response suggests low coloration. Impedance measured 32 Ohms and sensitivity 92dB from one milliwatt of input - normal values. Overall, a good set of results. **NK**



FOCAL SPIRIT ONE S £149



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Mobile over-ear headphones that combine good sound quality with comfortable fit

FDR

- smooth presentation
- firm, but not overpowering, bass
- comfortable fit

AGAINST

- slightly bulky
- small diameter pads

Focal
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Spotify
Connect*



Bluetooth™ /
aptX*



Remote



3x Digital /
Analogue
Inputs



USB



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(iOS™ &
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iRadio™



Multiroom
Streaming



Mu-so is Naim's first wireless music system. Finely tuned by Naim's specialist engineers in England, its powerful audio brain delivers the most exceptional quality in sound, commanding 450 watts of power through six custom-designed speakers to create an experience of music that has to be heard to be believed. Its advanced yet simple to use connectivity includes AirPlay, UPnP™ streaming, Spotify Connect, Bluetooth (aptX), iRadio, iOS and Android app control and multiroom capability. Call or e-mail Jordan Acoustics to find out more.

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Charles Atmos

Martin Pipe bulks up his multichannel muscles with Onkyo's TX-NR3030 AV receiver



In the worlds of cinema – domestic and professional – Dolby's new 'Atmos' audio technology is a hot topic of conversation. Launched in 2012, Dolby Atmos is intended to provide convincing localisation of sounds from all around the room. Commercial cinema-goers are literally-surrounded by speakers, Atmos-ready venues being equipped with up to 64 of 'em - hidden in the ceiling, along walls and behind the projection screen. The basic idea is that you're immersed in the sound, which comes from all directions – including overhead.

Atmos starts at the production stage, the technology being radically different from the movie sound-mixer's perspective. Instead of defining, via a conventional mixing-desk (or software application), the surround channels to which a particular soundtrack component should be directed, Atmos is

based on what Dolby calls sound 'objects'. Up to 128 of these dynamic soundtrack elements (like ambient babble, gunfire, weather, screams...) can be placed anywhere in three-dimensional space alongside more traditional soundtrack components – like dialogue – that are carried via the regular audio channels ('beds' in Atmos-speak) that you'll hear with non-Atmos gear.

As far as the film-maker is concerned, the Atmos approach is thus a more intuitive way of working with sound. Atmos does have some potential for effects-rich rock/pop music – an example of which was on the excellent Dolby Atmos demo disc we managed to get our mitts on – but in my opinion there's little it could do to enhance the comparatively-static classical-music experience. Atmos is, first and foremost, about enhancing movies – although 'audio-only' drama could by definition be similarly-enhanced

(I'd love to hear a Drama on 3 radio-play given the Atmos treatment!).

The first Atmos-encoded movie was Pixar's *Brave*; others have since followed.

What starts off at the cinema usually ends up at home, and Atmos is no exception. Atmos-encoded soundtracks can be included onto lossless 'TruHD' 7.1 audio streams of Blu-ray discs – the first of which was *Transformers: Edge of Extinction*.

It's also compatible with the lossy Dolby Digital Plus codec (meaning that on-demand streams and HDTV broadcasts could be accompanied by Atmos-encoded soundtracks). Any Blu-ray player can be used – set its HDMI audio output to bitstream – although you'll need new Atmos-ready equipment.

Of these, the most important is a decoder/amplifier capable of rendering those Atmos soundtrack objects. All key manufacturers are beaver-ing away on suitable product.



The TX-NR3030's densely-packed rear panel. Note the Wi-Fi aerials and the presence of no fewer than seven HDMI inputs. You also get a full set of multi-channel outputs (but alas no such inputs for older source-gear). The XLRs allow this prodigious unit to be integrated with high-end two-channel audio. For a 11.2 Dolby Atmos rig, all those speaker terminals must be busy!

In the UK, Onkyo was first to market with the TX-NR3030 receiver examined here – all 22kg of it! Although you can use any existing surround speakers (front, centre, surround and back) you'll need new Atmos 'height' speakers for best results.

Not everyone can put speakers into their ceiling, and so Onkyo have also introduced SKH-410 Atmos speakers will full-range drivers that are placed on top of your existing front/rear speakers. They fire upwards, and 'bounce' overhead sound to your ears via the ceiling. The result is a clear step forward from the conventional 5.1 and 7.1 systems we're used to at home – and an improvement over Dolby's own

Pro-Logic IIz (which offered a basic 'height' capability).

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

considering that effects 'move between' speakers.

Thankfully, the TX-NR3030's 'AccEQ' auto-calibration system – powered internally by twin 32-bit DSP engines – looks after all this stuff, as well as room-acoustics and speaker configuration/layout. Plugging the mike into a dedicated front-channel input kicks off the menu-driven process. This lurks under a flap, as do basic controls and a sensible brace of connectors – HDMI, headphones, optical digital/analogue stereo audio and composite video. Although the fluorescent function display is bright, the control/connector legends are difficult to make out in subdued lighting.

Onkyo would rather you used the remote – which is rather baffling on first encounter, as many buttons have multiple functions depending on what mode the receiver is operating in. Thankfully, a very good app (which will also stream music from your mobile device via Wi-Fi) is available as an alternative; RS232 control is another possibility.

As the TX-NR3030 is designed to be networked – wirelessly or via Ethernet – it shouldn't shock you to learn that some functions can also be controlled from a web page. Networking also facilitates DLNA playback, streaming music services like Spotify and Internet radio stations. Still on the wireless-music tip, Bluetooth is also on board.

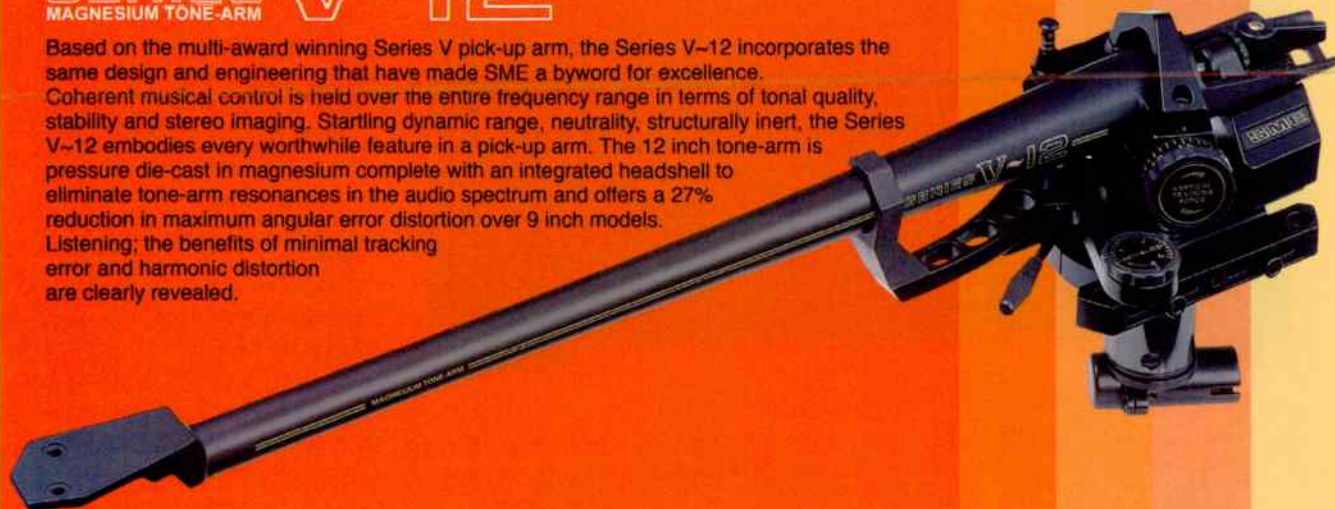
The remote is busy, but so too is the TX-NR3030's rear panel. To this mighty collection of terminals can be connected an awful lot of peripheral devices. The eleven binding-post terminals will deal with more modest speaker complements, the channels unused for surround being redeployable to jobs like bi-amping large front-channel speakers and/or driving up to two pairs of speakers in adjacent rooms ('zones' 2

Lots of things may be going inside, but Onkyo has neatly laid out the interior of the TX-NR3030. Note the use of three mains transformers for various power supplies - the middle one serves the eleven power amplifiers. Towards the top of the picture, the receiver's sophisticated digital circuitry can be seen.



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As can be seen from the display, Onkyo have fitted an FM tuner - and it's a goody too! The front-panel AV inputs (which, like the numerous setup controls, are hidden behind a flap when not required) are of significant practical value; unfortunately, the legends for these controls are barely visible in a darkened room. Backlighting next time, please?

and 3) from different audio sources. All decoded channels have line-level outputs too, with front-channel balanced XLRs to feed – for example – an audiophile-grade system, possibly in another room.

Then there are the inputs. Seven HDMI inputs, plus three outputs (one for Zone 2) jostle for panel-space with seven analogue inputs (one of which, 'Phono', is reserved for a turntable with MM or high-output MC cartridge).

Analogue video inputs (three composite, two component, one RGBHV/VGA) can be converted to HDMI by the ISF calibration-ready video processing; there's some 'multi-zone' potential here too. Also on offer are five digital inputs, three of which are coaxial. You cannot get anything higher than 24-bit/96kHz into these; however, HDMI poses no such limitations.

Indeed, the HDMI ports (which are 4k and 3D-compatible) will even pass DSD soundtracks from compatible SACD players to the TX-NR3030 for decoding natively (also game are DSD files from network sources – both 2.8MHz and 5.6MHz).

Finally, we have connections for external remote sensor, 12-volt triggering and FM/AM aerials (the TX-NR3030's tuner doesn't cater for DAB, but do you really need that with Internet radio on board?). The good news is that, after you've mastered that remote, this extraordinarily sophisticated and internally-complex piece of equipment is fairly easy to drive. The menus, which use graphics where possible, are laid out sensibly. I particularly like the room layout visualisation!

SOUND QUALITY

Watching Dolby Atmos-encoded material was little short of revelatory. Yes, it really does make an impact. And Transformers: Edge of Extinction (played here on a Cambridge Azur 751BD and heard with a Rogers GS6/GS5/C33/ASB60 speaker system) is just the sort of action-driven effects-laden picture that can harness the potential of the system. From the start of the film, during which the alien 'Creators' wipe out the dinosaurs 65 million years ago, you're hooked. Spacecraft, fighter-jets, cars, Transformers (both 'man-made' and 'authentic') and rain show off the positioning prowess and sheer scale that the TX-NR3030 can impart.

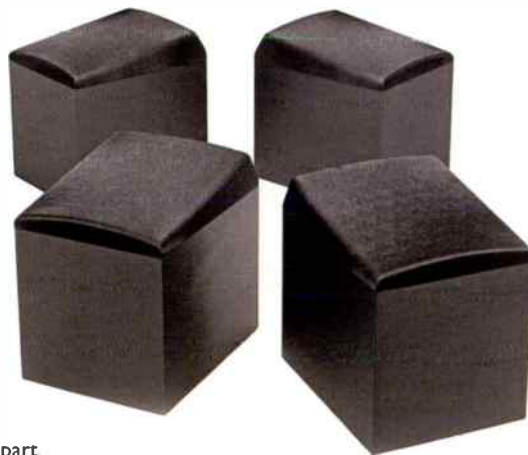
But it's not just the bombast that works. In one scene, a miniature drone whizzes around the entrance of a corporate headquarters with the intention of scanning an employee ID card for subsequent forgery. As the object moves around, you can audibly place it in the soundscape, thanks in no small part to the Atmos height channels. They buzz around your ears just like the fly you can never swat – and I suspect that was probably the intended effect. In other respects, we're onto a winner. Detailing is tremendous, while bass (explosions and machine sounds) is tuneful and tightly-controlled.

It's maybe a little too sharp on occasions, but treble/bass tone

controls are available if you need them. At no time did the TX-NR3030 show any signs of running out of steam – those eleven amplifiers are capable of outputting 185 Watts each into a six-ohm load; we measured considerably more.

Surround-sound music also benefits from such punch. I particularly enjoyed listening to the Pure Audio (music-only Blu-ray) of Queen's classic A Night at the Opera. Here all of the studio tricks have been applied to the multi-track master tapes to yield a 5.1 surround mix of what was originally a stereo album. It does take a while to get used to Brian May's instantly-recognisable guitar-playing coming from behind you. I wonder what the remix engineers would have done with this album had Dolby Atmos been available?

The analogue radio tuner may not be the TX-NR3030's main selling point, but it's certainly worth talking about. I found the RDS-equipped FM section to be sensitive, tonally-balanced and capable of a natural stereo soundstage with quality live broadcasts from the likes of Radio 3.



These are the dedicated 'Atmos-enabled' speakers that Onkyo sells for use with AV receivers like the TX-NR3030. Based on an 8cm, full-range driver, they're placed on top of the relevant 5.1/7.1 speaker, and fire upwards. The ceiling reflects the 'height' channel audio to the listener.

I was also impressed with the wide choice of stations available from the 'TuneIn' Internet radio service. As there are thousands of stations out there, some of which are capable of fine sonics, it's good that personal 'favourites' can be preset. My only beef is that the TuneIn user interface can be sluggish, and it's too easy to 'overshoot' the desired item.

USB and DLNA playback are excellent, and a wide range of codecs are supported – among them MP3, WAV/FLAC (up to 24-bit/192kHz), Apple Lossless, WMA, OGG Vorbis, AAC and DSD. There is a short gap between tracks if you're playing them

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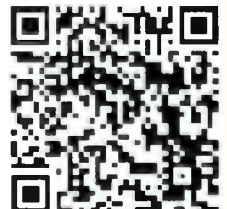
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from a DLNA server. This can be annoying if you're listening to one of those albums where one track joins into another – mix CDs, for example. Funnily enough, the very same album played via USB suffers from no such gaps! In sound quality terms, there's little to fault here. A rip of The Easy Star All-Stars' dub-reggae reworking of Pink Floyd's Dark Side of the Moon (CD) was introduced via the USB port.

The insistent rhythms of the drum 'n' bass tinged reinterpretation of On The Run were conveyed with the speed and bite due, while the wonderful heavy-reggae low-end that permeates the album was clean yet powerful.

Interestingly, switching to TX-NR3030's Pure Audio mode – which

disengages the DSP – yielded a noticeably more 'forward' sound.

Finally, we have the phono stage. This makes for a good introduction to vinyl playback; the sound proved to be warm and acceptably-detailed with my 'stock' Technics SL-1200 quartz-locked Direct-Drive with Philips GP412 cartridge – the modern equivalents of which could be comfortably-partnered with a receiver of this nature.

CONCLUSION

I've been reviewing AV amps and receivers for nearly twenty years, and I have to say that – in raw excitement terms – my experiences with the TX-NR3030 rank alongside the first time I sampled the discrete 5.1 of Dolby Digital at home. I certainly

look forward to more Dolby Atmos sound-tracked movies, but hope that intelligent use – rather than tiresome 'sonic ping-pong' gimmicks – will be made of this worthwhile new technology.

The TX-NR3030 also works well with 'standard' Dolby Digital and DTS 5.1/7.1 Blu-ray and DVD soundtracks; the Pro-Logic and DSP modes could also enhance two-channel material. Compared to dedicated two-channel audio (like Roksan K2 BT) there's a slight loss of transparency and finer musical detail when listening to well-recorded material. But given its complexity, the TX-NR3030 fares very well as a music reproducer – intelligent design, a hefty power supply and the use of decent 32-bit Burr-Brown DACs help here.

MEASURED PERFORMANCE

The TX-NR3030 produced a massive 180Watts into 8 Ohms under test, and 290 Watts into 4 Ohms. It ran just warm under test but a cooling fan kicked in after a while. It was able to cope with delivering high power for a long period without getting too hot.

Distortion levels were low, reaching a maximum of 0.018% at 10kHz, 1W output into 4 Ohms. This is low, and our harmonic structure analysis shows classic crossover distortion, but it is kept well under control.

An analogue input signal, through the ADC caused overload above 2V, but this limit is avoided by selecting Direct to route around the ADC. ADC noise was

low at -90dB; noise measured a low -102dB in Direct mode (no ADC). High input sensitivity of 220mV allows the Onkyo to accommodate external low gain phono stages for anyone wanting to run an MC cartridge perhaps; the phono input fitted is MM only.

Onkyo always fit a good VHF/FM tuner and this one was no exception. Frequency response measured flat to 7kHz (-1dB), after which treble rolled away slowly to measure -1.5dB at 10kHz. The mpX filter imposed a sharp cut off at 16kHz to reject 19kHz pilot tone. This response will give a slightly warm or 'easy' sound balance. Distortion was unusually low at full modulation, measuring 0.1% against a usual 2%, so this may well be a SDR tuner; if so it is a good one. Hiss was low at -68dB (IEC weighted) at full quieting, from a modest 0.8mV (p.d.) from the aerial. Measured IHF 50dB stereo sensitivity was good at 34uV.

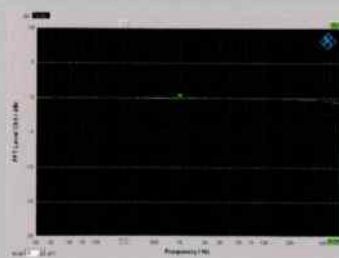
The MM Phono input was accurate in equalisation, having flat frequency response across the audio band. With low noise, normal sensitivity and overload figures it performed well all round.

Frequency response for CD through the D/A convertors via the optical S/PDIF digital input was absolutely flat, reaching 20.3kHz (-1dB). Distortion wasn't so low, measuring 0.27% at -60dB - not a great result for 16bit where 0.2% is common. With high resolution digital (24bit PCM) just 0.06% distortion was measured at -60dB, a good result, so on balance the '3030 is no disgrace. Surprisingly, neither electrical nor optical S/PDIF digital inputs would accept a sample rate higher than 96kHz, the receiver remained silent when

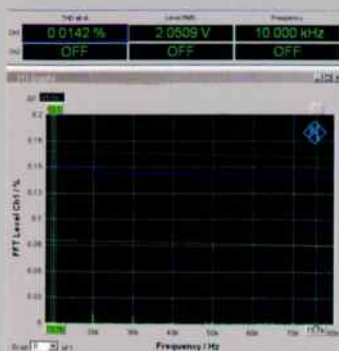
fed 176.4kHz or 192kHz digital, a peculiar and significant limitation nowadays.

The TX-NR3030 measured very well in most areas. The VHF tuner is a very good one, giving fine results all round. With CD (16/44.1 PCM) digital input performance figures were good, as is to be expected nowadays. Inability to handle high resolution PCM above 24/96 was a surprise but 24/96 bandwidth and linearity were good enough to reveal sound quality improvement over lower resolution digital. **NK**

FREQUENCY RESPONSE



IMPEDANCE



Power	180W
Frequency response (Direct) 6Hz-100kHz	
Separation	83dB
Noise (A/D, Direct)	-90/-102dB
Distortion	0.02%
Damping factor	25

DIGITAL	
Frequency response (-1dB)4Hz-41kHz (24/96)	
Separation	102dB
Noise	-112dB
Dynamic range (EIAJ)	112dB
Distortion (-60dB)	0.06%

VHF TUNER	
Frequency response	20Hz-7kHz
Stereo separation	56dB
Distortion (50% mod.)	0.08%
Hiss (CCIR)	-68dB
Signal for minimum hiss	0.8mV
Sensitivity (stereo)	34µV

PHONO	
Frequency response	6Hz-20kHz
Stereo separation	68dB
Distortion (50% mod.)	0.04%
Hiss	-82dB
Sensitivity	4mV
Overload	70mV

ONKYO TX-NR3030 £2,500



OUTSTANDING - amongst the best

VERDICT

One of the most exciting surround-sound receivers I've yet had the pleasure of using. Onkyo have done it again...

FOR

- Dolby Atmos is a real boon with appropriately-encoded material
- can play just about anything!
- great with movies – much better than expected with music

AGAINST

- remote takes a while to get used to 'Gaps' with DLNA
- playback (USB fine, though)

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

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

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Letter of the Month

MONO PERCEPTIONS

I was again fascinated to read Tony Bolton's ideas on music perception where he suggested that mono portrays more closely the listening experience.

I suggest that this is very dependent on two things; the type of music you prefer and where you like to sit at the venue! If your preference is for more intimate experience with a jazz trio or folk duet, then you may appreciate a listening experience where you can hear and locate individual instruments and/or singers, close to your listening position. In my view, this would require the stereo affect and would be very appropriate for Norah Jones and Kate Rusby. Hence the common observation; it was like she was in the room.

However, if you have heard these two play live, being very popular performers, it would most likely be in a medium to large venue. Different ideas apply here. Sitting close to the stage, your listening experience would need very wide stereo; very difficult to reproduce with a mono system! Sitting further back, the angle subtended between the two sides of the stage becomes smaller and we perceive more of a single, point source. This suggests that at a particular distance from the stage, this should be better reproduced with a mono system, rather than one that pretends you are still in row B! At this point, the auditorium really starts to play a part in the performance.



Modern recordings are now a long way from mono or stereo; here is 2L of Norway recording with "9.1 DPA microphones array, in DXD (352.8kHz/24bit)" at Uranienborg church, Norway.

It is the auditorium that may decide the best approach. The multiple reflections from walls and ceilings create the atmosphere and add to the listening experience. Can a mono source reproduce this as well as a stereo system? Your listening room could also play a part in adding to the ambience. I am curious as to how Tony would reproduce his widescreen mono. It sounds a great concept!

Tony makes a good point about microphones, as individually recorded instruments can be doctored in many, often false ways. Crossed pairs give a closer rendition of the listening experience. I remember when Binaural

or Dummy Head recording was fashionable, when two microphones were embedded in the imitation ears of a dummy head; all to pick up every last nuance of reflected sound.

There are many factors to consider, but what is the ideal? I think it depends on personal taste. If you like intimate concerts in small venues then my ideal would be stereo recorded with cross-pair microphones to allow you to hear and position individual performers. Orchestras or rock bands in larger auditoriums, with you sitting further back, then perhaps a mono sound source would produce a more faithful rendition.

It is called music reproduction, implying we re-produce the music, allowing someone other than the performer to decide how it should sound. Is our priority to be entertained or to experience the most faithful rendition of music? Who should decide what we hear, the performer or the engineer?

I have a pair of small monitor speakers. I sit close to hear Norah Jones, but move as far back as I can to listen to Led Zeppelin. It's personal taste!

Yours faithfully,

**Andrew Entwistle
Swindon**

THE CLASS OF A

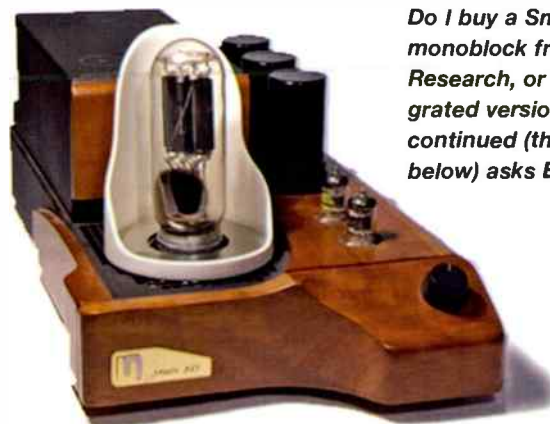
I am toying with the idea of experimenting with a different amplifier set up. I have a set of Quicksilver V4 Mono amplifiers and a matching preamp. These Monos are 120W beasts, most likely push-pull design, in my case using Golden Dragon KT 88s, although other valves can be used. To be fair, these are fine amplifiers and a bit of a bargain, well used in the USA but not well known in the UK.

Against Noel's better advice some years back in the Letters page, and at my wife's insistence, we went ahead and bought the cottage, with its somewhat smaller dedicated listening room. It's small, around 10ft x 10ft and with low ceilings - handy for me, since I'm short, if not handy as a listening room. Therefore the need for 120W / channel of big American valve amps would appear to be redundant.

I therefore started to consider the smaller power amplifiers and am currently considering something by Unison Research, as your publication seems to value these highly. I would most likely buy 2nd hand as valve amplifiers are pretty rugged beasts (the valves excepted). I don't want anything that is ultra rare, and preferably pure class A.

I recently looked into Unison Research and spotted a pair of SMART 845 Monos but, also, an S8 Integrated. This got me thinking: circuit wise they may be pretty similar and share similar characteristics, as they both output 24W and are both pure class A I presume, so what are the pros and cons for either? The price difference is pretty negligible and, if I went for the Monos, I'd appreciate useful preamp advice, preferably by the same company.

Also, I am happy to consider other companies (Icon Audio, Audio Note, EAR etc). I tend to stick with valves



Do I buy a Smart 845 monoblock from Unison Research, or the integrated version, now discontinued (the S8 seen below) asks Ewan Scott?

and went from Naim Audio some years back through an Audio Research phase and plumped for Quicksilvers as a real bargain.

In addition to this, I also use Celestion A3s and have done so for some time, but in a 10ft x 10ft room it strikes me as verging on insanity. In my old house they were fantastic, but in this one they have no room to do themselves justice, so suggestions would be useful. I'm also happy to take the leap to electrostatic loudspeakers but have no idea how these are in small rooms either.

Sources are a Sugden Masterclass CD player. The turntables still to be decided in the battle are a Townshend Rock Reference / SMEV or an SME 20 / SMEV.

Current cartridge is a Transfiguration AF - 1, still in decent condition, and a Dynavector DV 20H. I also have a completely rebuilt Ortofon MC2000, which I loved years ago: it has yet to be used in anger since a rebuild. I have a small ALLNIC phono stage, and also a Quicksilver Phono Transformer, yet to be used with the Transfiguration (or Ortofon); the Dynavector doesn't

need the additional boost.

Any advice would be helpful.

Ewan Scott

Hi Ewan. We have not reviewed these amplifiers but, as you say, they look very similar and likely will sound so. The Smart 845 monos stand alone and can be sited away from the hi-fi, which is convenient. Big 845s produce a fair amount of heat and the mains transformers are best not positioned close to other items, especially a turntable or external phono stage, so in this respect 845 Monos make most sense, especially since you intend to run a turntable in the system, but you do then have the extra cost of a preamplifier to consider.

But, having noted that, an external phono stage can drive a long signal line of at least 1m, making it possible to site turntable and phono preamp some distance from an S8 integrated. It depends upon what you find most convenient. The Unison Research Reference Pre with the 845 Monos would be a lovely combination, able to work with your



The S8 integrated 845 valve amplifier from Unison Research, now discontinued. It is single-ended, pure Class A.

high output Dynavector DV 20H. But if you intend to use low output moving coil cartridges, the 55dB gain of this preamp will be on the low side, meaning volume will have to be turned right up. An external phono stage with more gain, at least 60dB, and an input transformer for low noise, are best used. This suggests an Icon Audio PS3 MkII phono stage.

The options are a little bewildering, I must admit. Where you go depends upon what your future intentions are and if you intend to get an SMEV arm then those intentions are very high.

A 10ft square room is small for electrostatics, although Martin Logan Electromotion hybrid electrostatics will fit in physically. Absorption panels placed behind them - see Studiospares - will ensure rear energy (they fire backward as well as forward) doesn't muddle the sound. Don't expect disco levels, but they are quite sensitive and will go loud with 24 Watts, if not shatteringly so.

I hope this helps. Your path really depends upon your intentions with the turntable. **NK**

MACS FOR MEDIA

I have ripped many CDs and vinyl to hard-drive and would now like to experience downloading HD music files. So, Mac Mini or Mac-Book Pro as a dedicated music media centre - and which controlling software?

I currently have a 3 year old Mac Mini which is multi-purposed for the usual home office tasks: email, web browsing, photo library as well as use as a music library. I am considering getting a Mac Book Pro for the home office tasks and re-deploying the Mac Mini + screen to become a dedicated music media centre (along with external NSA storage) for ripped CDs and vinyl and future downloaded HD music files. I intend that the media centre to be free of all computer programmes other than those for the operating system / music controlling software.

This is my preferred option. However, would you recommend this approach or would you recommend I move the existing music files/library onto the new Mac Book Pro, keeping the Mac Mini for the home office tasks? Also which media centre controlling software would you suggest I use?

A new touch-screen for the media centre would be great. However, I do not think Apple software provides for this - perhaps you can tell me I am wrong!

*Many thanks for any advise and assistance.
Gordon Hargreaves
Cambridge*

Hi Gordon. Using a Mac as a media centre in its broadest sense means playing video, streaming Netflix and what have you, raising a wide array of computer issues you are best studying and pondering over on the internet.

To play high resolution audio and, especially, DSD, you will need a high resolution software player like Amarra or Channel D's Pure Music; I like Pure Music because although it is clunky and crashes, it sounds good and plays DSD well. There's Pure Vinyl as well.

Of the Macs, there's little to choose between them, unless the portability of the Mac Book Pro appeals. You can run any number of headphone amps from USB and get great results

from it on the settee. I run a Mac Book Pro with Yosemite, like most other reviewers, and it is a great workhorse, one that doesn't need drivers loaded - unlike PCs. OS-X handles at least 384kHz sample rate and 24bit resolution. I have not

heard any benefits from running it on battery power, by the way, although to be frank I don't use it as a portable player much, as I have no need with an Astell&Kern AK120 on hand.

I read that you can use the



The Martin Logan Electromotion is an affordable electrostatic, price £2600. It is devastatingly insightful and suits valve amps, especially pure Class As. The Electromotions fit small rooms and can be used in them successfully with the help of a little rear damping.

Pure Music® Version 2

High Resolution Music Server Software for Apple Macintosh Computers - NEW Version 2!

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- Audio Streaming Support with Pure Music's "Playthrough" feature (included in Pure Music since 2011) which permits conveniently playing and enhancing other computer audio sources (Spotify, Qobuz, YouTube, iTunes Radio Internet audio streams, movies, etc.) through Pure Music, with full access to Pure Music's dithered volume control, 64 bit crossover, audio EQ plug-ins, NetSend streaming, metering, etc., all without needing to quit Pure Music

Channel D's Pure Music player plays all high resolution audio formats and gives excellent sound quality. It works in conjunction with iTunes.

touch screen of an iPad running iOS to control a Mac running OS-X. Sounds like a lot of brain-ache to me but you may well like to try it. **NK**

DIGITAL LP

I use a Creative XiFi Titanium internal PC sound card and a Terratec Aureon X-Fire 8.0 external ADC for recording to digital files. However, I do not use a PC to play back the files. I play back digital files using a Naim SuperUniti driving Quad ESL63s and this demonstrates vividly that the recorded digital files are far more nuanced, with more subtlety in timbre, more detail and more attack when played back on a good system. In other words the ADC in both my internal and external sound cards seems to be better than the DAC. Creative claim that their ADC is a pro quality item and this is justified (at the price).

So far, 'ripping' LPs to digital at 96/24 and 192/24 with Audacity has shown me that this is the future for me. If I do one or two a day the task will be competed in a year or so and I enjoy listening to albums I haven't heard for decades.

I still have the pleasure of album cover art and liner notes but I can now enjoy my LPs anywhere and anytime without wear and tear on the original LPs. Quite frequently I find the digital files sound better than the LPs. They seem to have more detail and subtlety and attack than the original LP, even using cheap sound cards. I think there is more noise on an LP than in a computer.

I scan an A4 section of each LP cover on a simple A4 flatbed scanner. I create a folder for each LP and place the scanned cover in the folder with the audio files. I link the cover to the audio files with Media Monkey. Sometimes I add a sheet of track notes and additional information to the folder using Open Office.

I do not bother to subdivide the LPs into tracks. I record each LP side in full in one 'take' and label it with artist or composer and album or piece and S1 or S2 and export to FLAC (in order to add metadata).

I enjoy listening as I record. I do not edit the original file in any way except removing bad clicks manually and adding brief metadata in Audacity. I have found this greatly improves the speed and pleasure of 'archiving' LPs to digital and you can always subdivide into tracks later.

I have archived a few 'favourites' onto DVD and Blu-Ray discs and second hard drives and USB sticks, but as I am keeping the LPs I do not worry too much about backing-up.

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Mike Tartaglia-Kershaw uses a Terratec Aureon XFIRE8.0HD to turn LP into digital: "this is the future for me" he says - and we should review it.

There must be many more like me who feel they cannot justify an ADL Furutech Esprit unit that you recommend to record LP. I feel I may be better off buying a better record deck, arm and cartridge to get a better FLAC file! So I ask you again, please review some lower cost ADC options.

My FiiO X5 portable plays downloaded DSD files via line-out to the SuperUniti and they sound wonderful. It must be the cheapest way to enjoy DSD (via the same DAC as the SuperUniti). It also contains dozens of my LPs and downloads at 96/24 and cover art. It sure beats CD for sound quality and even convenience. But CD rips also sound as good as my Marantz CD player (sometimes better?).

Best wishes,
Mike Tartaglia-Kershaw

Hi Mike. Your experiences of ripping LP to digital are interesting and I am sure many readers will appreciate them.

The Furutech Esprit is a not-expensive stand alone hi-fi preamp that covers a wide variety of tasks

and has a good ADC on board. But admittedly, it doesn't cost the measly £60 or so of the Terratec, which does look to be something special, it does so much. How you get a DAC and ADC, plus all else, into a case for that price I do not know. We will try and get one in for review, as you suggest. **NK**

OLD GOLD

I was interested to read Laura Knight's letter in the November issue and her 'leave it in the past' attitude to past artists and their work. There is no doubt that there are many excellent and credible new artists recording some innovative and original music today, however all of this music, however original, is influenced by music and artists from the past.

When I first started listening to music it was pop in the 70s, Queen, Bowie, ABBA, etc., then Punk, New Wave, then 80s rock and pop, electronic music, Britpop - and then the older I got the more selective I became, but also the more curious I became about the music that influenced the stuff I liked.



The ADL Furutech Esprit preamplifier has a high quality 24/96 ADC on board and does a great job turning LP into digital, we found.

My love of electronic music has morphed into a journey of discovery in jazz. My love of rock has led me down the path of the blues. I've been delighted to discover Ella Fitzgerald, Louis Armstrong, Art Blakey, Oscar Peterson, BB King, Robert Johnson, Kenny Burrell as well as a host of others to the point where I'm now listening almost exclusively to older music. The added bonus here also is that this material is almost always beautifully recorded too. I haven't forsaken new music, but to understand and appreciate the great music of today, I think it's invaluable to understand and appreciate the great music of the past (on vinyl of course!)

Laurence Robertson

OPPO OPTION

I was pleased that you reviewed the Oppo BDP-105D universal player in the December edition as this has been on my radar for a little while now to replace my existing 93EU model to improve (hopefully) the picture quality, but more importantly to improve on the sound quality from Blu-ray concert videos.

However, your extremely enthusiastic opinion of the Sabre 32 DAC in the player has given me food for thought. Also on my radar is a certain non-active pre-amp with RCA inputs only so I would have to source a new DAC as my current pre-amp has the DAC built in (Classe CP-800). I now wonder, after reading your review, if the DAC in the Oppo would be a good choice for my music listening via computer audio.

This brings me to a couple of questions I would like to ask you. During your time with the BDP-105D did you by any chance ascertain if the RCA outputs on the player were in any way inferior to the XLR outputs sound quality wise, and was the digital volume control as good as running the DAC without attenuation into a quality pre-amp, as I understand a lot of audio designers would poo poo the use of digital attenuation.

Many thanks
Terry Catlin

Hi Terry. I think you would be very well advised to use the Oppo to play back computer files. It's Sabre32 DAC will give better sound quality than most other DACs available, Audiolab's excellent Sabre equipped M-DAC being one exception. I was very surprised at how it 'magically improved' CD, but then this is possible with digital; it can be cleaned up through re-clocking, dither and/or the removal of repetitive noise

patterns to sound better, even though 16bit resolution CD is intrinsically dirty at low levels due to the amount of quantisation noise it suffers.

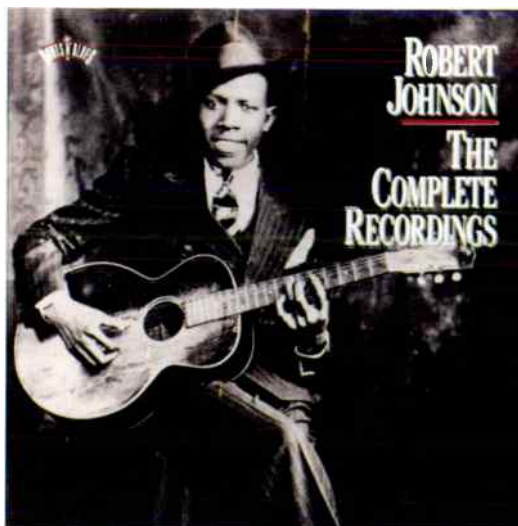
The XLR balanced output measures better and sounds better than the phono output, but only by a very small degree. Phono is an extra stage down the signal path on the output of a Sabre32, unbalanced being derived from its balanced outputs via an external 'bal-to-unbal' IC stage. XLR has around 3dB more dynamic range, measurement shows.

The volume control has 32bit internal resolution, which is huge, and I didn't notice or measure any problem with it. I would not worry about this; even the best analogue controls are not perfect either, remember. Digital pots do lose resolution of course, increasing distortion and noise as volume is turned down, a problem with cheap digital attenuators on computers and computer peripherals. Best to keep volume at max and adjust externally in the hi-fi, where you may well be using a high resolution Alps Blue pot/volume control.

But these days dedicated high resolution processing schemes are becoming ever more common and such earthly difficulties are fading. It was the curse of Stone Age digital; our digital tools today are more sophisticated! **NK**

WORLD APART?

I read the excellent review of the Roksan Kandy K2 BT integrated amplifier in Hi-Fi World's April 2014 edition. Recently Stereophile has also published a review of this amp and the measurements don't seem to match those published by Hi-Fi World. It even



Robert Johnson, one of the Blues greats. Laurence Robertson says "my love of rock has led me down the path of the blues". And that "to understand and appreciate the great music of today, it's invaluable to understand and appreciate the great music of the past".

looks like the new and upgraded K2 BT is measuring worse than the original K2. Can you comment on why this might be the case?

This is just to satisfy my personal curiosity and I promise to be discrete with your opinion on the matter.

Kind regards,
Vladimir Pandovski

Hi Vladimir. The measurements are sort-of similar, similar enough to be of the same amplifier! Bear in mind that sample differences, internal power supply differences (Stereophile tested a 110V model) and mains voltage and measurement methodology all affect results. I'll explain.



To hear CD and SACD at their best, the Oppo BDP-105D is hard to beat. It also works as a DAC. But are "the RCA outputs on the player in any way inferior to the XLR outputs sound quality wise?" asks Terry Catlin.

Mains voltage affects power output: low volts gives lower power, but changes are small and subjectively inconsequential. Stereophile measured 140 Watts into 8 Ohms and 200 Watts into 4 Ohms, with a "distortion signature which was predominantly second harmonic". And that's exactly what we measured.

They measured 0.048% at 1kHz, when delivering 20 Watts into 4 Ohms. This is quite different in intent to our measurement where we quote 1 Watt at 10kHz into 4 Ohms, mainly to assess crossover distortion. Our value was 0.01%, apparently much less than their result. But then look closely - their measurement is THD+N (distortion and noise combined) where ours is THD alone, which is always less. We look at non-linearity in the output devices in effect, not noise in the amplifier, so our result will be lower - and taking this difference into account the figures are not a million miles apart.

Because of the way analogue volume control circuits are configured, at half volume (electrically, not mechanically) capacitance across the output line (i.e. across the slider) will reduce frequency response. We use real-time measurement of frequency response (under all conditions) that allows us to see and record the "worst case" (narrowest response) as volume is turned down. The Roksan measured -1dB at 33kHz and if you look at their results this correlates with the 3 o'clock position, but it does not match their worst case result (as it should) that shows -1dB at 1SkHz, which is poor for any amplifier. I can't comment on this difference. If we measured this we would inform the manufacturer and possibly return the product for assessment/improvement, according to what they said.



The Roksan Kandy K2 BT amplifier. "Stereophile has also published a review of this amp and the measurements don't seem to match those published by Hi-Fi World" says Vladimir Pandovski.

Their phono stage frequency response, that in effect shows RIAA equalisation accuracy, shows +0.25dB at 20kHz and -1dB at 10Hz. Ours shows no lift at 20kHz and -1dB at 10Hz, not far off and since our equalisation curve is super-accurate, being in software not hardware, our result is correct for the amp tested. Their curve shows less roll off of the 75µS characteristic, but it is a very small difference, likely attributable to capacitor value spread, set by tolerancing, in the RIAA network and/or volume control position. This is no big deal; high resolution measurement will pick up such error but in the scheme of things it is not consequential to sound quality.

Their graphs are of arguable value, such as "-90dB FS spurious with 16bit"; you'll always get crud from 16bit, especially when it is compressed by aptX and passes through a Bluetooth transmission channel. It is most meaningful to just measure the noise floor here, which sums such stuff; no point in peering at dirty pictures! Their response shows Bluetooth measures -1dB

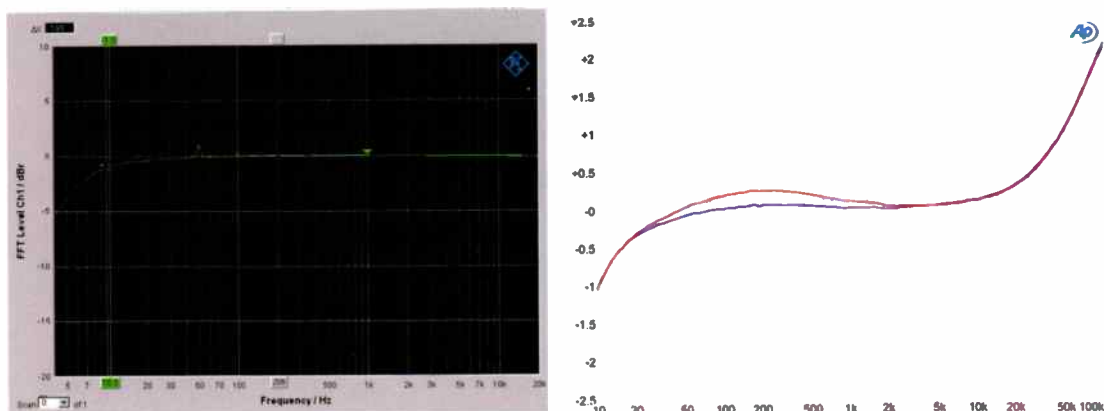
at 20kHz and that is exactly what we measured, but did not publish through lack of space.

So there are some discrepancies, but the figures are not a million miles apart and correlate well enough to be credible in both publications.

I hope I've explained this in reasonably understandable terms; measurement descends into arcane pedantry very quickly and is best not allowed to consume too much space in the magazine. **NK**

BASS CASE

I have loved hi-fi since my early teens and the days where everything seemed to based around Linn and Naim! So I guess that brings me now to my early 50s! I have always dreamed of owning a Michell Gyrodec and about 18 months ago that dream came true. Vinyl is - and has always been - my first love, though I really enjoy technology as well and have embraced high-resolution digital audio and SACD. I have an unexpected problem that is vinyl based and hope you can help please. I also have a couple of questions/observations about hi-res and DACs.



Frequency response graphs of Roksan's K2 BT amplifier phono stage. They look very different, but in fact are similar when studied closely. Our graph reaches 20kHz, Stereophile's 50kHz.

My system is as follows - Michell Gyrodec tuneable with Orb clamp upgrade and the standard PSU, but may upgrade to HD PSU later. The screw-down Orb clamp is far superior to the original. I have an Origin Live Onyx pickup arm with Benz micro Ace SL moving coil cartridge.

CD is played by a Yamaha CD-S1000 CD/SACD player coupled with its sibling Yamaha A-S1000 amp. I loved the retro styling of these and enjoyed them more after the demo. Tone controls yes and never used, but in the flat position I believe they are not in circuit. If used, a relay click is audible.

There is a Marantz NA7004 Network Player with DAB/FM/AM and Monitor Audio GX200 speakers connected via QED silver cable (quite old now). The speakers aren't bi-wired as I can never tell the difference.

The room in which it's all housed is 5.3m long x 3m wide x 2.5m high. Domestic harmony means the speakers fire across the room. Music tastes vary from Diana Krall/Stacey Kent to Pink Floyd and most things in between.

Firstly to the hi-res side of things. I'd heard the Marantz was reported to be a very good player with a great DAC and this does seem to be the case - even though 24/96 is the max it can handle. I was happy with the CD replay of the Yamaha until I connected it to the Marantz via the optical input. A remarkable transformation indeed and this is now how I play my CDs. It has opened everything up with widened sound stage and far more detail. Even non hi fi minded folk have commented on the difference.

However, the optical/coax outputs from the Marantz are disabled when SACD is in use. SACDs sound fantastic anyway and I wish they were more available. I may have to investigate DSD files instead?

The Marantz also streams from my PC via Powerline/Homeplugs without issue and I also have my music files backed up on a WD Passport Drive that I plug in. Being a mechanical device, is this a good way to play hi res files or is "Sneakernet", as Noel likes to call it, best? I do have difficulty detecting a difference, but logically the Passport Drive could induce noise I suppose. Given I've heard the difference a good DAC can make, what would be a good DAC upgrade for me? I could keep the Marantz for radio purposes.

So - to my vinyl problem. I'm suffering from excess bass/overhang/boom which masks detail and subtleties etc, which is a major part of my listening enjoyment. This is only evident

on vinyl. I don't get this problem with any other source - no matter how much I turn the wick up. The bass is then firm, solid and impressive. Not so with vinyl. So how to cure it? Have fitted bungs to the rear speaker ports, but it's too drastic (speakers are about 18" from rear wall) and affects all other sources. I've also tried varying the tracking weight between min & max and also tracking angle. I think either something on the front end needs looking at or it may be the MC phono stage within the Yamaha. Perhaps purchase a separate phono stage? I do like the Yamaha but would consider a replacement.

For aesthetic purposes it would be nice to have a matching CD player, but it would need SACD playback. Though visually matching items aren't as important as sound quality.

Where do you think this issue could lie? What would you recommend as a phono stage upgrade or even CD and amplifier replacement? Solid state or valves? I've never investigated the latter. Kind regards

Mark Gould

also handy aerials, this could be the reason "sneakernet" (using aluminium encased LaCie keys) sounds better to me, but it may be different where you live. 'Tis cleaner in the country I suspect.

I am surprised bass quality is poor from LP; there is very little there I can see to explain why. Your Benz Micro Ace SL moving coil cartridge and Origin Live Onyx arm shouldn't be the cause. I wonder whether something a little more obscure is happening here: are your loudspeaker bass cones flapping? If so, there is too much subsonic gain through the MC phono stage, as is common with Japanese phono setups - they like subsonic gain and rarely use high pass warp filters.

This raises other related issues: is the deck near the loudspeakers, or in a corner? If either of these, then try moving it to a less acoustically bass heavy position in the room. Worst place is a corner, where all sound pressure modes congregate, and next worst is on the floor (or near it),



Yamaha AS-1000 amplifier. Mark Gould loved the styling, but wonders why bass quality from LP is poor. "It may be the MC phono stage within the Yamaha" he thinks. But is it?

Hi Mark. Your digital solution is the Oppo BDP-105D CD, SACD player. This offers superb sound quality from all silver discs, a step ahead of all else, and it is also a DAC of highest quality. Nothing comes close.

Flash memory (i.e. memory stick) is a simple and clean way to carry music to hi-fi using feet (those at the end of your legs, not under the turntable or wherever!). The Americans call it "sneakernet" and it seems a nice simple way to highlight it as an alternative to ethernet.

Whether you use flash memory or a powered drive as mass storage devices likely matters little. I get best results, however, by not using ethernet, possibly because I have neighbours everywhere and a wi-fi transmitter availability list long enough to overwhelm GCHQ, especially on a PC with external wi-fi aerial. As ethernet cables are

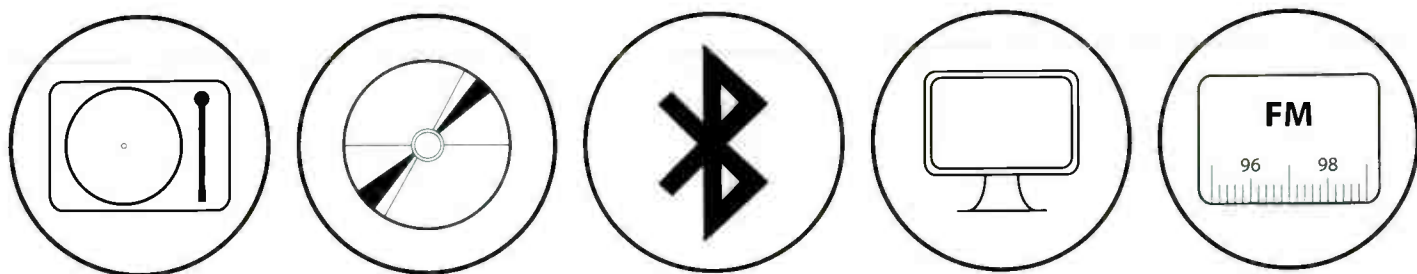
against a wall. Half way up a wall, on a wall shelf, positioned one-third to half way along the wall is best. Keep the speakers well away if possible, and close the lid on the deck.

If you have a brick wall one side and a flimsy partition wall the other, that acts as a sounding board, fix the shelf to the brick wall.

I suggest you experiment with re-positioning first to see if your problem lies in this area that, to be technically specific, is about acoustic feedback in the system.

Rega phono preamps have subsonic filtering and will eliminate cone flap. By lessening subsonic gain they will also help suppress subsonic phenomena too, but cannot affect bass above 20Hz. So you are best off ensuring the turntable is well positioned on a stable shelf first. I hope this helps. Have fun experimenting on a Saturday morning! **NK**

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World Radio History



TELLURIUM Q CABLE AND SYSTEM PREPARATION / REFRESH CD £19.34

It must be some ten years since I first came across a system burn in CD, a concept that I initially approached with some caution. Having found that it worked I have tried various examples over the years as more manufacturers have realised

the benefits of marketing such a tool. The latest example to come my way is from Tellurium Q. It costs £19.34 and

contains three tracks. The first is a quick check to ensure that everything is correctly connected and working. The second, lasting 60 minutes, is a complete work out for the system which is claimed to explore the frequency extremes and to refresh the system in a way that merely playing music cannot do.

The final track is a 10 minute "yoga workout" for your system just to give it a quick refresh before listening.

Since I do not have several identical systems set up, it is, of course, impossible for me to do

a comparative test between this and the other discs on the market offering a similar result, but knowing this system and how it responds to these discs, I would say that the Tellurium Q disc is at least as effective as any that I have tried.

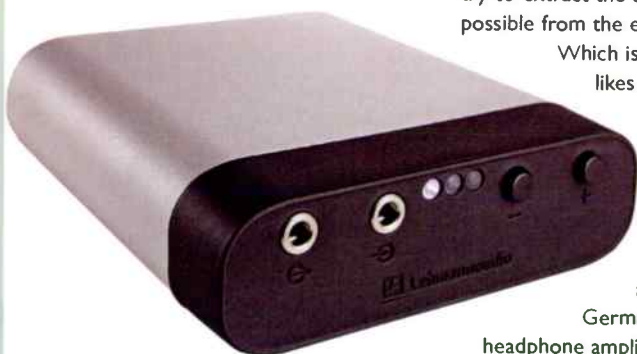
After the full work out, which involves the usual strange whooping noises, clicks and, more unusually, pulses in the white noise background, the final effect was as obvious as cleaning the car windows after a particularly muddy journey. All aspects of the sound seemed clearer, with better focus on small details, such as the decay of a high-hat, and the presentation of the sound was more vivid and effortless.

This disc is very effective, doing what it says on the box and is a worthwhile accessory in your toolkit.

TB

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SOUNDBITES



LEHMANN TRAVELLER HEADPHONE AMPLIFIER £399.95

With more and more people listening to music on the go via portable devices there's been a resurgence in the market for small headphone amplifiers.

After all, if you are spending serious money on the likes of an Astell&Kern digital music player or iPhone, alongside decent quality headphones, then it's only right to

try to extract the best performance possible from the equipment.

Which is where the likes of the Lehmann Traveller come in. Pocketable (80mm x 90mm x 25mm), sturdily built and produced by

Germany's renowned headphone amplifier and phonostage specialists Lehmann Audio, the Traveller is purposed to do one job – improve the sound quality on digital files stored on a portable player.

Input and output sockets are provided on the front and back of the unit, while two small buttons provide for volume control and balance.

Lehmann claims the 4000mAh Lithium-ion battery gives a run time between charges of up to 20 hours – which proved fairly realistic in our testing.

So how does it sound? Actually, extremely good. Used in combination with an Apple iPhone 5 there was immediately more drive and depth to the music.

On Massive Attack's 'Safe From Harm' via a pair of Philips Fidelio X2 headphones bass became firmer with a greater sense of timbre while the leading edges of notes had greater bite.

The inflections and tone on female vocals also become more nuanced, with a greater sense of individual shading.

Take the volume up and the Lehmann remains crisp and clear with little sense it's about to run out of power despite the small size.

It's not the cheapest portable headphone amplifier on the market but is undoubtedly one of the better sounding. Definitely worth auditioning if you want to improve your portable listening experience. **JM**

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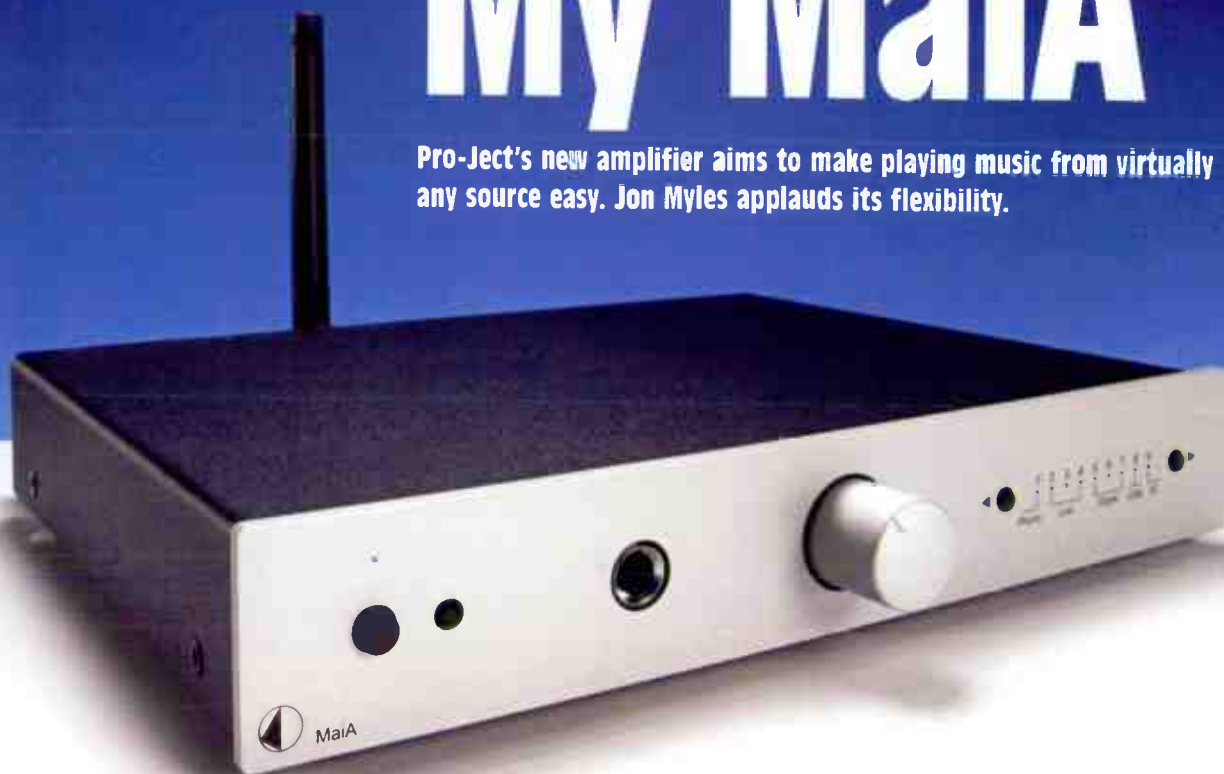


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My MaiA

Pro-Ject's new amplifier aims to make playing music from virtually any source easy. Jon Myles applauds its flexibility.



Pro-Ject may have made its name with great value turntables – but recently its Box range of electronics has been garnering enthusiastic recommendations throughout the hi-fi community.

And it's not hard to see why. They eschew frippery, pack everything into a small form factor (hence saving cost) and sound rather good. You might lose out on the bling factor but you'll gain on the sonics.

And while the range has included phonostages, amplifiers, streamers and DACs, the new Pro-Ject MaiA is perhaps its most ambitious offering yet. The name, in case you are wondering, stands for My Audiophile Integrated Amplifier and the MaiA is designed to play music from just about any source you can imagine – and all for just £400.

So you get a total of nine inputs with an RIAA equalised MM phonostage, 24bit/192kHz-capable DAC, wireless aptX Bluetooth (A2DP profile) alongside coaxial and optical S/PDIF inputs and an asynchronous USB connection.

Whether it's a turntable, CD player, computer or mobile device, the MaiA will play your music.

The full complement of inputs

comprises a one Phono and two Line inputs through RCA sockets, a 3.5mm stereo jack; one digital coaxial (electrical) and two optical inputs and a USB Type-B. Outputs comprise a 3.5mm mini-jack, a 6.3mm headphone socket and 4mm speaker connectors.

Power is supplied to Flying Mole Class D amplifier modules which Pro-Ject rates at good for 25 Watts per channel – although we measured 21 Watts into 8 Ohms and 30 Watts into 4 Ohms.

Obviously, then, the little MaiA is no powerhouse but it should have enough grunt to power similarly-priced loudspeakers and its range of input options give it tremendous flexibility.

The unit itself measures a svelte 206mm x 36mm x 200mm (W/H/D) and despite all the electronics packed into the slim chassis it runs relatively cool thanks to the Class D amplifier selection.

On the fascia sits a central rotary volume dial with source selection buttons and small LED indicator lights to the

right and full-size headphone socket on the left.

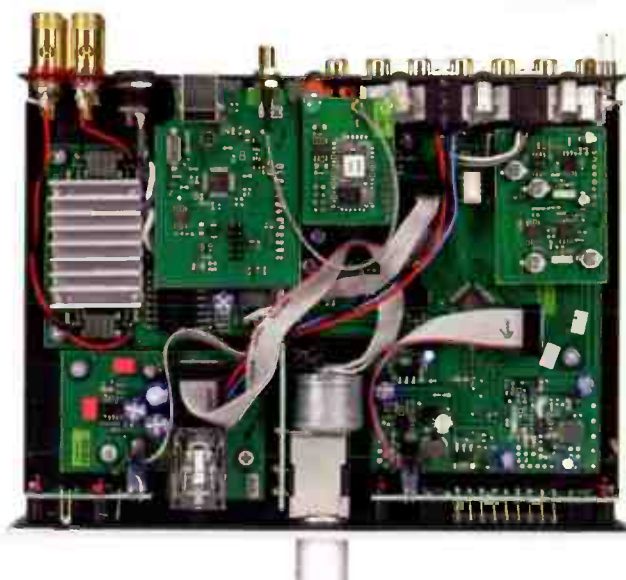
Overall construction is relatively sturdy with no indication that any obvious corners have been cut to save on costs.

SOUND QUALITY

Despite its small dimensions the MaiA has a surprisingly large and lively soundstage.

Fed CD through a Cyrus transport and driving the smooth and sophisticated Usher N-6361

Despite its plethora of inputs and small size case the MaiA's internal layout is nice and neat and the unit runs relatively cool thanks to its Class D amplifier modules.



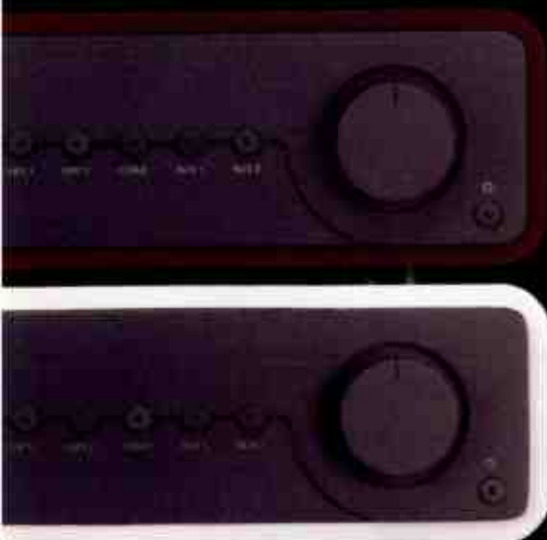
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QUAD

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floorstanders (see review elsewhere in this issue) the Pro-Ject had no problem filling our large listening room.

The Ushers are a relatively easy load and seemed to suit the MaiA well. Peter Hook's basslines on New Order's 'Bizarre Love Triangle' had definition and punch while Bernard Sumner's vocals were planted firmly between the 'speakers.

In absolute terms there's a little extension missing at both ends of the frequency spectrum so the top end lacks a little sparkle while earth-shaking bass is out of the equation. But the overall sound is relatively neutral with nice timing and a good sense of pace to up-tempo numbers.

Moving on to some high-resolution material via the electrical input and the MaiA seemed to lack the outright resolution to make the most of the enhanced information.

Kraftwerk's 'Minimum-Maximum' (24/96) had a slightly shut-in feel with a masking of the air and atmosphere that makes this collection such a compelling listen. Similarly the strings on Arvo Part's 'Tabula Rasa' had a slightly mechanical sheen to them which robbed the piece of some emotion and detail.

Some other standalone DACs – such as Audiolab's exceptional Q-DAC – will give you a more refined presentation. But then again the Audiolab doesn't have amplification built-in and nor does it boast Bluetooth capability.

For the latter the MaiA proved extremely stable. Pairing with a mobile or laptop is easy and the connection remained rock-solid throughout testing. With an appropriate device the aptX codec also brings a significant boost in sound – with everything sounding crisper and cleaner. The convenience of being able to walk into a room and play music from your mobile 'phone is also welcome.

Given Pro-Ject's background in turntables and phonostages it's perhaps no surprise that the MaiA's vinyl-playing capabilities are really rather impressive. Pro-Ject says the moving magnet phonostage is derived from its well-regarded Phono Box range and there are certainly some sonic similarities.

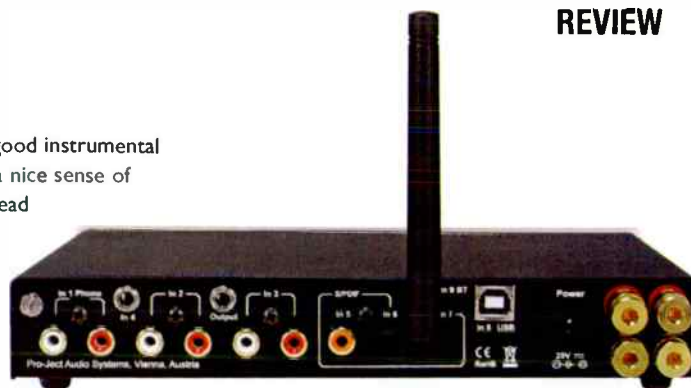
Robbie Robertson's eponymous debut album came across as detailed

and open with good instrumental separation and a nice sense of atmosphere. Sinead O'Connor's vocals on 'Sean Nos Nua' were also well projected – reaching out above the 'speakers and well into the room.

Although the timbre can be a little soft, there's a lightness of touch which keeps the music flowing naturally. In fact, this could possibly be the ideal introduction for anyone wanting to add vinyl replay to their collection of digital files.

CONCLUSION

Despite some of my criticisms above, the Pro-Ject is actually a fine product for the price.



The Pro-Ject boasts nine different inputs including digital, line-level, phono and Bluetooth via the attached aerial.

Combining a DAC, phonostage, decent Class D amplifier and Bluetooth in one small unit for just under £400 is no mean feat and offers excellent value for money.

You could use it to extend an existing set-up, as the heart of a second system or it would make a great introduction for anyone looking to get into the world of hi-fi.

MEASURED PERFORMANCE

The MaiA's Class D amplifier produced 21 Watts into 8 Ohm under test, and 30 Watts into 4 Ohms, so it's no power house, but it is tiny and runs cool. Frequency response rolled away above 10kHz and sharply above 20kHz into 8 Ohms, but Class Ds are commonly load sensitive and treble fell faster and harder into 4 Ohms (-3dB at 20kHz), so with such loudspeakers this amp will sound a bit dull.

Another problem with Class D is treble distortion producing a "breaking glass" sound, but this the MaiA kept reasonably well suppressed, measuring

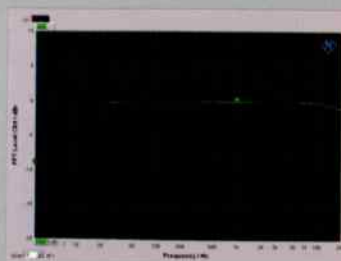
0.4% (1 Watt, 10kHz). There are better Class Ds around but it isn't so bad.

The S/PDIF digital inputs suffered noise and distortion (0.4%) that together limited EIAJ Dynamic Range to 97dB with 24bit - worse than CD (100dB). The digital stages barely resolved our -60dB test signal in fact, a disappointing result. The electrical input processed 192kHz sample rate digital but the optical did not, managing 96kHz maximum.

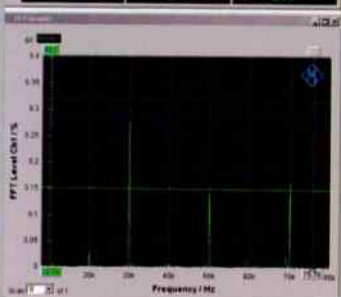
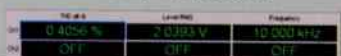
The phono input was surprisingly good, with flat frequency response, low noise, high sensitivity and a high overload margin.

The little MiaA is a bit challenged in its digital stages but otherwise measures reasonably well, keeping in mind its low price. **NK**

FREQUENCY RESPONSE



DISTORTION, 1W, 10kHz



Power	21 Watts
Frequency response	4Hz-33kHz
Separation	91dB
Noise	-99dB
Distortion	0.4%
Sensitivity	500mV

DIGITAL	
Frequency response	4Hz-20kHz
Separation	88dB
Noise	-82dB
Distortion	0.4%
Dynamic range	97dB

PHONO	
Frequency response	11Hz-20kHz
Separation	78dB
Noise	-81dB
Distortion	0.12%
Sensitivity	2.5mV
Overload	58mV

PRO-JECT MAIA £399



EXCELLENT - extremely capable

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VERDICT

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FOR

- range of inputs
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- price

AGAINST

- DAC could be better

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Jet-age sounds

Martin Pipe relives the glory days of the eight-track cartridge

In the late 1960s and early 1970s, the humble eight-track tape cartridge gave many British motorists their first opportunity to choose what they listened to whilst they drove - as opposed to succumbing to the radio playlists' choices.

The cartridge was noticeably larger than the Philips 'Compact Cassette' that ultimately drove it into obsolescence. Inside was the same basic quarter-inch wide magnetically-coated plastic tape that had for some time been adopted for reel-to-reel recording.

Twice as wide as that found within the Philips cassette, the tape was here spliced into an 'endless loop'. At 9.5 centimetres per second, it ran at twice the speed of cassette; generally speaking, the faster analogue tape runs the better the audio quality. As a result, the eight-track sounded much better than the first generation of stereo cassette machines. 'Highs' were brighter, while hiss was less evident.

The eight-track (or LearJet 'Stereo 8') was the brainchild of an American, William P. Lear. He was influenced by an earlier stereo four-track cartridge-based format, the 'Stereopak CARtridge'. Internally the Stereopak was itself based on the Fidelipac 'carts' then being used in radio stations to play jingles and advertisement 'spots'. Albums on Stereopaks eventually ran into the hundreds.

The system gained the attention of Lear, who considered installing Autostereo players in his aircraft. But he wasn't entirely happy with the system. Lear charged one of his engineers with the responsibility of improving on the format while simplifying its construction (thereby making it cheaper to mass-produce both software and hardware).

Most obviously, he increased the music-carrying capacity, at the expense of audio quality, by doubling



The influence of the professional NAB cartridge (top right) on the design of the 8-track (top left) is obvious. The middle unit is an 8-track player, modified to cheaply provide the functionality of a professional NAB player (like the one beneath) for mobile DJs.

the number of tracks on the tape. The narrower the track, the quieter it is (hiss becomes more noticeable) and the more susceptible it is to 'dropouts'.

KEEP ON TRACKIN'

As its name suggests, the Lear cartridge accommodated a total of eight tracks - which were arranged as four stereo pairs. On the player

was a button that, with a satisfying 'clunk', cycled through these pairs of tracks (and thus the selections of music, which were invariably known as 'programmes'). Indicator lamps identified the programme (tabulated on the case artwork) that was currently playing. A strip of foil joining both ends of the tape loop closed a pair of contacts, automatically-switching playback to the next

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Inside, eight-track players are somewhat basic - the mechanism was clearly designed to be as cheap and reliable as possible! The capstan's massive flywheel is coupled to the motor via a flat drive belt. To facilitate a simple 'fast forward' function, the motor is run at a higher speed (during this mode, the audio circuits are muted to prevent 'monkey chatter')

programme after the current one had finished. The eight-track 'clunk' came from a solenoid, which actuated a mechanical arrangement moving the heads up or down so that they lined up with the tracks corresponding to the selected programme.

Alongside the programme-selector button was another that engaged a fast-forward function. And this brings us to one of the main disadvantages of the format - lack of rewind. Thanks to the cartridge's endless-loop construction, such a feature would have been impossible to implement. If the user wanted to hear the same song again, it was a matter of fast-forwarding through the whole tape until the relevant section of track shuttled once again towards the playback heads.

The head block was, courtesy of a strip of foam recessed in the cartridge, always in contact with the tape and so there was a risk of premature wear. In addition, it was very slow; in this system, there was no method of driving the stores of tape directly as there was with cassettes.

The eight-track cartridge contained a rubber 'pinch' roller that came in contact with a vertical drive-shaft in the player known as a 'capstan'. During playback, this capstan rotated - and the tape sandwiched between was thus moved past the heads. When fast-forwarding, the capstan was simply rotated at higher speed while muting the resulting 'monkey-chatter' audio; no

wonder that cassettes sped up music-finding.

Another disadvantage of the format is head alignment. Listening to an eight-track today, it is often possible to hear the audio from adjacent tracks 'leaking' into quiet passages; a head adjustment screw on the underside of the player allows this problem to be minimised - but seldom eliminated. Despite the application of a special graphite-based lubricant to the back of the tape during manufacture, 8-tracks would often jam and break - especially where the two ends of the tape were joined. These design characteristics, coupled with manufacturing irregularities, sometimes led to audible pitch instability ('wow and flutter').

BRINGING IT BACK HOME

In 1970, the eight-track standard was modified to accommodate a fad of the time - quadraphonic (four-channel) sound. The resulting format, Quad-8 (or 'Q8'), offered a choice of two quadraphonic programmes (each of which occupied four tracks). These cartridges identified themselves to compatible players with a lug that

was sensed with a micro-switch; the players (which were also compatible with regular stereo cartridges) then set themselves accordingly. Although Quad-8 in-car players predominated, you could also buy decks that connected to your home quadraphonic audio system.

That way, your music collection could also be listened to indoors - although the sonic limitations of the format relative to vinyl records was laid bare on hi-fi equipment that was more revealing than in-car gear.

Hardly surprisingly, stereo eight-track home decks were more prevalent than quad ones.

Also available were machines that enabled you to record your own compilations of music - the forerunner of the 'mixtape' - onto the blank cartridges offered by tape manufacturers (including 3M/Scotch, Memorex, BASF and TDK). Some of these machines were top-of-the-range models incorporating such features as Dolby 'B' noise-reduction. One manufacturer (the Japanese tape specialist Akai) made a homedeck that could record, as well as play, in quadraphonic.

The system was considerably successful throughout the late 1960s and early-to-mid 1970s. Millions of cartridges were sold, covering every genre of music available at the

8-track hardware was available in many different configurations. On top is a specimen of an in-car player - the format enjoyed greatest success here.

In the middle is a rare JVC player able to play both four-programme stereo and two-programme quad ('Q8') carts.

The bottom unit has a record function, allowing you to tape custom compilations onto blank media.



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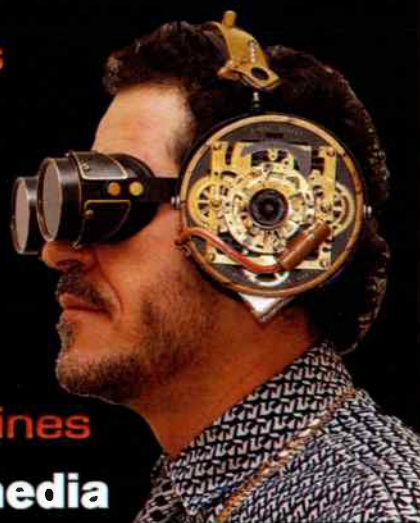
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time. Many albums were edited to fit the format's running time, which tended to differ from that of the vinyl version.

A handful of later pre-recorded cartridges (such as the copy of Mike Oldfield's 'Hergest Ridge' I have) were Dolby-encoded. Q8 releases included Donald Byrd's Black Byrd, Kraftwerk's Autobahn, Leonard Bernstein's Mass and of course Dark Side of the Moon. Today, rare artifacts like these are cherished among collectors; their four-channel mixes are unavailable elsewhere.

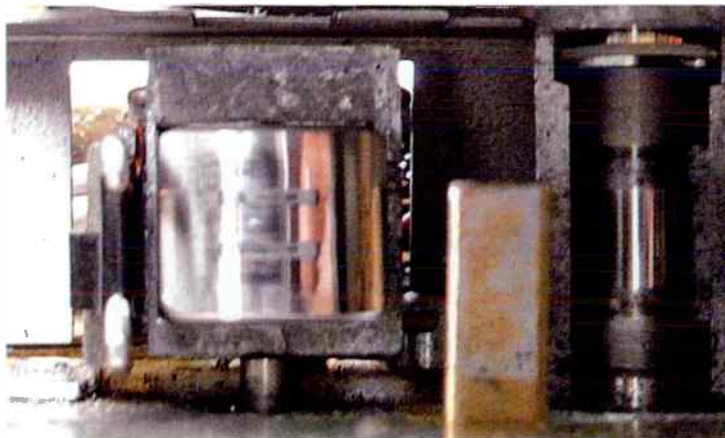
Eight-track software also covered niche interests like business training-programmes, 'background music', comedy and spoken-word albums. The format also bridged analogue audio and the incomprehensible new world of 'information technology'. In 1978, arcade-game pioneer Exidy housed ROM software-packs in the shells of 8-track cartridges for its 'Sorcerer', an early 8-bit microcomputer. Another early personal-computer manufacturer, CompuColor, actually used short-length eight-tracks for data storage.

It is a testament to the popularity of the format that major car manufacturers, including Ford and General Motors, offered eight-track players as 'options'. At the same time a plethora of consumer-electronics brands, from the familiar likes of Panasonic/Technics and Pioneer to more obscure outfits such as Amerex and Harvard, pitched hardware of varying sophistication to different sectors of the market.

As well as retrofittable in-car and home-use decks, you could - during eight-track's heyday - buy 'music centres' (the record player/radio/tape hybrids that were '70s consumer mainstays), battery-powered portables with hinged stereo speakers and wacky designs that encapsulated the spirit of the age.

Significant strides in the technologies that underpinned the Philips cassette were being made by the mid-1970s, and despite its slower running speed the cassette was starting to sound better. Cassette's ascendancy also spelled doom for Sony's high-fidelity Elcaset format of the mid-1970s. No in-car Elcaset players were made - certainly beyond the prototype stage.

Cassettes (and for that matter, Elcaset) offered both rewind and fast-forward for ease of selecting music, and eight-track's sole remaining advantage - continuous



Here we see an eight-track playback head (left), and the capstan (right) that drives the tape past it. The latter works in conjunction with a pinch-roller built into the cartridge housing.

playback - disappeared when in-car cassette players started to offer an 'auto-reverse' feature.

By the early 1980s, the eight-track had finally been ousted for general use - although pre-recorded cartridges were still being released in dwindling quantities until the end of that decade. A wonderful contraption that enabled cassettes to be played (badly!) on eight-track gear merely postponed the inevitable.

EIGHT-TRACK MIND

Three decades on, and strong feelings for the format remain - a regular phenomenon as far as vintage technology is concerned. Eight-track attracts the loving attention of collectors ('trackers') who prefer its 'organic' sound to CD's more clinical presentation. Some car enthusiasts refuse to replace the eight-track players in their classic vehicles, as they feel their authenticity would be compromised; to such people, a good supply of cartridges and home-deck recorders are prized. The eight-track was primarily a playback medium, and players outsold recorders by a considerable margin. For this reason, blank tapes aren't as common as pre-recorded ones. Those with recording decks 'bulk-erase' unwanted eight-track albums, and re-use them to capture their own music selections.

Eight-tracks became the subject of dedicated websites, museums and fanzines. The format and its loveable-eccentric collector 'underground' were the focus of a independently-made full-length documentary-style road-movie (1995's 'So Wrong, They're Right').

In 2009 Cheap Trick released an album ('The Latest') on eight-track, although customers were asked to stump up \$30 for the privilege - at the same time, the CD was a mere \$12.99. Shrink-wrapped cartridges

from eight-track's golden age have fetched over a hundred dollars on eBay.

Rarity also pushes up prices; a copy of the 1981 Kiss album 'Music from the Elder', for example, went for nearly \$300 in 2012. Eight-track may refuse to die, but here nostalgia is going to cost you.

But it doesn't have to be that way. The cartridges and associated hardware are frequent sights on eBay, in second-hand/'thrift' stores and at car-boot/garage sales. Such widespread availability reflects just how popular they once were. As a result, most of these relics from a bygone age are within the grasp of every music fan.

Since their timelines essentially ran parallel, much of the classic-rock era is well-represented on eight-track; among the artists are Led Zep, The Beatles, the Stones, Clapton, Creedence Clearwater Revival, Lynyrd Skynyrd, Dylan, Bad Company, Genesis, Black Sabbath, AC/DC, Yes, The Doors and ZZ Top. Quite a few of the cartridge specimens you'll find today, though, are held together with discoloured adhesive tape - a sure sign that, years ago, the shell had been broken open to effect a repair.

Another commonly-encountered problem is that the pinch-rollers and foam pressure-pads inside the cartridges are inclined to disintegrate with age. In addition, the internal drive-belts of players may be over forty years old and will almost certainly need replacing.

The professional-use Fidelipacs 8-track aped may have been first on the block, but in the event they saw off both the 4- and 8-track consumer formats. Radio stations around the world continued to use these NAB carts for broadcast fidelity, well into the 1990s, long after 8-track had died.

House of Usher



Usher Audio's new N-6361 floorstanding loudspeakers make eminently enjoyable music at a wallet-friendly price, finds Jon Myles.

I've had the pleasure of reviewing a number of Usher loudspeakers over the past few years and it's fair to say not one has failed to impress me. The hefty floorstanding Usher CP8871 II DMD with its diamond tweeter has become something of a personal favourite. But that particular model will set you back some £11250 and requires a relatively large space to give of its best. For those that don't have the room or the finances to accommodate the 8871, Usher has an alternative in the shape of the N-6361 floorstanders reviewed here.

Priced at £2000 the N-6361s are a two-way design featuring a pair of 7-inch mid/bass driver arranged in a D'Appolito configuration around a 1-inch soft dome tweeter. In true Usher style, all the drive units are manufactured in-house at the company's massive Taiwan plant.

The cabinet measures 26cm x 35cm x 110cm (W/D/H) and features curved sides to minimize internal standing waves, while a sturdy pair of gold-plated binding posts on the rear facilitate bi-wiring if required.

Bass reinforcement is provided by a forward-facing slot port, which makes positioning close to rear walls possible.

Instead of a one-piece grille, Usher supplies separate round fabric covers for the mid/bass drivers and the tweeter has its own protective metal mesh cover which is also said to aid high-frequency dispersion.

Beefy metal stands with inserts for the supplied spikes complete the package and overall fit and finish is extremely good for the price. The N-6361



Asimi Ultra RCA Interconnect

hi-finews
EDITOR'S
CHOICE

“ Reflecting the mood of the music, the Asimi Ultra allows the very best hi-fi systems to sing – sing loud, sharp and clear when required or soft, slow and relaxed as the recording demands. It’s a true flagship cable. ”

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might not be the flashiest-looking loudspeaker out there, but it is elegantly packaged with a purposeful design that suggests money has been spent on the most important parts.

SOUND QUALITY

Usher loudspeakers have a relatively consistent house sound which doesn't seem to vary too much across its ranges. In short, they tend to be natural, even and accurate - and that's exactly what you get with the N-6361s.

Initially, this can at times make them sound a little laid-back compared to some other models engineered for (say) artificial brightness, but give them some time and you start to realise that what you are actually getting is a superbly uncoloured sound. Driven by our smooth yet powerful Quad QMP monoblock power amplifiers it quickly became apparent the Ushers were capable of setting up a wide soundstage with plenty of detail.

Jackie Leven's distinctive vocals on 'Fairytale For Hardmen' came across with all the necessary edge and gruffness while individual instruments were easy to follow.

Indeed, the Ushers are extremely adept at letting you hear into the mix

of individual tracks. Play something like The Smiths' 'The Queen Is Dead' I heard all Johnny Marr's studio trickery at work with the added reverb and echo on the guitar parts thrown out in sharp relief. This is a dense track that can sound congested on some loudspeakers but the Ushers handled it with aplomb.

There's never any sense of one element of the sonic spectrum being over-emphasised at the expense of some others - instead the music flows freely with a natural, uninhibited attack.

Pushing up the volume I found the Ushers continued to remain composed. The bass on Lady GaGa's 'Monster' had depth and weight, with no sense of artificial thump. Ultimately you're not getting the smack in the chest feel of a single 12-inch driver, but the N-6361s go low enough to provide a firm foundation to the sound.

That freedom from artificiality also means big orchestral crescendos are given the necessary weight and

air to impress. Carlos Kleiber and the Vienna Symphony Orchestra's legendary rendition of Beethoven's Fifth and Seventh Symphonies coursed with power yet the string sections had realistic timbre while individual musicians could be picked out with ease.

These are 'speakers that will allow you to analyse individual tracks or instead just sit back and let the music wash over you - which is an impressive feat at the relatively affordable price of £2000.

CONCLUSION

Usher has produced another fine set of loudspeakers in the N-6361. At first listen they might not seem the most dynamically exciting but that's purely because they don't attempt to impose any artificial character on the music. Instead, what you get is an accurate, honest and detailed presentation that makes long listening sessions an absolute pleasure. With a bit of time they are sure to grow on you I feel.

MEASURED PERFORMANCE

Our frequency response analysis of the Usher N-6361 shows it measures almost perfectly flat, except for a small bass peak. This means it will sound tonally accurate, lacking either treble peaking or a midrange suckout. Absence of the former means treble will sound smooth and un-emphasised, unlike so many commercial loudspeakers that have brightness engineered in, and absence of a suckout means detail will be strong.

The smoothness of the trace suggests few local resonances and low intrinsic coloration from the drive units. The result was maintained off-axis, so the Ushers perform consistently whether they are pointed straight down the room or toed in toward the listener.

Bass from the drive units reaches down to 40Hz in fairly even fashion; there's no bass emphasis, ignoring a narrow peak, so the N-6361 will not sound bass heavy; it may be on the dry side and will work well close to a rear wall.

The port (red trace) is flat, or non-resonant, applying acoustic damping over a broad range of the bass spectrum. This will ensure the bass sounds well controlled, and smooth port output down to 20Hz also shows the speaker goes very low; in largish rooms of around 20ft or more subsonics will be apparent. The N-6361 should work across a wide range of room sizes, measurement suggests,

without sounding either bass light or heavy in any.

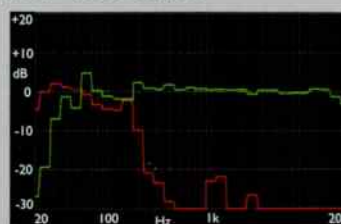
Overall impedance measured 7 Ohms, giving higher sensitivity than that of the 6311. With a sensitivity of 89dB the speaker needs little power to go loud too; around 40 Watts will do.

But like the N-6311, the N-6361 had a clean 200mS decay spectrum, meaning low coloration, as expected from its smooth response trace.

The N-6361 measured well all round, like previous Ushers. It will have an accurate tonal balance, well damped bass and low colouration. NK

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



USHER AUDIO N-6361 £2000



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

A lovely, uncoloured sound with plenty of detail that works with all genres of music. Highly recommended

FOR

- price
- natural, even-handed sound
- smooth treble

AGAINST

- some rivals can sound more dynamic

Decent Audio
+44 (0)580 205 4669
www.decentaudio.co.uk

WORLD STANDARDS

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

TURNTABLES

FUNK FIRM LITTLE

SUPEROCK 2013 £110
Funk's entry-level turntable offers excellent value. Superb speed stability and an appealing sonic performance make it a true bargain.



AVIO INGENUUM 2013 £800
Great bass response and upper midrange detail allied to clarity and a fleet-footed delivery makes this a must-hear at its price-point.

INSPIRE MONARCH 2012 £3,970
A startlingly musical performer with blistering speed and dynamics allied with smoothness, sophistication and purity of tone..



PRO-JECT 2 XPERIENCE BASIC+ 2012 £600
Seriously confident, assured and capable vinyl spinner. More than capable of getting the best out of your record collection.

ROKSAN RADIUS 5.2 2011 £1,450
Although getting expensive, the latest Radius is a highly grown up package with a flowing yet engaging nature; a fine package.

ACOUSTIC SIGNATURE STORM 2011 £3,612
An excellent high end design with a smooth, solid, open and lyrical sound and razor sharp styling and build.

FLETCHER AUDIO OMEGA .5 2010 £3,699
Charming high end turntable that's a fitting testament to the late Tom Fletcher.

PALMER 3 2010 £3,750
Eccentric hand built high end turntable with a pleasingly smooth, sweet and lucid sound.

E.A.T. FORTE S EVO 12 2010 £4,750
Excellent premium price turntable with power, precision and passion aplenty, but relaxed and easy going by nature too. Great value package with the Pro-ject Evo 12" arm option.

OR FEICKERT WOOPECKER 2010 £3,445
Elegant deck with great low frequency solidity, coherent soundstaging and a precise midband.

AVIO OIVA II SP 2010 £2,599
New twin belt drive and power supply make this a more commanding performer although there's a substantial price hike. Speed, dynamics and detail are hard to beat anywhere near the price.

NOTTINGHAM ANALOGUE HYPERSPACE 2010 £2,390
Deliciously spacious, lyrical and beguiling sounding turntable, but lacks ultimate grip.



LINN LP12SE 2010 £3,600
Surely hi-fi's most iconic turntable, the legendary Sondek goes from strength to strength. New Keel subchassis and Radical DC motor add precision and grip to one of the world's most musical disc spinners. Expensive, though.

INSPIRE ECLIPSE SEV2 12 2010 £2,349
Finely engineered, smooth and detailed sounding deck offering valuable twelve inch tonearm compatibility.

REGA RP1 2010 £225
Pleasing sound, fine build and ease of set-up and use make this a great first 'real' hi-fi turntable.

BRINKMANN BAROO 2010 £5,845
Unique high end direct drive turntable with amazing grip and focus, albeit not the most romantic of natures.

TO NEARMS

ORIGIN LIVE ENCOUNTER MK3C 2012 £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 delved deep into the mix for a satisfying listen.



REGA RB202 2012 £198
Replacement for the venerable and much-loved RB251. Three-point mount design serves up a taut and detailed sound.

HAOCCOCK GH-242 EXPORT 2010 £793
Consummately musical, lyrical sounding tonearm, but needs the right turntable. Excellent value.

FUNK FIRM FXR II 2010 £1,175
Clever reworking of the ubiquitous Rega platform, the FXR II gives a wonderfully musical, almost unipivot like performance.

ORIGIN LIVE ONYX 2011 £450
Easy, smooth, creamy nature that reminds you why you're listening to vinyl in the first place. Essential audition at the price.

SME 312S 2010 £1,750
Twelve inch magnesium alloy armtube plus SME V bearings makes an impressive transcription tool with an insightful yet composed sound. Superlative build completes the age.



ORIGIN LIVE SILVER 3C 2010 £599
Excellent mid-price tonearm with a clean and open yet lyrical sound.

AUDIO TECHNICA AT-F3/III 2010 £189
Great value entry level moving coil with detail and grip you just can't get from similarly priced moving magnets.

PHONOSTAGES

PRO-JECT TUBE BOX OS 2013 £425
Compact MM and MC phonostrage with valve output circuit and a big sound.



IFI IPHONO 2013 £350
Multi EQ phono stage from British manufacturer that punches well above its weight. Substantial bass and open midband.

TIMESTEP T-01MC 2013 £995
New, minimalist phono stage that sonically punches well above its weight.

LEEMA ACOUSTICS ELEMENTS

ULTRA 2012 £1,199
Smooth and detailed sound with the ability to accommodate most modern cartridge. Exceptional value for money.

WHEST AUDIO PS.30SE 2011 £4,500
Amazing incision and grip, the Whest manages to eke out information from low-level phono signals to an almost microscopic level.

CARTRIDGES

REGA CARBON 2013 £35
Budget price for a competent and musically coherent-sounding cartridge with a fairly unflappable nature.

ORTOFON 2M 78 2013 £80
Well thought-out mono, standard groove version of respected @M series of cartridges. Detailed sound with low surface noise.



BENZ MICRO ACE SL 2012 £595
Smooth, lucid and full-bodied, award-winning, hand-made cartridge from Switzerland.

VAN OEN HUL OOT-II SPECIAL 2011 £995
Long-established cartridge from Holland with an open and dynamic sound.

BENZ MICRO WOOD SL 2010 £945
Highly finished Swiss moving coil that plays music with riflebolt precision.



ORTOFON CAOENZA BRONZE 2010 £1,350
Smooth and engaging high end MC with a slightly warmer and more relaxed presentation than its superb bigger brother.

ORTOFON CAOENZA BLACK 2010 £1,650
Ultra incisive, transparent and dimensional moving coil with grip and punch aplenty.

ORTOFON CAOENZA BLUE 2009 £1,000
Musical, out of the box sound, allied to real finesse, makes this a great do-it-all high end moving coil.

PREAMPLIFIERS

MING OA M07-SE 2012 £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.



ICON AUDIO LA-4 2011 £800
Uses early 6SN7 triodes for liquid sound. Has plenty of gain and a remote control into the bargain.

DPA CA-1 2010 £2,650
Excellent solid-state preamp with a meticulously detailed and propulsive sound, but a deep velvety tonality.

MF AUDIO CLASSIC SILVER 2010 £4,500
One of the best preamplifiers we've heard 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.

INTEGRATED AMPLIFIERS

ICON AUDIO STEREO MKIIIM 2013 £1,500
Excellent starter tube integrated with plenty of detail and an expansive soundstage. Revised 2013 model features easy bias meter for even easier set-up.



ARIANO PRO845SE 2013 £1499
Pure single-ended valve magic. Low-powered but immediately gorgeous, easy-going yet forcefully dynamic at the same time. At twice the price it would still warrant the entrance fee.



CAMBRIAGE AUDIO AZUR 651A 2012 £450
Dual-mono construction and meaty toroidal power supply combine to produce a rich, mature sound that produces sonics far beyond its price point.

NAIM NAIT 5S1 2013 £925
Naim's fabled entry-level integrated amplifier is updated to its status. Retains Naim's superb musicality with an extended bandwidth and smoothness.

PRIMALUNA PROLOGUE 2013 £2,349
Fabulous pure, organic, liquid sound from this 40 Watts per channel valve amplifier. Slightly light bass is the only drawback.

CANOR TP-134 2013 £2,495
Great build quality sonics makes for hassle-free, sophisticated valve amplification. One of the great bargains in audio.



NUFORCE IA-18 2013 £2,899
Class D amp from undoubted experts in the field with bags of detail, clean sound and fantastic imaging.

CREEK EVOLUTION 50A 2013 £750
Flexible, friendly design marked by transparency and dynamism. Sets new value-for-money standard.

BURMESTER 032 2012 £11,500
Undeniably expensive - but if you treasure a large yet subtle presentation with plenty of air and space around the performers then the Burmester will provide. Also built to last a lifetime.

ICON AUDIO LA-4 MKIII 2012 £1,100
Vintage 6SN7 valves provide liquid sound with plenty of gain. Comes with remote control for added convenience.

EXPOSURE 1010 2012 £425
Entry-level integrated from Exposure has excellent upper mid-performance with an almost valve-like sound.

CAMBRIAGE AUDIO A851 A 2012 £1,199
Feature-packed amplifier that turns in a mightily accomplished performance offering power allied to superb levels of finesse and detail.

OENSEN B-175 2012 £5,500
Stylish, minimalist-designed amplifier which offers a combination of low frequency power and higher frequency finesse.



VTL IT-85 2012 £5,100
Valve-encrusted integrated with a surprisingly strong bass kick and a sense of passion and emotion that drags you into the music.

CYRUS 8A 2011 £1,250
Trademark shoebox-sized Cyrus integrated now offering 70Watts per channel. Majors on insight and clarity without sacrificing an ounce of musicality.

QUAO II CLASSIC 2010 £4,500
Beautiful retro styled integrated amplifier with a subtle, supple sound - although needs matching to speakers that are easy loads.

SIM AUDIO MOON 600I 2010 £5,750
Sturdy build, useful facilities and a wonderfully relaxed, seamless and even-handed sound will win this many friends.

MUSICAL FIDELITY AMS35I 2010 £5,999
One of the best high end integrations we've come across, this combines hear-through transparency with musical get-up-and-go.

OPA CA-1 2010 £2,650
Stylish, minimalist-designed amplifier offers a combination of low frequency power and higher frequency finesse.

OARTZEEL CTH-8550 2010 £16,500
Charismatic and quirky high-end solid-state integrated amplifier with superb sound and a charming visage.



POWER AMPLIFIERS

AUDIO RESEARCH VSI75 2013 £7,498
Powerful, fast valve sound that makes everything else look weak at times. Needs careful matching but well worth the effort.

ICON AUDIO MB845 MKIIM 2013 £5,999
Offering 120Watts from big 845 valves the Icon Audio offers power right down to low frequencies providing massive dynamics and bass swing yet always remaining easy on the ear.

QUAD ELITE QMP MONOBLOCKS 2013 £1,195 (EACH)

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.



TELLURIUM Q IRIDIUM 2012 £4,800
Single-ended Class A solid-state with a beautifully smooth, transparent and three-dimensional sound. All the refinement of a good valve designer but with a tighter and firmer lower end.



QUAD PLATINUM STEREO 2013 £2,495
The best solid-state amplifier yet from Quad. Combines power, poise and control with superb authority.

CHORD SPM 1200 MKII 2013 £8,200
Stunning looking amplifier with masses of grunt and a clean, detailed delivery that combines power with precision.

MUSICAL FIDELITY AMS50 2010 £7,000
Mighty, assured high end full Class A integrated proffering icy clarity allied to real musicality. Lacks the lucidity of the best tube amps but redeems with power and punch.

XTZ AP-100 2010 £520
Decently smooth yet usefully muscular, this power amp punches way beyond its price point in sonic and value terms.



ICON AUDIO MB845 MKII 2010 £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.

AUDIO RESEARCH VS115 2012 £5000
Oodles of power with enormous punch. Rafael Todes found the Audio Research provided "shock and awe" while retaining incredible smoothness and texture.



LOUDSPEAKER FLOORSTANDER

QUADRAL PLATINUM M50 2013 £3,150
A superbly engineered loudspeaker combining low-end authority with midband detail and a clean spacious treble. Very few to touch it at the price.



QUAD ESL-2812 2013 £6,500
The latest incarnation of Quad's classic design is better than ever. Brilliantly open and natural with a cohesive quality that puts conventional box loudspeakers in the shade.

TANNOY PRECISION 6.4 2013 £2,399
Clear, forward sound with great projection. Need little power to go loud and have superb fit and finish into the bargain.



SPENDOR SP100 R2 2013 £6,495
Retro looks but a sound that's hard to match. Spendor's 12" bass unit provides massive of low-end grunt with a room-filling sound.

QUADRAL ORKAN VIII AKTIVS 2013 £6,200
Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter.

CABASSE PACIFIC 3 SA 2013 £11,500
Superb speaker which resolves a vast amount of detail. Needs top quality source to be at its best.

SONUS FABER VENERE 2.5 2013 £1,198
Great bass, superbly neutral midband and musical authority to spare make this a great introduction to the Italian maker's range.



WHARFEDALE AIREDALE CLASSIC 2013 £24,995
Classic name and styling allied to 21st century cabinetry, crossover and drivers to produce a class-leading loudspeaker. Just make sure you have the room!

AURUM WOTAN VIII 2012 £2400
A supremely well-balanced loudspeaker. Clean and detailed with great treble and a real sense of presence. A big, bold sound from a relatively compact cabinet.

EPOS ELAN 35 2012 £1,200
Enthralling loudspeaker with prodigious bass power, detail and depth. A 93dB sensitivity means it works well with lower-powered valve amplifiers.



USHER DANCER MINI-TWO 2012 £3,500
Fitted with Usher's own diamond-coated tweeter, these loudspeakers glisten with detail while the massive cabinet delivers deep, powerful and controlled bass. Offer great sound from a price-tag half that of some rivals.



MARTIN LOGAN ETHOS 2012 £6,698
Matches Martin Logan's XStat electrostatic to a powerful subwoofer to provide extended, powerful bass with dramatic sonic purity. Demands careful partnering to give of its best.

PMC TWENTY.24 2012 £3,100
Stylish, detailed and thoroughly enjoyable, the PMCs have the deep bass of a transmission line with the heart of a mini-monitor.



SPENDOR A3 2012 £1,295

Fine little floorstander with a smooth, natural mid-band and even tonal balance. Ideal floorstander for smaller rooms.

Q ACOUSTICS 2050i 2012 £525

A large floorstander at a budget price. Offers high sensitivity and big sound and has very few flaws for the price.

**SPENDOR ST** 2010 £5,995

This classy sounding, superbly presented big floorstander will appeal to those seeking high end sonics with subtle looks.

VIVID V1.5 2010 £6,000

Breathtaking transparency, superlative coherence and dizzying speed make these one of the best standmounters ever made - providing you like their 'studio sound'.

B&W 800D 2011 £18,000

B&W's statement floorstanders are a veritable study in hi-tech design. They deliver depth and definition with breathtaking speed and authority. Expensive - but endlessly impressive.

GERMAN PHYSIKS LIMITED 11 2011 £7,800

Don't be fooled by the austere looks; this is a superbly enjoyable omnidirectional speaker with a wonderfully fast, expansive sound.

**ECLIPSE TD712Z/2** 2011 £5,100

Flawed genius, and willfully so. These loudspeakers don't do everything well, but what they can do is profound and enthralling; rhythms, dynamics and soundstaging.

MAD MY CLAPTON**GRAND MM** 2010 £3,599

Distinctive coaxial standmounters with wonderful soundstaging, bright lucid midband and true musical insight.

REVOLVER CYGNIS GOLD 2010 £15,000

Vast in scale with effortless dynamics and an easy, barrel chested bass, these big bangers are great for lowish power tube amps. Large room needed!

TANNOY DEFINITION DC10T 2010 £5,000

Wonderfully wide and open, super fast and amazingly engaging to listen to.

LOUDSPEAKERS STANDMOUNT**MARTIN LOGAN MOTION 15** 2013 £800

Folded Motion tweeter gives a taste of Martin Logan's electrostatic sound in a standmount. Very different from the standard mini-monitor and all the better for it.

**ACOUSTIC ENERGY 301** 2013 £425

Clean, crisp delivery with a good level of detail. Bass performance belies their size.

WHARFEDALE DIAMOND 122 2013 £280

Builds on the success of previous Diamond ranges with better bass, more detail and a much greater sense of scale.

USHER DANCER MINI-X 2013 £2,450

A highly-accomplished standmount speaker from Usher with outstanding sound and great build quality.

KEF LS50 2013 £800

Supremely musical mini-monitors which sound much bigger than they look.

**WHARFEDALE DENTON** 2012 £500

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

PMC TWENTY.21 2012 £1,375

Transmission line loaded standmount with a big box sound from a compact cabinet. Punches well above its weight.

PARADIGM SHIFT A2 2012 £658

Well-developed and hugely enjoyable active loudspeakers with distinctive looks and a big, bold sound.

TRIANGLE COLOUR 2011 £500

Taut, dynamic and immensely musical. Design, fit and finish comparable to models costing significantly more.

**MY AUDIO DESIGN MY 192** 2011 £1,350

Mini-monitors with an exceptionally smooth, spacious and refined sound that beguile and excite in equal measure.

Q ACOUSTICS 2020i 2010 £165

Great little bargain-priced standmounts with a friendly, fun yet surprisingly refined sound. Hard to better for a pair of starter loudspeakers.

ACOUSTIC ENERGY NEO 1 V2 2010 £225

Civilised sounding speaker with fast and tuneful bass.

XTZ 99.25 2010 £640

Disarmingly open and refined at the price, these standmounters bring unexpected civility, refinement and insight to the price point. Exceptional value for money.

MY AUDIO DESIGN MYCLAPTON SE 2010 £3,299

Powerful, dynamic, musical yet refined, this unconventional point-source design yields dramatic sonic benefits.

ELAC BS243 2010 £1,000

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

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.

HEADPHONE AMPLIFIERS**EPIPHANY EHP-02** 2012 £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.

**GRACE M903** 2012 £1,980

A top-quality DAC and headphone amplifier in one. Shines a bright light on even the finest detail.

ICON AUDIO HP8 MKII 2012 £550

Offering a clean, open soundstage, the HP8 MKII valve-based headphone amplifier provides precision and detail over the entire sound spectrum.

MUSIC FIRST PHONE BOX 2012 £276

Brings a big stage, plenty of detail and rich, deep colours to the sonic spectrum.

**FIDELITY AUDIO HPA 100** 2011 £350

Great little headphone amplifier with a lively yet refined and open sound.

CREEK OBH11 2010 £150

Designed specifically for low to medium impedance (300ohm - 3000ohm) headphones the little Creek has a marvellously well-judged sound. Slightly lean in the bass but none the worse for it.

GRAHAM SLEE NOVO 2009 £255

Eminently-capable, dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.

SYSTEMS

LINN KIKO 2013 £2500
Great looks and good sound make the Linn Kiko one of the best all-round entertainment systems available today.

PEACHTREE AUDIO IDECCO 2012 £1000
Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.

LINN AKURATE DSM 2012 £16,250
A technological tour-de-force of a system, largely due to the DSM preamplifier. The Akurate system has enormous ability plus a smooth sound.

CD PLAYERS

REGA APOLLO-R 2013 £550
Rega comes up with a cracking 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.

CAMBRIDGE AUDIO AZUR 651C 2012 £450
Mature, rich presentation from this budget CD player. Cracking audiophile entry point for any digital fan.

CHORD RED REFERENCE 2012 £15,000
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. This is a true reference player.



SUGDEN A21SE 2012 £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!



ESOTERIC K-03 2012 £9495
Superb high-end silver disc spinner that is beyond criticism. Devoid of its own character but has a flawless presentation.

XTZ CD-100/11 2012 £400
Stunning CD player for the price that will give players costing three times as much a decent run for their money. Well-built, great sound and bags of features.

CANOR CD2+ 2012 £3100
Musically coherent and tuneful valve-driven CD player from Slovakia. Lovely liquid sound.



DENSEN B-475 2012 £5,950
Ice-cool, luxury-designed two-box player with sublime sound quality. Could be the only CD player some people will ever need.

EXPOSURE 101 2012 £395
Detailed player with fine sense of timing should be an automatic entry on any demo list at this price.

ELECTROCOMPANET EMP-1/S 2011 £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.

AUDIOLAB 8200CDQ 2011 £949
Inspired CD player and DAC with price-performance ratio like no other. Capable of matching designs costing much more.

ROKSAN KANDY K2 2010 £900
A charmingly musical performer at the price - this is a surprisingly sophisticated CD player for the money.

MARANTZ SA-K1 PEARL 2010 £2,500
Finely-honed, affordable high-end silver disc spinner; this has a musical lucidity that's unexpected at this price.

TUNERS

CAMBRIDGE AUDIO AZUR 651T 2010 £299
Value-packed Am/FM/DAB and DAB+ ready tuner. Precise and detailed with excellent resolution of spoken word.

CREEK DESTINY 2 2010 £675
Creek's tuner expertise shines through in the Destiny 2. This AM/FM receiver is wonderfully three-dimensional and smooth.



MAGNUM DYNALAB MD-90T 2010 £1,900
Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.

DACS

TEAC UD-501 2013 £699
Feature-packed DAC with benefit of DSD playback. Superb sound means little to touch it at the price.



CHORD QUTE HD 2013 £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.

AUDIOLAB Q-DAC 2013 £400
Stripped-down version of Audiolab's M-DAC loses some features but retains much of the sound making it a veritable bargain.

AUDIOLAB M-DAC 2013 £600
Excellent sound, a comprehensive feature count and impressive flexibility make the Audiolab a stand-out product at its price. A range of filter options is the icing on the cake.



ANTELOPE ZODIAC GOLD/VOLTIKUS 2013 £3,095
DAC/preamp/powersupply combination majors on detail but has a remarkable un-digital sound. One of the best at its price.



CHORD QUTE HD 2013 £990
Superb looks and seriously good sound make this little DAC a winner. Both 384kHz and DSD capable meaning it is also future-proofed.

EXPOSURE 2010 S2 2013 £810
Superb performance from the USB input and various filter options make this a truly flexible DAC with great sound.



NAD M51 2012 £1500
A sweet-sounding treble coupled with complexity and tonal depth makes for a rounded and smooth performer. HDMI functionality adds to the NAD's all-round value.



REGA DAC 2012 £498
Lovely sound characterised by dimensionality and strong pace. Among the best at its price and destined to become a digital classic

DCS DEBUSSY 2011 £8000
DCS's bespoke 'Ring DAC' circuit gives a beautifully-fluid, almost analogue sound that encourages long listening sessions. Not cheap but worth every penny.

METRUM OCTAVE 2011 £729
Unique two-box digital-to-analogue convertor with great sound at a great price. Cuts upper treble, though.



NAIM DAC 2010 £1,995
Superb high-end digital convertor with a probing, punchy and fomesically-detailed sound.

NETWORK PLAYERS

CHORD DSX100 2013 £7500
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.

NAIM NAC-N172 XS 2013 £1650

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

**SANSUI WLD+2012** 2012 £350

Offering great value for money with a variety of input options the Sansui was a deserved Hi-Fi World Award-winner in 2012. Few can match its ability at the price.

**CAMBRIDGE AUDIO NP30** 2012 £399

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

CYRUS STREAM X 2012 £1400

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

**MUSICAL FIDELITY CLIC** 2012 £1250

Smooth and easy on the ear but possessed of a big, bold sound that remains clean and airy at all times. Clear, colour display makes navigation a breeze.

NAIM NDX 2011 £2995

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

PRO-JECT STREAM BOX RS 2013 £1095

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

NAIM ND5XS 2012 £2175

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

QUAD PLATINUM DMP 2013 £2495

Comined 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 AK120** 2013 £1,140

It's small - but packs a punch. Plays digital files up to 24/192, packs 32gb of memory (expandable up to 96gb via MicroSD cards) and has massive dynamic range with negligible jitter. Good enough to replace a CD in most systems.

**ASTELL&KERN AK100** 2013 £569

Portable high-definition digital player with fabulous sound quality.

NAIM HDX 2009 £4,405

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

PORTABLE SPEAKERS**BAYAN SOUNDBOOK** 2013 £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** 2013 £69

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

**CABLES****MAINS CABLES R US NO.27** 2013 £95

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

**BLACK RHODIUM LIBRA** 2013 £100

Opens up the sound stage and offers a significant upgrade to a basic power lead.

TELLURIUM Q BLUE POWER 2012 £399

This power cable is not cheap but is worth every penny. Top quality, high resolution and fine value.

BLACK RHODIUM TWIST 2012 £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.

**TELLURIUM Q BLACK** 2010 280/3M

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

**HEADPHONES****PHILIPS FIDELIO X1** 2013 £270

Aimed firmly at the upper end of the market, these are super-accurate 'phones that can shame many a loudspeaker. Hear them before anything else.

**B&W P3** 2012 £170

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

YAMAHA HPH-MT220 2013 £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.

ONKYO ES-HF300 2013 £180

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

SENNHEISER HD700 2012 £599

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

**JAYS V-JAYS** 2010 £49

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



Mind the gap!



Martin Pipe discovers that Cambridge's beer-budget CD5 has its plus points, but is let down in other key respects

The remote is uncluttered and friendly. It will also control the volume, muting and source selection of some Cambridge amps. What it can't do is eliminate the split-second silence that spoils 'gapless' CDs.



Considering how popular they once were, there must surely be a fair few old Japanese rack systems out there. Many date back to the last days of mass-market vinyl, and never had a CD player. Although substantially-built and now quite funky in a retro way, they were replaced with more modern hardware and consigned to a garage, shed or loft. Could they be brought back into service, if only as 'second-room' systems? Those amps and tuners, with their chunky knobs and aluminium fascias, could actually sound quite good, certainly with a decent pair of speakers (racks were usually let down by plasticky turntables and mediocre speakers). Even those once cutting-edge CDs might be an option, courtesy of the input selector's 'auxiliary' position. And a suitable player, of course.

Then there are the integrated systems that – despite the CD player going south – are still in daily use thanks to their radio tuners, or the auxiliary inputs that are more often than not fed by iPhones or similar devices. The better of these systems were sold by well-known brands and, thanks to a combination of familiarity and not-insignificant purchase price, their hapless owners are reluctant to part with them. Repairing the

internal disc-transport might not be a viable option, but CD playback could be restored with an external player. Technology moves on, and even with a well-chosen modern budget player your silver discs might end up sounding better than they did previously.

Or might you have a more modern budget system designed with streamery and smartphones in mind at one extreme, or vinyl at the other? Neither of which will be of much help if you've rediscovered a cache of CDs from your younger days and want to play them. CD's 16-bit resolution and 44.1kHz sampling rate may be 1970s technology, but done properly can sound surprisingly satisfying – and, in any case, an immense body of music has been released on the format over more than three decades. Once again, a decent entry-level player could fit the bill.

Such a machine could be Cambridge's Topaz CD5 – the entry-level model from a marque best known for proving that sound quality and value-for-money need not be mutually-exclusive. Although bestowed with the tasteful styling of its more luxuriously-appointed brethren, the CD5 is as basic as it comes. For example, it's the first disc player I've come across in years not

to have a digital output for external DACs and so on. If you want this feature, you'll need the 'upgrade' CD10. Interestingly, the CD5's signal-processing board has empty spaces where the coaxial output componentry would go.

But if you're looking to revive an older hi-fi rack or restore CD playback to a system that otherwise suits you, then that digital output is probably superfluous – especially if price is an issue. The only rear-panel connectors offered are phono sockets carrying line-level stereo audio to your gear (note that audio cables aren't supplied). The CD5 has two features that have greater practical value anyway. First of all, it has a full-function remote handset (which will also control the matching Cambridge amps). Secondly, it will play CD-ROMs containing MP3 or WMA tracks. This could be of particular value for parties or other occasions when long periods of unattended background music are required. Needless to say, the CD5's transport is compatible with CD-R and CD-RW media.

Such simplicity means the CD5 is as easy to use as it could be. Track/time information (time-remaining, but no CD Text or MP3 ID3 tags for that matter) are clearly displayed on the front panel, while playback



Connections here are as minimal as you can get - stereo analogue audio. Things haven't been this basic since the beginnings of CD! If you want a digital audio output, then you'll need the 'step-up' CD10 model.

modes include user-programmable track order, repeat, random, scanning and track-skip in either direction. Internal construction is neat and tidy, as with other Cambridge products. Much of the circuitry is on a single ALi M5673 chip; the DAC, meanwhile, is a Wolfson WM8761 (followed by an analogue 2nd-order Butterworth active-filter). This DAC may be able to handle 192/24, but it's always fed 44.1/16 here as no upsampling tricks are employed by the CD5. Providing the background muscle is a conventional 'linear' power supply.

SOUND QUALITY

The CD5 didn't, as our boxout shows, fare particularly well on the test bench. However, with my CD of Joy Division's Unknown Pleasures, classics like She's Lost Control flowed very nicely in terms of rhythm and pace; the sparse atmosphere - an amalgam of Ian Curtis' unique vocal delivery, Peter Hook's melodic bass, Bernard Sumner's angular guitar, Stephen Morris's mechanistic percussion and producer Mark Hannett's pioneering use of digital-delay effects - managed to convince, via two different replay chains (Roksan K2 BT amplifier/Acoustic Energy AE109 speakers; Benchmark DAC2 HGC/R headphones. Bass weight is alas not what it could be, although what you hear is well-defined.

It can also be surprisingly revealing for a budget player, the background hum at the beginning of Time on Pink Floyd's peerless Dark Side of the Moon being laid bare. However, in turn this classic album reveals a major shortcoming of the CD5 - and one that just isn't acceptable. DSoTM's tracks seamlessly join into each other, but the CD5 ruins this continuity (and thus the listening experience) with a split-second 'gap' of silence. Many other CDs - especially mixed dance-music compilations and classical works - are similarly-affected. If by unlikely chance your CD collection consists entirely of albums with

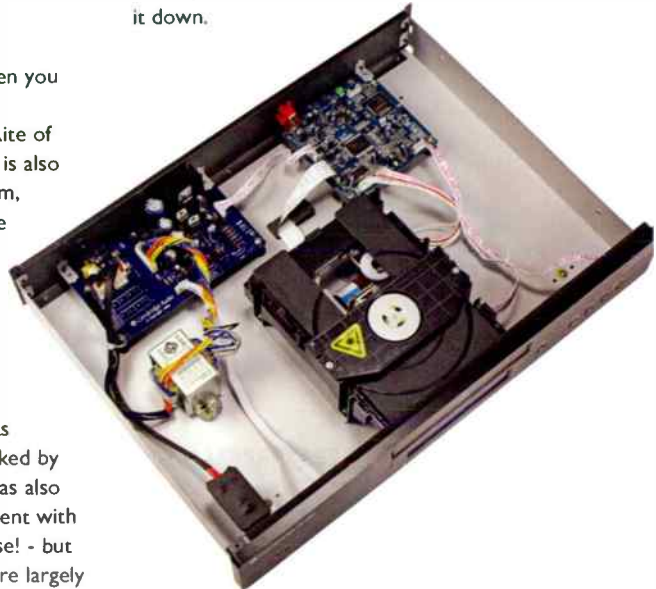
neatly-delineated tracks then you should be OK.

Stravinsky's colourful Rite of Spring (Simon Rattle/BSO) is also plagued by the 'gap' problem, spoiling the illusion of a live performance. The pace, rhythm and detailing noted earlier were apparent here too, the latter only suffering during the loudest climaxes when some more subtle elements of the orchestra were masked by more strident ones. This was also noticeable to a greater extent with MP3 files - no great surprise! - but tonal balance and drive were largely preserved. Occasionally, a slight 'edge' to proceedings can be heard during quiet passages (Rite of Spring's bassoon, for example).

CONCLUSION

As a music-playback machine, I definitely preferred the CD5 to a

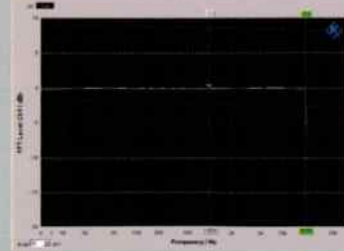
similarly-priced Blu-ray player (also connected via analogue). The CD5 is more revealing, and has more of the rhythmic 'snap' that brings - for example - rock and dance to life. However, the Blu-ray player in question did manage to play 'gapless' CDs without...um...gaps. The CD5's inability to do this marks it down.



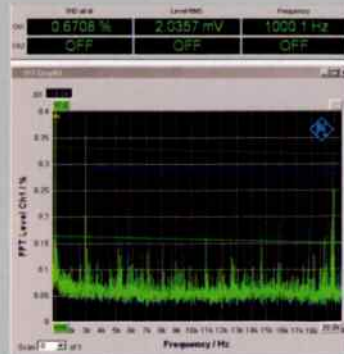
There's not a lot inside the CD5. Note that the power supply board (blue) is actually larger than the signal processing one that makes a CD player a CD player! The latter features a 192-kHz/24-bit Wolfson DAC that only works at CD-quality in this particular application.

MEASURED PERFORMANCE

FREQUENCY RESPONSE



DISTORTION



Frequency response for CD was absolutely flat, reaching 20.7kHz (-1dB) our analysis shows, so the Topaz CD5 will sound tonally balanced. Surprisingly for Cambridge Audio, distortion was high, measuring 0.65% at -60dB on both channels - a poor result for 16bit where 0.2% is common and expected, even in budget players. Noise and distortion generated by the DAC contributed to the also-poor EIAJ Dynamic Range value of 93dB; around 102dB is attainable for CD and 100dB an expected minimum.

The DAC of the Topaz CD5 was surprisingly poor, even by modern budget standards, giving this player a disappointing set of measured performance values. It does not make a good job of CD. NK

DIGITAL

Frequency response (-1dB)	
4Hz-20.7kHz	
Separation	91dB
Noise	-112dB
Dynamic range (EIAJ)	93dB
Distortion (-60dB)	0.65%

TOPAZ CD5 CD PLAYER £119.95



MEDIOCRE - unremarkable

VALUE - keenly priced

VEROICT

Sounded better than expected, but no digital output and can't play gapless CDs properly

FOR

- MP3 playback
- remote control
- better sonics than cheap Blu-ray players

AGAINST

- lack of continuity with gapless CDs
- no digital output
- transport quite noisy

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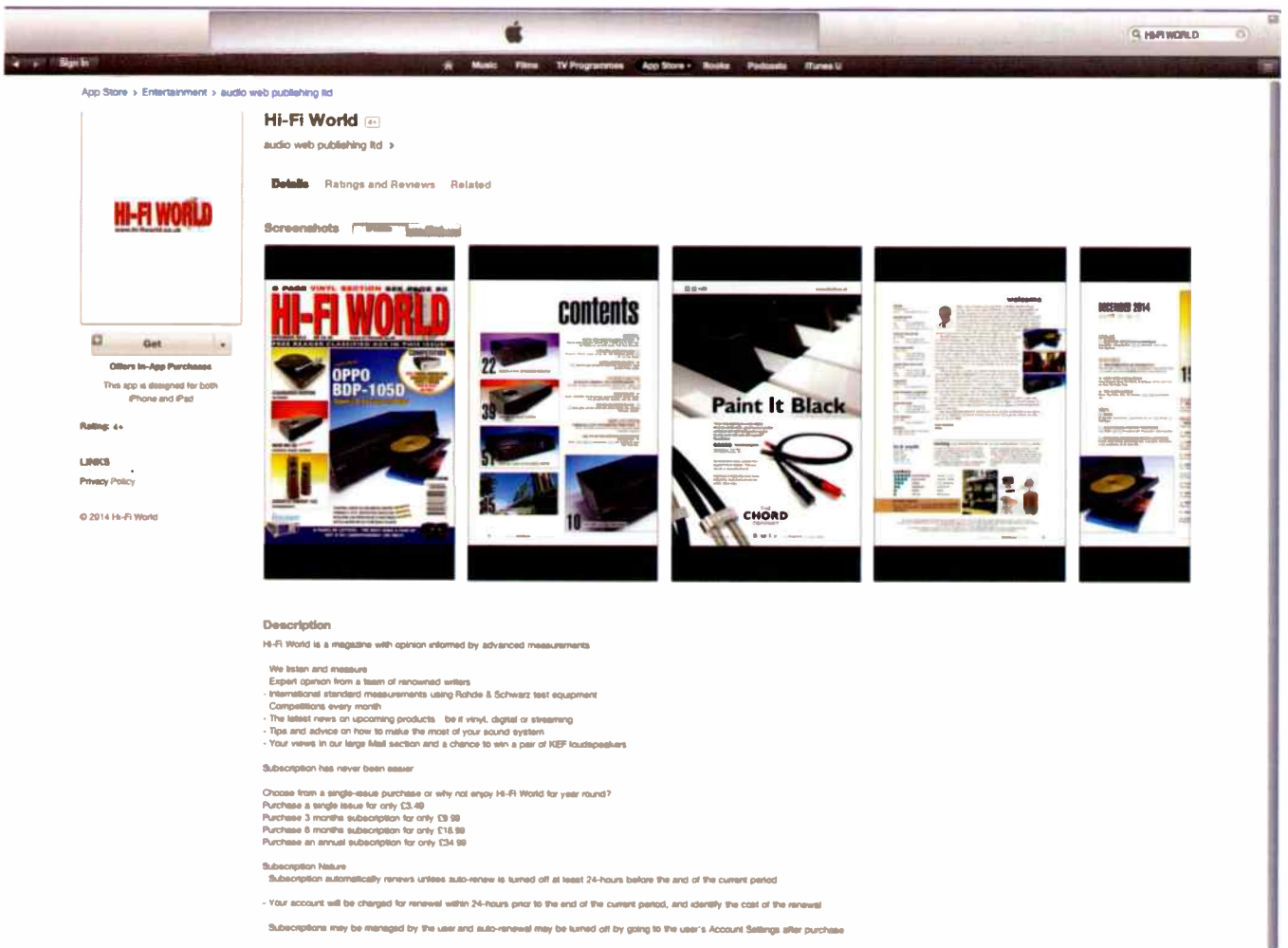


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"It takes the digital out of digital, in effect, helping restore sanity in the listening process"



Noel Keywood

I'm quite convinced CD can never sound any better than bad, because it is so fundamentally Neanderthal. But then something comes along that junks the notion before my eyes, or should I say ears.

Specifically, I am thinking about Oppo's BDP-105D Universal silver disc player/DAC that struck me as a remarkable sounding product: even CDs I know that sound grungy came out sounding better, as if they'd just been washed in Omo (I should probably say Ecover to better disguise my age, but what the heck!).

The Oppo seemed to magically clean CD before me. I must not over-exaggerate: it made bad CD sound better, more aurally palatable. It honed good CD, teasing out finesse in the sound, making it generally more couth and believable.

I was grateful, but also a little surprised. CD is an old digital system whose limitations can hardly be altered, such is the nature of digital. It has the benefit of being digitally defined, but the drawback of being a rigid process. There's seemingly little latitude for change, meaning improvement.

But over the years CD has been improved by a number of clever ruses. The first was the addition of noise to the digital signal. This at first seems a bizarre idea, because digital is meant to shrug off noise in the transmission channel. But then someone discovered that noise actually improved digital by randomising the zero crossing point of the pulses so they averaged out better.

I have never heard dithered-digital sound better than raw, undithered-digital, but it may well be so; it isn't always easy to run meaningful comparisons in real life. Certainly, dither works under measurement. If I apply a small

amount of dither in our analyser's signal generator distortion falls.

There are two mechanisms that did improve CD before my eyes and ears - one was AV and the other the ESS Sabre32 DAC that is now appearing everywhere. Let me explain.

First, the slightly peculiar idea that AV improves CD. Spinning CD through AV receivers with Dolby surround-sound processing switched on removes out-of-phase information from the front channels and sends it to the rears, as a form of ambience. What I found was that by clearing the front channels it removed what often sounded like hash, improving clarity. It worked only with CDs having out-of-phase information in them and, although intriguing, it still left many CDs sounding graunchy; distortion had not been tackled, nor noise or jitter.

What ESS claim in their technical white papers on the Sabre32 DAC family is that distortion, noise and jitter are all reduced. The Sabre series DACs measure much better than all others and - most importantly - they sound better than all that has gone before. Others around the world agree it seems: Sabres are appearing everywhere.

ESS claim their DAC is all about removing noise and here the subject gets subjectively interesting. It can get a little technically dense, but I'll keep it simple.

The noise a digital system generates is usually repetitive, not correlated to the music and inharmonic to our ear. Put all these factors together and you come up with a sound that we easily detect as weird because it is not within our everyday experience, sensually rather unpleasant, and in its acoustic patterning at odds with the music apparently producing it. It's just unfortunate for digital that we

readily detect sharp, irregular sounds and are upset by inharmonic ones. Digital noise has strong high frequency content and the ear is most sensitive around 7kHz, so it gets at us where we are most sensitive and acute.

ESS talk about repetitive noise patterns, how they catch our attention and are unwanted. I have curious experience of this: back in 1984 I bought a Hewlett Packard HP3561A audio analyser and, after reading its vast manuals, found it had a very interesting gizmo on board, what HP called a "pseudo-random noise generator".

I've been using it, and successors, ever since and believe me, this form of digitally generated repetitive noise drives you mad. It even has the peculiar property of getting inside the head and having some form of short-term cognition-changing effect; my hearing goes "funny" for a short time afterward, my brain seemingly a bit scrambled.

I've never thought too much about this, but now I strongly suspect that what we hear in CD that upsets us is this form of noise, just as ESS state. It is weird, nasty - and drives you nuts!

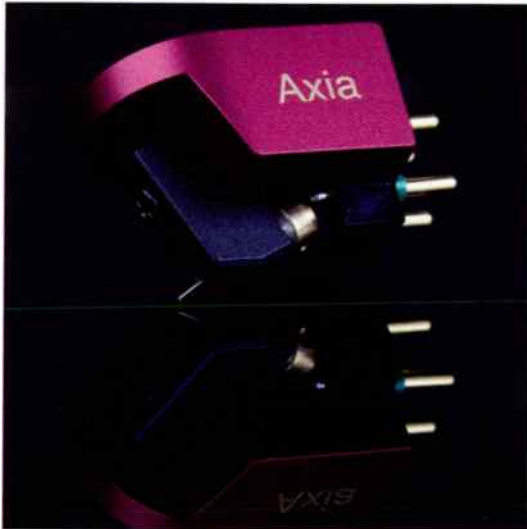
ESS say their Sabre32 DACs remove the repetitive nature of digital noise, as well as lower its level. It takes the digital out of digital, in effect, helping restore sanity in the listening process.

This then is my take on what is going on with CD at present. I never thought it could be processed so deeply and cleverly to make it sound better, but my ears tell me it can be done and it has been done. You can't make a sow's purse out of a pig's ear, so we have to leave 16bit behind. But it can be improved by some very clever digital processing schemes, and this is what is happening with CD today. ●

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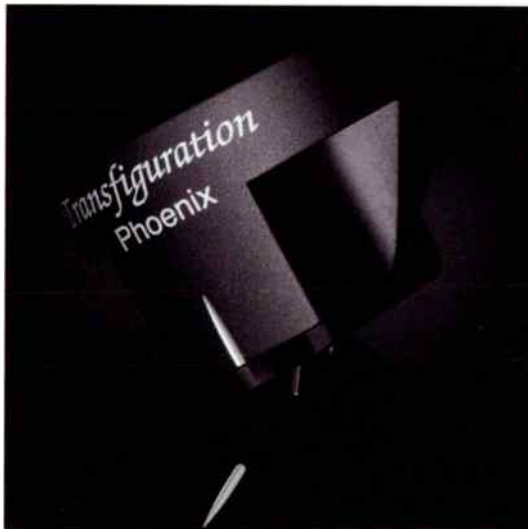
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"What makes a cult artist? It's a fine line that has no rhyme or reason"



Paul Rigby

One of my journalistic colleagues recently wrote a feature for a well-known music magazine. It was one of those list-type articles around a central theme. In this case, it was a batch of debut albums that, unfortunately for the artists involved, also became their last, largely shifting those albums into the 'obscure' category or, if they were lucky, as part of the cult phenomenon.

Coincidentally, at the same time, I had been looking through a batch of new CD releases from a selection of respected labels (i.e. Charly and Repertoire plus smaller outfits such as Madfish and Retroworld) and that cult tag cropped up in my head.

Retroworld offered a couple of live blues workouts from Freddie King and Albert King while Charly presented a new greatest hits package from the Small Faces.

Well-known names but hardly cult artists. Even the interesting new compilation of songs called 'Alice In Wonderland: The Great Lost Southern Popsike Trip' including tracks from obscure bands like The Jerms, The Rugbys and Half A World Away, provided a varied batch - but cult artists they were not.

They offered rare songs for the collector but nothing in the cultish realm.

What makes a cult artist? It's a fine line that seems, on the face of it, to have no rhyme or reason.

To be a cult band or artist, the first priority is to have enough fans out there that actually care and are active in their enthusiasm.

You can produce great music, have sold five albums limited to 100 copies each, have lived on nothing but lemonade and porridge, occupy a cave in South Wales and have married a small lizard called Kevin but, if no-one is actually bothered about all of that,

then you are not a 'cult' favourite.

Next? It helps if you were any good. Of course, you can be so bad that it hurts.

That will cause a stir and interest for the wrong reasons - but if you were innovative and ahead of your time, a great group but you fell through the cracks and were not picked up by a record label, were on the verge of stardom but the band died in a plane crash, was about to hit stardom but the lead singer hit the bottle and the group split up - or even all of the above, then you certainly qualify for absolute cult status.

Finally? Then there is a suite of almost indefinable qualities that prove essential to cement that longed-for cult status.

Let's return to my new batch of CDs to seek specific examples. They include new CD packs from The 13th Floor Elevators ('Live Evolution Lost'; Charly), Gong ('I See You'; Madfish) and Black Widow ('Sacrifice'; Repertoire).

Black Widow were a doom-laden prog/rock act with Black Sabbath overtones. This new reissue features the original album 'Sacrifice' from 1970 plus a remastered version "with interludes" and a DVD.

Black Widow were noted for their satanic tendencies, arriving on stage with fetishist gear and inverted crosses while the band were not averse to laying a naked girl on a sacrificial altar on stage and 'sacrificing' her there and then with a very large sword, complete with ear-piercing screams and lots of fake blood. They never made it but, to be honest, they should have, remaining one of rock's big question marks.

The new 2CD set featuring The 13th Floor Elevators, 'Live Evolution Lost' features the first release of the complete performance from

a legendary set at Houston Music Theater, 16 February 1967.

The Elevators were psychedelia pioneers that combined garage rock and were led by feral vocalist and professional outsider Roky Erickson.

The band were soaked in marijuana and, more than that, LSD and then speed. They would often be under the influence of drugs during live gigs.

You can imagine what that was like. Erickson was eventually marched in front of a judge, pleaded insanity and was committed to a mental asylum.

After trying to escape several times he was committed to an asylum for the criminally insane. Meanwhile, another band member was shot by his wife. Fun times.

Gong, fronted by ex-Soft Machine man Daevid Allen, were and still are a vast collective of musicians that come and go with the tide, along with the band's style which has moved between drug-infused hippy culture all the way to obscure jazz fusion and everything in-between.

Wacky, weird, mystical, strange, insightful, magical and even other-worldly. That's Gong. A new CD (quite possibly the band's last), called 'I See You', is out now.

You can see that the cult band has adopted a persona, a style, a... something. Something that sets them apart from the rest or, even if they copy others, the cult band does it better or to more extreme levels.

Current cult artists are always worth watching and listening to. They tend to take music out of the regular loop and send it spinning into strange and unusual directions.

Often, they are prescient about the future direction of their art so sometimes serve as an entertaining, if rather unstable, glance into a musical future. ●



Xtension 9 SuperPack

The Xtension 9 SuperPack from Pro-Ject Audio Systems represents one of the finest high-end turntable packages available today. Drawing inspiration from Pro-Ject's first ever 'money-no-option' turntable, the Xtension 12, this streamlined version boasts advanced technologies and phenomenal value for money.

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The Xtension 9 SuperPack's motor efficiency is improved by the built-in speed control module, and the whole package is finished off by the stunning 9CC Evolution Tonearm and pre-fitted Ortofon Quintet Black.

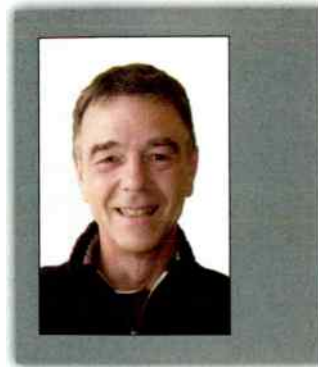
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“ ... that I found myself not playing music for pleasure anywhere near as much as usual.”



Tony Bolton

One of the great pleasures of this job is exploring just how good sound reproduction can get and the myriad of different ways that we have found of improving different aspects of it. Unfortunately there is also the drawback that when something that is spectacularly good comes along, there is the inevitable return to normality afterwards and getting used to that product not being in situ.

Now, I am normally pretty good at readjusting my ears to how my systems normally sound, even after some quite substantial upgrades have passed through my hands. A case in point being the Ortofon Anna cartridge that I reviewed a year or two back. It out-performed every cartridge that I have had in the house by quite a noticeable amount, but I still found that within a week or so of its departure my ears had readjusted and normal listening practice had resumed.

Occasionally, the change is so substantial that there is no going back, and regular readers may well recall that earlier this year I found that I couldn't live with the sound of my upstairs system with the Isotek Sigmus G2 back in place and ended up replacing it with the new EVO 3 version.

Well, since then I have had the same problem twice over. The first occasion being caused by Isotek again, this time with the EVO 3 Titan. Try as I might over the weeks following its departure from Bolton Towers I was still dissatisfied with the sound from the downstairs system. I found that I was missing the bottom end weight and speed, the extra mid band definition and the whole layer of musical magic that the EVO 3 unit imparted to the sound of this system.

I then compounded the problem

by reviewing the Tellurium Q Black Diamond speaker cable. Up to this point I had not found any cable over the last decade that had outperformed the Philosophy Cables loom that had been in situ. Until now.

Again, I tried living without it but found that I was just missing so many aspects of the sound that the Tellurium Q cables brought out in the system that I found myself not playing music for pleasure anywhere near as much as usual.

After several months of this niggling 'something isn't quite right' feeling, I finally accepted the inevitable and over the last few weeks I am pleased to say that there have been two upgrades to the downstairs system. The Philosophy loom has been replaced with Tellurium Q Black Diamond speaker cable and the Isotek Titan that feeds power to the entire set up has been upgraded to EVO 3 specification. The result has been a spectacular improvement in the performance of the setup and I am back to enjoying the music for the music's sake, rather than sitting here thinking 'that was very nice but...'

There are also a few other areas of the sound of my systems that are going to be adjusted over the Christmas holidays. You may remember that I brought my Linn Ittok LVV arm out of semi retirement and refitted it to the Sondek some months ago. In the meantime the SME M2-9R that had been gracing the Sondek was fitted to the Clearaudio Master Solution. This arrangement has proven most useful, since it has suited me recently to have an arm on that deck that had easily interchangeable headshells, both from the professional point of view and also allowing me to have a play with various older cartridges that have been wandering through my world of

late.

It has also been interesting getting to know the Ittok again, since the Sondek has altered somewhat since it was last in use. The LP12 now boasts the Funk Firm K Drive DC power supply and motor, as well as the Vinyl Passion subchassis. The top plate is also an after-market edition, being the Khan from Tiger Paw.

All of this adds up to a deck that has the well known LP12 bass bloom removed but maintains the deck's ability to play a merry tune. What it has also shown up is the upper mid-band glare that is a known aspect of the Ittok sound, and I am finding this increasingly difficult to live with. Especially since the bass is so much flatter and cleaner, it just throws the upper mid issues into greater prominence.

I have my suspicions that the internal wiring may be, at least partially, responsible for this, since there was an improvement in the tonal balance of the sound when I fitted the LW-6N headshell cables from Ortofon. However since there is no money currently available for a rewire and I am missing the ability to change cartridges and headshells easily on that system, I am planning to put the Ittok back in its box for a while and put the SME M2-9R back onto the LP12.

Apart from practical considerations, I am finding that I really do prefer the sound of it to the Ittok. It is less demanding of my attention and seems to take more of a background role in the sonic presentation, rather than stamping its mark on things.

I am pretty sure that this will restore my audio equilibrium and allow me to get on with the all-important task of enjoying the music, rather than being aware of the sound the system and how it is affecting the presentation of the music. ●



MAYHEM

Grand Acceleration of War
Back On Black

Ah, black metal. Fascinated by the dark side of life and the evil in and around it. Lovely chaps, though. Take Euronymous (actually, easier to say than his real name, Oyster Aarseth) who was the guitarist from that jaunty outfit, Neobutcher. He decided to form his own band, Mayhem, back in 1985, the very first black metal outfit in Norway. Creating a serious cultural impact in the meantime. The original vocalist Dead is, oddly enough, dead. He committed suicide. He shot himself in the head. Drummer Hellhammer confirmed the rumours about all drummers by making a necklace of his skull fragments. Euronymous meanwhile, was reported to have cooked and ate parts of Dead's brain.

I mean, you've gotta luv 'em, haven't you? But that's not all. Euronymous, standing in his underwear, as we are all wont to do on occasion, was stabbed to

death by the band's bass player. A guy called Count Grishnackh. The good Count was terribly jealous of Euronymous' evil reputation, apparently. When the Count was arrested, police found over 150kg of stolen dynamite in his house along with a plan to blow up a local church. Meanwhile, Hellhammer put together a new line-up.

Which is where this album, laden down with traumatic and tragic history, comes in.

Even with the murder, cannibalism, morbid behaviour and potential terrorist acts, this album is a cracking black metal LP and shows why, despite the blood and gore, Mayhem are still one of the best black metal bands around (until the next wave or death descends, possibly).

An elaborate, conceptual piece, it is both challenging and to be listened to as a single piece of work. If black metal fans give this LP time and attention, they will be greatly rewarded.

VINYL



MARK JENKINS

Analog Archives
Wah Wah

He may have been the first musician in the world to issue a CD of music created using the iPad but Jenkins' creative CV has enough history, depth and gravitas to overcome such modern, technological frippery. If you visit his site (www.markjenkinsmusic.com), you will see that he was a member of the experimental UK outfit White Noise, teamed up with crazy man Arthur Brown and played with Can, Tangerine Dream, Gong and Van Der Graaf Generator.

This album was initially released in 1995 on Jenkins' own AMP label and is reissued here, on vinyl, for the first time. Well, I say 'this album' as only most of it has been reissued. There are two tracks, 'Urizen' and 'Dancing About Architecture Part 1' ('Part 2' is present on the vinyl) which were left off this vinyl issue because of their long length. The original CD, featuring the missing tracks, can still

be bought for around £10, however.

Anyone interested in classic instrumental electronica will find something of interest on this LP. Both 'Where No Shadows Fall' and 'Ohrwurm' scream Tangerine Dream while 'Heart of Darkness' adds a measure of guitar grit while 'Sundown' sounds like the keyboard break on a first-generation Genesis track.

On the flip side, the music takes a rather more Jean-Michel Jarre direction in terms of the song structure and even down to the percussive choices. I must admit disliking 'Time's Winged Chariot' for no other reason than it includes a vocoder. I think the pop blathering of the likes of Cher spoiled the vocoder for me for good. My own personal neurosis aside, however, this is an excellent album of vintage analogue noises that will provide many a nostalgic hour for fans of prog and electronica.

From Scandinavian death metal, murder and cannibalism to Scandinavian euro pop, all teeth and lures. Abba, often the subject of many a macho music fan's forbidden pleasures ("I'm into Motörhead, Black Sabbath, Metallica...and (cough) Abba.") produced perfect pop. In fact, with 'Dancing Queen', the group produced, in my opinion, the best pop single ever issued.

Universal Music/Polydor are the custodians of the Polar Music catalogue and have taken advantage of the 40th anniversary of the group to release all eight original ABBA albums, pressed on 180g vinyl inside a sturdy outer slipcase.

The set kicks off with 1973's 'Ring Ring' and 'Waterloo' (1974) and then moves on to 'Abba' (1975), 'Arrival' (1977), 'The Album' (1977), 'Voulez-Vous' (1979), 'Super Trouper' (1980) and 'The Visitors' (1981).

Familiar songs are plentiful and include 'Honey, Honey', 'Mamma Mia', 'SOS', 'Knowing Me, Knowing

You', 'Take A Chance On Me', 'The Name Of the Game', 'I Have A Dream', 'Chiquitita', 'Super Trouper' and 'The Winner Takes It All'.

Why, though, is there no extra vinyl disc of rarities to duplicate the CD 'Albums' box set (to be had at around a third of the price)? There was a rarities disc included within the 2010 vinyl box set which features that same album selection, after all.

Apart from the standard eight albums, there are no rarities or extras within this particular set.

To my mind, this robs vinyl fans because anyone who yearns for these rarities will have no choice but to buy the CD box set. But then, maybe that was the plan all along, eh?

Teeth grinding irritation aside, though, this vinyl box set remains a joy to listen to - principally because there are so many hidden gems that sit in and around the gamut of pop classics.



ABBA

The Studio Albums Polar

Released this year, 'Northern Soul' is a movie that has been described as a new 'youth culture' film but is, in effect, a celebration of the music from the Northern Soul music genre and, thus, of interest to Northern Soul fans of any age.

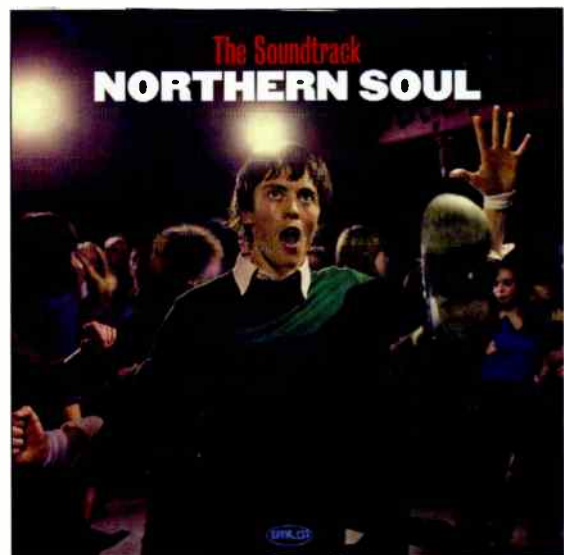
The physical version of the soundtrack, which features key tracks from the film, is generally available as a double CD and DVD (including interviews and extras) set but here we feature a limited edition vinyl set which features all of the music from the soundtrack disc that has been pressed on fourteen 7" singles and comes complete with a sixty-page hardback book edited by the film's director Elaine Constantine.

In terms of CD-based audio, what the CD pack gives you that this vinyl version does not is a selection of extra music from the Northern Soul genre selected by

Constantine. There are twenty-seven of these bonus tracks available on CD. For buyers of the 7" box set, you do receive one of these extra music tracks in the shape of Eddie Holman's 'I Surrender', which can be found on the B-side of the final disc in the box set: Tobi Legend's 'Time Will Pass You By' is on the A-side.

In terms of quantity, the CD version offers you more music and greater value for money but in terms of what the Northern Soul movement is all about then the 'soul' of the 'Northern Soul' soundtrack is this box set. This is where, after all, Northern Soul music originated, on stupidly rare 7" singles that have lay forgotten and largely ignored until discovered by rabidly keen Northern Soul fans.

As such this box set, which also includes picture sleeves featuring key scenes from the film, is a joy and an essential purchase for any fan of the genre.



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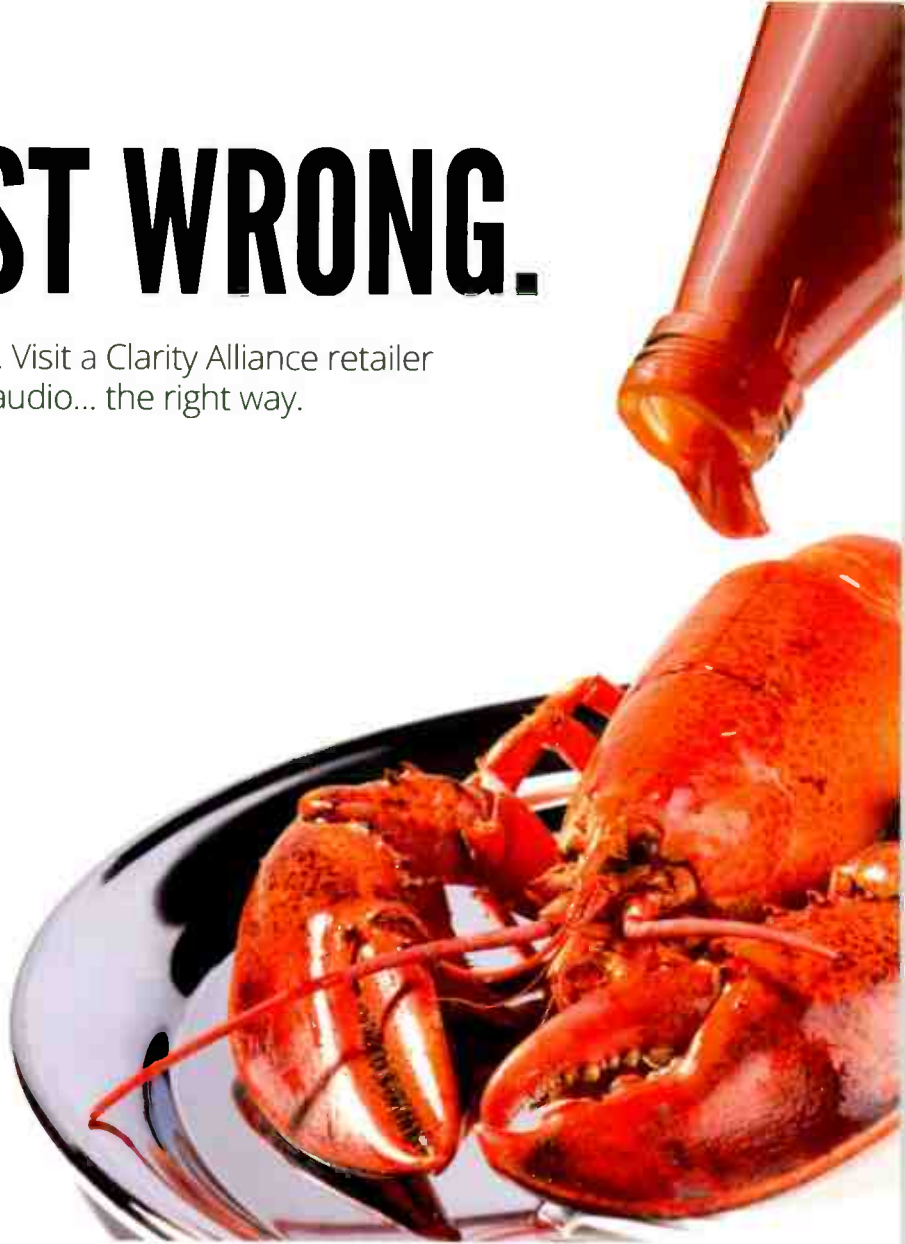
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TECHNICS SL-1210 BEARING UPGRADE 82
Noel Keywood fits an improved bearing from MCRU.

RENAISSANCE PHONOSTAGE 87
Tony Bolton listens to a new phono stage from Renaissance.

news

Yngwie Malmsteen's 'Fire & Ice' (1992) is too full of radio rock and hair metal but does feature baroque highlights. Electric Flag's 'A Long Time Comin'" (1968) is packed with classy soul-rock. Brimming with ideas and musical changes, this is a fun LP.

Moving towards blues-rock and Beth Hart's 'Live At Paradiso' (2005). The live setting is perfect for Hart's confessional songs with a much rawer delivery than her studio offerings.

Mudhoney's 'Piece of Cake' (1992), their major label debut, retains the stripped approach with a heavy punk attitude.

It took four years to complete 'Filthpig' (1992) but Ministry ended up with a monotonous noise and no power.

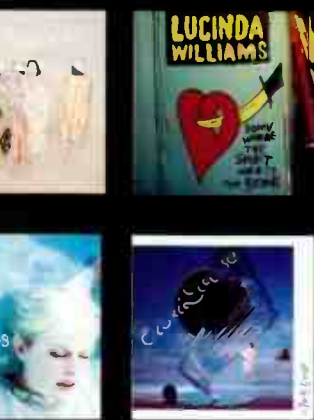
Korn's 'Follow The Leader' (1998) offered nothing new with steady songwriting but the band's sound was grindingly immersive and addictive.

Also look out for Wu-Tang Clan's and David Bowie's limited and numbered 'Iron Flag' and 'Peter and the Wolf' LPs respectively.

MUSIC ON VINYL

Couple of new jazz titles before we get to the hard stuff from MOV (www.musiconvinyl.com). The third studio meeting between Medeski, Martin & Wood plus guitarist John Scofield are tight enough to be a 'real band' on 'Juice'. Mixing covers and originals it offers plenty of invention. Also look out for 'Diggin' Deeper 2', the roots of acid jazz.

Onto rock now and Dream Theater's 'Metropolis Pt.2: Scenes From A Memory' (1999) who produced a concept album 'suite' of prog - worthy of extended listening.



GIRLS ON WAX

Tori Amos' 'Live in Switzerland 1991 & 1992' (Let Them Eat Vinyl; www.letthemeatvinyl.com) is a new double album featuring two separate performances at the Montreux Jazz Festival. The songs are generally taken from her debut, 'Little Earthquake'.

Also new is Rachael Dadd's 'We Resonate' (Talitres; www.talitres.com) the folkie's fourth LP featuring a host of guests and songs that reflect human observation.

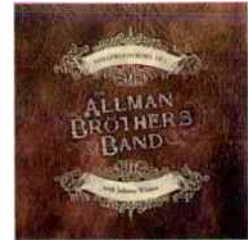
'Down Where The Spirit Meets the Bone' is Lucinda Williams new album, the first on her own label (www.lucindawilliams.com) enjoying sweet and sour blues. Not great but it is compelling.

Also look out for the Mediæval Bæbes' 'Of Kings An Angels' (www.mediaevalbaebes.com) a Christmas carol collection; folkie Olof Arnalds' 'Palme' (One Little Indian; www.indian.co.uk) that sprinkles electronics on stripped arrangements plus Amy Kohn's Plexilusso (Palpebre; www.amykohn.com) orchestral pop that has an open, Kate Bush-like sense of clarity and 'anything goes' delivery.

ROCK QUARTET

Four rock LPs begin with Franz Ferdinand's 'Live 2014' (Let Them Eat Vinyl), a double album gatefold of their 14 March performance at London's Roundhouse from this year's tour supporting their fourth album, 'Right Thoughts, Right Words, Right Action',

Also look out for The Allman Brothers Band, with Johnny Winter, and a recording of 'Hollywood Bowl 1972' a FM broadcast (Let Them Eat Vinyl); Orange Goblin's 'Back From The Abyss' (Back On Black, www.backonblack.com) a new heavy metal 2LP set that continues the band's upward curve, offering excellent riffs and a diverse set and 'Looking for Johnny' a Johnny Thunders 2LP, limited red vinyl edition covering his entire career, including rarities.






MOBILE FIDELITY

Two choice items from the American audiophile outfit (www.mofi.com), The Allman Brothers Band's 'Brothers and Sisters' (1973) was a lean, chart-topping LP featuring a re-jigged lineup and crowd pleasing songs.

Bob Dylan's self-titled, Woody Guthrie-inspired debut out-classed the competition but was, in itself, out-classed by Dylan's later releases.

...AND FINALLY

DJ Marcelle's 'Meets Most Soulmates At Faust Studio Deejay Laboratory' (Klangbad; www.klangbad.de) packing in a wealth of rarities over four sides includes 12", EP and 7" tracks including the likes of Muslimgauze Klara Lewis.

Erik Honore's 'Heliographs' (Hubro; www.hubromusic.com) electro-centric ambient, ethereal jazz. A grooved up David Sylvian feel.

Speaking of ambient, John Hassell & Brian Eno's 'Fourth World Vol. I: Possible Musics' (1980; Glitterbeat, glitterbeat.com) is a brilliant Hassell solo album, featuring African and Middle Eastern rhythms with Eno production touches. Tribal techno.

Jozef Van Wissem's 'It Is Time For You To Return' (Crammed Discs, www.crammed.be) offers avant-garde classicism, hypnotic and melodic offering that rare thing: experimental lute music.

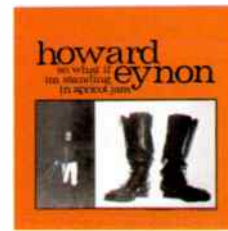
The one and only album from Howard Eynon, 'So What If I'm Standing In Apricot Jam' (1974; Earth) was a bizarre, acid-folk gem. Not of this world...well, not of any contemporary scene. Has a Kevin Ayers feel to it.

New from Thurston Moore is 'The Best Day' (Matador; www.matador.com), unusually song friendly with guitar deconstructions. It reminds me of his solo debut, 'Psychic Hearts'.

Parker Millsap's second, self-titled album (Oklahoma; www.parkermillsap.com) features poetic ballads and novelistic rockers fronted by the main man's vocal and his backing band's folk-rock jump.

Frontman to My Chemical Romance, Gerard Way's new solo outing, 'Hesitant Alien' (Reprise; reprise.com) reflects his emo art punk approach while tagging past artists like David Bowie.

Finally, former Spaceman 3 drummer, Sterling Roswell's new LP 'The Call Of The Cosmos' (Fire, www.firerecords.com) offers textured, experimental ambient pieces combined with vintage psychedelia. Space rock for 2015.



Technics tune

Noel Keywood digs out his toolkit and replaces the main bearing in a Technics SL-1210 Mk2 Direct Drive turntable with a Mike New custom bearing supplied by MCRU.



At left the original Technics bearing, at right its replacement.

As the days of the turntable came to an end, through the 1980s, Technics produced one of the slickest Direct Drive models ever, the SL-1210 Mk2. It is a monument to Japanese technology, that of the servo-feedback DC motor, but also a product cleverly pared down, Japanese fashion, to bare bones minima to be inexpensive. There's a lot on it that can be improved, and this includes the main bearing, say MCRU. They sent us an upgraded bearing developed and machined in Australia by Mike New, price £450. Would it improve the sound, I wondered?

I run a Garrard 401 with improved main bearing that works superbly and am fascinated by the motor of our in-house Technics SL-1210 Mk2, with Timestep Electronics improved power supply and internal electronic parts, plus SME309 arm. So the idea of fitting a new bearing appealed to me. The Technics measures well and sounds very concise in standard form, but it lacks the Garrard's bass and pace. It offers a more academic view of music, I could say - and flatter



Remove the platter by lifting it slightly, using the finger holes, then giving the bearing a light tap to release it from the taper; I use a screwdriver handle here. This is a standard method for releasing an engineering taper. Once freed, the platter lifts off. Revealed is a circular black plastic cover, with cooling vents, held by five small crosshead screws, that must be removed. The cover then lifts off to reveal the circuit board/motor assembly.



▲ The circuit board has three white, multi-pin connector blocks. These must be disconnected, preferably by easing them apart with a small jewellers' screwdriver, rather than pulling on the wires. There are no spring clips; they are a simple friction fit and slide apart.



▲ Three screws holding the board to the chassis must be removed, then another three holding the motor assembly down to the chassis; they pass through the bearing assembly and hold it in place too.



▲ With board and motor screws removed the combined board/motor assembly can be lifted out. This then reveals the main bearing that is to be replaced.



▲ The main bearing is free to be lifted out. The Mike New bearing then drops into its place. It must be aligned with tapped lugs in the chassis, using the long motor screws, before the board/motor assembly is replaced.



◀ Protruding wires must be snipped flush on the underside of the board.



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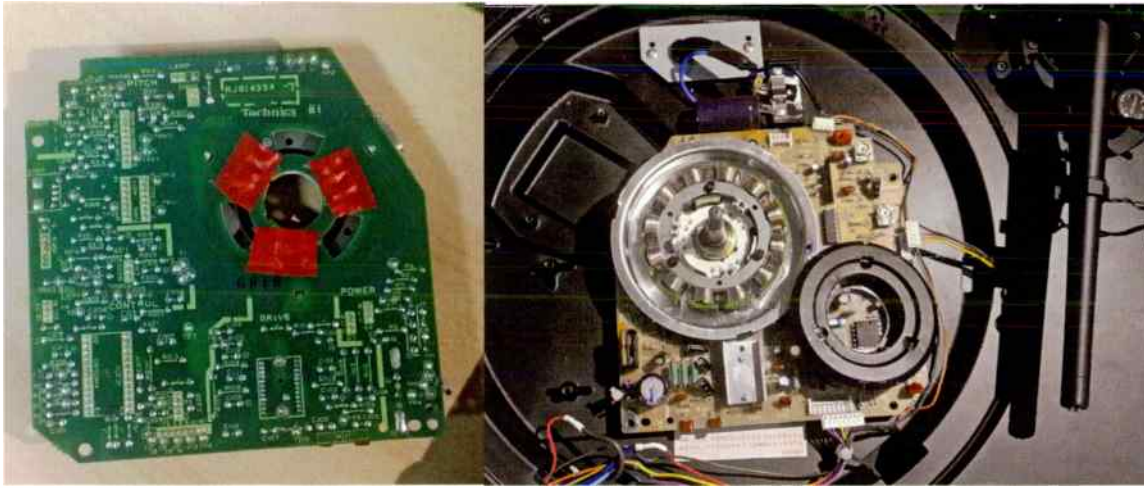
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I placed red PVC electrical tape over the snipped wire ends to ensure a short would not occur (left). A black plastic motor protection cover must be removed - see right. It clips out, to reveal the drive coils beneath. Then the vented cover and platter can be replaced, completing the job.

"It brought more solidity and stability to singers and instruments"

sound staging. Would this change I wondered?

The Mike New bearing uses a substantial machined brass housing, where the original Technics bearing was built into a light Zamak casting - see our pictures. Extended lugs on the Mike New bearing locate the coils to the brass housing and through to the chassis. A 12.8mm shaft, wider than the original 7.1mm Technics shaft, sits in sintered bronze oil absorbent bearing, atop an 8mm Silicon Carbide ball sitting on a thrust pad in an oil bath. The shaft is 3mm longer than the original, to better accept record clamps. Where the Technics shaft was chrome plated and polished, the new shaft has a dull grey finish, a tad disappointing.

Replacing the bearing within a servo-motor seemed potentially challenging to me, but the instructions were clear enough and the task fairly straightforward - I encountered no problems; it was a one hour swap over. But it's probably best if you have some prior experience in disassembling electronic parts, because the motor is fixed to a circuit board that carries the drive electronics.

Our pictures show and explain the sequence. Tools needed are crosshead screwdrivers and a small wire cutter to trim some protruding wires on the circuit board. Only the top of the SL-1210 Mk2 is accessed;

all the parts lie beneath the platter. For a job like this it is always best to have the right tools, obtainable from Maplins at low cost, plus a clean and open work surface and good lighting.

SOUND QUALITY

The bearing did slightly improve overall depth perspectives, bringing a smoother feel to images on the sound stage, and they were set against a darker background. It also brought more solidity and stability to singers and instruments, firming

the sound up to make everything a little more lifelike. The rock steady pitch stability of our Technics remained, so nothing was lost in this upgrade. In all then, the new bearing brought a worthwhile improvement.

CONCLUSION

This was a nice little upgrade I felt. The new bearing is easy enough to fit, providing you have some experience with circuit board connectors and such like, and you can have the job finished within one hour or so. The improvement in sound quality does move the Technics SL-1210 Mk2 ahead in the sound quality stakes too. What I love about this turntable is its sheer practicality, at a sensible price. Ours now sounds even better with the Mike New bearing.

MEASURED PERFORMANCE

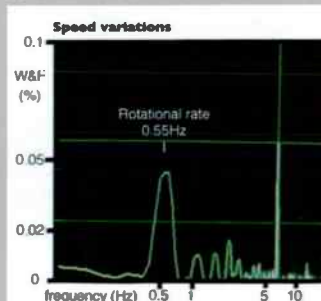
Wow and flutter rose slightly with this bearing. The Technics SL-1210 Mk2 consistently measures 0.06% IEC/DIN total weighted wow and flutter. With the Mike New bearing, this rose to 0.1%. Our spectrum analyser showed a very low value of basic rate wow at 0.55Hz (33rpm), as usual with the Technics, but a flutter peak at 7Hz that I have not seen before.

In absolute terms the degradation is not large and I suspect subjectively of little consequence. You have to bear in mind that most belt drives measure around 0.2% IEC/DIN weighted wow and flutter. This makes the Technics look good by market norms, especially at the price - and degradation from the Mike New bearing is minor in this context.

Also, a discrete 7Hz flutter peak seems unlikely to come from a bearing;

there is no mechanism that could generate such an effect. This suggests that stronger mechanical coupling between bearing/motor/chassis may be more strongly transmitting a discrete vibration. Is this the flutter talked about with Direct Drive, making its presence known due to a more rigid structure?

SPEED VARIATIONS



TECHNICS SL-1200/1210 BEARING UPGRADE £450



EXCELLENT - extremely capable

VERDICT

A substantial but neat upgrade that improves sound quality.

FOR

- easy to fit
- well made
- improves sound

AGAINST

- shaft not chrome plated
- adds a little flutter

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Sonic rebirth

Tony Bolton listens to a new phono stage, the RP-02, from British manufacturer Renaissance Audio.

Although they have been making hi-fi products since 2000, Renaissance Amplification was started in 1996. However, other business interests took precedence and the hi-fi range was temporarily put to one side. Over the last 14 years the range of products has grown to include amplifiers, a DAC, CD transport and the RP-01 phono stage which is a valve driven unit.

It has now been joined in the range by the £750 RP-02 phono stage, under review here, which has its circuitry very much in the solid-state camp.

The casework is A5 sized, measuring 205 x 60 x 153mm and is made of aluminium. It comes in either a black or red/pink paint finish, which is well executed. The front is ornamented only by the power switch and a blue power indicator LED. The back contains some quite substantial phono sockets for the input and output signal. Alongside these are jumpers to choose between Moving Magnet and Moving Coil settings. Mains power is delivered via an IEC socket on the left.

It is both a compact and lightweight unit and may well need

blu-taking to a shelf if stiff or heavy interconnects are used. The Atlas Elektra interconnects that I use are of medium weight but still pulled on the unit a little.

The inside contains a circuit with solid aluminium electrolytic capacitors plus PPS film caps - and all components are surface mounted except for the PSU. This is a low energy unit fed from a 3VA toroidal transformer with a triple regulated first stage, a shunt regulator for a

with a wander through the classical section of my record collection. This mid '50s recording of 'Eine Kleine Nachtmusik' is one that has grown on me over the years. I am not the world's greatest Klemperer fan, finding him a bit staid and mannered in a lot of his recordings, for my taste at least, but in this version he seems to have been a little less "considered" in his pacing and style of conducting and produced a lively but still thoughtful recording of this

"It had real energy to it and propelled the music along in a truly irresistible manner."

final regulation and double regulation otherwise.

The first gain stage has a 50 Ohm impedance for MC cartridges (alternative values can be fitted at the factory) the second stage uses a LM4562 op-amp and incorporates the RIAA stage and a 47k Ohm impedance.

SOUND QUALITY

After a suitably long running in period I started off my listening

famous piece.

The RP-02 phono stage handled it well, although I would have preferred a mono/stereo switch to have been fitted to eliminate some of the surface noise that did intrude into the sound a little. It wasn't bad, but could have been better with such a fitment.

Tonally I felt that the balance was pretty good. The usual trap of a poor violin sound was circumnavigated quite easily. I did feel that the RP-02



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Epic power

Tony Bolton listens to a mains lead and speaker cable from the Chord Company.

At a quick glance, most people would decide that the C-Power mains cable from the Chord Company was just another mains lead. In doing so they would make a mistake because this is a case where looks are truly deceptive. Inside the lead are 3 x 14 AWG high purity multi-strand copper conductors laid out in a parallel configuration. There is a floating shield and then a foil shield over wrapped around the PVC insulation, which is covered by what is described as a high density vibration damping outer jacket.

The plugs are of the over-moulded design which has two claimed advantages, the first being that the conductors are held firmly in place by the moulding process so are not subject to mechanical noise, and secondly, the connections to the pins are made with a high pressure crimping technique so there are no screw connections to work loose.

In practice this results in a visually unimpressive but sonically satisfying cable that is a huge leap forward performance-wise over the 'give away' mains leads that it so closely resembles.

Compared to these leads I found that there was a perception of a considerably increased bandwidth, deeper and more solid bass sound and a smoother, more extended

treble.

The C-Power gave good results when powering budget integrated amplifiers but struggled somewhat with more power hungry designs, leaving a feeling of compression to the bass. It worked very well when plugged into source components.

As an upgrade to the basic supplied lead it is worth its price in any system, and if used with low power source components is really in its element.

At the other end of the cable loom I have also listened to Chord's Epic twin speaker cable. This lead falls in to the Chord range at a point where it benefits from 'trickle down' technology from some of the Company's more expensive cables. In this case the shielding comes from the Signature speaker cable and the conductors are from the well known

Odyssey model.

These are two 12 AWG 19 strand silver-plated oxygen free copper aligned in a twisted pair configuration. The insulation is PTFE. They are surrounded by PVC which supports the dual layer, high density braid and over lapped foil shielding.

It can be supplied unterminated or with Chord's own 24 karat gold plated banana plugs, gold plated copper spade connectors or BFA Camcon connectors.

After the usual burn in period on my Blue Horizon Pro-Burn I found the sound had opened up and stabilised into a very smooth and detailed presentation of music. I found the bass to be excellent, with very good definition as to where a note stopped and started. This having the effect of giving the rhythm quite a sprightly step.

Vocalists were well projected with a lot of small detailing available to my ears that I would normally expect to have to pay rather more to hear with this degree of effortlessness.

The treble was very well extended, again with small detail such as the shimmer at the end of the decay of a cymbal being very well described.

I liked this cable. It made music sound very coherent and enjoyable, with an openness and vigour that I don't normally expect at this price point.



CHORD COMPANY C-POWER MAINS CABLE £50 1.5M



OUTSTANDING - amongst the best.

VERDICT

Excellent value for money mains lead. At its best with source components or budget amplification.

FOR

- opens up layers of sound
- good bass
- smooth treble

AGAINST

- nothing at the price
- looks like a normal cheap mains lead

CHORD COMPANY EPIC TWIN SPEAKER CABLE £45 PER M



OUTSTANDING - amongst the best.

VERDICT

A classy speaker cable that can punch well above its price point.

FOR

- fast and lucid bass
- good detailing
- focussed imaging

AGAINST

- nothing at the price

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 Hi Fi from, B&W Densen, Dynavector Cartridges, Dynavector Amplifiers, Isoblu, Naim, Neat Acoustics, Piega, Quadraspire, Rega, Revolver, Shahinian, Totem, Well Tempered Turntables, Zu Loudspeakers. Quality Hi Fi is not plug and play. We deliver and install all systems. Tuesday to Saturday 10.00am to 5.30pm Thursday till 8pm

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 Tel: 01922 457926
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clive@soundcinergy.co.uk
 Black Rhodium, Chord Co, Exposure, Heed, Kudos, Lehmann, Linn, Marantz, Michell, Monitor Audio, Neat, Nordost, Okki Nokki, Ortofon, Project, REL, Roksan. Check our website for ex dem and secondhand bargains. Ample car parking. Tuesday-Saturday 10-5.30

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 Email: sales@15audio.co.uk
www.15audio.co.uk
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 For the best in quality hifi in West Yorkshire, representing Naim Audio, Rega, Sugden, Audio Research, VPI, Krell, Copland, Sonus Faber, Arcam, Nottingham Analogue, Roksan, Hutter, Martin Logan, Proac, PMC, M&K, Finite Elements, SME, Cardas, Kudos Loudspeakers and others. Open Tuesday-Saturday 9.30am to 5.30pm

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www.Ardhowenhifi.com
 07581 119913 Tom

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WANTED: AUDIO-
Technica aluminium alloy
S-shaped spare pipe
for AT1100 tonearm
(detachable) Tel: Toni 07971
953628

MARANTZ PM7001
amplifier, boxed, unused,
£170. Linn Index speakers
£70. Thorens TD166Mk2
turntable, very good
condition £150. Collect
only. QED DiscMaster
phono stage, boxed £40.
Sony TCK611S cassette
deck £55. Tel: 01708 457
691

SUGDEN MASTERCLASS
LA4 preamp, titanium,
October 2013, mint, boxed,
little use, £1750. Buyer
collects. Tel: 01482 853091

CAMBRIDGE AUDIO
640P phono stage, boxed,
extensively upgraded
by Fidelity Audio, (Bills
available) with Russ
Andrews AC12 power
supply, £135 ono. Tel: 01275
872 777 anytime (Bristol
area)

QUAD 909 power amp
for sale. Lots of power and
mellow sound. Very good
condition. £550 ono. Tel: Lee
01225 706 783 (Wilts)

FOR SALE: Bought Orbe. I
use SME Series IV-D hence
Technoarm 'A11' and VTA
adjuster for sale. New,
unused, £450. Tel: 01505
346 791 (Renfrewshire)

GRADO 325 Headphones
for sale. £90 spent on
bringing them up to spec
with new cable and earpads.
£100 ono. Tel: Andrew
01743 245888

I AM Selling my Bose 901
Series 2 speakers. I have
had speakers for 20 years.
The speakers have equaliser
and stands and spare
equaliser. Good condition.
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'Signature' CD player.
Black, unmarked, excellent
condition and sound,
remote, manual, boxed.
Digital & analogue out and
variable volume control.
Unused for 4 years. £275.
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847 (Littlehampton, West
Sussex)

RUSS ANDREWS one
metre high current
PowerKord £30. Also
Kimber Hero 0.5 metre
pair interconnect £50. Van
Den Hul The Wind speaker
cable, 5 metre pair £100
plus postage. Tel: 020 8590
8530

SENNHEISER HD650
headphones, unused, boxed,
£200 including P&P UK.
Sony TC-KE600S cassette
deck, lovely condition,
manual included. superb
recorder, £50 plus P&P. Tel:
Roy 07940 192 313

SUGDEN A21a Series 2
amplifier, glorious, £700.
Musical Fidelity M1 DAC
£150, V-Link £45. Linn Pekin
tuner £100. All unmarked.
Tel: John 01952 728 773
(Shropshire)

FOR SALE, pair of
Celestion SL700 speakers
and stands in excellent
condition £600 o.n.o.
Contact David 01758
614380.

AUDIO-PRO Ace
subwoofer B2-40. Active
unit, tuneable filters, gain
control. Complete with
user and service manuals.
Test certificate. Teak cabinet.
Very good condition. £100.
Tel: 01462 712 604 Email:
aebthepond
@btinternet.com

NAIM CREDO Speakers.
Beech. Very good condition.
£250. Can demonstrate.
Naim Flat Cap Power
Supply. Little used. £150.
07785 724 849. Oxfordshire

QUAD SYSTEM: 34 pre-
amp, 306 power, FM4
tuner. Quad stacking unit.
Very good condition.
Manuals, boxed. ESL 63s
electrostatics, brown. All
carefully used. £700 ono.
Can demonstrate. Email:
cobscolley
@btinternet.com.
(Staines, Middlesex area)

RUSS ANDREWS special
hybrid ultra purifier
block (£740) with mains
zapperator (£94) plus 8
Clarity mains modules
(£800) installed internally.
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- £885 collected £900
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Email: jukey39@yahoo.co.uk

FOR SALE: Lyngdorf
bi-amplified system. TDAI
2200 with integrated
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BW-1 woofers. Remote,
microphone, cables, boxes
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7714245995 Email:
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@hotmail.com.

AUDIO LAB 8000 P/C
Pre/Pwr Amp combi. Black
finish. incl. leads and manual
FWO £325. ono Pro-Ac
Studio 125 Speakers. Dark
wood Finish (Mahogany?)
incl QED Bi-Wire leads.
£315 ono. Arcam CD72
CD player incl. Remote and
manual. Silver finish £75.
ono Sony ST-SB 920 AM/FM
tuner. Incl. Manual. Black
finish £50. ono 020 8950
0658 OR 07831887601

SONUS FABER Concertino
speakers with Sonus Faber
Piano Black fluted stands
in excellent condition,
with original boxes
£570.00, Musical Fidelity
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cables, banana terminations,
£75, Arcam DVI 137 DVD
Player excellent condition
£200 Tel Coventry
02476 679165 or Email:
davidhirst244@o2.co.uk

RUSS ANDREWS HPI, PA1
Preamp, Headphone amp,
Poweramp Combo. 50wpc,
vgc. Fine neutral sound. Will
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collects, £300. (cost £1200)
for full details phone
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THE ULTIMATE Vintage
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Sony T-AE900 esprit pre
amp Sony T-A NR 1s
(pair) recently serviced
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order and used daily. Tel:
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lesliegriffiths@fastmail.fm

WANTED: SPENDOR A5
or S5e speakers. Must be in
good condition. Tel: 01277
219 639

CUSTOM DESIGN
wall mounted turntable support. Black metal frame. Toughened glass shelf. Complete with all fixings. In as new condition. Offers please Tel. 01293 524587 Mob. 07951596593 West Sussex

HEYBROOK SEXTET
speakers Rosewood excellent condition £350. No boxes therefore buyer collects. Project RPM4 turntable. Ortofon 510 cartridge vgc £110 Tel 01233 661556

RESONESSENCE INVICTA
dac, pre. & headphone amp. Plays SD cards. Outstanding Product Award and the same "genes" as HFV Product Of The Year Award. £500 of cables included. Mob. 07557093121 leithmike@hotmail.com

CYRUS PSX-R in black excellent condition with user instructions £165 ono Tel :01229 584509 Email - lindamarycott@btinternet.com

WANTED FAULTY or non working Quad 34 preamps. Contact Mike 01758 613790.

AUDIENCE ONE + stands desktop speakers £460. Monitor Audio Radius 90 speakers walnut £160. Cyrus CD Xt SE transport £270. Cyrus Dab 8 Dab/FM tuner £220. both black. All items in good condition. 07475037706 or Email: vicsowerbutts@hotmail.com (Basingstoke)

QUAD II Anniversary Amplifiers in Gold This is the pair reviewed by 'Stereophile.' £2,750 ovno. Full details via email to: womble0007@gmail.com or lan +44 (0)7545 624395

LIVING VOICE OBX R2 speakers, cherry finish, excellent condition, boxed £1,750. Chord Signature speaker cables pair 3 metres, plus 4x1 metre for OBX, plus jumpers £500. Buyer collects. Guildford. Tel: Tony 01483 427083.

WANTED ARM board to fit an Ariston RD80 cut for an SME tonearm, mint or near mint preferred, tel or text Steve 07710 581899

SPENDOR SPI speakers and stands £450. JPW Sonata speakers and stands £80. Shearpe Phase 2 Anniversary Amplifier £350. Arcam Alpha 2 amplifier £50. All ono. 01923 286897, Email: jonathan.aylett@yahoo.co.uk. Herts/Bucks.

NORTHWEST ANALOGUE Garrard 301 in slate plinth. Mint condition, SME 4 tonearm, boxed. M.B.L. 121 speakers, excellent. M.B.L. 7008 integrated amp, boxed, mint. Ring for details: 07770 772 647 (Wigan)

CLASS A amplifier power supply, self contained free standing unit, suits John Linsley Hood's 1969/1996 designs and similar amplifiers, best offer will be accepted, can post if needed. Tel:- 0207 499 8729.

NAIM CDS1 & CDP5 combination and remote. Excellent condition, 2 owners from new 1995. Cord Cobra DIN to Phone interconnect, boxed and original Naim cable. The original and some say the nearest to the vinyl sound. Upgrade forces reluctant sale. Asking price £1,200.00 o.n.o Contact nigelsach42@tiscali.co.uk or tel: 07917221033 Wirral/Merseyside, can deliver if local.

SUGDEN MASTERCLASS LA4 preamp, titanium, October 2013, mint, boxed, little use, £1750. Buyer collects. Tel: 01482 853091

TELLURIUM Q Graphite interconnects. 1 metre XLR in excellent condition complete with packaging. £350 ono: 01303863424 or Email: john.patrick.john@btinternet.com (Kent)

WANTED: SPENDOR A5 or S5e speakers. Must be in good condition. Tel: 01277 219 639

CLASSIC CONTACTS

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all these companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

GT AUDIO
(Graham Tricker, Bucks)
Classic tuners, radios and amplifiers restored, repaired.
Tel: 01895 833099
Mob: 07960 962579
www.gtaudio.com

TECHNICAL AND GENERAL
(East Sussex)
Turntable parts - wide range of spares and accessories, plus arms and cartridges. Tel: 01892 654534

CARTRIDGE MAN
(Len Gregory, London)
Specialist cartridge re-tipping service and repairs. High quality special cartridges. Tel: 020 8688 6565
Email: thecartridgeman@talktalk.net
www.thecartridgeman.com

Dr MARTIN BASTIN
(Shropshire) Garrard 301/401 restoration, renovation and service. Special plinths; rumble cures, etc. Tel: 01584 823446

CLASSIC NAKAMICHI
(Paul Wilkins, Worthing, West Sussex). Restore, Repair & Service Nakamichi Cassette Decks. Tel: 01903 695695 Email: paul@bowersandwilkins.co.uk www.bowersandwilkins.co.uk

ARKLESS ELECTRONICS
(Northumberland)
Specialist in repairs, restoration and modifications to all amplifiers, valve or solid state, ancient and modern. Tel.: 01670 530674
Email: info@arklesselectronics.com
www.arklesselectronics.com

CLASSIQUE SOUNDS
(Paul Greenfield, Leicester)
ESL-57s restored, rebuilt, fully renovated or improved. Leak, Quad valves amps etc.
Tel: 0845 123 5137/
Mob: 0116 2835821
Email: classique_sounds@yahoo.co.uk
www.flashbacksales.co.uk/classique

ATV AUDIO
(Henry Dulat, Surrey)
Repairs, restorations and upgrades to valve and transistor amps and all analogue audio including Revox. Tel: 01372 456921 Mobile: 07730 134973

REVOX
(Brian Reeves, Cheshire)
Revox tape recorder spares, service and repair. Accessories also available. Tel: 0161 499 2349
Email: brian@revoxservice.co.uk
www.revox.freeuk.com

ONE THING
(Coventry) Specialist in electrostatic panel manufacture and repair. Can refurbish ESL 57s and 63s as well as Leak Troughlines and Quad IIs. Email: one.thing@ntlworld.com
www.onethingaudio.com

EXPERT STYLUS COMPANY
(Wyndham Hodgson, Surrey) Stylus replacement service for all types of cartridge. Including precise profiling for 78s. Tel: 01372 276604
Email: w.hodgson@btclick.com

OCTAVE AUDIO WOODWORKING
(Bristol) Unit 2, 16 Midland Street, St Phillips. Bristol. Tel: 0117 925 6015
www.octave-aw.co.uk

WEMBLEY LOUDSPEAKER
(Paul MacCallam, London)
Comprehensive loudspeaker servicing. Tel: 020 8 743 4567
Email: paul@wembleyloudspeaker.co.uk
www.wembleyloudspeaker.com

LORICRAFT AUDIO
(Terry O'Sullivan, Bucks)
Garrard 301/401 and their own 501 repair, spares and service.: Tel: 01488 72267
www.garrard501.com

QUAD ELECTROACOUSTICS (Cambs)
Quad's service department, able to repair almost all Quad products, from the very first. (Also Audiolab, Mission & Wharfedale). Tel: 0845 4580011
www.quad-hifi.co.uk

SOWTER TRANSFORMERS
(Brian Sowter, Ipswich)
Large range of audio transformers for valve amps, cartridges, line drive, interstage plus all associated services. Tel: 01473 252794
www.sowter.co.uk

LOCKWOOD AUDIO
(London)
Tannoy loudspeaker parts, restoration and repair. Also Epos and TDL loudspeakers. Tel: 020 8 864 8008
www.lockwoodaudio.co.uk

CONVERSION OF VINYL/78/DVD/LASERDISC AND CD COLLECTIONS TO DIGITAL FILES
(Martin Pipe, Southend-On-Sea)
Migrate music and film collections to today's servers and personal players. Tel: 07802 200660
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www.tekktalk.co.uk

NEXT MONTH MARCH 2015 ISSUE

ICON AUDIO MB81 POWER AMPLIFIER

We expected to review Icon Audio's new MB81 amplifier in the December 2014 issue, but it needed further development and was delayed. Now, however, the Icons have been in our possession and under review for some time. So with some confidence we can say a full review will appear in the March 2015 issue. Don't miss it! Producing over 200 Watts each under test, these monsters, based around Russian GU81 transmitting valves, are awesome to behold - and hear!

Also, we hope to bring you –
Magneplanar 3.7i loudspeakers
Fostex GX-102MA loudspeakers
Audio Pro T10 Bluetooth 'speakers
Martin Logan Crescendo system
Buffalo hi-fi NAS drive

...and much more.



This is a selection of what we hope to bring you, not a complete list. We regret that due to a wide range of issues, such as failure under review, we cannot guarantee that all products listed above will appear.

**PICK UP THE MARCH 2015 ISSUE OF HI-FI WORLD ON SALE 31st January 2015,
OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: SEE PAGE 66**

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Name: _____

Address: _____

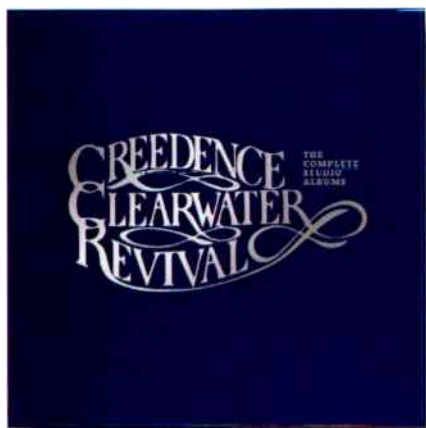
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 APRIL 2015 - 4TH FEBRUARY

CREEDENCE CLEARWATER REVIVAL

GREEN RIVER 1969



"There is something unique about this album. It stands as the first time the band reached full maturity as a performance outfit"

Creedence Clearwater Revival (CCR) made a terrific start to their career with the release of their 1968, self-titled album which did well to be so out of step with the hippie times, offering gutsy and vibrant takes on blues and rockabilly. 'Bayou Country' (1969) saw the band reach 'assured' status as the outfit found its true sound with John Fogerty (the creative force and soul of the band) sounding like he'd just emerged from the swampy, misty backwoods, epitomised by the single, 'Proud Mary'.

'Willy and the Poor Boys' (1969) was arguably the band's most 'fun' LP in which Fogerty's vocal performance was unrestrained while the rest of the band played in a largely unruly, savage manner. It remains one of the best pure rock & roll LPs of the genre.

Later, 'Cosmo's Factory' (1970) exhibited a broadening of the sonic palette with tracks such as 'Travelin' Band', despite the growing stress and chaos derived from the clashing personalities within the group.

There is one LP missed within that list, though and it is 'Green River'. Released in 1969, 'Green River' reached the same standard of quality in terms of performance and song-writing as 'Willy...' and 'Cosmo's...' but there is something unique about this album. It stands as the first time that the band reached full maturity as a performance outfit. It offered the true CCR sound too. 'Green River' is, above all, lean and tight. There is no flab on this piece. Every note on this album is there for a reason and nothing is out of place.

Five minute jams? Not here. This album also saw Fogerty at the very height of his creativity and showed him at his most honest in terms of baring his emotions to the world because this album has the lot: fear, anger, trepidation and a growing exhaustion. More than that, there is a superb contrast between Fogerty's own complex, emotional outpourings and the outright joyous state of mind of the rest of the band as they played with abandon.

It is the inner turmoil heard in songs such as 'Lodi', 'Tombstone Shadow', 'Commotion' and 'Bad Moon Rising' that give the clue to the portentous thoughts within Fogerty's mind that adds a gloomy strip through the raucous rock

celebrations. It's this clashing combination that lifts the album above all others in their canon.

Speaking recently about his work, Fogerty explained, "I had the phrase 'Bad Moon Rising' written down in my song-title book. I thought back from that to an old movie I'd seen called 'The Devil And Daniel Webster' [1941]. It's about this man who sells his soul to the devil to have greater rewards here in this life, and one night there was this terrible hurricane and the man is cowering in his barn. In the morning, he looks over at his neighbour's yard, and all the corn is just squashed down and everything's totally destroyed."

"And, right at the fence line, where his property is, the corn is standing straight up, peaceful and untouched. That just seemed so spooky, the idea of an epochal force – nature or the devil or whatever – that's gonna get you. Later, people began to point out, 'Hey, John, you've got this song about death and doom but it's this bouncy little thing'. And I'd go, 'I just didn't worry about that part'.

"The scariness of the words seemed to be telling enough; the cool music was gonna put it across. When you're a very tuned-in young person, you're tied to everything that affects your generation. So I think [that some social commentary] was in there".

The track, 'Lodi' seemed to foretell future problems.

"I saw a much older person than I was, 'cause it is sort of a tragic telling. A guy is stuck in a place where people really don't appreciate him. Since I was at the beginning of a good career, I was hoping that that wouldn't happen to me".

If you never grabbed the original album, you can now take advantage of the Universal label's decision to release it and the others in a superbly produced box set called 'The Complete Studio Albums' on the Back To Black imprint.

Pressed on 180g vinyl, the featured albums include: 'Creedence Clearwater Revival', 'Bayou Country', 'Green River', 'Willy And The Poor Boys', 'Cosmo's Factory', 'Pendulum' and 'Mardis Gras'. There are also downloadable MP3 vouchers included within. All of the albums are held within a sturdy slipcase.

PR

USHER

The USHER Dancer Diamond Series features the world's first amorphous DLC (diamond-like carbon) diaphragm tweeter. This is a tweeter which is second to none in the current market. To find out more, visit www.usheraudio.com or your nearest USHER dealer...



"2012 Editor's Choice" Awards --- AUDIO ART

Mini-X Diamond

2-way system: 1.25" Diamond DMD dome tweeter, 7" midrange

Sensitivity: 87 dB @ 1 watt / 1m

Nominal impedance: 8 ohms

Frequency response (-3 dB): 41 Hz - 40 kHz

Power handling: 100 watts

Crossover frequencies: 2.3 kHz

Weight: 15.5 kgs/34.2 lbs. per piece

Dimensions (w x d x h): 26 cm x 37 cm x 43.5 cm;



Behind the scenes

Dr. Joseph D'Appolito a world renowned authority in audio and acoustics designs the crossover and performs prototype testing/final fine tuning for Usher Audio. Consulting to a couple of famous audio companies, Joe always finds the tremendous value Usher Audio products represent a delightful surprise in today's high end audio world.

Rueyma Electric Technology Co., Ltd.

No.29-2 Jhonghua Rd., Taipei City 100, Taiwan
Tel: 886 2 2314 3868, Fax: 886 2 2371 7253

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W: www.decentaudio.co.uk E: info@decentaudio.co.uk

pure virtuosity



For more than a quarter-century, Sonus faber has represented the pinnacle of loudspeaker aesthetics. From its earliest models, incorporating real wood, furniture-grade finishing, seductive curves and even grilles that reveal style and inventiveness, this repository of Italian artisan skills and artistry has achieved what was once deemed impossible: creating speakers that sound as beautiful as they look.

Along with a series of models paying homage to the great luthiers of Cremona, the company has since been inspired by the Teatro Olimpica in Vicenza. It is appropriate that this new family of speakers considered the standards of a famed venue as the ne plus ultra of the reproduction of music with vivacity and power... exactly what defines music from opera to orchestral to rock music to soul to jazz. To achieve this, Sonus faber has exploited all that it has learned since its inception.

Like all Sonus faber loudspeakers, Olympica represents what is possible, while respecting what has mattered.

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