NEWS AND REVIEWS SECTION SEE PAGE 96

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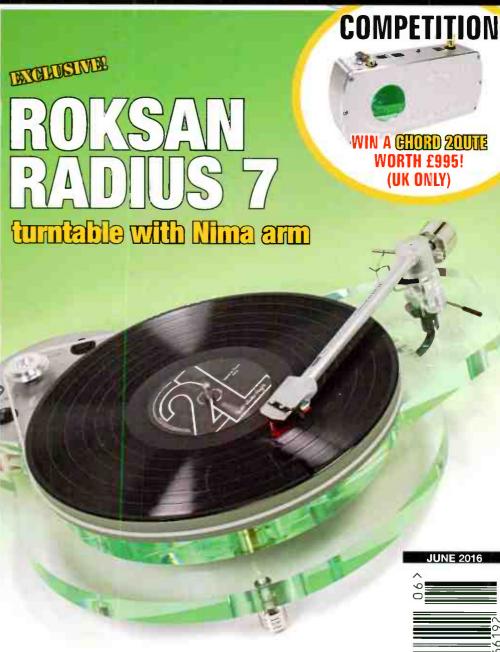








dac



**LUXMAN L-590AX MKII INTEGRATED AMPLIFIER** CHARISMA AUDIO REFERENCE ONE CARTRIDGE **ONKYO A-9010 INTEGRATED AMPLIFIER** OPERA PRIMA LOUDSPEAKERS YBA HERITAGE D100 DAC

7 PAGES OF LETTERS - THE BEST WINS A PAIR OF QUAD S2 LOUDSPEAKERS! (UK ONLY)
World Radio History



# CHORD

**World Radio History** 

### welcome

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The latter part of 2015 was auspicious for hi-fi. Chord Electronics announced their Mojo DAC based on a UK designed DAC chip that leads all others globally and Meridian announced MQA. Both events were held with panache in London's Shard tower too - not a faceless suburban factory. And the glitz was

MQA is a digital file that assures the quality of the audio packed within. Whilst Meridian founder and digital expert Bob Stuart outlined it only in general terms

at the Shard press conference, we are now told a separate

company has been set up to market MQA to the music industry and outside world, headed up by Bob. Meridian the hardware company, as it were, continues selling hi-end audio of course, and developing product. It also has a fair amount of involvement in - and business with - Jaguar / Land Rover, specifying and supplying in-car audio, including a surround-sound encoding scheme called Trifield audio that was another of Bob Stuart's interests way back in the 1970s, alongside Ambisonics, to which it is related. If you buy a Range Rover Sport you get Trifield 3D surround technology, I was told by Richard Hollingshead of Meridian, when he visited us to talk about Meridian and MQA recently. He also explained how large JLR are and the effort they put into installing top quality audio into their vehicles: it sounded daunting. All of which is to get Meridian's new Signature Reference CD player we review on p58 into the broader context of the world from which it comes. It also illustrates UK audio isn't dead yet.

And that theme is repeated in Audiolab's new M-DAC+. This Chinese owned UK company ploughed a lot into the original M-DAC. No one is talking figures, but I can guess what it cost them (and why). Its designer, John Westlake, had a clear vision of what was needed to deliver great sound from CD and hires, and M-DAC was its incarnation. The whole point about M-DAC is you get top performance from the (other) best DAC chip in the world, at less than a grand. It's as simple as that. Recently, M-DAC had a makeover, becoming M-DAC+. It's still less than

a grand and now even more complex and impressive. Don't miss our in-depth review on p15.

The Japanese have – and have had – their own audio idioms, and one is the great Japanese receiver of the 1970s, bedecked with meters, dials and knobs - an all analogue wonder. Boy, are they easy to understand and use, I was reminded by Luxman's gorgeous, Class A, heat streaming L-590AX MkII receiver - see p10. No digital up/down buttons or buried menus here: just sweetly engineered ease of use and loveliness of sound. Who could want more?

Well, we have plenty more in this issue - and I hope you enjoy it all.

#### Noel Keywood Editor

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

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

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

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

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

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## verdicts

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keenly priced

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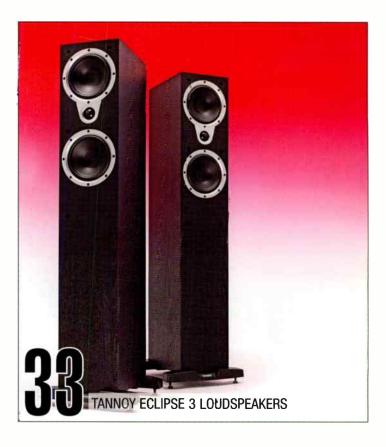
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he products we review are tested first to ensure they work properly and meet their manufacturer's specification. Our measurements also look at factors that affect sound quality, like frequency response, distortion and dynamic range, as well as those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

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

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



Measuring the Charisma Reference One moving coil cartridge. It is fitted to an SME309 arm on a Timestep Evo modified Technics SL-1210 Mk2 turntable with improved servo circuitry and external power supply. The red output leads feed an unequalised measurement pre-amp - our own design - that in turn feeds custom equalisation necessary for the JVC TRS-1007 test disc (centre). This half-speed cut test disc is the only one considered accurate and is obligatory for meaningful cartridge measurement. Third-octave analysis of a lateral sweep is made using the Clio test system. Tracking ability and distortion are measured using CBS STR-112 Technical Series test disc (left) and a Hewlett Packard HP3561A spectrum analyser (top right).

The new Meridian 808 V6 CD player/ DAC under test. Here the analogue section is being measured for frequency response, by our Rohde&Schwarz UPV audio analyser (top left). This analyser also generates a wide variety of digital test signals, able to reveal all aspects of DAC behaviour, including the informative dynamic range value.

Audiolab's new M-DAC+ was also tested in this set up.



#### email:news@hi-fiworld.co.uk

## news

#### **OUAD Z-1 LOUDSPEAKERS**

Quad has unveiled its latest loudspeaker range, the Z Series – the first of many new products planned for 2016 in celebration of the distinguished British audio brand's 80th year. Like the S Series, which launched in 2015, the new range combines Kevlar-coned bass and midrange drivers with a ribbon tweeter. The Z Series re-engineers the usual drive units, crossovers and cabinets to provide, says the company "…a bridge between the entry-level S Series and Quad's electrostatic ESL speakers".

The new range comprises two standmount models (Z-1 and Z-2) and two floorstanders (Z-3 and Z-4). The Z-1 stands 383mm high and incorporates a 150mm bass/mid cone, while the larger Z-2 uses a 175mm bass/mid cone. The two floorstanders sport three-way configurations, coupling a 150mm midrange driver with two 175mm bass drivers in the Z-3 and three 165mm bass drivers in the Z-4.

All Z Series models sport a bespoke ribbon treble unit. Like the ribbon unit developed for the S Series, the composite sandwich construction of the Z Series ribbon ensures it is robust enough to handle high-powered amplifiers, but at 90mm x 12mm it is significantly larger than the S Series ribbon. In fact, it is the largest ribbon treble unit that Peter Comeau, Director of Acoustic Design or Quad's parent company IAG, has ever worked with.

Designed especially for the Z Series, the speakers' bass and midrange drive units use cones fashioned from woven Kevlar. Acoustic filter bass reflex loading is used on all models. This incorporates a dual-chamber filter system inside the cabinet, with the reflex port exiting via a shaped expansion chamber in the plinth that is filled with resistive foam.

Prices per pair are: Z-1: £1,199.95, Z-2: £1,499.95, Z-3: £2,499.95 and Z-4: £3,199.95. For more information, call 01480 447700 or click on www.quad-hifi .co .uk



#### YAMAHA SOFTWARE UPDATE & HOME CINEMA

Yamaha has announced the latest range of RXV AV receivers, dubbed the 'RX-V81 series' that will include Bluetooth, HDCP 2.2 protection, 4:4:4 support and 4k/60p pass-through as well as support for HDR and BT.2020 pass-through.

Another addition is MusicCast. Here, you can stream your music around your home but, more importantly, stream any source from any compatible device to any other compatible device. That means vinyl connected to your hi-fi being streamed to a wireless speaker, or sports from your TV and soundbar being sent to a micro system in another room.

The RX-V381 kicks off the line-up as a 5.1 AV Receiver with Bluetooth. Features include auto speaker calibration and Yamaha's Extra Bass and CinemaDSP. The RX-V481 5.2 AV Receiver comes next with networking support and MusicCast while the RX-V581 7.2 AV receiver includes support for Dolby Atmos and DTS:X on board.



Looking to the RX-V681 7.2 AV Receiver, you can expect to see a more flexible Zone 2, which can switch between an Atmos set-up and a set of external speakers. There's also an MM phono stage on board which means, with the additional of MusicCast, you can distribute your favourite vinyl record output all through your home.



At the top of the line-up sits the RX-V781 7.2 AV Receiver, with a second HDMI output for a projector/TV setup and a full aluminium front panel. The YPAO auto calibration is a higher level here with upgraded multi-point measurement and an increased power rating over the RX-V681. There's upgraded components inside too.

Pricing is as follows: RX-V381 - £349.95; RX-V481 - £399.95; RX-V481D - £449.95; RX-V581 - £499.95; RX-V681 - £599.95; RX-V781 - £699.95.

For more information and details see uk.yamaha.com

#### STREAM BASE

Cabasse has designed a four-way per channel stereo solution loudspeaker for the Stream BASE. Active filtering technology individually controls tweeter, the midrange units of each channel. A dedicated low frequency channel, fitted with a long throw 13cm woofer firing downwards at 360°, is included.

When connected to a home network, Stream BASE gives access to all of the music stored on the network, to thousands of Internet radio stations and to audio streaming from Deezer, Qobuz, Spotify and Tidal. The USB port gives access to music stored on USB sticks or hard drives.

Connection to the TV is via optical or S/PDIF and is Dolby Digital compatible. Files in a large variety of formats can be played back, including WAV, AIFF, ALAC, FLAC and MP3 and the Stream BASE can reproduce high-resolution audio up to 24bit/96kHz. Price is £450.

Call 01242 511133 or click on www.connecteddistribution.com for more information.



#### **BLACK RHODIUM TWIST VS-4**

The new Twist VS-4 speaker cables feature the GN Legacy VS-4 Vibration Stabiliser designed to reduce audible cable distortion while the cable itself includes thicker insulation made from silicone, increasing the distance between conductors. The cable is continuously twisted along its length to prevent it acting as a loop aerial while additional RFI/EMI filtering is also applied directly to the conductor wire.

Twist VS-4 uses two plated copper cores for positive and negative signal flows. These are connected in opposite directions.

Gold plated Z plugs are utilised too. Cables terminated with rhodium plated Z plugs are also available.

To prevent the cable losing its 'twist' during handling, Black Rhodium provides a printed heat shrink to bind the two conductors six inches from the end.

Price for a 3m pair terminated with gold-plated Z plugs is £195 and £255 terminated with rhodium-plated Z plugs.

For more information, call 01332 342233 or click on www.blackrhodium.co.uk.

#### KK TT-1

Russ Andrews has introduced a dedicated turntable RCA phono cable via of Kimber Kable to owners of the many turntables fitted with phono socket outputs.

A fully shielded design, derived from the Kimber Kable flagship Select range, the high-purity copper coax geometry uses a multistranded core.

By designing the cable with a shielded construction, the TT-1 is suitable for use with both moving magnet (MM) and moving coil (MC) cartridges. It is also particularly suited for use with valve equipment, where using a shielded interconnect eliminates potential hum problems.

Fitted with Kimber's UltraPlate Phono plugs, the TT-1 is also available with optional burn in, DCT (deep cryogenic treatment), Super Burn In and with the company's MiniZap technology incorporated into the cable.

Many modern turntables no longer require a dedicated ground connection but, for those that do, Russ Andrews is including a separate 2.5mm grounding wire fitted with 4mm spade terminals.

TT-I is available direct from Russ Andrews at www.kimberkable.co.uk/tt-I-turntable-interconnect and prices start at £104 for a 0.5m pair.

Click on www.kimberkable.ca.uk or call 01539 797300



#### ONE FOR ALL STREAM

One for All has announced two new, low cost, "Music Receivers". The top-end SV1820 model includes a Wolfson DAC as well as AptX technology and Bluetooth. It also comes with optical, RCA and 3.5mm connections. The entry-level SV1810 offers RCA and 3.5mm connections only.

You can link three smart devices simultaneously (two devices with the SV1810).

The One For All SV1820 is priced at £50, whilst the SV1810 is £30.

Click on www.oneforall.co.uk for more information.



#### **SIGNATURE EDITION SCM10SE**

ATC Loudspeaker Technology is celebrating the 70th birthday of its founder and Managing Director, Billy Woodman, with a 'Signature' version the SCM10 mini monitor from 1990. The Signature Edition SCM10SE is presented in a blue piano finish with an anodised silver aluminium tweeter wave guide, complementary silver mid/bass driver surround and a fine grain blue leather baffle, hand-finished by Eissmann, a supplier of interior trims for the likes of Aston Martin, Bugatti, Lamborghini and McLaren.

The proprietary drivers and crossovers include the recently developed SH25-76S 'S-Spec' 25mm dual-suspension design and SB45-125SC 125mm mid/bass unit with an integral soft dome. The system's crossover is re-designed for the new drive units and uses ATC's hand-wound air-cored inductors and polypropylene capacitors throughout.

The SCM10SE is limited to a production run of just seventy pairs, each supplied with an exclusive owner's guide relating the story of Billy Woodman's career from his formative engineering in Australia to the work at Goodmans in the UK. Price is £3.491

For more information, call 01285 760561 or click on www.atcloudspeakers.co.uk.





#### **DEMAG UPGRADE**

enables

Android

Like its predecessor, the new DeMag (Demag Alpha') allows you to discharge the magnetism that resides or builds up in LPs and optical disc media (i.e. CD, DVD, SACD, etc.), thereby improving their sonic performance. It can also be used for keeping interconnect cables, connectors and power cords demagnetised to prevent magnetic signal distortion. The new and improved Alpha version promises a 20% increase in demagnetisation power over the original and also features touch panel technology.

Furutech explains that the culprit is actually the pigment added to the plastic during the manufacturing process. This pigment contains small amounts of ferrous material which become magnetised as a record spins. Price is £2,200.

For more information, call 0118 981 4238 or click on www.soundfowndations.co.uk.

#### **DRAGONFLY BLACK & RED**

Now this tiny DAC can be used with smartphones. AudioQuest has worked alongside Microchip Technology to develop a new USB microcontroller that delivers improved signal-to-noise ratio and lower power consumption. Drawing 77% less current than the DragonFly v1.2's microcontroller, the new Microchip MX compatibility with Apple and smartphones and tablets.

Apple iOS device users will need
Apple's Lightning-to-USB Camera Adaptor while
Android devices can buy the DragonTail USB Adaptor For

DragonFly Red and Black processing offers 24bit/96kHz via the improved 32bit ESS Sabre DAC chips: the 9010 in the Black and the higher-performance 9016 in Red. Both employ minimum-phase filtering. While DragonFly Black uses the same headphone amp and analogue volume control found in the DragonFly 1.2, DragonFly Red includes the latest ESS headphone amp and a bit-perfect digital volume control that resides on the 9016 DAC chip itself. DragonFly Black outputs 1.2V, enough power to drive all preamplifier input circuits and all reasonably efficient headphones. With its higher 2.1V output, DragonFly Red is compatible with an even wider range of headphones.

The new DragonFlys are also software upgradeable through complimentary Windows and OS X desktop applications. Prices? DragonFly Black costs €99, while Red demands €199. The DragonTail USB Adaptor is €19.95.

For more information, click on www.audioquest.com

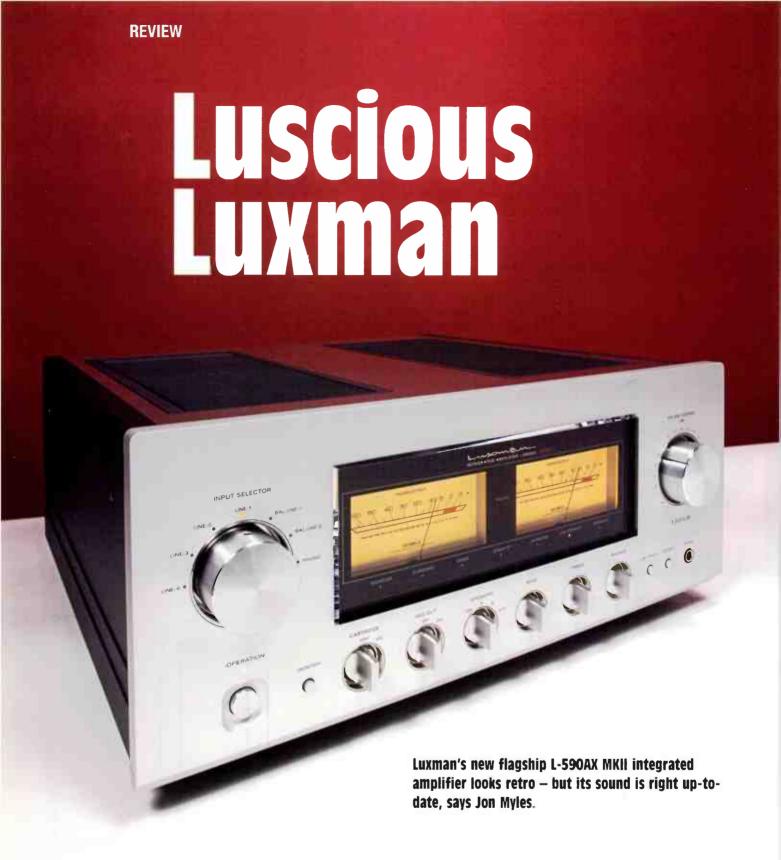


#### **XQISIT BT iE200**

XQISIT has announced its XQ BT iE200 Bluetooth magnetic earphones. These cable-free earphones allow users to pause music by connecting the magnets and allows them to wear the device around their neck until they are ready to listen again.

Weighing in at 16g, with an operational range of up to 10m, the earphones have a music playback time of three and a half hours, talk-time of up to four hours and stand-by time of up to 150 hours. Price is £50.

Click on www.xgisit.com for more information.



or music lovers back in the late 1970s and early 1980s
Luxman was an aspirational hi-fi amplifier brand
– a beautifully-built slice of Japanese exotica festooned with buttons and featuring just about every facility you could want. And Luxmans sounded good at a time when this wasn't guaranteed by other brands.

Predominantly Class A operation meant an inherently smooth sound with none of the sonic nasties that plagued some cheaper amplifiers of the time. No wonder the name Luxman became a by-word for quality.

Somewhere along the road though, the company managed to lose its way as it made an ill-judged foray into the budget end of the market – a move that cost it dear. Luxman withdrew from all territories apart from its home market of Japan as it sought to rebuild its reputation.

Since 2009, though, the firm has enjoyed something a renaissance

under a partnership with the IAG audio group.

So much so that I gave the Luxman L-550AX integrated amplifier our full five globes back in the July 2015 issue of Hi-Fi World, it was so good.

Now there's a new flagship model in Luxman's integrated range in the shape of the L-590AX MKII. Priced at £6495 it's essentially a stepup from the L-550AX (which still remains in the range) offering greater power and upgraded components.

Not that you'd immediately notice it from the exterior as the new L-590AX MKII mirrors the L-550AX in terms of design – meaning it resembles those battleship-grade Far-East amplifiers many of us lusted over way back when. So it's big and glossy with an array of buttons on the fascia below two big, illuminated power meters. As you expect, it is beautifully made and finished, the rotary controls moving with silky precision.

Features include a switchable MM/MC phono stage, bass and treble controls, a loudness button, line straight, balance control, two pairs of switchable loudspeaker outputs, plus a high-quality headphone circuit.

Round the back are the Phono inputs for a turntable, four line-level inputs, and two balanced XLR line inputs. A well-finished and admirably easy to use remote control completes the package. The only thing missing is any form of digital input; this is an all-analogue amplifier.

Not surprisingly, with all these features the L-590AX MKII is big, measuring 193mm x 440mm x 463mm (H/W/D) and weighing just over 28kg – heavy. You'll need a decent sized rack with plenty of clearance for the top-mounted ventilation grilles.

These are essential as the amplifier operates mainly in Class A, meaning it gets warm to the touch after a while – although never enough to cause discomfort or burn.

Luxman says the L-590AX MKII is a pure Class A design – although this isn't strictly accurate. Instead it is Class A up to 30 Watts from where it moves into Class B to give a quoted peak power performance of some 160 Watts (see Measured Performance).

To be fair, though, you'd have to be using this amplifier in a ballroom the size of the Strictly Come Dancing set with a pair of pretty insensitive loudspeakers to get anywhere near pushing it to its limits into Class B operation.

#### **SOUND QUALITY**

The Luxman may be handsomely equipped and bedecked with controls – but at its heart it is a wonderfully no-nonsense performer.

This is one piece of equipment that simply gets on with the job of music-making in a thoroughly engaging manner.

Connecting it to a pair of Spendor's big SP200 Classic



Internally, the Luxman L-590AX MkII demonstrates this company's immaculate build quality and attention to detail. At lower centre is the mains transformer and above it rows of circular smoothing capacitors of the power supply. At left and right are large heatsinks to keep the output transistors cool under Class A operation.

loudspeakers (see review Hi-Fi
World May 2016) and queuing
up 'Whole Lotta Love' from Led
Zeppelin II, first impressions were of
a smooth, rich sound with plenty of
clarity and life.

The bass line was punchy and tuneful but never overly-dominant. Above that Jimmy Page's classic guitar riff stopped and started with no sense of smear while Robert Plant's vocals had lovely purity.

It may be a transistor amplifier but Class A operation means there's none of the hash or slight blurring of detail. Instead the Luxman just cuts right to the very heart of the music.

Playing John Coltrane's 'One Down, One Up; Live At The Half Note' and the drums, piano, saxophone and double bass were all anchored in their own instrumental space, stage left and right, even the sound of the audience's conversations and clinking glasses coming through loud and clear between tracks. This isn't the clearest or most high-fidelity of recordings but through the Luxman that ceased to be a concern, the amplifier dredging up every last bit of detail.

That clarity extended to whatever I played and was combined with an innate musicality that

brought timing to the fore. Ike and Tina Turner's 'River Deep, Mountain High' and Phil Spector's orchestral wall of sound production swelled from the 'speakers. The Luxman kept a firm grip on the Spendor's twin 12-inch bass drivers to create a giant soundstage in front of me.

Switching from the Spendors to the new Opera Prima standpoint loudspeaker (see review this issue) was interesting. They require more power than the Spendors to come on song and obviously - because of their smaller cabinet - do not have the absolute low-end authority of the

Spendors. But pairing them together introduced a certain synergy. The low-end on John Campbell's rendition of 'Down In The Hole' was firm and potent, providing a solid foundation for the guitar and rasping vocals which give so much



The remote even has a Mono button to lessen hiss on LPs.

## Bowers & Wilkins

# Designed for listening

The new CM Series loudspeakers are undoubtedly beautiful, capable of gracing any room with their clean lines and high-quality finishes. But as with all Bowers & Wilkins loudspeakers form must follow function, and thanks to our Decoupled Double Domes and tweeter-on-top technology you won't believe how beautiful your music can sound.

bowers-wilkins.com



Decoupled Double Dome tweeter



atmosphere to the track. This is where the Luxman really shines - it's happy enough powering a pair of giant standmount loudspeakers but adds life to small standmounts.

This was all with the Line Straight mode engaged to by-pass the tone controls. Switching them in I could gently tailor bass and treble. I did find there was a slight loss in absolute detail, but they were useful in taming some of brightest recordings I have. Oasis's 'Live Forever', for example, benefitted by having the searing treble diminished. They are there, can be used if needed but left out if not.

Moving on to vinyl through the built-in phonostage it was clear this also is no mere cosmetic addition. It shares the same overall tonal clarity as the line-level inputs with an extremely low noise floor. Playing Leonard Cohen's 'First We Take Manhattan' there was body and depth to the vocals while the electronic backing track had weight and definition. Also noticeable was a refreshing absence of background noise. I've heard some standalone phonostages costing a good third of the Luxman's total



The rear panel of the Luxman shows the range of inputs available - balanced XLR sockets at right, plus unbalanced RCAs including a single switched MM/MC input at far left. Gold plated speaker terminals accept bare wires, spades and 4mm banana plugs.

price which don't sound as good - which just goes to show how good in every area this package is.

But that's the beauty of the L-590AX MKII. It seems to do everything very well without drawing too much attention to itself. Instead it just enables music to flow in a purely effortless way. Yes, it's reminiscent of Japanese amplifiers from the 1970s in terms of both looks and features but its sound is right up-to-date, being both vibrant and utterly involving. In short, this is

one piece of equipment that cannot fail to put a smile on your face.

#### CONCLUSION

The original L-550AX was a very good amplifier by market standards. But Luxman have taken all its essential elements and improved on them for the flagship L-590AX MKII. It has more power and detail yet retains the same easy-going musicality and foot-tapping sound. It's an absolute gem, to both look at

#### **MEASURED PERFORMANCE**

The Luxman L-590AX MK II produced 90 Watts into 8 Ohms and 156 Watts into 4 Ohms. Working substantially into Class A it passes a lot of current through the output stages and gets guite hot after a while, independent of whether it is producing music or not. All the same, this is plenty enough power to go very loud irrespective of loudspeakers or room size.

Distortion was low at all levels, although at high frequencies there was a rise to 0.2% or so at very low outputs, below 1 Watt - a little crossover distortion.

Line input sensitivity was high, just 180mV from both the unbalanced phono socket inputs and the balanced XLR inputs, so the unit matches all outside sources with ease.

Frequency response (Direct) measured flat from 3Hz to 52kHz, so this is a wideband amplifier. The tone controls gave +/-8dB lift or cut and reasonably good resolution, although subtle levels of change of 2dB or so needed very little control movement. Lift and cut acted over a wide frequency band centred at 1kHz: the controls don't adjust just spectrum extremes

The MM and MC phono stages differed slightly. MM gave an essentially flat response with just a small of bass

shelf loss of -0.2dB, whilst the MC input was the opposite, with a similar amount of lower frequency lift below 1kHz. Subsonic cut from the optional Subsonic filter was extreme, rolling off deep bass fast below 60Hz (-1dB), curtailing deep bass as well as warps - somewhat

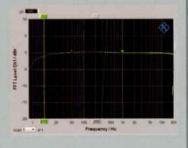
Phone sensitivity measured MM 3mV and MC 0.3mV, the latter suitable for low output MC cartridges. With low equivalent input noise value (IEC A weighted) of 0.12µV, MC hiss was minimal; this is just 3.5dB higher than input transformers ( 0.08µV).

The L-590AX MK II measured well in all areas. It is powerful, runs heavily in Class A and has low distortion. It has a very good moving coil (MC) cartridge input stage with high gain and low noise that will suit expensive MC cartridges.

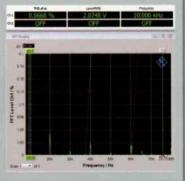
Power 90watts CD/tuner/aux. 3Hz-52kHz Frequency response Separation 87dB -105dB Noise Distortion 0.04% Sensitivity 180mV

#### Disc (MM/MC) 6Hz-20kHz Frequency response Separation 87dB -87/-63dB Noise Distortion 0.06% Sensitivity 3/0.3mV Overload 12/120mV

#### FREQUENCY RESPONSE MC



#### DISTORTION



#### **LUXMAN L-590AX MKII £6495**







Class A operation, retro looks and a host of features add up to one of the best integrated amplifiers you can buy at the price.

#### FOR

- foot-tapping sound detail
- smooth delivery
- MM/MC phonostage

#### **AGAINST**

- looks might not be to evervone's taste

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## Enjoyed Worldwide.



"The Sigma SSP can be regarded as a superb stereo analog preamp, and all the rest of its bells and whistles as a gift." Kal Rubinson, Stereophile, USA

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

Theo Nicolakis, Audioholics.com, USA

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

Ludwig Swanberg, HemmaBio, Sweden

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

Stephen Dawson. Audio Esoterica, Australia

"This Sigma system is a huge achievement which everyone must absolutely discover." Adrien Rouah, Québec Audio & Video, Canada



## Plus Power



or those in the market for a top quality DAC, Audiolab's M-DAC has been the go-to product for many years. Unlovely in appearance, it was lovely in sound quality — and affordable. The new M-DAC+ is even less lovely in appearance, but it addresses weak points in the original M-DAC, to give even better sound. And it remains affordable, carrying a price tag of just £850.

Otherwise much remains the same, since you don't want to change a successful formula for the sake of it — and in any case there wasn't much leeway to change anything; Audiolab got it mostly right in the first place.

The original M-DAC scored by using the best DAC (Digital-to-Analogue Convertor) chip available at the time, the ESS ES9018 from their Sabre32 series, put into a box with a set of unique digital filters — no less than seven of them.

DAC chips are technologically very complex devices, and also require large investment to manufacture. So the DAC that lies at the heart of all digital players (e.g. CD players) and external hi-fi DACs like the M-DAC comes from an outside specialist supplier: think Texas Instruments (USA), Wolfson (UK), Asahi Kasei (Japan). Choice is limited and chip manufacturers seek to leapfrog each other in order to corner the global market.

In 2008 ESS of Milpitas, California, introduced the Sabre32 series DAC chips that have an astonishing performance, way beyond all else: people soon took notice. One of those people was UK designer John Westlake, who isn't averse to complexity, and he based the Audiolab M-DAC around ESS's top quality ES9018, Sabre32 series DAC chip, adding those filters I mentioned in the process.

And that explains how and why

the first M-DAC was different to most others. It was one of the first to use what proved to be one of the best sounding (and measuring) DAC chips on the market at the time – and ever since, with the single exception of Chord Electronics unique rival DAC, from designer Rob Watts

I hope this gives you some idea of where top-quality hi-fi DACs come from, how they are designed and what – inevitably – are the limitations of choice seen by hi-fi manufacturers. It sets the stage for the M-DAC+ here, shining light into the commercial background from whence it came. And from where all others – Chord Electronics excluded – come.

These days, rivals using the ES9018 chip are popping up all over the place, including price rivals such as the Northern Fidelity DAC-384 at £650 we reviewed in the January 2016 issue – competition is getting fierce.



## 8 products of the year and most wanted components

in just 2 years by preserving relative phase relationships in a signal



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



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

- Jon Myles, Hifi World 2015

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

- Awards Edition, HiFi World 2015

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

- Mono & Stereo, 2015

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



Stereo Times







The big physical difference between M-DAC and M-DAC+ is that the latter has its power supply built in, so comes as a single unit. M-DAC relied upon an external switch-mode power unit connected by cable terminated in a multi-pin DIN style plug. The advantage was no hum - and switch mode power supplies are more numerous than ducks in China, where this DAC is made, meaning they are cheap. After repeated and fairly heavy use at our hands though, the pins in the power cable plug started to bend and I have had to apply corrective surgery, using snipe-nosed pliers and magnifying glass. Our usage doesn't mirror that of the outside world since we constantly plug and unplug equipment - causing weak connectors to fail. But it does suggest where M-DAC had weakness.

And then there is the poor reputation of switch-mode supplies with regard to sound quality, not to mention the intervention of a cable and connectors between supply and DAC to degrade sound quality. Japanese audio companies commonly play up the superior sonic results of conventional linear power supplies – and along came Oppo with their BDP-105D Blu-ray player with ES9018 DAC chip and internal linear supplies to underline the message: go linear if you want good sound.

So this is what Audiolab have now done. M-DAC+ has a high quality on-board linear power supply, mains power being applied through the usual IEC mains plug.

Another new feature of the M-DAC+ is the ability to process DSD digital code, in addition to normal PCM. All modern DAC chips can process DSD because it is simple to do so but enabling this provision hasn't been so common because DSD files are rare and difficult to transmit over a USB computer connection. No point in adding complexity and cost when no one will use it, the thinking goes.

Yet DSD, as originally used in SACD (Super Audio Compact Disc), sounds more fluid and natural than standard digital (PCM) and has gained wide respect for this alone. As a result DSD recordings have moved out of being an interesting rarity and into the mainstream - helped by continued support from Sony who developed DSD long ago as an archiving medium. Labels like Blue Coast Records (California) promote DSD and have a DSD Guide on-line

if you are interested in knowing more. They are supported directly by Sony I found, when visiting them at the California Audio Show, so there's no lack of activity here and the new M-DAC+ can now handle DSD recordings, up to quad-DSD (DSD 256).

That's new M-DAC+ described in outline, and what the + moniker means. Audiolab thankfully haven't stripped out any of the original features that made the unit so flexible. It still has a high-resolution digital volume control that can be switched out if desired, this being intrinsic to the 9018 DAC chip. What it means is the unit can drive power amplifiers direct - no preamp needed. The small remote control has volume Up and Down buttons, as well as Mute, so volume can be adjusted from the settee; the main unit has a rotary volume control should you prefer it (or lose the remote).

The optical S/PDIF digital input now handles 192kHz sample rate PCM so it will accept output from an Astell&Kern portable hi-res player and not fall silent when a 192 file is played, something I suffered



The small remote control unit provides all functions, including volume, mute and filter selection.

continually and found irritating on the original M-DAC!

There is also an AES/EBU balanced S/PDIF digital input, that gives slightly better results than optical or electrical inputs — where an AES/EBU balanced source is available; they are rare.

And then there's a USB B 'unidirectional' input for connection to a computer. It will accept up to 384kHz sample rate PCM, the limit of the ES9018. You can set a Mac to output at this sample rate if you wish, but



Multiple layers of circuit boards in the newer, high-profile case of M-DAC+ reveal how complex it has become with on-board power supply and DSD processing.

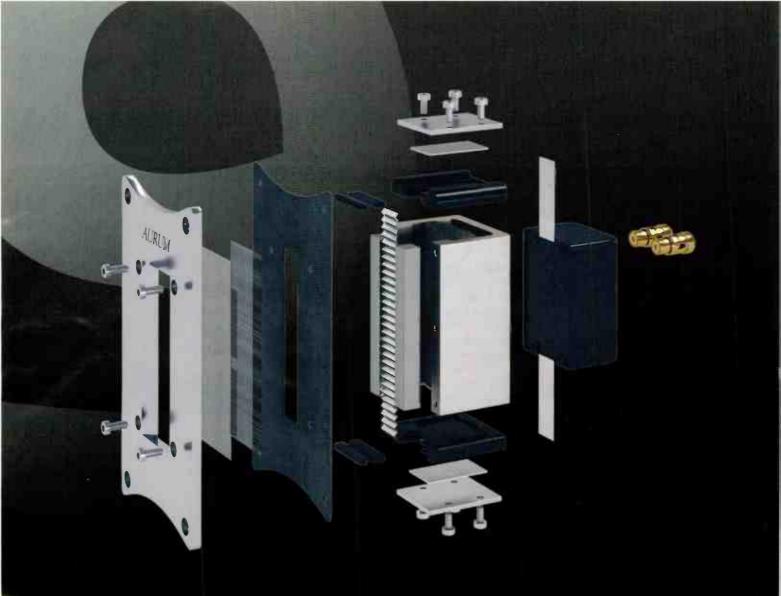
it won't improve sound quality; PCs must have driver software installed. Audiolab include an 8cm mini-CD with necessary software, so you don't have to download it. There's now also an iPhone/iPad USB A input.

As before, M-DAC+ has both unbalanced phono socket audio outputs and balanced XLR outputs. Measurement showed the XLRs run direct from the DAC (which has balanced output only), giving the 9018's full 125dB dynamic range, but the unbalanced has been buffered and has 7dB lower dynamic range due to noise in the buffer. To get this into perspective, at 117dB it's still has the dynamic range of most high quality DACs but it is a significant shortfall on what is available from the balanced XLR outputs, so obviously M-DAC+ is best connected via XLR.

As before, M-DAC+ has a full sized (1/4 in) headphone output on the front panel so it can be used to drive phones from a computer via USB.

To play DSD use Foobar 2000 for PC Audiolab suggest, Audirvana Plus for DSD from Mac (£58) or Pure Music Player for Mac that works in conjunction with iTunes.

The seven filters Audiolab have designed around the Sabre32 DAC chip are impressively effective. They can impose quite large changes upon the sound quality of CD but their impact is less obvious at higher



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sampling rates where the filter characteristic effectively moves up in frequency.

In essence, three filters are 'fast' – Sharp roll off, Optimal Spectrum and Minimum phase. Three are 'slow' – Optimal transient, Optimal transient XD and Optimal transient DD. Then there's the seventh odd-man-out that is a compromise between fast and slow, being called Slow.

The three fast filters are what you get in most digital devices, whilst the three slow filters are most certainly not. That's because they roll off high frequencies quite strongly and don't offer the best performance figures, being drastic enough to make CD sound obviously warm. However,

Running M-DAC+ on my computer desk as a headphone amplifier, fed from a Mac via USB, all worked well. Until, that is, I decided to load test files from the same computer onto my iPhone via USB cable: iTunes would not see the phone. I had to physically disconnect M-DAC+ before the phone icon appeared in iTunes.

With test files loaded, the iPhone played via M-DAC+'s USB A input, then all of a sudden it stopped doing so and would not see the phone - even though all else worked properly and so did the phone. M-DAC+ needed a re-boot to clear this, meaning switch-off of mains power and removal of IEC plug. Happily this did not happen often.

"a sense of order and clarity were imposed on the track and it sounded quite different to the way I know it."

they eliminate pre and post ringing in the time domain, giving superior transient performance and, in my experience, after a while I find I prefer them, offering an easier and more relaxed sound.

For those who want this well-damped time domain response but also some high treble sparkle from CD there is the Slow filter that is a compromise – and a very good one under measurement, if not obviously so when listening, but it does depend upon programme material I find.

Filter selection is achieved by pushing in the Select knob, rotating it to the filter wanted and pushing again – simple.

DSD filters are included in the ES9018 chip and implemented in the M-DAC+, so you also get three filters here, but they are simple analogue filters to reduce the supersonic noise one-bit DSD produces and little affect sound quality.

M-DAC may not look lovely, at least in the black finish we had, but it is sturdily built. Measuring 247mm wide, I I 4mm high and 292mm deep, the unit will slot into most spaces. It's a neat bit of packaging in fact because linear power supplies are big and they radiate hum unless you use a heavily screened toroidal transformer. Audiolab say there are no fewer than eight different supply lines and digital and analogue are kept separate.

I've come across obscure
Apple problems like this before and
they're usually linked to the constant
changes being made by Apple in
their software; heavens I've loaded
Mavericks, Yosemite and El Capitan

XI headphones the overriding quality was a sense of massive low end power, delivered with supple ease. The Darkness 'Growing on Me' (a CD rip) fairly blew the Philips Fidelio headphones off my head, the huge rhythmic lead line stretched out wide and solid, underpinned by enormous heft. There was a sense of warmth to the sound that didn't suit the Oppos, that in themselves are a tad laid back up top, so I gravitated to the XIs. The message here being that the smooth, easy sound of this DAC suits normal to bright headphones but less so those that veer the other way.

'Time' from the Pink Floyd (24/96) came over as rich and smooth, with a sense of deep separation between instruments across a wide soundstage - and again power behind drums and the laconic bass line.

Headphone listening apart, I used M-DAC+ fed by a digitally linked Astell&Kern AK I 20 portable player driving a Naim NAP 200DR power amplifier direct, hooked up to huge Spendor SP 200 loudspeakers (two I 2in bass units no less!).

These 'speakers have bass resolution big style and this made it absolutely clear to me that M-DAC+ has an altogether larger, more muscular sound than the original. M-DAC+ is very, very un-CD like -



The rear panel carries phono and balanced XLR analogue audio outputs. At right is an XLR socket for balanced (AES/EBU) digital input, alongside electrical and optical digital S/PDIF inputs. There is also a USB B input for computer connection, and USB A for iPhone connection.

months apart.

The little remote was superb I thought; easy to hold, no spurious buttons and yet able to do it all, including change filters.

#### **SOUND QUALITY**

I started listening to M-DAC+ as a headphone amplifier, to check its USB behaviour and iPhone compatibility. With Oppo PMI and Philips Fidelio more so than the original model.

With The Eagles 'Too Busy Being Fabulous' (CD rip) which usually sounds somewhat messy and harshly bright, M-DAC+ discarded the muddle and focussed on the instruments instead, putting definition into the bass line, setting the drums into their own space whilst clearing the air around Don Henley's vocals. A sense of order and clarity were







K3 Integrated January 2015

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Distributed by Henley Designs Ltd.

imposed on the track and it sounded quite different to the way I know it, being a classic Rock test track used often. Just be aware that M-DAC+ comes over as creamy smooth with the sort of warmth associated with analogue LP rather than anything digital, so it changes what is going on.

With well recorded and balanced Rock tracks like Fleetwood Mac's 'Go Your Own Way' (24/96) there was strong dynamic punch to Mick Fleetwood's drums, the SP200s driving our room with gusto. Cymbals rang with strength here, with the XD filter giving a well solidified image.

With the Minnesota Orchestra playing Rimsky Korsakov's 'Dance of the Tumblers' (24/96) bowed stings were lusciously smooth, forming a caressing backdrop to the solo flute, whilst kettle drum strikes shook our listening room with confident ease. With classical in general, orchestras had massive presence and power; I was inevitably pummelled by the LSO playing 'Mars' from the Planets (24/48), the aggressive closing orchestral sequences having both forward thrust and sharp timing.

Then I moved to another system entirely for a different view — and specifically to use the M-DAC's balanced output, which offers a step

up in performance over unbalanced (i.e. phono socket) output. A Creek Evolution 100A amplifier was switched to straight-through (i.e. no volume control) from its balanced input, and connected to revealing Quadral Auram Megan VIII loudspeakers. This system sounded extraordinary, even with CD.A sense of immaculate grip and razor sharp timing became apparent, transients from Terry Evan's steel stringed guitar coming across with lacerative power, in Get Your Lies Straight. His gruff grumbling about his woman, and background rumbling picked up by the microphone in this blues piece all had electric presence. In fact. I was so taken aback by this performance and all others that followed. I would declare it is the best I have ever heard from CD. The basic output of the ES9018 Sabre32 DAC is balanced (as it is with most DAC chips), not unbalanced - and what I was hearing here was the chip at its best in Audiolab's excellent support environment, now with linear power supply. I preferred the Audiolab's Optimum Impulse XD filter, by the way; with CD its impact is quite noticeable, smoothing the sound and adding body to mid-range instruments. Extraordinary clarity,

enormous dynamic swings and a deeply smooth, quiet background greeted me from the balanced output of the new M-DAC+: it was beyond impressive, the best I have heard digital yet.

#### CONCLUSION

The new Audiolab M-DAC+ has been usefully buffed up to keep it ahead of the pack. If you want fabulous sound quality from CD, something the original M-DAC provided in buckets, the new model manages even better. It is deep, open and spacious — but now has even firmer bass and a more broad-shouldered sound. Use balanced output and it gets ever sharper timed, forensically clean and clear, with more dynamic contrast.

You also get superb hi-res of course and a DAC that has few rivals when hooked up to a computer through USB. And all for £850. Pay much more — as in the Resonessence Invicta Mirus — and you may well get just a little better, but you'll not get anything as well designed and effective under £1k by a long margin. The M-DAC+ remains the place to go in my view if you're looking for a super high quality DAC. It's great piece of design work and sounds wonderful too, even breathtaking.

#### MEASURED PERFORMANCE

The M-DAC+, at maximum volume on its display of +3dB, delivered 3.35V from its phono sockets, and double that at 6.7V from its balanced XLR sockets.

At full volume it was not in overload, so full volume is usable. What +3dB means is that output is above Philips Red Book standard of 2V - that's all.

The higher output of XLR lifts music further above noise and as a result gives improved dynamic range figures. The best dynamic range value from M-DAC+ was, surprisingly, from its USB computer connection that delivered an impressive 125dB via the balanced XLR outputs. This is higher than the original M-DAC by 2dB and reaches Chord's Mojo. Unfortunately, the unbalanced phono socketed output delivered 117dB dynamic range — quite a shortfall on balanced. Although this is a good result, it isn't exceptional.

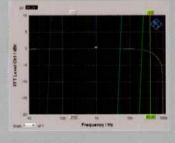
All three digital S/PDIF inputs accepted 192kHz sample rate signals, including optical, but where optical and electrical gave 124dB dynamic range via XLR out, the balanced AES/EBU input was obviously quieter the analyser showed, giving 125dB.

Maximum analogue bandwidth

(68kHz, -1dB) was achieved with the Optimum Spectrum filter at 192kHz sample rate.

With CD the Slow filter becomes severe, rolling off treble sharply above

#### FREQUENCY RESPONSE



#### DISTORTION



5kHz, whilst Optimum Transient rolls it off slowly above 5kHz, so both will have quite an obvious audible affect upon CD, but the other filters are more conventional in behaviour, Optimum Spectrum giving flat response to 21kHz for example.

Overall, the seven filters give a wide range of differing results: three offer best impulse response with least pre/post time domain ringing, two offer widest frequency spectrum and one — Slow — offers a good compromise.

Now with high-quality internal linear power supply, as well as DSD capability, the M-DAC+ continues to offer fine results all round, the only caveat being unexceptional dynamic range from the phono socketed, unbalanced outputs that most people use. **NK** 

Frequency response (-1dB)

rrequency response (-10	D)
CD	4Hz-68kHz
Distortion (24bit, -60dB)	%
0dB	0.002
-60dB	0.02
Separation (1kHz)	112dB
Noise (IEC A)	-124dB
Dynamic range	125dB
Output	3.4/6.7V

AUDIOLAB M-DAC+ £850





#### VERDICT

A DAC that offers the best performance today – and affordable too. The new M-DAC+ has it all for £850: best sound and the ability to do it all, almost.

#### FOR

- sound quality
- flexibility
- filter set

#### **AGAINST**

- appearance
- -dull display
- phono dynamic range

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## Simply the Best



### **Spendor D7**

Among the finest speakers I've heard at any price Sam Tellig, Stereophile Nov 2014

Spendor's approach is the most radical I've seen, going where no hi-fi manufacturer has gone before. D7 is extremely capable and very neutral, but most importantly it puts the music first

Hi-Fi + Dec 2013

If you're after a great all-round, affordable, high end loudspeaker, here it is

Hi-Fi Choice issue 370 2014

D7 has an unmistakeable touch of magic. Easy to drive, genuinely efficient, undemanding of placement, fine stereo, extended powerful bass, upbeat and well-balanced, build and finish first rate.

What more can one ask?

Hi-Fi Critic Sep 2013

However it's been achieved, we can't help but marvel at the sound from the D7's. Spendor D7's set the standard for speakers at this price

What Hi-Fi Oct 2013

Bass punch allied to tremendous mid band and treble insight makes for a winning combination Hi-Fi World Jul 2014





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This is a remarkable little speaker Hi-Fi + Sep 2015

Outstanding Hi-Fi World Oct 2015





Wireless Wonder

The new B&W P5 Wireless headphones offer convenience with great sound quality, says Jon Myles.

luetooth headphones have a lot going for them in theory. The lack of wires and convenience for a start. Unfortunately the reality hasn't always matched the promise. Many have been hampered by patchy connectivity and, frankly, rather poor sound quality.

But those problems are exactly what Bowers & Wilkins are hoping to combat with their P5 Wireless headphones. Priced at £330 they retain the classic looks of all B&W 'phones – meaning a well-padded headband with a formed metal frame attaching it to the two earcups. It's classy and distinctive and feels rather comfortable on the head.

The drive units are the same 40mm devices used in the wired version but the ear pads are slightly larger and a tad heavier to accommodate the Bluetooth technology. And, of course, the control buttons.

These are situated in the right earcup and include the standard three-button

volume/play/pause/call configuration alongside a power/pair slider switcher. There are also two microphones and a lithium battery with a battery life of some 17 hours – although this will vary depending on volume.

Where the P5s do shine at first is with their ease of use. Pairing with an iPhone, Android device (aptX is included) and even an Astell&Kern AK 120 took a matter of 30 seconds. Also, once connected the link was never lost, even with the different player buried deep in my pockets — which is the whole point of a Bluetooth headphone.

#### **SOUND QUALITY**

The P5s are well balanced and nicely natural. They have a little warmth to the midband but this doesn't distract from the overall presentation.

Most importantly the bass is deep – but not overbearingly so

 and nor is the treble too strong. Instead B&W

and vocals - but relies on

offer a well-judged sound which makes listening comfortable.
So with ESG's 'Come Away' I was hearing the tune and the dynamics in a natural, unforced way. It's a simple track – drum, bass, guitar

timing. These headphones got it right in every way.

They also do the same on the likes of The Pixies 'Where Is My Mind'. Rhythm here is spot on with the headphones having superb drive. Higher frequencies are a little tailed off which does curtail some of the energy but, yet again, it's a minor point.

Add in the fact that you can push the volume up from one hand and the P5s start to make perfect sense.

Yes, you can achieve better definition from more expensive headphones - but at £330 for a set of Bluetooth cans these B&Ws are very impressive.

#### CONCLUSION

Good Bluetooth headphones are few and far between. The B&W P5s go straight to the head of the list. Great design, solid sound quality and superb ease of use make them stand out.

#### B&W P5 WIRELESS £330









VALUE - keenly priced

#### VERDICT

As Bluetooth headphones go, the B&W P5 Wireless is hard to beat. Design, construction and sound quality are up with the best while it is easy to use. Highly recommended.

#### **FOR**

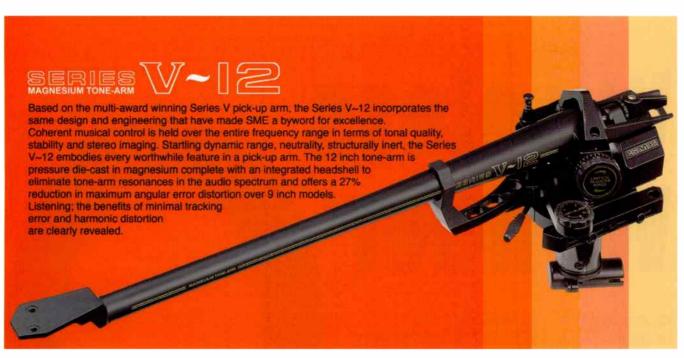
- comfort
- ease of use
- sound quality

#### AGAINST

- nothing

#### B&W

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" Greater spaciousness around each instrument that helps me to appreciate that the orchestra is composed of a number of individual instruments

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Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld. co.uk. Letter of the month wins a pair of QUAD 52 loudspeakers.

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

#### **LETTER OF THE MONTH PRIZE**



**OUAD S2 LOUDSPEAKERS** 

CHOICES OF COLOUR: BLACK OR MAHOGANY

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

A pair of QUAD S2 loudspeakers are on their way to DENNIS HOLIDAY, Letter of the Month winner in our June 2016 issue.

#### Letter of the Month

#### **ELEMENTAL UPGRADE**

Having recently had my near 20 year old Linn Basik turntable upgraded by Inspire (using the Element package and excellent advice from Robert Isherwood), I've been encouraged to think again about that hoary old chestnut: how critical is the front end in music reproduction?

The rest of my vinyl/CD system comprises the classic Cyrus 2 amp; Cyrus CD6SE player and B&W 686 speakers. The speakers are obviously far cheaper than the rest of the kit, but to my ears the system has fine synergy. I have auditioned more expensive speakers (using Cyrus CD/amp combinations), including the speaker/stand Q Acoustic Concept 20s, Monitor Audio Silver range, costlier B&W designs and Castle Knight stand-mounters. To my (admittedly ageing!) ears, none offered a significant improvement.

Since the Element upgrade, I've noticed significant improvements: tighter bass, fuller soundstage, reduced sibilance and more subtle details of recordings becoming readily audible. The best thing is that I'm spending more time enjoying a range of music through this enhanced system.

So the reason for writing is to



The Inspire Element Upgrade Package for Linn Basik turntables...

- Removing the feeble and lightweight plinth, the sound degrading rubber feet, felt mat and re-using the better parts.
- The circuit board, motor, bearing, inner and outer platter from the Linn Basik are re-housed into a 50mm Solid Birch Ply Plinth with a choice of exquisite veneers.
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encourage observations and discussion about one or two points: what cost-effective adjustments to existing gear have you or readers found useful? Can reasonably priced speakers really sing with higher quality components of a system?

Back to my opening thought. Is it worth thinking about system hierarchy and which component should take priority and determine expenditure?

Incidentally, it was great to meet and talk with Noel at last year's Bristol Show and to encourage him to keep us old school LP fans happy by retaining the vinyl section in the magazine – many thanks for continuing to do so. It's making one long-term subscriber very happy.

#### Roger Palmer Cardiff

Hi Roger – and thanks for the compliments! It was great to meet you at the Bristol Show; all the many conversations I have with readers always gives me heart that there are so many others who really enjoy their hi-fi and the musical enjoyment it brings.

And talking about happiness, the width of my smile increases as I think about the turntable and analogue LP. So we are back to that in 2016! Who would have thought it in 1983, when CD was launched. Oh strange! But your way ahead is a great solution for many who want to return to LP now that they are back in stock in record stores. Inspire can revive an old but treasured vinyl spinner, perhaps bought second hand from the dreaded e-Bay. As you note, Bob Isherwood knows a lot about all this and is best called at Inspire for his advice, which he is always happy to give. It is a very interesting and novel service he runs, perfectly timed to catch the vinyl revival. NK

#### **ADCS ADVANCE**

I refer to your reply to the letter from Denis Holliday in the latest edition of Hi-Fi World, re. the dynamic range of ADC chips. You mentioned that the Texas Instruments (TI) Burr Brown PCM 4222 ADC is good quality. This has a dynamic range of 122dB (at the chip). The ADC chip in the Creative ZxR sound card in my PC is a TI Burr Brown PCM4220 with a dynamic range at the chip of 121dB and makes good recordings.

Sygnifi have just informed me that the ADC in the Novafidelity X40 is a Cirrus Logic CS5361. This has a dynamic range at the chip of (only) 114 dB. This is not as good as the Burr Brown chips but is still good for LP recording.

I have made comparative LP recordings from old LPs in OK condition but with some wear, using the ZxR and the X40 (and Terratec Aureon and Maplin HD external sound cards). The X40 ADC has a lower specification but the recordings are a bit better than the PC internal and external audio 'cards'. All sound clean with no more 'noise' than the original LP and all provide deep bass, but the X40 adds a bit more detail and definition across the frequency spectrum, especially noticeable



"The ADC in the Novafidelity X40 is a Cirrus Logic CS5361 and is good for LP recording" says Mike Tartaglia Kershaw.

in the bass.

This does confirm what you and your team have mentioned many times in replies to my earlier emails: it is not just the ADC but also the supporting audio circuits. However for those who are focussed on PC as a source of audio, for example in a home based office, the Creative ZxR internal sound card does make recordings from LP as good as the external PC 'sound cards'. It is also shielded and the ADC is on a separate daughter board with gold plated phono connectors.

I find that the internal X40 phono preamp makes better recordings using my Rega RPI/Bias than the same via my 200 Rega phono pre-amp into the X40. The bass especially is more well defined and three dimensional using the X40 internal phono preamp.

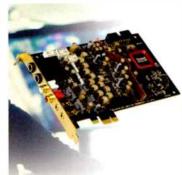
Did you measure the dynamic range of the recording circuits when you tested the X40 electronically (April 2015)? I bought the X40 because of your comments on the electronic aspects of the X40 and Jon Myles sound quality review and I am a very satisfied customer.

I am using my X40 via XLR into a Quad Artera power amplifier and Monitor Audio Gold 200 speakers and the sound is wonderful. I hope you will review these speakers in Hi-Fi World one day. They have amazing ribbon tweeters which seem to improve bass definition, as well as adding that almost electrostatic 'airiness' for want of a better word.

Also, each drive unit (including the ribbon) uses the same ceramic coated material leading to a very consistent sound across the whole frequency spectrum. Other professional reviewers have said the sound is 'glossy' but we find it airy and three dimensional with a wonderful definition in the bass which seems to complement the Sabre DAC in the X40.

The Artera appears to be perfectly neutral in all this and just passes through the signal it receives without adding anything except power – just as you expect from Quad. Nothing is perfect and there may be an edge to the treble on some recordings which may be the Sabre DAC and the revealing ribbon in the 200s working together, but on the whole this possible 'highlighted' treble seems to improve the mid range and bass definition most of the time, at the expense of occasional brightness.

I would love to see them in a comparative test with new Quad Z series equivalent. The Z series was not available when we bought the 200s, but we have no regrets (this may change if you do publish a comparative review



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If you record audio using a PC, the Creative Sound Blaster ZXR gives quality as good as external cards says Mike Tartaglia Kershaw.

and find the Quad to sound better.)

Finally, can you advise from your electronic analysis of the X40 which filter on the Audiolab Q-DAC/M-DAC is the most similar to the fixed filter on the X40?

Best wishes,

#### Mike Tartaglia Kershaw

Thanks for all your findings Mike. We must ask Monitor Audio for Gold 200s for review. I'll note that their Platinum series has raised treble and a tendency to sound a tad bright, if very clean and fast. This is a fine balance to strike with the Sabre32 DAC of the X40 that is very smooth. The closest filter is Optimal Spectrum and Sharp Roll Off, but you'll find Minimum Phase also very similar. **NK** 

#### TRANSMISSION LINE

I read your review of the Castle Avon 5 (October Issue) article with joy as it reminded me of the pleasures I got when I owned a pair of transmission line speakers in the 80s. You emphasised the musical bass, plus mid range and high frequency clarity that is so typical of transmission line speakers.

Music issues from these units in such an unforced way that the overall experience is such a listening pleasure. They are certainly better than some of the others with holes in them (reflex ports). Cost and difficult manufacturing methods have been blamed for not seeing more of these units but with modern machinery and workshop methods such excuses can no longer be a cause.

Recent research and reworking of the maths have given a better understanding of transmission line designs so I think that the previous scepticism can no longer be the cause for unpopularity of transmission line speakers.

During a recent search on the World Designs forum for information on transmission lines I came across an article where Peter Comeau had an input. He also mentioned his love of transmission lines and the revival of the Radford lines. He is of course now working for the IAG group who owns the Castle brand. Could he have had some influence in this creation. Is this the beginning of a re-introduction of the great transmission lines?

Thank you for Hi-Fl world. Subs well spent.

#### Henry Curniffe

Hi Henry – and as you say these days we have a better understanding

of the transmission line than when, in the 1960s, Dr Bailey ran a model train with a microphone on board though one to measure its behaviour. For those interested there have been some in-depth discussions on the U.S. based DIY Audio forum.

Unfortunately, the issue of cabinet cost and manufacture remains fraught. In a nutshell, the UK has lost most of its cabinet manufacturers, high cost and variable quality being the two issues usually mentioned to me; Denmark managed better it seems. You'll pay around £100 for a pair of simple cabinets when ordering in quantity and this is too high; needless to say China does it cheaper. However, interestingly, Phil Swift of Spendor has stepped into this area by buying and re-equipping a UK cabinet plant and we will be visiting and reporting upon it soon.



Castle Avon 5, a loudspeaker with "musical bass, plus mid range and high frequency clarity that is so typical of transmission line speakers" says Henry Curniffe.

#### THE STRENGTH OF ARMSTRONG

NK.

I was pleased to read Martin Pipe's piece on Armstrong 620 series equipment. I bought late examples of the amplifier and FM tuner in 1980/81 just as they we going out of business. I was attracted not only by their good sound but also their small form factor and design centre recommendation. They looked a cut above most other equipment available at that time. They also sounded a cut above, through KEF Celeste IV speakers — ah nostalgia!

The Armstrongs lasted me 20 years until replaced by Cyrus 7 amp, CD and tuner (spot the design continuities). The

Armstrong amp was as punchy and musical as the Cyrus, but as Martin said was warmer, more lyrical but less detailed and precise than more modern designs

The tuner was, as Martin said, amongst the best at the time and though more fiddly than later PLL and IC designs was a cut above most – really only the QUAD was better amongst relatively affordable equipment.

Jim Lesurf, who designed later tweaks to the 620 amp and designed the 700 series, maintains a history of Armstrong at www.audiomisc.co.uk/ Armstrong/armstrong.html.



Armstrong 600 Series products looked good and sounded it too, notes John Hurley.



Jim later became a university academic and latterly of course a hi-fi journalist. We share an interest in RISC OS based computers (the old Acorn OS) so are in touch from time to time. I now wish I had kept the old Armstrongs and had them overhauled. I reckon they were undervalued at the time and would stand better critical comparison now. Regards

John Hurley

#### **ARMSTRONG 600**

Thanks for the interesting article in your May issue by Martin Pipe on the Armstrong 600 units. I get more emails about these than any other range or unit and they clearly still have a number of happy users. I'd like to add a few comments to what Martin wrote.

The 600 range design evolved and was improved during the years it was manufactured. For example, late examples of the FM tuner section used a Texas Instruments stereo decoder IC to give improved performance (the board will be marked 'L I 5' rather than 'L I 4'). And later versions of the power amp used better transistors to increase the power capability and reduce distortion. Various other component values were also altered.

So later models had better performance, although the external appearance and printed specs didn't change. There were only two releases of the circuit diagrams, so these didn't keep up with the reality, either!

The 600 amplifier should be OK with \*one\* set of 4 Ohm speakers at reasonable power levels. But asking it to drive \*two\* sets of 4 Ohm speakers in parallel was demanding a bit much from the transistors of the period. Particularly when they are on the small heatsinks. Hence the words of caution in the documentation. The most likely problem the wording wished to avoid was overheating of the transistors caused being required to drive essentially a loading of only 2 Ohms or less.

All that said, for obvious reasons I think you get best results by using one speaker pair at a time, my preference being for LS3/5As or something like the KEF speakers of the period. Although Ted Rule tended to use some small B&W speakers when listening... erm testing.

Finally, if people use the 600 units with something like modern CD players, DACs, etc, I'd suggest preferring to use the Tape' input sockets. This is because these days sources tend to output up to about 2 Volts which is rather more than was typical for many line sources in the early 1970s. The Tape' input has a lower sensitivity and higher overload tolerance



Left first CD-player (1982)

Is it all over for CD? "Perhaps we should have a reader's referendum" suggests Alan Scott.

than the 'Aux' input. A potential bonus is that pressing the 'Monitor' key down then bypasses the tone control section if you prefer this.

Cheers.

Jim Lesurf http://www.audiomisc.co.uk

Many thanks for your reply. Your www.audiomisc.co.uk website is excellent, and a treasure trove of Armstrong-related information - I used it when servicing my own unit! I'm surprised that there isn't more about these excellent products on the Web. They did sell well internationally, after all. My early (1973-vintage) unit has the original TO-3 power transistors, and a decoder board (mine is marked F14) that's based around the RCA CA3090AQ chip. For all this it still sounds very good, even with Radio 3; other broadcasts tend to be horribly-compressed, and I suspect this would have more impact on sound quality than the newer decoder. In the 1970s, though, Optimod had yet to make its impact and FM radio could sound very good.

Serious FM users could replace this decoder with a new one built around the National Semiconductor LM1800 chip also found in the Leak Troughline retrofit. Unfortunately, the LM1800 is becoming difficult to obtain.

Interesting tip about the tape input. The tone controls feed the output of the tape DIN socket (so you can make 'corrected' recordings). The tape monitor input – when selected – goes to the volume and balance controls via the sensitivity pots. Feeding a CD player into here instead (I suspect that tape is a minority pursuit nowadays!) will therefore bypass the tone controls and any impairment they may introduce. MP

#### **U-TURN**

In the May issue Noel Keywood simultaneously negotiated the bell curve and performed a U-turn!

Your Opinion Page article was uncharacteristically positive in relation to the humble CD and supportive of the millions of us who have invested in the technology. I welcome this apparent change of policy and no longer regard you as the 'Grim Reaper' of CD! Henceforth, I will transfer all blame for



Ortofon 2M Black MM cartridge - one of the best and with great tracking ability.

CD's imminent demise to the dreaded bell curve!

Perhaps we should have a reader's referendum – is it finally exit time for the CD?

Whatever the outcome Noel, be assured you will always have my vote of confidence. Long live CD, LP and NK!

#### **Alan Scott**

Thanks Alan. Yes, I am feeling dizzy from all the twists and turns! But please don't forget that these days every improved DAC in effect advances the sound of CD, M-DAC+ and Mojo being the two most auspicious. Now short in supply are dedicated CD transports.

In truth I suspect a lot of the problems I now hear on CD, having become innured to hi-res, are as much in the original digital recordings it carries, as in the limitations of the playback system, even though I 6bit is now Neolithic. Meaning if you get a 'good CD' and play it back through a decent DAC it does sound impressive. **NK** 

#### **RADIO RATES**

Thanks for printing my enquiry 'Chasing URL's. However, you may be interested in this, when using this URL for BBC Radio 3 (http://a.files.bbci.co.uk/media/live/manifesto/audio/simulcast/hls/uk/sbr\_high/ak/bbc\_radio\_three.m3u8) that is on Martin's URL list, the bitrate is 128 kbps.

This can be verified by recording a short section of the broadcast using VLC media player. After recording, right click on the file, click on 'Properties' then the 'Details' tab. Under 'Audio' see 'Bitrate'.

Using the URL for BBC Radio 3
Martin highlighted in his Opinion column in the March 2016 (http://open.live.bbc.co.uk/mediaselector/5/select/version/2.0/mediaset/http-icy-aac-lc-a/format/pls/vpid/bbc\_radio\_three.pls) and following the above procedure the audio bitrate is 320 kbps.

I'm sure I read somewhere on a BBC blog that the BBC's main radio stations are available at 320 kbps – but the Radio 3 bitrate for Radio 3 on DAB is 192 kbps!! Regards

#### Michael Bickley

#### **MC TRACKING**

In your February issue, you responded to a letter regarding differences in high output and low output MC coil masses and that the former tend to break up and distort lower modulation passages than the low output types. Where do the moving magnet types fit in the

scheme of things regarding the internal mechanism mass and are they any better than, say the high output MCs?

Quite a while ago, you had an article by Albert Lee called Thorens TD125 Rebuild. In it he stated that when taking out the 3 springs to be sure and label them so they go back into their original spots. I didn't realize that there was any difference between them, but looks can be deceiving. Or is it because the ones nearest the platter would have lost their springiness due to the higher load to support. Would appreciate your or Albert's reply to this. Regards,

#### J.Wdowiak Canada

Yes, where you have an MC cartridge in Low Output, and High Output versions, the low output one will track best, simply because it has fewer coil turns and lower moving mass, that translates to lower effective tap mass and better

absolute terms, even budget ones.

We have lost contact with Albert Lee so cannot answer your second question. **NK** 

#### **VALVE VALUES**

Your review of the subject amplifier was quite interesting. Notable in particular for your comments concerning valves. This is not the first time that you have stated a preference for amplifiers designed around the KT88 over the newer KT120.

Stating a preference is fair enough. In this instance, however, in my opinion you went too far. It is difficult to understand why you chose to withhold certain facts concerning the source and history of these valves. Can you report that both the KT120 and KT150 come from Russia and are the products of Tung-Sol?

It would be worth noting, too, that the Audio Research Reference 75 was designed around the KT120, as were all Audio Research valve amplifiers





Audio Research now use the new, high quality KT-150 power valve, seen here in their Reference 75 SE amplifier.

acceleration. This influences the midband and high frequency tracking more than low frequency tracking, which is why we always test tracking at IkHz as well as 300Hz.

High output MC cartridges better suit noisy phono stages, but these days low noise Integrated Circuits are common and inexpensive, so this is becoming less of an issue. In general then, go Low Output for best results.

MM cartridges wave a magnet around, or a permeable element. The coils are fixed so do not influence tracking. Most MMs track very well in from 2010. Since you report that you eschewed any amp built around the KT120, please allow me to state for the record that the original Reference 75 is a pretty terrific sounding amplifier in it's own right.

Another highly regarded manufacturer of valve amplifiers here in the USA is Conrad-Johnson, and for the record all of their current production utilize KT120 valves. It should come as no surprise that their KT120 based amplifiers also sound wonderful, garnering class leading accolades from one and all here in North America.

There are certainly amplifiers based

on KT88 valves that are terrific too.

How any given amplifier sounds has a great deal more than just valve selection at play. Circuit design, component selection, build quality, layout are all part of the end result. It is just simply not sensible to condemn products you have admittedly ruled out of consideration solely on the basis of valve selection. You can do better, I know because I have been a fan of yours since years gone by when you wrote for that other hi-fi magazine. Yes I am that old. Take care.

Regards,

#### Bill Stevenson West Palm Beach, Florida. USA

Hi Bill. Hope West Palm Beach is warmer and drier than London as I write this – it's got to be hasn't it!

Anyway, yes, I do have a grudge against both the KT90 and I 20, both of which I never liked much. To me they sounded clanky and crude, unlike the KT88. I felt they undermined the intrinsic quality of a good valve – tube to you – and this includes the great Western Electric 300B of course.

I live with 300Bs in a minimalist World Audio Design 300B push-pull amplifier of 28 Watts (phase splitter/driver transformers), as well as KT88s in Quad II-eighties — and love both even though they sound quite different. Since I also like 845s and most else, I have broad experience and taste

Against this backdrop the KT90 and 120 were prosaic in their sound I felt. Their real attraction to manufacturers was they were cheap, handled a lot of power and were reliable – a big issue in the real world.

I was told the KT90 and I20 were relatively simple and crude Kinkless Tetrodes with extended anode area, their structure being inadequately supported to minimise microphony and other ills. This person worked with their suppliers and knew more than me.

I felt vindicated in my views when the KT-150 was introduced. All of a sudden, the ills of the 90/120 were by implication made known (the 150 has an improved glass envelope and better supported electrode structure). It sounded completely different in the way I expected, losing the crude clank – and everyone has predictably flocked to it, including Audio Research I note, who know how to control the sound of a tube amplifier, and value reliability.



The return to vintage is gathering pace, outside of hi-fi as well as in it. Here's a new 'vintage' Triumph, a modern design in old style.

Yep, we know that design and components also affect the sound but the amplifying device is crucial and it is the ability to get at and influence this device in valve amplifiers that so distinguishes them from those other things. This is why the intrinsic sound of a valve is so important.

Please e-mail over some sun. NK

#### **NOSTALGIA**

I love my hi-fi almost as much as I love my music, but I had to smile when I read Noel Keywood's editorial and other articles waxing lyrical about nostalgia in the May 2016 edition.

It is apparent that in recent years the hi-fi industry has reluctantly recognised that with no new conventional formats in the pipeline and a move away from separates to instant digital gratification, it is in need of a new impetus if it is not to stagnate. The answer has been to go retro, regardless of historical developments in technology, and regardless perhaps, of quality.

Yours, a regular reader and not really a sceptic.

### Andrew Wardle Isle of Wight

Those that work in hi-fi are amazed at the return to vinyl; it is something none of us would have – or could have – predicted. From where it came I am unsure. That's why I speculated about the delights of a simple physical medium, as others have done of course.

What you have to bear in mind Andrew is that the return to all things retro is not only common around the world, at least in relatively well-off industrialised countries with a history of consumer product usage, but also across other industries, motorbikes being an obvious one. It isn't a conspiracy hatched up by the hi-fi business.

And having just read a piece in the Daily Telegraph, by Michael Henderson, where he says "in case you hadn't noticed vinyl is back", I re-iterate that the LP is associated with the music it carried, the two being inextricably intertwined, a point he makes — and my son makes who is interested in music and my LP collection, but not hi-fi (oh shame).

NK

#### **BALANCED CONNECTION (1)**

Martin Pipe raised in his column in the May edition of Hi-Fi World the question and benefits of balanced connection, asking readers for their reaction and views.

Martin outlined the largely professional and broadcasting use of balanced connection and the benefits this brings, but asked if there was any benefit in domestic use.

Wherever possible all the



Balanced connection, usually made by an XLR plug terminated cable, as seen here, is the most common way of achieving it in hifi. But both cables and connectors are big and expensive.

connections within my system are balanced, which includes turntable to disc stage and pre-amp, CD to DAC to pre-amp and pre-amp to two bridged Myryad MA240 power amps. In all cases of connection the balanced form is

superior to single ended with a clearer, more detailed coherent sound, superior imaging and better bass. The lengths involved are short typically, 0.5 to 1.0 metres with a maximum of 1.5m or so. The effect varies, but in every instance there is no thought to go back to single ended. Bridged amplifiers are just another form of balanced operation which I think is the main benefit rather than the increased power that bridging brings.

Of more fundamental importance is a balanced power supply which can be achieved by an isolation transformer. The mains supply as well as being isolated by the transformer is changed to a one of +115 volts (or so) on the positive side and -115 volts on the neutral side (i.e. balanced), achieving the 230 volts of the home supply. The hi-fi system then hangs between this supply with a cancellation of mains born interference achieved by the balanced operation, in addition to the isolation afforded by the transformer. This has the same effect as balanced connection on the sound quality.

Why balanced connection should achieve this improvement I am at a loss to explain. Balanced power supplies and bridged amplifiers I can understand but a short length of balanced connection is more difficult to explain, but it clearly works.

Yours

### Peter Graves Stockton on Tees

Hi Peter. That's all interesting to know – thank you for writing in.

I have had much the same experience: balanced always sounds better, meaning slightly purer and crisper, having just a little less fuzz. Often it isn't a big effect, but it is there. And often I suspect this means the signal is passing through balanced line drivers and receivers (e.g. That Corporation 1606 / 1290), a complexity some object to, noting that the circuits in the products are otherwise almost certainly, unbalanced.

This arrangement, however, still means earth currents are separated from signal currents, measurably improving dynamic range I have found, for example with Merdian's 808 V6 in this issue.

And then there's the fact that balanced cables and connectors

– mostly Neutrik – are better quality than unbalanced product.

The idea of balanced mains is fascinating, being common in safety transformers for use with 250V power tools used in wet conditions; you only get a 125V shock. This is

less lethal than a 250V shock, if you see what I mean! So I've got a huge transformer of this type sitting in my lounge and it did again measurably reduce earth currents (until I made a connection error and blew the front end of my spectrum analyser). However, it made less difference sonically than I expected, but this may be down to the quality of the mains supply; mine is good.

Balanced mains is a very interesting route to go down all the same and I see RS Components sell, for example, a Carroll & Meynell I.65kVA fixed, encased transformer for 'garage use' that can deliver I5A from twin centre tapped I10V secondaries (Part No CM 3300 WMO, price £296.75). This looks suitable for lounge use, but it must be wired in by an electrician and I'll note that most don't understand the idea of balanced mains and may be a tad wary. The downloadable safety instructions provide detail.

Ideally, all hi-fi equipment should run fully balanced all the way through I believe, but that is another story. **NK** 

#### **BALANCED CONNECTION (2)**

With regard to Martin Pipes' article "Balanced connections" I will explain my experiences, if it may be of interest. I found I needed to find a solution to a situation that arose when I moved to a larger house 10 years ago. I thought "great, we have a larger lounge for a listening room". It was a typical 3.5 x 6.5 metre rectangle. However, all my audio equipment had to be at the opposite end of the room to the speakers.

Nothing unusual about that perhaps, except I knew that speaker cables longer than about 3 metres compromised the



A Carroll & Meynell CM 3300 WMO mains transformer that offers a balanced output for safety in 'garage use'. It delivers up to 15A – plenty enough for a hi-fi system.

to a couple of Anatek monoblocks, but again the long interconnect cable killed the sound dynamics / frequency extension / speed (even using single solid-core silver Audio Synthesis cable made negligible improvement).

Much careful thought and research over many months finally created a system with long balanced interconnects I made with Klotz copper professional microphone cable and Neutrik silver plated XLR plugs — and the two essential items at either end? A Music First Silver Mk II passive pre. with a pair of Nu-Force Ref. 9V3 SE amplifiers, hidden discreetly behind my speakers.

Incidentally, I had tried some silver plated copper mic cable initially, believing it ought to be the best thing, but my system was so revealing it demonstrated an odd sibilance on speech and percussion sounds that I knew was not due to the components at either end — so the less expensive cable was better!

It had been quite an education — as is the way with these things — but I am



Nu-Force Ref 9V3 SE power amplifier with balanced input, used by Richard Best, behind each loudspeaker.

sound too much - I like to try to get everything functioning at it's optimum.

My NVA system that had served so well simply could not be used with long interconnects, so I had to research new options. The added stipulation from my wife was that the power amplifiers must be barely visible and nestled behind my

I built a White Noise preamplifier kit into a meticulously engineered case, allied

pleased that I am a convert by necessity to balanced cables. They enable the signal to be transmitted with negligible corruption and at reasonable cost.

I now judge equipment reviews in a new light — source and amplifier units that offer balanced options, I consider to be "serious audio". Regards.

Richard Best RMB Loudspeakers.

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Total Eclipse

Tannoy has unveiled its most affordable loudspeaker range yet in the shape of the Eclipse series. Jon Myles says the flagship Eclipse 3 floorstander could be one of the hi-fi bargains of the year.

unsurprised that for the budget
Eclipse series Tannoy have resorted
to Far East manufacture. All the same,
Tannoy's designers must have drawn
on all their experience when creating
the new Eclipse series — officially
launched at this year's Bristol Sound
& Vision Show.

Why? Well, they are the most affordable 'speakers in Tannoy's comprehensive range, starting at just £130 for the Eclipse I standmount. Above that sits the Eclipse 2 floorstander at £229 while the flagship model of the range is the Eclipse 3 on review here for just £299. And that is low. very low for a company known for quality loudspeakers, such as the Westminster Royal GR we reviewed in our November 2015 issue, that costs a mere £27,950!

No doubt that by current market norms £299 for a three-driver floorstanding loudspeaker measuring 37.8" × 10.6" × 10.9" (H/W/D) puts it firmly at the budget end of the market. All the same, the Eclipse 3s are exceptionally well presented for their price – coming in a handsome black oak finish with silver detailing around the drive units adding a touch of class to the fascia.

Those drivers are arranged in a D'Appolito configuration with the tweeter placed centrally between the two mid/bass units. All have been designed especially for the Eclipse range with the tweeter using a 28mm woven polyester dome diaphragm coated with a layer of nitro-urethane

roducing a good budget loudspeaker is one of the trickier tasks in hi-fi. Yes, many of us may admire and lust after some of the cost-no-object models that occupy the higher end of the retail chain. But give a designer a blank sheet of paper, unlimited funds and the choice of the best drivers and cabinet construction available and you'd expect them to produce

At the lower end of the market, however, designing a loudspeaker to hit a certain price-point inevitably includes a series of comprises. The more money you spend on drivers, for example, the less there is for the cabinet — and the cabinet in itself consumes a lot of available budget. So much so that you have to build a budget loudspeaker in the Far East as matters stand. I will be covering this by visiting a UK cabinet plant

soon. But in the meantime I am



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damping. This coating is said to move the break-up frequency much further outside the human range of hearing, leading to a smoother and less fatiguing sound.

The new 127mm Eclipse mid/bass driver cone is constructed from a light, stiff multi-fibre enriched paper pulp with a nitrile rubber surround, large ferrite-magnet motor and Tannoy's advanced cooling design which the company says gives high efficiency and power handling.

Each 'speaker weighs just over 12kg and features a rear-firing reflex port as well as a single set of goldplated binding posts. The whole construction sits on a two-piece screw-on plinth which extends out from either side of the cabinet to give maximum stability.

#### **SOUND QUALITY**

The Eclipse 3s certainly look more expensive than their price tag would suggest - and they sound it too. Unlike many budget floorstanders they have a relatively smooth and even presentation with no hint of boom or tizz in low and high frequencies respectively.

Partnered with a Creek Evolution 100A integrated amplifier via Black Rhodium Samba VS-1 cables I found the Tannoys sounded entertaining playing The Style Council's 'Long Hot Summer'. Mick Talbot's insistent keyboard backing line came over as rich and detailed, without being too forward so as to swamp Paul Weller's gruff vocals. Similarly with Massive Attack's 'Angel' the opening bass notes were firm and tuneful without being unnecessarily exaggerated.

Admittedly, there's a slight midbass lift but this simply serves to give up-tempo songs an infectious, toe-tapping quality. The Libertines' 'Can't Stand Me Now', for example, was fast and punchy, the tight rhythm section powering the song along with aplomb. Higher up the registers the guitar interplay of Pete Doherty and Carl Barat sounded sparkling. Most impressively Doherty's descending guitar line near the start of the track was clearly discernible - something lesser 'speakers sometimes fail to capture.

Moving on to the title track of David Bowie's 'Aladdin Sane', the sheer musicality of the Tannoys shone through. Mike Garson's discordant piano lines are, well, suitably discordant but never sounded out-of-kilter or divorced from the backing or vocals, melding with them

to provide a truly thrilling experience.

This is all aided by excellent instrumental separation and stereo imaging - so on the San Francisco Symphony's DSD recording of 'Mahler's No 2' the various orchestral sections and voices were placed firmly in their own acoustic space with the music extending well beyond the outside edges of the cabinets. There was no sense of strain on the climactic finale even with the volume pushed way up.

There's perhaps not quite the sense of scale you'll get with some more expensive loudspeakers and at times the tweeter can lack that last bit of detail and delicacy on female vocals. But having said that I've heard loudspeakers costing more than twice the price of the Tannoys that don't possess half their musical coherence or rhythmic

If designing a truly satisfying budget loudspeaker is a delicate balancing act then Tannoy have got the balance spoton with the Eclipse 3s. They are smooth, detailed but with sufficient punch to do justice to both bass-heavy rock and vast orchestral crescendos. That's a potent combination in a 'speaker costing just £299.

#### CONCLUSION

This is a belter of a budget floorstander from Tannoy. It is well built for the price but, crucially, has the sonic ability to shame loudspeakers costing considerably more.

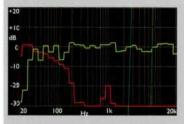
The rear carries a single pair of screw terminals and a reflex port. Note the stabilising plinth feet.

#### MEASURED PERFORMANCE

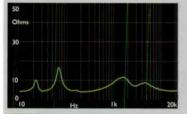
Frequency response of the Eclipse 3 is fairly even across the audio band, up to 15kHz. There are some ups and downs, but nothing large as loudspeakers go, the trend being flat and therefore tonal balance is relatively accurate.

High treble output is strong but the ear won't easily detect this, being more sensitive to the upper midband that falls slightly, softening the sound. So the

#### FREQUENCY RESPONSE Green - driver output Red - port output



#### **IMPEDANCE**



Eclipse 3 will not sound forward or brash, more easy and possibly mild in its

Bass output is very well maintained all the way down to 40Hz, the port (red trace) adding a little below this, by reaching down to a low 20Hz, so the Eclipse produces deep bass and even sub-sonics in a large-ish room of around 20ft long. All the same it is not a bass heavy loudspeaker, as overall bass level drops slightly relative to the lower midband. However, 'room gain' will compensate for this to give, subjectively, an even balance.

Sensitivity was good at 88dB Sound Pressure Level from one nominal Watt (2.8V) of input. Our impedance trace varies around 6 Ohms, with no large reactive changes; even the residual bass peaks around port resonance at 30Hz are low, giving the Eclipse a substantially resistive characteristic, making it a reasonably amenable amplifier load, although it still draws current

The Eclipse measures well all round. It isn't the smoothest speaker going but it is well balanced and delivers well proportioned and controlled deep bass.

#### **TANNOY ECLIPSE** 3 £299







VALUE - keenly priced

#### VERDICT

A budget floorstander that belies its price. Assured sound which is detailed and controlled vet also immense fun. A real bargain.

#### FOR

- punchy bass
- smooth midband
- big sound
- price

#### **AGAINST**

- nothing

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# Black to the future oner

Is the A-9010 one of 2016's best hi-fi bargains? Martin Pipe certainly thinks so.



nkyo's A-9010 looks like one of those amps of yesteryear, with its cool black finish and numerous controls. At £200, though, it's rather cheaper if – say – thirty years of inflation is factored in. And it's got rather more 'kick' than a typical 1980s rack-amp, Onkyo claiming just under 45 watts of useful power per channel.

But the mass-market hi-fi heritage is there for all to see. Bass and treble tone controls and a 'loudness' button are offered, albeit with a 'straight' bypass, and there's an MM phono stage. Yes, vinyl lovers can plug a turntable straight in! Indeed, inputs are a numerical strong point. The A-9010 also gives you no fewer than four line inputs on phono sockets, a fifth front-panel 3.5mm input for personals, and a fixed output for recording. Output meters may be absent, but blue LEDs inform you which input is selected. In the US and continental Europe, the A-9010 has a built-in 24/96 DAC. What a shame this didn't make the UK

A limitation, as I see it, is that no tape monitor feature, of the sort

you'd find on the Japanese integrateds of old, has been fitted. Personally speaking I would rather have a tape-monitor button than the tonal colouration of a 'loudness' function - which boosts treble and bass at low volume levels, in an attempt to compensate for hearing characteristics. During listening, their effect was rather draconian and the adjustment range coarse. They might well be of benefit for some lessthan-perfect recordings. but keeping them out of circuit pays dividends when it comes to resolving the

And outputs? The A-9010 only makes provision for one set of speakers, but the rear-panel terminals are far superior to the cheap spring-clips of vintage Japanese gear. They'll take 4mm plugs or bare wire. The front-panel 6.3mm headphone socket gets its own amp, rather than being fed from the power amplifiers (which are implemented with discrete

finer details of better ones.

transistors) via resistors. And the crowning glory? A handset that lets you operate the (motorised) volume control, change sources and operate some recent Onkyo source gear from your listening position.

#### **SOUND QUALITY**

I put the A-9010 through its paces with a pair of Rogers GS5 floor-standers. In addition to a Pioneer CT90R, source gear included a 1980svintage Kenwood direct-drive turntable (with Philips GP401 cart), the Sony MDS-JB940 Minidisc deck featured in this month's Olde Worlde and - for serious digital listening - a Cambridge CXN streamer and Chord Hugo TT DAC. Headphones were Oppo PM3s. Let's start with vinyl. Given that what we have here is a budget unit, I was

surprised at how much the

The A-9010 handset offers input selection, muting, volume and standby. Most of the buttons do not relate to the amplifier, being for Onkyo source components like tuners, CD players and iThing docks.

ONKYO



A-9010 could dig out of the grooves with its on-board phono stage.

My original (1974) pressing of Supertramp's Crime of the Century was delivered with vitality and tonal balance; the bass isn't perhaps as 'dry' as what I was getting from my Armstrong (something particularly evident when listening to Radio 4) but this slight difference in presentation didn't compromise my enjoyment of the LP one iota. I was drawn into the performance, such is the sheer musicality on offer. An expected amount of musical detail manages to emerge, although some of the finer elements are masked - this is where costlier designs come into their own.

But as an introduction to the joys of vinyl, it's difficult to fault - especially at this price level. And lovers of that long-term supporter of vinyl, dance music, will love it too. The evidence? A 12in. copy of Time Zone's World Destruction. The bassline of this track, as old as my cassette deck, was given depth and articulation while the punchy Oberheim DMX electronic percussion (a staple of classic old-school hip-hop) drove with snap



Note the large mains transformer at left, while the finned heatsink hosts the Class AB power amplifier's discrete output transistors - no modules here. It's fed, via a motorised volume control, from a preamplifier that features electronic signal selection. Long-term freedom from switching 'crackle' is thus assured, while muting gives you a short 'pause' between sources.

and verve. Upfront, the vocal performances of Afrika Bambaataa and John Lydon, together with the guitars and synth, crackled with appropriate energy.

Next, I turned to a CD-sourced



Decca recording of Ravel's Bolero (Ernest Ansermet/L'Ochestre de la Suisse Romande). This recording was made in the early 1960s, seen by some as the 'golden age of stereo'. Once again, the A-9010's innate musical flow came into its own. And as the piece slowly builds in intensity, this modest little amp copes admirably with the increase in complexity and scale. Sure, it doesn't have the sheer dynamics of the Arcam A49 currently also at my disposal - but that's aimed at a different segment of the market, where more spacious rooms and bigger speakers are more likely to be encountered.

I have for many years enjoyed

the unique 'space music' of German electronic composer Klaus Schulze, and somewhere kicking around I have LP versions of classic albums like Blackdance and Timewind. During my time with the A-9010, though, I instead listened to a lossless CD rip of a slightly more recent work, 1977's Mirage (in this case the 2005 Revisited remaster). The stereo spread

"such depth and ability to localise sounds demonstrates the A-9010's ability to set up a convincing soundstage".

I experienced was little short of holographic, Schulze's rich tonal layers and understated rhythms extending to the sides of the room on occasions. Such depth and ability to localise sounds demonstrates the A-9010's ability to set up a convincing soundstage; in this regard, it's bettered some costlier amps

I've heard. Throw in a more-thancompetent headphone amp, and you've probably got the amplifier bargain of the year here! The Onkyo A-9010 is a great little amplifier at a fantastically low price, upholding the long Japanese tradition of producing quality budget amplifiers for impecunious audiophiles.



With no fewer than five line-level inputs (one of which is on the front panel) and a phono stage, the A-9010 gives you plenty of source possibilities. There's no tape loop, only one pair of speakers is catered for and you don't get the integrated DAC provided to customers in North America and Continental Europe. The 'RI' jack conveys remote commands to and from other Onkyo gear.

#### **MEASURED PERFORMANCE**

The A-9010 produced 60 Watts into 8 Ohms and 100 Watts into 4 Ohms so it has plenty of power, far more than specified (45W), and will go loud.

Distortion behaviour was peculiar, with levels declining slowly after any action, indicating a dynamic biassing system with slow time constant. Also, the higher current draw of a low 4 Ohm load produced less distortion than an 8 Ohm load, when it is always the other way around. As output was decreased below 1V distortion rose dramatically, reaching 0.4% at 0.5V, with extended harmonics of crossover, so the A-9010 will not sound especially clean or svelte at low listening levels; it was behind the curve here – budget amps manage better nowadays.

There is compensation perhaps in complexity on offer: tone controls, loudness control, remote control of volume etc. However, the tone controls had excessive lift/cut of around 12dB, making fine adjustments difficult as control resolution was poor. Plateau lift and cut of 2dB minimum around 1kHz

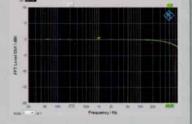
were provided, response changes being spectrally broad – not ideal.

The phono stage gave a clean set of results for MM cartridges, with accurate RIAA equalisation but no warp filter, low noise, good sensitivity and very high overload.

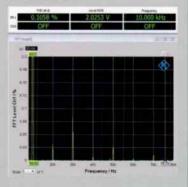
The A-9010 has a satisfactory overall performance but was challenged in certain critical areas, high distortion at low output being the most problematical for sound quality. **NK** 

Power	60watts
CD/tuner/aux.	
Frequency response	3Hz-50kHz
Separation	89dB
Noise	-101dB
Distortion (1W, 10k)	0.1%
Sensitivity	180mV
Disc	
Frequency response	4Hz-20kHz
Separation	67dB
Noise	-81dB
Distortion	0.12%
Sensitivity	3.5mV
Overload	87mV

#### FREQUENCY RESPONSE



#### DISTORTION



#### ONKYO A-9010 £200



OUTSTANDING - amongst the best

VALUE - keenly priced

#### VERDICT

Despite its modest price, and the A-9010 combines a goodly selection of features with a musically-satisfying performance. A worthy introduction to 'proper' hifi, or the sound basis of a 'second system'.

#### FOR

- numerous inputs
- MM phono stage
- headphone socket
- remote control

#### AGAINST

- no tape loop
- coarse tone controls
- no DAC, unlike foreign versions!

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Martin Pipe tucks into YBA's Heritage D100 hi-res DAC

Heritage

he YBA Heritage D100
DAC (Digital-to-Analogue
Convertor) does the
French reputation for
attractive design no harm
whatsoever, with its elegant
yet solid metalwork, uncluttered
fascia and green eye-shaped display.
It's the first YBA product to support
DSD.

Additionally, it has Bluetooth (with apt-X support) and electrical coaxial, plus optical digital inputs (S/PDIF), as well as asynchronous USB for connection to a computer. To use the latter with Windows, you'll need a driver that can be downloaded from the YBA website.

Rather than sticking with the 192/24 Wolfson WM8740 chip fitted

to its Heritage CD100 DAC/CD player, YBA has plumped for the higher-spec Texas Instruments PCM1795, based around their advanced segment' architecture. It has 32bit resolution (but most do) and supports DSD and 384kHz sampling rates, again like most other DAC chips.

But things got a little confusing with the Heritage D100 when I read what the YBA website says about DSD support: "Irrespective of the source (USB, Coax, Optical or Bluetooth) the DAC will detect DSD encryption". This is wrong: only USB can support DSD code.

Rather than dedicating the two DACs of a stereo converter chip to each channel, using a technique

known as 'dual differential', a single PCM1705 provides stereo conversion duties in the D100. But then again, the PCM1795 offers differential outputs for each channel. These current outputs, analogue-filtered and converted into voltages, form the balanced outputs that you'll find on the D100's rear-panel XLR outputs. Other circuitry is used for the single-ended outputs provided on standard phono sockets.

The only other output is a coaxial digital one, carrying the currently selected source. This could be handy for anyone with a digital recorder; another possibility is using the D100 as a USB-to-coax converter with an 'upgrade' DAC. The only other connector, mains

input apart, is one that allows dealers to introduce new firmware.

Controlling the D100 is very easy. Armchair selection of sources (but not standby mode) is allowed with the excellent supplied remote, which will also control other YBA products. Front-panel toggle switches turn the unit on or off and sequence through the four inputs.

A third switch, marked, 'SRC' is claimed in the manual to 'increase the sampling rate'. Huh? Something has evidently been lost somewhere in translation; I suspect that SRC stands for 'sample rate conversion'. When the function is engaged, '192kHz' appears on the display.

Yup, the D100 upsamples the selected source to 192kHz. A peek inside the unit reveals that another TI chip, the SRC4193, is employed for this purpose.

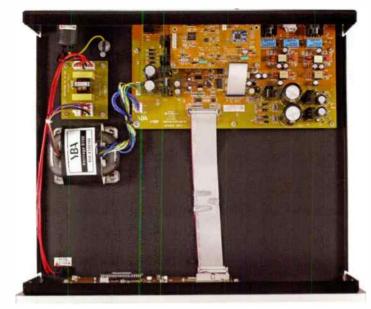
YBA hasn't provided the user with any means of selecting different filter characteristics so the D100 relies on the digital filter built into the PCM1795.

Interior construction is very neat, and it's interesting to note that small lumps of wood have been glued onto the DAC and the key op-amps that follow it – presumably to damp unwanted resonances.

The power supply is of traditional 'linear' design, driven by an R-core mains transformer. The D100 is purely a DAC; no means of controlling volume is available.

#### **SOUND QUALITY**

Let's start with Bluetooth. This is also very easy to use. Select the 'BT' input, and 'YBA Heritage D100' will appear on your source's list of devices - select it for pairing. The D100 display informs you that it is indeed 'paired' and tells you the connection's codec (apt-X in the



Not a lot inside! Most of the circuitry lives at the rear of the enclosure. The top board features the Bluetooth and USB interfaces, while the lower one contains the DAC 'proper'. Here, you'll find the sampling rate converter, PCM1795 DAC chip and support circuitry. The analogue output op-amps are socketed, for ease of replacement (and possibly future experimentation). Note the use of wooden 'damping blocks', and a R-core mains transformer.

case of my Samsung Galaxy S4 Mini). The connection's sampling rate is also displayed. Sound quality here was better than expected, given that the music was being decompressed by my player software (VLC) and then recompressed in apt-X for travel over the wireless link. But then again, apt-X was originally designed with broadcast use (outside broadcasts and 'spot' playback) in mind. In particular a 320kbps .aac rip of a Steve Reich late-night Proms broadcast, circa 2011, fared very well.

That night's performance of Music for 18 Musicians bristled with life. Despite all the compression forced on the music - on its

somewhat-delayed journey from the Royal Albert Hall to my Arcam A49 amplification and Quadral Aurum Wotan VIII speakers – its depth, tonal colour and rhythmic flow emerged intact.

Next up, the USB port. Here, compression isn't necessary; you can play uncompressed or losslessly-compressed music as the USB link has more than enough capacity. I wasn't able to test the DSD side of things as YBA hadn't considered the feature worthy of a full explanation. But if it's like anything I've seen before, you should be able to configure some types of playback software (among them Foobar2000)

The D100 gives you all the connectivity you could want at the moment. USB and Bluetooth (thus the aerial pointing skyward) for the computer age are joined by coaxial and optical inputs for more conventional sources. As can be seen, both unbalanced (phono) and balanced (XLR) outputs are provided.



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I was however able to play DSD files after a fashion, the player software (Foobar, with DSD plugin) of my Windows 7 PC transcoding them 'on the fly' to PCM. To be honest, many streamers and DACs do this in DSP; they have to, as their DAC chips don't - unlike the D100's converter - support DSD natively.

I concentrated instead on PCM content, changing the Windows audio settings to match the format of the files I was playing (e.g., 24-bit, 48kHz). As a result, you avoid any unnecessary conversion and the effect it may have on sound quality.

On which subject, the effects of the D100's own upsampling circuitry are perhaps best described as subtle - certainly with the CD-sourced (i.e. 16-bit/44.1kHz) programme material I tried. Interpolation cannot after all add information that wasn't there in the first place; what it can do is mitigate quantisation errors that may be slightly more obvious during very quiet passages. Upsampling isn't mandatory, and there's no harm in trying it. If it works, giving better sound from your specific equipment, you're free to engage it when appropriate.

For most of the remaining listening, I used a Cambridge CXN to access a collection of losslesslycompressed music held on a NAS. The drama of Britten's War Requiem (LSO/Gianandrea Noseda, a 24-bit recording) came across very well. Congestion never compromised the brooding tension of the strings, ferocious brass-playing and fullbodied massed choirs; there's palpable depth, dynamic thrust and an appropriate sense of scale. Nothing individual is lost, and yet there's a cohesive whole. And during the quieter passages? The timbre and decay of the bell, as well as the solo instruments, operatic vocalists and individual choirs, were portrayed with conviction and sensitivity. A good balance is thus struck between musicality and an overly-analytical nature.

Switching to a different genre, specifically the big-beat electronica of the Chemical Brothers' Born in the Echoes (CD rip), highlighted the D100's engaging sense of rhythm. One can also delight the sheer slam of the fulsome bassline in tracks like Under Neon Lights and, thanks to the D100's resolving powers, derive insight into how the duo have manipulated the sounds that form

their basis. The analogue synthesisers radiate warmth here and, where allowed, guest vocals sound natural.

I then turned to the late, great Johnny Cash - and The Man Comes Around (American IV, CD rip). This sparsely-arranged and beautiful yet apocalyptic song is driven by a guitar rhythm, over which Cash delivers an emotionally-charged vocal backed by bass piano and a second guitar; the D100's resolving power also allows you easily pick out the understated use of organ. The sheer intimacy of the performance is only let down here by a slight 'edge' to Cash's closely-miked baritone.

#### CONCLUSION

The character of the Heritage D100 stops at the elegant casework that betrays its YBA origin. This DAC is

neutral in the sense that it doesn't audibly-colour the sound, and analytics is not allowed to get in the way of the music. Connectivity is sensible, but YBA lets the side down with confusing documentation.The D100 may be the first YBA DSD product, but what's the point when you're not told how to actually get DSD into the thing?



The remote is well-made and has a luxury feel. However, it will only sequence through inputs; no means of placing the D100 into standby, or adjusting its output level, are provided.

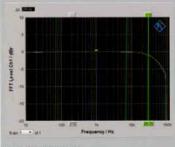
#### MEASURED PERFORMANCE

Frequency response of the YBA Heritage D100 rolled away slowly above 20kHz with a 192kHz sample rate digital input, reaching the 96kHz limit -6dB down. A slow roll down like this in the frequency domain gives a well damped impulse response in the time domain and it is a good balance to strike with high resolution files.

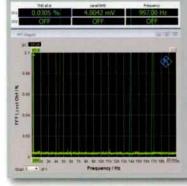
With CD's 44.1kHz sample rate the D100 measured flat to 21kHz however a conventional result with CD that provides a normal tonal balance from the silver disc. So the D100 gives good results with both CD and hi-res digital in terms of frequency response. There are no filter options.

The optical input accepted

#### FREQUENCY RESPONSE



#### DISTORTION



192kHz sample rate, unlike many that reach 96kHz maximum, so it will for example not go silent when fed from an Astell&Kern portable delivering 192kHz via optical link.

Dynamic range measured 117dB from the balanced XLR output and 116dB from the unbalanced phono outputs. This is typical of the PCM1705 DAC chip used, meeting TI's spec. It is also a relatively high value in itself, being well above CD at 103dB and enough to allow the benefits of hi-res files to be sonically apparent, but at the same time a dynamic range of 125dB is available from rivals such Audiolab's M-DAC+ or Chord's Mojo, so the D100 offers no advantage in dynamic range.

Output from the phono sockets measured 2V and from XLR 4V - normal values. Distortion levels were low, measuring 0.21% at -60dB with CD (16bit) and 0.03% with 24bit hi-res files. SRC changed measured performance little, adding some distortion; results were better with it switched out.

The YBA D100 measured well in all areas and it is a well executed design as far as its TI DAC chip allows, but in dynamic range it lags the best by 9dB and there are no filter options. NK

Frequency response (-1dB)

4Hz-30kHz

Distortion	24bit
0dB	0.0007%
-60dB	0.03%
Separation (1kHz)	89dB
Noise (IEC A)	-117dB
Dynamic range	117dB
Output (Phono/XLR)	2v / 4V

HERITAGE D100 DAC £1,500





EXCELLENT - extremely capable

#### VERDICT

Compared to some of the competition (e.g., Chord), this is a relatively-simple design using mostly 'off-the-shelf' components. But it's wellengineered and sounds good!

#### FOR

- a fine Bluetooth implementation
- supports hi-res (32-bit, 384kbps)
- neutral but musical sound

#### AGAINST

- documentation needs attention
- no indication of resolution or sample rate

#### YBA

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# WIN

**CHORD'S SUPERB 2QUTE DAC WORTH** £995 IN THIS MONTH'S **GREAT GIVEAWAY!** 

ere's your chance to win the superb Chord 2Qute DAC we reviewed in the October 2015 issue. Read the review excerpt below and answer the questions.

"In typical Chord fashion the new standalone DAC is housed in a gorgeous machined aluminium chassis measuring 160mm x 70mm x40mm (W/H/D) with curved edges and an illuminated round window on the top allows you to see a section of the neatly laid-out internal electronics as well as acting as an indicator of incoming sample rate (more of which later).

Inside the 2Qute employs

technology derived from Chord's more expensive Hugo DAC. So instead of the off-the-shelf digital decoding circuits used by most other manufacturers you get the latest Spartan 6 version of the company's proprietary Field Programmable Gate Array technology with 26,368 digital taps - which the company claims contributes to better detail retrieval and musical transparency.

On the rear, BNC coaxial and USB type-B inputs can accept highresolution files all the way up to 32-bit/384kHz while an optical input operates up to 24-bit/192kHz.All three will also play DSD64 files while DSD128 can be played via the USB and coaxial. As usual the USB input is plug-and-play for Apple and Android

devices while Windows users will need to install the supplied driver to get their machines running with the 2Qute.

A simple connector switch toggles between the three connections and a single pair of line-level RCA outputs provide connection to the hi-fi.

Incoming sample rate is indicated by the colour shown in the illuminated window on the top of the chassis. For example, on 44.1kHz files the window glows red while green indicates 96kHz, purple 192kHz and so on, It looks fantastic in use but you'll probably find yourself referring to the instruction manual on a regular basis at first until you memorise the various colour codes."

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 8th June 2016 to:

June 2016 Competition, Hi-Fi World magazine, Studio 204, Buspace Studio, Conlan Street, Notting Hill, London WI0 5AP

#### QUESTIONS

[I] Are the edges -

[a] sharp [b] curved

[c] square

[d] serrated

[2] Is the 'coaxial'

input socket -

[a] phono [b] XLR

[c] 13 Amp

[d] BNC

[3] USB can handle -

[b] DSD128

[c] VHF/FM [d] long wave

[4] On 44.1kHz files the window glows -

fall red

[b] yellow [c] brown

[d] black

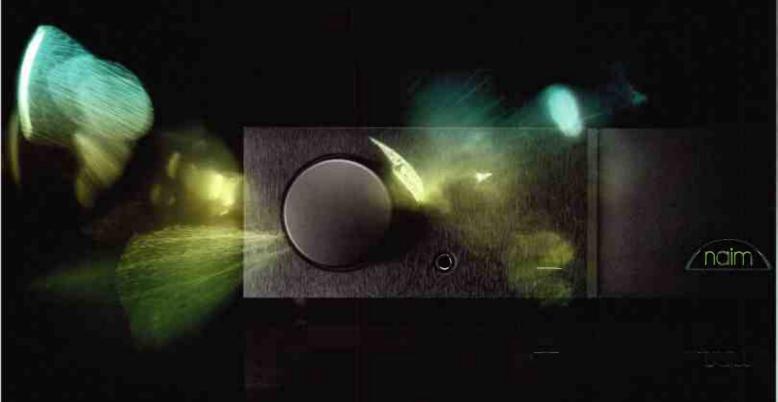
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Go Deeper



# Martin Logan Neolith

Noel Keywood visits KJ West One in London to hear Martin Logan's latest and greatest hybrid electrostatic loudspeaker, the Neolith.

'm an electrostatic man, which doesn't mean I have shocking effect so much as love the 'speakers that use this effect. So I was destined to visit KJ West One in Central London on a bright Saturday morning to hear Martin Logan's latest in this field, the Neoliths - price £72,000. Yep, it's silly money to you and me, but peering down from my lounge window the other day onto the impressive form of a Lamborghini Aventador (£500k), I realise not everyone is of the same outlook - and a Neolith is a similar form of total statement: here is what's possible.

And it was! Playing Queen's 'Radio GaGa' from a 24/96 hi-res file put Freddy Mercury up in front of me in massive form, delivered with brutal clarity, whilst the pulsating synth bass line was monumental in scale and seismic in power. This was

Queen in a stadium, my position being apparently just feet away.Hearing right into the mic feed, or so it seemed, had Queen's theatrical lead singer delivering straight at me - and it was an eyepopping experience.

The Neoliths are an enormous hybrid electrostatic loudspeaker, meaning one that uses an open electrostatic panel to deliver most of the audio range, but a conventional cabinet to produce bass. In

the Neolith, however, Martin Logan have come up with an unusually wide and high see-through XStat electrostatic panel measuring 4ft high

> and nearly 2ft wide (122cm x 56cm) atop a huge bass cabinet with two massive bass units. Inside lie a 12in front firing bass/mid unit in its own sealed chamber, whilst behind there is an even larger 15in bass unit in a (reflex) ported chamber. This is more than most hi-fi loudspeakers by a large margin; even more than Spendor's SP200 with twin 12in bass units that we reviewed in the May 2016 issue.

> The XStat electrostatic panel of the Neolith reaches down to 250Hz the spec sheets says,



Neolith is the name - and you can see why in situ at KJ West One's listening room in Central London. But with that comes an absolutely astonishing performance.

which my experience of this glorious panel (in the Summit X) suggests is about right.

These loudspeakers stand just over 6ft high (75in/190cm) and weigh a prodigious 175kg (385lb) each, which is technically a five person lift (W.H.O. 32kg per person).

You can see how large they are in our event picture and you would need a large room to house them without visual intrusion. But being a statement of what is possible in high fidelity audio and costing what they do, I guess this is no problem if you can afford them.

The Neoliths were sent from the USA to UK distributor Absolute Sounds and were in London for just two days before being jetted out

We were offered an aural glimpse of what is possible. But that glimpse of an electrostatic of massive power and authority - confirmed why I am an electrostatic man. The Neolith was a great demonstration of the best way to reproduce music, in Martin Logan's unique fashion.

KJ West One +44 (0) 20 7486 82 62 www.kjwestone.co.uk

Absolute Sounds www.ahsolutesounds.com +44 (0)20 89713909

Martin Logan www.martinlogan.com



The Martin Logan's XStat panel (left) is 4ft high and nearly 2ft wide while beneath it sits a cabinet with two bass units.

# WORLD STANDARDS

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

#### **TURNTABLES**

#### AVID INGENIUM £800

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



#### CLEARAUDIO INNOVATION

Expensive, but offers great results from a finely honed and beautifully finished belt drive turntable, with servo control from the platter to keep a grip on tempo like few others. Can be fitted with a

Clearaudio tangential arm, or any conventional design. Awesome.



#### INSPIRE MONARCH

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



#### LINN LP12SE

£3,600

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

#### MICHELL GYRO DEC £1700

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



#### PRO-JECT ESSENTIAL DIGITAL

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



#### REGA RP3

£6400

£4,350

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

#### TIMESTEP EVO

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



#### **TONEARMS**

#### ORIGIN LIVE ENCOUNTER MK3C £1,745

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

#### HADCOCK GH-242 EXPORT £810

Consummately musical, lyrical sounding tonearm, but needs the right turntable.

#### ORIGIN LIVE ONYX £450

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



#### REGA RB303

£300

£550

£2100

£300

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

#### ME 312S £1.60

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



#### SME 309

£1500

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

#### SME V

£3000

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

#### **CARTRIDGES**

#### AUDIO TECHNICA AT-OC9 MLIII MC £420

A fine sounding MC with strong bass and super fine treble from a great stylus – yet inexpensive.



#### AUDIO TECHNICA AT-F3/III MC

£150

Great value entry level moving coil with detail and grip you just can't get from similarly priced moving magnets.

#### BENZ MICRO ACE SL MC

£595

Smooth, lucid and full-bodied, award-winning, hand-made cartridge from Switzerland.

#### BENZ MICRO WOOD SL MC £945

Highly finessed Swiss moving coil that plays music with riflebolt precision.

#### **DENON DL-103**

£180

A popular and much loved budget MC with big bass, smooth treble and deep sound stage. Fantastic value.



#### LYRA TITAN I MC

£3,500

Breathtaking speed and dynamics from LP, helped by diamond coated, boron rod cantilever.



#### **ORTOFON 2M MONO SE MM**

280

A mono cartridge purposed for The Beatles in Mono microgroove LPs. Fitted with a top quality Shibata tip. Fab for the four.



#### ORTOFON 2M BLACK MM

As good as it gets from MM. Fabulous detail and insight from a Shibata stylus, good bass and excellent tracking.

#### ORTOFON CADENZA BRONZE MC

A mid-price MC with a slightly livelier presentation than the super smooth Cadenza Black. Highend sound at midband price - great value.



#### ORTOFON CADENZA BLACK MC

Ultra smooth and dimensional moving coil with bass and punch aplenty. Lovely stylus.

#### ORTOFON A95 MC

£3,750

Fast and extremely detailed, this is an MC cartridge that sets standards.

#### **REGA CARBON MM**

£35

Budget price for a competent cartridge with a fairly unflappable nature. Ideal for beginners.



#### **GOLDRING 1012GX MM**

£250

A glorious sounding cartridge with solid bass and strong dynamic punch, plus excellent treble from its Fritz Geiger stylus. Fun and affordable.



#### SHURE M97XE

280

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

#### VAN DEN HUL DOT-II SPECIAL MC

Long-established cartridge from Holland with an open and dynamic sound.

#### PHONO PREAMPS

CAMBRIDGE AUDIO 651P

£200

Clean, concise sound from MM and MC cartridges at a very low price. A real bargain.

#### ICON AUDIO PS3 MKII £1,200

All valve MM phono stage with MC transformer option, graced by big, spacious and relaxed



#### IFI IPHONO

£350

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



#### LEEMA ACOUSTICS ELEMENTS ULTRA £1.199

Smooth and detailed sound with the ability to accommodate most modern cartridges. Exceptional value for money.



#### PRO-JECT TUBE BOX OS

£425 Compact MM and MC phonostage with valve out-

put circuit and a big sound.



#### **QUAD QC24P**

€995

MM and MC, oodles of gain, a volume control - and valves! Looks superb and sounds even better: smooth, atmospheric and big bass.

#### TIMESTEP T-01MC

New, minimalist phonostage that sonically punch-

es well above its weight.

#### **PREAMPLIFIERS**

ICON AUDIO LA-4 MKIII

Uses early 6SN7 triodes for liquid sound. Has plenty of gain and a remote control into the bargain.



#### ME AUDIO CLASSIC SILVER

£4.500

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

#### MING DA MD7-SE

A valve preamplifier with an open, effortless sound and a big soundstage. It has plenty of gain so will accept any source and drive any power amp. A real beauty.



#### INTEGRATED AMPLIFIERS £1,499

ARIAND PRO845SE

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



#### **AUDIO RESEARCH VSI60**

€3.500

Power house sound with enormous pace and punch from traditional U.S. muscle master Audio Research. Breathtaking, but expensive.



#### **CAMBRIDGE AUDIO AZUR 651A**

Dual-mono construction and meaty toroidal power supply combine to produce a solid and sharp sound with sonics far beyond its price point.

#### **CREEK EVOLUTION 100A**

£1.500

Superb build and smooth confident sound make this powerful amplifier a benchmark.



#### CYRUS 8DAC

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

#### **EXPOSURE 1010**

£495

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



£1,300

#### ICON AUDIO STEREO 60 MKIII

Excellent tube integrated with plenty of power and an expansive soundstage, plus KT150 tube option and bias meter for easy adjustment.



#### NAIM NAIT 5Si

£925

Naim's fabled entry-level integrated amplifier is updated to si status. Demos Naim's superbly muscular sound at entry level.

#### **SUGDEN A21SE**

£2.480

£1.700

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



#### **POWER AMPLIFIERS**

#### **AUDIO RESEARCH VSI75**

£7.498

Powerful, fast valve sound that makes everything else look weak at times. Needs careful matching but well worth the effort.

#### **AUDIO RESEARCH VS115**

£5.000 Oodles of power with enormous punch. Rafael

Todes said it provided "shock and awe" while retaining incredible smoothness and texture.

#### ICON AUDIO MB845 MKII £5.500

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



#### **ICON AUDIO MB81**

£10,000

Big Russian transmitter valves deliver 200W from these massive monoblock amplifiers. Frightening in every sense.

#### MCINTOSH MC-152 £4,995

Stunningly insightful sound with enormous bass punch from a uniquely designed transistor amp. Amazing audio, a league up, if expensive.



#### **QUAD ELITE QMP MONOBLOCKS** £2400 PR

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

#### **QUAD II-EIGHTY MONOBLOCKS** £6.000 PR

Powerful and expansive sound from modem

design monoblocks that also look lovely. Superb - used by us as a reference



#### LOUDSPEAKER FLOORSTANDER

#### B&W 803 D3

€12,500

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

#### CASTLE AVON V £1,600

A big floorstander at a modest price that suits the average room. Refined ribbon treble and deep bass give it a great delivery.



#### **EMINENT TECHNOLOGY LFT-8B**

Excellent U.S. planar magnetic loudspeaker at bargain price. Utterly superb - a must hear.

#### EPOS K2

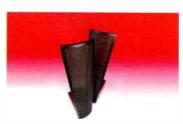
A fun sound that is tidy all round and very engaging, with solid bass. Music as you hope it to be.

#### **FOCAL ARIA 926**

Simple, clean, neutral sound - easy going but well engineered and affordable.

#### MARTIN LOGAN SUMMIT X £16,698

Matches Martin Logan's XStat electrostatic panel to a powerful subwoofer to provide extended, powerful bass. Dramatic sonic purity. Awesome all but unmatched.



#### **MARTIN LOGAN ELECTROMOTION**

Martin Logan's budget baby XStat hybrid electrostatic. Fits into any lounge to give electrostatic levels of clarity and imaging.



#### **QUADRAL CHROMIUM STYLE 8**

A supremely smooth yet open sounding loudspeaker. Clean and detailed treble from a fine ribbon tweeter. Accurate yet informative and

QUADRAL ORKAN VIII AKTIVS

£6,200

Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter



#### O ACOUSTICS 2050i

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

#### SPENDOR SP100 R2

£6.495

Retro looks but a sound that's hard to match. Spendor's 12" bass unit provides massive lowend grunt with a room-filling sound.



#### SPENDOR A3

£1.300

Fine little floorstander with a smooth, natural midband and even tonal balance. Ideal for smaller

#### TANNOY DEFINITION DC10 Ti

26,000

Enormous power with great projection. Glorious subsonics too. Need little power to go very loud and have superb finish into the bargain.



#### **TANNOY KENSINGTON**

£9.950

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



#### **LOUDSPEAKERS** STANDMOUNT

**ACOUSTIC ENERGY NEO 1 V2** 

£225

Civilised sounding speaker with fast and tuneful

#### **ACOUSTIC ENERGY AE1 CLASSIC**

£845

Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.



54

enjoyable. Pure class.

#### **ELAC BS243**

£1,000

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



#### **EMINENT TECHNOLOGY LFT-16A**

£1,200 U.S. planar magnetic bookshelf loudspeaker with

unrivalled mid-band and treble. Hear it before all else.

#### WHARFEDALE DIAMOND 220 £200

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



#### KEF L\$50

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



#### **MARTIN LOGAN MOTION 35**

£1,300

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



#### PMC TWENTY.21

£1.575

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



#### O ACOUSTICS 2020i

£165

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

#### WHARFEDALE DENTON

£500

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



#### **HEADPHONE AMPLIFIERS**

CREEK OBH11

Designed specifically for low to medium impedance (30 0hm - 300 0hm) headphones the little Creek has a marvelously well-judged sound.

#### **CHORD MOJO**

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



#### EPIPHANY EHP-02

£99

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



#### ICON AUDIO HP8 MKII

9650 The HP8 MKII valve-based headphone amplifier

brings the spacious sound of valves to headphones, And it matches 'em all.



#### **FIDELITY AUDIO HPA 100**

£350

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

#### MUSIC FIRST PHONE BOX £276

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



#### **OPPO HA-2**

€250

Remarkable performance and sound from ESS Sabre32 DAC in a slim portable package.



#### **CD PLAYERS**

AUDIQUAB 8200CDQ

£949

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



#### CANOR CD2+

£3,100

Musically coherent and tuneful valve-driven CD player from Slovakia. Lovely liquid sound.



#### CAMBRIDGE AUDIO AZUR 651C

£410

Snappy modern presentation from this budget CD player. Cracking audiophile entry point for any digitar fan.

#### CHORD RED REFERENCE MKIII

£16,000

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



#### **ESOTERIC K-03**

Superb high-end silver disc spinner that is beyond criticism. Devoid of its own character but has a flawless presentation.



#### **EXPOSURE 101**

£395

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

#### **ELECTROCOMPANIET EMP-1/S**

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



#### OPPO BDP-105D

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



#### **REGA APOLLO-R**

₽550

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

#### **ROKSAN KANDY K2** £900

A charmingly musical performer at the price - this

is a surprisingly sophisticated CD player for the money.



#### TUNERS

**CAMBRIDGE AUDIO AZUR 651T** £299

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



#### **CREEK DESTINY 2**

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



#### **MAGNUM DYNALAB MD-90T**

£1.900

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



#### DACS

£4,650

AUDIOLAB M-DAC

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



#### **AUDIOLAB Q-DAC**

£250

£600

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

#### ANTELOPE ZODIAC GOLD/VOLTIKUS £3.095

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



#### **CHORD 2QUTE HD**

£990

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



#### DCS DEBUSSY

£8,000

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

#### **NORTHERN FIDELITY DAC**

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



#### METRUM OCTAVE

£729

Unique two-box digiral-to-anlogue convertor with great sound at a great price. Cuts upper treble, though.

#### **NAIM DAC** punchy and forensically-detailed sound.

£2,400 Superb high-end digital convertor with a probing,



#### TEAC UD-501

€699

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



#### **RESONESSENCE INVICTA MIRUS**

£4,499

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



#### NETWORK PLAYERS

CHORD DSX100

£7.500

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



#### **CAMBRIDGE AUDIO NP30**

£399

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

#### CYRUS STREAM X

£1,400

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



#### **ENTOTEM PLATO**

£2999.00

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



#### **NAIM NDX**

£2.995

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

#### NAIM ND5XS

£2.175

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

#### NAIM NAC-N172 XS

£1.650

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



#### PRO-JECT STREAM BOX RS

£1,095

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

#### QUAD PLATINUM DMP

£2,500

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



#### **DIGITAL SOURCES**

ASTELL&KERN AK100 MKII

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



#### FiiO X3

C1E0

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

#### LOTOO PAW GOLD

£1,500

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



#### NAIM HDX

£4,405

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

#### NAIM UNITILITE

£1,995

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



#### PORTABLE SPEAKERS

#### BAYAN SOUNDBOOK

£149.99

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



#### IRIVER IBA-50

£69

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

#### **CABLES**

BLACK RHODIUM TWIST

£71/3M

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



#### MAINS CABLES R US NO.27

Offers a sprightly pace with a precise nature. Fast

performance enhance frequencies and beautifully etched detail.



#### CHORD SIGNATURE REFERENCE

Majors on timing, detail and openess. Capable of

getting the best from most systems and a recommended upgrade.



#### TELLURIUM Q BLACK

280/3

£804/M

9900

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

#### TELLURIUM Q SILVER DIAMOND

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

cables.



#### **HEADPHONES**

AUDEZE I CD-3

£1.725

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



#### B&W P3

£170

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

#### JAYS V-JAYS

€49

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



#### NOBLE K10

£1.279

INC. FITTING

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



#### PHILIPS FIDELIO X2

£260

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



#### ONKYO ES-HF300

£180

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

#### OPPO PM-1

£950

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

#### SENNHEISER HD700

£599

Tremendously fast with a strong, focussed, lowerfrequency range and a firm bass punch.

#### YAMAHA HPH-MT220

£150

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



# Signature Sound Sound

Meridian's 808v6 Signature Reference CD player, DAC and preamp has added MQA capability to its range of features. Jon Myles explains all.

nce upon a time a CD player was just that. How times have changed. Nowadays they are multi-function machines, many boasting features such as volume control, digital inputs and even the ability to play back DSD files.

It's what buyers need and demand, to cope with the more complex world of digital file replay – and you'd be hard pressed to find

a more feature-packed machine to cope with all this than Meridian's new flagship 808v6 Signature Reference player. Ostensibly it's a CD player - but it also boasts preamp and DAC facilities. Whilst it can be used as a stand-alone unit, it has been designed to interface with other Meridian products, notably their active loudspeakers, to which this player sends a digital signal. Under measurement it became apparent that the player, as a source, is hardearthed, where most sources have a ground-lift resistor to avoid hum loops. The 808's earthing suits an all-Meridian system, but not necessarily others, unless balanced operation is used.

Unpacking the 808, its sheer size tells you there's some serious technology under the hood. The unit is one of the largest CD players I've come across, measuring some 6.9" x 18.9" X 16.2" (H/W/D). The front panel hosts a 20-character dot matrix display with adjustable brightness and contrast, whilst the slide out drawer feeds discs into a CD-ROM transport. A drop-down cover gives access to volume controls, while below sits a full range of play/pause, forward/back buttons - although these are also replicated on the large, beautifully engineered remote (this is one device you'll have trouble losing down the back of the sofa).

Around the back the rear panel is populated with more connections than Clapham Junction. There's six unbalanced analogue RCA inputs plus pairs of coaxial and Toslink digital

inputs, plus USB. Outputs include unbalanced phono and balanced XLR, plus sockets for connecting Meridian's own active digital loudspeakers via an ethernet-type MQA-equipped device to unwrap the extra information. Not surprisingly, the 808v6 is one of the first CD players to offer this capability, via USB from a computer, or via S/PDIF from an external player.

"slot this into your hi-fi rack and you'll feel a definite pride of ownership."

Inside, the 808v6 uses Meridian's own digital signal processing, plus the company's own proprietary apodising filter which it says eliminates preringing to produce a cleaner sound.

All this means there's a wealth of set-up options for the Meridian. Go into the settings menu and you can set fixed output, adjust sensitivity for individual sources, tailor the 808v6 to work with other Meridian products and take your pick of a host of other functions. The flexibility is more than impressive.

But there's one other important trick up the 808v6's sleeve in the shape of MQA decoding. MQA (Master Quality Authenticated) is Meridian's new high-resolution format that is claimed to bring studio quality sound from files not much larger than that of a standard CD (see panel for more details).

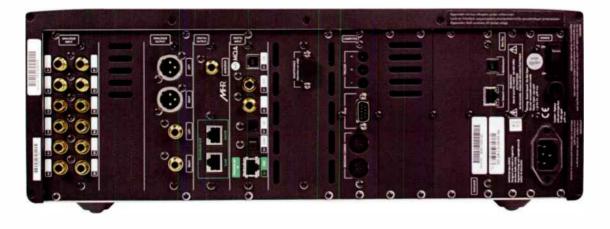
MQA files can be packed inside any lossless format such as WAV or FLAC and so can be handled by any player. But to get the full benefit of the higher resolution you'll need an All this technology comes at a price: the Meridian 808v6 will set you back some £11000 in its standard gloss black finish, with other colours available at extra cost. Having said that, it is supremely well built with exceptional fit and finish and a firm, responsive action to all the controls. Slot this into your hi-fi rack and you'll feel a definite pride of ownership.

#### **SOUND QUALITY**

With a healthy output via both unbalanced and balanced connections and volume control, the Meridian is capable of driving a power amplifier direct. So I first connected it (unbalanced) to Naim's new NAP200DR amplifier, then to a Luxman L-590AX MKII via a balanced connection.

Slotting in The White Stripes' classic 'Seven Nation Army' it was immediately evident that the Meridian majors on poise and precision. This track barrels along with thunderous drumming which can overwhelm, but the Meridian held

The rear panel of the 808v6 is testament to its complexity. At left are six analogue inputs and these pass through an analogue-to-digital convertor (ADC), because the link to a Meridian active loudspeaker is digital. There is no other digital output however. Just left of centre are balanced and unbalanced analogue audio outputs. At centre are optical and electrical digital (S/PDIF) inputs and a USB B computer input. There is no AES/EBU S/PDIF input.







# Sínfonía

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

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

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

Available across the UK now.

#### **Technical Information**

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

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



Distributed by Henley Designs Ltd.

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it in firm check without losing any of the impact. There was strong crack to the drums with Jack White's vocals standing out firmly above.

It was also detailed enough to make clear that what sounds like a bass riff is nothing of the sort – but actually a semi-acoustic guitar stepped down an octave.

This sense of clarity shines through the Meridian's presentation at all times. Playing a 24/96 file of Eleanor McEvoy's 'I've Got You To See Me Through' the piano was perfectly pitched, the decay of the notes sounding both realistic and natural. It also places the various instruments in their own space so it is easy to track individual lines.

If there's any criticism to be made it's that the delivery isn't the most forceful you'll hear - erring on the side of an icy clarity instead of outright drive. This does, however, mean that it reveals the traits of

partnering equipment well. Paired with the traditional Naim values of pace and timing revealed an obvious synergy - while connected to a Luxman L-590AX MKII the presentation was a little more laidback but no less enjoyable.

But what of MQA? Well, here things started to get extremely interesting. I'd first heard a demonstration of the technology at last year's Munich High-End Show and thought it had potential — but this was my first real hands-on experience.

Loading an MQA recording of Christian Eggen playing Carl Nielsen's piano compositions, there was a stark difference from the standard CD. This recording was made direct to DAT in 1993 and the MQA version is a revelation. It feels as is the noise floor has been lowered; high frequencies have a precision and tonality that wasn't there before. Timing also

seemed to take a step forward, the rippling notes hanging together in a purely natural way.

The same effect was evidenced on Mozart's 'Violin Concerto in D Major' by Marianne Thorsen and the Trondheim Solistene (2L). Instruments seemed to have more colour, body and resonance to them with 'less of a digital edge to the violin. Here it was as though you were taking a step closer to the live performance. Comparing it to a 24bit/96kHz download of the same performance and it was obvious the MQA file was a step closer to what you'd hear in a live performance.

Of course, we are going to have to see whether MQA is adopted by the major music labels before we know whether it has a long-term future, but on the evidence of the Meridian 808v6 it definitely provides a step-up in sound quality.

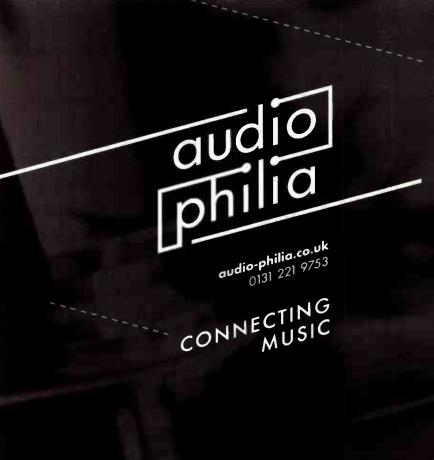
Away from that, however, most people will use the Meridian for playing their existing music collections - be it straight CD or high-resolution downloads. And in that role it proves a capable performer. Yes, at £11000 it demands deep pockets but its build quality, flexibility and sophisticated sound mark it out as a classy performer. And you'll also be future-proofed if MQA does turn into a mass market format.



The remote control console is designed to sit conveniently on a table. It is strongly built and very well finished and carries all functions.

#### CONCLUSION

Boasting just about every possible connection you could want plus a preamp function, the Meridian 808v6 is well positioned to form the heart of a digital music system when connected to Meridian loudspeakers, or via a balanced connection to other components.



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#### WHAT IS MOA?

MQA - or Master Quality Authenticated - is the brainchild of Meridian co-founder Bob Stuart and has two aims: packaging high-resolution audio files in as small a tile as possible plus correcting the timing domain errors introduced by many analogue to digital convertors.

In essence, it's a suite of various technologies that links the whole replay chain - from source to playback device.

For a full explanation I'd recommend taking a look at Bob Stuart's paper to the Audio Engineering Society (available at http://www.aes.org/e-lib/browse. cfm?elib=17501).

However, in terms of its practical value MQA does seem to have many advantages. For a start it is backwards compatible. So it is contained in a conventional lossless file such as FLAC or WAV but has extra information wrapped in there. Input the file though a DAC without an MQA decoder and it will play - but with an

MQA decoder you'll hear the sound in the studio's original bit rate which could be anything from 44.1kHz to 384kHz.

The MQA file's metadata carries information on the analoque-to-digital convertor used to make the original recording which is then transmitted to the DAC within your player so corrections can be made. Complicated? You bet but the concept makes sense.

And one of the most important points is that streaming high-resolution files takes up less bandwidth. For example a 24bit/96kHz file of Mozart's 'Violin Concerto in D Major' comes in at 171MB - the equivalent MQA file is 98MB.

For those of us with sufficient storage capacity this might not seem a great deal - but it opens the door for real highresolution streaming via the likes of Tidal and Spotify.

Of course, as ever caution has to be recommended. The real success of MQA will depend on whether it becomes generally adopted by the music industry. However, having listened to the 808v6 with MQA I would hope it is.

#### **MEASURED PERFORMANCE**

Output from the 808v6 measured 3V from the unbalanced line outputs and 6V from the balanced XLR outputs. With the volume control switched out (Fixed), a full volume digital signal (0dB) delivered 2.4V and 4.8 V respectively at these outputs. These are all usefully high values, allowing the 808 V6 to drive any preamp or power amp direct.

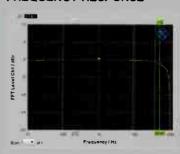
Like a previous sample (v5, Feb 15), Dynamic Range measured a relatively low 114dB - behind the curve nowadays; an ESS 9018 Sabre32 DAC delivers 132dB in the Resonessence Invicta Mirrus, for example, giving 18dB more headroom from 24bit recordings.

Dynamic Range with CD measured 102dB, as always. Distortion levels were low at 0.2% from CD and 0.03% from 24hit

All the above values were measured from the balanced output or the unbalanced with the player not directly grounded by the cable screen to external equipment, because the player is hard-grounded to mains earth (i.e. there is no earth-lift resistor). Feeding a similarly grounded external amplifier via the unbalanced phono output increased noise, worsening dynamic range figures markedly. This is an unusual grounding arrangement for a source; most have 100 Ohm ground lift resistors.

Unlike the v5 we tested in February 2015 the latest 808v6 accepts 192kHz sample rate digital, frequency response measuring flat to 48kHz, our analysis shows, before rolling away to the halfsample-rate limit of 96kHz.

#### FREQUENCY RESPONSE



Meridian active loudspeakers through a digital link. It can also act as a CD player/preamp feeding conventional power amplifiers via its analogue outputs

-95dB (XLR out).

and in this role the balanced XLR output is best used to avoid the possibility of a hum loop due to the hard earthing that harmonises with Meridian product, but not necessarily others. NK

The preamplifier has a high maximum

unbalanced) out, and x18 phono in to XLR

out, with maximum outputs of 3.2 and

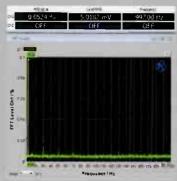
6.4V respectively. Frequency response

measured flat to 32kHz and noise low at

The 808v6 is purposed to feed

gain of x9 phono in to phono (i.e.

#### DISTORTION



#### **ANALOGUE INPUT** Frequency response 4Hz-33kHz Separation 91dB Noise -95dB Distortion 0.02% Gain x3 (+10dB) **Overload** 3V out

DIGITAL INPUT & CD	
Frequency response	4Hz-48kHz
Separation	95dB
Noise	-113dB
Distortion	0.03%
Dynamic Range (EIAJ)	114dB

#### **MERIDIAN 808V6** REFERENCE **SIGNATURE** £11.000







#### **VERDICT**

Meridian's flagship CD player continues to be an impressive performer - and now adds MQA capability to its wide range of features.

#### **FOR**

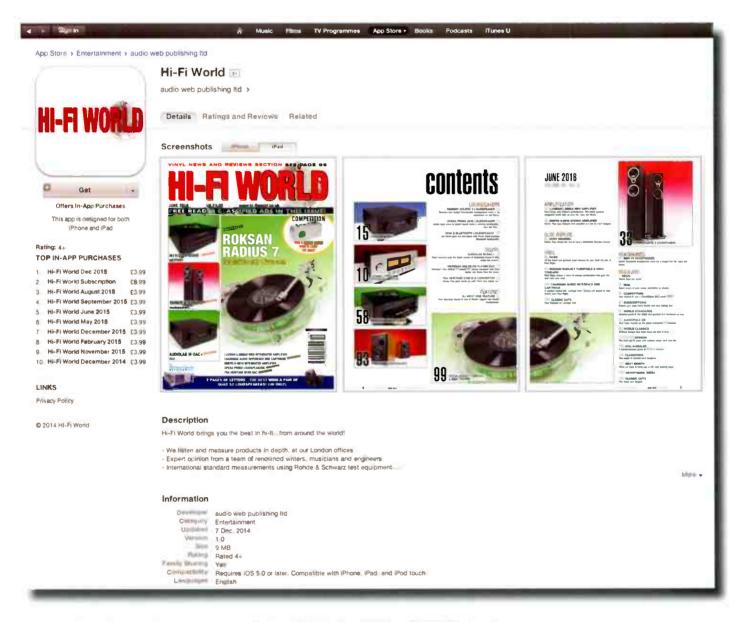
- connection options
- MQA capable
- preamp function
- detail

#### **AGAINST**

- expensive
- limited dynamic range

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### KIMBER AXIOS HEADPHONE CABLE £684 [FOR 1.2M]

What is the point in spending hundreds, perhaps more, on a pair of headphones if you then lose a percentage of that sound quality down the cable?

That is what Kimber and its AXIOS headphone cable has been designed to tackle. It features 16 individually insulated 24-gauge strands of OFHC (oxygen-free high thermal conductivity) copper, with the Kimber 'weave' through the cable.

Wooden accents on the connectors betray the hand-made

and bespoke approach. The length of the cable can be specified, in addition to the varied connection options at the amplifier and headphone ends.

I began the sound test playing the CD version of Bing Crosby's 'Bing on Broadway' and the classic track, 'Swanee' that, with the AXIOS, forged a tremendous insight in terms of detail. Crosby's voice lost earlier smearing and blurring while Buddy Cole's backing now exhibited the subtle backing guitar. There were plenty of times, with the standard cable, when you could have convinced me that no guitar

was actually playing on this track. The AXIOS brought out the performance successfully.

On Neil Young's 'Ragged Glory' LP, on vinyl, there was a noticeable separation between the strike of the drum and the later reverb. This separation gave the percussion a more mature and complex sound. Also changed was the Young vocal, which provided more nuance and separation.

I do have an issue with the cable's price. The ratio to the price of typical quality headphones is wrong: the sound improvements are excellent but not revelatory. That said, the AXIOS allowed the headphones to really express themselves for the first time. They provided a sense of truth, giving each instrument a tonal accuracy and a musicality that engaged and entertained. Every high-end headphone owner should demo this cable. PR

[www.russandrews.com ]

## SOUNDBITES

#### ATLAS ZENO HEADPHONE CABLE £175 (FOR 1M)

Replacement headphone cables are an obvious upgrade path for the dedicated headphone user looking to squeeze an extra slice of sound quality from their (often) significant financial investment.

The Zeno, is a lightweight, solder-free affair utilising Metik plugs and Ohno Continuous Cast (OCC) copper conductors covered in FEP (Fluorinated ethylene propylene) low temperature deposition dielectric covered in a soft PVC inner liner, plus a fabric outer jacket. Connectivity options are varied and numerous and include 2.5mm, 3.5mm, 6.3mm and 4-pin XLR mini at the headphone end with the amp end offering 3.5mm, 6.3mm and 4-pin XLR as options.

This means that you can attach this Atlas cable to headphones from Sennheiser, Audeze, Audio Quest,

OPPO, Ultrasone, Sure, AKG and HiFiMan. Talk to your dealer or Atlas for forthcoming new brand additions.

My review cable was created to plug into a pair of Sennheiser HD800s which I duly did and spun up a CD of Bing Crosby's 'Bing on Broadway' and the track 'Mandy'.

There were improvements in several areas. The most noticeable was the Crosby lead vocal itself which exhibited a removal of midrange bloom. More subtle effects were heard on the bass which added a degree of tonal realism while plucked double bass strings sounded characterful, with an enhanced resonance from the bass body.

I then turned to Neil Young's energetic rock outing on vinyl, 'Ragged Glory'. There was an agreeable clarity in the overall presentation of the music which gave it a sense of air and openness that allowed the performance to flow easily.

Sonic improvements were obvious and welcome – although there was not really enough for the price point. Nevertheless, you feel that the Zeno encourages a real sense of control behind the music being played, an order and a focus that adds to the emotion of the performance. PR

[www.atlascables.com]





















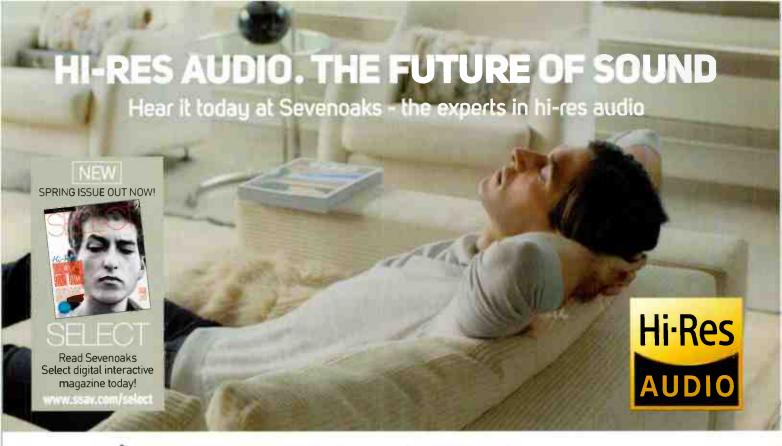














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THE KNICKERBOCKERS

The Challenge Recordings Sundazed

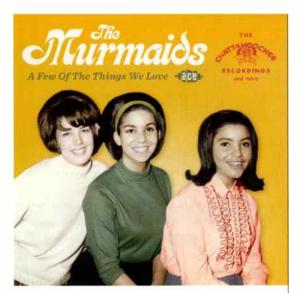
hen the Beatles hit the American shores, it's hard to express just what

a shock it was to the US public and, even more than them, the American music industry and bands. Some of them tried to ape the Fabs and then blended that style with their own inherent vibes. The Knickerbockers were one of these. Anyone interested in The Beatles should take a listen because, despite the Beatleslike approach, there's enough portpunk rawness to throw a unique light onto this group.

This new 4CD box set features LPs from their Challenge label days, plus many previously unheard recordings, eighty tracks in all, mastered from the original tapes and acetates.

Playing the Kinks' cover 'You Really Got Me' (1965) there is a great confluence between the compression that you can hear on the original mix and the stuff that exudes from crescendos and the higher guitar notes heard here, because of the spacious and airy remastering that has been successfully undertaken by Sundazed. This has produced the clearest and most transparent version of this original cut heard from the group to date, providing all the atmosphere and 'feel' of the times but with hi-fi clarity.

That inherent sound quality does improve with later recordings such as the Beatles-esque cut 'One Track Mind' from 1966. The relatively harsh upper mids are pulled back from the brink and treble is far more acceptable. By the time we get to the 1967 Hollies-like recording 'As A Matter of Fact' the sonics are far more mature and better balanced. There are no nasties that jump out at you from behind a midrange bush. Again, pats on the back to Sundazed for 'telling it like it is' and doing its very best with this early material, while retaining the original approach to recording.



THE MURMAIDS

A Few Of The Things We Love

three-piece, Kim Fowley-produced, teenage girl group who had a hit with 'Popsicles and Icicles' (written by, of all people, future Bread man David Gates) in 1963 came complete with vocal arrangements by future Byrds member Skip Batten. So, this group was surrounded by musical cognoscenti. The single hit No I and was seen as the final No I before the British Invasion kicked in (the very next chart No I was The Beatles' 'I Want To Hold Your Hand').

This CD provides the group's entire sixties output with many new to CD – including one with lead vocals by Jackie DeShannon.

In sonic terms, how can I put this? How about "Wow!" Does that convey my thoughts, I wonder? These recordings were created from the early through to the late 60s but, right from the off with 1963's 'Popsicles and Icicles', the group presents an unhurried, easy

approach to their performance that is aided by the 3D soundstage that enhances the three-part harmonies, adding depth and richness to the vocal performance. The instrumental separation is top-notch which allows the percussion to offer detailed and often quite fragile accompaniment.

Ace should be congratulated for this and, more than that, for recording this CD so quietly (well, relatively speaking for works of this vintage) which allows your hi-fi to do the talking and just enhances the final sound quality.

When you get to the more mature 'Paper Sun' from 1968, which has a slight Mammas & the Papas feel to the presentation, the vocals are set back into the mix, in amongst the instruments to form a real band atmosphere but, if anything, the sound quality improves still further. A brilliantly realised sonic issue from this respected British reissue label.

nd I'm sure that's exactly how we all treat our shacks, they all deserve a good shake now and again.

I had to review this CD, for no other reason than the wonderful name of this country-pop singer. But, then again, he was also known as a honky tonk singer called Terry Preston and a country vocalist named Simon Crum. He got around, shack in tow. He racked up the hits in the fifties, no matter what he called himself, having minor chart success until the mid-seventies and later trod the boards regularly at the Grand Ole Opry.

This 32-track compilation features rarities and previously unheard material.

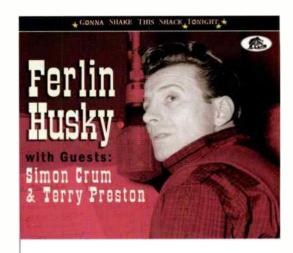
Sonically, this CD offers a production from a time and a place. From 1959's 'Black Sheep', Husky's delivery sits within some rather lively reverb that is enhanced by the fast-paced playing and the surf-like twangy guitar adds speed to

the process. You feel that Husky is singing this song galloping at full pace over a dirt track while hunting stray cows from the herd.

Don't assume that the sonics are second-rate, though. Bear Family has been nothing if not sympathetic to both the recording and your ears.

For example in the earlier, rather rockabilly-styled track 'Prize Possession' from two years earlier, complete with ethereal vocal backing, there is no sign of compression, tizzy treble or harsh upper mids. The frequencies from this track are impeccably behaved.

Husky, if he really wanted to, could tackle Johnny Cash-like bass frequencies (well, almost...he was on the way down there, shall we say, even if he never quite arrived) but this variety, on the track 'Detour', adds welcome richness to Husky's performance. Again, the sound quality is top-notch with extended reverb from guitar string pluckings that delight the ear.



#### FERLIN HUSKY

Gonna Shake This Shack Tonight Bear Family

ack in 1996, Chris Rea produced a film called 'La Passione' about a little boy who dreams of being a racing driver. Rea's original film has been revived along with home movies from driver legend Wolfgang von Trip which includes footage of many of his contemporaries: Juan Manuel Fangio, Peter Collins, Stirling Moss and team mate Phil Hill (plus rare footage of legendary motor racing correspondent Dennis Jenkinson) plus von Trip's self-filmed footage of the terrible crash that killed him during the 1961 Italian Grand Prix at Monza. The 2DVD documentary footage accompanies this 2CD audio suite and is included within a beautiful 70page, large format book that features paintings from Rea.

Listening to this album, the music has that big box of chocolates feel to it: it's rich and full of flavour. More than that, it offers an epic sense of grandeur that flows in

and around the orchestral backing that sweeps left and right of the soundstage as Rea's similarly rich, yet rather husky and gravelly and distinctively reassuring vocal swings down the centre.

The midrange is nothing if not sumptuous, bass is broad, big, bold and comforting, treble is sharp, crisp yet fragile in nature and the CD has (thank the lord) been cut quietly to allow your hi-fi to take over the volume if necessary to further enhance the frequencies.

In fact on a couple of occasions I was encouraged to increase the gain on my amp which brought further benefits in playback, especially when the backing strings were in action, not to mention Rea's own vocal performance which maintains his own high standards.

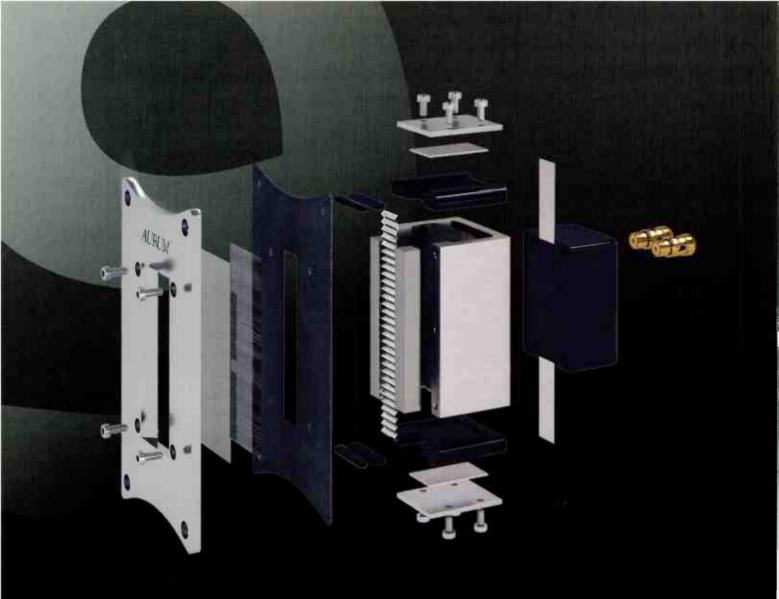
In many respects, the point of this package is the film, not the music.

That said, the two audio CDs are here by right and proudly so. **PR** 



**CHRIS REA** 

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## "The wonders of new products come from companies most people have never heard of"



Noel Keywood

t looks like hi-fi, but is it I wonder? These days I increasingly see not hi-fi but the global electronics business making a buck, or many of them. If I want to know what goes into a product and — especially — what influences basic design decisions, I'm afraid enlightenment doesn't come from navel gazing the hi-fi business.

In fact, quite the opposite. Many of the pronouncements made by the industry about its own products are cynically misleading in that they trumpet technologies that are far beyond existent company skills implied either in the press release or by company spokesmen.

And here I smell casual contempt for hi-fi journalists who may well know about hi-fi, but little about what makes it tick, as well purchasers who are also expected to take the bait. The wonders of new products come, in truth, from companies most people have never heard of such as ESS, Texas Instruments and others.

It's hardly surprising either. The more I read about the companies that drive digital technology and their products the more I realise it is a world moving rapidly beyond anyone's easy understanding. Let me illustrate this with simple experience.

Recently I decided I needed a volume control for a project. These things are, in essence, starkly simple — all but Victorian. By this I mean they are mechanical contraptions where you turn a knob and it moves a wiper along a carbon track. There are horrid ones, nasty and cheap and with a short life, and there are super-duper ones — spawned by the hi-fi industry I will note — the best known being the Alps Blue. Needless to say, it is expensive.

So far so good. But we have a problem. How to turn this device by remote control? The easy way is to strap a couple of broom poles

together, fit a prosthetic hand to one end and twiddle the resulting contraption across the lounge from your armchair. The advantage of this is you don't need remote control batteries; the disadvantages are those only you can perceive!

In case you think I jest (you're right, I do), I'll explain the origin of my vision; it is not uncommon in amplifiers to use a long shaft from front control to back input selection switch, a mechanical link similar to my broomsticks, if smaller and usually tucked away out of sight so your friends won't laugh when they come round

Alps, not wishing to mail out broomsticks, came up with a motorised version of their lovely volume control and we used it in World Audio Design amplifiers way back in the 1990s. You can spot these things by the eerie movement of the volume control seen from afar when the remote is being used. What a delightful contraption!

But we have big difficulties here. The main one is cost and the next is bulk. And I needed a quad control for a fully balanced amplifier. Enter the obvious solution - an electronic volume control.

It is amazing how many there are and the differing ways in which they work. But to cut a long story short, many these days are controlled by microprocessors (think: mini computers) and are horrendously complex. To use one I realised I would have to learn C++ programming language, pore over arcane code late into the night and then flash the memory of a chip to load the code.

But now we are using a microprocessor just to change volume for heaven's sake! This illustrates the massive leap in complexity that oft lies behind the fascia – and real life designers, such as those behind the Audiolab M-DAC+

I review in this issue, will laugh at my anguish! That's because M-DAC is far more complex: it has USB hubs, Apple accreditation and much else that is high technology bought in from outside specialists, from all those companies most people have never heard of. Electronic volume control – simple!

Once upon a time it was common to dismiss those who bring together a host of outside technologies as box stuffers, an appropriate phrase when you could buy in a CD player on a board, complete with disc mechanism, from an anonymous factory in the Far East, put it into a box and market/sell it, using lots of claims and deceptive phrases to fool people into thinking the product had merit.

But digital is under rapid development in all the big global electronics companies and I was intrigued by what ESS said about this. They got out of the fiercely competitive world of consumer electronics where everything is costed down to pennies and into high-end audio where quality transcends price. And they made this move stick by coming up with a DAC chip that makes CD sound almost analogue - and that has been the basis of Audiolab's M-DAC for many years now. But the ES9018 DAC chip is expensive, very expensive.

Which brings me to today and the modern firmament. It may look like a hi-fi product but the truth is today's advanced hi-fi is based on technologies no modern hi-fi manufacturer could ever hope to grapple with. That's not to demean what we see and get, it is to understand where it is coming from, and get a better understanding of what lies inside, beyond the vacuous marketing material that attempts to prevent us distinguishing the good like the new M-DAC+ from the bad.



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Stereo Times







# "Pop music...it's like playing the National Lottery"



Paul Rigby

op music. It's a wonderful, wonderful thing, isn't it? It can lift your spirits, divert your attention, provide a few valuable minutes of escapist fantasy and put a great big smile upon your face. It can reveal the source of brilliant music and equally brilliant song-writing. It can introduce genuine talent that often flowers and evolves into other musical directions, often launching major careers in the process.

Pop music is also ephemeral. We don't have to think too much about it because it has to be catchy, it has to grab you and it has to sell itself in just a few seconds to succeed. Pop lifts your spirits and often your heart.

Pop music. It's a terrible, terrible thing. It can irritate the hell out of you: ever allow a tedious riff or an annoying chorus to enter your head where it flies around all day making you thoroughly grumpy?

It can appeal to the lowest common denominator and, because its aim is to make money, is derivative and often feeds off the hit of the day so you feel that the current Top 10 is a bunch of variations on a theme.

Pop can be horribly exploitative, preying on innocent talent, ripping them off in financial terms, showing a thoroughly uncaring attitude to the young and their emotional development, being unashamedly sexist, often bigoted and taking a selfish, greedy and sometimes criminal tone in terms of the behind the scenes business dealings that demand attention only to the bottom line.

Pop music. It cannot be ignored. Why? Because it is everywhere: on your TV, your radio, your computer, your phone, in shopping centres, you name it.

And do you know what? The

public don't care either way. Not really. Why? Because pop is a the Big Mac of music. It is there purely to be consumed. Many people complain that it's not good for you but many of us indulge anyway. Many listen to it and find it empty of meaning and significance but it is tolerated and enjoyed in equal measure...mainly by the young.

Pop and the public who consume it are a lot more 'knowing' now than they used to be. Partly because we all have been educated by the mechanics and the machinations of the media. We know how TV and records work. We know about production, cameras, special effects and the like.

Everyone in the street could be a TV presenter, we all know what camera to look in, and we all know the tricks of the trade.

Hence, in many ways, the magic of pop is no longer there – which has meant that the music of today lacks a certain frisson of wonder and innocence.

We, as listeners, tend to be more cynical and expectant, almost daring pop to entertain us.

The fifties and sixties were the golden ages of pop and retained that air of enchantment and illusion, as did the golden age of Hollywood. Pop had a great charm and a fascination which, because of those things, added to its glamour.

Maybe that is why we look back with such a rosy glow of nostalgia at those innocent days.

Back in the fifties and sixties both bands and their songs frequently had rather silly names, for example. You can see this on the excellent Ace CD, 'Where Are The Girls, Volume 9' compilation, where you can find group names such as The Popsicles, The Bitter Sweets, The Sweet Three, Honey Ltd and other sugar-infested labels singing

wonderfully crafted pop, it has to be said.

Silly song names abounded too. Take the gospel singer Dee Dee Sharp, on the Cameo Parkway label (a pre-Motown outfit). Sharp, who received her name because she had a tendency to sing songs in D sharp, was given a song to sing called...wait for it... 'Mashed Potato Time'.

"I thought that it was the dumbest record I'd ever heard. It was so silly. I was accustomed to singing gospel" she said.

Nevertheless, the published single hit Billboard's Top 10. Well, she was caught then, wasn't she? Hence, the reason why the next song she was given to sing was, 'Gravy (For My Mashed Potatoes)' which would also enter the Top 10 chart (you can find both tasty morsels on Ace's 'It's Mashed Potato Time/Do The Bird').

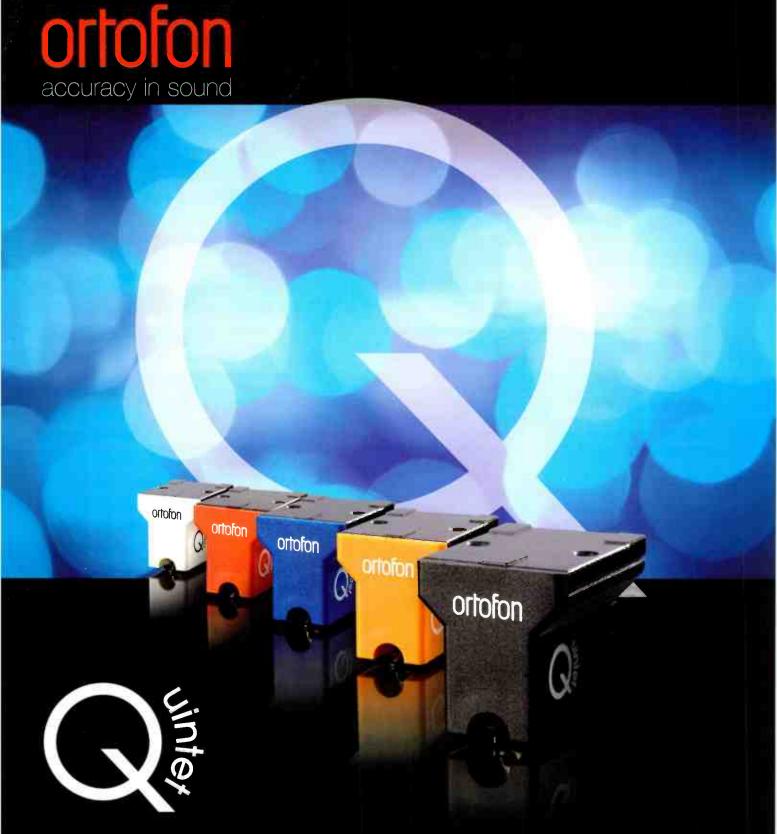
Pop's inflated lack of substance continued with the likes of Ray Stevens who had a massive hit with 'The Streak' in 1976 and bizarrely named ditties such as 'Harry The Hairy Ape' and 'The Rockin' Teenage Mummies' (other tracks can be heard on Ace's 'Face The Music' via Stevens).

Sometimes, though, pop just 'clicks' and makes complete sense no matter what the song title. There's a blend of musical talent, a social zeitgeist and a sonic implementation that hits a real sweet spot and is surprisingly fulfilling.

Take the output from the Innocents, a US-based harmony group that stemmed from the same car club who offered a smooth delivery with oodles of charm (you can find more on Ace's The Innocents' 'Classic Innocents').

And that's pop music. It's like playing the National Lottery.

Most of the time, what you hear are losers but sometimes, just sometimes, you really hit the jackpot and that makes it worthwhile.



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# "The combination of classical musicians and soaring dance tunes worked magnificently"



Jon Myles

o those of us who love music one of its most fascinating qualities is the seemingly never-ending emergence of new genres and forms. From classical to jazz, rock to punk, hip-hop to triphop, rap to gangsta and ever onwards – something new seems to be always just around the corner.

Even within those definitions different sub-sets continually emerge. So within classical we have orchestral, avant-garde, romantic, minimalist and a host of others. Rock has given us rock 'n' roll, heavy metal, death metal, grunge, Britpop and even (believe it or not) Brazilian thrash metal while in jazz there's...well, you get the picture.

However, one of the most refreshing features of the music scene over the past few years has been the melding and blending of all the different forms and the willingness of listeners to take in and enjoy artists and works from across the various genres.

It wasn't always so, of course. Once we had classical and rock fans and it would have been rare to find the works of Mahler nestling alongside a copy of, say, Iggy and The Stooges 'Raw Power'. In those times there was a clear line between the musical tastes (and fashions) of the Mods and Rockers.

And as for the Punks and socalled Hippies, their music was composed, by definition, at Year Zero! I well remember a friend of mine throwing out all his Led Zeppelin, Deep Purple, Rainbow and Yes LPs shortly after he bought 'God Save The Queen' because of the new start it seemingly represented (he's since bought them all back again!).

In short, once upon a time you liked one type of music or another – with little chance of any crossover.

But over the past decade or

so all that has changed. Artists now borrow sounds and ideas from across musical boundaries to universal acclaim while the Bhundu Boys happily nestle alongside Beethoven, Nirvana, Stockhausen and Run DMC on iPods and mobile 'phones across the globe.

All the while festival goers at Glastonbury take great delight in welcoming acts as diverse Burt Bacharach, Bruce Forsyth, Yes, Primal Scream, English National Opera performing Wagner's 'Ride Of The Valkyrie' and even, er, The Wombles.

And just to highlight how far all this cross-cultural mayhem is going I recently witnessed one of the strangest (and also most enjoyable) events I've seen in a long time in the form of Hacienda Classical at the Royal Albert Hall.

It brought together a 70-piece orchestra, six-piece choir, two DJs, various keyboard players and a handful of luminaries to recreate the glory days of a long-demolished but hugely-influential Manchester nightclub that was the Hacienda.

Conceptually, it made absolutely no sense. Veteran Hacienda DJs Graeme Park and Mike Pickering had got together to concoct a two-hour mix of classic Eighties dance singles re-arranged to be performed by conductor Tim Crooks and the Manchester Camerata orchestra. Additional help came from New Order bassist Peter Hook and Happy Mondays' infamous duo of Shawn Ryder and Bez. It shouldn't have worked but somehow it did – and to glorious effect.

The sight of five thousand ecstatic men and women throwing their hands in the air and dancing like lunatics to an orchestra recreating the best tunes from the heady days of the Acid House revolution was a sight to behold. The fact that it was taking place within the venerable

walls of the home of The Proms made the spectacle seem all the more surreal.

Surreal or not, though, the combination of classical musicians and soaring dance tunes worked magnificently. The subtle timbres of the orchestra's various instruments and range of sonic dynamics brought new levels of insight to the resolutely electronic-based music of the Hacienda era. Indeed, there was something totally ethereal and spinetingling about the reworked version 808 State's 'Pacific State' and with an orchestral backing Happy Mondays' singer Rowetta's version of Candi Staton's 'You Got The Love' was simply a soaring masterpiece.

It just goes to show how disparate musical genres (and they don't get much further apart than classical and dance) can come together to create something completely new and life-affirming.

Speaking of the Royal Albert Hall, my recent musings on its circular auditorium not being the perfect acoustic space has been borne out by a new study. Researchers at Aalto University in Finland have discovered the emotional response of listeners to music varies depending on the layout of the venue it is being played in.

The research team presented 28 test subjects ranging in age from 22 to 64 with an excerpt of Beethoven's Symphony No 7 using a surround-sound loudspeaker system set-up to mimic the acoustics of rectangular or non-rectangular concert halls from six European venues.

And it turns out the strongest impact is elicited from the acoustics of shoebox-type concert halls such as Vienna's Musikverein or Berlin's Konzerthaus.

Which makes me wonder just how much better Hacienda Classics would sound at Vienna's Musikverein instead of the Royal Albert Hall!

# THE VINYL REVOLUTION







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# "If you have HDCD software but nothing to play it on, here's a solution"



Martin Pipe

ho remembers
HDCD? Hands up!
The format was
launched in the mid1990s by Californian
firm Pacific

Microsonics. In 2000, the thendominant software giant Microsoft purchased the technology; HDCD support was to be built into the Windows Media Player of its forthcoming XP operating system. As its name suggests, HDCD is a method of cramming extra audio information onto an audio CD that can also play perfectly well on 'standard' CD players. The result can be seen as a 'halfway house' between 16-bit CD and 'true' hi-res audio formats like 24-bit PCM. Quite literally; decoded HDCD is claimed to have an equivalent resolution of 20-bit - and all that implies in terms of potential detail and dynamic range.

However, to get the best from a HDCD you require a CD player that supports the technology. In the early days, this would have been an upmarket CD player equipped with a Pacific Microsonics PMD100 decoder/digital filter chip. HDCD data can travel via the 'raw' digital output of any CD player/transport, and so we saw HDCD-compatible DACs too. Such products had a prominently-displayed HDCD frontpanel logo. There was usually also an indicator that lit up whenever HDCD content was being played.

Then came HDCD-compatible DVD players, whilst at the other end of the scale, my 2001-vintage Arcam DV27 is HDCD-capable. By this stage, much of the HDCD decoding could be done in DSP; DVD players had the 24-bit DACs needed to do it justice. Some semiconductor firms (among them Burr-Brown/TI) sold DAC chips with HDCD support. All

an equipment manufacturer had to do was pay the licence fee. And the attraction? There was somewhere in the region of 5000 HDCD titles to choose from.

Many releases, especially in the early days, were the work of specialist labels like Audio Fidelity, and Premonition. The frequent use of 24-carat gold discs was indicative of premium audiophile product. But there was mainstream involvement too. Majors like Warner, BMG and Sony jumped on board for some artists.

New music was also released on the format, and we saw anything from bubblegum pop (Aqua's Aquarius), through blues and jazz, to serious classical works (recordings of Copland, Mussorgsky, Smetana, Vivaldi, Beethoven and Mozart amongst others).

Most discs are clearly marked HDCD. However, there are some discs that aren't marked as such on the packaging. Albums from Faith No More (the 'Who Cares A Lot' compilation) and Danzig (6:66 Satan's Child) caused a compatible player's HDCD LED to glow. Other releases (for instance, a Joe Ely compilation) were partially-encoded. In other words, some tracks were HDCD while others weren't.

HDCD transfers started life with a \$20,000 (1995) encoder, based around custom 20-bit analogue-to-digital converters and mighty Motorola DSP chips working in parallel.

The system used a number of different techniques to meet its objective. They included filtering, non-standard dithering and dynamics processing. A control bit buried within the CD bitstream told a HDCD-compatible product that decoding should be applied.

So what of HDCD today? There's not an awful lot of new compatible gear around as the audio industry has since moved to hi-res. But if you have HDCD software and nothing to play it on, here's a solution - especially if your equipment is compatible with 24-bit WAV or FLAC files. The Windows version of dBpoweramp Reference 'Batch Converter' software (£28, https://www.dbpoweramp.com/) has a 'DSP effect' that will decode HDCD, generating 24-bit files from HDCD-encoded content. After picking your tracks and clicking 'convert', select add (options) in the window that appears and choose 'HDCD' from the list of 'DSP Effects'. A '+6dB Amplification' box can be checked, to take full advantage of 24-bit audio's additional headroom.

Select the format of the converted file and click 'convert'. VLC will confirm ('tools'/'codec information') that the converted file is 24-bit; if it's not, then chances are your source wasn't HDCD-encoded.

With a hi-fi system, you'll notice the improvement relative to standard 16-bit playback immediately! I also note that FLAC files derived from CD rips retain their HDCD flag and data. As a consequence, they too can be processed by Batch Converter; good news if you've already ripped your music collection for storage on a personal player or NAS. It won't work with any HDCD content encoded in and stored/distributed losslessly as MP3s I will warn.

Probably few remember HDCD: it made no lasting impact. But it worked well all the same and you can still enjoy its benefits if you rip CD to a computer file and use dBpoweramp Reference 'Batch Converter'.

# Viva Riva

The new Riva S Bluetooth loudspeaker aims to combine portability with good sound quality. Jon Myles finds out whether it succeeds.

ortable Bluetooth loudspeakers can be something of a mixed bag.
There's a delicate balance
to be achieved - light and
small enough to be carried around, yet sufficiently sturdy
in their construction and driver
arrangement to make them a rewarding listen.

The new Riva S Bluetooth loudspeake aims to tackle both those problems head-on. So it is small, measuring 2.6" x 7.5" 2.5" (H/W/D) and weighs in at a svelte 1.5 lbs (0.7kg). All the same, internally

it packs seven drivers - three active (firing left, right and forward) plus four passive bass radiators to add some foundation to the sound. It's an unusual arrangement which is aimed at making the Riva deliver a bigger soundstage than its physical dimensions would suggest.

Power is supplied by a 30 Watt Class D amplifier chip, while control of the unit can be accessed via top-mounted buttons or an iOS download for Appe devices. The Riva website promises an Android alternative will be arriving soon although there's no time scale

on this at present.

Also included in the package are a nylon carrying case and international plugs for different territories.

The internal battery is said to be good for 13 hours of life, which I never managed during my listening sessions - instead averaging around 12 hours although, to be fair, this was with volume turned up which produces greater battery drain.

What was impressive, however, was the ease of use. The Riva S paired immediately with

my iPhone 6 Plus and never once lost its connection even at a range of 30 metres.

#### **SOUND QUALITY**

Yes, it's compact - but the little Riva S is also rather potent. The side-firing drivers do, indeed, create a larger soundstage than you'd imagine Playing a slice of up-beat electronica in the shape of the Pet Shop Boys' 'West End Girls' revealed a firm low-end allied to a smooth treble. Higher frequencies were a little rolled off meaning some of the scale of the track was lost - but as £200 Bluetooth loudspeakers go it was no disgrace.

Increasing the volume with Bjork's 'Black Lake' showed how well-engineered this unit is. There



was no rattle or shake to it even when the lower frequencies kicked in. Okay, I wasn't hearing the full measure of this track – but nor did it sound diminished in any way.

That's down to the fact that the Riva S times very well. It may lack frequency extremes but it has a natural flow to its presentation. As such Tommy Smith's saxophone on 'Azure' had a lilting quality to

it, while the bass and drum

backing track provided a subtle counterpoint. Sound-quality wise it was impressive for such a small package.

#### CONCLUSION

At £200 the Riva S isn't the cheapest portable Bluetooth loudspeaker available - but it is certainly one of the best. If you want ease of use allied to good sound quality then it is well worth a look and a listen.



# Disc jockey

In the first of a two-part feature, Martin Pipe remembers the Sony Minidisc.



ome 25 years ago I can remember marvelling at 'MO' computer storage disks, which were more robust and capacious at I 28MB than the rather unpredictable I.44MB floppy disks that most of us can remember. 'MO' stood for 'magneto-optical' and although the disk looked similar to a floppy, complete with protective



The MDCC-2000 'Confer-Corder', a 2002-vintage machine built around a pair of Minididisc drives that could operate in 'relay', recorded four channels of time-stamped courtroom audio in LP4 mode. Special 'legal' blanks (MDW74CCs) were required; each could hold two and a half hours of four-channel audio.

shutter, what went on 'under the bonnet' was very different. They used a crafty mix of lasers and magnetics to achieve their higher 'information density'. To write information to a MO disk, a laser targets a specific region on the disk, which has a magnetic coating covered by a plastic layer. This narrow beam heats a tiny 'spot' on the disk to its Curie point - the temperature beyond which any existing magnetic properties are lost. A precision electromagnet aligned on the other side of the disc then changes the magnetic state to that of the data bit to be written. This state is retained after the laser is turned off. During the read process, the laser beam is again focused on the disk surface, albeit at much lower power. Thanks to a something called the surface magneto-optic Kerr effect ('SMOKE'), the reflected light changes according to the magnetic state - and the recorded data bit can be recovered.

MO drives and media were very expensive, although strides in technology were to increase capacities. They were business tools, pure and simple. But later in 1992, MO was to enter the consumer mainstream – thanks to the search

for a digital replacement for the established Philips Compact Cassette. Digital Audio Tape (DAT), eventually launched in 1987 and the subject of a previous Olde Worlde, was the first. But by 1992, the expensive DAT - a complex system that relied on a VCR-like tape transport - had made little impact in the consumer market; it was successful in the pro-audio sphere alone. There were, however, two newer high-tech contenders, which were mechanically-simpler than DAT and aimed squarely at consumers. The first was DCC - Digital Compact Cassette - Philips' digital-age reworking of the internationally-successful medium it had invented thirty years previously, and also revisited in Olde Worlde.

Then there was the radically-different Minidisc from Philips'
CD collaborator Sony, which was basically a tiny (70x67.5x5mm) MO disc optimised for audio. Announced in September 1992, it received its Japanese launch amidst considerable fanfare in November of that year. The rest of the world had to wait until the following month – just in time for the Christmas buying season. But in the meantime the hype kept flying. Who, for example, can forget

Sony UK's resident audiophile Eric Kingdon demonstrating Minidisc on Tomorrow's World? And among the advertising that followed was a high-profile 1994 TV spot featuring then-upcoming UK alt.rockers Reef (who, funnily enough were signed to Sony). Reef were shown recording a demo onto their second-generation MZ-R2 portable, which they then pitched it to a record industry executive. The unimpressed exec chucked the Minidisc out of his New York skyscraper window, only to be picked up by a skateboarding dude who conveniently had a personal Minidisc player on his person. The basic message is that, courtesy of the same virtues that made MO a wise professional choice, Minidisc was practically indestructible.

The launch Minidisc product was Sony's MZ-I 'MD Walkman' portable recorder (you had to wait until 1994 for a hi-fi use 'homedeck'). Featuring recording and playback, alongside full analogue/digital connectivity, it is remembered as a rather bulky object that only suited deep pockets (not least because it sold for nearly £500). Future models were cheaper, and some wouldn't be much bigger than the discs themselves. The first generation of discs only offered an equivalent capacity of approximately 130MB - or sixty minutes of stereo recording. However, 74minute (160MB) discs came shortly afterwards, followed by 80-minute (175MB) discs in 1999. Pre-recorded music Minidiscs were also available. These weren't MO discs; instead, they were optical discs produced on the same lines as CDs, but built into protective enclosures.

In order to cram 74 minutes into 160MB of capacity signal compression essential. The Sony ATRAC (Adaptive TRansform Acoustic Coding) compression system was conceptually-similar to (although incompatible with) the Philips DCC system (PASC, or Precision Adaptive Sub-band Coding) and, for that matter, the MPEG-1 Layer 2 ('Musicam') system that would later form part of the DAB and digital TV audio specs. All are lossy, an understanding of psychoacoustics being applied to the development of data-reduction processing algorithms. Quieter parts of the audio signal that would be 'masked' by the louder elements during playback, and therefore judged to be inaudible, are discarded irretrievably. The data rate of the original Minidisc ATRAC



In 1992, Sony's Eric Kingdon appeared on Tomorrow's World to demonstrate a Minidisc prototype. Viewers were treated to the first few bars of Michael Jackson's 'Bad'.

incarnation, as employed by the MZ-I, is 292kbps. That's a compression ratio of approximately 5:1.ATRAC went through a series of refinements and revisions. By the end, it became difficult to discern a Minidisc recording from a CD original especially with rock and pop material. It certainly wiped the floor with the era's MP3 encoders!

In all, there were four major ATRAC versions; the front-panels of some Sony decks indicated the ATRAC version (e.g., ATRAC 3) and underyling DSP (e.g., 'Type R') being used. Hardware was backwardscompatible, and so later decks would play discs made with earlier machines using older incarnations of ATRAC. The codec became so sophisticated and effective that by the end of the 1990s, Minidisc decks were able to offer long-play ('MDLP') modes that respectively worked at half (LP2) and a quarter (LP4) of the bitrate, doubling and quadrupling disc capacity. The 132kbps LP2 mode was surprisingly effective, although LP4 was unsuitable for music - even with joint-stereo encoding to wring every drop out of its 66kbps. From the start, though, Minidisc, featured a mono-only SP mode that doubled the capacity.

The format was nothing short of flexible, and became popular among journalists as well as music fans - who appreciated Minidisc's freedom from the average personal cassette player's pitch instability and hiss. There were benefits beyond the robustness of MO technology too. True random-access was first



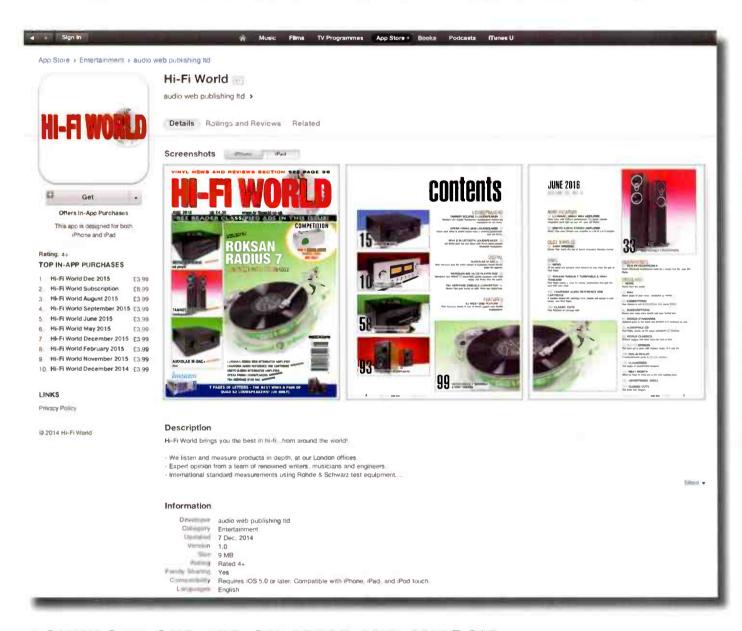
I spotted this Sony MZ1 - the world's very first Minidisc product, launched in 1992 - at a 2015 Audiojumble. In mint working condition, it was being offered for £25. Not bad for a piece of audio history!



Here is the 1992 launch advertisement for the MZ1 portable. Over the years, Sony spent a considerable amount of money marketing its Minidisc.

and foremost; a specific song (or part of your interview!) could thus be quickly accessed. In contrast, a DCC (or for that matter DAT and analogue cassette) deck had to shuttle laboriously through the tape





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Minidisc also got some broadcast use. In addition to Minidisc 'cart machines' (notably from Sony and Denon), and a rugged Marantz portable for radio news gathering, was this heroic British contraption. The ASC MD-Report was a cradle into which any consumer Minidisc portable could be inserted. It facilitated interfacing with the balanced connections of pro-grade kit.

to the desired point.

Then there was the editing.

Recordings can be split, marked, partially-erased or combined - and tracks reordered in the desired sequence. Minidiscs also made clever use of multi-megabit buffering. This provided two key advantages. During replay, you got resistance to shocks - and the resultant 'skips' that plagued contemporary portable CD players; furthermore, as long chunks of musical data are being read out in 'bursts', the mechanism's motors and laser don't have to be powered continuously, thereby improving the battery life and long-term reliability. Buffering was also used to improve battery life during recording. By 2000, a pocketable MD recorder could offer nearly 10 hours of recording - double that figure for playback - from a single AA cell (or a flat rechargeable 'gumstick'). The original MZ-1, in contrast, delivered an hour of recording with its NiCd battery pack full-charged. The handful of alternative first-generation decks (for example Sharp's MD-MII) didn't fare much better.

Minidisc was not particularly successful first time around, so in 1997/8 it was extensively relaunched as a mass-market proposition - with less-expensive gear of much higher performance and versatility. It might have eluded most people, but Sony declared 1998 to be 'the year of the Minidisc'. At that time, it was facing competition from newcomers like primitive first-generation MP3 players and recordable CD. But the policy seemed to work; for a fleeting period, Minidisc was a 'fashion' must-have - and, thanks to shrinking sizes, the bootlegger's tool of choice. This

is because most portables had a recording function - and 3.5mm minijack analogue microphone/line inputs as well as the optical digital port needed to get the best from CD dubbing.

Sony's full-size mains-powered homedecks were typically ranged into

portables to be interfaced with professional gear. Among the other Minidisc oddities were a four-track Minidisc Portastudio-type affair from Sony, early digital cameras that captured onto Minidiscs from Sharp and Sanyo, a Sony audio-logging machine designed for legal work and 'MD-Data' computer peripherals that stored data on high-grade Minidiscs. Yes, MO data storage went to Minidisc - and back again! Some of these wonders are listed on the wonderful minidisc.org website, which provides instruction and service manuals for many models and much else besides.

You could buy blank media from Sony, TDK, BASF and Maxell amongst others. All worked well, and having used hundreds of these discs over many years I only came across a couple that didn't work from the start or failed subsequently in use. Pre-recorded Minidiscs were rare, Sony Music being the main backer of the format. It didn't help that early pre-recorded MDs sounded awful - thin, little depth and wayward



Few pre-recorded Minidiscs were sold. Many pre-recorded titles sounded mediocre, and given their high retail price and unpredictable availability it was better to buy the CD and dubiy to a blank.

'budget', 'mid-market' and 'high-end' models – the latter often sporting the firm's premium 'ES' suffix. Higherend decks justified the additional expense with more features, more connectivity and upscale electronics (notably in terms of ADC/DAC and analogue stages).

Marantz and HHB attempted to muscle into DAT territory with rugged pro-grade Minidisc portable recorders. Canford Audio/ASC sold the 'MD-Report' - a rugged 'cradle' that enabled conventional Minidisc

treble. Hardly surprisingly, most users preferred to make their own recordings. It wasn't uncommon for retailers to bundle homedeck, portable and accessories into an enticing 'package' deal. And the well-known Richer Sounds hi-fi retail chain cut Minidisc prices to the bone. Sales tactics like this helped to bring Minidisc within reach of more British consumers.

Next month: developments and decline

We do not sell these products. It is for your information only.

# ORLD CLASSICS

Here is our list of the great and good from audio's glorious past, products that have earned their place in hi-fi history. You'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price.

#### **TURNTABLES**

**EAT FORTE** 2009 £12,500 Lavishly finished two box, two motor turntable with gorgeous Ikeda 407 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.



FUNK FIRM VECTOR II 2009 5860 Innovative engineering gives a nimble, pacey and musical sound that's one of the best at the price.

REGA P2 2008 £300 Excellent value for money engineering, easy set up and fine sound.

MCINTOSH MT10 2008 £8,995 Big, expensive, controversially styled and glows more than some might consider necessary, but an astonishingly good performer.

**REGA P3-24** 2008 **C405** Seminal affordable audiophile deck with fine bundled tonearm. Tweakable, and really sings with ontional £150 outboard power supply.

ACOUSTIC SOLID ONE 2007 £4.050 Huge turntable, both in terms of sheer mass and sonic dynamics. Fit up to three arms and enjoy, just don't damage your back moving it...

AVID VOLVERE SEQUEL 2007 £4,600 Stylish high end vinyl spinner with industrial strength build quality and a sound to match. Sound is edge-of-the-seat stuff.

MICHELL GYRODEC SE 2005 £1,115 Design icon with superlative build. Sound is beautifully smooth, effortless and exceptionally expansive.

**MARANTZ TT-15S1** 2005 £1,299 Cracking all in one deck/arm/cartridge combination, this must surely be the best sound'plug and play package at this price point.

MICHELL TECNOOFC 2003 £579 Superb introduction to Michell turntables - on a budget. Top quality build and elegant design mean it's still the class of the mid-price field.



MICHELL ORBE 1995

£2.500 The top Michell disc spinner remains a superbly capable all rounder with powerful, spacious sound that's delicate and beguiling.

SME MODEL 10A 1995 £4,700 Exquisitely engineered deck and SME V tonearm combo that's an extremely accomplished performer with classical music.

LINN AXIS 1987 £253 Cut-price version of the Sondek with LVX arm. Elegant and decently performing package. Later version with Akito tonearm better

TECHNICS SL-P1200 1987 2800 CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pr' use and laden with facilities - a great eighties icon.

**ROKSAN XERXES** 1984 £550 Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

**DUAL CS505** 1982 Simple high quality engineering and a respectable low mass tonearm made for a brilliant budget buy. Polished, smooth and slightly bland sound.

MICHELL GYRODEC 1981 £599 Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved. Clean, solid and architectural sound.

TOWNSHEND ROCK 1979 £ N/A Novel machine has extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

MARANTZ TT1000 Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan



**REGA PLANAR 3** 1978 Brilliantly simple but clean and musical performer, complete with Acos-derived S-shaped tonearm, 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb budget buy.

SONY PS-B80 1978 £800 First outing for Sony's impressive 'Biotracer' electronic tonearm. Built like a tank with a clean and tidy sound, albeit lacking involvement. Scarily complicated and with no spares support - buy with caution!

TRIO LO-7D 1978 2600

The best 'all-in-one' turntable package ever made, Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

**ADC ACCUTRAC 4000** Bonkers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

**PIONEER PLC-590** Sturdy and competent motor unit that performs well with a wide range of tonearms. Check very thoroughly before buying due to electronic complexity and use of some now-obsolete ICs

**PIONEER PL12D** When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL112D was off the pace compared to rivals.



**TECHNICS SP10** 1973 Seminal Japanese engineering, Sonics depend on plinths, but a well mounted SP10/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

**LINN SONDEK LP12** For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Recent 'SE' mods have brought it into the 21st century, albeit at a price

**ARISTON RD11S** 1972 €94 Modern evolution of Thorens' original belt drive paradigm. Scotland's original super-deck was warm and musical, albeit soft. Still capable of fine results today.

**GOLDRING LENCO GL75** 1970 £15.6S Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today.

**GARRARD 301/401** 1953 £19 Tremendously strong and articulate with only a veiled treble to let it down.



HEELWORLD JUNE 2016

THORENS TD124 1959

The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass

£ N/A

#### **TONEARMS**

REGA RR251 2009 £136

Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counterweight modification.

**HELIUS OMEGA** 2008 £1.595 Stylish and solid lump of arm with fabulous build qual-

ity, that turns in a dynamic and weighty performance.

**AUDIO ORIGAMI PU7** 2007 The classic Syrinx PU3 updated to spectacular effect. Hand made to order, with any mass, length and colour you care for. Fit, finish and sound truly impressive.



**GRAHAM PHANTOM** 2006 £3.160

Sonically stunning arm with magnificent bass dexterity and soudstaging. Build quality up to SME standards, which is really saying something!

TRI-PLANAR PRECISION 2006 £3 600 Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

MICHELL TECNOARM A 2003 Clever reworking of the Rega theme, using blasting, drilling and rewiring!

£767 SME 309 1989

Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

1987 **NAIM ARO** £1.425

Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

**SME SERIES V** 1987 Vice-like bass with incredible weight, ultra clear midband and treble astound, aithough some don't

like its matter of factness! **NAIM ARO** 1986 £875 Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened

frequency extremes.



**ALPHASON HR100S** 1981

First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.

SME SERIES III 1979 £113

Clever variable mass design complete with Titanium Nitride tube tried to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

TECHNICS EPA-501 1979 ₽ N/A Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

LINN ITEOK IVII £253 1978 Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. The final LVIII version worth seeking out.

**AUDIO TECHNICA AT 1120** 1978 £75 Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few guid to spend.

HADCOCK GH228 1976 P46 Evergreen unipivot with lovely sweet, fluid sound. Excellent service backup.

**ACOS LUSTRE GST-1** 1975 £46 The archetypal S-shaped seventies arm; good, propulsive and involving sound in its day, but ragged and undynamic now.

**SME 3009** 1959 Once state of the art, but long since bettered. Musical enough, but weak at frequency extremes and veiled in the midband. Legendary serviceability and stunning build has made it a cult, used prices unjustifiably high.

#### PHONO STAGES

**CREEK OBH-8 SE** 1996 Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic.

Partner with a Goldring G1042 for an unbeatable budget combination.

MICHELL ISO 1988 This Tom Evans-designed black box started the

trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in



LINN LINNK

beyond class expectations.

1984 £149

Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, aithough off the pace these days.

#### INTEGRATED AMPLIFIERS

NAIM NAIT XS 2009 £1.250 With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth

MUSICAL FIDELITY PRIMO 2009 Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

SUGDEN A21A S2 2008 £1.469 Crystalline clarity, dizzying speed and forensic detailing. Power limited so needs sensitive speakers.

**CREEK OBH-22** 2008 £350 Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral

**CAMBRIDGE 840A V2** 2007 £750

Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

SUGDEN IAA 2007 £3.650

Goodly amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrateds.

NUFORCE P-9 2007 £2.200

Impressive two box preamp with superb resolution and an engaging sound.

MELODY PURE BLACK 101D 2007 £3 295 The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.

AUDIOLAB 8000S £400 2006 In another life, this sold for three times the price. making it a stand-out bargain now. Very clean. powerful and tidy sound.

MCINTOSH MA6800 1995 Effortlessly sweet, strong and powerful with seminal styling to match.

1987 Fast, dry and with excellent transients, this first DPA integrated is the real deal for eighties obsessives. Ridiculously punchy 80W per channel from a tiny, half-size box. Radical, cool and more than a

EXPOSURE VII/VIII 1985 \$625 Seminal pre-power, offering most of what Naim amps did with just that little bit extra smoothness. Lean, punchy and musical.

little strange.



**AUDIOLAB 8000A** 1985 £495

Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.

#### VTL MINIMAL/50W MONOBLOCK

1985

Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

MUSICAL FIDELITY A1 1985 Beguiling Class A integrated with exquisite styling. Questionable reliability.

MISSION CYRUS 2 1984 £299

Classic 1980sminimalism combines arresting styling with clean, open, lively sound, Further upgradeable with PSX power supply.



TIAN MIAN 1984 £350 Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage. very low power.

CREEK CAS4040 1983 £150 More musical than any budget amp before it; CAS4140 loses tone controls, gains grip

MYST TMA3 1983 £300 Madcap eighties minimalism, but a strong and tight

performer all the same.

ROTEL RA-820BX 1983 £139

Lively and clean budget integrated that arguably started the move to minimalism.

1979 £69 NAD 3020 Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.

**ROGERS A75** 1978 Lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet.

1977 Sweet and musical feature-packed integrated; the Audiolab 8000A remains a classic.



SUGDEN C51/P51 1976 £130 Soft sounding early Sugden combo with a plethora of facilities and filters. A sweet and endearing performer but lacking in power and poor load driving ability.

**SUGDEN A21** 1969 £ N/A Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

ROGERS CADET III 1965 £34 Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves

**CHAPMAN 305** 1960 Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper secondhand.

#### POWER AMPLIFIERS ELECTROCOMPANIET NEMO 2009 £4.995 (EACH)

Norwegian power station as cool as a glacier tonally, yet impresses with sheer physicality and fleetness of foot. 600W per channel.

NUFORCE REFERENCE 9SE V2 2006 £1,750 Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.

**OUAD II-80** 2005 26,000 PER PAIR

Quad's best ever power amplifier. Dramatic performer with silky but dark tonality, blistering dynamics, serious power and compellingly musical sound.



**QUAD 909** 2001 Current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but superb value all the same.

NAIM NAP 500 2000 £17.950

Flagship amplifier will drive just about any speaker with ease. Factor in the company's trademark pace. rhythm and timing and it all adds up to one effortlessly musical package.

**MARANTZ MODEL 9** 1997 68000 Authentic reproduction monoblocks still more than cut the sonic mustard. Highly expensive and highly sought after.

MICHELL ALECTO 1997 £1989 Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!



MUSICAL FIDELITY XA200 1996 £1000 200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity

PIONEER M-73 1988 £1,200 Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the experience.

KRELL KMA100 II 1987 Monoblock version of the giant KSA-100 is one of the seminal 80s transistor power amplifiers. Massive wallop allied to clean and open Class A sound makes this one of the best amplifiers of

#### RADFORD STA25 RENAISSANCE

1986 £977

This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.

**OUAD 405** 1978 £115 The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound. 606 and 707 continue the theme

#### **HH ELECTRONICS TPA-50D AMPLIFIERS**

with greater detail and incision.

1973

Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain

LECSON AP1 1973 £ N/A Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

**OUAD 303** 1968 €55 Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking

LEAK STEREO 20 1958 £31 Excellent workaday classic valve amplifier with decent power and drive, Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



LEAK STEREO 60 1958 £N/A Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the

smaller Stereo 20. Desnite concerns over reliability rarity value means high price.

OUAD II 1952 £22

The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly



LEAK POINT ONE, TL10, TL12.1. TL/12 PLUS 1040 Early classics that are getting expensive. Overhauling is de rigeur before use, using original parts if possible. Surprisingly crisp and musical.

#### PRE AMPLIFIERS

Deeply impressive in fine fettle.

AUDIOLAR 8000C 1991 £499

Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.



**CROFT MICRO** 1986 £150 Budget valve pre-amp with exceptionally transpar-

ent performance.

CONRAD JOHNSON

MOTIV MC-8 1986 €2,500 Minimalist FET-based preamplifier is brilliantly

neutral and smooth with a spry, light balance in the mould of Sugden. Something of a curio, but worthwhile nonetheless.

AUDIO RESEARCH SP-8 1982 £1.400 Beautifully designed and built high end tube preamplifier with deliciously sweet and smooth sound. Not the last word in incision or grip.

LINN LK-1 1986

A brave attempt to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not bad for under £100.

NAIM NAC 32 5 1978

Classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

LECSON AC-1 1973 F N/A

Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.

DUAD 33 1968 £43 Better than the 22, but Quad's first tranny pre isn't

outstanding. Responds well to tweaking/ rebuilding though.



**LEAK POINT ONE STEREO** 1958 Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

**QUAD 22** 

1958

The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it's for anacrophiles only. matches their looks.

#### LOUDSPEAKERS

WHARFEDALE DIAMOND 10.3 2010 £290 Great small standmounters for audiophiles on a budget; dry punchy sound with impressive soundstaging at the price.



YAMAHA SOAVO 1.1 2009

Needs the best ancillaries to fly, though.

Musical, transparent with impressive dynamics and cohesion. Excellent build and finish.

**USHER BE-10** 2009 Clever high end moving coil design with immense speed and dizzying clarity allied to epic punch.



SPENDOR A5

Multi-talented floorstanders with generous scale and punch and Spendor's classic mid-range detail. Deliver a sound that thoroughly engages whatever you care to play.

MONITOR AUDIO PL100 2008 £2,300

The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble.



MARTIN LOGAN SOURCE

Brilliant entry level electrostatics, giving a taste of loudspeaker esoterica for the price of most moving coil boxes. Tremendous clarity, eveness and delicacy, aithough not the world's most powerful sound.

2008

£1,600

PMC 0B1I

2008 £2,950

Cleverly updated floorstanders give scale and solidity in slim and well finished package.

**ISOPHON GALILEO** 2007 £2,100

Big standmounters that really grip the music and offer quite startling dynamics and grip.

ONE THING AUDIO ESL57 2007 One Thing Audio's modifications keep the good old ESL57 at the very top of the game.

MOWGAN AUDIO MABON 2007 £3,995 Massively capable loudspeakers that offer dynamics, scale and clarity in an elegantly simple package. Wide range of finishes, too.

**B&O BEOLAB 9** €5.000

Technically impressive and visually striking loudspeakers with sound quality that more than



**ISOPHON CASSIANO** 2007 £12,900

Drive units featuring exotic materials allied to superlative build quality result in an immensely capable loudspeaker. Not an easy load to drive, however.

B&W 686

Baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

2007

£299

**OUAD ESL-2905** 2006 £5,995

The old 989 with all the bugs taken out, this gives a brilliantly neutral and open sound like only a top electrostatic can; still not a natural rock loudspeaker, though.

B&W 801D 2006 £10,500

In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.



REVOLVER CYGNIS

£5,999 2006

Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

USHER BE-718 2007 £1,600

Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

USHER S-520 2006

Astonishingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.

**ACOUSTIC ENERGY AE1 CLASSIC** 

2006 £845

£350

Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.



MISSION X-SPACE

1999 £499

The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!

MISSION 752

1995

Cracking Henry Azima-designed floorstanders combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

TANNOY WESTMINSTER

1985 £4500

Folded horn monsters which sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others



**CELESTION SL6** 

Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...

HEYBROOK HB1 1982 £130

Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic



1980

An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.

MISSION 770 1980

Back in its day, it was an innovative product and one of the first of the polypropylene designs. warm, smooth, clean and powerful sound,

ACOUSTIC RESEARCH AR18S 1978

Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, aithough finesse was most definitely not their forte...

YAMAHA NS1000 1977

High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



1977

Cylindrical speaker was ignored for decades but now back in fashion! Based on classic KEF T27/ B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but has clarity and imaging,

**KEF R105** 

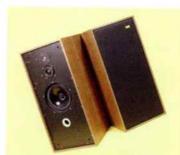
£785

1977 Three way Bextrene-based floorstander gave a truly wideband listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace.

SPENDOR BC1

1976 £240

Celestion HF1300 tweeter meets bespoke Spendor Bextrene mid-bass unit. The result is a beautifully warm yet focussed sound. A little bass bloom necessitates careful low-stand mounting.



**IMF TLS80** 

1976 €550

Warm and powerful 1970s behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms not a forte.

#### **HH ELECTRONICS TPA-50D AMPLIFIERS**

1973

Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish,

#### BBC LS3/5A 1972 £88

Extremely low colouration design is amazing in some respects - articulation, stage depth, clarity and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence.

#### **LEAK SANDWICH** 1961 **EACH**

Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.

#### **QUAD ESL57** 1956 £45 **EACH**

Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, aithough frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.

#### SYSTEMS

MERIDIAN SOOLOGS 2.1 2010 £6.990

Crisp styling, bright, colourful touchscreen, plus excellent search facilities . This is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers



**NAIM UNITIOUTE** 

2010

Great little half width one-box system with truly impressive sound allied to a wealth of source options.

#### **ARCAM SOLO MINI** 2008

£650 Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to it bigger brother.

**MERIDIAN F80** 2007 £1,500 Fantastically built and versatile DVD/CD/DAB/FM/

AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn't a 'proper' hi-fi product, Just listen.

SHANLING MC-30

2007 £650

Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.



**AURA NOTE PREMIER** 

2007 £1,500

Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.



MARANTZ 'LEGEND'

2007 £22,000

The combination of SA-7S1 disc player, SC-7S2 preamp and MA-9S2 monoblocks delivers jawdropping performance.

**ARCAM SOLO NEO** 2006 £1,100

Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and

PEACHTREE AUDIO IDECCO £1,000

Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.



TUNERS

**ARCAM FMJ T32** 2009 £600 Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.



MAGNUM DYNALAB MD-100T 2006 £1.895

One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.

**MYRYAD MXT4000** 2005 £1,000

Sumptuous sound and top-notch build quality make for a tempting AM/FM package. Warm and richly detailed on good-quality music broadcasts.

**NAIM NATO3** 1003

The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

**CREEK CAS3140** 

1985 £199

Excellent detail, separation and dynamics - brilliantly musical at the price. T40 continued the

1983 £240

Supreme ergonomics allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



NAD 4040

1979 £79

Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica.

**MARANTZ ST-8** 

1978 £353

Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.

YAMAHA CT7000

1977 £444

Combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

**SONY ST-5950** 1977 £222

One of the first Dolby FM-equipped tuners, a format that came to nought. Still, it was Sony's most expensive tuner to date, and boasted good sound quality with brilliant ergonomics.



**ROGERS T75** 

1977 £125

Superb mid-price British audiophile design, complete with understated black fascia. Smooth and sweet with fine dimensionality.

SANSUI TU-9900 1976 £300

A flagship Japanese tuner . It boasts superlative RF performance and an extremely smooth and lucid sound.



**TECHNICS ST-8080** 

listen.

1976

£180 Superb FM stage makes for a clean and smooth

**REVOX B760** 1975 £520

The Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?

SEQUERRA MODEL 1 1973

Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.

LEAK TROUGHLINE

1956

Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the bestsounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Deliciously lucid with true dimensionality.

#### **HEADPHONE AMPLIFIERS**

GRAHAM SLEE NOVO 2009 £255

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



MUSICAL FIDELITY X-CAN V8 2008 £350
Open and explicitly detailed sound plus serious bass wallop . A great partner for most mid-to-high end headphones.

#### CD PLAYER/RECORDERS

MUSICAL FIDELITY TRIVISTA 2002 £4000
When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

MARANTZ SA-1 2000 £5,000
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



SONY MDS-JE555ES 2000 £900
The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.

PIONEER PDR-555RW 1999 £480
For a moment, this was the CD recorder to have.
Clean and detailed.

MARANTZ DR-17 1999 £1100
Probably the best sounding CD recorder made; built like a brick with a true audiophile sound and HDCD compatibility.



CAMBRIDGE AUDIO CD4SE 1998 £200
A touch soft in the treble and tonally light, but outstanding in every other respect.

SONY TCD-8 DATMAN 1996 £599

Super clean sound makes this an amazing portable, but fragile.

LINN KARIK III 1995 £1775
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

NAIM CDS 1990 £ N/A
Classic Philips 16x4 chipset with serious attention
to power supplies equals grin-inducing sonics.

MARANTZ CD73 1983 £700
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC -super musical



#### MERIDIAN 207 1988 £995

Beautifully-built two-box with pre-amp stage. Very musical aithough not as refined as modern Bitstream gear. No digital output.

SONY CBP-R1/DAS-R1 1987 £3,000
Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.

CAMBRIDGE AUDIO CD1 1986 £1500
Inspired Stan Curtis redesign of Philips CD104,
complete with switchable digital filter. Lean but
tight and musical performer.



#### MERIDIAN MCD 1984 £600

The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.

SONY CDP-701ES 1984 £890
Sony's first bespoke audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperbook-sized remote control.

YAMAHA CD-X1 1983 £340
Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the

SONY CDP-101 1982 £800
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!



#### ANALOGUE RECORDERS

AIWA XD-009 1989 Alwa's Nak beater didn't, but it wasn't half

Alwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

NAKAMICHI CR-7E 1987 £800
The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



SONY WM-D6C 1985 £290
Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

PIONEER CTF-950 1978 £400

Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.

YAMAHA TC-800GL 1977 £179

Early classic with ski-slope styling. Middling sonics by modern standards, but cool nonetheless!

SONY TC-377 1972 EN/A

A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

REVOX A77 1968 £145

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days.

#### COMPACT DISC TRANSPORTS

ESOTERIC PO 1997 £8,000
The best CD drive bar none. Brilliantly incisive, ridiculously over engineered.

TEAC VRDS-T1 1994 £600 Warm and expansive sound made this a mid price hit, Well built, with a slick mech.

**KENWOOD 9010**The first discrete Jap transport was beautifully done and responds well to re-clocking.

#### **DACs**

DCS ELGAR 1997 £8500 Extremely open and natural performer, albeit extremely pricey - superb.

DPA LITTLE BIT 3 1996 £299
Rich, clean, rhythmic and punchy sound transforms budget CD players.

CAMBRIDGE AUDIO DAC MAGIC

1995 £99

Good value upgrade for budget CD players with extensive facilities and detailed sonics.

PINK TRIANGLE DACAPO 1993 £ N/A
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

QED DIGIT 1991 £90

Budget bitstream performer with tweaks aplenty.
Positron PSU upgrade makes it smooth, but now past it

#### **CABLES**

MISSING LINK CRYO REFERENCE 2008

£495/0.5M

High end' interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

**TECHLINK WIRES XS** 2007 £20 Highly accomplished interconnects at an absurdly low price. Stunning value for money.

VDH ULTIMATE THE FIRST 2004 £250
Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with alr and space.



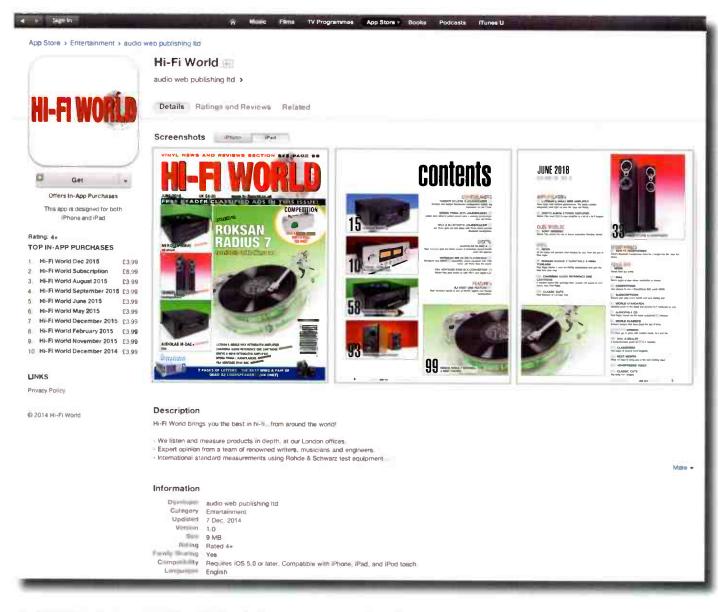
WIREWORLD OASIS 5 2003 £99/M
Excellent mid-price design with a very neutral, silky
and self-effacing sound. Superb value for money.

#### TCI CONSTRICTOR 13A-6 BLOCK

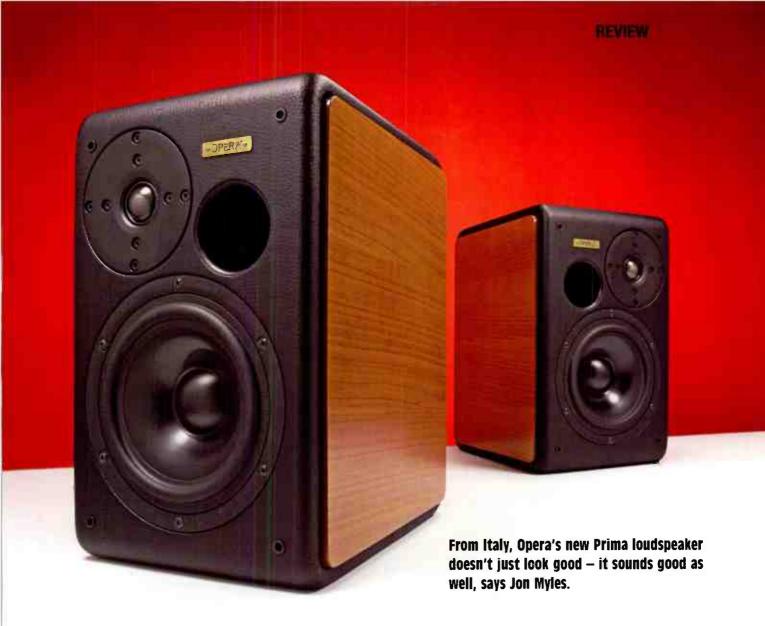
2003 £120

Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.





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# Grand Opera

'm always wary of using national stereotypes when reviewing hi-fi equipment but sometimes, well, it just cannot be avoided. Especially when confronted with the likes of the new Opera Prima 2015 standmount loudspeaker. Why? Well, you only have to take one look at them and the phrase 'Italian style' comes to mind – just as it would with a Ferrari car or an Armani suit.

In short, they are absolutely gorgeous. Take a look at our pictures and try to tell me I'm wrong. Each unit is exquisitely finished with a faux-leather wrap over the front, top and back, with veneered wood panels at the side to add rigidity. The cabinet

also slopes inwards to the rear to minimise internal standing waves.

Measuring 33cm x 20mm x 28cm (H/W/D) they employ a custom made 7" mid/bass driver from Scanspeak allied to a 1" soft dome tweeter. The former has an aluminium diaphragm while the latter has a decompression chamber to smooth frequency response.

Next to the tweeter sits a frontfiring reflex port to extend bass response. This arrangement helps make close to rear wall positioning easier without disturbing the sonic balance.

Around the back is a single pair of 'speaker terminals that accept banana plugs or spade connections,

so bi-wiring is not an option.

The 'speakers are also handed - meaning you can have the tweeters positioned on the inside or outside. Conventional wisdom dictates the inside gives the best performance. I experimented with both during the listening period and conventional wisdom won out so this is how they were used for the majority of the

All this gorgeous styling comes at a price, however. The Opera Primas cost £1400 - meaning they are up against some stiff competition from the likes of B&W, Epos. Wharfedale and KEF for what is, essentially, a small standmount loudspeaker.

Their fit and finish easily justifies

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Rakoon EQA11r phonostage, boxed with stand	used 1499	Audio Research DSi 200, just ARC serviced with remot		Chapter Audio Sonnet CD & Nevo REDUCED	dem		8&W 68552, black ash, near mint boxed		399
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Clearaudio Basic Symmetry Phono Stage REDUCED	used 399	BAT VK55 Power Amplifier, excellent boxed	used 1599	Consonance CD2.2, new sealed		Call	Focal Electra 1008, mint boxed		1 999 1 2249
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Graham Phantom Supreme, SME cut	dem 2749	Chord Electronics, CPA5000/SPM4000, new old stock		Cyrus Stream X Signature, excellent boxed	used	1249	Kef X300a, due in		l Call
Grahom Phontom Supreme 12", SME cut	dem 3249	Chord Electronics, Cyan Click Integrated amplifier	used 1699	Denon DNP720AE, near mint boxed	used	199	Kef Q7, fair condition.		229
Graham Slee Fanfare Gramamp 3	used 179	Chord Electronics, Mezzo 140 Power amplifier Chord Electronics, Prima Preamplifier	used 1999 used 1299	EAR Acute 3, mint boxed	dem		Leema Xandia Mk1 in black, REDUCED		1999
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Linn LP12, Armagedon 2, Aro, Prefix, superb Linn Akiva, excellent boxed	used 2999 used 999	Cyrus 6DAC Integrated, boxed, REDUCED	used 649	Marantz NA7004, remote, excellent boxed		299	Martin Logan SL3, excellent condition		999
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Logic DM101 /Alphoson HR100s/MC15 super REDUCED	used 699	Esoteric CO3/AO3, pre/power ex demo boxed	used 8999	Morantz CD6005, remote, boxed excellent	used	249	Martin Logan Prodigy, excellent		3499
Lyra Skalo, excellent boxed	used 2249	Graaf GM50B Mk2 Integrated, ex dealer demo	dem 2999	Marantz CD60, TDA1541A chip, boxed excellent	used	99	Martin Logan Ethos, near mint boxed	used	3499
Michell Gyro Expart/QC, vgc boxed	used 999	Jolida Envoy 211 Monoblocks, £7k new, superb, vgc	used 1999	Micromega CD30, excellent boxed, REDUCED	used	449	Mortin Logan Vantage, superb active bass, REDUCED	used	1999
Michell Hydraulic Ref c/w Fluid orm, superb	used 999	Lavardin C62/AP150 pre/power and interconnects	used 5499	Micromega Leader, remote	used	99	Martin Logan Vista, vgc boxed,		1399
NAD C553/DEM Rega arm, Galdring 1012 cart	used 199	LFD LS1 linestage, reasonable shape	used 299	Moon Eclipse CD/DAC/PSU, near mint, REDUCED	used		Martin Logan Spire, excellent, 6 months use only	used	3249
NAIM Superline, excellent boxed	used 1199		used 3499	Musical Fidelity A1008CD CD Pro, excellent boxed		999	Monitor Audio 8X2, brand new	new	179
Nattingham Analogue DAIS, near mint, ex demo	dem 3999	Linn Klimax Kontrol, Dynamik PSU, boxed	used 2999	Musical Fidelity M1 DAC, excellent boxed REDUCED	used	199	Monitor Audio GSXW Subwoofer mint boxed	new	749
Oracle Delphi, mk1 c/w Zeta tonearm REDUCED	used 899	Luxman C383/M363 Pre/Power combo, fab!	used 899	Musical Fidelity A308CR CD, excellent boxed	used	649	Monitor Audio 8X5, nr mint boxed	used	199
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Project P2, arm and cart	used 199	Micromega IA100, great integrated, boxed REDUCED	dem 449	NAIM DACVI, excellent boxed	used	899	Nolo Micro Grand Reference inc stands, £15k new	dem	5495
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Thorens TD150, fair condition, no arm, REDUCED Thorens TD160 original, boxed	used 79	NAD C320, excellent	used 149	NAIM CDS3, excellent boxed	used		Revolver Music 1, excellent boxed		299
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Quad FM4, vgc, serviced	used 149	Sugden Mosterclass Pre/Monos in Graphite REDUCED		NAIM HiLine, boxed		449	XTZ 99.26 mk2, vgc+ in gloss block	used	299
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andberg TCD440a, superb! REDUCED	used 449	TEAC Distinction A1000 Integrated, mint, REDUCED	dem 549	Nordost Flatline Gold speaker cable	used	199	Naim UnitiQute, nr mint boxed	dem	899
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the price but does that equate into sound for your pound value?

#### **SOUND QUALITY**

Happily, the Opera Primas do not just look good, they have a beguiling sound as well. They did not blow me away at first with any obvious strengths, but the more I listened the more I realised they were doing very little wrong - and a lot of things right.

Using them on the end of Naim's new NAP200 DR power amplifier fed by Meridian's flagship 808 V6 CD player/pre-amp (see review this issue), the Operas came across as smooth and assured.

Playing Bruce Springsteen's 'Thunder Road' via straight CD there was an air and atmosphere to the gentle piano introduction. Immediately I heard the Operas were allowing the music to breath without thrusting it in my face. Impressively here, the leading edges of the guitar lines never became lost in the mix. Everything hung in place just where it should be - so when Steve Van Zandt's guitar part cut in I knew he was playing and what he was doing on the fretboard.

Lower down the frequency spectrum the Operas also demonstrated an ability to sound natural and unforced. No, you do not get the sheer wall-shaking bass you'll experience from a big floorstander but nor do you ever feel anything is really missing.

King Tubby's 'Dub Fever' collection features some seismic bass lines which can wrong foot many a small loudspeaker. The Primas, though, took it in their stride. Yes, the very bottom octaves were missing, but the foundation was still firm enough to provide the essential backing for the higher registers. Studio effects came and went from right and left channels in a snap - seemingly emerging from nowhere and then disappearing in an instant.

To be fair, if you are a fan of massive bass you might crave a little bit more depth - but if tonality and accuracy are what you are after you will not be disappointed.

Nor will you be in terms of soundstage or scale. On the Kansas City Symphony's recording of Benjamin Britten's 'Young Person's Guide To The Orchestra' - a thorough test of any loudspeaker - the dynamics were outstanding. Pushing the volume up here on the final fugue, the woodwind retained

all its detail and delicacy without collapsing in on itself. That's quite an achievement and shows just how well-engineered the Primas are.

In the final analysis, these Opera Prima 2015s are a class act. Yes, you can spend £1400 and find other loudspeakers with maybe a deeper low-end or more strident treble - but I doubt they'll stand the test of time as well as these little beauties.

#### CONCLUSION

and a joy to listen to, the Opera Primas are everything you'd want in a small standmount. They have power, poise and precision, allied to a thoroughly involving sound. Add in the luxury look and you have a loudspeaker which will give you a real pride of ownership.



The rear panel carries one set of solid gold plat-Beautifully presented ed loudspeaker binding posts, that accept 4mm banana plugs, spades and bare wire.

#### **NOEL SAYS** -

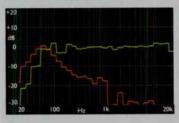
The Primas immediately caught my attention. They are very well damped, meaning they lack any form of zing or ting: strident they are not. However, apart from being seamlessly smooth and well integrated they also had a fine sense of stage depth, an engaging rhythmic snap and plenty of low end weight. I heard a well developed port adding lively bass, even in our very large listening room. These are loudspeakers I could live with, being svelte yet exciting too. Deeply nice.

#### MEASURED PERFORMANCE

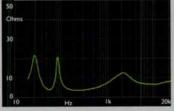
Frequency response of the Prima 2015, seen in our third-octave pink noise analysis, was both smooth and even right across the audio band. This suggests good subjective tonal balance and low coloration, due to the absence of minor local resonances that introduce

#### FREQUENCY RESPONSE

Green - driver output Red - port output



#### **IMPEDANCE**



peaks and troughs in response.

The tweeter was very well integrated, with none of the phase dips that appear rapidly in other loudspeakers as the measuring microphone is moved

Although tweeter output is lifted by around 1dB this is not enough to make the Prima overtly bright; it ensures it will not sound warm or duli.

Bass extends down smoothly to 50Hz, aided by a port tuned quite high to 60Hz and strong in its output. Unison have ensured the speaker gets down to 40Hz but no lower, so bass will sound fast and clean, but lack subsonics. The speaker will also be consistent between smallish-to-medium sized rooms by not over exciting room modes.

Sensitivity was high, 89dB sound pressure level coming from one nominal Watt (2.8V) input. Measured overall impedance was 6 Ohms.

The Prima 2015 is a very neatly engineered loudspeaker that delivers good results all round and should have a smooth and natural sound, in most rooms NK

#### **OPERA PRIMA** 2015 £1400







**OUTSTANDING** - amongst the best.

#### VERDICT

Classic design allied to a totally involving sound makes these little loudspeakers a sure-fire winner.

#### FOR

- tonally smooth
- good bass extension
- superb design

#### **AGAINST**

- tough competition

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# vinyl section

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**JUNE 2016** 

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NIMA TONEARM 99
Paul Rigby enjoys a turntable that gets the best out of vinyl.

CHARISMA AUDIO REFERENCE ONE 105
A new moving coil cartridge, reviewed by Paul Rigby

CLASSIC CUTS 109
Paul Robeson at Carnegie Hall.

# news



















#### TURN LEFT

More left-field releases arrive in the form of Owl Rave (Interstellar: www.interstellarrecords.at) which offers an atmospheric instrumental presentation with a distinctly soundtrack-like suite of arrangements. Low key and moody. Also look out for Austria/Germany-based Richie Herbst and Christian Zollner who offer soundscape improv including drones and clashing harmonies on Regolith "I" (regolith.klingt.org).





#### **ROCK ON MOV**

Vinyl might be the 'flavour of the month' but it sometimes seems that MOV (www.musiconvinyl.com) is providing most of the ingredients for this waxy-flavoured dish! Such is their exhausting output.

New out is Birth Control's 'Hoodoo Man' (1972). This band occupied the harder rock edge of krautrock. Some quote prog but this is more Atomic Rooster than Genesis. A worthy outing, nevertheless.

More heavy rock (this time eighties', poodle-haired variety) with Cinderella's 'Night Songs'. Discovered by Jon Bon Jovi, that's exactly what this 1986 debut sounds like.

More hardcore rock from Static-X and 'Shadow Zone'. First time on vinyl and on coloured vinyl too, it is rather formulaic, in a late-nineties, Korn way.

Guns N' Roses bassist, Duff McKagan's 1993 solo LP, 'Believe in Me' features GN'R bandmates Slash and Gilby Clarke, as well as Lenny Kravitz, Jeff Beck, Skid Row's Sebastian Bach and Snake Sabo. The album is hopelessly flawed, though.

Sick Of It All's 'Built To Last' provides a solid hardcore LP featuring fast-paced hardcore punk.

Anti-Flag's 2008 politically-infused LP 'The Bright Lights of America' is ambitious, sharp and worthy hardcore punk.

If ever there was a 'rock god' in the purest sense, then Thin Lizzy's Phil Lynott surely fits the bill. His 1980 solo release, 'Solo in Soho' was recorded by the regular band without any outside guests, the album features 'lost' Thin Lizzy tracks, variety, an emotional roller-coaster and highlights aplenty. A Thin Lizzy fan? You have to own this album.

The Jeff Healey Band's third release, 1992's 'Feel This' is both meaty and satisfying with a great live feel. Unlike much of their studio output.

Finally, The Allman Brothers Band's 'Seven Turns' was their amazing 1990 comeback album. The band perform freely, creating a bold rock album packed with well-written songs.









#### **ROCKING ONCE MORE**

Two from SPV (www.spv.de). First up is Anvil and 'Anvil is Anvil', the latest release from the band which is patchy but has plenty of high spots for the fans.

Another classic outfit and Magnum's latest 'Sacred Blood "Divine" Lies', their eighth since their 2001 reformation. Some might accuse it of being overly restrained but, in fact, the music is both confident and oozes style with plenty of epic hooks.

Now two from Century Media (www.centurymedia.com). First up is Borknagar's new release 'Winter Thrice', sparkling prog/black metal. Their first outing in four years, the music provides an epic journey with stellar performances from four vocalists and fine instrumental control and some adventurous explorations.

Finally, Hexvessel's new release 'When We Are Death' offers a mix of psychedelia rock and folk that draws upon a decidedly seventies inspiration.

#### **PURE FUN**

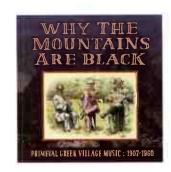
That's "The Innermost Limits of Pure Fun' to you, sunshine. From Sundazed (www.sundazed.com), this is a soundtrack to a late sixties surfing movie from the Farm, who derived from the Dragons (who toured



with the Beach Boys during their 'Good Vibrations' era). This isn't twangy guitar music but a combination of blues and jazz with plenty or organ improv and trippy elements to add a depth of flavour.

#### **JACK WHITE GOES GREEK**

From Jack White's Third Man label (www.thirdmanrecords.com) is the unusual 'Why The Mountains Are Black, Primeval Greek Village Music: 1907-1960'. Esoteric? You betcha. The label allies it to doom folk or free jazz (it's right, the instrument, the pipiza, sounds like Coltrane playing on hot coals). It's certainly way, way ahead of its time. Avant-garde fans will love it. Don't think 'easy listening' Demis Roussos. Instead strap yourself in when you explore these wild grooves.



#### ...AND FINALLY

Jeb Loy Nichols is back with on On-U Sound on-usound.com) with the latest release 'Long Time Traveller. Backed by Dub Syndicate and Roots Radics with Adrian Sherwood helping out, it's an intriguing mix of country and reggae.

Skunk Anansie has a new album release – 'Anarchytecture', a decent effort and one for the fans.

Also look for eccentric artist The Jazz Butcher's 'Last of the Gentleman Adventurers' (Fire; www.firerecords.com). Self-released in 2012, this quirky avant-indie release presents a notably clear and concise guitar style.

A new Shearwater release is always welcome. So there's 'Jet Plane And Oxbow' (Sub Pop; www.subpop.com) which has a Midge Ure-type Ultravox style in there — restrained alt.folk, Coldplayesque guitar vibes, edgy rock, exhausted ballads and more!

From The Hanging Stars is 'Over the Silvery Lake' (The Great Pop Supplement; www.greatpopsupplement.com) and some worthy folk-pop with psychedelic harmony overtones (i.e. backwards guitars and the like).

Finally, the one and only Johnny Moped is back with 'It's a Real Cool Baby' (Damaged Goods; damagedgoods.co.uk) mixing new songs and readjusted older ditties. Old school punk and all the better for it. He still has it, people. Lovely stuff.













"Compared to many high-end cables whose bulk and rigidity

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by Black Shodium



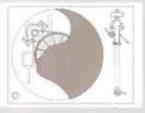
(or fragility) seem contrived to make their installation as arduous as possible, Black Rhodium's Duet DCT++ CS is a positive joy to hook up. But while the cable is unusually 'bendable' its sound has real spine - its bass powerful and robust while the treble is smooth rather than incisive or biting. Certainly one for the shortlist, the Duet's warm quality is suited to sharp-sounding systems." Paul Miller, Hi-Fi News, March 2015

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# Clear benefit

Releasing a new midrange turntable, toting its established Nima arm, Paul Rigby reviews the Roksan Radius 7.



first saw the Roksan Radius 7 in its attractive glass-like appearance at the last Sound & Vision show in Bristol in February of this year.

Speaking to UK distributor Henley Design's Ralph Ward at the show, he explained that the deck "is a replacement for the Radius 5. There have been improvements over the previous turntable in a number of areas, principally including improved motor decoupling. The designers have also managed to source an acrylic for the chassis that has a glass effect. The price has increased a bit too, The arm

is the Nima, which was originally on the Radius 5".

Set-up of the turntable was relatively painless. Features of note include the motor assembly that utilises electronic speed selection, sourced from the high-end RPM speed control of the Xerxes. An LED light shines blue for 33rpm or red for 45rpm, made more showy by the glass-like plinth.

if have a couple of design quibbles – more irritations than major factors. Firstly, I would have liked to have seen the option to replace the mains cable for something rather more audiophile

The counterweight is decoupled and designed to rotate off-centre, allowing easy azimuth correction for the unipivot.





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Roksan has developed an attractive 'glass-like' plinth for the Radius 7.

"beautifully clear and clean in its aspect and so airy and light, I thought that the strings were about to take off above the wide and expansive soundstage"

in the future. Same story with the phono cables. Upgrading both would help this turntable in sonic terms. Also, both the power button and the speed button are uncomfortably close to the belt – I can see myself catching the belt as my finger leaves a button, pulling the belt off the outside of the pulley/platter.

The second issue is the arm. I used a Glider as my reference cartridge and the cantilever

The simple anti-skate feature.



protrudes, hence, caution is paramount. Yet the Roksan arm does not have a protective arm clip to lock the arm tube onto the rest. This unipivot arm is waiting for accidents to happen, therefore.

These are simple issues to fix but the fact they are all on one turntable makes it stressful to handle.

#### **SOUND QUALITY**

I began the sound test with psyche rock action from a group that used to be The Action, actually, but transformed themselves into Mighty Baby, combining a West Coast vibe with beat origins to form a psyche rock of sorts. This self-titled, 1968 LP was a touch compressed so offered the Roksan a challenge.

And that compression was there, the Roksan didn't waste time trying to hide the fact, so there was no attempt to colour the sound or bathe it in warmth to hide it: the Roksan provided honest playback. On a more proactive basis though, I was very impressed with the vocal delivery on the track, 'House With

No Windows'. The lead vocal was joined by a backing voice to form an effective harmony, offering a superbly moulded and nicely formed delivery. There was an impressive degree of

personality to both; the Nima seemed able to tease out character in

The improved motor has enhanced decoupling, but switches are very close to the belt.

the sound, not imposing its own.

Similarly, bass, while not blooming or providing an artificially 'massy' output, was precise yet punchy, while secondary percussion from tambourine offered a detailed and treble-infused quality that added welcome top-end extension to the arrangement. I was also happy to hear the Hammond organ sounding pleasantly meticulous for a turntable at this price point.

For the contrast of a rather lushly orchestrated soundtrack I turned to Ennio Morricone and 'Metti, Una Sera A Cena' with some appealing gentle scatting from Edda Dell'Orso.The title track was





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beautifully clear and clean in its aspect and so airy and light I thought that the strings were about to take off above the wide and expansive soundstage.

More specifically, I was pleased to hear a touch of metallic reverb on every strike of the glockenspiel, later in the LP, while the excellent transient response added an immediate strike/reaction to this sunny and cheerful instrumental interlude; piano was both expressive yet restrained.



Bundled with the turntable is the Nima unipivot arm.



The headshell is made from acrylic, fitted here with an Ortofon 2M Bronze MM cartridge.

There was no indication of any bloom in the upper mids or any smearing to mask detail, the Roksan allowed each instrument the freedom to express itself.

Moving to Bruce Hornsby & The Range and the album, 'Scenes From The Southside' (1988), the first track 'Look Out Any Window' highlighted the Hornsby piano: it was big, bold and richly formed. A swathe of detail the Roksan found was highlighted and presented in an ordered and focused manner.

The soundstage was also notable for being layered, instruments clearly positioned; I was drawn into the rolling rhythms. While the track provided a 'period' eighties production sound, the Roksan added a welcome polish and a sense of clarity that laid bare the busy soundstage.

Turning to classical and Beethoven's 'Moonlight Sonata' via the magical fingers of Arthur Rubinstein, surely one of the greatest classical pianists of the 20th century. Here, as our tests warned, the Radius 7 attempted to mar the maestro's peerless reputation with, on sustained piano notes towards the end of the first movement, slight but 'visible' wavering that resulted from speed stability issues.

#### CONCLUSION

Although arriving with a few design quirks and speed stability that may not impress classical aficionados, the bottom line is the Roksan Radius 7 doesn't fail to deliver overall. I found it an impressive performer that gives space and air for detail in bucket loads, making it a strong contender at the price point. It was lovely to look at and hear, if not quite perfect in detail.

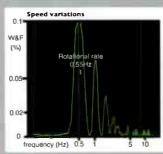
#### SYSTEM USED

Origin Live Sovereign turntable
Origin Live Enterprise 12" arm
Miyajima Takumi cartridge
Koetsu Black cartridge
Icon Audio PS3 phonostage
Aesthetix Calypso pre-amp
Icon Audio MB 845 Mk.II monoblocks
Quad ESL-57 speakers with One Thing mods
Vertex AQ & Atlas cabling

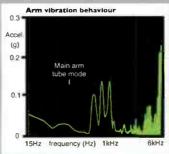
#### **MEASURED PERFORMANCE**

The Radius 7 ran at exactly correct speed when delivered. Speed stability, meaning variation around correct nominal speed, followed a slow repetitive pattern

#### SPEED STABILITY



#### **ARM VIBRATION**



of variation where the platter settled to an unweighted wow and flutter figure of 0.15% then deteriorated to 0.25% over a period of many seconds, before calming down again, as it were, our analysis showing variation at rotational frequency of 0.55Hz

A structural analysis of the Nima arm using a Bruel&Kjaer accelerometer showed it resisted vibration, the head shell being well damped at high frequencies our analysis shows, as might be expected from a machined acrylic block. The arm tube has some resonant modes at 475Hz, 675Hz and 950Hz our analysis shows, but these are too high to be the main tube bending mode (around 200Hz) so it has been well damped and bass resolution in terms of dynamic and image stability will be good as a result.

Our review sample was unimpressive in speed stability figures, but otherwise worked well. NK

Speed error	0%
Wow	0.2%
Flutter	0.04%
Total W&F weighted	0.13%

#### ROKSAN RADIUS 7 £1.900



EXCELLENT - worth considering.

#### VERDICT

Infusing both air and space into music to extend the potential of dynamic reach, the Radius 7 is an addictive listen.

#### F0R

- midrange insight
- open presentation
- focus
- clarity

#### **AGAINST**

- control button placement
- no arm tube clip
- not rock steady speed

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# Charismatic Quality

Created in Canada - Paul Rigby reviews Charisma's new moving coil cartridge, the Reference One.

ome cartridges arrive with a rather simple plastic chassis while others really push the boat out. Charisma prefers the latter. The engine of this cartridge is surrounded by amboyna burl wood. The same wood that you'll find on the keys of the marimba or, if you prefer, the dashboard of the rather expensive and opulent Mercedes Maybach.

Weighing in at 7.1g, the super fine line contact nude diamond sits on the end of an unusual ruby cantilever (chosen to combine hardness with a light weight to enhance transient response). The Reference One has a pure iron crossed-coil with ultra high purity single crystal copper and operates at a recommend tracking force of 2g.

#### **SOUND QUALITY**

I began the sound test with a slice of self-titled British psych-rock from 1968 via Mighty Baby, who evolved from the mod rock outfit The Action. This excellent, high-energy piece includes a touch of compression on the master but the Charisma offered its own problems before I could properly evaluate the music. As our tests show, the Charisma has tracking issues and, playing this rock music at the recommended 2g was rather unpleasant due to distortion. I increased tracking force to our own recommended 2.3g and the midrange settled down, becoming relatively

clear and open. For the first time, I could hear the vocals without wincing.

Once the 2.3g tracking force setting was in place, I began again and found that the Charisma slotted into rock mode very easily. The bass was big, slightly boomy perhaps, but certainly powerful and meaty while bass guitar threatened to shake the windows.

Although the secondary percussion from the tambourine may have lacked a little detail and drums could have been rather more precise, there was a real 'fun' element to the playback on this heavy, all-out, monstrous rock track. The smoothly delivered vocals and warming overall presentation certainly confirmed our test results.

For a lower key, more orchestral arrangement, I turned to Ennio Morricone and 'Metti, Una Sera A Cena'. This is one of Morricone's

big, retainly siguitar ows. Although the strings were a little recessed in terms of their midrange reach, there was certainly an assuring and comfortable glow that was elegantly portrayed by the gently scatting female lead vocal, whose voice was utilised almost as another instrument during the title track of this LP. While the expected sparking

"I was impressed with the detail of the strumming guitar that offered a a certain degree of grandeur"

'straight ahead' productions with an easy presentation, offering a subtle arrangement that requires any cartridge to get to work to dig out as much detail as possible.

the detail of the strumming guitar that offered both a richly expressed plucked string effect while giving that instrument a certain degree of grandeur. Although space and air was

detail may have been slightly lacking,

there remained an admirable degree

of insight to engage me. For example

on 'Sauna' I was impressed with







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The cantilever is made from ruby.

not dominant along the relatively wide soundstage, there was enough instrumental separation to allow the orchestra to remain relaxed and at ease, giving the arrangement an easy going presentation without any one frequency dominating or colouring the overall feel of the sonics.

I scouted around my record collection and decided that the Charisma is one of those niche cartridges that does a particular job brilliantly and that job, in my case, was Bruce Hornsby and the well-produced album 'Scenes From the Southside' (1988). This has a rich and grand piano, meaty bass presentation, big sound and open vocals without too many upper frequency

detail demands.

Playing 'Look Out Any Window' at high volume and I couldn't help an exclamation of "Oh yea, now that's the one." The Charisma just lapped up this music.

Hornsby's piano, especially, was rich, balanced in tone, slightly sepia-tinged that added a sense of maturity and reassurance to the sound.

Bass was full, big, rolling and wholly musical while Hornsby's vocal delivery was warm, clear and relaxed. Playing this genre of music,

the Charisma just flowed with such a musical ease you couldn't help but move your body to it.

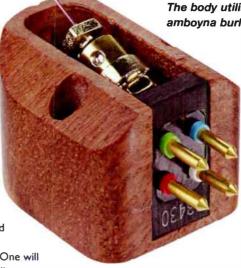
#### CONCLUSION

The Charisma
may need a
careful installation
and its warming
nature may not
make it a first
choice for the likes
of classical and jazz
but for rock and
especially AOR-related
rock plus synth-heavy
music, the Reference One will
plaster a large smile all over your
face.

#### SYSTEM USED

Origin Live Sovereign turntable
Origin Live Enterprise 12" arm
Miyajima Takumi cartridge
Koetsu Black cartridge
Icon Audio PS3 phonostage
Aesthetix Calypso pre-amp
Icon Audio MB 845 Mk.II monoblocks
Quad ESL-57 speakers with One Thing mods
Vertex AQ & Atlas cabling

The body utilises the exotic amboyna burl wood.



#### **MEASURED PERFORMANCE**

Set to 2gms tracking force, as recommended, the Reference One moving coil cartridge, in tracking ability tests just cleared a 45µm lateral cut with signs it was at its limit at this level on the oscilloscope monitoring waveform. Since most cartridges these days clear 63µm peak amplitude with ease and many, including moving coils, can clear a 90µm torture track, low frequency tracking ability (300Hz, CBS STR-112 test disc) is surprisingly limited.

This remained the case in the midband (1kHz, B&K 2010) where a velocity of 16cms/sec was cleared, albeit with a high and unusual 9% distortion, where most modern cartridges manage 20cms/sec and 1% or so. So tracking ability is poor and the highest downforce of 2.1gms best used; even 2.3gms might be appropriate.

The Reference One produced a consistent 2% third-harmonic distortion irrespective of modulation level, where around 0.8% is typical, and a high 9% — mostly second harmonic — in the

midband. These levels are higher than usual, around double, so it is not a low distortion design.

Channel separation and balance were good, and output reasonably high at 0.45mV at 3.54cms/sec rms (0.6mV at 5cms/sec rms).

Our analysis (JVC TRS-1007 test disc) shows frequency response is flat and smooth across most of the audio band. However, output begins to fall at high frequencies, measuring -2dB down at 10kHz — enough to give the Reference One an easy demeanour; it will certainly have smooth treble too.

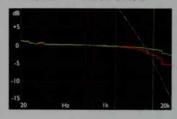
On inner grooves (red trace) tracing loss from the stylus was high, output falling to -5dB down — enough to sound positively warm. The stylus has a larger edge radius than most suggesting detail retrieval will suffer.

The Reference One has an unusually smooth, peak free, frequency response characteristic and this, with ruby cantilever, may well result in a relaxed and naturally balanced sound, free of

colouration. Tracking ability is distinctly mediocre however, and there's some distortion, so it has limitations too. **NK** 

Tracking force	2gms
Weight	7gms
Vertical tracking angle	24 degrees
Frequency response	20Hz - 10kHz
Channel separation	30dB
Tracking ability (300Hz	)
lateral	45µm
vertical	45µm
lateral (1kHz)	16cms/sec.
Distortion (45µm)	
lateral	2%
vertical	3.4%
Output (5cms/sec rms)	0.6mV

#### FREQUENCY RESPONSE



#### CHARISMA REFERENCE ONE £1.650





#### **VERDICT**

Supremely musical, the Reference One encourages you to kick off your shoes, relax and enjoy the fun.

#### **FOR**

- musicality
- big bass
- rich midrange
- warm presentation

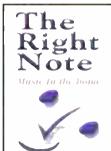
#### AGAINST:

- recessed mids
- tracking issues
- soft treble
- detail

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# PAUL ROBESON

#### At Carnegie Hall Pure Pleasure

he struggle of the negro people cannot be by itself. There is a human struggle. My politics embrace the common struggle of all oppressed people, specifically the labouring people of all the world. There is a unity between our struggle, especially the white working people of the South as well. A few people should not control the wealth of any land. It should be a collective ownership. It's a Democratic socialism."

These words, spoken in 1958, strike a chord even now and will trigger nodding heads from many who read them. For this sort of talk, though, for his out-spoken political views, for his genuine search for equality and the freedom from poverty and repression, Robeson was a marked man and suffered restrictions in his movements in the USA - as well as other government-sanctioned interference. As a political activist, as an active opponent of racism, he was respected and admired. Some might say that his visits to the Soviet Union were naive and damaging to his cause, yet you feel that he only sought answers for his cause and would not rest until he examined every possibility.

"I was a little boy in Princeton, New Jersey," said Robeson. "A college town where the students mainly came from the deep South. So, I grew up in Jersey, in a rather 'southern' atmosphere. My father was a minister – he was also a slave – and I was shaped against that background."

As a singer, Robeson was peerless. His powerful, bass-driven voice was comfortable singing operatic or show-derived tunes. He commanded an audience but he could only really relax, in an artistic sense, when he felt a freedom to perform, "I felt the pressure of living in the area of my home. The pressure was so great that I travelled to New York but didn't stop and ended up in London. I went to play the musical, 'Showboat' in 1928. We had a great success. Then we did concerts. I then became domiciled there, paid my taxes there, until 1940, after the war began. I never felt the same pressures there."

But he never forgot his "people" and the struggle that they were facing, "I, and any negro would have to say, that in our democracy at present, he is never, at any one second, unconscious of the fact that he is a black man."

Which was why, "After 1940, I decided that I must come back to my own country and struggle and make the sacrifices that I have."

For many, his most well know song will be 'Old Man River'. For me, I'm used to hearing Frank Sinatra belt this song out and a remarkable job Sinatra does too. Especially using his remarkable breathing technique. But when Robeson stands up to the mic and sings this song you hear his pain. This is a powerful man, in form and in voice and you cannot imagine him submitting to anyone or anything. That said, the river, a symbol of abuse and subjugation, generates a picture in my mind of Robeson vs The Mississippi in some Super Hero-type battle. This song tells it all and Robeson struggles with everything that the Mississippi means to him and represents on a larger, slave-infused canvas, in every line and every word. He sometimes growls his lines, sometimes spits them out in bitterness. Sinatra never had that in his version. He couldn't. What Robeson offered in this song was experience. Most of them bad.

I was also delighted to hear Dvorak's 'Going Home' on this LP, which I immediately associated with the Welsh miners, a working group who received much support from Robeson and who extended their love and respect in return.

"I was one of the few outsiders who has sung at their National Eisteddfod, their musical festival. I went down the mines with the workers and they explained to me, they said, 'Paul, you may have had success here in England but your people suffer like ours, we are poor people. You belong to us, not to the bigwigs in this country.' I feel as much at home in the Welsh valleys as I do in my own negro sections in the United States".

This is a classic album, offering a measured, sometimes repressed emotional performance that is all the more powerful because of that. It is well mastered too while providing the only time that Robeson appears in stereo and recorded with more modern equipment.



"I was one of the few outsiders who has sung at their National Eisteddfod, their musical festival."

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NAIM NAIT XS amp, as new, boxed. Accept £800. Also, Fatman iTube valve amp plus Dock, as new, boxed, accept £100. Tel: 07583 078 744 (Notts/ Derby area)

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**HI-FI WORLD JUNE 2016** 

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#### **ONE THING**

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Sounds good — but does it? See our review of the high technology B&W 804 D3 floorstanding loudspeaker in the next issue to find out.

#### Also, we hope to bring you -

Unison Research Unico CD Due CD Player
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Oracle Paris turntable PSU + Phonostage
T+A PA 2000 R Integrated Amplifier
Exogal DAC & Exogal Comet upgraded PSU
Kennerton Magister Stereo headphones
Icon Audio HP8 MkII Headphone Amplifier
...and much more.

This is a selection of what we hope to bring you, not a complete list. We regret that due to a wide range of issues, such as failure under review, we cannot guarantee that all products listed above will appear.



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JULY 2016 ISSUE - 4TH MAY AUGUST 2016 ISSUE - 7TH JUNE

# THE ANITA KERR SINGERS

#### FROM NASHVILLE...THE HIT SOUND

EL



"There is no doubt that Kerr is one of the most lyrical soprano singers in pop history" he choice of this month's Classic Cuts is three fold: to show how popular the easy listening genre was (and, actually, still is); to illustrate how important harmony groups are and were in the USA as opposed to the UK, and that a woman could be responsible, back in the fifties and early sixties don't forget, for a superb suite of vocal arrangements in a scene that was dominated by men.

In fact, back in those days, The Anita Kerr Singers were one of the most important acts from Nashville. At the head of the pack was Kerr herself, but also featured was alto Dottie Dillard, tenor Gil Wright, and Louis Nunley who took the baritone duties. The group first found fame on Sunday Down South, an early 50s radio show on NBC when a Decca contract promised much. The quartet then appeared on Arthur Godfrey's TV show and, from there, to RCA records when then-head of RCA 'Country' music, Chet Atkins, cast an eye over their talents.

From this point the group became inordinately busy, appearing behind country artists of note (including Red Foley, Jim Reeves, Perry Como, Floyd Cramer, Eddy Arnold, Hank Snow and Roy Orbison). They quickly developed a recognisable Country sound of their own and produced their own albums.

The style was light and very friendly and their own albums tended to take Country and Pop cross-over hits, through their own arrangements to produce a distinctive sound that rapidly spread. In fact, such was the quartet's influence, they could be said to have been greatly responsible for creating the classic Nashville sound of the time.

This LP was the quartet's debut disc for the RCA label and began a four year contract with the company – but don't be fooled by first impressions which offer a rather simplistic approach on initial listening. This is because Kerr was cannily adept at arranging the Nashville sound for a MOR audience. This was pure gold to the likes of Chet Atkins because not everyone was that enamoured with the rural nature of much of the Nashville output of the time. Hence, Kerr tweaked that music and made it saleable.

Take Floyd Cramer's outing 'Last Date',

for example, that was given tweaked lyrics and the parenthesis of 'With You', in the title, and Red Foley's 'Night Train to Memphis' which was also successfully arranged. You'll also find Carl Smith's 'Hey Joe' and Don Gibson's 'Oh, Lonesome Me' on this disc. Listening now, many hardened music fans might wince at the ersatz and rather dated presentation.

This, surely, was the sort of music that Elvis and The Beatles were supposed to grind under their respective feet? That said, there are many listeners out there who have rediscovered lounge music and find new and intriguing angles in its delivery. Also, there is no doubt that Kerr herself is one of the most lyrical soprano singers in pop history, backed by a delicious blend of tones from the quartet.

How important were they in the grand scheme of things? Well, in 1965, they beat the Beatles' legendary 'Help!' to win the Grammy award with their own release 'We Dig Mancini'.

And how important was Kerr to harmonies, arranging and to Nashville? Apparently more important than the records suggest. Author, Larry Jordan interviewed Dottie Dillard many times, who confirmed that Chet Atkins took much of the credit for the arrangement work that was, in fact, wholly created and completed by Kerr.

Apparently Atkins would "...come in just long enough to sign the time card for the union so that he'd get paid, then he'd leave and go play golf...but he'd still get paid anyway, plus his name would end up on the album credits even though it was Anita doing the work!"

For those who enjoy Harper's Bizarre, The Four Freshmen, The Association, Free Design and even The Beach Boys, you will love this.

This album appears on the CD 'The Stylings in Harmony: The Anita Kerr Singers', that also features the LP 'Genius in Harmony' plus extra

Also look for more releases from Kerr on El including 'Tender Words' including that LP along with 'Chet Atkins with the Anita Kerr Singers' plus 'The Best Chet Yet' aka 'The Amazing Chet Atkins' plus extras.

Finally, 'Anita Kerr Forever' includes 'Velvet Voices', 'Voices in Hi-Fi' plus extras and 'On This Holy Night/ Christmas with Chet Atkins', two albums that also include extra tracks. PR



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