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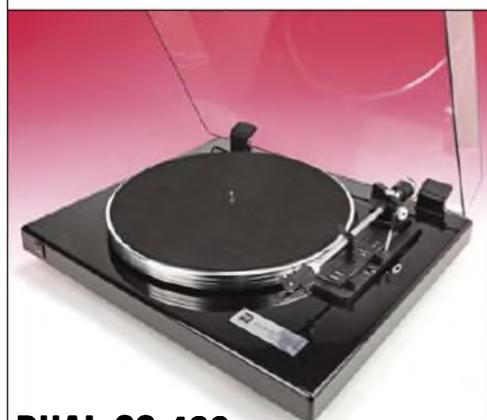
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CHORD ELECTRONICS
HUGO TT2/HUGO M SCALER



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ROHDE & SCHWARZ
MEASUREMENT



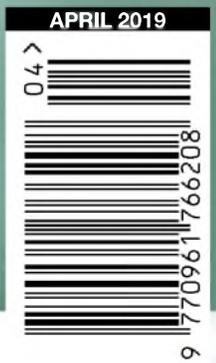
COMPETITION



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Hi-Fi World Dec 2015



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Hi-Fi World Dec 2017

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Chord Sarum T Range
Hi-Fi+ May 2017



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Paul Rigby, Jon Myles, Martin Pipe,
David Tull.



Loudspeakers have a hole in the middle – and it's not a port. It is the gap between low frequencies and high frequencies where the two cone drive units have difficulty meeting up in decent fashion. This always was the justification for a three-way loudspeaker – one with a midrange unit that best covers the region where the ear and brain together are most alert. And KEF's new R5 has an aluminium cone

midrange unit of impeccable pedigree. That's why it threw so much information at me – see our review on p10. Such a well-developed loudspeaker is almost challenging; you need to feed it decent digital or lovely LP. Get this bit right however and the R5s sing.

Whilst the KEFs were aurally challenging, Chord Electronic's M Scaler was mentally challenging. A lot of e-mails went back and forth on this one as I needed to make sure my review was not only informative but also technically accurate. Chord Electronics are not only masters of digital they also are, as a company, very helpful – to their customers as well as reviewers. This thankfully allowed me to get a good understanding of M Scaler; to explain and resolve what I was hearing. And with M Scaler it is all about hearing. Transfixational hearing I would say! See our review on p25.

One million being bigger than 93,000, M Scaler sort-of out shone Chord Electronics new Hugo TT2 DAC – see our review on p18. In practice it is a supplemental filter for it (and other DACs). Even though Hugo TT2's 93,000 tap filter might not match M Scaler it still easily outruns all other DACs, giving a massively impressive sound – as well as unbeatable measured performance.

Meanwhile, the glorious LP sails on unfazed by such matters. Project have interestingly decided to offer an all-discrete phono stage that Martin Pipe reviews on p89. Silicon chips were never purposed for LP; better is possible.

The art and science of audio makes itself known in our April 2019 issue. I hope you find it a great read.

Noel Keywood
Editor



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verdicts

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

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

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

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

ELECTRONIC MAGAZINE

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The new R Series. The only thing to remain the same is the name.

At KEF the quest for sonic perfection demands constant innovation. So when we sought to improve R Series we completely re-engineered it and changed everything. Discover the full story on our R Series website and find your local KEF dealer for a breathtaking demonstration.

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KLIPSCH KOLLEKTION

One new speaker? Pah. Instead Klipsch gives us an entire new range - the 18-strong Reference Premiere Series - for which is claimed a "string of improvements" including new horn technology, high-grade materials, luxury finishes and various sonic enhancements. The entry point is £400, which will buy you a pair of RP-400M bookshelf speakers. At the other end of the scale are the Dolby Atmos-integrated P-8060FA floorstanders, a pair of which has a £2400 price tag. Yes, home cinema is evidently where Klipsch is at; a variety of subwoofer, surround and centre channel options are also being offered. Klipsch seems particularly proud of its 90x90 Tractrix horns, which are reckoned to improve high-frequency response and extension while enhancing imaging and dynamics. The tweeters behind them feature exclusive 'Linear Travel Suspension', titanium diaphragms and vented ceramic housings for dynamics, detail and cleanliness. What makes the Reference Premieres stand out on first acquaintance, though, are their distinctive copper-spun 'Cerametallic' woofer cones - which work in conjunction with Tractrix reflex-ports to deliver "controlled low-end and midrange reproduction".

Contact: Henley Audio, +44 01235 511166. www.henleyaudio.co.uk



TOO GOOD TO BE TRUE...

In the January issue, we inadvertently jumbled up our digits when quoting the price of van den Hul's XGW Colibri Signature Stradivarius cartridge. High-end vinyl addicts were no doubt salivating at the prospect of paying a mere £4750 for one of these hand-crafted moving-coil marvels - a 'flipping bargain', as vdH's PR puts it - but you can actually expect to shell out £7450 for one. Many apologies to vdH, UK distributor Decent Audio and disappointed punters...

Contact: Decent Audio, +44 05602 054669. www.decentaudio.co.uk

LIFE BEHIND THE COUNTER

Even if you've never read that Nick Hornby novel, you might have wondered what goes on behind the scenes of a record shop. Sure, vinyl has attracted interest of late... but isn't that more than offset by the Internet-driven decline of the high street, and its effect on 'footfall'? Thankfully, the very same Internet can now help satisfy your curiosity. Head to YouTube and seek out 'Behind the Counter' - which is described as "an exciting and brand-new video series that tells the engaging stories behind the weird and wonderful world of the independent record shop". Presented by Bowers & Wilkins, Record Store Day UK and Classic Album Sunday, it consists of a weekly video featuring "one of the UK's most intriguing record stores". The twelve-episode series will receive addition until Record Store Day UK on 13th April, new videos going live each Tuesday at 4 pm. The first episode, featuring Margate's 'Transmission Records', can be found at <https://bit.ly/2AZ9Efy>.



BIG MAC LIFESTYLE

When one thinks of McIntosh, those iconic big and beautiful black boxes with blue-backlit meters spring to mind. But there's more to McIntosh than traditional hi-fi gear. McIntosh is now also targeting the luxury Custom Install market with its new 'multi-channel distribution' amplifiers (the £4,495 two-channel M1128 and £5,995 four-channel M1254), in-wall speakers (the £2,495 WS300 and larger £2,995 WS500) and £1,495 CS200 in-ceiling speaker. The two amps, which use Class-D technology to deliver 250W to each channel (8 ohms) without the need for cooling fans, can easily-distribute stereo signals to multiple outputs. They boast 12V triggering, auto signal-sensing, installer-friendly physical dimensions...and those famous meters! All of the speakers are three-way and voice-matched to each other for seamless integration, and can be adapted to two-channel or

multi-channel applications. The 93mm-deep

WS300 and WS500 are fully-enclosed with controlled air-chambers to ensure high performance. Each features one (WS300) or two (WS500) 165mm woven glass-fibre woofers, a pair of 50mm inverted-dome midranges and a 19mm titanium-dome tweeter. The CS200 takes in-ceiling speakers to new performance heights with its 100mm woven glass-fibre woofer, and rotatable array for the midrange and tweeter.

Contact: McIntosh, www.mcintoshlabs.com



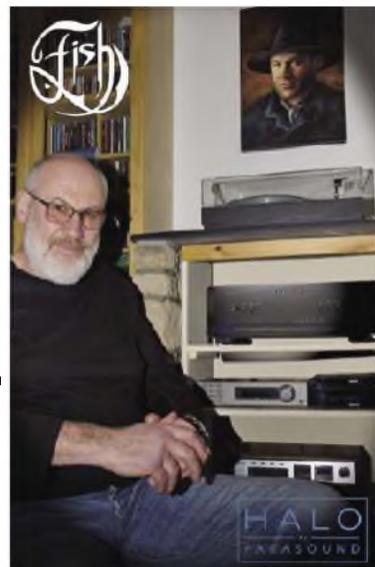
FISH TALES

Platinum-selling artist Fish, who first attracted acclaim through his work with prog-rockers Marillion, is evidently a fan of Parasound gear. In his home, you'll find a Halo integrated amplifier. A Halo in their dedicated studio facility located close to Edinburgh, meanwhile, is helping Fish and his bandmates to record forthcoming album 'Weltschmerz'.

Fish also put his signature on a Parasound hi-fi system that recently sold at auction in aid of Fish's chosen charity, Chest Heart & Stroke Scotland. The lucky winner - lifelong fan Barry Capper - got to meet his musical hero during the presentation of a £1,000 cheque to the charity. His wife made the bid as a "surprise Christmas present".

Parasound's UK importer Connected Distribution organised the charity auction in conjunction with Fish, who is a Parasound endorsee. "For any loyal fan, owning something signed by your musical hero is a real coup," said Connected's Mike Bonnette.

Further information: <http://fishmusic.scot>; www.chss.org.uk; www.parasound.co.uk



A VISIBLE DIFFERENCE?

Most pickup cartridges involve the stylus-driven interaction between a magnet and coils fashioned from very fine copper wire. However, there's another non-magnetic contender when it comes to vinyl replay - from DS Audio, which unveiled its first optical cartridge (the DS-W1) back in 2013. The DS-W1 uses a beam of light to read stylus/cantilever movement.

Lower weight and freedom from magnetic friction are claimed

to equate to delicacy, sensitivity, subtlety and musical believability; however, a special phono stage is necessary. The DS-W1 and phono stage were expensive at over £6k. 2017's DS002 follow-up brought costs down to under £5k, but now we have the DS-E1. Using "an aluminum cantilever and elliptical stylus" to bring costs down, the DS-E1 and accompanying phono stage can be yours for £2,295.

Contact: Sound Foundations, +44 0118 981 4238. www.ds-audio-w.biz or www.soundfoundations.com.



FROM CLEAR TO CLEAN

New from Clearaudio is the Smart Matrix Silent record cleaning machine, which sells for £1,375 (the dust cover is another £125). Replacing the earlier Smart Matrix Professional model, the Silent is "designed for intensive and continuous use" and employs vacuum-cleaning capabilities that are described by Clearaudio as "gentle yet highly effective". Claimed to be "effortlessly-simple to operate and maintain", the Silent is evidently built to last - the arm, chassis and accompanying 'SMS Seal' record clamp are all machined from solid aluminium, while the motor at its heart is a powerful yet quiet 500 Watt type. The unit's multifunctional cleaning, vacuum and antistatic arm features a sliding record-size selector that enables you to clean 12in. LPs/singles, 10in. EPs and 7in. singles. The unit will accommodate both vinyl and shellac discs. It looks good too - here's a cleaner that you'll be happy to place alongside your hi-fi.

Contact: Sound Foundations (UK distributor), 0118 9814238 www.clearaudio.de



FOR WANT OF A WASHER...

A mere tenner buys this clever washer from Miyajima, the Japanese firm best known for 'artisan' phono cartridges. It will be of value to audiophiles whose tonearms have a SME-type bayonet-fitting headshell. These headshells have a non-rigid washer at the point of tonearm fitment and there's often a perceptible degree of movement. Miyajima's new ultra-thin split washer is embossed with three indentations, designed to produce a more rigid and less flexible joint, coupling headshell and cartridge more tightly to the tonearm. This "smallest of upgrades" is said to "clearly-improve sound quality", with benefits including "tighter bass and a more vibrant, dynamic and expressive presentation." For less than the price of a record, it's got to be worth a try.

Contact: Timestep Distribution +44 (0)1803 833366. www.miyajima-lab.co.uk



DIGITAL RADIO ON THE UP?

According to listening figures covering the last quarter of 2018, from audience monitoring body RAJAR, 52.6% of listeners are now tuning in digitally; this figure - "a record" claims trade body Digital Radio UK - is the simple average of the BBC (51.5%) and commercial (53.9%) radio listening proportions.

Digital Radio UK estimates that in-car digital listening grew by 15 million hours, now accounting for 37.5% of all such listening. According to data from CAP/SMMT from the end of 2018, 93% of new cars sold now come with DAB as standard. Nearly 2.5m new vehicles fitted with DAB radios were registered in 2018. Digital listening, says Digital Radio UK, "is increasingly the norm...all demographics aged between 10 and 64 have digital

listening above 50%". 35-44 year olds are evidently the biggest fans, 58.5% of them consuming radio in this way; perhaps hardly surprisingly, BBC 6 Music is the most popular digital-only station with 2.3m listeners.



However, the RAJAR figures reveal that total UK radio audiences were down by 0.9%. In London, the drop was a staggering 3.9%, equating to many thousands of listeners. The audience of BBC Radio 2, still the UK's most popular station, shrunk from 15.49m to 14.89m. There are now 1.83m Radio 3 listeners - 120,000 fewer than last year - while Radio 4 lost 769,000 listeners. Only the World Service gained audience. Most digital stations report modest growth, although the number of absolute listeners fell from 2.6m to 2.4m.

Visit www.rcjar.co.uk

YOU'VE BEEN FRAMED...

American brand Bose has officially launched, in USA at any rate, its intriguing "AR Frames". These high-tech shades "combine the protection and style of premium sunglasses, the functionality and performance of open-ear wireless headphones, and the world's first audio augmented-reality platform" to create a "truly revolutionary" wearable device. Described as "the tiniest, thinnest, most lightweight Bose system ever", the AR Frames can "stream music and information, make or take phone calls, and access virtual assistants". Instead of "changing what you see, or using a lens to superimpose objects in your sightline", the Frames - which determine location with a 9-axis motion sensor and your phone's GPS system - automatically add a "layer of audio, connecting you to endless possibilities for travel, learning, entertainment, gaming, and more"



There's no UK launch date yet, and some are already selling these devices on eBay for grossly-inflated prices. An alternative is to buy them for \$199 via the New York shopping concierge Big Apple Buddy - but the press-release drawing our attention to its scheme neglected to cover issues like warranties or technical support



THE VOICE OF Q

A couple of years ago, Armour Home's Q Acoustics speaker brand made waves with their Concept 500 floorstanders. Now they've shrunk said speakers to bookshelf size and called the result of their experiments the Concept 300. During the intervening period, Q's boffins also used their experience to refine the advanced underlying technology. It starts with the P2P-braced - and wood-finished - cabinet, which is built up from three individual layers separated by 'Dual Gelcore'. This is a non-setting gel that turns high-frequency vibrations into heat for a more focused audio performance. Cabinet resonances are claimed to have "been reduced to negligible levels". To this high-tech box are fitted a woofer with 165mm impregnated paper cone, and a dome tweeter that features a very subtle horn-shaped profile.

The biwireable Concept 300, which is intended for use with amplifiers rated between 20W and 200W, sells for £2,999 with stands. They're available in gloss black/rosewood, gloss white/oak or dual silver/ebony.

Contact: Q Acoustics, +44 01279 501111. www.qacoustics.co.uk

Five Alive

KEF's new R5 floor standing loudspeaker brings life to performance, Noel Keywood finds.

KEF's big, black, new R5 floorstanders have technological attitude. KEF was founded on hard engineering analysis back in the 1960s, made its name that way and continues with the tradition today, now as a successful part of Gold Peak (China). And you'll get the whiff of this background – or more if such things interest you – in all of the company's literature for the new R5. So what I'm looking at here is an unashamedly advanced loudspeaker in technological terms.

What we need in a loudspeaker is one that commits no great sins and suits our expectations. And the R5 is neatly tailored to do just this I found. It's a high technology design in which subtle but appropriate balances have been made to ensure it appeals, since with loudspeaker design you have to get it all right – and then ensure it sounds good. Technological perfection isn't the same as sonic acceptability and KEF have struck a nice balance with this compact three-way floor stander aimed at typical



UK living rooms; an R7 and R11 exist for bigger spaces and higher sonic power.

Standing one metre high (1070mm) the R5 is sized like most of its showroom rivals. KEF have kept the front narrow at 177mm to improve radiating characteristics they say, whilst depth is 350mm including terminals. For stability the R5s come with bolt-on outrigger feet that take width to 270mm total. Our 'speakers were nicely finished in a deep gloss black but white and walnut are options.

Because the cabinet has many internal bracing panels it is heavy at 27.3kgs and feels very solid and rigid when being moved. Adjustable spikes with spanner are supplied, plus foam bungs for the ports to damp down bass if necessary – something that can be needed for smaller rooms to lessen their boom. Cups are supplied to fit under the spikes to protect wooden floors.

The R5 features KEF's well developed Uni-Q driver where an aluminium dome tweeter is placed concentrically within an aluminium cone mid-range unit, giving a single assembly that works across a very wide range, in the R5 from 400Hz up to 20kHz. Concentricity and the closeness of the tweeter to the cone's apex together eliminate the usual phase cancellations and asymmetric behaviour of most three-ways, for a more focussed and consistent sound both at the listening position and around the room. This unit sits in a shallow sealed chamber and it appears from KEF's exploded diagram rear radiation is absorbed by a foam ring. Tangerine wave guides direct high frequency sound across the surface, resulting in an unusually smooth result on and off axis, our measurements show. There's little difference between pointing the cabinets straight down a room or toeing them in to fire direct at listeners, the Uni-Q is so well honed.

Above and below the Uni-Q sit hybrid 130mm bass units with a shallow concave aluminium front face backed by a paper cone. They both work into the rear cabinet whose chambers are coupled, but the upper and lower ports are tuned differently, the lower one working at a lower frequency making it most likely to excite a small room and the best initial target for a bung I suspect.



Twin ports with staggered tuning, bi-wire terminals and sturdy cast alloy outrigger feet for stability. The spikes are adjustable – spanner supplied!

"Their resolution of fine detail is superb, illuminating orchestral works"

Note that all drive units have an aluminium face for consistency of sound character.

The rear carries a bi-wiring panel with integral links, heavy terminals being able to accept 4mm banana plugs, spade connectors or bare wires

SOUND QUALITY

For the most part I drove the R5s from our Creek Evolution 100A amplifier, via Chord Signature cables. Sources were an Oppo BDP-205D Universal player acting as a CD

transport, feeding Chord Electronics M Scaler via its own optical cable, connected to an Audiolab M-DAC+. A MacBook Pro fed DSD from Audirvana Plus straight to M-DAC+, and hi-res PCM to M Scaler. The 'speakers were run in for 50 hours.

Spinning Jan Akerman (CD) singing *Am I Losing You* – a simply structured track with vocals over guitar – the R5s were vivid in portrayal. Rather than the slight sense of thin-ness and sharpness that comes from raised treble of so many current loudspeakers, the KEFs offered a timbrally rich insight into the instrument, plucked notes having speed without laceration. Akerman's vocals were focussed and stable in front of me, pushed forward and gripping. Impressive.

With uncompressed Rock tracks (CD) of wide dynamic range these KEFs gave an in-my-face delivery – especially of vocals – that was both refined yet viscerally exciting and very stable in image outline.

As measurement suggested the R5s sound full bodied – but not bloated – and bass was both firm and strong, if not heavy in our large (25ft long) room. There was stabbing power to drums from Marilyn Mazar's *Drum Impro*, with solid and controlled low end follow up. KEF know how to engineer in good low end control and the R5s offered a fine demonstration of their knowledge here.

Nigel Kennedy's *Stradivarius* violin was well lit and firmly delivered. The strong midrange presence of these 'speakers pushed

it out at me and I was thankful for the healing qualities of the ESS ES9038 chip in Arcam's CDS50 player, that I used early on, to make 16bit from CD palatable – because the sound bordered on edgy so much was being revealed. At times with complex material like this I also felt the midband could be usefully more transparent in nature.

The R5s Uni-Q unit is both obvious and revealing of what's being fed in – which was challenging at times. Fine if what's being fed in is fine – high quality from vinyl

"Tellurium Q Statements are no usual cable affair and if I've called the Silver Diamonds an Emotional Tour de Force what are then the Tellurium Q Statements!? Well, they certainly transcend any typical labeling and this time I'm elevating them on the throne, that they clearly deserve. Their stand out, extraordinary performance can only be recognized with the 2018 Editor Choice Award!"

-Matej Isak, Mono & Stereo

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for example – but I was getting to hear some of the problem's within recordings: Nigel Kennedy's violin on CD always had a slightly edgy sheen to it for example – and the R5s made this quality of the recording more obvious. It's a phenomenon I've muttered about before with good hi-fi products: the sound doesn't necessarily get better!

Salvation came both from smooth DSD digital, and preened PCM digital from Chord Electronics M Scaler (see review in this issue). Via M Scaler the R5s better looked into the Stradivarius, revealing both its qualities and Kennedy's playing, his vigorous tempo made apparent by their clean rendition.

The consistent tonal signature of the R5s was made clear with Loreena McKennit's *The Gates of Istanbul* (CD), as well as their bass. The opening and continuing plucked bass had strength and yet was firm. Bouzouki came through with natural clarity and a lively dynamic. The whole track hung together beautifully.

Fleetwood Mac's *Dreams* (24/96) kicked off hard and fast from Mick Fleetwood's drum kit, Stevie Nicks vocals were pushed out forcibly and cymbal crashes crashed – a quality of the recording. Bass was supple and speedy, and in good proportion.

The Minnesota Orchestra

playing Korsakov's *Dance of the Tumblers*, from *Snow Maiden* (24/96), came over full sized and powerful, a lovely smooth swathe of instruments set out left to right in front of me. Violins were made obvious but I could hear their contribution in succinct form.

The R5s also revealed differences between Tchaikovsky's *Serenade for Strings* (2L, Norway) as DSD64 (2.8MHz) and DSD 128 (5.6MHz) with a slightly finer and more intricate sound from the latter. Their resolution of fine detail is superb and, with strong projection, illuminates orchestral works.

CONCLUSION

KEF's new R5s come over as all-of-a-piece: there's no stinging treble nor disconnected bass. They are mid-band projective and this



KEF's unique Uni-Q driver array, with central tweeter firing out through a shallow mid-range cone, dispersion controlled by Tangerine waveguides.

means they do need a very good source or you end up hearing – as I heard – problems in the recordings. That's the other side of listening to KEF's revealing Uni-Q drive unit, something you won't hear elsewhere. I almost apologise for having to say "gentlemen, look to your sources" (women too!) for these 'speakers, but if you do then the R5s deliver a sound that's impressive.

MEASURED PERFORMANCE

Frequency response of the KEF R5, using third-octave analysis of pink noise, runs smoothly from 60Hz to 20kHz within +/- 3dB limits. There's some slight variation across this range but overall smoothness of the trace shows this is a loudspeaker free from the myriad of minor local resonances that add colour.

Starting at the top end first – meaning high treble – the aluminium dome tweeter that sits behind a 'Tangerine' waveguide delivers an extraordinarily smooth response free from peaking, on-axis and off-axis; it is consistent in delivery wherever you sit or however the speakers are angled. Lack of lift or peaking means the R5 will have a top end free from the obvious emphasis of so many of today's loudspeakers, and also lacking their sharpness, incision and quite often the coarseness that accompanies lifted treble due to emphasis of distortion, especially from CD. So smooth and colour free treble.

Output below 1kHz lifts a little, by +2dB at most, to add some sense of body to the sound; without this a loudspeaker can sound starkly dry. Low bass rolls down smoothly below 80Hz, output supported by the upper port that peaks at 50Hz (red trace) and the lower port that has broader output stretching from 30Hz to 45Hz (orange trace). The R5 cuts off sharply below 30Hz, so it delivers deep bass but not subsonics. It has been designed to work close to a rear wall in medium sized room of around 16ft-20ft long.

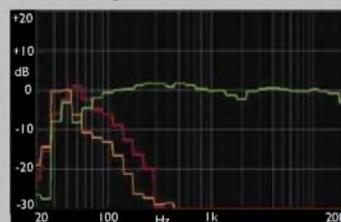
Sensitivity was 87dB sound pressure level (SPL) produced from one nominal Watt (2.8V) of input, exactly as quoted. However, the R5 draws current to achieve this, being a very low impedance design with a 3.5 Ohm d.c.r. and a measured impedance with pink noise of 4.7 Ohms. Our trace shows there are no residual reactive peaks, due to offset-tuned bass chambers or a compensation

network. Amplifiers of 40 Watts per channel will go loud with these 'speakers.

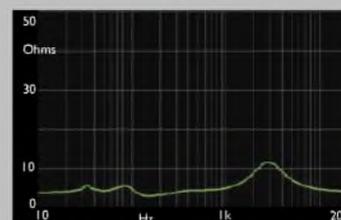
The R5 is well engineered and technically accurate. **NK**

FREQUENCY RESPONSE

*Green - driver output
Red/orange - port output*



IMPEDANCE



KEF R5 £2,000



OUTSTANDING - amongst the best.

VERDICT

A focussed and cohesive sound with great insight and fine bass.

FOR

- midrange insight
- controlled bass
- excellent build and finish

AGAINST

- lack transparency

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with the Quad tradition. A chip tried and tested – and all but famous for getting great sound from CD.

The Play+ has analogue phono socket (unbalanced) inputs that run through the volume control and to the output sockets. By default there is no gain (x1) so what goes in comes out almost unaltered, except in volume but this allows two other analogue sources to be hooked into the system – even a Phono stage. When I say "no gain" that is from phono socket input to output; from phono socket input to balanced (XLR socket) output there is a gain of x2 (+6dB) but this will only come into

play if the XLR outputs are used to feed a power amplifier with XLR inputs, such as Quad's own matching Artera Stereo power amplifier (140W). Also, gain (or attenuation) can be dialled into the system – up to x2.3 (+7dB) – and this could be useful to match in low gain external Phono stages.

Yes, the Play+ can be used as a general purpose analogue preamplifier. Additionally, there are S/PDIF digital inputs, optical and electrical, plus a USB input for computer connection".

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QUESTIONS

[1] The Artera Play review issue was –

- [a] December 2019
- [b] December 2001
- [c] December 2018
- [d] December 2000

[2] The DAC is famous for –

- [a] number of pins
- [b] size
- [c] power consumption
- [d] great sound from CD

[3] The matching power amplifier is –

- [a] Artera Stereo
- [b] Leak Stereo 60
- [c] WAD 5881
- [d] Sinclair ZX60

[4] Computer connection is via –

- [a] string
- [b] elastic band
- [c] USB
- [d] telepathy

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Top Tap DAC

Chord Electronics Hugo TT2 DAC now comes with an astonishing 98,304 taps. Noel Keywood listens in – then adds the new M Scaler for a few taps more.

Products from Chord Electronics are always fascinating – even exciting, sometimes confusing. And that's just what I found when reviewing Hugo TT2 with M Scaler. Notes in the handbook allude to the 'power' of Hugo TT2's audio outputs. Chord Electronics explain there are discrete power amplifiers in Hugo TT2 that can drive loudspeakers direct, especially sensitive horn loudspeakers. We drove a pair of Tannoy Westminsters – large horns – from a portable Mojo in our January 2016 issue. Could Hugo TT2 drive loudspeakers, slashing system cost? More later!

Let's look at cost. Hugo TT2 is priced at £3995 – a substantial

sum. The TT means it is a table-top version of Hugo, more expensive and without batteries. It has a partnering 100 Watt power amplifier that you'll see in many website shots, TTOBY, price £2899. However, it will drive any power amplifier. M Scaler is £3495 and I talk about this separately on following pages just for clarity.

It's as a super high-technology DAC that Hugo TT2 is presented – and usually talked out – using Chord Electronics own and unique digital-to-analogue convertor (DAC) designed by Rob Watts. Manufacturers normally buy in DAC chips from outside suppliers. What you get here is a highly-specialised and continually advancing design from Mr Watts that, our measurements show, out-runs all

else except ESS (although AKM get close). However, Rob Watts states that where other designs have digital filters with hundreds of taps and make compromises as a result, Hugo TT2 now has 98,304 taps in its filter, fed by a x16 oversampled signal. M Scaler ups this to a massive 1 million taps, again fed by a x16 oversampled signal.

Chord Electronics sent us M Scaler with Hugo TT2 so we could hear the difference, a task made easier by our Martin Logan electrostatic loudspeakers. And our ability to measure the thing: there are only two analysers in the world able to do this – they have one, we have the other. Interestingly they quote a class-leading 127dB dynamic range and



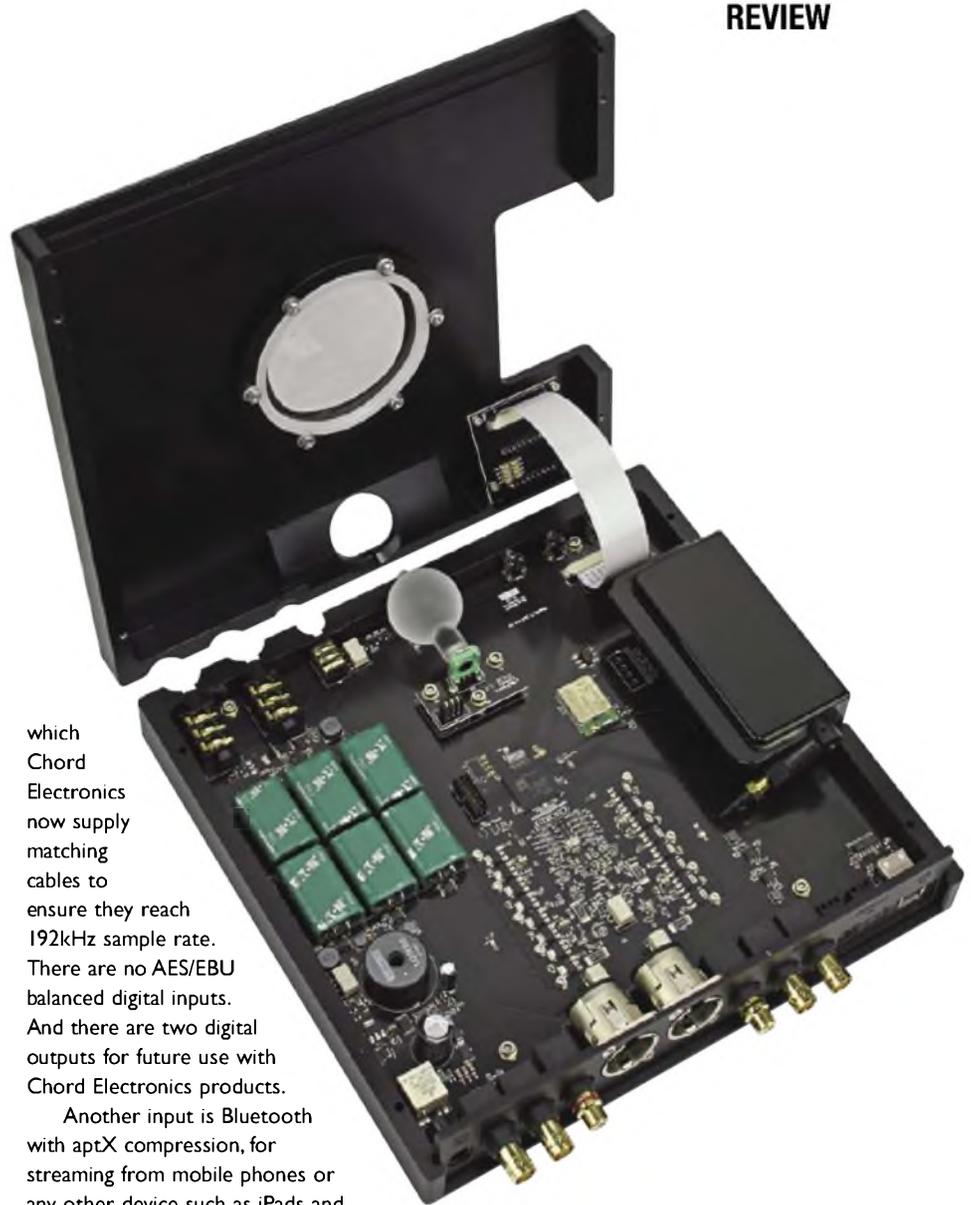
we measure 128dB from amplifier output, or 124dB from DAC output – both outstanding values.

In addition to being a unique DAC, Hugo TT2 is also a pre-amplifier and headphone amplifier they say. Hmm...Yes, it is, but it does not have analogue inputs, so cannot accept external analogue sources. The 'pre-amplifier' bit relates to the fact that very high gain is available, enough to drive a power amplifier direct or act as a power amplifier in its own right. Two gain settings (Hi and Lo), a big illuminated spherical volume control (centre) and both phono-socket (unbalanced) and XLR-socket (balanced) analogue outputs being fitted to make it all happen.

These days headphones rule and Hugo TT2 is designed to cope, with no less than two full size 1/4in (6.35mm) jacks, plus a 3.5mm mini jack, so no adaptors are needed. Those on-board power amps let Hugo TT2 drive headphones down to 16 Ohms or lower, with massive voltage swing so even the most difficult of headphones offer no challenge. An unusual addition is three selectable levels of Crossfeed between channels to give a more loudspeaker-like presentation. The only omission is the lack of a balanced output. Plugging headphones in disables amplifier mode (i.e. the analogue outputs).

There are arrays of digital inputs. A fully isolated USB input allows Hugo TT2 to be used as a computer's headphone DAC or to send audio from the computer to the hi-fi. The TT2 accepts native DSD (PC only) up to x8 (DSD 512). At present double-rate x2 DSD (DSD128) is about the limit for music files, because of their size. If you run a PC a DSD driver must be downloaded from Chord Electronics to run native or DoP; if you run a Mac the paid-for Audirvana Plus app sends via DoP that works to DSD128 only in Hugo TT2.

In addition to the USB input there are two electrical S/PDIF digital inputs via BNC sockets, not the usual phono sockets. They can be used independently, as usual, to accept a digital stream from outside sources, or together as a special DBNC (Dual BNC) input to accept the DBNC output of M Scaler. There are two optical inputs for



which Chord Electronics now supply matching cables to ensure they reach 192kHz sample rate. There are no AES/EBU balanced digital inputs. And there are two digital outputs for future use with Chord Electronics products.

Another input is Bluetooth with aptX compression, for streaming from mobile phones or any other device such as iPads and portable players that now mostly come with Bluetooth. A small, light (plastic) and simple remote control unit is provided with all functions, including volume control, input selection and filter selection.

There are four filters, an incisive neutral filter (Filter 1) that offers 'absolute reference' they say, and the same with high frequency roll-off (Filter 2) to 'remove noise' from hi-res files of 88.1kHz sample rate or higher. Then there's a filter with 'warmer tone' (Filter 3) and again the same with high frequency roll-off (Filter 4). Differences between these filters were not great and sonic differences small. They work with DSD also to reduce high frequency noise (2 and 4), a problem inherent to DSD.

Like all Chord

A small and light remote with volume, filters and inputs.



The illuminated volume ball on a shaft at front, connected to green potentiometer behind. Six green super-capacitors (left) bolster the power supply. At right is the Bluetooth radio module. At centre the square black FPGA chip that holds the WTA filter and DAC.

Electronics products Hugo TT2 is of exceptional build and finish. The case is machined from solid alloy, making it wonderfully strong and with superb contours and detailing. The company light up the whole device in their usual style: the spherical volume control at centre changes colour to show gain, the colour palette moving from red (low) up to green (sensible) and then into blues to purples and eventually white (max). Internally, the LEDs change colour on the circuit board to indicate sample rate (or DSD) and this is visible through the top window. Case dimensions are 235mm wide, 223mm deep and 46mm high, with a weight of 2.53kgs.

Power is supplied by a Chinese external switch-mode power supply block that delivers 15V at a high 4A through a cable 2340cm (11ft) long

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in total. Chord Electronics exclusively use switch-mode supplies and are happy with them, even though they are shunned by many others. To compensate for any possible limitations in supply transient behaviour 'super capacitors' are fitted to store charge within the unit.

And finally to the power amplifier potential of Hugo TT2. Hugo TT2 produces 20 Watts from its XLR outputs. However, it doesn't have the heat sinking or devices to

provided hi-res and DSD replay, again connected by the supplied USB cable.

I started off with high dynamic range (uncompressed) rock from CD and with Nils Lofgren singing 'Keith Don't Go' got quite a shock. It was obvious straight away that this DAC has the company's trademark sound – but supercharged. In basic character think crystal clear and vividly insightful, with no hint of warmth. There was an airy spaciousness to the sound, made more apparent

Safri Duo's 'Samb Allegro' – tremendously fast but punchy bass. It seemed perfectly timed and I heard texture where I had not before, here in the synth kick-drum beat that underpins the track so dramatically.

Modern hi-res recordings such as Marta Gomez singing 'Maria' (24/96) bettered CD in obvious fashion by fleshing out a performance with more intense inner detail – making CD sound a tad barren by way of contrast. With this superb recording,



At left, twin BNC output sockets (for future products). Next along, two large XLR socket outputs flanked by phono-socket outputs. Then come twin BNC digital inputs that together form a DBNC input. At right are TOSLINK optical inputs and a USB B computer connection.

produce such power on a continuous basis. It works fine and goes loud, but very loud will overheat (there are protection circuits) Small loudspeakers are insensitive so expect lower volume – but they will work well enough on a desk where speakers are close to your ears

SOUND QUALITY

I used Martin Logan ESL-X hybrid electrostatic loudspeakers driven by a Creek Evolution 100A amplifier via its direct XLR inputs (no volume control) through Chord Company Epic XLR cables. Loudspeaker cables were Chord Company (not Chord Electronics; they are different and unrelated companies) Signature UL cables. The unit was run in Amp mode, mostly Filter 1 and with volume set at light blue where full dynamic range is available.

Digital was delivered from an Oppo BDP-205D Universal player acting as a CD transport, coupled optically to the Hugo with the cable supplied that was a tighter fit into the TOSLINK socket than our cables. A MacBook Pro running Audirvana Plus

by a very broad soundstage where the audience yelled and shouted from hard left to hard right in lively fashion, yet they were clear of the vocals with well-identified distance. This sense of dimensional resolution with hard images on a wide yet firm

canvas remained throughout my listening. Lofgren's rapid finger-picking was super clear, with better timing between fine details from the strings than I have ever heard, giving a sense of intense insight. It was breathtaking – and not just because of the qualities mentioned but because of a sense of great dynamic contrast too. An astonishing level of revelation was obvious from this track alone, as well as ability to lay out the acoustic being picked up by Lofgren's mic.

Another almost-peculiar property made itself very clear with

images were hewn from stone with clear space between them – and a vivid dynamic all but defining what high-fidelity must be.

Fleetwood Mac's 'Dreams' (24/96) – a hi-res transcription from an old analogue master tape (1977)

"breathtaking clarity, giving a starkly clear and concise sound unmatched elsewhere.

– hit me with a dramatic start from Mick Fleetwood's drum kit that had surgical punch – but some of the cymbal crashes were too well revealed. I know the top end of this track is a bit raspy and here Hugo TT2 made the fact obvious. In effect it revealed limitations in the transcription or original recording.

Comparisons got interesting with Diana Krall singing 'Narrow Daylight' on hi-res PCM (24/96) and DSD64. To my surprise there was not much difference. Both were relentlessly sharp in timing, clean and clear, DSD



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without the romance I associate with it.

With classical DSD tracks like Dejan Lazic playing Brahms' 'Piano Concerto No3' although there was fabulous insight - the almost relentless clarity of this DAC made for a lack of organic warmth that was not what I expect from DSD. Again though, the tremendous sense of timing and broad sound stage gave Hugo TT2 a sense of rigid composure no other DAC can match, strings coming through with assured presence.

After writing the above I was told Hugo TT2 converts DSD to PCM, presumably because the custom FPGA chip lacks a DSD process route with low pass filter. This explains what I heard though.

With hi-res classical such as the Minnesota Orchestra playing Korsakov's 'Dance of the Tumblers' from 'The Snow Maiden' (24/96), TT2's large canvas made the orchestra sound both vast and dynamically engaging, kettle drums having sudden and solid power when struck, the instruments all seemingly well separated with clear air between them. Again, it was time to run up the volume!

This was something I kept doing and suddenly the penny dropped. Using Amp mode at high gain - light blue and above on the volume sphere - maximises dynamic range. And I was running at light blue and above, effectively achieving a dynamic range of 130dB or more. That's way above the 120dB of top class rivals.

An issue Hugo TT2 raised was that of 'insight'. It appears to have insight into digital, as it were. Transcriptions of old analogue performances had their faults revealed and did not sound wholly better. Modern hi-res recordings fairly assaulted me with everything from detail to dynamics, sounding almost too good to be true. Good CD was fine but old CD was revealed as, well - old CD and not so nice.

Bluetooth worked well once I had entered the PIN number demanded, which the handbook fails to mention: it is 0000. Interesting that the limitations of aptX compression became quite obvious in contrast to all else.

And finally Hugo TT2 did indeed drive our Martin Logan ESL-X loudspeakers quite loud (Hi gain) via the XLR output sockets, using a pair of adaptor leads I soldered up (XLR to 4mm line socket).

I fancied there was a tad more detail but then there was less low-end drive, David Bowie's 'Suffragette City' missing a bit of propulsive power. So a bit of a compromise here but do-able all the same.

Headphones are best used at Lo gain that limits output to 3V - more than enough. Sound quality showed all the traits I heard with loudspeakers, cross-feed (XFeed) making the experience less in-head.

CONCLUSION

Hugo TT2 resolves both CD and hi-res digital with breathtaking clarity, giving a starkly clear and concise sound unmatched elsewhere. It also has fantastic timing and almost



Our DIY loudspeaker adaptor leads, XLR to 4mm line socket (not available commercially; go to RS Components).

peculiarly tight yet punchy bass. It is a little short on warmth, especially with DSD, majoring on deep analysis instead - undoubtedly its forte.

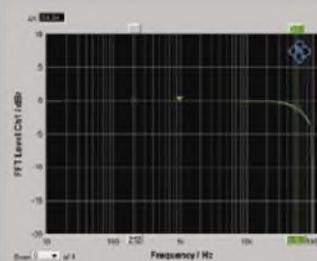
To hear CD and hi-res like you've never heard it before, and as you will not hear it anywhere else, this is the DAC to audition.

MEASURED PERFORMANCE

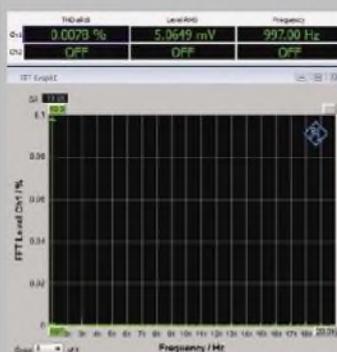
The crucial EIAJ Dynamic Range value of Hugo TT2 was 124dB in DAC mode and 128dB in Amplifier mode, set to Hi gain and with volume advanced to avoid output clipping (light blue on the volume control). Both are exceptionally high values not bettered elsewhere, although ESS DACs match the figure.

DesignerRob Watts insists distortion is more important than dynamic range and here the Hugo TT2 produced a record low value of 0.008% at -60dB with 24bit - see our analysis. At best rivals manage 0.02% so Hugo TT2 has half their distortion. Note that Chord Electronics only quote distortion at

FREQUENCY RESPONSE



DISTORTION



full scale (0dB FS) to match other manufacturers. Our -60dB test is more meaningful and now widely used. S/PDIF and USB gave identical figures.

Distortion with CD (16bit) measured 0.19% at -60dB, not a lot different to usual due to quantisation noise inherent in 16bit. Dynamic range was 101dB.

The S/PDIF electrical (BNC socket) and optical digital inputs (with supplied optical cable) both accepted 192kHz sample rate PCM, frequency response measuring flat to 55kHz (-1dB) with Filter 1 and 3 before slow roll off to the 96kHz upper theoretical limit, our analysis showing Filter 1. Filters 2 and 4 had a 21kHz (-1dB) upper limit - low. They are quite strong filters..

At Lo gain the headphone outputs delivered 3V max, at Hi gain 8V max. - more than enough for all headphones. Distortion and dynamic range values were identical to Line out at Hi gain, just tad lower at Lo gain.

Results with M Scaler were identical although dynamic range did reach 129dB.

Hugo TT2 delivers class leading measured performance in all areas. It has huge dynamic range and unusually low distortion. NK

Frequency response	5Hz-55kHz
Distortion (-60dB, 24bit)	0.008%
Dynamic range (EIAJ)	128dB
Noise	-126dB
Output Hi gain (Ph/XLR)	8.5V / 17V
Output Lo gain (Ph/XLR)	3V / 6V
Output DAC (Ph/XLR)	2.5V / 5V
Output H'phone (Lo / Hi)	3V / 8V

CHORD ELECTRONICS HUGO TT2 £3,995



OUTSTANDING - amongst the best.

VERDICT

Fabulous DAC with analytical and precise sound. Unimpressive with DSD.

FOR

- great sound from CD
- styling and build quality
- small size
- wide range of inputs

AGAINST

- lacks warmth
- dry DSD

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A Few Taps More

Chord Electronics release a unique product – M Scaler. It's a one-million tap digital filter that transforms CD, they say. Noel Keywood listens.

To celebrate producing a one million tap digital filter Chord Electronics have released M Scaler. M Scaler isn't a product you'll find elsewhere, even though upscaling is not a new idea. However, M Scaler doesn't just upscale, it also possesses a Watts Transient Aligned (WTA) filter in its most advanced ever state because of those milestone one million taps. That's what you pay £3495 for. And trust it will

produce better sound!

To clarify the purpose of this product, it is to get the very best from CD, by first scaling up sample rate from the low 44.1kHz – necessary in 1982 when Philips and Sony were developing CD – to 705.6kHz that will run on today's silicon. Then the stream is passed through the WTA filter and on to an array of outputs. There are standard S/PDIF digital outputs in the form of one electrical via a BNC socket, and

one optical via a TOSLINK socket, for connection to an external DAC. This can be any DAC, not just one from Chord Electronics – if with limitations I'll explain later. For Hugo TT2 and other Chord Electronics products there is also a Dual BNC (DBNC) output pair that outputs at the full 768kHz sample rate.

Input wise, there are two electrical BNC socket inputs, two TOSLINK opticals and one galvanically isolated USB for connection



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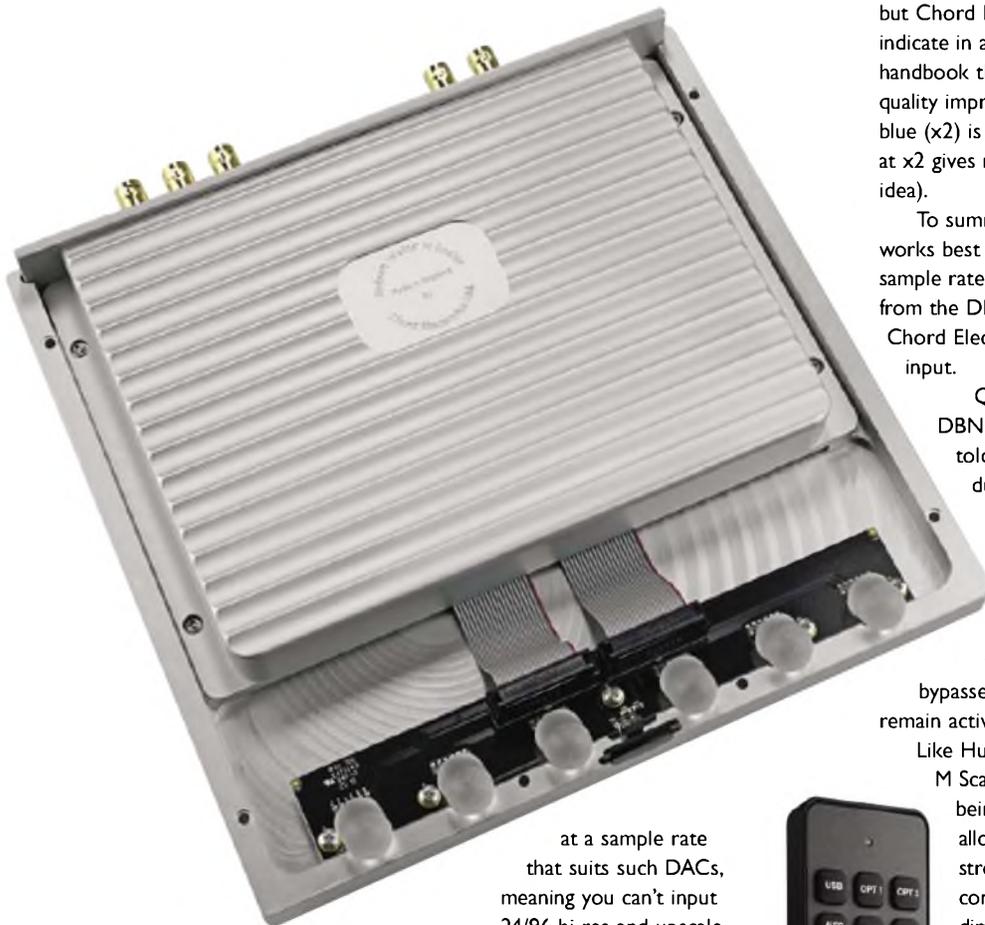
The M2sCD is designed as serious hi-fi available at a modest price. From the fine fit and finish of its metal casework to the unique technology sitting inside. The M2sCD builds on our years of engineering expertise, uniquely featuring both a mains choke filter and a high-tech digitalstream noise filter.



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Under the cover – another cover! This one with non-removable screws to shield from prying eyes, as well as provide further RF screening. At front in a line are the acrylic spheres that act as illuminated switches.

to a computer. Both a front panel spherical button (2nd from left) or the remote control can be used to step between inputs, the button changing colour to show selection. Output sample rate is set by an illuminated spherical button third-in from left. Lit red the unit is set to

at a sample rate that suits such DACs, meaning you can't input 24/96 hi-res and upscale x16 to a sizzling 1.5MHz 'cos there's no DAC out there able to take it – and cables become an issue too. Consequently, with a 96kHz input M Scaler upscales x8 to 768kHz max, but only through its DBNC output sockets to feed Chord Electronics products like Hugo TT2 with a matching DBNC input. The single BNC outlet for other DACs is limited to 384kHz under all conditions so as to suit both their DAC chips and commercial interconnect cables. I mention cables because optical



"Like Hugo TT2, build and finish of M Scaler is impressive"

bypass, then with CD x2 upsample to 88.2kHz is green, x4 to 176.4kHz is blue and max upscale of x16 to 705.6kHz is white. Now on to practicalities.

M Scaler as a real world product must feed external commercial DACs and at present most DAC chips work up to but not higher than 768kHz; older designs 352.8kHz. So whatever goes into M Scaler must come out

TOSLINK cables barely work past 96kHz, not just because of internal losses and low bandwidth of the cheap plastic optical conductor, but also because of imprecise termination in TOSLINK sockets – wiggle 'em at high sample rates and see what happens! So the optical output of M Scaler is restricted to 192kHz for entirely practical reasons. The data still passes through the WTA filter

but Chord Electronics disarmingly indicate in a chart within M Scaler's handbook that there's no sound quality improvement, except when blue (x2) is selected (why white also at x2 gives no improvement I have no idea).

To summarise simply, M Scaler works best with CD and 48kHz sample rate files, with output taken from the DBNC socket-pair to a Chord Electronics DAC with DBNC input.

Queried about the special DBNC connection, Rob Watts told me it is an AES S/PDIF dual-mono mode with changes to the data bits to flag this status.

DBNC does not bypass all Hugo TT2's filters by the way; the first of three stages is bypassed, the second two stages remain active.

Like Hugo TT2, build and finish of M Scaler is impressive, its case being machined from solid alloy, making it wonderfully strong and with superb contours and detailing. Case dimension are 235mm wide, 236mm deep and 40.5mm high, with weight of 2.55kgs.

Power is supplied by the same Chinese external switch-mode power supply block used with Hugo TT2, delivering 15V at a high 4A through a cable 335cms (11ft) long in total.

There is a video mode that reduces filter time delay (0.6secs) so speech synchronises with the picture, achieving this by reducing the number of filter

taps.

The USB input did not accept DSD from my MacBook Pro laptop running Audirvana, that is packaged as DoP code. It may accept native DSD from a PC, but you can't get a Mac to do this. M Scaler is about improving PCM, not reproducing DSD.

SOUND QUALITY

I used M Scaler mainly with CD delivered in optically from our Oppo BDP-205D Universal player acting as a CD transport. Unsurprisingly perhaps, it does not change the sound of Hugo TT2 so much as magnify it to a degree that was eye popping. With Nils Lofgren's Keith Don't Go the sound stage became even larger and more densely

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- We listen and measure products in depth, at our London offices.
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Information

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

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At left, two gold plated BNC digital inputs, two optical inputs and a USB for computer connection (centre). Then optical and BNC outputs, and right twin DBNC outputs for Chord Electronics products with matching DBNC inputs.

powerful, as if images had gained physical weight. There was more internal detail too. The only slight alteration, rather than amplification, was a subtle smoothing of the sheen on strings, from Nigel Kennedy playing Massenet's Meditation.

"the sound stage became larger and more densely powerful, as if images had gained physical weight"

However, with Marianne Thorsen playing Mozart's Violin Concerto in G Major (24/96) her violin was still sheeny, but this recording has always been so. M Scaler, like Hugo TT2, does not euphonicly process such recordings so much as expose their intrinsic character.

M Scaler's benefits become less apparent at higher sampling rates used in hi-res recordings (e.g. 24/96). With Marta Gomez singing Maria (24/96), images were densified and the sound stage hardened up, but by a smaller if still useful degree than the changes heard with CD.

The idea of putting M Scaler in front of a DAC other than the distinctive sounding Hugo TT2 could be very interesting I thought, or a damp squib. It was both. Our Audiolab M-DAC+ was a prime candidate and a qualified success; an Arcam CDS50 CD/SACD player a failure. See my column.

From CD through to hi-res M Scaler quite clearly removed

muddle from the sound of M-DAC+, separating images and events, retrieving more atmosphere from recordings and also broadening the sound stage with firmer and more strongly embodied images. Even better, the full bodied sound

of M-DAC+, with its on-board high current, low noise linear power supply was retained, even slightly enhanced by the smoothing effect of M Scaler – I fell in love with this combo! Korsakov's Dance of the Tumblers (24/96) became even larger, orchestral instruments more distinctly separated. Diana Krall singing Narrow Daylight (24/96) came into stronger focus, accompanied by a slightly smoother quality.

The one wrinkle here was M-DAC+ would only see 176.4kHz sample rate maximum, falling silent at 352.8kHz from M Scaler, so x4 was available, not x8. Changing cables made no difference.

With an Arcam CDS50 CD player interface difficulties became strange. The Arcam flagged up sample rate from M Scaler as 44.1kHz only where M-DAC+ had already shown it varied as stated. I tested the CDS50 on a digital generator and it correctly showed input sample rate, so no fault here. Worse, sound quality

was unspectacular, but a complicating factor was I had to use the Arcam's unbalanced outputs to feed the Creek's line input and volume control; neither Arcam or Creek have volume adjustment on their balanced lines. So perhaps some muddle crept in as a result. Whatever, whilst this combo worked at a functional level, it did not convey the sonic benefits of M Scaler.

The warning here then is M Scaler has problems interfacing with DACs other than Hugo TT2. Yet at the same time I thought its coupling with M-DAC+ was sublime and, for me at least, I would rate this pairing worth hearing. The extraordinary cleanliness, composure and timing of M Scaler, as well as its sound staging properties were all passed to M-DAC+ that in turn sent out a sound that was big bodied and easy going.

CONCLUSION

Chord Electronics M Scaler embodies Rob Watts view of how to perfectly reproduce digital. I thought it was devastating. You get to clearly hear how CD can sound when all the rubbish is swept away, performers and instruments all being placed in solid form on a wide and clear sound stage. Add in almost-peculiar bass timing and resolution and you end up with a sound not available elsewhere.

It's expensive – as you must expert from a technological exercise dedicated to FPGA silicon to make it happen and commercially available. It works most assuredly with Chord Electronics DACs having a DBNC input and is for PCM, not DSD. Book a demo and have a listen. This is a unique and extraordinary product.

**CHORD
ELECTRONICS
HUGO M SCALER**
£3,495



**OUTSTANDING - amongst
the best**

VERDICT

If you want the best from CD, M Scaler is a must-listen. Expensive but worryingly good.

FOR

- sound quality
- small size
- build quality

AGAINST

- inconsistent with ext. DACs
- no DSD

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Ready for Roon

Powerful music server software for today's home, Roon may be just what you are looking for. Noel Keywood explains.

Readers ask about Roon music distribution software. And Chord Electronics told us “we use Roon at Shows”. Big endorsement. So what is Roon? Here's a short explanation.

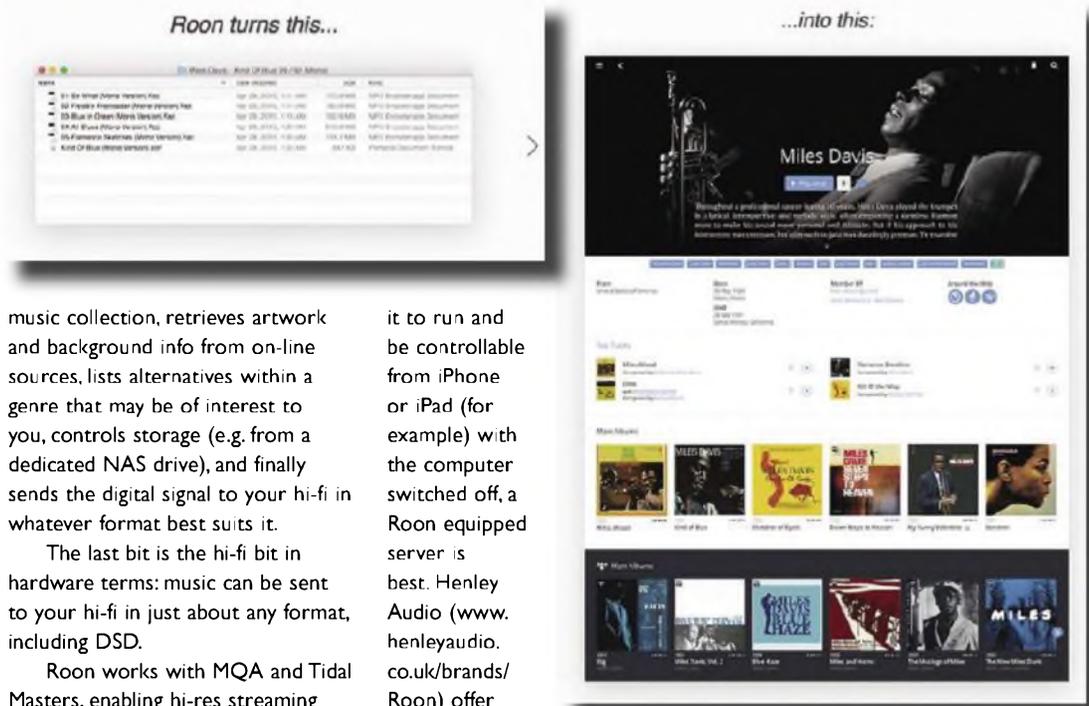
In essence, Roon catalogues your

independent server, so your PC does not have to be switched on. Roon ‘end-points’ best cope with its stream. You may need to upgrade to meet these criteria – extra cost.

The software will run on your computer, Mac or PC, and works with iOS and Android. If you want

Receiving a Roon stream gets complicated. It can send any digital format a DAC can handle, so no worry here. All the same, Roon choose to identify products as ‘Roon Tested’ or ‘Roon Ready’.

‘Roon Tested’ products have been tested in-house to provide users with



music collection, retrieves artwork and background info from on-line sources, lists alternatives within a genre that may be of interest to you, controls storage (e.g. from a dedicated NAS drive), and finally sends the digital signal to your hi-fi in whatever format best suits it.

The last bit is the hi-fi bit in hardware terms: music can be sent to your hi-fi in just about any format, including DSD.

Roon works with MQA and Tidal Masters, enabling hi-res streaming from internet source straight to your hi-fi. It's a massively capable and comprehensive piece of software, but technically dense.

Cost? Yearly cost is \$119 and lifetime subscription is \$499. There is a two week free trial (go to <https://roonlabs.com/>). The system works best with a Roon optimised

it to run and be controllable from iPhone or iPad (for example) with the computer switched off, a Roon equipped server is best. Henley Audio (www.henleyaudio.co.uk/brands/Roon) offer dedicated

Nucleus or Nucleus+ audio servers at £1500/£2500. The Nucleus is based on an Intel NUC PC that has sufficient internal processing power to assemble and deliver data without delay.

Alternatively, a NAS drive with Roon ROCK server software can be used – only possible with drives able to run this software. If you have a reasonably powerful PC or Mac and leave it running, no need for a dedicated server, but dedicated servers lack noisy peripherals such as Bluetooth, wi-fi and other services, so are preferable.

best settings for that product.

‘Roon Ready’ products are able to run the company's end-point software, ‘embedded into’ devices to give best results. This implements RAAT – Roon Advanced Audio Transport. Roon told us: “these products offer the best of Roon's features including high-resolution streaming, two-way control, Signal Path integration, and synchronized multi-room playback”.

To offer all this Roon regularly update their software and the price includes a host of licenses for outside services that supply meta-data (data about the music). They also aim to make the system easy to use and friendly. But at the same time there are a lot of settings and menus to navigate for best results.

Will a Roon Ready product ever



Nucleus Roon server, based on an Intel NUC with unnecessary services turned off.

appear with tubes? Wouldn't dare ask.

RUNNING ROON

Roon can be installed simply and cheaply, onto a PC or Mac (or Linux) – the best way to start out. Or you can go the whole hog – complex, expensive – and limited to Roon Ready products. Here's a quick run down of Roon in a basic set-up.

I ran Roon on a Mac (112MB download) connected via USB to an Audiolab M-DAC+. There were no problems. You are asked to identify music folders and provide permission for on-line data retrieval but the user interface screens are well designed and clear. Roon did well in identifying a thick melange of 'music', including recognising a lot of obscure test tracks not for commercial release, whilst defaulting to a grey cover for test material recorded on Audacity and therefore not on any searchable database.

Audiolab's M-DAC+ was recognised and selected but remained silent until the Mac's Sound panel had



Moon 280D DAC with MiND 2 is a Roon Ready DAC able to accept Tidal Masters, Deezer Hi-Fi and Qobuz Sublime+ music services.

Preferences to send DSD over PCM using DoP made no difference – a surprise because Audirvana Plus has no problem here: M-DAC+ flags up DSD64/128. It appears then that on a Mac, the Mac version sends DSD as PCM, not DoP.

This issue apart Roon offers a seamless and impressive user experience in basic form. The play screen carries album cover artwork, release date, an album review that gives useful background information – even an editorial star rating that raised my eyebrows a few times! Audio format data (AAC, FLAC etc), sample rate (e.g. 44.1kHz for CD)

them and identifies quality differences – neat.

Even better in principle, if arguably not in practice, Roon provides a dynamic range value for an album (not a track) – something I found intriguing. In their Knowledge Base it is identified as an EBU R128 LRA value. Some of these I had doubts about, high dynamic range tracks from CD samplers measured a measly 8 (MAAT says 12/14) and Jackie Leven's The Mystery of Love is Greater than the Mystery of Death a high 15 where MAAT says around 8/14. The reason is explained by MAAT (www.maat.digital/drmeter), whose dynamic range meter I use: "LRA turns out to be useless for dynamic measurement of pop and MOR music genres due to its inherent design, which ignores the top 5% of content, in terms of amplitude, so as to prevent extremely loud passages from affecting the overall result. Unfortunately, that top 5% of amplitude is where 90% of modern music lives". Roon at least broaches the subject and gets a value up on screen – it's a start!

Roon not only sees your music collection but Tidal and Qobuz on-line music servers too. This brings into the picture Tidal Masters and Roon's ability to process MQA from end-to-end, a subject I have yet to explore. Already one expert tells me they don't agree with the filtering used within MQA, their filtering being better – so this is a subject that will run!

Sound quality? Running M-DAC+ (via XLR) through a Creek Evolution 100A amplifier and Martin Logan ESL-X hybrid electrostatic loudspeakers, as well as headphones (various), the sound was crisp and clear – obviously high quality. This is a quick look at Roon at a functional level – not an in-depth sonic assessment that demands a Roon ready end-point. But even in basic and reasonably inexpensive form it does deliver a rich musical experience, as claimed.



The Roon play screen, with album artwork (from an on-line database), review, an amplitude time-line at bottom. Below the cover this file has been identified as an AAC at 44.1kHz – an iTunes escapee. Beneath is an EBU R128 dynamic range value of 15.

been set to see it, including Audio MIDI setup (in the Utilities folder), as always.

Utilising the Mac's core audio, M-DAC+ saw the sample rate and bit depth set in Audio MIDI setup – PCM 384kHz, 24bit maximum. Whatever was set here was flagged up by M-DAC+, as expected except with DSD. Setting Roon's DSD playback strategy in Audio

and data rate are all shown, usefully allowing different versions to be identified, including floating rogues – files that have been re-formatted for test purposes in my case. In fact they have been put into folders as test files, so Roon is unable to identify their status, as perhaps is to be expected with no file location data on screen. The converse is that if you have multiple files Roon finds



Acoustic Energy's new AE 300 standmount loudspeakers offer a big sound from a compact cabinet, says Jon Myles.

Appealing Acoustics

Compact loudspeakers have many advantages – especially for those who are looking to position them in small to medium-sized rooms.

However, getting them to deliver good sound at a realistic price can be a difficult task. Bass power and a sense of musical scale are all made more difficult when the designer is working with a small cabinet.

Take a first look at Acoustic Energy's new £599 AE 300s and you'd immediately think they'd suffer on these factors. Measuring a diminutive

300mm x 175mm x 260mm (H/W/D) they are small – but Acoustic Energy has packed some clever technology into the package.

First of all there's a newly-developed 130mm mid-bass drive unit. This features a ceramic aluminium sandwich cone with a shallow profile but a high-force, long-throw motor system for extended low-frequency output.

Allied to this is a 25mm aluminium dome tweeter especially designed for the AE 300s. It is housed in a proprietary Wide Dispersion Technology waveguide aimed at

providing a wider sweet spot.

These drivers are housed in an MDF cabinet which is nicely rounded at the top, bottom and sides and features a slot-shaped reflex port on the rear to help boost bass output.

SOUND QUALITY

The immediate thing that struck me about the AE 300s is just how big they sound for their size. Closing my eyes I could easily believe I was listening to a pair of floorstanders – yet the Acoustic Energys are much smaller and rather more room friendly.

However, just as in any quality loudspeaker, set-up is important. So I placed them on a pair of solid stands and angled them towards the listening position. Experimenting here showed they sound best in this position. Having them firing straight down the room didn't work well for me.

Well-positioned though they shone, bringing a vibrancy to whatever music I played. Bass on Joy Division's 'She's Lost Control' was extremely strong and distinct coming over with admirable force. It punched hard but there was no sense of overhang or cabinet colouration – just a tight feeling to the notes from Peter Hook's instrument.

The Acoustic Energys also projected Ian Curtis's voice well into the room while the whole track had a propulsive quality to it.

These 'speakers sound fast, working well on rock and pop music. Playing The White Stripes' 'Seven Nation Army' the drums which underpin the track crackled vibrantly, rim-shots coming over brightly but never edging into harsh territory.

All this was through a Creek Evolution 100A amplifier which has some 110 Watts of power on offer. And these Acoustic Energys do need some grunt to really get them going (see our Measured Performance for full information). They will certainly not be for those who prefer low-powered valve amplifiers.

However, with this combination correct performance comes alive. Correct positioning makes a difference; the slot port at rear makes close-to-wall positioning work well. There's no annoying boom, just a seamless sound that has a coherent whole to it.

On Nick Cave and The Bad Seeds' 'The Curse Of Millhaven' the guttural vocals sent a shiver down my spine but, while prominent, they didn't detract from the guitar work below. Instead everything was in the right place with good separation between the whole band.

If there's any criticism to be made it's that the 300s lack a little bit of sophistication compared to some more expensive rivals.

Playing Mahler's 'No 4' by the San Francisco Symphony the string section sounded a little constrained with a lack of absolute resolution. However, we are talking about a £599 standmount loudspeaker here – and one that excels in what it does. For example, the leading edge of the



The Acoustic Energy Wide Dispersion Technology waveguide on the tweeter provides a room-filling sound.

violins on the Mahler piece were well-defined and the decay of notes realistic – a testament to just how good the tweeter and its waveguide work.

With the silky tones of Sinead O'Connor on her version of 'Peggy Gordon' from 'Sean-Nós Nua' (24/96) the intakes of breath between the lines took me aback. This was as realistic as it comes from a set of compact standmount loudspeakers. So much so I could not help playing

the track again and again to revel in the levels of detail revealed.

CONCLUSION

As compact loudspeakers go the Acoustic Energy AE 300s are hard to beat. They may be small but they sound sophisticated, detailed and larger than they look. Pair them with a decently-powered amplifier and they will provide a brilliant combination that's well worth hearing.



The AE 300's slot port on the rear enhances bass capability as well as working well next to a rear wall.

MEASURED PERFORMANCE

Frequency response of the AE 300, using third-octave analysis of pink noise, shows basically level output from 60Hz to 20kHz within +/-3dB limits. There's variation across this range that will add character. Some plateau lift around 200Hz will add a little lower-end body, whilst a midband lift around 1kHz will help project vocals, giving strong image presence.

The tweeter lifts by around +2dB above 3kHz, enough to add top end sheen. However, its smooth output and

wide dispersion will make this amenable to hear, rather than edgy or sharp like uneven-response tweeters, adding in subtle high treble presence.

Lack of an upper midrange dip at crossover around 3kHz ensures strong delivery of detail.

Like most loudspeakers of its size the AE 300 is purposed for near wall mounting and this helps lift output that falls away slowly below 80Hz. A loudspeaker like this is best on a stand at one end of the room with listening at the other, so it drives the lowest room mode effectively.

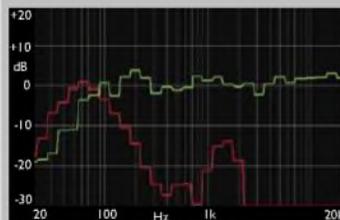
Lower bass is supported by a rear firing slot port around 60Hz (red trace) that our impedance analysis also shows as a trough at 60Hz with residual peaks either side. The port is quite sharply tuned, suggesting lively bass.

Sensitivity was on the low side at 85dB sound pressure level (SPL) produced from one nominal Watt (2.8V) of input. Amplifiers of 60 Watts per channel will go loud with these 'speakers. The reason is this is an 8 Ohm nominal impedance loudspeaker, where most are now 6 Ohms or less.

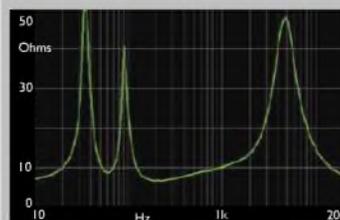
Fundamentally accurate but specifically voiced, the AE 300 will come over as fast, forward and with lively bass. It does need some power however, due to low sensitivity. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



ACOUSTIC ENERGY AE 300 £599



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

A compact loudspeaker that punches well above its weight. Highly recommended.

FOR

- tight bass
- fast sound
- easy positioning

AGAINST

- nothing at the price

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

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A KEF EGG WIRELESS DIGITAL MUSIC SYSTEM is on its way to MICHAEL HENDER letter of the Month winner in our March 2019 issue.

Letter of the Month

COMING CLEAN

Paul Rigby's review of the Kirmuss Audio KARC-1 stimulates me to write with firstly a few comments on the review and then to share my own ultrasonic based cleaning system.

It is clear from reading the review that the Kirmuss device is very dependant on manual processes, with up to five spray and brush steps each followed by 5 minutes in the ultrasonic tank. Although less dirty records may need less time, this means at least half an hour per record. I note up to two LPs and two singles can be cleaned together, but need to be staggered by a minute.

Watching the videos on the Kirmuss web site is essential and quite entertaining and gives more detail than I suspect space allowed Mr Rigby. Additional information gleaned from the videos is that the ultrasonic cleaner needs to be rested after about five cycles to cool down and the fluid in the tank needs replenishing after cleaning 15-20 records.

In summary, the Kirmuss cleaning system does appear to offer the most thorough clean a record can hope for, but at a cost of considerable time and effort. I would suggest one would only



Kirmuss Audio KARC-1 LP cleaner. "Watching the videos on the Kirmuss web site is essential and quite entertaining" says Charles Pidsley.

wish to use it for the most valuable and treasured items in the collection, although the amount of handling required makes me anxious about unintended damage.

Bearing all this in mind and the lack of a drying process (evaporation

and polish being the finishing stage according to the video), I think the review would have benefitted from a weighing up of the input required versus the result obtained compared to the all-in-one solutions available.

A few years ago I was looking

at options to upgrade from my Disco Antistat cleaner and investigated ultrasonic cleaners. Being unable/unwilling to spend upwards of £3000 on an all-in-one solution, I concocted the following process, all using the Audiodesk system fluid diluted with distilled water (no alcohol content)

Firstly I carry out a pre-wash using the old Discostat and discarded fluid from the ultrasonic bath, unless it's visibly murky

Secondly I use a rotating record clamp with up to three records called the Vinyl Stack Ultrasonic spin kit, imported from USA. This rotates the records submerged to the label in an ultrasonic tank. The frequency is 40kHz and power 360W. I use a 5 minute cycle in temperatures between 21 and 40 deg C. I use a speed for the spin which completes 3-4 spins in those 5 minutes

Lastly, having drained the records in the faithful Disco Antistat rack I dry them off using a manual vacuum device called the KAB EVI. There is no vacuum motor within this device, vacuum being supplied by attaching a domestic vacuum cleaner to the pipe at the side! (see photo). The record is manually turned on the turntable until dry. A little experimentation is needed in the attachment of the vacuum cleaner to achieve the right balance of suction.

Records are then inserted into anti-static inner sleeves and the cover in a polythene jacket.

What of the results? Invariably the records look very shiny and clean. There is no residue on the stylus which surely must be a good sign. All of the listening comments in the review apply, particularly dynamics and extended range, top and bottom. The sound stage appears broader as well.

Not all noise is removed and the results do seem quite variable, with some records being completely quiet and others disappointingly noisy still. I did get the worst offenders cleaned using an all-in-one system and was comforted if still disappointed to find there was no improvement. I suspect this depends upon the nature of the contaminant, with some being welded into the record surface.

The total cost of my system excluding domestic vacuum cleaner cost around £1000, much the same as the Kirmuss. This was mainly due to the horrendous freight costs of importation from the States.

I estimate I can clean 36 records in about 3 hours, so the trade off for not quite the best clean is that I can

keep on top of cleaning my acquisitions, many from charity shops. The fluids to clean 200 records cost £50 i.e. 25p per record.

Regards,
Charles Pidsley.

Hi Charles. That is both fascinating and helpful to other readers. Thank you. I recall long ago a comment made by a professional that vinyl contains lubricants that can be leached out by cleaning with strong alcohol solvents, making the vinyl noisier, not quieter. This is not to be confused with stamper release agents, as it often is.

An article on LP moulding compound in an AES 100th Anniversary of the Phonograph (1977) confirms the use of fillers, modifiers, plasticisers and anti-static agents in addition, so harsh chemical treatment of vinyl may well cause damage. Your findings that some LPs don't respond to cleaning is likely due either to low quality vinyl with noisy fillers, plasticisers or even coarse carbon black – or removal of lubricant in the cleaning process.

I would have thought that light pressure washing with water may be sensible, perhaps after an LP is soaked to loosen matter. I leave my records alone, being fearful about causing harm.

Also, I notice that some LPs become noisier over time, apparently as lubricants slowly dry out. This suggests restoration would mean soaking in a vinyl lubricant – not washing at all. I have no idea what

LP. There might be better ways to restore vinyl than attacking it! **NK**

HERE'S AN UPDATE

Well, it has been a few months since I last put pen to paper – thought it was about time I gave an update.

In response to my last letter you suggested Quad CD player and a valve based phono stage from Quad or Icon Audio. You also recommended some sound absorption for the back wall. Well, I have sort of taken your advice. On the phono stage I finally settled on an EAR834P and this will be arriving in the coming week, so valves are in :-)

I was tempted by the Icon Audio but two boxes put me off due to space challenges. Why do we not hear anything about EAR or Audionote phono stages these days? I also would be interested in other such phono stages.

On the CD side of things I have listened to a number of CD player combinations. One of my favourite was a two-box affair from Italian company Lector, it weighed over 40kg, came in two large boxes and used valves in the output stage, it sounded superb but sheer size counted against it and so reluctantly had to say no. I also listened to a couple of secondhand Audio Research players (with and without valves). I also tried to get my mitts on an AMR CD777 but no luck/availability and too impatient to wait weeks just to hear.

I finally decided on an as-new secondhand Canary Audio CT600 transport along with a Chord Quester DAC. I took a risk on the transport, buying it unheard which is really a



EAR's 834P valve phono stage. "Arriving in the coming week, so valves are in" says John Speight.

a vinyl lubricant might be though, or whether old vinyl could re-absorb it. But all this suggests that aggressive cleaning in particular is not necessarily a good idea for the

no-no, but it was a risk I thought worth taking, especially when you look at the build and specification. Based on first impressions when unpacking and early listening

(even with an old Rega DAC) I am extremely happy with my choice. It looks and sounds superb, built like a battleship.

I am currently waiting for the delivery of the Chord but based on demonstrations expect the set up to sound superb. The DAC was a challenge, I really wanted to try valve based DACs following my experience with Lector but was really challenged to find any at the right price point and to demo was difficult. It is a real shame that Icon Audio don't do a DAC, Audio-note are just too expensive and large. I was also tempted by the Sugden DAC but funds dictated a no, but never mind, maybe next time...this is a really dangerous and expensive hobby.

I have put on my Christmas wish list the floor standing sound absorption panels from GIK acoustics (www.Gikacoustics.co.uk), it will be interesting to see how these impact the sound. Have you tried them out – if so what were your findings?

I have also decided to end my time with ripping music in my main system. I spent a long time ripping over 500 CDs to a VortexBox, working out how to connect to a DAC, the internet via range extenders over mains etc, then downloading iPeng and finally getting music to be heard. Anyway, now the device is sitting on eBay and hopefully will be shipped to someone who will get better use out of it than me.

I also think I will give streaming a miss. Why? Firstly, the complexity. Secondly, I find it extremely hard to decide what to listen to, going through the iPad to choose and end up selecting the same old albums! With CDs and Records you look through your collection, decide what to put on and then listen end-to-end. I would say that overall, the quality is pretty good though and maybe in the future I will re-consider.

Last point. Would be good to get system reviews in your publication. I note that one of the competing magazines does articles on dealer setups, which I think is a good start. Challenge is that the articles are too high-level and it would be nice to have more in-depth stories. The other would be articles on how you take a system and slowly improve, through set up, changes to ancillaries etc. I recall one publication did this as an on-going story and each month they introduced a change and then determined impact, value-for-money etc.



"I am currently waiting for the delivery of the Chord Qutest DAC but based on demonstrations expect the set up to sound superb" says John Speight.

Next year I reckon it will be time to look at new MC cartridges; my current Ortofon is getting a lot of use :-)

John Speight

Hi John. You will find your new EAR 834P valve phono stage a great sonic match into your system, ended by Martin Logan Classic ESL9 hybrid electrostatic loudspeakers (that you forget to mention!). The ML's big XStat electrostatic panels are almost horribly revealing and will confirm to you the quality of sound from valves. Lots of fun ahead!

We haven't tried out GIK acoustics panels but this is a good way to go with rear-firing dipole electrostatic panels. Just make sure you move them around a bit – in other words experiment. Start out 1ft behind the panel. Move closer and you will hear them; move back and you will reach a sweet spot. Also try angling at 45 degrees, left and right, so as not to direct lower frequency non-absorbed energy back through the XStat panel.

A big record collection has late-night ceremony, the album cover artwork being an experience you can't get by any other means.

And finally please say something about your sound if you can. I thought those big XStats deeply dramatic. Tell us what you think. This is the exciting bit after all! **NK**

MY SOLUTION

Mark Pitchford's dilemma in your February 2019 edition Letters was an interesting one. Noel's knowledge of modern turntables is far superior to mine. If it was left to me – yes, you've guessed it – a well fettled Garrard 401

with an SMEIV arm and – if he could get one – a Denon DL304 cartridge; Expert Stylus and Cartridge Company may be able to assist.

The plinth would be a Slateage plinth system. This should appease Mrs P! Slate age website: <https://www.slateage.com/hifi/> Expert Stylus and Cartridge Company's e-mail info@expertstylus.co.uk

I wouldn't have thought that a subwoofer would be required with the La Scalas – as Noel said only if you want a better headache! What may be worth a try is to toe in the La Scalas, so they sit across the right angle of the two walls. This may just augment bass enough.

Mike Bickley.

Hi Mike. Yes, a Garrard 401 with SME IV is going to offer most excitement. The Garrard has pace and bass like no other. It has a smidgeon of mid-band hard colour from the big, cast alloy platter, unless a better platter mat is fitted, but that is seemingly its main sin – and not a big one. In truth you can hear that it has less temporal precision than a Direct Drive but the rest of the 401's sound is so overwhelming this hardly seems to matter. It would match Mark's system but I felt a Timestep modified Technics SL-1200G with Rega or SME arm was on-balance (and arguably) better, or more simply a Rega P9. But I would not disagree with your choice, having Garrard 401 in my DNA!

A Denon DL304 moving coil cartridge would not be my choice, but it is historically related in sound quality I guess – and much loved for its sound: big powerful and spacious with no lack of confidence.

Large horns do not go low. The Tannoy Westminster we reviewed in our November 2015 issue reached down to 60Hz. Worse, Mark Pitchford's La Scalas were – his pics show – half way down a room, which is the worst position to drive it. Understandable then that deep bass was absent.

A subwoofer is a solution but subwoofers of normal variety are not going to match into such a loudspeaker unless set up with a measuring microphone and spectrum analyser. Without such careful tuning you end up with an overpowered untuned bass system that's just a sonic headache.

Thanks for your views though; I know where you are coming from.

NK

QUEEN

At the beginning of 2019, it is very interesting for me to muse upon the fact that after many album releases, through many decades, and after just about all of said releases, this particular band are quoted as saying that they almost broke up. Every band member apparently quit (behind closed doors) at some time or another, only to rejoin the group (behind closed doors again) and carry on regardless. When you have four painters all painting on the same canvas, it can get a little uncomfortable, one band member was quoted as saying recently.

In the early days, there was next to



“Queen are still (and perhaps even more than ever), everywhere in 2019” says Neil Porter.

no money, differences of opinion, shall we or shall we not continue as a band. There may have even been a slightly negative change in public appreciation of the band at one point and there was certainly a massive shake up of the musical landscape due any moment, which you may have thought would not have helped their long term cause.



“A well fettled Garrard 401 with a SME IV arm and – if he could get one – a Denon DL304 cartridge, all in a Slateage plinth system should appease Mrs P!” says Mike Bickley about Mark Pitchford’s system (Letters February 2019 issue).

The shake up was Punk and the band I’m talking about are Queen... With the extremely sad passing of their lead singer in 1991, which could potentially have been the end of the band, (bearing in mind that lead singer was the mighty Freddie Mercury, that is no crazy suggestion), if we jump forward to today, not too much seems to have changed.

Queen are still (and perhaps even more than ever), everywhere in 2019. Musical theatre, currently touring internationally. A new film, which has been longed for by fans for what seems like an eternity. The music for every other advert on television, or maybe it just seems that way, and this from a band that said no to letting Sylvester Stallone use Another One Bites the Dust as the theme tune for Rocky III. Incidental music for many television shows. Appearing many times on the countless lists of the top 10 or top 100 rock ‘n’ roll countdowns. Books. Magazine front covers. Deluxe re-releases of their back catalogue. Tours. A pop up store in the centre of London. An intriguing 3D book/memoir. A website and forum in full flow and a seemingly endless fascination with everything Queen.

And why on earth not. By the time I have pressed send on this communication it would not surprise me at all to learn that Queen had been victorious in a vote to run the country or will have been contacted by Elon Musk and are set to be whisked away to become the first band to play in space. Either way, when all is said and done, I believe that

if Freddie Mercury could be aware of the current state of play, he would be delighted that Queen are still wearing his crown. 2029. Now who would bet against it...

Neil Porter.

UK SKILLS

In a thought provoking piece in his “Opinion” column of the Feb. 2019 edition: “The Far East leads...” Noel explores two basic questions: (1) lack of electronics skills in UK, and (2) why large projects, especially UK Gov. projects always go over time and over budget. It made me think and I’d like to comment on both.

There are a few UK companies that lead the world in Hi-Fi products, but they are usually high-end (read expensive) and niche (e.g. valves). For example Audio Note. I bought an Audio Note M6 pre-amp a couple of years ago. When I picked it up the owner of AN, Peter Qvortrup, gave me a factory tour. I saw the workstations of technicians building circuits using high quality discrete components, soldered, wired and tested by hand: technicians winding coils for the IOI cartridge: and even the vat of special wax used to dip mains transformers to minimise vibration. All based on designs by Andy Grove. These require very specialist skills which, as Noel says, sadly, are not much in demand.

When I started out, 40 years ago, I spent 3 years full-time at a Technical College learning the skills to become a Telecommunications & Electronics Technician. I went to work with my trusty ‘scope, Avo, and a fish-box of spare components, seeking out failing resistors, caps, coils, diodes, valves and transistors

in radio transmitters, radars, mainframe computers, terminals and direction finders. All skills that are no longer required with today's disposable hi-fi and electronics. There was a time when every village hosted a TV repair man with such skills.

Which raises the question: where do you learn about electronics today? Noel is right, we no longer have the skills in the UK. Hi-Fi World no longer has a DIY supplement, on the cheap paper, in the middle as a pull-out. As Noel said in a piece a few months ago, we no longer discuss hi-fi in technical terms and now use more abstract or "soft" descriptions. How many readers today could explain the difference between Class A, A/B, B, C, D amplifiers – the knowledge is no longer there. How many understand EMC interference and how to stop it?

One of the last bastions of electronic education is in Amateur Radio. The Licence used to be run at colleges throughout the UK as a City & Guilds evening class. Today it's administered by the RSGB and run as three courses [Foundation, Intermediate & Advanced] and taught by volunteers at local Radio Clubs. It does give a basic understanding and the RSGB does produce a number of books to help develop the topic. But it is still fairly superficial and lightweight with an almost complete lack of the detailed Maths which is needed to really understand the topic it's hard to explain the difference between Frequency modulation and Phase modulation



"I bought an Audio Note M6 pre-amp a couple of years ago. When I picked it up the owner of AN, Peter Qvortrup, gave me a factory tour" says Ted Martin.

A project is specified as a set of tasks often drawn out as a set of interconnected boxes (precedence diagram) or arrows (arrow network). Estimates are drawn up for each task of the time needed to complete, the resources, and the cost. And each task is shown in relation to the one before and the one after. For example you don't need to employ the bricklayers until you have foundations, so you don't want to buy the bricks before you need them. You don't want plasterers until the walls are built or buy the plaster (especially as gypsum has a short useable shelf life!).

Now, for simplicity, assume each task can finish either Early, On-time, or Late. In fact Early doesn't help much as you invariably can't bring any other tasks forward. If the tasks are specified accurately then if you run a probability

tendered to all EU countries. And, the Gov. purchasers, driven by politicians always trot out the same-old "... we must have value for the UK taxpayer..." mantra. This means, in practice, the cheapest quote will be selected.

And so how do companies win the business? Well first they strip out the Risk element and then the contingency, and then a little more "just for the pot." Hence right from the start the project is bound to overrun on time and cost.

Many companies use their Lobbyists to cosy up to the politicians and Civil Servants ["we've got a nice little earner for you when you retire..." "fancy being a Neddy?"]. The objective is to discover the cheapest quote so far. Then they say the magic words to a politician's ears: "We'll do it for 10% less" and the politician can announce an "amazingly



An Arcam Alpha 6 CD player. "My brother took it to a technician from Poland who had a small repair shop in a backstreet garage in Brussels. The fix cost 10 Euros and two years later it still runs perfectly" Ted Martin tells us.

without maths.

It's easy to say this doesn't matter and the skills are no longer needed but, I would suggest, this is a slippery slope. Once we start to simplify and abandon areas of knowledge the whole of society is diminished. And we lurch even further towards a world governed by soundbites and short attention spans.

Which brings me to Noel's second interesting point: why do projects overrun. It's a simple fact that all projects, and especially UK Gov. projects, will go over time and over budget. Logically they cannot fail to do so, and I'll explain why.

analysis [often called a Monte-Carlo Analysis] against the project plan, and if the plan has more than 10 tasks, with equal probability of each task being either Early, On-time, or Late you will find that there is a 99%(+) probability of the overall project finishing late and over budget.

So, if we know the project will finish late and over budget, what's the answer? The answer is to add 25% Contingency to all estimates (time & cost especially) and then a further 25% to cover Risk. And that of course is where the problems start.

All UK Gov. projects have to be

good deal for the taxpayer." Of course, the winning company doesn't really have a clue, no due diligence has been done, but hey-woppy-do-dah they've won the business and a win-bonus all round.

And then when the project starts to overrun the failing is hidden for as long as possible before being greeted with universal surprise when the contractor demands a further bung of cash.

And so the big questions leaping from Noel's piece is how do we get the skills we need to regenerate our economy, where is the next generation of skilled technicians coming from? And how do we stop politicians and Civil

Servants (i.e. amateurs) from creating vanity projects which divert huge amounts of cash into white elephants? Let's spend the money on something useful like, for example, developing high quality technical skills in the next generations.

And one final and true story. My brother, who lives in Belgium, had an Arcam Alpha 6 CD player with a fault. He took it to his main dealer who said it can't be fixed and offered him 10% off a new player. He took it to another dealer – same story. Then, on the advice of a friend, he took it to a technician from Poland who had a small repair shop in a backstreet garage in Brussels. The fix cost 10 Euros and two years later it still runs perfectly.

The moral here is that in Poland they don't have the same throw-away consumer economy; they don't have the same incomes or lifestyle; and so they still have technicians who understand how hi-fi works and can fix things. But then, if we all learned to fix things how would companies survive, and how would their Chief Execs justify their huge annual bonus?

Best regards,
Ted Martin

Hi Ted – and wow! That is one big appraisal – with I believe a lot of rude truth in it. Thank you very much for your views.

Everyone has – and now expects to have – a mobile phone, computer, iPad and what have you. None are produced in the UK. A Hong Kong University lecturer told me that primary school children there are introduced to the subject of electronics through toys and it is woven into the educational curriculum. For this reason perhaps (if it is so) all the gadgets we use are made in the Far East. There has to be some identifiable reason that Britain lacks skills that now underpin the world's largest companies, from Apple through to Foxconn. Most depressing of all though is that there is no recognition of our failure here. Complacency reigns. There is a stubborn refusal to put basic electricity/electronics into UK school curriculums for example, to promote interest and provide an overview understanding. It can be both simple and quick to teach the basics. Maplin used to stock a range of educational kits but sadly that has all gone too.

If you are in this educational sphere and would like to comment – including disagree! – do please e-mail us at letters@hi-fiworld.co.uk. **NK**



"Decca remastered much of their back catalogue in the '70s; these can be distinguished by the Decca logo on the label being rectangular rather than a quarter moon" says Mark Hodgson.

THE DAYS OF DECCA

I share your correspondent Mike Buckley's love (letters, Feb) of Decca Argo LPs from the '60s. Decca worked on submarine detection in WW2, subsequently launching "full frequency range recording" on 78s.

LP was launched in the US by Columbia in 1948, and in the UK by Decca in 1950. Because of the slower rotational speed, higher frequencies were less bright, so around the mid-'50s Decca adopted half-speed mastering; this led to criticism that the bass was less apparent, so in the early stereo era (late '50s/early '60s) they abandoned their purist microphone setup (a stereo pair) to put a 'spot mike' on the timpani, and area ones on the basses and cellos.

Also in this period, they edited the master tape, not a copy, before mastering, e.g. on Solti's Wagner "Ring" cycle (1958-65), leaving much repair work (due to stretching and breaks) for later engineers digitising the recordings for CD reissue.

Still in pursuit of perfection, and not satisfied with their early stereo cutting heads, they remastered much of their back catalogue in the '70s; these can be distinguished by the Decca logo on the label being rectangular rather than a "quarter moon". Some audiophiles may disagree, but I think these sound (marginally) better, and I daresay this admirable dedication to excellence contributed to the company's demise and takeover by Polygram (now Universal) c1979.

Final point: from 1957-67, American RCA recordings in the UK and Europe were made (and mostly distributed) by Decca in the UK, including (though not for distribution) the mail order subscription series for Reader's Digest, which sound much better on the original

LPs if you can find them (I daresay the CDs, on various labels, are made from tapes some generations removed from the originals).

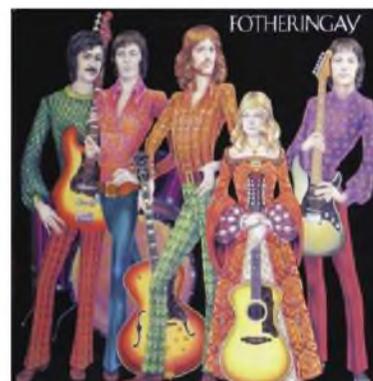
Kind regards,

Mark Hodgson

SOUNDS OF THE 70S

A huge thank you to you and Paul Rigby for the Fotheringay item in your January 2019 issue. I was a student in London in 1970 and was lucky to see and hear Fotheringay on 'the student gig' circuit.

Their music has stayed with me all my life and I have regularly listened to the original vinyl LP, and the later CD. I have bought the new LP but I would love to have an SACD or a high definition download of the original studio tapes! I rate the Fotheringay album and Fairport Convention 'Liege and Lief' as the twin peaks of British electric folk. 'The Sea' is one of my favourite songs and I have probably played it more than any other song over the years. It is a song about rising sea levels, written back in 1970 (or earlier) and in the form of a riddle. It is a true, and haunting, classic. In just a few poetic words she infers that the rise in sea levels since the last ice age, 'the coming of the sea', are part of human 'folk memory' and we should be concerned. The words are available via Google.



"Jerry Donahue from Fotheringay went on to become one of the most influential Fender Telecaster players ever" Mike Tartaglia Kershaw notes.

However, I am disappointed that Paul spent so many words on the Sandy Denny / John Peel 'interview'. He could have told us instead that, for example, Jerry Donahue from Fotheringay went on to become one of the most influential Fender Telecaster players ever, including recording a solo album called 'Telecasting Recast' (1998). He was once labelled "the string-bending king of the planet". And of course whole books have been written about Sandy Denny. What more is there to say? She will always be one of the best ever.

Best wishes,

Mike Tartaglia Kershaw



Joining the M-Two Movement...

Martin Pipe explores a capable duo from the revitalised Musical Fidelity marque.

Recently and with little publicity, Musical Fidelity was acquired by Austrian turntable specialist Project. Maybe that's why the cartons of their products

reviewed here – the M2si integrated amplifier and M2SCD CD player – feature a prominent 'Austrian Brand' message. The M2s are the entry-level options of an M-series that go all the way to 'no compromise' M8 products.

The new M2si amplifier is purely analogue, with no onboard DAC for digital sources. Oddly – given the new owner's passion for vinyl – there's no phono stage either. In all fairness, you'll get better results from



"can deliver music in a manner that does not in any way shame Musical Fidelity's enviable heritage."

a decent off-board pre-amp than you would from a cheap circuit thrown in to boost the feature count and I review a suitable contender – funnily enough, Pro-Ject's Phono Box S2 Ultra – elsewhere in this issue. In all, the no-nonsense M2Si is equipped with six unbalanced line-level inputs, on rear-panel phono sockets. A blue LED indicator indicates the one that's selected, either with the button underneath or the remote control (which will also adjust volume).

Promisingly, one of the inputs is marked 'Tape'. However, that's all it is – just another input; it's not the 'tape monitor' of a genuine tape loop, although the M2Si does dedicate a fixed line-level output so that the selected source can be fed to a recording device.

Next to this fixed output is 'pre out', which is subject to the actions of the volume control, allowing the use of an alternative power amplifier. The M2Si doesn't have tone controls, or any similar circuitry to potentially-muddy music.

The only other feature of note is the M2Si's ability to dovetail with audio-visual cinema gear, enabling your amp and speakers to reproduce



On the unusually-shaped preamp daughterboard of M2Si lives the preamp and source selector. Its output passes, via the motorised pot that is the volume control (there's a Burr-Brown digitally-controlled volume control chip too), to the power amp section that dominates the right-hand side of the interior, with heatsinks needed to cool the output transistors.



Musical Fidelity has endowed the M2Si's rear panel with six analogue line inputs, but the tape input lacks a 'proper' tape monitor function. Only one pair of speakers are covered by the fitted terminals – that accept bare wire or 4mm banana plugs.

The remote supplied is a rather dated-looking affair. However, it will operate both amplifier and CD player (as well as some other MF products). Most of the higher CD-related functions are accessible only via the remote.



the all-important front channels. A switch on the rear panel bypasses the volume control when one of the inputs is selected. To this would be connected your home-cinema gear, which usually has its own volume control.

The amplifier's 60 watts per channel (into 8 ohms) power amps are of Class AB design; this is not a budget Class D amplifier. They connect to your speakers via sturdy pairs of rear-panel terminals. The M2Si makes no provision for headphones.

The M2SCD CD player is as no-nonsense as its companion amplifier. It offers none of the features – MP3 compatibility, network streaming or DAC mode – that so many manufacturers deem necessary these days. Discs are loaded into a front-panel slot, rather than a tray, which precludes playback of certain discs – like the 3in. CD singles of the late 1980s, certainly if an adaptor isn't being used. However, audio-format (i.e. Red Book) CDs on CD-R or CD-RW media are accepted.

A row of basic controls are positioned beneath the player's LCD screen, which is capable of displaying CD-Text data as well as the usual numerical information. The remote that drives the M2Si will also control the M2SCD and it's necessary to access more advanced playback functions such as intro-scan, shuffle, programmed playback, repeat, track-scan and section repeat. You can also dim the display backlighting, for late-night listening.

The rear panel of the player is equipped with phono-socket (unbalanced) analogue outputs. Optical and coaxial digital outputs

are also provided for external DACs, providing an upgrade path.

PERFORMANCE

The pair gave a decent account of themselves – I tried two sets of speakers, Quadral Aurum Wotan Vllls and – to represent a more compatible price-point – Rogers GS5s. QED X-Tube speaker cabling was used, in a conventional 'monowire' arrangement. Both sets of speakers were driven more than satisfactorily, and grip was never lost; in all, the M2Si has a tight and dry sound. Kraftwerk – notably the track Etape 2 – revealed that the system is fast and rhythmically-compliant, which has the effect of naturally-engaging the listener. For this reason, it also succeeded with Radiohead's Burn The Witch (from A Moon Shaped Pool) and Steve Reich's Music for 18 Musicians (Ensemble Signal/Brad

Lubman, Harmonia Mundi).

We're not talking about particularly-expensive equipment here, and so it's a credit to the company's design team that the Radiohead track's complex production sounds uncluttered and correctly-proportioned. The Reich work, meanwhile, was given urgency and 'flow' responsible for its unique character – the music washes over you in a compelling and enjoyable way. Another great musical character is Johnny Cash, whose closely-miked baritone in The Man Comes Around (American IV) is conveyed with its emotional charge intact. He's accompanied by guitars, bass piano and – way back in the mix – organ. The Musical Fidelity system can comfortably-resolve these elements, without undue bias or exaggeration.

I also enjoyed a 1987 digital recording of Mussorgsky's Pictures at



Above the slot-loading CD drive is a 'Blue Tiger' board, bought in from Asian Philips offshoot Stream Unlimited, that controls its laser and motors in addition to providing most of the other core functionality of a CD player. The top boards contain the DAC and linear power supply with toroidal mains transformer.



Old-school connectivity from the M2SCD – no Ethernet or USB ports here! The player has analogue unbalanced phonos (no balanced XLRs) to feed amplifiers like the M2si directly. Standard optical and coaxial S/PDIF digital outputs will feed an external DAC.

an Exhibition (Slovak Philharmonic/ Daniel Nazareth, Naxos), and took great pleasure by being able to define specific orchestral textures.

A tad more clarity – across the board – is exposed through direct comparison with a Chord Qutest DAC (£1200) that was inserted between one of the M2SCD's digital outputs and a spare auxiliary input on the M2Si. But in all fairness, the

DAC provisions of the M2SCD – a 24-bit delta-sigma dual-differential configuration with 8x oversampling, the company say – acquits itself surprisingly well. And that you can hear the difference with an amp that is modest by high-end standards deserves praise.

CONCLUSION

As a system, the M2SCD and M2Si

worked very well together, and – with appropriate speakers, installed correctly – can deliver music in a manner that does not in any way shame Musical Fidelity's enviable heritage. This duo is quite old-fashioned in outlook, with no direct concessions to streaming or for that matter the vinyl revival. Such bases are however covered via the multiple line inputs.

MEASURED PERFORMANCE

M2si AMPLIFIER

The M2si integrated amplifier produced 78 Watts into 8 Ohms and 132 Watts into 4 Ohms, enough to go very loud with all loudspeakers.

Distortion levels were low at both low and high outputs at all frequencies, the critical 1W/10kHz value – a measure of crossover distortion – coming in at a very low 0.01% our analysis shows. In the midband (1kHz) distortion measured 0.003% at 1 W and 0.004% just below full output. With a high damping factor of 60 the M2 is will sound powerful but tight and very clean.

Input sensitivity was just 200mV, meaning the amplifier will work well with low output external phono stages for those who want to spin LP. There is no internal phono stage, nor a digital input.

Frequency response measured flat from 6Hz to 53kHz, unaffected by volume control position.

The M2si produced a fine set of results. It is a very low distortion design with plenty enough power for most systems and homes. **NK**

Power	78W
Frequency response (-1dB)	6Hz-53kHz
Distortion (10kHz, 1W)	0.01%
Separation (1kHz)	92dB
Noise (IEC A)	-87dB
Sensitivity	200mV
Damping factor	60

M2sCDD PLAYER

Frequency response of the M2sCD CD player measured flat to 21kHz our

analysis shows – a normal result for CD.

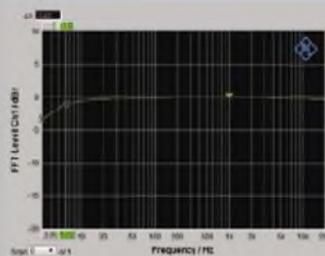
Distortion at peak level (0dB) measured 0.001% but at -60dB, 0.23% as our analysis shows. This is close to the 0.2% possible, set by 16bit quantisation noise and harmonic distortion from CD, resulting in an EIAJ Dynamic Range value of 100dB – close to the 102dB possible.

Noise is low at -113dB but this is due to infinity-zero muting; noise with a -60dB tone notched out measured -100dB.

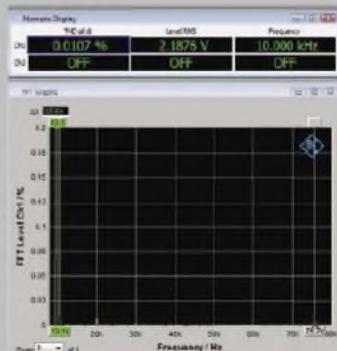
Output measured 2V, right on CD

MUSICAL FIDELITY M2si

FREQUENCY RESPONSE



DISTORTION



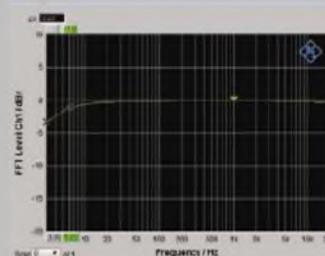
standard. There are no balanced XLR-socket outputs nor a headphone output or adjustable output level.

The M2sCD produced good if standard CD performance under measurement. **NK**

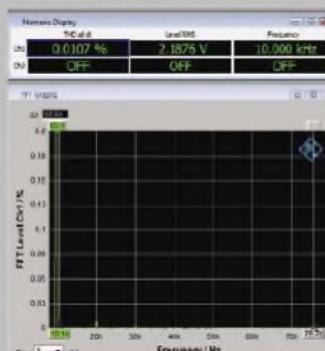
Frequency response	4Hz- 21kHz
Distortion (-60dB)	0.26%
Separation	95dB
Dynamic range	98dB
Noise	-113dB
Headphone output	none

MUSICAL FIDELITY M2sCD

FREQUENCY RESPONSE



DISTORTION



MUSICAL FIDELITY M2SCD AND M2SI £799 EACH



EXCELLENT - extremely capable.

VALUE - keenly priced.

VERDICT

A worthwhile combo, especially if your primary music source is the humble CD. And it's free of hassle.

FOR

- six line inputs
- revealing yet musical sound
- ease of use
- remote control

AGAINST

- no XLR in/out
- no USB in
- no phono stage

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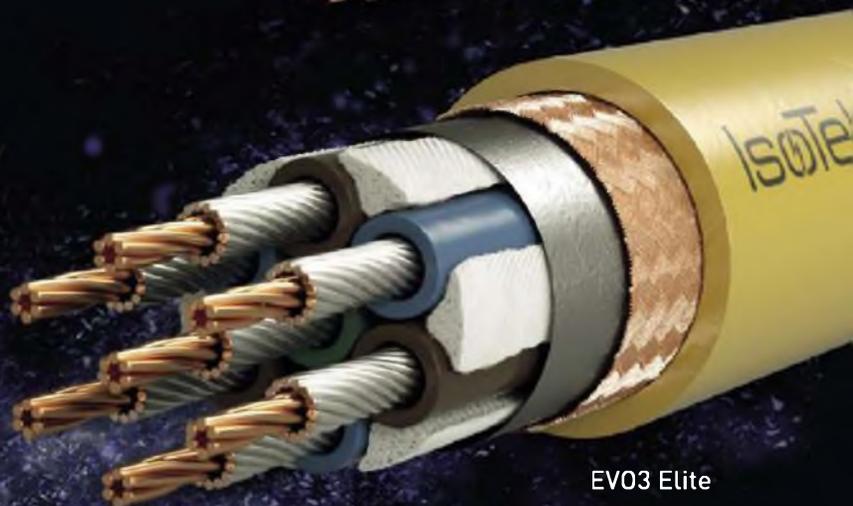
EV03 Initium



EV03 Premier



EV03 Sequel



EV03 Elite



EV03 Optimum



EV03 Syncro



EV03 Ascension

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Mini Marvel

Samsung's new AKG VL5 one-box loudspeaker and amplifier offers outstanding value for the price, finds Jon Myles.

One box loudspeaker and amplifier units are becoming ever more popular. They offer some great benefits – not least of which is the convenience of being able to connect via a mobile 'phone, tablet or even to plug in an auxiliary source such as a CD player, with the correct cables.

And this is exactly what the new Samsung VL5 offers: simple musical convenience. It is a handsomely-finished unit featuring a wooden surround, touch controls on the top and sides, plus a handy circular puck remote control.

As ever these days there's also a free application (Android and Apple) available for download that is an easier way to control the VL5. However, the so-called SmartThings app can take a bit of getting used to, as it can also control almost every product Samsung makes (fridges, cookers heating controls etc).

Having none of these I headed straight to the AV option that allowed me to select between Bluetooth, wi-fi or auxiliary inputs.

Inside, the Samsung has three mid/bass units and two tweeters allied to a Class D amplifier module – and the whole package has been voiced in conjunction

with headphone and microphone specialists AKG.

Power comes from a supplied outboard unit – which is where the sleek looks of this unit take a dip. Finished in bright white with a chequered-pattern lead it doesn't match the VL5 in terms of overall design, appearing incongruous. That said most people will likely hide this unit behind furniture so it probably won't be that much of a problem.

SOUND QUALITY

A big plus to the Samsung is that its sound has a solid presence. Playing John Campbell's 'Way Down In The Hole' via Bluetooth from



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an iPhone X his vocals came over with presence and a great sense of realism. The bass guitar also had real slam to it – which belied the slim size of the cabinet.

I was particularly taken by how much detail the Samsung

to replicate. Through the VL5 it had both a rich sense of atmosphere and superb separation between instruments – guitar, drums and bass

guitar work – coming across with excellent bite and good high-frequency definition.

For such a small unit the Samsung threw out a surprisingly wide soundstage, images established well to the left and right of the enclosure. With Pink Floyd's 'Dark Side Of The Moon' the full panning effects could be heard as a result. Every time I tried to trip it up the VL5 surprised me – even with the Jesus And Mary Chain's feedback-drenched 'You Trip Me Up' where the guitars stood tall instead of collapsing into themselves.

Nor did the bass on James Blake's 'Limit To Your Love' – a test of almost any loudspeaker – sound too weak. Admittedly, you will not get the sub-sonic power a large floorstander can provide but the VL5 never sounded less than beefy and always made me want to

"superb rhythmic ability make it a delight to listen to"

all came across in their own space. While the scale wasn't up to that of a separates system there was little sense of anything missing. Indeed, pushing the volume control from the app upward to near its limit via the wi-fi connection there was a room-filling sound.

The longer I listened the more impressed I became with the sound of the Samsung. Led Zeppelin's 'Whole Lotta Love' played via an Oppo UDP-205 universal disc player into the Aux input had plenty of punch to it. Robert Plant's vocals were distinct as was Jimmy Page's

continue listening.

On the downside the SmartThings app is over-complicated but that's hardly a deal breaker. And, if you have other Samsung products, it could be something of a bonus.

CONCLUSION

This is one of the more refined one-box loudspeaker/amplifier models on the market at present.

Good bass extension together with a smooth midband and superb rhythmic ability make it a delight to listen to. Its looks and finish also add to the overall appeal.



Underneath is a detachable plate that allows access to the power input and other functions.

could reveal. With Nils Lofgren's 'Keith Don't Go' his fret-work was sparkling, coming across with no lack of power. At the higher registers this compact loudspeaker may lack some delicacy but it covers its tracks well. Not once did I feel things were compressed or hard feeling – instead the music flowed with good toe-tapping rhythm.

The overall quality of the unit was well conveyed when playing the live version of Hugh Masekela's 'Stimela'. Play this on a set of separate components and it has an eerily uplifting quality – something I thought the Samsung would struggle



A small puck remote control unit makes controlling the Samsung easy from the armchair.

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FOR

- sound
- flexibility
- build quality

AGAINST

- app can be confusing

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The Art Of Atlas

Jon Myles reviews the latest state-of-art Asimi loudspeaker and interconnect cable from Atlas.



After long discussions about cables with Kevin Kelly, MD of Atlas Cables, I visited their factory and was invited to review their new flagship loudspeaker cable, the Asimi – a cable aimed firmly at the high-end. Price is £6600 per metre. To understand why, you only have to look at its construction. While most cables use 99.999 per cent oxygen free copper, sometimes plated with silver, Atlas have gone the whole hog.

The Asimi not only uses solid 6N-purity silver but the strands are OCC-drawn using a heated die to create one long crystal with no grain boundaries. There are six silver strands per conductor arranged in three pairs. Each strand is then

wound in air-filled cotton before being wrapped in a microporous PTFE tape. All six insulated strands are then twisted together at the ideal tension to quell microphony without expelling the air.

It sounds complicated and it is a lengthy process. Added to this the conductor ends are screened with an alloy/mylar foil and tin-plated OFC braid, terminated at the amplifier-end of the cable with a flying Grun connector.

You can also choose from 4mm connectors, spade and Z-plugs to suit your equipment. Our example used standard RCA's but also came sheathed in Atlas's stitched leather sleeve. These are produced by a specialist manufacturer in Scotland - and you can even specify your own

colour. It certainly looked cool – but how does it sound?

SOUND QUALITY

Inserted between a pair of our resident Martin Logan ESL-X electrostatic loudspeakers and a Naim Supernait 2 amplifier the sheer resolution of the Asimis became clear with the Grunt cable connected to a free RCA input.

Some listeners associate silver loudspeaker cables with a degree of hardness but Atlas have avoided this. The plucked guitar on Antonio Forcione's 'Meet Me In London' had improved delicacy and a little extra bite. Instruments came to the fore with enhanced clarity.

Delving a little deeper I tried The Clash's 'London Calling' where Paul

Simonon's bass had sufficient weight but a little more subtlety about it. These cables are adept at bringing out nuances in music that can often lay hidden. Dynamics and subtle shadings were laid bare but not in an overt, sharp way.

So with Nick Cave's 'Where The Wild Roses Grow' the piano

"The plucked guitar on Antonio Forcione's 'Meet Me In London' had improved delicacy and a little extra bite. Instruments came to the fore with enhanced clarity"

was sweet but still carried sufficient menace. An enthralling performance.

ASIMI LUXE INTERCONNECTS

The Asimi loudspeaker cables are not the only Atlas product to benefit from Atlas's new and unique topology. There's also their Luxe interconnects. Again these use solid 6N-purity silver OCC-drawn using a heated die to create one long crystal with no

grain boundaries. The Grun system is incorporated and they are again sheathed in hand-stitched leather.

Plugging these into the existing system added something again. Admittedly the gains were not quite as distinct as with the 'speaker cables but the soundstage became a little wider with a definite increase in bass weight and top-end definition.

Most noticeable was where the



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shimmering guitars on The Pixies' 'Into The White' coalesced together. Instead of becoming one squall of sound I could hear two distinct instruments - one playing the melody, the other the lead line. It's a subtle change but one for the better and helped bring the track to life in an impressive way. Furthermore, drums and bass took on more presence, each having a depth and clarity that came to the fore.

It all coalesced when listening to Billy Mackenzie's voice on 'Party Fears Two' by The Associates. His baritone voice had a richer timbre to it - seeming to dig a little deeper into the register. Yet it did not dominate

the rest of the track - with the backing instruments holding their own scale in the overall sound.

Switching from the Martin Logan to a pair of standmount Spendor AIs the two Asimi cables worked together to provide a seamless and smooth presentation. I couldn't help but be impressed by just how the guitars on Lynyrd Skynyrd's 'Free Bird' came across. The interplay of the guitars was excellent - but most importantly there was a rapid feel to the music and real depth to the sound. Even the applause at the start and end of the track sounded realistic - not something all cables can manage.

Listening to BBC Radio 4 I couldn't help but notice just how rich the tones of presenters were - each taking on a stronger sense of individuality and presence.

CONCLUSION

The Atlas Asimis are expensive but they are superbly constructed and, most importantly, have a gravitas few others can match. They impose little of their own character on the system and allow the music to flow freely.

The bespoke leather sheath is also something not seen elsewhere and adds to the luxury feel. Plug these into your system and you will definitely hear a difference.



The picturesque town of Kilmarnock, Scotland, is where Atlas has its base. Crucially, they told me, there is no soldering involved with their cables – MD Kevin Kelly firmly believes adding different materials adds a filter to the



sound flow. They are crimped instead.

Kevin is always looking at new materials and construction techniques. One of the latest is the Grun coherent earthing system designed to combat the low levels of EMI (electro-magnetic interference) and noise on the signal ground which can subtly modulate and

degrade the overall noise levels of the system. It earths the loudspeaker lead by attaching to an unused RCA socket on the amplifier.

Attaching the Grun lead to a pair of Atlas's flagship Asimi loudspeaker cables the noise floor dropped and instruments were projected much further into the room. Acoustic guitars took on a richer timbre while the whole sound had better musical tone. It works well. **JM**



Kevin Kelly, the Managing Director of Atlas Cables, inspects the latest products.

ATLAS ASIMI LOUDSPEAKER CABLE FROM £6600 PER METRE



OUTSTANDING - amongst the best

VERDICT

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FOR

- silver conductors
- unique construction
- grounding system

AGAINST

- not cheap

ATLAS ASIMI LUXE INTERCONNECT CABLE FROM £2950



OUTSTANDING - amongst the best

VERDICT

Builds on the qualities of the Asimi loudspeaker cables but adds a little extra.

FOR

- OCC silver conductors
- grounding ability
- leather sheaf

AGAINST

- best with Asimi 'speaker cables

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Dream Machine

This month, Martin Pipe examines a mid-1990s pro-grade DAC from British manufacturer Prism Sound.

A professional ADC that gained critical acclaim from the recording industry was the AD-1 from Prism Sound, a company founded in 1987 by two electronics engineers who shared “a lifelong passion for audio”. Graham Boswell and Ian Dennis met in 1981 while working on digital signal processing (DSP) technology at Rupert Neve, the world-renowned Cambridge mixing-desk manufacturer. We now take DSP for granted, but in the early eighties it was cutting-edge stuff.

Six years later, Prism did the

companies fed this boom by reissuing older albums remastered for the new format. Prism’s first product, the ‘Dream’ AD-1 16/20-bit ADC, became the “product of choice for the most critical users”.

Genesis may have bought AD-1s for its studio, The Farm, to digitise the master tapes of their famous back-catalogue – but these magic boxes weren’t just being used for rock and pop. Classical producers wanted the very best resolution for their new CD releases. The list of labels that chose Prism converters included Chandos, Deutsche Grammophon and Linn. Users of the

Naturally, a fine ADC needs a fine DAC for session playback. In 1995, Prism Sound launched to this end the similarly grey-fronted Dream DA-1 – as featured here. According to Graham Boswell, this £3k (in 1996) DAC was “the companion to the AD-1 and AD-124 units, designed with live-to-stereo recording (and monitoring & editing) as well as mastering in mind”. The DA-1 is, like the ADC, designed for mounting in a 19in. rack and makes no pretensions to domesticity. Some might call it ugly, but to my mind industrial would be a fairer description. To me, the extensive connectivity that you’ll find



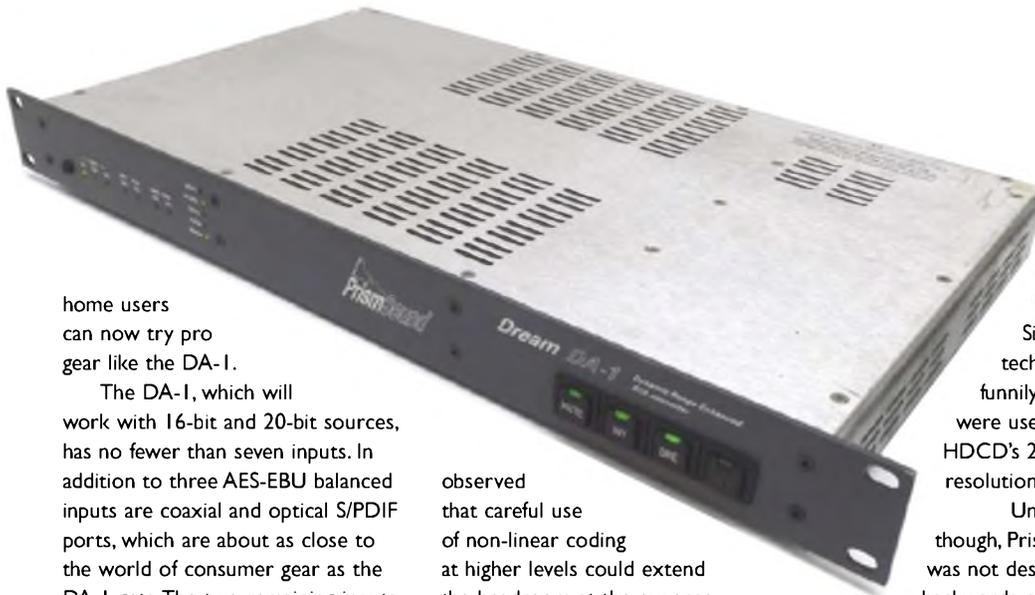
The Dream DA-1 employed four TDA1547 Bitstream DAC chips – described by maker Philips as ‘dual top-performance’ devices – in a parallel, balanced architecture for better signal-to-noise ratio and improved distortion.

opposite of what high-tech firms tend to do these days - they switched focus from consulting to the development and manufacture of products. Professional audio was to be its focus; not only did its founders share a passion for high-quality sound, but there was an enormous public appetite for CDs. Record

AD-1 (and its follow-up, the AD-124) were apparently impressed by the “amazing low-level detail evident between takes...when the musicians had gone to lunch and all that could be heard was birds singing outside”. These low level sounds, Prism claim, “could not be captured with the earlier generation of ADCs”.

on the DA-1’s rear panel gives you some idea of the type of user it’s aimed at.

The only analogue outputs are balanced XLRs, an industry-standard connection in the pro-audio world where reliability and performance are crucial. XLRs are now appearing on even modestly-priced hi-fi amps so



home users can now try pro gear like the DA-1.

The DA-1, which will work with 16-bit and 20-bit sources, has no fewer than seven inputs. In addition to three AES-EBU balanced inputs are coaxial and optical S/PDIF ports, which are about as close to the world of consumer gear as the DA-1 gets. The two remaining inputs are the complete opposite; these are three-socket SDIF (Sony Digital InterFace) connections intended for use with PCM1630, an archaic piece of studio equipment that recorded 16-bit PCM onto a U-Matic video cassette.

There are also optical, coaxial, S/DIF and two AES/EBU digital outputs – and their purpose is interesting. They provide the same data as present on the selected digital input, translated into the appropriate format. However, any incoming jitter is “filtered off”; Prism understood the damaging effects of jitter at an early stage. In other words, the DA-1 is not only a unit able to provide “digital to analogue conversion without sampling jitter or data truncation, regardless of the source’s resolution or timing, but it’s a digital audio format converter, corrector and de-jitterer too. Pretty flexible stuff, then.

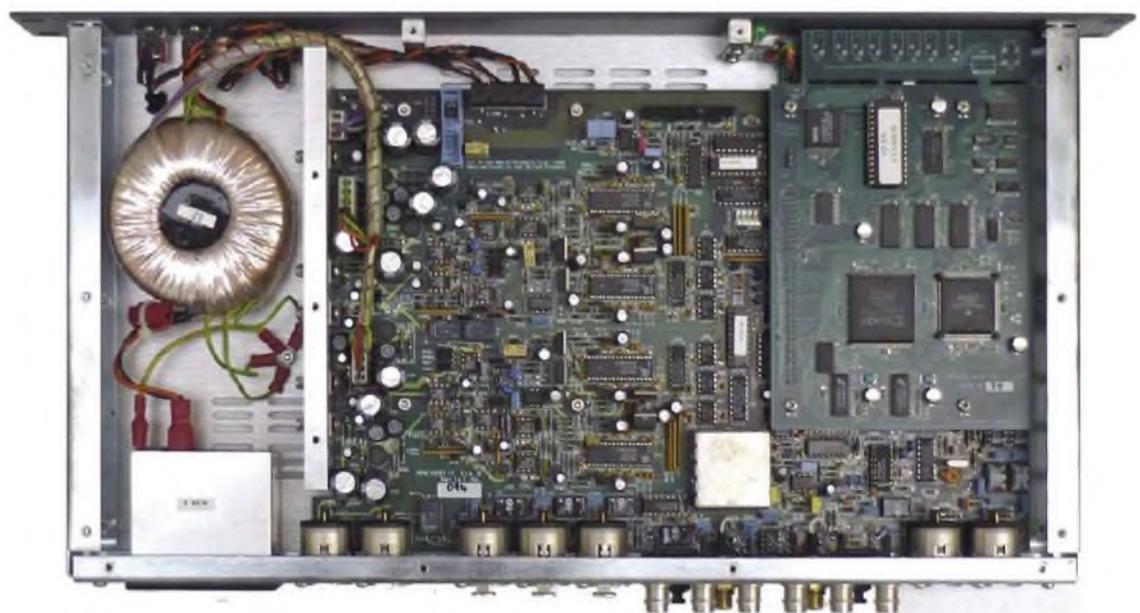
Another interesting feature, albeit one unlikely to find use outside of a recording studio equipped with Prism, is accessed with a press of the front-panel ‘DRE’ (Dynamic Range Enhancement) button. DRE, Boswell told me, was “designed for professional use – it provided a means of achieving higher dynamic range from 16 bit media. At Prism, we had

observed that careful use of non-linear coding at higher levels could extend the headroom at the expense of small increases in distortion for the highest transients”. The DRE system, Boswell explained to me, enabled studios to take advantage “of standard 16 bit DAT and CD recorders, rather than the very much more expensive NAGRA-D machines”.

“At that time”, Boswell says, “the improvement in low-level

“very good”. Similar basic techniques, funnily enough, were used to achieve HDCD’s 20-bit effective resolution.

Unlike HDCD, though, Prism’s DRE was not designed for backwards-compatibility, as Boswell admits; DRE material “was not intended to be used undecoded...it could be played, but would it would be very loud and distorted”. Engaging DRE with ‘regular’ CD material yields a terrible sound, too. With regular CD (and CD-derived) material, though, the DA-1 can be revelatory. Remember that a studio DAC must show the



The DA-1 was designed for constant professional use and reliability was of utmost performance. It is a packed and complex design, as this picture shows.

performance that was achieved by pushing the low end of the converter range down, in both the ranging analogue-to-digital architecture and the DRE encoding system, was considered well worth the compromise. we had great success with the AD-1/AD-124 as a result. Lots of people loved these ADCs, but comparatively few used the DRE - which in our view was actually

music being fed into it as it is, warts and all. The sound delivered by the DA-1 is incredibly detailed for 16-bit, and can be defined by its utter transparency and freedom from colouration – regardless of the music you care to put through it. The same philosophy can be found in later models – including the superb £1,500 Callia DAC/headphone amplifier that marked



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British Grove Studios, owned by Dire Straits guitarist Mark Knopfler (on the left, alongside studio staff), has spent “more than £100,000 on its (approx. 24) Prism Sound ADA-8XR converters”. On the day Prism visited British Grove for the PR shoot responsible for this pic, Knopfler said that he spent such large sums of money because “they (the ADA-8XRs) are better!” Prism co-founder Graham Boswell is at the back of the room, with some of his converters.

Prism’s entry into the hi-fi market.

Expensive pro gear never sells in the same quantities as consumer products, and Boswell revealed that “about 200” DA-1s were made before the model was replaced by the DA-2. The latter “used the same (Philips TDA1547) converters,

noise ratio and improved distortion”. Instead of the DA-1’s off-the-shelf Yamaha filter, though, the DA-2’s was implemented in DSP within an FPGA/DSP that could cope with higher sample rates (96kHz, against the DA-1’s 48kHz). The DA-1 is incredibly complex inside, its slim

major clients like “Abbey Road, Metropolis Mastering, Sterling Sound, Precision Mastering and - I think - British Grove”. If Boswell’s memory serves him, “experienced people like Tony Cousins at Metropolis still regard it as a reference unit”. The DA-1, which will work with 16-bit



There are no unbalanced outputs on phono sockets of the DA-1. Instead, the outputs are professional balanced XLRs. Three AES-EBU balanced digital inputs are fitted, plus optical and coaxial and an S/PDIF input – for Sony PCM1630 processors of the sort that were fairly commonplace in 1980s studios.

architecture and the same analogue circuitry...we made around 250 DA-2s, which were last listed at £6995”. Thanks to the small production runs, finding used DA-1s or DA-2s is, as Boswell admits, “like looking for the proverbial rockin-horse s**t, as the people that have them generally hang on to them”.

Both DA-1 and DA-2 employed the same parallel, balanced architecture, in which “certain key low-order harmonic distortion products would tend to cancel in the two halves of the balanced DAC arrangement...the benefits of the architecture were better signal-to-

frame being packed with components. Most contemporary consumer DACs were much simpler, but then again they didn’t have to do as much – and could rely on off-the-shelf components. It’s amazing the DA-1 is so transparent...

Although recording studios, broadcasters and other professional users were the primary users, Prism did sell a few to audiophiles - Boswell remembers a “dentist buying one, after a late-1990s hi-fi show in New York”. Quite a few were sold to Chinese audiophiles too. Boswell also recalls that the DA-1 was used as a reference DAC for many years by

and 20-bit sources, has no fewer than six inputs. They are ‘cycled’ through with a front-panel button – no remote here! To save time, inputs that aren’t required can be disabled. In addition to three AES-EBU balanced inputs are coaxial and optical S/PDIF ports, which are about to close to the world of consumer gear as the DA-1 gets. The remaining input – an entirely professional proposition – is a three-socket SDIF (Sony Digital InterFace) connection intended for use with PCM1630, an archaic piece of studio equipment that recorded 16-bit PCM onto a U-Matic video cassette.



PAUL YOUNG

The CBS Singles Collection 1982-1994
Edsel

He offered a combination of soul and pop with an extended talent. Although he sang many covers, he also wrote a fair amount of his own material. Many of you will have come across Paul Young before you even knew he existed. I thoroughly enjoyed the 1978 novelty hit, 'Toast' from his group, the Streetband. He pulled a few of those band members to form a Motown-type outfit, the Q-Tips. Signing up to CBS turned his head to his own solo potential. This led to his first solo outing, which appears in this set, 'Iron Out the Rough Spots'.

This collection of singles features nineteen facsimile replica CDs, stored in a slipcase box plus a signed A4 Print. That's 108 tracks, including every b-side and alternative mix. How thorough is this set? Well, many of these tracks are available on CD for the

first time. Also available within the box is a DVD of eighteen promo videos plus a thirty-six page book. Then came the jaunty 'Love of the Common People' and, finally, his third attempt, which hit No. 1, 'Wherever I Lay My Hat (That's My Home)'.

The concept is good, so is the packaging and the content – but what of the sound quality? Playing 'Love of the Common People' I was impressed by the sheer breadth of the soundstage on this hit single, exhibiting backing vocals far left and right. Mids are clean, clear and detailed but relatively balanced in terms of compression. The latter does exist (these are singles, after all and singles are notorious for a compressive presentation) to an extent but it's restrained and tends to add a touch of focus which can be heard on the punchy percussive bass.

AUDIOPHILE CD



MONTANA

Change in the Weather
Angel Air

A bit of a weird one, this. Mostly because of the name of the group itself, its evolution and how it's viewed now by fans and followers. Initially known as the Mission Mountain Wood Band, this bluegrass/country rock outfit were also known as M2WB. Hitting the scene in 1971, they were multi-instrumental talents keen on a multi-part harmony or two - and very nice it was, I might add. After releasing two albums, the original band split and a reformed outfit replaced it known as The Montana Band, releasing this very album. Then tragedy struck: two of the original M2WB band members, three newer The Montana Band members plus the sound manager were killed in a plane crash. Pilot error was blamed as ten people lost their lives. The surviving band members, according to reports, then apparently reformed as Montana.

Originally released in 1981 on the Waterhouse label, half of the album was penned by band members Rob Quist and Kurt Bergeron with the Quist-penned single 'The Shoe's on the Other Foot Tonight' becoming a signature tune.

The tone and presentation of the album could be described as a bit on the thin side with much of the musical information living in the midrange and upper bass areas. This gives the music a light and airy feeling, fleet of foot you might say too. It also betrays a strident approach during crescendos, within high pitched guitar sections and saxophone solos.

Musically, the album moves in Eagles circles with lazy country rock vibes and an approachable lead vocal style with easy going harmonic vocal backing with a distinctly adult-oriented arrangement made for US-based AOR FM stations of the time.

Fronted by keyboard wizard, Dave Greenslade, the band Greenslade was created from the remnants of another prog group, Colosseum with the help of the bassist, Tony Reeves. In fact, Greenslade was a two-keyboard group with ex-Episode Six keys man, Dave Lawson, drafted in. Mellotrons swamped their early work as their music explored rock but also some blues and jazz with delicious harmonies and counterpoint melodies poking their heads into the mix. You'd often find Lawson singing his little heart out and playing flute - so Greenslade certainly got his money from that job recruit!

Andrew McCulloch was brought in from King Crimson and then, before this, the group's third album was released, the band expanded once more to add Dave Clempson who have previously played with Humble Pie. He took the guitar duties with Graham Smith (ex-String

Driven Thing, Harry Nilsson, etc) appearing on violin.

I list the line-up to emphasise just how talented this group was - an aspect of Greenslade that is often overlooked. Too often the band is dismissed as 'mere prog' with a wave of the hand. They were a solid creative machine.

You could make a case for this album being the creative peak of the group, but I'd also add balance. Balance in terms of instrumental finesse but also hard edged music presentation.

In terms of the mastering, I was very happy with the overall job and a commendation should be awarded to Esoteric on this one. The sense of tonal balance for a CD is there to hear in all its glory. There's a slight compression lurking but, on the hole, also a mature and rich suite of mids that blend well with a bass that sits nicely in the mix. A superb CD release.



GREENSLADE

Spyglass Guest
Esoteric

AUDIOPHILE CD

I've been watching a few vintage episodes of 'Top of the Pops' via BBC TV's BBC Four. The time is the mid-eighties and there in all his spiky-headed glory, was Howard Jones in his synth-pop pomp. Sometimes playing one of his stack of keyboards and then whirling away to sing into his head-mic, touching his ear to draw attention to it.

Jones was the epitome of the synth pop genre during this time. He was also ever-present - or so it seemed - in the charts. Always on 'TOTP'. In fact, co-presenter, John Peel, once introduced him with the free and easy "Howie" on one occasion, such was his familiarity.

This Southampton-born artiste moved to Canada as a child, joined a prog outfit called Warrior, moved back to the UK, joined college, flunked out, played in jazz and funk bands back in Southampton and then went solo. It was John

Peel who discovered the musician which lead to Jones attending one of Peel's famous radio sessions and grabbing an Elektra record deal.

'Human's Lib' (1984) is a fest of electronica but it's also much more and you'll realise this if you ever see the original music videos that accompany the singles. The album encourages the autodidact. Mostly with words of love, peace and harmony plus oodles of melodic hooks to make the medicine go down.

'Dream into Action' (1985) continues the psychology theme but moves more into self-help territory (i.e. 'Things Can Only Get Better', 'Dream into Action' and 'No One is to Blame'). In terms of synth pop? It's bit less specialist synth and a bit more specialist pop but it still has plenty going for it.

Both editions are packed with alternative tracks, remixes and a DVD of videos from each.



HOWARD JONES

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"For me the Chord M Scaler was a digital revelation"



Noel Keywood

I didn't know what to expect from Chord Electronics M Scaler: another device for tid-dling up dodgy-digital perhaps. There are no end of contrap-tions that re-clock to reduce jitter, up-sample, filter and do the fandango – all at the same time. They offer improvement – but sufficient improvement? Debatable. M Scaler would join the debate, the cynic inside thought.

Not so: it leads the debate. The shock of M Scaler is sudden revelation of what digital can sound like, which then implants into the brain the expectation of what it is meant to sound like – if you see what I mean! I thought digital sounded like exhibit-A, M Scaler says it sounds like exhibit-B. Oh.

As a reviewer I get to hear great digital from top quality DACs, nowadays preened by all sorts of mystical processing schemes.

Then there's DSD that comes at you from another direction, barely sounding digital at all. Think open, spacious, atmospheric and analogue like.

But now, having heard M Scaler, they've faded backwards in sonic merit.

I walked into the office on a quiet Sunday, span CD via our Audiolab M-DAC+ and heard a sound that was image-vague, slightly turgid and generally imprecise. But only after hearing M Scaler. Before this experience M-DAC+ was a go-to for CD and hi-res replay. Now, suddenly, not so.

But the issue is a little more complex. M-DAC+ can be fed from M Scaler and with this happening it gets right back into the fray. I'll need to explain why.

M Scaler is a one-million tap digital filter, not a DAC like M-DAC+. Its designer, Rob Watts, feels it is a milestone in digital. Since he has

been muttering darkly about digital since the early 1990s, from when I first met him, saying at least 352kHz sample rate was required when such a thing wasn't possible, Rob's sense of belief and determination here is undisputed – and unique.

Important too that Chord Electronics MD John Franks, similarly a skilled and experienced electronics design engineer, recognised Rob's ability and was prepared to support it financially, leading to the company's range of unique digital products – not available, imitated or understood elsewhere in the world.

Some may like to pass all this off as digital hocus-pocus, but you can't in view of the class leading measured performance we confirm by measurement.

Chord Electronics face a commercial dilemma with M Scaler. They could have made it exclusive to their DACs, via DBNC connection, but they have not. It has been given digital outputs so it can be used with any DAC. This is commercially savvy because it opens up a wider potential buying audience. But perhaps not so savvy in that it also suits and cleans the sound of rival products, such as Audiolab's M-DAC+ – and perhaps many others. Ouch.

The idea of using M Scaler with other DACs got me intrigued. If, as Rob Watts claims, a one-million tap digital filter sorts out CD then this little box of tricks could be revelatory – and that's how it turned out. I have now been re-programmed to a different expectation of quality from CD.

But, should you have a fat wallet that needs lightning and a local Chord Electronics dealer willing to help – a small warning. It worked with Audiolab's M-DAC+ but only up to 176.4kHz output; M-DAC+ fell silent with 352.8kHz no matter what cable I used. With Arcam's

CDS50 it worked at all output sample rates, including 352.8kHz, but Arcam's display said it was receiving 44.1kHz and I heard no subjective improvement. So the issue of DAC compatibility is hazy.

M Scaler with Hugo TT2 leaves the pack behind in measurement but M Scaler in itself has little measurable impact – although perhaps not with time-domain impulse response measurements I haven't yet applied.

It is with listening that the mists – even the fog – of digital clear. M Scaler took CD and expunged its sins! This threw light onto decades of my insistence that digital (meaning CD) was not as perfect as claimed (and widely believed). Now, in addition to all its other identified faults that degrade sound quality, M Scaler shows that more is needed to get the best from CD: proper filtering.

M Scaler cleans up PCM digital recordings by clearing muddle and imposing focus. It also cleans and clears hi-res (24/96) if to a lesser degree. It does not bring CD up to good hi-res; the limitations of 16bit code are still there. All the same CD from M Scaler was more composed and impressive than everyday hi-res not processed through M Scaler.

M Scaler processes all digital except DSD but when I listened to Diana Krall's 'Narrow Daylight' in 24/96 via M Scaler, then DSD via M-DAC+ (that doesn't turn DSD to PCM) I felt M Scaler just had it. More concise.

Such a comparison is 'interesting' rather than definitive. But it does suggest that normal digital (PCM) can sound pretty damn impressive when well processed. For me all this was a digital revelation. M Scaler brings both the subject and the music into focus. I hope we get to hear more on all this very soon as it comes onto the open market. ●

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"I used to try to out-drink Bogey and Errol Flynn"



Paul Rigby

Many of us enjoy the work of so-called "lesser" musical artists. My own collection is bulging with the work of such lost creatures.

We often look at the stars out there from the likes of The Beatles, Led Zeppelin, Queen, Elton John, Frank Sinatra, Bing Crosby, Madonna, Michael Jackson, Beyoncé and more. Then in comparison there are many other artists out there that never truly maximised the talent they had with any success. Never truly 'made it', in the classic sense. Never realised their potential because of – what – personal addictions? Trouble with the law? Mental problems?

Of course, such statements are not only sweeping but they are debatable and my comments can easily be viewed as contentious. After all, who am I to judge? How dare I call anyone's talent unfulfilled? It can be argued that treasured music from such artists only appeared in the first place because they had a hard time in their lives and that, if everything was plain sailing, they would never have produced such vital music. Who knows?

It's a debatable point. Nevertheless, the following is a 'woulda-coulda-shoulda' list. All the artists, oddly enough, have received CD releases direct from the worthy Jasmine label (www.jasmine-records.co.uk), who must have a bead on such people, so you can judge my comments either way by listening to their respective CDs for yourself.

First up? Gordon MacRae. Yes, yes, I know, he was a big star and appeared in two of the most successful Hollywood musicals there's ever been: 'Oklahoma' and

'Carousel'. So, what on earth am I talking about? A crazy choice, eh?

The problem with Gordon MacRae – and Gordon MacRae readily admitted this himself – was, you may be surprised to hear, Gordon MacRae. Firstly, just as he was building a tremendous film career, he quit. His voice was as good as Howard Keel's, to name one competitive example, but I (and many others) wanted him to push his talent just as far and, well, he didn't.

His problem? He was an alcoholic. "I used to stand at the bar and try to out-drink Bogey and Errol Flynn" he said. His work on the four CD compilation, 'Lover's Gold' illustrates that talent.

A lady from Northern Ireland next, Otilie Patterson. Never heard of her? You should have. She was a white girl that sang the blues and you can hear her on the CD, 'The First Lady of British Blues'. Married to jazz legend, Chris Barber, she shared a stage with Lonnie Donegan and she sang with legends such as Sister Rosetta Tharpe, Sonny Terry, Brownie McGhee and Big Bill Broonzy.

Muddy Waters paid Otilie Patterson the biggest compliment when he stated, "Hey, lady, you sing real pretty. How come you sing like one of us?" George Melly compared her to Bessie Smith. Yet her talent is often forgotten. Was that because of her frequent health issues spiking her forward trajectory, perhaps?

Andy Starr had the name and should have been as big as Elvis Presley. A man initially buried in poverty, a hobo who rode the trains illegally travelling around the USA and a delinquent who pulled a gun on a teacher at the age of 14.

Starr later recorded rockabilly singles and signed with MGM who

completely failed him. They didn't have a clue what to do with Starr. He grew bored, ran off to Alaska, hit the drink and the drugs, then he kicked both, became a sawmill worker, recorded some forgotten country singles, found religion, became a preacher and then – get this – found politics and ran for President of the USA...twice! His 'Rockin' Rollin' Stone: 1955-1962... Plus!' gives you an idea of this lost talent.

Ronnie Self is my last entrant. A dead cert pop star. He had talent, he was a wild child vandal, he had looks, he sang R&B, he sang country and even rockabilly. He had an Elvis-ish, Carl Perkins-kinda voice, he was a songwriter. I mean...come on! Self initially missed a vital tour because of the birth of his son, then later his personal life deteriorated, he gained a wild man reputation, he was barred by TV because of that, then dropped by his record label (Columbia - big league stuff), he hit the drink and drugs and flailed until the end. The 'Ain't I'm a Dog' CD tells a story of 'what ifs'.

Fractured talents are often of more interest to music fans than established stars. Partly because their life is often laid bare on the stage. Their performances are often short-lived, raw, honest and to the point.

Production is not the focus for these people, the message is the focus. And that's the dichotomy of 'lost' talents. Often the message they push out to the world is longer lasting and more meaningful than any 'I Love You' hit from a rich megastar whose penned lyrics dissolve in the memory as quickly as sugar in your tea.

Yet, in such cases who, in artistic terms, is the success and who is the failure? ●

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"...A Game Changer!"

- Matt,
TCG Head-fi Oct 3

“How can we sell sound equipment if there are no places to hear it?”



Jon Myles

I have two major passions in life – one is hi-fi and the other is watches.

So, while I was searching for one of the latter recently on a local High Street

something struck me. There were no end of shops selling watches, from relatively cheap quartz models to the likes of high-end Rolex, Tudor and TAG Heuer costing an arm and a leg. I did not see one store stocked with loudspeakers, amplifiers, turntables or cables and interconnects.

Search as I did, I failed to find a single hi-fi shop. However, there were no end of specialist jewellers and the likes of Ernest Hart, Beaverbrooks, H. Samuel et al all bursting with timepieces.

Which made me think: how exactly are we expected to sell good quality sound equipment to a new generation if there are no places to hear it in?

I recall my brother once asking me – long ago – why I had so much passion for hearing music through – what he perceived – as an unnecessarily expensive set-up. In truth, by today's standards, it was nothing of the sort at the time, consisting of a Technics CD player, NAD amplifier and a pair of KEF standmount loudspeakers.

Quite a simple system then, even for the time, but as soon as he heard the sound he was taken aback and within a few weeks had gone out to buy something similar. Shortly after he started looking to upgrade. All this because he had heard a simple but good system in the flesh and realised the power of

music was enhanced.

He's now significantly moved upwards in terms of his system but would never have done so without having first heard mine.

And nor would I have invested money in that initial set-up without having it demonstrated to me by a friendly dealer who took the time to explore my budget, talk to me about my room size and listening preferences and then put together a set of components that suited my needs – even down to the interconnects and loudspeaker cables.

Yet those dealers seem to be disappearing. There are, of course, many reasons for this. Maintaining a High Street presence with the rental required and size of store needed to stock the likes of loudspeakers, amplifiers and turntables is not easy. They are far larger products than watches. Then a dedicated listening room is needed to demonstrate all this, plus expert knowledge to explain all the fine details. Not something needed to sell watches.

Watches are much easier items to stock and sell – being smaller and requiring less space to showcase. However there's no getting away from the fact that sound quality still matters to a large amount of consumers, so hi-fi stores cannot easily ignore demo facilities, or technical abilities.

Just look at the headphone market for example. During my daily commute to work I see many people sporting £500+ in-ear monitors allied to the likes of Astell&Kern or FiiO high-resolution

digital audio players.

The cost of the total package? Something in the range of £1500 – for which you could put together a rather nice home system that might sound better overall.

Take the Acoustic Audio AE 300s I review in this issue, price £599, pair them with a good amplifier and a nice set of stands and the sound quality is rather special. Sit someone down in front of this and their eyes and ears might well light up.

However, it isn't going to happen while the bricks and mortar hi-fi shops keep closing to be replaced by charity outlets and corner stores; there are ever fewer places to hear hi-fi equipment nowadays.

Is there a solution? Well, apart from me winning the National Lottery and investing some of the millions in a dedicated hi-fi store with specialist staff, then perhaps not. However, the first time I went into my local shop and actually listened it made me want to open my wallet; their existence is vital.

So the experience with my brother still holds true. There is no better way to demonstrate a hi-fi system and the joy it can give than have someone sit down in front of it and listen. That's what I did, what my dealer made available to me, and it helped bring a whole new generation into hi-fi and expand musical appreciation at the time.

On a final note – I failed to buy the watch. The reason? I preferred to spend the money on a new amplifier! It was a much better investment. ●



STORM 'BEST OF 2018'



AudioBacon

"BEST DIGITAL CABLE of 2018"
COST NO OBJECT CATEGORY
WAVE STORM Reference BNC



"The first thing I noticed about the **WAVE STORM Reference** was its bass extrusion capabilities. It has a huge bottom that protrudes into your listening space. It throws its weight outward with ease and authority. Kick drums have a chest-rattling impact (cannons from 1812 Overture) with tangible shape, tone, and tightness. **Definitely the punchiest out of all the cables I've heard so far..**"

(Actions speak louder than words and after the review the reviewer bought a pair of **WAVE STORM Reference** Dual BNC cables for his own use.)

Pursuit Perfect System

HIFI & AV Equipment Reviews

BEST DIGITAL CABLES 2018

Wave High Fidelity STORM Reference

Pursuit Perfect System

"BEST DIGITAL CABLE of 2018"
WAVE STORM Reference BNC

"**WOW** this cable is awesome - congrats!!

Great skills. Mega impressed

Sonically I enjoyed a tighter more focused vocal, with fine details becoming easier to hear as part of a extremely well defined soundstage. Chord Electronics DAVE owners should give the **WAVE STORM Reference** cable serious consideration."

www.pursuitperfectsystem.com

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Nick, founder of WAVE High Fidelity, says

"Most people report that when the RF noise is removed the sound seems darker, less bright or harsh and with better bass. It is easy to mistake RF brightness for detail, depth or soundstage but all of these are just false artifacts due to the RF and they actually mask the true detail in the music". nick@wavehifi.com

"I received a £20 voucher and a letter signed by the great man himself"



Martin Pipe

Many of you will have experience of the Richer Sounds chain of hi-fi shops, founded in 1978 by 19 year-old entrepreneur Julian Richer – whose parents worked for Marks and Spencer. Maybe that's what inspired Richer junior to get into retail; in the 1970s, hi-fi was in its boom phase and a way of life for many. It almost certainly helped that he loved his music; to this day, Richer plays drums in a funk style. A significant proportion of his employees are musicians in their spare time too. And he has ploughed some of the money he has made into Richer Unsigned, which aims to promote talented artists without record deals.

Famous for cut-to-the-bone pricing and heavy advertising in the mass-market What Hi-Fi, the store that he opened for business with photography retailer Vic Odden came to prominence in the 1980s. The first Richer Sounds, a tiny outlet not far from London Bridge station, achieved the Guinness record for the highest sales per square foot in a retail outlet anywhere in the world. When I visited, the tiny shop (still there, over forty years on!) was indeed packed. There was barely enough room for customers, never mind luxuries like dem rooms. But I'd always walk out with something – if only a pack of TDK cassette tapes, which Richer always sold cheaper than anyone else!

Richer Sounds' initial success came from snapping up the stock that manufacturers (mostly Japanese) were having trouble shifting, and flogging it quickly – and cheaply! One manufacturer privately admitted that Richer 'bought their greatest mistakes'. Punters who would otherwise have been priced out of the hi-fi game (myself included!)

could treat themselves to budget bargains, especially if they were prepared to indulge in a spot of DIY. Some tuners and cassette decks, for example, required customers to make their own power supply arrangements as the amplifiers normally performing such duties were not part of Richer's deals with manufacturers.

I also came across damaged equipment in need of repairs (imagine retailers offering such goods now!) and even a selection of second-hand equipment at Richer Sounds stores, the number of which grew over the decades to the present tally of 53. Richer Sounds also sidelined into areas like TV and video, using the same pile-it-high, sell-it-cheap techniques, although it has since switched to a more upmarket approach with new branding, dem rooms and home cinema/multi-room offerings.

The chain always offered to beat prices, and encouraged customers to get in touch with their suggestions. Back in 1990 I received a £20 voucher, and a letter signed by the great man himself, for mine. I can't remember what my suggestion was, but the voucher was put towards a pair of Sennheiser HD480 headphones. Yorkshire-based Richer also has a 51% share in the Audio Partnership hi-fi manufacturer – currently responsible for brands like Mordaunt-Short (speakers), Opus (multi-room home entertainment) and (probably the best known of 'em all) Cambridge Audio. Naturally, the latter are stocked by Richer Sounds outlets.

So what has stimulated me to write about Julian Richer? A recent (January 23rd) article in the London Evening Standard sets out his stall on various matters like tax-avoidance. And it makes for riveting – and inspirational – reading. Interestingly,

he used this platform to freely-admit that he exploited a tax loophole. He now regrets these actions.

In the article, he states that "all of us involved in business" need to be looking at what can be done to "reduce inequality, not make it worse". Richer Sounds – which he tries to run "in an ethical way" – is certainly doing its bit. For a start, 15% of its profits go to good causes. And "unlike certain internet giants..." says its website, Richer is "a British company, paying British taxes and proud to be supporting the British economy and high street...with a warehouse in Manchester, not Jersey or Luxembourg". In his article, he repeats Tax Justice UK's 'conservative' estimate that Britain "could be losing £120 billion to tax dodging... just imagine how much that could help public services".

"Capitalism without checks" he explains, "is a dangerous machine which can exploit workers, rip off customers and make our societies more unequal". Richer rejects ideas like imposed zero-hours contracts. "Happy staff" – he refreshingly believes – equate to "happy customers". To this end, he is committed to providing "employees with secure, well-paid jobs in a stimulating, equal opportunities environment".

Richer acknowledges that staff are key to his business, unlike other entrepreneurs who "say their success is down to their great talent...they feel they don't depend on anyone else, so are entitled to maximise profits at any cost".

Then there are the businesses he deals with, the cash-flow of his suppliers. He claims that "every one of them" is paid in an average of only 18 days – "over twice as fast", he reckons, as "the national norm". Post-Brexit Britain needs more entrepreneurs like Julian Richer. ●

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"yes I have taken on Frank Ifield on occasions"



Dave Tutt

As a child I was in the junior school choir. I got to sing all those typical school songs of the time including hymns from a traditional Christian environment. I was also often to be found singing along to my parents record collection – the least said about that probably the better!

This was during the mid to late 1960s with the Beatles, Stones and Elvis in the charts, none of whom made much of a dent on my musical tastes. My dad drove an Austin A105, his first car, and of course no radio so there was little appreciation of the music of the time. I was stuck in a time warp of "The Sound of Music", "Oliver", Val Doonican or Max Bygraves! We did have those odd songs like Right said Fred by Bernard Cribbins and Come outside by Mike Sarne, where some of the lyrics that I couldn't quite get in the day now make much more sense.

At that time also an American gentleman called Andy Williams appeared on the TV on the BBC, the only channel we had. He seemed to sing totally differently to what I was used to, locked in as I was to my parents 1950's style big band crooners or music from the shows. So at the age of around 11 my musical education began.

There were only two shops in Chatham at the time that had records, LPs as they were called then – Boots the chemist and a lovely little independent shop at the other end of the high street called Coopers. Boots was a combination made up of around 6 narrow shops with each department flowing into another; music was tucked into the back of one section.

It was here I found some Andy Williams which I brought with my

birthday money when I was 11. It was a noisy, bustling, cramped shop and a challenge to buy anything at that age. Coopers however was different. Usually silent with very few customers and two quite stern looking staff. However, they were very helpful and knowledgeable if you knew what to ask for. This was probably my first experience of proper sound.

Coopers was equipped with a Garrard 301 and SME 3009 turntable, Quad 303 33 amplification and a huge pair of Goodmans 301 based speakers. Not only that, they had a second set up and listening booths! Browsing here was a revelation. As I got older going to Coopers looking for something specific was always great. I purchased the difficult to find albums by the Moody Blues that Boots hadn't even heard of, and as the years went by I discovered all sorts of things there. Renaissance Novella, brilliant! George Benson, Colin Blunstone, and many others.

By this time Woolworths in my town had records, although it was rare that anything in the shop stirred my interest. If you liked MFP compilations from singers that should have stuck to strutting their stuff with Lulu on the TV you were in heaven – but not for me thanks.

Then Our Price arrived. Wow! So much here that I had never heard of nor for that matter would I have considered buying. I have never been much into heavy metal, punk, or to a certain extent the likes of Led Zep, ELP or Black Sabbath but hey each to their own. It's much of a track pick from these sort of bands, not an entire album.

Coopers eventually closed. My last visit showed the store having tried a move into more ethnic music styles to cater for the growing

market in the town, music from the Caribbean, from India and Pakistan that had never been heard here. They were also probably put in difficulties with the rise of the CD which changed the market considerably.

So for a while it was Our Price who came to monopolise sales of music in Chatham. Shelves of LPs got pushed out as more CDs arrived, as well as VHS tapes. I did still manage to buy things like Olivia Newton John and John Themis, as well as Jean Luc Ponty and Jimmy Webb with his original 1977 album containing The Highwayman.

All this time I have still been singing, usually along with the music on the radio or playing through the system somewhere. Every now and then I get the urge to sing something when no one is around which could be 5 O'clock in the morning by Godley and Creme or Sunshine on my shoulder by John Denver or even Strange way by Firefall. Sometimes it's in the car if some particular incident has sparked random thoughts that can only be voiced by a quick tune, be it a nutty verse from something my mother would have come up with or something from the vast back catalogue of lyrics that get stuck in our heads.

I appreciate a proper singer, male or female. The ability to hold a tune is what triggers my initial interest followed by phrasing and tone. So Pink Floyd captivates me, it's almost hypnotic. Quarterflash, Shakin the Jinx or Love should be so kind both rank as favourites.

So I must apologise to my neighbours both past, present and future who might have or will find my yodelling (yes I have taken on Frank Ifield on occasions) an annoyance. Or for that matter singing along with Oliver tunes when I was 9 or 10! ●

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WORLD CLASSICS

Here is our list of the great and good from audio's glorious past, products that have earned their place in hi-fi history. You'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price.

TURNTABLES

EAT FORTE 2009 £12,500
Lavishly finished two box, two motor turntable with gorgeous Ikeda 407 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.



FUNK FIRM VECTOR II 2009 £860
Innovative engineering gives a nimble, pacy 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 £405
Seminal affordable audiophile deck with fine hinged tonearm. Tweakable, and really sings with optional £150 outboard power supply.

ACOUSTIC SOLID ONE 2007 £4,050
Huge turntable, both in terms of sheer mass and sonic dynamics. Fit up to three arms and enjoy, just don't damage your back moving it...

AVID VOLVERE SEQUEL 2007 £4,600
Stylish high end vinyl spinner with industrial strength build quality and a sound to match. Sound is edge-of-the-seat stuff.

MICHELL GYRODEC SE 2005 £1,115
Design icon with superlative build. Sound is beautifully smooth, effortless and exceptionally expansive.

MARANTZ TT-15S1 2005 £1,299
Cracking all in one deck/arm/cartridge combination, this must surely be the best sound/plug and play package at this price point.

MICHELL TECNODEC 2003 £579
Superb introduction to Michell turntables - on a budget. Top quality build and elegant design mean it's still the class of the mid-price field.



MICHELL ORBE 1995 £2,500
The top Michell disc spinner remains a superbly capable all rounder with powerful, spacious sound that's delicate and beguiling.

SME MODEL 10A 1995 £4,700
Exquisitely engineered deck and SME V tonearm combo that's an extremely accomplished performer with classical music.

LINN AXIS 1987 £253
Cut-price version of the Sondek with LVX arm. Elegant and decently performing package. Later version with Akito tonearm better.

ROKSAN XERXES 1984 £550
Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

DUAL CS505 1982 £75
Simple high quality engineering and a respectable low mass tonearm made for a brilliant budget buy. Polished, smooth and slightly bland sound.

MICHELL GYRODEC 1981 £599
Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved. Clean, solid and architectural sound.

TOWNSHEND ROCK 1979 £ N/A
Novel machine has extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

MARANTZ TT1000 1978 £ N/A
Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.



REGA PLANAR 3 1978 £79
Brilliantly simple but clean and musical performer, complete with Acos-derived S-shaped tonearm. 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb hudget buy.

SONY PS-R80 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!

TRIN LO-70 1978 £600
The best 'all-in-one' turntable package ever made. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

ADC ACCUTRAC 4000 1976 £300
Bonkers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

PIONEER PLC-590 1976 £600
Sturdy and competent motor unit that performs well with a wide range of tonearms. Check very thoroughly before buying due to electronic complexity and use of some now-obsolete ICs.

PIONEER PL120 1973 £36
When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL112D was off the pace compared to rivals.



TECHNICS SP10 1973 £400
Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10 will give any modern a hard time, especially in respect of bass power and midband accuracy.

LINN SONDEK LP12 1973 £86
For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Recent 'SE' mods have brought it into the 21st century, albeit at a price.

ARISTON RD11S 1972 £94
Modern evolution of Thorens' original belt drive paradigm. Scotland's original super-deck was warm and musical, albeit soft. Still capable of fine results today.

GOLDRING LENC0 GL75 1970 £15.6S
Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today.

GARRARD 301/401 1953 £19
Tremendously strong and articulate with only a veiled treble to let it down.



THORENS TD124 1959 £ N/A
The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.

TONEARMS

REGA RB251 2009 £136
Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counter-weight modification.

HELIUS OMEGA 2008 £1,595
Stylish and solid lump of arm with fabulous build quality that turns in a dynamic and weighty performance.

AUDIO ORIGAMI PU7 2007 £1,300
The classic Syrix 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 celerity and scudstaging. Build quality up to SME standards - which is really saying something!

TRI-PLANAR PRECISION 2006 £3,600
Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

MICHELL TECNOARM A 2003 £442
Clever reworking of the Rega theme, using blasting drilling and rewiring!

SME 309 1989 £767
Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

NAIM ARO 1987 £1,425
Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

SME SERIES V 1987 £2,390
Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

NAIM ARO 1986 £875
Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes.



ALPHASON HR100S 1981 £150
First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.

SME SERIES III 1979 £113
Clever variable mass design complete with Titanium Nitride tube tried to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

TECHNICS EPA-501 1979 £ N/A
Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

LINN ITTOK LVII 1978 £253
Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. The final LVIII version worth seeking out.

AUDIO TECHNICA AT 1120 1978 £75
Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few quid to spend.

HADCOCK GH228 1976 £46
Evergreen unipivot with lovely sweet, fluid sound. Excellent service backup.

ACOS LUSTRE GST-1 1975 £46
The archetypal S-shaped seventies arm; good, propulsive and involving sound in its day, but ragged and undynamic now.

SME 3009 1959 £18
Once state of the art, but long since bettered. Musical enough, but weak at frequency extremes and veiled in the midband. Legendary serviceability and stunning build has made it a cult, used prices unjustifiably high.

PHONO STAGES

CREEK OBH-8 SE 1996 £180
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.

MICHELL ISO 1988 £ N/A
This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse.



LINN LINNK 1984 £149
Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

INTEGRATED AMPLIFIERS

NAIM NAIT XS 2009 £1,250
With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth beyond class expectations.

MUSICAL FIDELITY PRIMO 2009 £7,900
Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

SUGDEN A21A S2 2008 £1,469
Crystalline clarity, dizzying speed and forensic detailing. Power limited so needs sensitive speakers.

CREEK OBH-22 2008 £350
Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral sound.

CAMBRIDGE 840A V2 2007 £750
Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

SUGDEN IA4 2007 £3,650
Goodly amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrateds.

NUFORCE P-9 2007 £2,200
Impressive two box preamp with superb resolution and an engaging sound.

MELODY PURE BLACK 101D 2007 £3,295
The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.

AUDIOLAB 8000S 2006 £400
In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound.

MCINTOSH MA6800 1995 £3735
Effortlessly sweet, strong and powerful with seminal styling to match.

DELTEC 1987 £1900
Fast, dry and with excellent transients, this first DPA integrated is the real deal for eighties obsessives. Ridiculously punchy 80W per channel from a tiny, half-size box. Radical, cool and more than a little strange.

EXPOSURE VII/VIII 1985 £625
Seminal pre-power, offering most of what Naim amps did with just that little bit extra smoothness. Lean, punchy and musical.



AUDIOLAB 8000A 1985 £495
Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.

VTL MINIMAL/50W MONOBLOCK 1985 £1,300
Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

MUSICAL FIDELITY A1 1985 £350
Beguiling Class A integrated with exquisite styling. Questionable reliability.

MISSION CYRUS 2 1984 £299
Classic 1980s minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



NAIM NAIT 1984 £350
Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

CREEK CAS4040 1983 £150
More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

MYST TMA3 1983 £300
Madcap eighties minimalism, but a strong and tight performer all the same.

ROTEL RA-820BX 1983 £139
Lively and clean budget integrated that arguably started the move to minimalism.

NAD 3020 1979 £69
Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.

ROGERS A75 1978 £220
Lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet.

A&R A60 1977 £115
Sweet and musical feature-packed integrated; the Audiolab 8000A remains a classic.



SUGDEN C51/P51 1976 £130
Soft sounding early Sugden combo with a plethora of facilities and filters. A sweet and endearing performer but lacking in power and poor load driving ability.

SUGDEN A21 1969 £ N/A
Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

ROGERS CADET III 1965 £34
Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves.

CHAPMAN 305 1960 £40
Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper secondhand.

POWER AMPLIFIERS

ELECTROCOMPANET NEMO 2009 £4,995 (EACH)
Norwegian power station as cool as a glacier tonally, yet impresses with sheer physicality and fleetness of foot. 600W per channel.

NUFORCE REFERENCE 9SE V2 2006 £1,750
Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.

QUAD II-80 2005 £6,000 PER PAIR

Quad's best ever power amplifier. Dramatic performer with silky but dark tonality, blistering dynamics, serious power and compellingly musical sound.



QUAD 909 2001 £900
Current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but superb value all the same.

NAIM NAP 500 2000 £17,950
Flagship amplifier will drive just about any speaker with ease. Factor in the company's trademark pace, rhythm and timing and it all adds up to one effortlessly musical package.

MARANTZ MODEL 9 1997 £8000
Authentic reproduction monoblocks still more than cut the sonic mustard. Highly expensive and highly sought after.

MICHELL ALECTO 1997 £1989
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!



MUSICAL FIDELITY XA200 1996 £1000
200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.

PIONEER M-73 1988 £1,200
Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the experience.

KRELL KMA100 II 1987 £5,750
Monoblock version of the giant KSA-100 is one of the seminal 80s transistor power amplifiers. Massive wallop allied to clean and open Class A sound makes this one of the best amplifiers of its type.

RADFORD STA25 RENAISSANCE 1986 £977

This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.

QUAD 405 1978 £115
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound, 606 and 707 continue the theme with greater detail and incisiveness.

HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110

Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain.

LECSON AP1 1973 £ N/A
Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

QUAD 303 1968 £55
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

LEAK STEREO 20 1958 £31
Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



LEAK STEREO 60 1958 £ N/A
Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability rarity value means high price.

QUAD II 1952 £22
The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly.



LEAK POINT ONE, TL10, TL12.1, TL/12 PLUS 1949 £28

Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical. Deeply impressive in fine fettle.

PRE AMPLIFIERS

AUDIOLAB 8000C 1991 £499
Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.



CROFT MICRO 1986 £150
Budget valve pre-amp with exceptionally transparent performance.

CONRAD JOHNSON MOTIV MC-8 1986 £2,500
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden. Something of a curio, but worthwhile nonetheless.

AUDIO RESEARCH SP-8 1982 £1,400
Beautifully designed and built high end tube pre-amplifier with deliciously sweet and smooth sound. Not the last word in incisiveness or grip.

LINN LK-1 1986 £499

A brave attempt to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not bad for under £100.

NAIM NAC 32.5 1978 £ N/A
Classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

LECSON AC-1 1973 £ N/A
Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.

QUAD 33 1968 £43
Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...



LEAK POINT ONE STEREO 1958 £ N/A
Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

QUAD 22 1958 £25
The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it's for anacrophiles only.

LOUDSPEAKERS

WHARFEDALE DIAMOND 10.3 2010 £290
Great small standmounters for audiophiles on a budget; dry punchy sound with impressive sound-staging at the price.



YAMAHA SOAVO 1.1 2009 £3,000
Musical, transparent with impressive dynamics and cohesion. Excellent build and finish.

USHER BE-10 2009 £10,500
Clever high end moving coil design with immense speed and dizzying clarity allied to epic punch. Needs the best ancillaries to fly, though...



SPENDOR A5 2009 £1,695
Multi-talented floorstanders with generous scale and punch and Spendor's classic mid-range detail. Deliver a sound that thoroughly engages whatever you care to play.

MONITOR AUDIO PL100 2008 £2,300
The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble.



MARTIN LOGAN SOURCE 2008 £1,600
Brilliant entry level electrostatics, giving a taste of loudspeaker esoterica for the price of most moving coil boxes. Tremendous clarity, evenness and delicacy, although not the world's most powerful sound.

PMC OB11 2008 £2,950
Cleverly updated floorstanders give scale and solidity in slim and well finished package.

ISOPHON GALILEO 2007 £2,100
Big standmounters that really grip the music and offer quite startling dynamics and grip.

ONE THING AUDIO ESL57 2007 £1,450
One Thing Audio's modifications keep the good old ESL57 at the very top of the game.

MOWGAN AUDIO MABON 2007 £3,995
Massively capable loudspeakers that offer dynamics, scale and clarity in an elegantly simple package. Wide range of finishes, too.

B&W 801D 2007 £299
Baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

B&O BEOLAB 9 2007 £5,000
Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.



ISOPHON CASSIANO 2007 £12,900
Drive units featuring exotic materials allied to superlative build quality result in an immensely capable loudspeaker. Not an easy load to drive, however.

QUAD ESL-2905 2006 £5,995
The old 989 with all the bugs taken out, this gives a brilliantly neutral and open sound like only a top electrostatic can; still not a natural rock loudspeaker, though.

B&W 801D 2006 £10,500
In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.



REVOLVER CYGNIS 2006 £5,999
Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

USHER BE-718 2007 £1,600
Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

USHER S-520 2006 £350
Astoundingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.

ACOUSTIC ENERGY AE1 CLASSIC 2006 £845
Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.



MISSION X-SPACE 1999 £499
The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!

MISSION 752 1995 £495
Cracking Henry Azima-designed floorstanders combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

TANNOY WESTMINSTER 1985 £4500
Folded horn monsters which sound good if you have the space. Not the last word in loudness but can drive large rooms and image like few others.



CELESTION SL6 1984 £350
Smallest two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit coarse at high frequencies and limp in the bass. Speakers would never be the same again...

HEYBROOK HB1 1982 £130
Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic.



QUAD ESL63 1980 £1200
An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.

MISSION 770 1980 £375
Back in its day, it was an innovative product and one of the first of the polypropylene designs, warm, smooth, clean and powerful sound.

ACOUSTIC RESEARCH AR18S 1978 £125
Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, although finesse was most definitely not their forte...

YAMAHA NS1000 1977 £532
High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabinets equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!

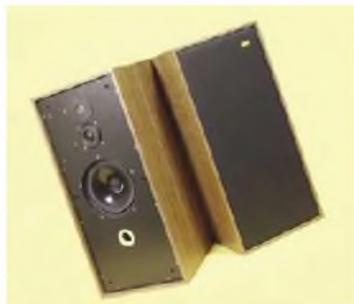


JR 149 1977 £120
Cylindrical speaker was ignored for decades but now back in fashion! Based on classic KEF T27/B110 combo as seen in the BBC LS3/Sa. Doesn't play loud, needs a powerful transistor amplifier but has clarity and imaging.

KEF R105 1977 £785
Three way Bextrene-based floorstander gave a truly wideband listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace.

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.

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.



HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110
 Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

BBC LS3/5A 1972 £88
 Extremely low colouration design is amazing in some respects – articulation, stage depth, clarity – and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence.

LEAK SANDWICH 1961 £39 EACH
 Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.

QUAD ESL57 1956 £45 EACH
 Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.

SYSTEMS

MERIDIAN SOOLOOS 2.1 2010 £6,990
 Crisp styling, bright, colourful touchscreen, plus excellent search facilities. This is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.



NAIM UNITIQUE 2010 £995
 Great little half width one-box system with truly impressive sound allied to a wealth of source options.

ARCAM SOLO MINI 2008 £650
 Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to its bigger brother.

MERIDIAN F80 2007 £1,500
 Fantastically built and versatile DVD/CD/DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn't a 'proper' hi-fi product. Just listen.

MARANTZ 'LEGEND' 2007 £22,000
 The combination of SA-7S1 disc player, SC-7S2 preamp and MA-9S2 monoblocks delivers jaw-dropping performance.

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.



ARCAM SOLO NEO 2006 £1,100
 Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

PEACHTREE AUDIO IDECCO £1,000
 Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.



TUNERS

ARCAM FMJ T32 2009 £600
 Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.



MAGNUM DYNALAB MD-100T 2006 £1,895
 One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.

MYRYAD MXT4000 2005 £1,000
 Sumptuous sound and top-notch build quality make for a tempting AM/FM package. Warm and richly detailed on good-quality music broadcasts.

NAIM NAT03 1993 £595
 The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

CREEK CAS3140 1985 £199
 Excellent detail, separation and dynamics - brilliantly musical at the price. T40 continued the theme...

QUAD FM4 1983 £240
 Supreme ergonomics allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



NAD 4040 1979 £79
 Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica.

MARANTZ ST-8 1978 £353
 Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.

YAMAHA CT7000 1977 £444
 Combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

SONY ST-5950 1977 £222
 One of the first Dolby FM-equipped tuners, a format that came to naught. 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 liquid sound.



TECHNICS ST-8080 1976 £180
 Superb FM stage makes for a clean and smooth listen.

REVOX B760 1975 £520
 The Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?



SEQUERRA MODEL 1 1973 £1300
 Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.

LEAK TROUGHLINE 1956 £25
 Series I an interesting argument but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Deliciously lucid with true dimensionality.

HEADPHONE AMPLIFIERS

GRAHAM SLEE NOVO 2009 £255
Dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.



MUSICAL FIDELITY X-CAN V8 2008 £350
Open and explicitly detailed sound plus serious bass wallop. A great partner for most mid-to-high end headphones.

CD PLAYER/RECORDERS

MUSICAL FIDELITY TRIVISTA 2002 £4000
When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

MARANTZ SA-1 2000 £5,000
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



SONY MDS-JE555ES 2000 £900
The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.

PIONEER PDR-555RW 1999 £480
For a moment, this was the CD recorder to have. Clean and detailed.

MARANTZ DR-17 1999 £1100
Probably the best sounding CD recorder made; built like a brick with a true audiophile sound and HDCD compatibility.



CAMBRIDGE AUDIO CD4SE 1998 £200
A touch soft in the treble and tonally light, but outstanding in every other respect.

SONY TCD-8 DATMAN 1996 £599
Super clean sound makes this an amazing portable, but fragile.

LINN KARIK III 1995 £1775
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

NAIM CDS 1990 £ N/A
Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.

TECHNICS SL-P1200 1987 £800
CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pro' use and laden with facilities - a great eighties icon.

SONY CDP-R1/DAS-R1 1987 £3,000
Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.

MARANTZ CD73 1983 £700
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC - super musical!



MERIDIAN 207 1988 £995
Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

CAMBRIDGE AUDIO CD1 1986 £1500
Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.



MERIDIAN MCD 1984 £600
The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.

SONY CDP-701ES 1984 £890
Sony's first bespoke audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperback-sized remote control.

YAMAHA CD-X1 1983 £340
Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

SONY CDP-101 1982 £800
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!



ANALOGUE RECORDERS

AIWA XD-009 1989 £600
Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

NAKAMICHI CR-7E 1987 £800
The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



SONY WM-D6C 1985 £290
Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

PIONEER CTF-950 1978 £400
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.

YAMAHA TC-800GL 1977 £179
Early classic with ski-slope styling. Middling sonics by modern standards, but cool nonetheless!

SONY TC-377 1972 £N/A
A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards.

REVOX A77 1968 £145
The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days.

COMPACT DISC TRANSPORTS

ESOTERIC P0 1997 £8,000
The best CD drive bar none. Brilliantly incisive, ridiculously over-engineered.

TEAC VRDS-T1 1994 £600
Warm and expansive sound made this a mid-price hit. Well built, with a slick mech.

KENWOOD 9010 1986 £600
The first discrete Jap transport was beautifully done and responds well to re-clocking.

DACs

DCS ELGAR 1997 £8500
Extremely open and natural performer, albeit extremely pricey - superb.

DPA LITTLE BIT 3 1996 £299
Rich, clean, rhythmic and punchy sound transforms budget CD players.

CAMBRIDGE AUDIO DAC MAGIC 1995 £99
Good value upgrade for budget CD players with extensive facilities and detailed sonics.

PINK TRIANGLE DACAPO 1993 £ N/A
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

QED DIGIT 1991 £90
Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

CABLES

MISSING LINK CRYO REFERENCE 2008 £495/0.5M
High end interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

TECHLINK WIRES XS 2007 £20
Highly accomplished interconnects at an absurdly low price. Stunning value for money.

VDH ULTIMATE THE FIRST 2004 £250
Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space.



WIREWORLD OASIS 5 2003 £99/M
Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

TCI 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.

vinyl section

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THE ROLLING STONES

Look out for a special, 50th anniversary edition release of 'Beggars Banquet' (www.abkco.com) presented in a gatefold sleeve, with additionally 'Sympathy for the Devil' as a 45rpm 12" original mono mix with an etching of the original toilet sleeve image, plus a Japanese Flexi disc featuring a Jagger telephone interview from 1968.

news

WAH WAH

From the Spanish audiophile label comes 'The Book of AM, Part V: Night'. This is a long album project from 1977 via members of the Belgium outfit, Cosmic Trip Machine (which gives you a clue to the sound here). This particular release was not included in the original release sequence which means the sequence can now be formally completed for the first time. So, a bit of a bonus then.

Also look out for Atila's 'Reviure', the first release of this prog LP from 1978. A Spanish outfit influence by Floyd and King Crimson you'll hear jazz/rock too. Includes an 8-page booklet.



MIKE + THE MECHANICS

Another anniversary, this time a 30th and the 1988 album 'Living Years' from Genesis bassist Mike Rutherford's band. Arriving with a forty page booklet, the edition includes two vinyl discs and two CDs that hold the original album plus live tracks. That said, the second LP and CD contains the bonus tracks from the 2014 reissue edition.



BRIAN ENO

Originally released in a 1975 album, 'Discreet Music' is out once more. It was Eno's first real foray into ambient music as a genre in which music is gradually layered and then changes evolve throughout. The themes include both calm and serenity while the music offers a simple beauty.





KATE MELUA

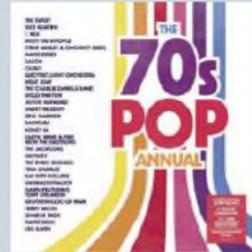
Compiled by Melua, 'Ultimate Collection' (BMG) is a double album featuring twenty-three songs from the artist's seven LP releases. Alongside a duet with Eva Cassidy on 'What a Wonderful World' are two new covers, 'Bridge Over Troubled Water' and 'Diamonds Are Forever'. Includes a gatefold and inner sleeves featuring notes from Melua, plus photographs.

DEMON

A trio of new releases from Demon (www.demonmusicgroup.co.uk) includes The Human League's reissue of 2001's 'Secrets' but this edition features an additional disc of B-sides and remixes.

Also look out for two snazzy compilations. 'The 70s Pop Annual' includes Bill Withers' 'Lovely Day', Sweet's 'Blockbuster' and Dolly Parton's 'Here You Come Again'.

'Disco Classics' includes Anita Ward's 'Ring My Bell', Heatwave's 'Boogie Nights' and The Hues Corporation's 'Rock the Boat'.



...AND FINALLY

From Shawn Pittman & Jay Moeller comes 'Everybody Wants to Know' (CCR; www.shackmedia.de) from which comes high energy electric blues. Two white guys with a Freddie King kinda thing.

Those into original soundtracks should note the star-studded and recently released 'King Of Thieves' by Benjamin Wallfisch (www.milanmusic.fr). Think John Barry...now.

José James' 'Lean on Me' (Blue Note) is a tribute to Bill Withers featuring 12 songs from the great man over two discs but on only three sides (Side D is blank - wot, no etching?). Lovely voice, mellow and soulful and very Bill.

Featuring a gold doily slipmat (oh, yes), the picture disc of Mr Vast's 'Touch & Go' (mrvast.bandcamp.com/track/touch-go) features foodie images on both sides: brekkieside and supperside. Limited to just 300, the featured music includes manic, unhinged and slightly bizarre funk.

Zement has release 'Klinker' ([Sunhair, zement.bandcamp.com/album/klinker](http://Sunhair,zement.bandcamp.com/album/klinker)) the Würzburg outfit's second LP. Motorik percussion, looping rhythm guitar, synths and more instrumental loveliness for Krautrock fans. Buy it. No, really. Buy it.

J.P. Bimeni & The Black Belts' 'Free Me' ([Tucxone, tucxone-records.com](http://Tucxone,tucxone-records.com)). Great band name and a new album of old, old soul sounds. A clean, open sound, full of emotive power.

Death metal fans watch out for Bloodbath's 'The Arrow of Satan is Drawn' ([Peaceville; www.peaceville.com](http://Peaceville;www.peaceville.com)). The band's fifth outing and an inhumane release is it too. Nasty, cruel and beastly - a bit of a winner, then.

The Pineapple Thief's 'Dissolution' ([Kscope, kscopemusic.com](http://Kscope,kscopemusic.com)) combines rather subtle indie rock with prog flavours to create a score shining the light on technology and how it can alienate and isolate. Serious stuff.

Stray Ghost's double album, 'A Shade Under Thirty' ([Phases; www.phasesrecords.com](http://Phases;www.phasesrecords.com)) offers experimental electronica and modern classical piano full of portentous, hanging, extended chords, echo-laden soundscapes and slow tempo sorrow.

Big Brother & The Holding Company ([We Are Vinyl, wearevinyl.com](http://We Are Vinyl;wearevinyl.com)), featuring Janis Joplin's 'Sex, Dope & Cheap Thrills' retains the controversial original title and, instead of the original album, gives you two discs of alternative takes, thirteen previously unreleased cuts and sixteen tracks in all!

Onto Ian William Craig and 'Threshold' ([130701; www.130701.com](http://130701;www.130701.com)). Electronica inspired by quantum physics, black holes and space with, hi-fi fans, use of a: Fostex X18, Fostex A4, Sony TC-377 and TEAC 3440 and Craig's treated vocals as a further instrument. Fascinating, atmospheric.

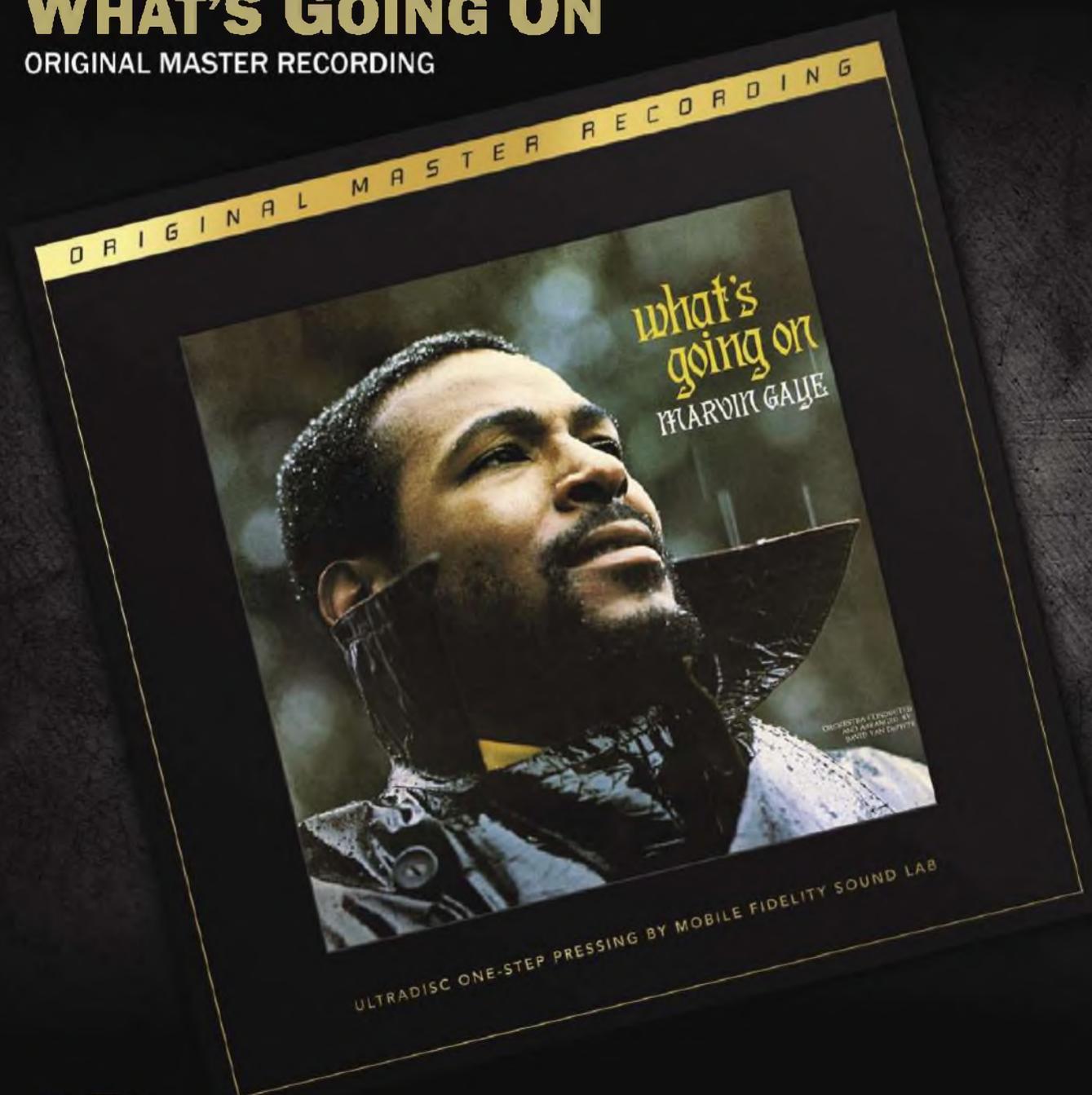
She's still singing, folks. Marianne Faithfull's new 'Negative Capability' (BMG) featured Ed Harcourt, Mark Lanegan and Nick Cave. Full of rough-edged wisdom, she knows her way around a song. Like an ageing football player, the knees might have gone but she plays the game using her head instead.



MARVIN GAYE

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An automatic turntable that does the fiddly bits for you. Noel Keywood reviews Dual's CS 460.

Easy Rider

Here's a fascinating return to the past: a fully automatic turntable. Dual's CS 460 places its arm onto the record then lifts and returns it to rest after play. All in a smooth, silent

and civilised fashion – unlike units I've used in the distant past that clanked or even crashed their way through this mechanical ballet. You simply place the LP onto the platter and it does the rest, removing the likelihood of stylus damage from clumsy

cueing. So good, this is how all turntables should work – but they don't.

There are of course those horrible little drawbacks, like nasty little gremlins trying to wreck everything. All the extra bits in the mechanism needed to achieve

ortofon

accuracy in sound



2M

The 2M Series, named after the abbreviation of Moving Magnet (MM) technology, is an affordable range of pick-up cartridges with first-class audio design principles throughout. Featuring Ortofon's trademarked split-pole pin technology for a flat frequency response, all 2M cartridges have a high output for easy integration into any turntable system.

Designed in conjunction with celebrated design house Møller-Jensen Innovation Design, the 2M Series body represents the shape of a diamond, whose contours gracefully trace the grooves on a record's surface.



Red.Cartridges

A hugely popular all-purpose cartridge with a Tipped Elliptical stylus that delivers an open, dynamic sound with a slight touch of warmth.



Blue.Cartridges

An affordable step up in the range, which adds a greater resolution, dynamics, and detailed sound thanks to the Nude Elliptical stylus.



Bronze.Cartridges

Featuring a superior body, the Bronze picks up even the highest frequency information for a rich, detailed and deep soundstage, and can be further upgraded with ease.



Black.Cartridges.

The musician's choice and flagship of the range, the 2M Black features a Nude Shibata stylus which guarantees a true-to-life sound performance.

this add to cost and detract from performance. Autos were never – even in their heyday – considered top class.

But let's ignore that because nowadays people may well want to play LP without being faced by its handling problems and for them Dual's CS 460 is a sweet solution by its very nature. It just has to do a decent job by today's standards rather than reach audiophile status – and that's how I'm approaching it for review purposes.

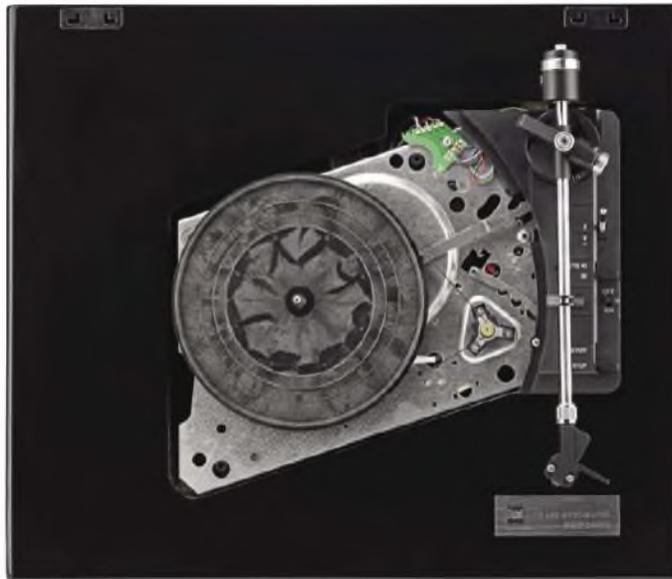
The CS 460 is a belt-drive design, where a small d.c. servo-motor drives a belt wound around a plastic sub-platter. It comes with all this in place – no need to fit anything. A large metal platter fits over the sub-platter and this has to be slipped on during set-up, and two transit screws removed using a crosshead screwdriver (not supplied). Speed can be set to 33rpm or 45rpm, a small slide switch providing a 78rpm option for those wanting to spin old shellac 78s.



A lightweight moulded headshell carries a similarly light Ortofon MM cartridge.

The auto-mechanism is set to place the arm down on a 7in diameter disc with 45rpm selected, or on a 12in disc with 33rpm selected. This means that 12in 45rpm discs cannot be played automatically, nor old 10in singles. Instead, with 45rpm set, the arm must be lowered manually using a cue lever that operates a damped platform. At end of side the auto mechanism still lifts and returns the arm to its rest, stopping the platter too. It's very convenient; you're not forced to get up at end-of-side to stop that relentless clicking of the locked run-out groove being played over and over.

Although the CS 460 arm actuates a mechanical auto-mechanism Dual still confidently supply it with an Ortofon OM10 cartridge tracking at a very light 1.5gms. I used 1.7gms, at the top of Ortofon's recommended limit (1.75gms), since the cartridge has an elliptical stylus on a rondel that are not good midband trackers and it



The moulded sub-platter is driven by belt from a d.c. servo-motor.

must actuate the auto-system as well. It managed this at 1.5gms, showing how well the system has been engineered, but I played safe all the same.

The slim arm comes with a removable headshell, but its mechanical connector is unique to Dual so universal SME-style bayonet connector headshells cannot be substituted. The removable headshell has a locking collar that is simply unscrewed for removal, making cartridge changing easy. Arm balance is set by screwing the counterweight forward or backward, and a dial conveniently sets tracking force. Bias can also be set but arm height is fixed. Overhang (lateral tracking angle) can be set as

usual by sliding the cartridge forward or backward in its headshell.

As a traditional Dual the CS 460 looks and works much like those I have used in the past – and this means with slick ability. It is idiomatic. No one does them any more: the CS 460 harks back to the 1970s when autos were king. Rega and Audio Technica make strong alternatives at a similar price – but they lack Dual's auto-mechanism.

Size-wise the package is normal enough at a compact 430mm wide, 365mm deep and 130mm high. The supplied acrylic dust cover that moves on sprung plastic hinges swings up to 400mm high – the clearance height needed on a shelving system. Build quality and finish are good, the solid plinth well finished in gloss black. However the turntable assembly is lightweight – as Duals always were – and the anti-skate



The rear counterweight sets arm balance and a dial applies tracking force.

Black Rhodium Waltz Loudspeaker Cable

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For more information on Quickstep and Waltz, please contact Black Rhodium: sales@blackrhodium.co.uk



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- The Audiophile Man

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Rear 12V d.c. power input and signal leads.

adjustment ring on our sample lifted off whilst being set.

Power comes from an external wall-wart universal supply that delivers 12V d.c. (100mA) through a thin lead 2m long, terminated by a concentric d.c. supply plug. Perhaps surprisingly, since on-board power is available, there is no integral phono-stage, so an amplifier with a Phono input is needed, or an external phono-stage.

SOUND QUALITY

I used the CS 460 with our Icon Audio PS3 Mk2 phono-stage, feeding a Creek Evolution 100A amplifier driving KEF R5 loudspeakers through Chord Signature cables.

The basic sound balance is determined by Ortofon's OM10 budget MM cartridge. Although technically it is a good design, at the same time it lacks warmth and can be very revealing. With older LPs or slightly harsh cuts, such as our Fleetwood Mac 'Rumours' LP recent-remaster which for some reason has problems on vinyl (the 24/96 digital version sounds better!). Here, vocals on 'Go Your Own Way' were forward and moving toward strident.

That's not exactly the deck's fault: it is very revealing but the OM10 I must candidly note doesn't give vinyl smoothness and warmth. Revealing rather than romantic.

All was, however, fine with top-quality cuts such as Mark Knopfler's 'Kill To Get Crimson' or Lyn Stanley's 'Moonlight Sessions' (45rpm) but the first album from the Scissor Sisters was a tad edgy for example, as were many others. An Audio Technica AT-3600 is my preference in a deck like this. Obviously, the budget arm is just that and gave a decent enough sound, but as measurement revealed, it's not in Rega territory. This is a nice lightweight design that rides warps well, but rigidity lags modern standards.

With volume wound up, as I cued down into the lead-in groove of LPs I could hear faint motor whine coming through the loudspeakers. A

DIN Rumble test disc confirmed its existence. This isn't very impressive; the motor should be inaudible as it is in nearly all modern turntables. The whine was caused by motor vibration feeding through to the platter.

I spun synth-based LPs like The Scissor Sisters to check for signs of wow, since synth notes mostly lack frequency modulation, unlike human violin players for example. Here the CS 460 was steady enough, with no obvious warbling or such like.

CONCLUSION

In terms of sheer performance Dual's delightful CS 460 shows its age. The lightweight arm rides warps well but lacks rigidity, there's faint motor whine too – it was all a bit approximate. And Ortofon's OM10 rather cruelly reveals noise and harshness in old LPs or even modern ones.

It isn't romantic – and I can't help feeling potential buyers may be looking for a bit of that.

All the same, the CS 460 is a delight to use and it does offer a way to let others in the household play LP without difficulty (or a bent stylus). I liked it as a well-functioning blast from the past that makes playing LP a simple and enjoyable experience for all the family.



Start/Stop lever at front, speed selection behind, then cue lever.

OTHER FINISHES

Dual CS 460 Textured Black

3 Speed, Fully Auto, Heavy Alu Sandwich platter, Cardan Quad Bearing Tonearm, Detachable HS, Adjustable VTF/VTA/Antiskate, OM10 Cartridge £599.00

Dual CS 460 Walnut

3 Speed, Fully Auto, Heavy Alu Sandwich platter, Cardan Quad Bearing Tonearm, Detachable HS, Adjustable VTF/VTA/Antiskate, OM10 Cartridge £699.00

Dual CS 460 Makassar

3 Speed, Fully Auto, Heavy Alu Sandwich platter, Cardan Quad Bearing Tonearm, Detachable HS, Adjustable VTF/VTA/Antiskate, OM10 Cartridge £699.00

MEASURED PERFORMANCE

The turntable ran -0.7% slow, just within the 1% limit where pitch is audibly incorrect to a trained ear. The d.c. servo-motor held this speed over a long period without any great wander from

nominal, a good result.

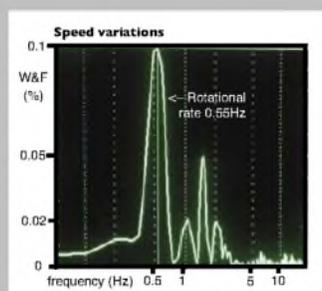
Speed variation was about as expected for a traditional belt drive turntable, measuring a mediocre 0.2%, predominantly at rotational frequency (0.55Hz) and its second harmonic ((1.1Hz) our analysis shows. Above 5Hz however there is virtually no flutter. This level of wow is common enough in budget turntables and produces slightly watery pitch rather than obvious slur.

Our Brüel&Kjaer accelerometer, attached to the headshell, shows a large and broad vibrational peak centred at 400Hz. This is the light alloy tube and headshell both reacting to mechanical input from the cartridge. Rigid modern arm assemblies manage considerably better.

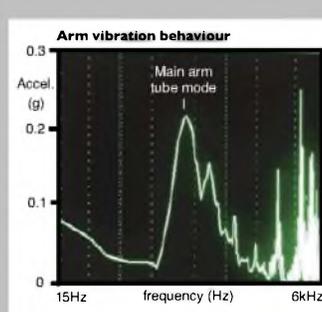
The CS 460 was mediocre all-round under measurement, the arm in particular falling below what is possible at the price. **NK**

Speed error	-0.7%
Wow	0.2%
Flutter	0.07%
Wow & Flutter (unwtd)	0.2%
Wow & Flutter (DIN wtd)	0.15%

SPEED VARIATION



ARM VIBRATION



DUAL CS 460 TURNTABLE £699



GOOD - worth auditioning

VERDICT

A fully automatic turntable that makes playing LP easy and damage free.

FOR

- ease of use
- three speeds
- appearance

AGAINST

- bright sound
- lightweight build
- motor whine

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Information

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

Screenshots

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Discreet – and discrete!

Martin Pipe reckons that Pro-Ject's flexible Phono Box S2 Ultra punches way above its £200 price.

Over the past two decades or so, Pro-Ject has probably done more than any other hi-fi company when it comes to renewing serious interest in vinyl playback among audiophiles fettered by modest budgets. Indeed, the firm was telling us to 'go analogue' at a time when everyone else was sold on digital. And while Pro-Ject offers a worthwhile portfolio of digital products, any of its developments that happen to revolve (!) around those magical black discs will always make us sit up and take notice.

As well as their turntables, Pro-Ject also have a neat line in phono stages. When the firm started its vinyl crusade, integrated phono preamps

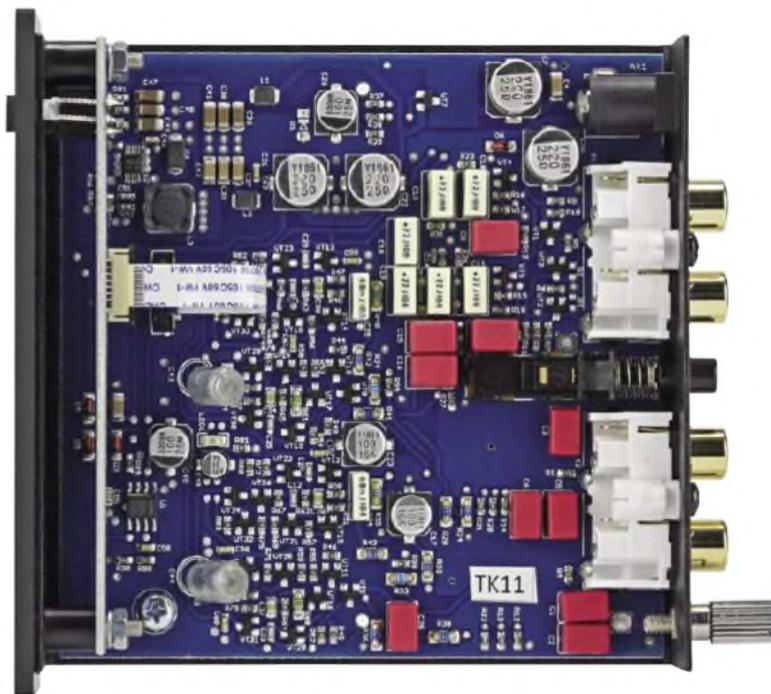
were disappearing from amplifiers as manufacturers were under the impression that there was no longer any demand for them – in an era when CD had become the primary music carrier. If an amp had a Phono input it was a mediocre MM-only design cost-engineered around an off-the-shelf silicon chip or two.

If you're to get the best from vinyl, a properly-designed phono stage that plugs into a line input (Aux, Tuner etc) can be essential. Such devices are also useful if you envisage using a recorder or PC to archive LPs onto digital media so they can be enjoyed – for example – on the move. Whilst you can pay thousands for a phono stage, the Pro-Ject Phono Box S2 Ultra – which can

be configured for MM or MC carts – can be yours for £200 or so.

Despite this, the Phono Box S2 Ultra – a cost-reduced version of the limited-edition £300 Phono Box Ultra 500, built into substantial copper metalwork (for 'heightened' screening) and supplied in a fancy wooden box – is a flexible wee beastie. Inputs and outputs are via phono sockets and there's a ground post. The S2 Ultra's small size ensures that finding a place for it – close to the turntable, maybe? – is never going to be a problem. Part of the reason for those diminutive dimensions is that the power supply is external. The 18V DC needed by the preamp is provided by a 'wall wart' that plugs into a mains socket.





The circuit board of the Phono Box S2 Ultra is busy, full of transistors instead of generic op-amps. Decent-quality passive components, like polystyrene capacitors, are also in evidence. According to Pro-Ject “the split RIAA equalization” implemented with this collection of devices “enables a pin-point accurate representation of the RIAA curve” to be achieved. The unit’s only chips are power supply components.

A secondary advantage of Pro-Ject’s design is that mains supply voltages are kept away from the sensitive electronics that work with the tiny signals from phono cartridges – improved performance should result. Another route to the best sound is ensuring that the input of your phono stage is matched to the specific characteristics of your cartridge. And this leads us to the S2 Ultra’s second concession to flexibility. On the base of the unit are two rows of DIP switches – one per channel – that alter the electrical characteristics of the inputs, so that full compatibility with any cartridge can be achieved.

The instruction sheet supplied with the unit gives the various switch permutations needed to achieve a specific resistance (10 Ohms to 47 kOhms for MM) or capacitance (100 pF to 420 pF), but falls short of providing user-friendly tables for commonly-used cartridges. The gain is also switchable between 40dB (MM) and 60dB (MC).

On top of this, a further 3dB of gain can be added at the flick of another tiny switch. This can be useful for lower-output cartridges, or when digitising ‘quiet’ compilation LPs with numerous tracks.

The third valuable feature is a subsonic filter, which is particularly useful when it comes to dealing with warped records. It’s switchable,

meaning that your low-end can be left unimpeded if desired to get that sense of deep subsonics LP can provide. If your woofer cones are flapping alarmingly, then best to turn on the filter. All of this is achieved without an op-amp in sight, Project instead relying on discrete transistors – this was standard practice, back in vinyl’s ‘golden age’. Time moves on in other respects, though; extensive use is made of surface-mounted components. That’s how Pro-Ject have managed to make the unit so small.

SOUND QUALITY

I drove two integrated amplifiers with the Phono Box S2 Ultra – an Arcam A49 integrated amp and the Musical Fidelity M2 Si reviewed elsewhere in this magazine, in both cases driving Quadral Aurum Wotan VIII ‘speakers. To put the S2 Ultra through its paces, I used two turntables fitted with very different cartridges. One was a Technics SL1200 Mk2 Direct-Drive fitted with an Audio-Technica AT440MLb MM cartridge, the other a Systemdek IIXE900 belt-drive fitted with Alphason Opal arm and Denon DL304 MC cartridge. I matched the cartridge characteristics, as listed in spec sheets, as closely as possible to the S2 Ultra’s loading.

The first thing I heard with the Systemdek/Alphason/Denon was just



Two rows of recessed DIP switches – one per channel – enable Phono Box S2 Ultra to be ‘matched’ to whatever cartridge (MM or MC) you happen to be using. A tiny screwdriver is needed to flip each switch.



Gold plated phono sockets are used for signals both into and out of the Phono Box S2 Ultra. The highly-effective subsonic filter, which deals with problems like warped records, can be switched out of circuit if not required.

"presented with depth, dynamics and a naturally-wide soundstage"

how fulsome and well-defined the lower frequencies are. In Another One Bites The Dust, from Queen's 1980 LP The Game, John Deacon's Chic-influenced bass throbbed powerfully and tunefully – carrying along the track just as intended. Switching to my mid-70s CBS pressing of Simon and Garfunkel's Bridge over Troubled Water I found that the footstomps and bass drum of Cecilia were given the room they need. Flipping the record over, the depth and definition bestowed on the bass harmonica of The Boxer was a

joy to behold.

After a quick reconfiguration I found that the Technics/Audio Technica combo fared perceptibly better at the lower end of the scale. However, the reverse was true in terms of treble cleanliness and overall clarity! It is a credit to the resolving-power of the Phono Box S2 Ultra that such differences are laid bare.

My ASV Digital LP of Vivaldi's Concerto in C for Bassoon and Strings (English Chamber Orchestra/ Daniel Smith/Philip Ledger) was presented with depth, dynamics and

a naturally-wide soundstage, the subtleties of Smith's bassoon being definable without compromising the orchestral strings that back him. An even older recording (EMI, 1958) of Dvorak's New World Symphony (Berlin Philharmonic/Rudolf Kempe) was also a convincing listen, courtesy of the tonal range and stereo imaging that could be conveyed.

CONCLUSION

It's difficult to find fault in a phono stage that sells for £200 and sounds wonderful. It's sonic success is down to careful design and its ability to accommodate both MM and MC cartridges, as well as the use of discrete transistors rather than silicon chips. Fantastic sound and fantastic value!

MEASURED PERFORMANCE

Gain values were exactly as described, x100 (40dB) for MM and x1000 (60dB) for MC. The +3dB switch is a neat touch that provides exactly the right gain step for low output MMs and MCs, with MC giving a maximum gain from the unit of x1413 or 63dB, measurement showed.

Output overload measured 9.5V. That equates to 95mV input overload for MM and 9.5mV for MC, both good figures our measurements of cartridge output show; the unit will not suffer overload.

Frequency response MC measured flat from 20Hz-20kHz with the highest gain of 63dB – most challenging because inadequate gain causes bass roll off. There is some slight plateau loss of low frequencies, meaning not a bass heavy sound. Switching in the warp filter corrected this as well as attenuating deep bass very quickly. With MM equalisation was more accurate and the warp filter equally effective.

Noise measured a very low 0.15µV

(input noise) for both MC and MM. With MM this is way below the thermal noise a cartridge produces. With MC the situation is different – they produce virtually no thermal noise. The 0.15µV value is low and hiss will not be audible except with very low output designs where a faint background hiss at the 'speaker will be audible; super-low noise inputs, typically using transformers, are 6dB quieter. For a budget design however the Phono Box S2 Ultra manages very well and hiss will not be audible with most MCs.

This is a very well designed phono stage that is quiet, accommodates all phono cartridges and has an excellent warp (subsonic) filter. Superb. **NK**

PHONO (MM/MC)

Frequency response (-1dB)

20Hz-20kHz

Distortion (1kHz, 5mV in) 0.04%

Separation (1kHz) 68dB

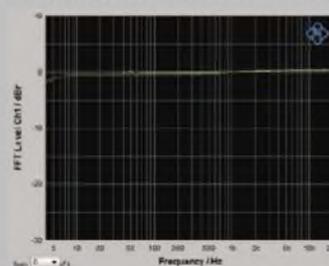
Noise (IEC A) -93dB / -82dB

Gain (MM, MC)

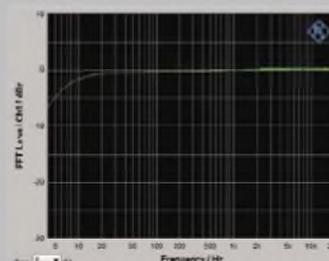
x143 (43dB) / x1413 (63dB)

Overload (MM, MC) 95mV / 9.5mV

FREQUENCY RESPONSE MM



FREQUENCY RESPONSE MC



PRO-JECT PHONO BOX S2 ULTRA £200



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

This little phono stage does a wonderful job – Pro-Ject should be congratulated!

FOR

- excellent detail and dynamics
- very musical
- compact and practical design

AGAINST

- DIP switches can be rather fiddly
- a 'table' of settings for cartridges would be welcome

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Musical ending

Paul Rigby reviews a book that delves deep into the end of a music industry legend EMI.

The Final Days of EMI: Selling the Pig

Author: Eamonn Forde

Omnibus Press

Price: £20.00

I've been waiting for a book like this to appear for months now. Finally, here it is and it's been written by a music business journalist – a relief because this story is largely about finance.

It's a sorry affair and signifies the end of an era in terms of the greater music business, the dominance of the physicality of music in sales terms, the nature of major label dominance and the time when big music labels strode over the earth and controlled artists in a similar way to the old movie studio system and the Golden Age of Hollywood.

I personally feel sad that, if any of the big names was going to fall, that EMI should have been the one to go but that's what this book details over its 358 pages.

The popular consensus is that EMI died at the hands of Hands. Guy Hands, the head of a private equity company called Terra Firma. Hands took control of EMI in 2007 and completely failed to keep control of the company which died in 2010. Long-term EMI staff pointed the finger at him and accused him of killing a 113 year old company in just three years.

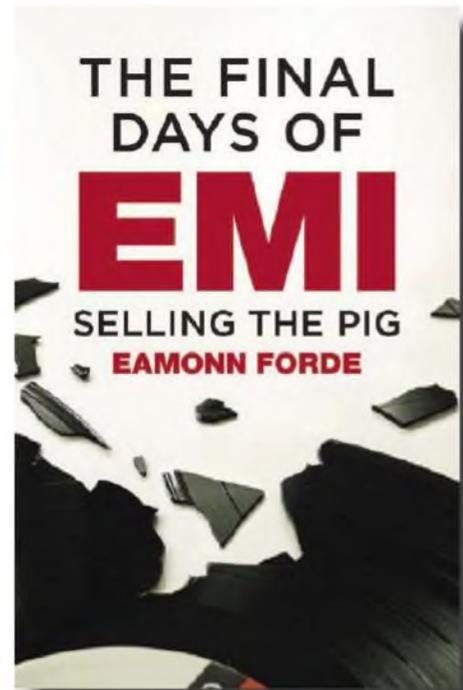
Yet Forde digs further than this. He looks back at 1996 when EMI separated from its former parent Thorn and, because it lost

a protective shield, one that was previously part of a multi-interest affair, became increasingly vulnerable.

What ifs? There's plenty of those. EMI chairman Sir Colin Southgate could have sold EMI to Seagram's Edgar Bronfman Jr. Instead, Bronfman bought Polygram from Philips. Then there was the European Commission's block of the Warner merger with EMI in 2000. EMI then thought about buying BMG. But then that same European Commission said that Sony was fine to merge with BMG.

What would have ultimately happened to EMI if any one of these business moves had been completed?

Forde talks about the lead up to the laying on of Hands, as it were, and even at this early stage I was impressed by Forde's willingness to get up off his backside and talk/track people down. There's lots of voices here and it helps to provide comment from all sides, filling in all kinds of gaps in the picture. Sometimes the sources are anonymous but the voices also emerge, directly or indirectly, from the head of Parlophone, Miles Leonard, the co-manager of Radiohead Bryce Edge, Guy Hands himself, David Kessler (Terra Firma partner), ex-BBC head honcho John Birt who was with Terra Firma at the time, songwriter and creative advisor



Billy Mann, Uli Mücke who was part of EMI Europe, Marco Alboni who was head of pop/frontline music at Capitol/EMI in Italy, Daniel Miller the head of Mute Records, Roger Faxon the CEO of EMI at the time and many more.

Issues discussed include how Terra Firma were welcomed into EMI and how Terra Firma meshed with EMI...or didn't, the growth of internal politics, Terra Firma's friction with artists and established EMI staff members including the loss of Radiohead, its negotiations with The Rolling Stones, the digital landscape, courtroom dramas and much more.

Then we get to the final chapter entitled "Putting the Old Girl Out of Her Misery" and a final Vox Pop section where a number of voices give their opinion on the failure of EMI as an ongoing entity.

As one anonymous EMI executive has it "People say that Terra Firm killed EMI. Terra Firma did not kill EMI. EMI, one way or another, would have ended up in the hands of someone else – Warner or whoever. [Terra Firma] where the ones holding the parcel when the music stopped".

A sad yet informative read, this is a story that had to be told. Forde has told it well. **PR**

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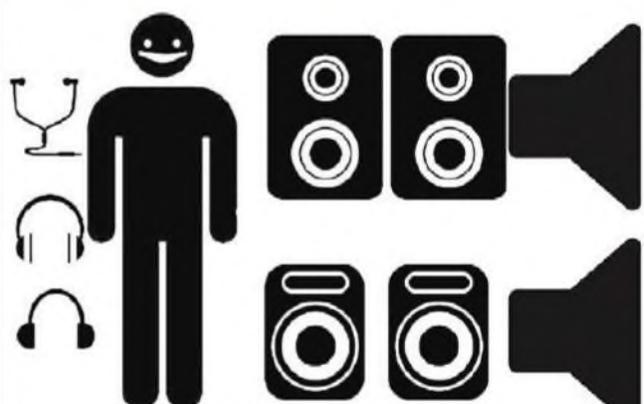
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NEAT MOTIVE I speakers. Cherrywood veneer excellent speakers, excellent sound £475. London 07957384795 (Evan)

TECHNICS RSX950 stereo double cassette deck. Very good condition, little used. Only fits Technics rack system. Buyer collect. £35. Email: barry.allchin@yahoo.co.uk

MERIDIAN 566/24 Bit DAC/Processor. Excellent condition, great sound. Upgrade your system. £375 ovno. Cash only please, buyer collects. Tel: Terry 01934 811 235 or 07868 480 165 (Weston- super-Mare)

QUAD 44 pre-amp. £250. Dual turntables (2) working order. £50. Pair ceramic cartridge styli 150 plus many types. Offers. Pioneer PL550 DD turntable, superb condition, £500. Tel: 01708 457 691

PROJECT DEBUT Carbon Esprit 5B turntable. Dali Zensor I speakers. Project Tuner FM Box S. Project Headphone Box S amplifier. Project Phono Box MM. All boxed with manuals. Bargain £475 the lot. Buyer collects. Tel: 07531 288 156 or 01159 754 070 (Nottingham)

CANADIAN GUTWIRE Synchrony 3 metre length speaker cables. Superb - totally new condition £700 (Synchrony Interconnects available separately). Email: stephen.adolphus@gmail.com. Tel: 07787 574784.

ELECTROCOMPANET SPIDER CD clamp, black, mint. Excellent upgrade for ECM1 up one two or four. New price £295. Sell for £200. Tel: 01308 868 044

GARRARD 401, one owner from new 1967. Domestic use only. Good condition. Spare interwheel. Collect only. Offers. Tel: 01472 690 844 (Cleethorpes NE Lincs)

VINTAGE HI-FI System Deck transcription turntable, Syrinks LEI arm, Sumiko Blue Point III cartridge, 10 hours use. Boxed. £350. Denon DCD 1700 CD player, remote, boxed. £50. Can demo. Tel: 01245 473 054 or Email: murray.j.todd@virgin.net

WELL TEMPERED Classic turntable, £1400. Audio Note silver interconnect Kondo Japan AN-P plugs, £430. Marantz CD85 £430. Wanted: Audio Note Oto early version. Tel: 0113 255 9475

AUDIO RESEARCH LS175E £1000. JSAudio upgraded Musical Fidelity P270 2000w power £2000. Musical Fidelity phono stage M1ViNL £300. M6CD player 24/192 DAC £750. boxes remotes manuals call Tom 07809554827 Yorkshire

TARGET VINYL Storage rack £60. Tel: 07900 694 245 (Hampshire)

SUGDEN AU41 pre & power amps. 112 watts per channel. Collection preferred, Pembrokeshire. £350. Email: tandemon@btinternet.com

MARANTZ CD 5005 CD Player, just under twelve months left on warranty and boxed. Genuine reason for sale. Preferably, collect only, cash or cheque. £120 ono. Also Marantz CD 6000OSE CD player, transport issue, free to good home. Contact Mike Bickley on michael.bickley@hotmail.co.uk Birmingham area.

VINTAGE VERY rare Audio Research SP6A valve pre-amp (not hybrid) which used to be mentioned regularly in Absolute Sounds advertising. £750 ono. Also Meridian rare black 101pre, 104 tuner, 105 (2x mono amps each with power supply) so stacked 3 high in pairs £695. 01704 628968 or 07968769595 (Southport)

GRAHAM SLEE MC step up for between cartridge and phono stage. It is black so matches older styles. £95. Tel: 01704679165 or 07968769595

I-POD CLASSIC 160 GB £70. Cambridge Audio NP 30 Streamer with Remote £60. Cambridge Audio DacMagic. Boxed £100. Onkyo ND-S1 I-Pod Dock with Remote. Not working. Boxed. £20. Hi-Fi World and Hi-Fi News magazines from 1990s onwards. Offers Tel: 07785 724849. Oxfordshire

CAMBRIDGE DAB 300B, black, tuner as supplied plus remote. £100. Delivered UK mainland. Tel: 01302 391 030 (Doncaster)

EPOS K2 speakers in white. Mint condition, boxed, less than two years old, hardly used. £600. Email: david.smither@yahoo.co.uk Tel 01630 685966. (Shrewsbury area)

WATERFALL AUDIO Victoria Evo glass floor-standing speakers (1 pair). Brand new, open box. Superb beasts! Not even broken in. Yours for £1,650. Can be shipped at cost. Email: paulheath72@gmail.com

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NEXT MONTH MAY 2019 ISSUE

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A superbly built and finished valve preamplifier from World Design, graced by high quality sealed small-signal relays for consistent results and long life, plus beefy line drive output transformers to minimise noise. This lovely looking unit will be reviewed in our forthcoming May 2019 issue – don't miss it!

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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, we cannot guarantee that all products listed above will appear.

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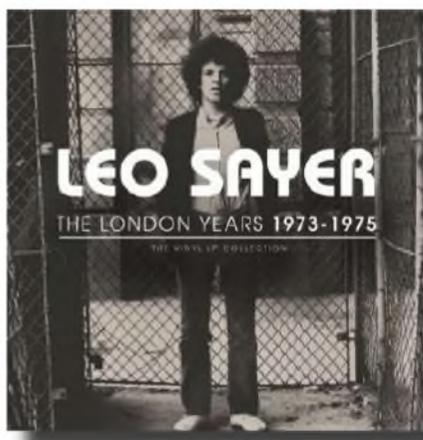
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JUNE 2019 - 2ND APRIL

JULY 2019 - 7TH MAY

LEO SAYER

JUST A BOY
DEMON

"that appearance
can never be
shown on TV"

Some artists - and that includes musicians - have as much personality as cardboard, are as dull as a blown light bulb and live a life as animated as a fridge. Not our Leo, life seems to find him.

He recently admitted that he walked past a camera scrum after spotting Lady GaGa in full regalia "I'm the mug who walked right across the line of photographers and shouted 'Hey Gaga, how ya doing?' She was so transfixed posing for photographers, she completely dissed me. A week later I got this lovely letter from her, saying 'Leo, I'm so sorry, I saw you but I couldn't change the pose'."

He's also the guy who stormed out of TV reality show 'Big Brother'. Partly because of the general toxic atmosphere but also because the show controllers wouldn't supply him with clean underwear. "They offered me a record deal" he said. "I needed a deal and you've got to have publicity. I knew it was a bad decision the moment I went in - actually, I knew the week before - but there was no backing out".

His first Top Of The Pops appearance in 1973, dressed as a Pierrot clown and singing the hit single 'The Show Must Go On' was going and going fine. "Jimmy Savile introduced me" he said. "Then f*****g Savile jumps on halfway through the song and starts clowning around, so that appearance can never be shown on TV".

Then there was the experience with his original manager, ex-singing star, Adam Faith who, upon signing Sayer, immediately took him to a brothel, to knock out his innocence. "He wanted to make me a man, instantly". Faith was a "loveable rogue" yet Sayer sued Faith for mismanagement and eventually settled out of court.

Faith was managing Sayer when 'Just a Boy' was released in 1974. Sayer wrote the lyrics and his colleague, David Courtney, penned the music, achieving a Top 10 place for the track 'Long Tall Glasses (I Can Dance)'.

"Long Tall Glasses is really all about first playing in America" said Sayer. "You're playing these gigs and all your heroes are better

singers than you. You get people coming to the gigs saying 'Oh you're an incredible singer!' and I say 'No I'm not. I'm not Bobby Bland...come on'. It kind of got embarrassing so I was kind of saying in a way 'I can't dance'. If you say you can then we will believe you more. So I turned round in song and said 'Of course I can dance!' Then they all go 'Yeah you're great!' and suddenly it all goes on. That's very much America".

The LP also features 'Giving it All Away' and 'One Man Band'. What hits you when you listen to this album is the lack of artifice. If Faith's brothel idea was supposed to remove Sayer's innocence then I reckon that idea bombed. And thank goodness it failed. There's plenty of that on this LP and I'm all for it. There's a sense of the geek from Sayer on this project, someone who may be just a little bit awkward. There's also plenty of charm here with a suite of songs that are delightful in their basic approach. The lack of complex production is a big plus point.

More than that, there's plenty of song writing nous here with considered lyrics, a passionate series of vocal performances that often have Sayer's vocal chords on the verge of breaking point (witness the later parts of 'When I Came Home This Morning') and music that merges musical hooks with a mature and rich rhythmic content.

Also, at this point in their career, in song-writing terms both Sayer and David Courtney were on a roll. As he told the website, Super Deluxe Edition (www.superdeluxeedition.com) "One Man Band has Ry Cooder playing acoustic guitar on it. So that's pretty cool. But that's Adam (Faith) again, you see. He'd go to Warners and say 'I want your best guitarist, we're doing a session for Leo'. He had clout and persuasion"

For many music fans, the peak of Sayer's creative output were his first three albums: 'Silverbird' (1973), 'Another Year' (1975) and this release. Now you can own all three in pristine condition because Demon has released the lot under the title of 'Leo Sayer - The London Years' as a slipcase box set including a signed photo. The new releases have been well mastered. **PR**



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