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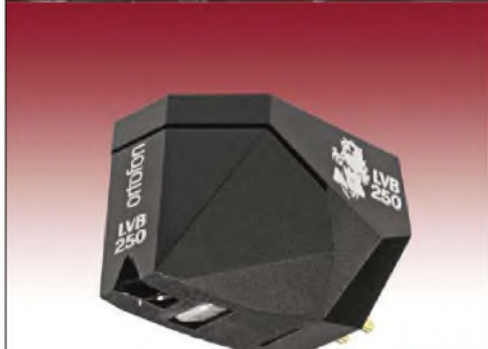
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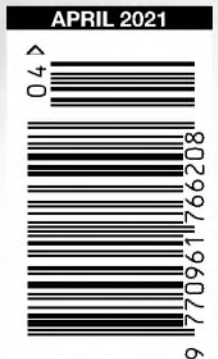


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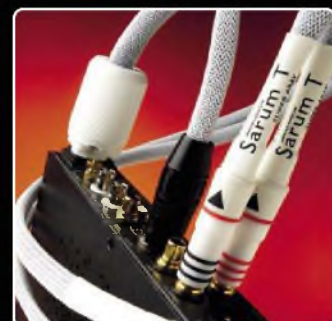
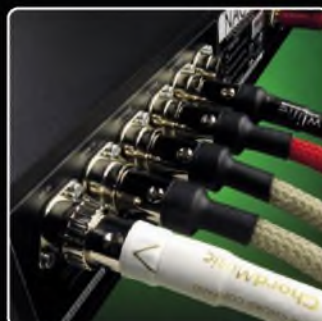


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DIAMOND
12.1
loudspeakers

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welcome

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Chris Frankland, John Pickford.



It's super green and super clean. A massively powerful amplifier that you can lift with one hand, consumes little power, does not run hot and represents cutting edge audio technology. The SA-01 reviewed on p22 is difficult to believe, it is so far away from the norm and so apparently the future of audio amplification. At a cost of just £588 in the form we reviewed. If the UK was part of the EU and they got serious about trying to curb inefficient audio then valve amplifiers would be legislated against and we would all be left using amplifiers like the SA-01.

This is a nightmare. The nightmare is that choice will be denied us, rather than the SA-01 is somehow inadequate. Quite the reverse: the SA-01 was disarmingly smooth and intriguing in its own way: why should we not all be using such amplifiers? KJF Audio do a great job in presenting advanced Class D technology in user friendly form. Our measurements show clearly just how refined Class D amplifiers are becoming. Possibly the future then, whether we like it or not!

Whilst Hypex modules and B&O's Icepower might define future amplifier space, the past still has pull. Nothing seems able to stop the re-adoption of LP and I guess you could put it down to sentimentality – that lovely warm sound of yesteryear. Evocative of smoky bars and romantic scenes free of edgy overtones – “play it again Sam”. I mean sonic edgy overtones here of course, not the historical ones behind Casablanca.

Truth is, LP today is far from warm and at times not romantic either. It lacks the gritty edge of poor digital and is more dynamically engaging that's for sure, but as LP replay equipment advances the gap between analogue and digital closes. Ortofon's latest 2M Black LVB 250 moving magnet cartridge you can read about on p66, is as sonically accurate as CD and technologically advanced too. Warm and cuddly? No. Add in the advantage of balanced connection to the phono stage, explained on p73, and the result is a sound that is more than a challenge for the best digital.

I hope you enjoy reading about these cutting edge technologies in our April 2021 issue. It only gets better.

Noel Keywood
Editor



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verdicts

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

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

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



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news

WATCH THE GHOST

American valve – or should that be tube - gurus Audio Research add a new model to their Reference series of amplifiers. The new Reference 80S Stereo Power Amplifier shares the same outward dimensions and similar levels of design and engineering as the Reference 160S, with a lower power output (80W per channel) and lower price tag.

Four KT150 output valves are employed instead of the eight featured in the 160S, however much of the bigger sibling's technology can be found in the 80S, including dual GhostMeters that 'float' in front of the KT150 valves within a dual-layer glass window.

A fully balanced differential design, the 80S also features a proprietary auto-bias circuit that adjusts for valve age and powerline voltage swings. Single-ended and balanced inputs provide flexibility, whilst switchable Triode/Pentode operation accommodates loudspeakers and sound preference. There is also an hour meter, indicating how much usage the valves have had.

UK retail price is £14,998 in either natural silver or black finishes.

Further details www.absolutesounds.com



BASS IN THE SPACE

Maximising bass yet minimizing space is KEF's aim with their new KC62 subwoofer. Featuring the company's proprietary Uni-Core force-cancelling driver technology in a compact, sealed aluminium cabinet, the twin 6.5 inch driver array features a single motor unit with the voice coils concentrically arranged, allowing the cabinet size to be reduced by over one third.

The driver's patent-pending P-Flex Surround is inspired by the Japanese art of paper folding, earning itself the nickname Origami Sound, while the company's Smart Distortion Control Technology is a sensor-less motion feedback system that measures current in the voice coil to reduce non-linear distortions.

DSP courtesy of KEF's Music Integrity Engine incorporates iBX (intelligent Bass Extension) and SmartLimiter algorithms, that continually analyse the signal to prevent clipping. Priced at £1,400, the KC62 is powered by 1,000W RMS (2 x 500W) of specially designed Class D amplification. KEF SmartConnect eliminates any connection issues and the KWI adaptor kit enables wireless compatibility. Finish options are Carbon Black and Mineral White.

Further details www.uk.kef.com



NOW DAC'S MAGIC!

Cambridge Audio has launched a flagship DAC/headphone amplifier with native MQA support. The DacMagic 200M is priced at £499 and features a more powerful headphone output than previous models along with superior DAC technology and integrated Bluetooth.

Dual ESS Sabre DACs are at the heart of the DacMagic 200M. A step up from the previous generation DacMagic Plus, the new high-quality DACs can handle PCM and DSD signal inputs at a higher resolution than before – up to 32-bit/768kHz (PCM) and DSD512 natively.

Dual mono configuration means each DAC processes the left and right channels separately, resulting in a performance that is said to be astonishingly free of distortion, incredibly precise and has superb dynamic range. Switchable digital filters on the DacMagic 200M offer greater flexibility and control over your listening experience. These three pre-set filters help reduce noise generated by the digital-to-analogue conversion process, with each filter offering a different sonic option depending on the source material.

Further details www.cambridgeaudio.com



RED ROCKET

A new addition to iFi's long-running transportable Micro iDSD series is the iDSD Diablo DAC/headphone amplifier. Dressed in devilish red, the Diablo is said to be the best battery-powered DAC/headphone amp the company has ever produced.

With "prodigious power" to drive even the toughest headphone loads, the iDSD Diablo features balanced and single-ended headphone outputs, balanced line-level output and employs OptimaLoop negative feedback technology.

The unit's digital stage features a low-latency 16-core XMOS chip, which processes data from USB and S/PDIF inputs, and a pair of Burr-Brown True Native DAC chips in custom 'interleaved' configuration.

Extensive jitter-eradication technologies are applied to the digital stage it's said, including an enhanced version of iFi's GMT (Global Master Timing) femto-precision clock, which features a new crystal oscillator.

The iDSD Diablo handles PCM data to 32-bit/768kHz, all levels of DSD to DSD512 and single/double speed DXD. Full decoding of MQA files – the hi-res streaming codec, as used by Tidal's 'Masters' tier - is supported through the USB and S/PDIF inputs. RRP is £899 – accessories available at extra cost.

Further details www.ifi-audio.com



AN ACE IN THE HOLE

Swiss loudspeaker manufacturer PIEGA has launched the ACE series, an affordable collection featuring the company's signature aluminium cabinets and AMT tweeters. Drawing on technology trickled down from the Master, Coax and Premium models, the Ace series consists of the Ace 50 (£1,980), a slim, one-metre tall floorstander; the Ace 30 (£980), a compact satellite loudspeaker and the landscape format Ace Center (£590), designed for home-cinema systems.

The cabinets are 14cm wide and 16cm deep, sporting an oval aluminium profile with no visible seams, angles or fixings. They are braced and optimised for the 120mm MDS mid/bass drivers common to all three models.

The Ace series is available in three finishes: Natural aluminium with grey fabric grille, anodised black with black grille and high-gloss white with white grille.

Further details www.piega.ch



DANCING IN THE CEILING

French loudspeaker specialists Focal unveil a 'game-changing' range of in-wall and in-ceiling speaker and subwoofer options with the Focal 1000 Series. Three years in development, the new flagship series is said to embody the essence and savoir-faire of Focal: innovative speaker science, exclusive technology implementation and exquisite French design and manufacturing.

Beryllium tweeters are used, along with 'W' cones as featured in Focal's Utopia home speaker range. They come with magnetic, ready-to-paint speaker grilles for the perfect visual integration in every room, Focal says.

Ceiling speakers employ Focal's patented 'Easy Quick Install' system for tool-free integration, while the wall speakers feature adjustable drivers that can be angled in any direction towards the listening position.

They can be paired with 1, 2, 4 or 6 subwoofers, while using only one channel of amplification, to match the room size and desired SPL. Speakon cables are provided for simple speaker/sub connectivity. Single units are priced between £999 and £2,599.

Further details www.focal.com

NORMAL LIFESTYLE

Horn specialists Klipsch announce the ProMedia 2.1 BT, a powered speaker system "equipped for duties beyond just the desktop" says the company. This is a re-designed version of the US maker's original 2.1 compact package, with added Bluetooth connectivity.

The ProMedia 2.1 BT consists of a pair of powered stereo speakers and an acoustically matched subwoofer. Each satellite speaker houses an 8cm Klipsch MicroTractrix horn mid/bass driver directly below the 19mm PEI (polyetherimide) tweeter; the two satellite speakers integrate with a 17cm side-firing ported subwoofer. Klipsch quote a maximum power rating of 200 Watts.

Designed for modern lifestyles the company says, "The topics of working from home and home entertainment have never been more pertinent and enabling great audio for both activities is hugely worthwhile. The Klipsch ProMedia 2.1 BT demands little in the way of desk/shelf/table acreage, yet brings spacious stereo sound, deep bass, and Klipsch horn-empowered clarity and naturalness. Whether it's for work, rest or play, the new Klipsch ProMedia 2.1 BT is prepared for your new normal". UK SRP is £279.99.

Further details www.klipsch.com



PHANTOM POWER

French audio technology company, Devialet, introduces Phantom I, the newest iteration of its Phantom all-in-one speaker.

Phantom I now incorporates Devialet's unique audio processing chip, embedding signal processing and amplification performance in a System on a Chip (SoC) – making Phantom I up to 4 times more energy efficient than the previous generation, the company says.

Phantom's design has been updated with a modern matte finish, now available in black and white, with new signature side panels, accessories and packaging. In addition, Phantom I launches with new features, including compatibility with Room Ready and AirPlay 2 and a more intuitive interface.

Available at two power and bandwidth levels, Phantom I 103dB offers a frequency response of 16Hz – 25kHz, while Phantom I 108dB ranges from 14Hz – 27kHz.

Retailing from £1,890, Phantom I is available from department stores such as John Lewis, Selfridges and Harrods, as well as through Devialet's website and own stores.

Further details: www.devialet.com



GO BUDDY GO

Cyrus Audio has launched the second-generation soundBuds2 in-ear headphones. The company says it has dramatically improved on the original soundBuds with a sleek modern design, improved larger drivers, longer battery life and capacitive touch controls.

Bluetooth range is quoted as 10 metres and the headphones come with a pocket-sized fast charging case with one-hour rapid charge. Once charged, the soundBuds2 give five hours playing time with a further 15 hours available from the carrying case in your pocket.

"We have retained the extremely light weight "fit and forget" design and a small case for "slip in your pocket portability" said Simon Freethy, MD of Cyrus. "Again, we have focused on combining this with superior audio and soundBuds2 are sonically a step up over the previous model. Auto pairing, new touch controls and increased battery life have all enhanced the ease of use. The one thing that has not changed is the price, making them even better value". Price is £79.99.

Further details www.cyrusaudio.com



EIGHTH WAVE

Furutech has launched a new LAN-8 NCF 'Category 8' audio Ethernet cable. Category 8 refers to an ultra-high-speed transmission cable with speeds of up to 40Gbps and frequencies of up to 2,000MHz, 3.3 times the capability of Category 7.

The LAN-8 NCF features a connector shell incorporating Furutech's Nano Crystal Formula. NCF uses a special crystalline material said to have two active properties, as it generates negative ions that eliminate static and converts thermal energy into far infrared. This material is combined with nano-sized ceramic particles and carbon powder for their additional 'piezoelectric effect' damping properties. The cable also features a 24 AWG silver-plated OCC conductor and RJ45 connector with a non-magnetic 24k gold-plated conductor and gold-plated copper alloy body.

It's claimed the LAN-8 NCF also features improved specifications for crosstalk and system noise when compared with a Category 7 cable. Available in various lengths from 0.6m (£120) to 5m (£260), 7.5m and 10m cables are available on request.

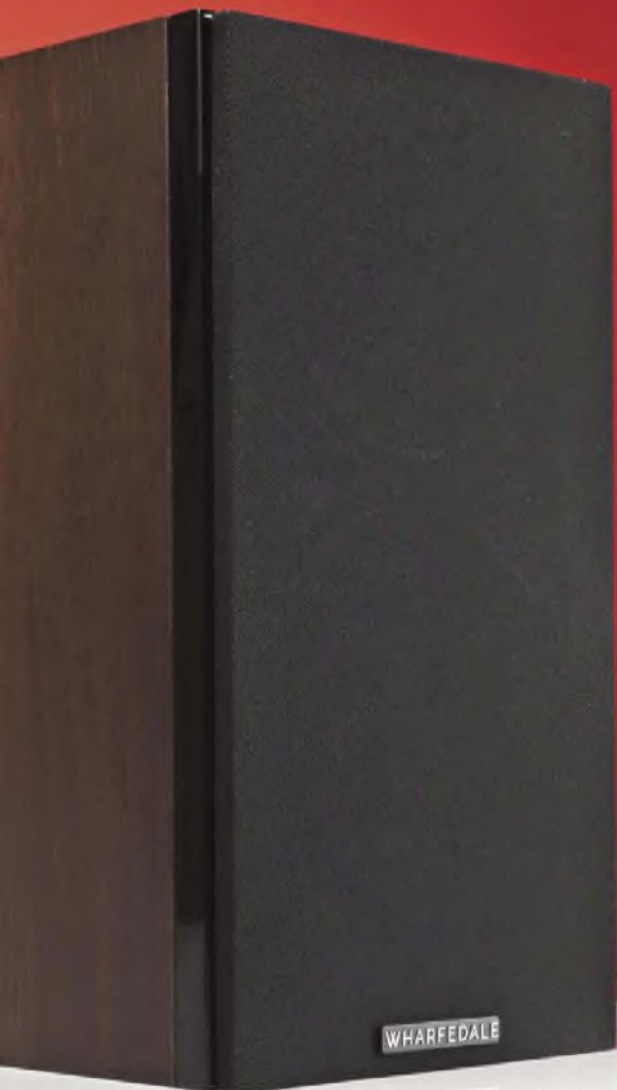
Further details www.furutech.com





Diamond Life

With heritage dating back almost 40 years, Diamonds are forever, says John Pickford.



Heritage is something of a buzzword in audio these days. Wharfedale's popular Linton Heritage, based on a mid-60s design and offering modern sound in a vintage-style cabinet is proof of that.

Although the new Diamond 12.1 makes no concessions to retro-chic fashion, today's Diamonds can claim heritage dating back to 1982. Back then the Diamond was a dumpy little thing, almost as deep as it was tall, reminding me, with its squat profile, of top-cropped hotrods.

Nowadays the Diamond is a brand in its own right, comprising a series of bookshelf and floorstanding loudspeakers intended for both stereo and home theatre use. Owing nothing to the original model beyond its status as the grand-daddy of quality compact affordable loudspeakers, the new Diamond 12 Series has been designed from the ground up by the highly respected Karl-Heinz Fink, one of the most successful loudspeaker designers on the planet according to Wharfedale.

Sizewise, the 12.1 is in the middle of the three bookshelf models in the range, all of which share the same 25mm (1in)

textile dome tweeter. The present model features a 130mm (5in) woofer with a cone made from the company's proprietary Klarity material – a polypropylene/mica mix – with a low-damping rubber surround. Raised 'ribs' on the cone are added to aid stiffness but also add to the speaker's visual appeal.

It's an elegant design – and though styling is always a matter of personal preference, the Diamond 12.1 is a traditional design for modern-day living without sporting an obviously vintage vibe.

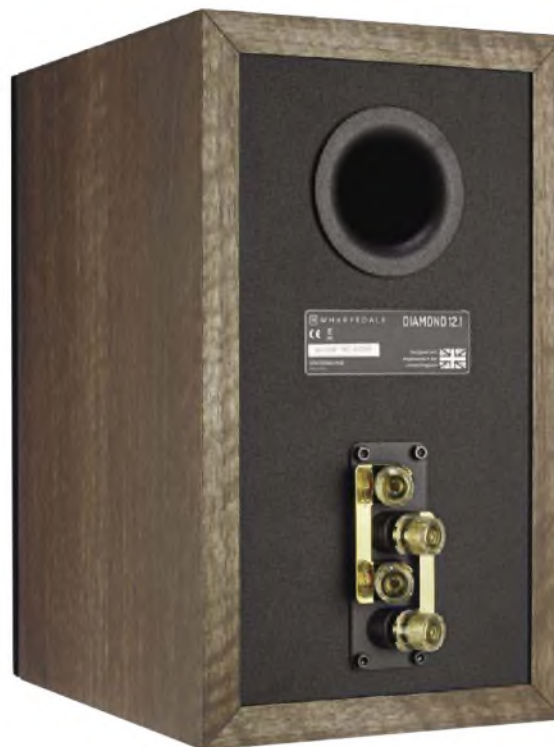
Our review sample came with a lovely walnut finish and glossy black front baffle, to which a cloth grille can be magnetically attached. You may wish to leave the grilles in place for aesthetic reasons however, like most detachable grilles, they do nothing for sonic performance and are best left off for serious listening.

At the rear is a conventional bass-reflex port, which plays a large role in the low-end response though not so much as to preclude close-to-wall positioning. I tested the pair on heavy Target stands with the rear baffle just 6 inches from a rear wall, though a later mono test of a single speaker in free space – 4 feet from the nearest wall – revealed the Diamond's bass response is not overly reliant on boundary reinforcement.

Talking of reinforcement, the cabinet employs what Wharfedale describes as 'Intelligent Spot Bracing' to reduce cabinet resonance. This is done



Wharfedale's proprietary Klarity cone material is lightweight yet rigid and further stiffened with raised ribs. The low-damping surround is designed to minimise colouration and improve dynamic expression.



The rear port has been optimised to work in unison with the drive units to assist low-end response. Two sets of terminals allow for optional bi-wiring with metal links provided for single wire connection.

successfully as the Diamond 12.1 is remarkably free from audible boxy colourations; performing the knuckle-wrap test confirmed the resonance-free rigidity of the cabinet.

Returning to the rear panel, two sets of speaker terminals, set at jaunty angles to each other, allow for bi-wiring if you wish. I haven't gone down the bi-wire

route for many years so a single run of QED XT40i cable did the job nicely. This connected the Diamonds to my Naim Nait XS 3 amplifier, which might seem like overkill partnering £249 loudspeakers with an amp retailing at over £2k, however the results clearly showed that fed good quality power, these budget boxes punch well above their weight.

SOUND QUALITY

And pack a punch they do, as I

discovered spinning my original vinyl copy of Nirvana's classic Nevermind, which celebrates its 30th anniversary this year - how old has that just made you feel? For all its aggression, Smells Like Teen Spirit can sound thin and gritty through brightly balanced speakers, even those costing way more than the Diamonds. Here though, the 12.1's smooth treble, punchy midrange and rounded bass presented the track with the sort of slam, drive and weight that would leave my BBC LS3/5a monitors limp. You want to hear a rock recording like this loud and the Diamonds' smooth tonal balance almost begs you to turn up, rock out and don't spare the neighbours.

But these aren't mere rock-boxes, as I discovered spinning Sand and Foam from Donovan's 1967 Mellow Yellow LP. This close mic'd, dry acoustic recording needs to be reproduced accurately for full effect and here the Diamonds' articulate nature projected the lead vocal with clarity and nuance, while the acoustic guitar's leading edges and body were presented in perfect proportion.

A play through The Mike



The Diamond 12.1's HF dome is made from a woven polyester film with a high gloss coating. The front plate is contoured to aid dispersion.

CONCLUSION

Wharfedales latest Diamond design is completely successful, so my ears tell me. Friendly yet fun, they won't render any of your favourite tracks unlistenable by highlighting too many flaws in the recording. They have a lively, engaging sound that is punchy yet free flowing and easy to listen to, regardless of what type of music is played.

Happy-go-lucky in nature, they are quite unfussy about where they are placed, however they deserve

sources and amplifiers costing far more than their asking price; they have the potential to survive system upgrades.

I was extremely impressed by the quality of sound the Diamonds deliver for the money; I would have guessed their price to be at least 50% more than it is. As it is, Wharfedale's brand new Diamond 12.1 is a must-hear loudspeaker for anyone looking for a classy two-way bookshelf design that doesn't break the bank.

NOEL SAYS -

I know designer Karl Heinz-Fink well and the new Diamonds reflect his design outlook. In a quick listen I found them admirably smooth and easy, the polypropylene/mica cones revealing instrument timbre superbly; no zingy metal imposition here. Nor screechy treble, because the tweeter is not metallic either. A class act at a low price.

"They have a lively, engaging sound that is punchy – yet free flowing and easy to listen to"

Westbrook Concert Band's Celebration (Deram 1967), a large-scale work beautifully produced by Eddie Kramer (who recorded many rock giants including Hendrix and the Stones; he even engineered a couple of Beatles tracks), didn't upset the Diamonds at all. Stereo imaging was honest enough without being epically panoramic, and while the speakers' slightly mid-forward character doesn't make for the deepest of soundstaging, their realistic portrayal of each instrument's timbre was excellent. I've heard this recording sound altogether more cluttered through much larger and more expensive loudspeakers.

Listening to some midrange-dominant mono 45s from the same era (Hendrix, Stones and Beatles again) revealed the Diamonds' forgiving nature, for while they don't offer a particularly immersive 'listen in' experience, they project well without becoming overly strident or harsh. With generous and warm low-mid and upper bass output, they rounded out the overall sound usefully, preventing the wince-inducing aggressive artefacts more ruthlessly revealing transducers – studio monitors for example – will not tame.

good quality partnering equipment and will not be outclassed by

MEASURED PERFORMANCE

Frequency response of Wharfedale's Diamond 12.1 is impressively flat and smooth, our analysis shows, making this a fundamentally accurate loudspeaker – unusual nowadays where budget 'speakers in particular come with treble lift.

The tweeter is interestingly peak free and it crosses over relatively low – at 1.5kHz the impedance curve shows. This gives a crossover wavelength double that of the usual 3kHz, making phase matching easier – and indeed the Diamond maintained its response well at differing microphone heights on the forward axis. This keeps the sound consistent with head movement and helps toward coherent imaging. In all, an excellent high frequency response.

The small bass/midrange unit works from 1.5kHz down to 50Hz before rolling down slowly, the port (red trace) adding to output around 55Hz. There's a small amount of lift toward low frequencies to give the sound a sense of body.

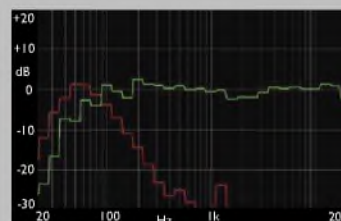
Sensitivity was good for a small cabinet, measuring 85dB sound pressure level (loud-ish) from one Watt of input at 1 metre distance, making a 60 Watt+ amplifier best suited.

Impedance measured 6 Ohms using pink noise, d.c.r. being 4 Ohms (4 Ohm bass unit). Our impedance trace shows a classic two-way with port dip at 55Hz and crossover peak at 1.5kHz.

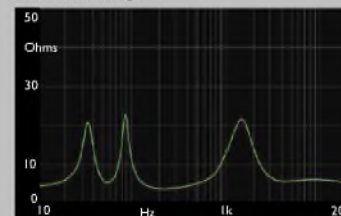
The Diamond 12.1 measured well, with obvious emphasis placed on maintaining treble quality and tonal accuracy. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



**WHARFEDALE
DIAMOND 12.1
£249**



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

Lively and engaging with all types of music. Bags of fun yet well-mannered.

FOR

- punchy midrange projection
- clean and classy top end
- unfussy of placement

AGAINST

- nothing at the price

Wharfedale
+44 (0)1480 447700
www.wharfedale.co.uk



website: www.jordanacoustics.co.uk

tel 01202 911 886 email ask@jordanacoustics.co.uk



MCINTOSH C8

Valve Preamplifier
£4,295

0% FINANCE EXAMPLE*
Initial 20% deposit of **£859.00**, then
£143.17 per month for **24 months***

With its beautiful open chassis design, a wide range of inputs, tone controls, phono stage, headphone amplifier and optional next-generation DA2 digital DSD512 module, the McIntosh C8 offers incredible value, with a performance to match.



MCINTOSH MC830

Mono Amplifier, pair
£9,990

0% FINANCE EXAMPLE*
Initial 20% deposit of **£1,998**, then
£266.40 per month for **30 months***

Combining beautiful design and a gorgeous fast-responding Dual Scale Watt meter, the 300wpc McIntosh MC830 mono power amplifier delivers breathtaking performance from even the most demanding loudspeakers.



*0% Finance examples above are subject to status & conditions

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Audeze
Aurender
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SONUS FABER MAXIMA AMATOR

Loudspeakers, pair
£14,500

0% FINANCE EXAMPLE*
Initial 20% deposit of **£2,900**, then
£386.67 per month for **30 months***

The third member of the Heritage family, the Maxima Amator, delivers striking looks, beautiful build quality, and uses the very finest components. Once again, Sonus faber raises the bar to take two-way speaker design to a whole new performance level.



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Modular Hi-Fi Stand
£call

0% FINANCE EXAMPLE*
Available, please ask.

The second generation of the Class Line improves on the first generation in every way whilst still maintaining an affordable price point and impeccable technical features. Now available in wenge and walnut too, and a perfect match for Sonus faber's gorgeous speakers.



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What Hi-Fi? Awards 2020

Revolutionary Sound Absorption

A truly revolutionary tool in the KEF acoustic armoury, MAT™ is a highly complex maze-like structure that absorbs 99% of unwanted sound from the rear of the driver, eliminating the resulting distortion and providing purer, more natural sound. MAT™ breaks completely new ground in speaker design.

Listen and believe



That's why the lady wants a TR-Amp

The TR-Amp portable headphone amp and DAC from EarMen stretches the definition of a 'pocket' product. Chris Frankland slips it into his all the same.

Ever wished the sound from your 'phone had more oomph when playing through your favourite headphones? Well, the TR-Amp portable headphone amp/DAC from EarMen could be just what the doctor ordered.

I reviewed the EarMen Eagle (£109) and Sparrow (£189) pocket

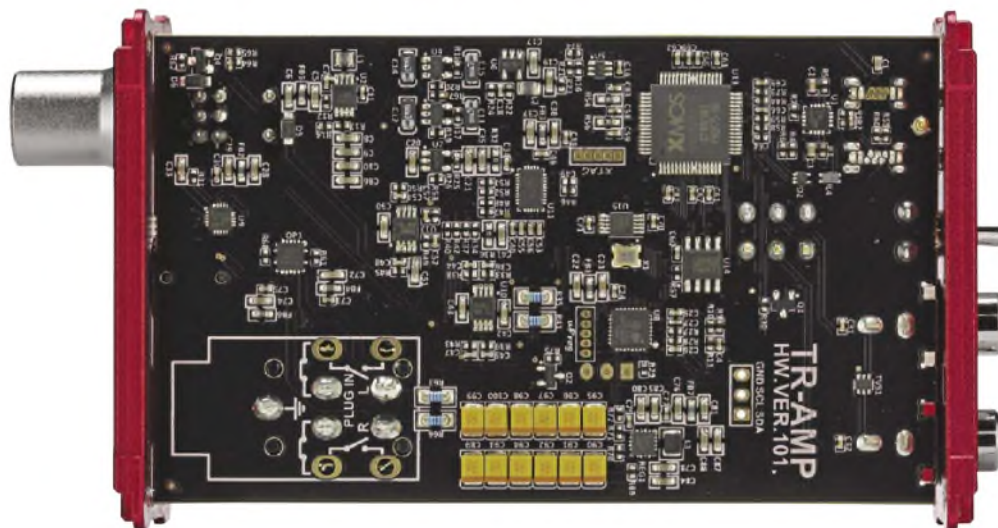
DACs in the last issue and the battery-powered TR-Amp tops off the range from this California-based specialist. At £229, it also adds a headphone amp into the equation.

With headphone listening on the move having increased in popularity, EarMen was set up in 2019 to cater for the growing demand for portable DACs that can improve the quality of playback

over what your phone, laptop or tablet offers. It was founded by Milomir Trosic, who, in 2013, started high-end manufacturer Auris Audio in Serbia, which makes high-end tube headphone amps.

I was very impressed with the performance of both the Eagle and the Sparrow pocket DACs, so I was keen to see if the TR-Amp could step things up to the next level.





TR-Amp uses a four-layer, gold-plated circuit board. It's massively complex, using a top quality ESS ES9038Q2M DAC chip able to accept PCM and DSD digital, as well as MQA coding.

The TR-Amp is substantially larger than the USB flash drive-style Eagle and Sparrow, measuring 30mm high by 66mm wide and 129mm deep. The smart red CNC milled aluminium case feels solid and durable. On the front panel are 6.5mm and 3.5mm headphone outputs, as well as a volume control/power switch to the far right. Both headphone outputs can be used at the same time.

On the rear panel are two USB-C inputs, one for charging and one for data. Next to those is a toggle switch that selects either PRE-OUT (via the amp/volume control) or DIRECT (fixed-level) to the line output RCAs. This could be used to connect either to a power amp, amplifier line input or active desktop speaker.

The TR-Amp differs from its cheaper siblings in having a

400mW headphone amplifier. This has a Texas Instruments TPA6120 chip, using current-feedback Class AB architecture that is said to deliver high bandwidth, extremely low noise and low distortion. It also boasts a high slew rate to prevent "odd-order distortion anomalies". A dynamic range of 128dB is quoted.

And just like the cheaper Eagle and Sparrow, the TR-Amp also uses 'super-low ESR' (equivalent series resistance) tantalum capacitors, high-grade power-supply components and a four-layer, gold-plated PCB – all said to keep noise to a minimum.

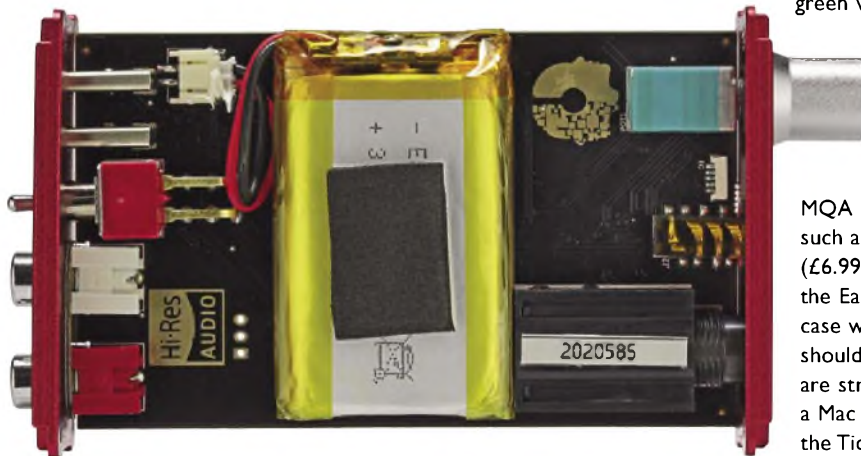


Carrying case and lead for charging or playback from a computer USB output.

The TR-Amp is fitted with an ESS Sabre 9038Q2M 32-bit DAC chip that can handle PCM 32-bit/386kHz, DoP DSD256, native DSD128 and also MQA sources. The LED on the front panel glows green with a PCM source but

changes to magenta for MQA and cyan for DSD. But, as with the Eagle and Sparrow DACs, if you use an Android phone, you can only get

MQA by using a separate app, such as USB Audio Player Pro (£6.99). This is not a fault with the EarMen DACs and is also the case with other brands too. There should be no such problem if you are streaming from an iPhone or a Mac or PC computer, but in the Tidal settings, for example, you need to set the output to 'Exclusive Mode'.



A sturdy rechargeable battery powers the unit's extensive circuitry.

SOUND QUALITY

I made sure I gave the TR-Amp a good few hours charge before I started my listening session. The LED on the front panel will flash red when battery power drops below 20%. It was hooked up to my Samsung Android 'phone with streaming from Tidal; also used were Sennheiser HD599 (£179) over-ear headphones as well as B&O BeoPlay H3 in-ear models (£130).

I started with the track Honey Dipped from the album Saxophonic by sax supremo Dave Koz. This track's complex, syncopated rhythms and Koz's powerful sax style are always a challenge. Could the TR-Amp rise to it? To be honest, within a few bars, I had my answer. Koz's sax was better articulated and the ebb and flow of his play was revealed more convincingly by the TR-Amp. It also allowed me to follow Norman Brown's excellent guitar work and Jerry Hey's trumpet and flugelhorn more easily.

Some vocals next, in the shape of the title track from Van Morrison's Days Like This. On the TR-Amp, I found Morrison's vocal more natural and intelligible (well, as intelligible as they get, anyway!) and it was easier to pick out the backing vocals, while horns had better power, bite and impetus. The track just seemed very dynamic on the TR-Amp.

Next was the superb Groovin' album from one of my favourite guitarists, Peter White. On the title track I instantly picked up fine percussion detail and the body resonances and note shape on White's guitar. The TR-Amp separated out the various instruments and allowed Rick Braun's trumpet to soar without glaring.

And another helping of vocals finally, this time the superb ballad Not Enough Love in the World from Don Henley's (Eagles) solo album Building the Perfect Beast. This track has an insistent, staccato beat that really drives it along and that was well handled on the TR-Amp. Drums and percussion were snappier and more dynamic than on

the Eagle, while the character and emotion of Henley's vocals were better captured. The track just made a lot more sense.

deal. It improves upon the Sparrow in every way musically, while its built-in amp allowed it to drive my Sennheiser and the B&O phones effortlessly. It may be bulkier and

"it was easy to pick out the backing vocals, while horns had better power, bite and impetus"



At far left are USB-C ports for charging and data input. A toggle switch selects DAC out (fixed level) or PRE OUT (variable through volume control). Two RCA phono sockets deliver a line output.

CONCLUSION

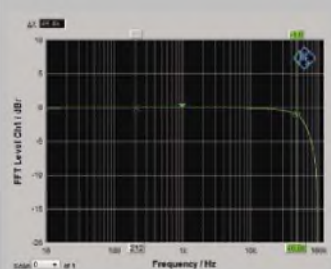
So you'll have guessed that the TR-Amp impressed me a great

a tighter fit in some pockets, but sonically it is well worth the extra £40.

MEASURED PERFORMANCE

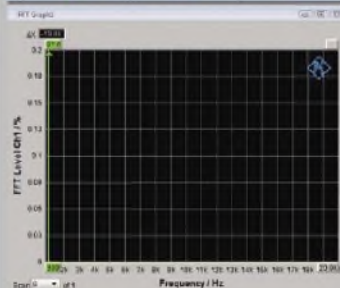
The Earmen TR-Amp delivers 2.1V from Direct output and 3.4V from its PreOut. Distortion was low measuring 0.0004%

FREQUENCY RESPONSE



DISTORTION

TFC (dB)	Level (dB)	Frequency (Hz)
0.0004 %	994.16 mV	1.0000 kHz
OFF	OFF	OFF



via the analogue stages.

Frequency response measured flat from 8Hz to 48kHz as our analysis shows, with a 192kHz PCM digital input via USB. It rolled off smoothly to the upper frequency limit of 96kHz. The ESS Sabre32 series ES90382QM DAC used gave 114dB EIAJ Dynamic figure which is good, enough to reveal the benefits of hi-res digital if not quite up to some implementations of this chip. Noise was also low at -114dB relative to full output. Distortion at -60dB and with 24bit measured the expected figure of 0.02%.

A 37000MAH battery for up to 10 hours play time has been fitted too.

The TR-Amp measured well in all areas and with its top ESS DAC will likely give fine sound. **NK**

Frequency response (-1dB)	3Hz-100kHz
Distortion (10kHz, 1W)	0.002%
Separation (1kHz)	92dB
Noise (IEC A)	-114dB
Dynamic range	114dB
Max output	2 / 3.4V

EARMEN TR-AMP £229



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

Sound quality is excellent and it has the power to drive headphones better than any 'phone. Competitively priced. Offers a lot for the money

FOR

- great sound quality
- well made and finished
- easy to use

AGAINST

- instructions are minimal and uninformative
- MQA playback from Android 'phone or tablet needs aftermarket app

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Every note. Every word.
Every detail.

LS50 Wireless II



LS50 Wireless II - The Ultimate Wireless HiFi

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Listen and believe





WIN

iFi'S FLAGSHIP iPHONO3 BLACK LABEL PHONO STAGE WORTH £999! IN THIS MONTH'S GREAT GIVEAWAY!

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Here's your chance to win iFi's iPhono3 Black Label LP phono stage we reviewed in the September 2020 issue. Read the review excerpt below and answer the questions.

"It's surprising just how twiddly LP can get and this little phono preamp from iFi has plenty of twiddle-ability to suit. I'm alluding here to Decca and Columbia EQ settings. iFi's new iPhono3 Black Label phono stage (£999) has both, plus a lot more twiddle factor to suit pickup cartridges.

As a physical package the little iFi stays in keeping with the company's design idiom of a very small case with plenty of facilities. At heart it offers broad compatibility with moving magnet (MM) and moving coil (MC) cartridges – ultra low noise with MC I found – and unusual pre-1980s equalisation curves.

Most LPs conform to equalisation

specified by the Radio Industries Association of America or RIAA. But Decca (UK) had their own equalisation curve that was also used by Deutsche Grammophon (Germany), and Columbia (USA) had a different take on things. For collectors who want sonic authenticity, the iPhono3 is perhaps a must, Decca and Deutsche Grammophon being known for the quality of their classical releases in particular. However, Decca also put out quite a lot of early British Blues onto LP in the 1960s.

A small three-way toggle switch selects between these differing

equalisations (EQs) and is easily accessible, iFi also includes other variants on the underside".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 9th April 2021 to:

**April 2021 Competition,
Hi-Fi World magazine,
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QUESTIONS

[1] The iFi has -

- [a] twiddle-ability
- [b] CD ability
- [c] nuclear ability
- [d] digital options

[2] EQ settings include -

- [a] DSD
- [b] PCM
- [c] Decca and Columbia
- [d] Old colonial

[3] EQ is selected by -

- [a] rocker switch
- [b] push-button
- [c] toggle switch
- [d] light switch

[4] On the underside are -

- [a] flashing lights
- [b] LED meters
- [c] plugs and sockets
- [d] other variants

ENTRIES WILL BE ACCEPTED ON A POSTCARD ONLY
PLEASE ENSURE YOU PUT A TELEPHONE CONTACT NUMBER ON YOUR ENTRY

JANUARY 2021 WINNER: CAMBRIDGE AUDIO CXA61 AMPLIFIER
Mr. K Clarke of South Humberside

Hypexspace

A compact, high technology amplifier based on a Hypex module impresses Noel Keywood.



It's small and it runs cool but this stereo power amplifier from UK manufacturer KJF Audio delivers 170 Watts in the version we tested – so here is power if you want it. And at an amazingly low price of £588. There are many options with the SA-01 that raise or lower this price, as I'll explain, but the basic message is: if you want oodles of power at a low price, read this review!

The simple outline is KJF Audio package a bought-in Hypex power module (complete with power supply) with their own control board, in one small alloy case. The amplifier is sold direct from KJF Audio's website, so no dealer margin – explaining the low price. That means you can't get a dealer audition, and back-up comes from KJF Audio who are based in Leicestershire.

Our review sample came with the Hypex NC252MP board installed but there are lower and higher power versions. Additionally, there

are a variety of fascia options, both aluminium and wood, and even input options. You get to specify the amplifier you want. Best to check out the website for all this, since each option changes price and the options/prices are too lengthy to list here.

Hypex, as my memory recalls from dealing with them, are a spin-off from Philips and based in Groningen, Holland (Netherlands). Hypex modules use Class D switching technology to produce high power efficiently, meaning no heat. This amplifier might be powerful but it has no heatsinks. The

and light, measuring 230mm wide, 370mm deep and 83mm high, with a weight of just 3kgm. I could lift it with one hand – no sweat! It is more the size and weight of a DAC than a power amplifier. The power supply is on-board, so no external supply, just a normal mains lead with IEC mains plug. A single, circular power switch sits on the front panel, its illuminated surround changing from red to green at power up. KJF Audio explain “the multi-function stand-by ring on the front flashes red when you hit the limit. It also displays errors like DC shutdown as a sequence of red-green flashes. Because of our

socket loudspeaker output terminals, there is no loudspeaker switching and no remote control. Nor a volume control, so a preamp is necessary. And with low sensitivity an accompanying preamp should ideally have a bit of gain, say x3 (9dB), but the amplifier itself has enough voltage gain to reach full output from a CD player and this is how I used it.

Our sample had unbalanced phono socket inputs in addition to balanced XLR inputs, a small toggle switch selecting one or other; they have identical sensitivity. Switch on and off was silent – no pops or such like.



"silky yet solid, the pounding bass synth giving plenty of rhythmic push"

Hypex modules I worked with long ago expired if the power supply went 1V over, explaining why Hypex have now packaged their Class D amplifier with a regulated switch-mode power supply on one board to ensure reliability. In the SA-01 KJF Audio have designed a sophisticated control board with microprocessor that provides monitoring functions and overload protection, as our internal picture shows.

For such high power output our SA-01 was almost unbelievably small

clever on-board micro-controller the amp even remembers what the errors were so that if you need to return to base, we can see what was going wrong”.

KJF Audio go on to say “The Hypex modules are clever little things, they have a communication bus to monitor both power and amplification error monitoring, clipping, temperature monitoring, muting, standby and protection and reporting from failure to DC. Until now no other company offering the Hypex amps at anywhere near this price have implemented these available features”.

This then is an ‘intelligent’ amplifier, made so by KJF Audio’s control board. All the same, it is a very simple user experience. The rear panel has one pair of 4mm

SOUND QUALITY

I chose to use the SA-01 with our Oppo UDP-205D universal player that has a volume control and balanced XLR outputs; it fed in CD and hi-res. Connection was through Chord Company Epic balanced cables. Loudspeakers were Martin Logan ESL-X hybrid electrostatics connected through Chord Company Signature Reference cables. I also used an Icon Audio PS3 Mk2 (valve) phono stage with volume control.

My first impression was of a mild balance, percussion in Dave Brubeck’s Take Five sounding restrained. It was there alright, but my attention wasn’t drawn to it. The central drum part was firm and fluid, I got to hear qualities of the instrument, the thwack of stick on skin – and here the KJF was both revealing and lithe, if without a fulsome lower end.

LS50 Meta

Every note. Every word.
Every detail.



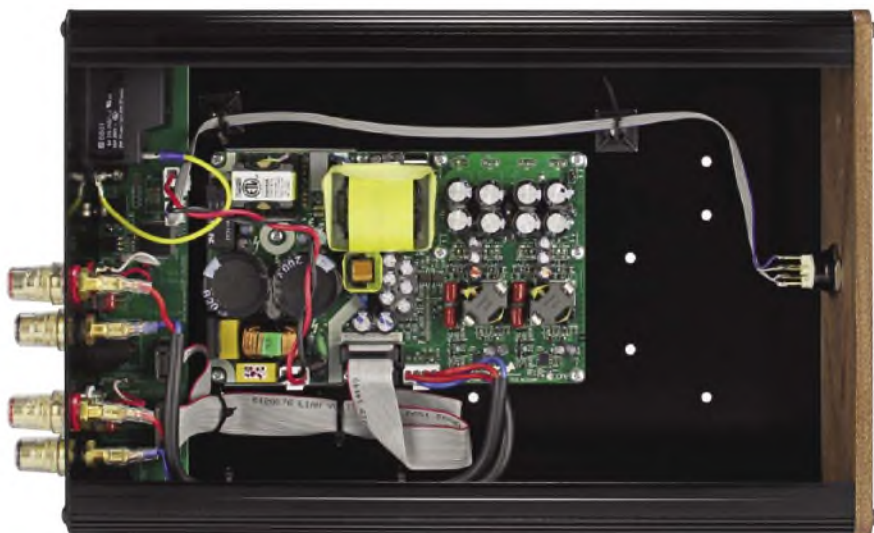
LS50 Meta

Introducing the successors to the iconic LS50. Building on the brilliance of the originals, the LS50 Meta speakers provide an even purer sound, which brings out subtle nuances and details you may never have noticed before. That's because our unique Metamaterial Absorption Technology eliminates the high-frequency distortion inside the speaker. So at last, you can hear music as its creators intended.



Listen and believe





At centre the Hypex NC252MP Class D power module and switch mode power supply. At far left is KJF's control board, complete with micro-processor.

The opening bass line in Holly Cole's Train Song similarly moved along slickly and was well expressed, Holly's vocals sounding suitably smoky and laconic. An easy and revealing performance that was thoroughly enjoyable.

There was always fine midband insight, whatever I span. There was always a sense of utter smoothness too; beyond my expectation this amplifier was almost sedatively smooth. Not once did anything jump out as challenging; definitely svelte. It was almost eerily clean in its sound.

My current go-to test track for bass, pace and timing is Safri Duo's Samb Adagio and here the KJF was silky yet solid, the pounding bass synth giving plenty of rhythmic push. Again, there was little incision from the highs, fast transients sounding mild. Bass was fast but not thunderous.

A good test of treble quality comes from Willy DeVille singing Spanish Harlem, where vocal sibilants into his microphone can cause all sorts of upset, but here Mr DeVille's gravelly vocals passed with slick ease. No sharpness, no spit, just smooth delivery. As with Holly Cole, this song slid by in easy yet enjoyable form.

CONCLUSION

The SA-01 power amplifier from KJF Audio is unusual and technically impressive. Based around Hypex Class D power modules, our version with Hypex NC252MP board delivered massive power from a small, lightweight, self-contained case. With a measured performance as good as it gets – meaning better than most – and super smooth sound this has to be a fine way to bring power into your system without removing power from the bank account. A top amp in its own way then.



A master power switch at left and solid gold-plated loudspeaker sockets at top. The balanced XLR inputs are standard, the gold plated phono socket inputs an extra, selected by toggle switch.

MEASURED PERFORMANCE

The SA-01 with Hypex NC252MP board produced 136 Watts into 8 Ohms and 256 Watts into 4 Ohms – powerful considering its compact dimensions. It ran without strain at full power, with no noise or heat; the case stayed uncannily

cool during power tests. An output impedance of 0.06 Ohms gives a very high damping factor of 126, suggesting tight bass.

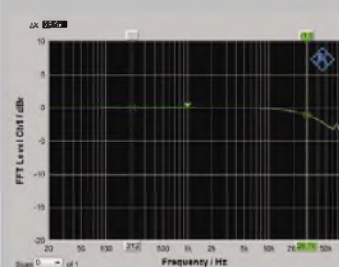
Frequency response ran from a low 3Hz to 29kHz our analysis shows and was unaffected by load.

Distortion was very low at 0.003% in the midband, from 1 Watt to full output, rising to 0.01% at 10kHz, also a low value. This is a very linear amplifier at low and high power outputs, at all frequencies and into 4 Ohms too.

Input sensitivity measured 1.7V for both inputs, where 1V is common for unbalanced and 2V for XLR.

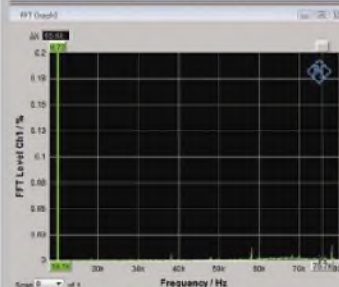
The KJF Audio power amplifier produced almost startlingly good measured performance. A text book result suggesting blemish-free sound quality. NK

FREQUENCY RESPONSE



DISTORTION

TIC (dB)	THD (0dB)	Frequency
0.0138 %	2.0700 V	10.000 kHz
OFF	OFF	OFF



Power	136W
Frequency response (-1dB)	3Hz-29kHz
Distortion (10kHz, 1W)	0.01%
Separation (1kHz)	93dB
Noise (IEC A)	-107dB
Sensitivity	1.7V

KJF AUDIO SA-01
£588



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT
A slickly smooth sound, with supple bass and mild treble. Easy going. Great value.

FOR
- low price
- small and light
- super smooth sound

AGAINST
- lacks deep bass heft
- no volume control

KJF Audio
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Mail

Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q150 bookshelf speaker

Answers by: NK - Noel Keywood; PR - Paul Rigby; MP - Martin Pipe; DT - Dave Tutt; JP - John Pickford.

LETTER OF THE MONTH PRIZE



KEF Q150 BOOKSHELF SPEAKER

<https://uk.kef.com/products/q150-bookshelf-speaker>

[subject to availability - Satin Black / Satin White]

A PAIR KEF Q150 LOUDSPEAKERS are on their way to MIKE TARTAGLIA KERSHAW, Letter of the Month winner in our March 2021 issue.

Letter of the Month

EXSTATIC

Like so many, I found early CD digital harsh and unlistenable for prolonged periods. As I pointed out in a letter to the November 2011 edition, a Musical Fidelity V-Link between computer and DAC reduced the digital grunge but was replaced by a similar unit from Audio-Gd with I2s output which bettered it by a considerable margin. I used Pure Music software to trick iTunes into playing Flac files. Good sound quality but a bit clunky and a chore to import Flac files. Although it generally worked well, it would occasionally quit for no reason.

So where next? I thought that it should be possible to obtain a sound that was closer to analogue, so largely thanks to the Hi-Fi World review and the reputation of ESS chips, purchased an Oppo BD105 player, used as a DAC. It could also play DSD/DSF files, perfectly possible via Pure Music.

Now the system was singing more smoothly. However, the Oppo could not see my digital music files stored on the computer, so the Pure Music software remained in use, the Oppo acting as a DAC only.

So where is all this leading? Well, first of all, you must listen to any proposed equipment purchase and use

music that you know well. Piano music is usually very revealing of jitter/distortion and digital harshness (heard as a ringing sound). If you find yourself listening to the equipment and not the music, then carefully work out if it is the correct purchase for you.

If the music can make the hairs on the back of your neck stand on end and you have an emotional reaction to it and just want to keep listening, then you are on to a winner. The tingle down the spine is also a good guide.

Remember that equipment that sounds ultra impressive in a demonstration room may not be so impressive in your listening room and you may find long listening periods tiring. If at all



Martin Logan Classic ESL9. "These speakers have been a true revelation and I cannot express in words what a difference they have made" says Howard Spendlove.

possible, audition in your own home.

Finally I had the means to buy a higher quality system for the main listening room. I took Noel's advice (from a conversation at the Bristol 2020 show) and purchased a pair of Martin Logan Classic ESL 9s (thanks to Paul at HiFi Lounge for a perfect demo – the other contenders were Magnepan 3.7is).

These speakers have been a true revelation and I cannot express in words what a difference they have made; the stunning yet natural sound quality they produce is so different to box speakers. The wired ethernet digital feed (from a new MacMini) is via a Sonore (Optical) Ultra Rendu connected to an additional Sonore transceiver unit via an SFP Fibre cable. This unit has (amongst others) an i2s output that feeds a PS Audio DirectStream DAC. Thus, the DAC is electrically isolated from the network and computer.

The ESLs are driven by Conrad Johnson valve Pre and Power amps that I already possessed. No bi-amping as the Martin Logans give a more cohesive sound when driven by a single amp. And what a sound! Stereo depth, width and height I had only dreamed about, not to mention complete and utter transparency combined with a smoothness that is totally beguiling. Low level detail retrieval has transformed my listening pleasure.

The Conrad Johnsons are renowned for stereo imaging and via the Martin Logans are a revelation. The PS Audio DAC is in an altogether different league to my two earlier DACs. What I was listening to in 2011 was nothing like this! This system has the tingle factor and I find it difficult to bring any listening session to an end. I am now rediscovering my entire music collection. I forget that I am listening to digital and just lose myself in the music. That's just how it should be.

Only one caveat, this system does ruthlessly reveal poor recordings. However, it also demonstrates that a well recorded 16/44 file can sound better than a poorly recorded high resolution file. Some poor early CD transfers are guilty of atrocious sound, mainly I suspect due to the inadequate ADC converters used for mastering from studio tapes.

However, since most people have a large collection of CD based files, your system should be able to reproduce them accurately and without jitter/distortion.

One major plus of the newer app based systems is the ease of searching

for music via an iPad and also access to streaming services such as Tidal. The Sonore is an exceptional network endpoint streamer and works flawlessly with the SqueezeLite app on the iPad and Logitech Media Server on the MacMini (the Sonore equipment came with a 3 month free trial of Roon but I didn't get on with it).

Apart from a multi box dCS system (well beyond my means), this is the most natural and analogue-like digital sound I have ever heard.

Any words of warning about digital purchases? Well, first of all and most importantly, I would avoid a cheap NAS. Unless it has serious processing power, from experience you will end up being frustrated and want to smash it to smithereens! Stick to a Mac with solid state storage if possible.

Secondly, try to isolate the computer and DAC using an optical interface or link to the DAC.

Next, make sure you make at least one extra hard disk copy of your digital music collection. Then, buy the best DAC that suits your ears and that you can afford; it should also match your system. I find that the i2s input (if available) does make an audible difference, others disagree.

Finally, consider valve amplification if you find that you can hear a certain harshness to digital sound via a solid state amplifier.



"The wired ethernet digital feed is via a Sonore (Optical) Ultra Rendu" explains Howard Spendlove.

with long term without tiring.

In case you might have thought that I had completely abandoned analogue, well no. A glass of wine, discrete lighting and a treasured LP still create that bit of extra magic. Admittedly, the Michell Orbe turntable, Origin Live arm with Ortofon Cadenza Bronze MC cartridge and Icon Audio PS3 valve phono preamp all play their part, but the LP is still the star. The sound quality that many (but not all) LP recording engineers managed to achieve is stunning.

Last of all, remember that whichever medium you are listening to, you should be able to immerse yourself totally in the music – whether it be digital or analogue and forget about the equipment.

So, finally, I would like to express sincere thanks to Noel and team for not only providing me with the best education in hi-fi that I could have wished for but also for producing consistently thorough, impressive and accurate reviews, news and opinions over the years and for converting me to valve amplification. I hope to look forward to my monthly Hi-Fi World delivery for



The PS Audio DirectStream DAC used by Howard Spendlove. An expensive high quality design from the States.

One oft forgotten aspect of a digital renderer/player is the software to control your choice of music. Some apps work better than others, so again, try before you buy.

Carefully match your speakers and amplifier, they have to work in harmony to produce a believable sound for your ears. A sound which may or may not be accurate but is a sound that not only gives you a thrill but that you can live

many years to come.

**Howard Spendlove
Derby**

Hi Howard. Thanks for your kind words. It's always nice to hear readers are happy with our recommendations. Your digital experiences are also helpful: there are so many options.

I'll explain to those unacquainted

with Martin Logan Classic ESL9s that they use a large (9.2in wide) XStat electrostatic panel with a passive bass bin, are sizeable, expensive (£7995) but sonically devastating electrostatics. One of the best loudspeakers I have ever heard. But witheringly analytical. You'll be interested in Bill Martin's discovery that a 15V linear d.c. supply improves sound quality even further – see a following letter. **NK**

BALANCED PHONO STAGE

I read with great interest in the March 2021 issue of Noel Keywood's review of the Pro-ject phono box RS2 phono pre amp. It truly is an impressive unit. I too have been running my turntable in balanced mode for many years now but I've been using a Musical Fidelity MX-VYNL. My turntable is a Michell Gyrodec SE fitted with a True Point Audio electronic speed control, Ortofon Cadenza Black fitted to an SME IV tonearm with an Analogue Audio Cable Designs tonearm cable.

This cable is fitted with an SME connector at one end and a Neutrik Rean mini XLR at the other. I have the impedance set at 20 ohms and it all

ortofon

MC Cadenza Black Technical data

Tracking angle - 20°
Internal impedance, DC resistance - 5 Ohm
Recommended load impedance - > 10 Ohm
Cartridge body material - Stainless steel Aluminium
Cartridge colour - Black/Black
Cartridge weight - 10,7 gram

Ortofon state their Cadenza Black MC cartridge can be used with a load of 10 Ohms or more.

sounds truly wonderful.

Ah, I hear you say, the mini XLR is not standard and not the best in the world. Well maybe not but it works brilliantly, and I hear you say you should have it set to 100 Ohms. Well the beauty of the MX-VYNL is you can experiment on the fly so to speak while listening to your favourite vinyl and to me 20 ohms is just about perfect.

There is no hum, no hiss and a dead silent background and all this without a ground wire fitted (I do understand the mini XLR will have a ground fitted). The MX-VYNL replaces my Primare R32 phono stage and a Chord Signature tuned ARAY tonearm cable (£800) which I might add fell apart after 14 months.

I have also replaced the MF's pathetic wall wart PSU with an RS components 12V 1.2Amp linear PSU



"I have been running my turntable in balanced mode for many years now but I've been using a Musical Fidelity MX-VYNL" says Neville Octon.

(RS400-7005) and this has made a huge and significant improvement in the overall sound quality of the MX-VYNL.

A few months back a competitor of yours reviewed the MX-VYNL along with 5 other phono stages and it came last of the bunch which is a shame as it was the only one able to be wired in balanced mode which they did not do and only briefly made note of its balanced operation. Why review it if you don't or can't exploit its virtues, not a fair review me thinks.

It's a shame really as the MX-VYNL really is very good when used in balanced mode and with a decent PSU behind it. Any chance you guys can do a comparison between the MX-VYNL and the phono box RS2 because if its as good as you say and better than the MX-VYNL I might have to go out and buy one.

Thanks for a brilliant mag and keep up the good work.
Kind Regards
Neville Octon
Newcastle upon Tyne

Hi Neville. Thanks for your experiences of running a turntable in balanced mode. It backs up my findings over the years.

Otherwise, there seems to be little available knowledge on the subject, reviewers keeping strictly away because it means a turntable re-wire, unless using an SME arm (as you and I do).

Theoretically however, it makes complete sense. In truth turntables need better wiring all-round, from the headshell leads through to the cable plugs. Alternative balanced output sockets is one possibility I have yet to see (Yamaha apart) for example.

And then there is the issue of the Permalloy screening can being strapped to the Green signal line earth (see our Ortofon 2M Black LVB250 review pics); ideally it should have its own earth to avoid sending RF noise down one cable line. That's a head scratcher of a problem since it suggests another cartridge connector.

It makes sense to use mini-XLR; I would not know whether it is "not best in the world". And you can load down to 20 Ohms with an Ortofon Cadenza Black, as it has a 5 Ohm (dcr) source coil. To minimise output loss the load should be at least double the source and – interestingly – Ortofon do quote load of "greater than 10 Ohms".

If you load down too far it may well degrade tracking, because a dead short locks a motor, but in practice I have not noticed such an effect, possibly due to loose magnetic coupling in the generator. Possibly worth checking with Clearaudio's brutal tracking test disc however. **NK**

CREEK VOYAGE i20 REVIEW

As the happy owner of many Creek Audio products...I was keen to read your review of the new Voyage i20 amp. But having read the review I felt I should point out a couple of mistakes.



Clearaudio Trackability test disc LPT83063 – use it to assess cartridge tracking ability.

You say that having a switch mode PSU – the new i20 is smaller than the outgoing Creek 100A (which had a toroidal). But it is the other way round:- Voyage i20 - 430mm x 80mm x 350mm (w x h x d), 100A - 430mm x 60mm x 280mm. So the new model is far bigger than the old amp (in both height and depth).

Also the price of the i20 is given as £4999 at the end of the article (but £4495 in the text)...perhaps people who can afford a 4 grand plus amplifier are not bothered about the odd 500 quid either way!

Finally you mention your reference

a mistake here and must apologise. Mike Creek also said "you're wrong", by the way. In truth differences are small and they both weigh 9 kgs. The i20 looked smaller to me, possibly due to fascia bevels. The price at the end was incorrect, the price at the beginning (£4495) correct so no extra £500 needed.

Make what you will of the price hike: I did make it obvious in the article. The i20 has an on-board DAC of very good quality and that compensates to a large degree. To play CD for example you just need a transport.

the cud chewed! Thanks for your complaint.

NK

AWKWARD CUSTOMERS

Dave Tutt's article this month took me back to my days in business when I was assisting in the running of a new car dealership, with quality used cars. We ran it successfully for over 25 years and thoroughly enjoyed ourselves in the process.

My point is that over that time we looked after some wonderful customers – apart from the odd few who you could not please whatever you did or offered.



Creek i20 amplifier. "Having read the review I felt I should point out a couple of mistakes" says Adam Tate.

amp - the old Creek 100A..How do you feel the 100A compares to the i20?

Comparing your 2015 test of the 100A we have:-

100A gives 136 Watts at 8 ohms and 225 Watts at 4 ohms (i20 gives 120 Watts at 8 ohms and 225 Watts at 4 ohms)

100A Frequency Response 3Hz - 85kHz (i20 Frequency Response 2Hz 53kHz)

100A Noise -110dB (i20 -106dB) Both old and new amps have 0.1% distortion.

Both amps use similar Class G technology.

The i20 benefits from an internal DAC (but then the 100A could be retro fitted with the Ruby DAC).

Even with the Ruby DAC fitted the old 100A was half the price of the new i20.

Regards

**Adam Tate
Hertford**

Hi Adam. Congratulations on your astute analysis! I did indeed make

The amplifiers are similar in basic nature, as you might expect, and offer the classic Creek sound you are happy with. So no radical or upsetting change, but then Mike Creek is still very much in charge and his knowledge of amplifier design is prodigious. The i20 benefits by having an integrated DAC, eliminating driver and buffer stages, as well as cables and plugs. This improves digital quality significantly.

Plug in with optical cable, I suggest, to ensure total isolation. But Mike disagrees, pointing out that the i20 has a digital isolating transformer on its electrical S/PDIF input and, he feels, gives better sound here as a result. Optical cables introduce jitter he says (actually, any cable with bandwidth limitation introduces jitter through zero-crossing indeterminacy) but that is why I use a QED Quartz glass fibre cable, glass fibre having more bandwidth than electrical cables.

So there you are – nothing like making a few mistakes to get

For example, some potential customer would go off and purchase a vehicle from another operation or individual, without making the proper checks. Then, they would come to us for the services and other associated work and get very upset when we produced the genuine long list of faults.

How do you explain, usually to very nice people, that they have just purchased a 'load of rubbish' without offending them, that the cheapest price is very often the worst possible deal!

I am pretty sure that this maxim applies in the hi-fi world also. First, customers come to you because you have a reputation in the field that you operate well. However, often, they will not listen or believe what you are saying, coupled with disagreeing or argument – and you are the real experts!

In the end, with the odd difficult customer, we would have to vet them because any work we carried out that involved costs they did not agree with was our fault would you believe! It was better to go our separate ways at that point.

In conclusion, technical knowledge in

my book is certainly not worthless and one should not be afraid to charge as I think it has value.

Kind regards,

**Donald Hawkins,
Gloucestershire.**

Hi Donald I have to say that having spent my life repairing things starting at the age of 12 with the products of the time; irons, standard lamps, valved radios, valved TV and just about anything else that people owned, my opinion as to that technical knowledge is rather different to the customer. Everything they have either goes straight in the bin or has such elevated value, as a repair person you could not possibly meet their expectations. Now I am 62 I think I am allowed to question people's thought processes on what they want done if only to keep myself sane!

DT

ESL-X POWER

Thanks to lockdown I have now been able to construct a 15V d.c. linear power supply for my Martin Logan ESL-X hybrid electrostatic loudspeakers. Nothing clever, just a dual secondary toroidal transformer feeding bridge rectifiers and 7815 voltage regulators to provide two separate outputs.

And to me the improvement in sound is significant. Singers are now more expressive with clearer diction while cymbals now have a clear and sonorous ring rather than just a tizz. Saxophones have both rasp and a metallic body resonance. All this emerges from a totally "black" background.

Of course, this may not be simply the result of an improved d.c. supply to the MLs. It is possibly the result of not having two SMPS units both injecting noise back into the mains supply along with the effect that their "chopping" action has on the mains sine wave purity by generating harmonics. This local mains interference could then be affecting the amplifier electronics (WAD phono and pre amps driving a pair of Exposure XM9 power amps via shielded balanced interconnects) and the highly transparent MLs faithfully reproducing the resulting distortion?

Who knows, but very interesting none the less!

Best Regards,
Bill Martin.

Hi Bill. Thanks for your update. We have found connecting the Martin Logan supplies to a mains regenerator helps, which is difficult to explain. So your linear 15V supply

will surely make a difference. Plenty of room for users to experiment here: perhaps batteries would sound good! **NK**

Hi Bill. There is no doubt that a transformer and a standard supply is far better for music. Even though many SMPSU has standard 7815 / 7915 regs on the output the damage is already done. I have a Chapter 2 (a defunct company from Kent) power amplifier here and it has a huge SMPSU with 4 transformers and both a pre-chopper stage and a output chopper too and of course it has gone bang. Tied to the B&O 300 Watt class D amplifiers it is not very sensible to try to do much with it. Thinking a rebuild with conventional circuitry might be better and far cheaper too! There is only one company that seems to understand combining the two and that is a German company making very clever bass guitar combo amps. **DT**

A LAUGH FROM DAVE

Reading Dave Tutt's article – February 2021 – made me laugh out loud and brought back wonderful personal memories from my retail experiences in this industry back in the day. My dear late father Philip Kerr had a TV/radio/Hi-Fi electrical shop in Wigmore St., Central London, for nearly forty years – and I joined him for the last ten years of its existence ending in the mid eighties.

He took great pride in serving many generations of the same family and it was an era that is now long gone and sadly will never return. The shop became quite a landmark in the area and we know that many London cabbies were instructed by the punter to be dropped off at the electrical shop in Wigmore St – and they all knew it.

Dave Tutt is quite right about the weird and wonderful examples of 'the customer'. Dad always reminded me of the old and sadly long forgotten adage 'the customer is king'. However, at times the wisdom of this saying was very hard to put into practice!

The eccentricities of people never ceased to amaze me. I remember one regular customer, a solicitor, who on purchasing a new TV in the shop would take a key out of his pocket and scratch a cross on the cabinet to make sure we

delivered the right one. I kid you not.

On another occasion we repaired a colour TV that had no sound and having been repaired and returned the customer 'phoned up and insisted that the colour quality on one channel was now inferior to another. Despite his valiant attempts my father could not convince her that she was being either hyper critical because it had been repaired or that there is a reception issue – and in any event to correct a



"I have now been able to construct a 15V d.c. linear power supply for my Martin Logan ESL-X hybrid electrostatic loudspeakers" says Bill Martin.

sound fault the engineer would have no reason to interfere with any circuit responsible for picture quality.

We also dealt with a very well known English aristocratic family and the wife was – shall we say – somewhat of a scatterbrain. One day I went with a chap who used to work for us to deliver their large colour TV that we had repaired to their Mayfair town house. The Mrs knew we were coming but was late in returning home. As we lifted the set out of the van we saw her driving fast down the street and she lent out the window shouting "Hello, hello, I'm coming". With that she lost control of the vehicle and smashed into three or four parked cars, doing a tremendous amount of damage. She gets out the car, looks back on what she has just done, and in that wonderful aristocratic cut glass English accent that you so very rarely hear nowadays, exclaims "Oh my goodness, look what I have just done". I

was like something out of an Eric Sykes sketch.

I could go on and regale you with stories about a permanently sozzled duchess or the Arab Sheik customer who was residing in a suite at the Hilton in Park lane and through his interpreter was bunging me a fifty quid tip! A significant amount in the seventies but I was too naive to initially understand what was happening.

But I think I will end with a story just for Dave to illustrate how engineers are also human. We employed a highly qualified and excellent engineer. If I remember correctly dad even sponsored him to go on a course when colour TV came around. Degaussing anyone? Anyway, one day a cheap record player came in. Fault? The platter wouldn't spin up. Dead as a Dodo Andy, the expert engineer took it downstairs to the workshop to do what for him should have been a five minute job.



Today, London's Wigmore Street has recitals at Wigmore Hall, and the dealer Audio Lounge, shown here.

About an hour later dad buzzes him on the internal intercom to find what he's doing down there. Andy somewhat embarrassed, explained that he has tried everything but can't find the fault. Dad says "What are you talking about". He goes down to the workshop only to see this record player completely dismantled into its constituent parts. "I've tried everything Mr Kerr. Measured everything. Nothing". Dad took one look at it and says "Tell me Andy, what's that screw? Right there". Andy turns red and replies "That would be the transit screw". "Yup – and have you checked whether or not it's done up?" Nuff said.

Dave, for reasons I won't go into, I really need a smile on my face at the moment. so as the song goes 'Thanks for the memories'.

Clive Kerr

Hi Clive. I too worked in a TV and electronics shop for a while in my late teens. Customers were strange. "Can I have an aerial plug please?". "Yes madam that will be 25p". "But it's the wrong colour. This is the broken one and as you can see it has blue on it". "Shall I swap it over for you?". "Yes please". "25p please". "Oh no I have given you my old plug so I should get a new plug for no more than 10p". Oh dear! But it happened! The stories I could tell about TV repairs, digital piano repairs, stage lighting wiring jobs, organs, the list of stories would fill a book. Now there's an idea! **DT**

SWITCH MODES

Regarding Noel Keywood's experiences with switch mode power supply, I like to share my own experiences with you.

I have been into hi-fi since the eighties and enjoyed listening to music and equipment in most if all these years.

At some point in the nineties I was beginning to hear more and more music systems that sounded bad and was not really playing music, it was quite annoying to listen to. At home I have had a lot of problems with the same sound – the sound was blurred with no rhythm, no edge and no sound picture at all, you don't want to listen to music anymore.

Just recently I found out why as I disconnected the cable from my DVD player from the main power, and suddenly I had real

music from my system again (Sugden Audition C amp, Rega Planar 2 turntable and Rauna Njord speakers).

It was the switch-mode power supply in the DVD that made the problem although it wasn't even connected to the Sugden amp in any way but only came from the same power string.

SATAN has invented switch mode power supply and he has got the Chinese to manufacture them in big numbers.

Regards,
**Jens Nielsen,
Denmark.**

Hi Jens. That's interesting, suggesting the switch-mode supply of your DVD player was polluting the mains supply to other products. Switch-mode supplies are known for producing

high-frequency switching noise, both into the electrical lines and by radio frequency transmission from their small, unshielded transformers.

They also have a reputation for being unreliable, I suspect because very fast, high voltage switching transients destroy the control chips. I inspected the blown power supply board of a Samsung TV, hoping to repair it, but it was wrecked. A lot of high frequency power is being pushed through small devices and they collapse in the end. Very fast, high voltage transients overwhelm even protection diodes: these are edgy circuits. They come I suspect from transformer field collapse, where huge back-emfs can be generated.

The next letter hints at further insidious effects. We all seem to be puzzled by these things. **NK**

Hi Jens. I think we underestimate the issues that a switch mode power supply actually causes. I get a vast amount of equipment through the door but some of it is scrap and not very old either. Sometimes still under warranty but the manufacturer and the dealers won't replace or repair it as they know how catastrophic the faults can be when they go bang. They conveniently tell the customer "you connected it incorrectly" so it is made to seem it is your fault.

Thing is if you combine any switching technology together you need to know what you are doing. SMPSU with Class D power amps are guaranteed to go bang no matter what when combined. At switch on or off they lock up and kill each other. The blackened mass of the Ampeg PF500 bass head has to be seen when it goes wrong. Carbon brick anyone?

Remember that more or less everything you plug into the mains could have one. Your home is full of them from your microwave, your TV your DVD player, your multiple phone chargers, your USB sockets built into your mains sockets on the wall, your gas boiler, and of course every laptop or PC or tablet too! Its worse than Covid and it's spreading its electrical noise! **DT**

SPEAKER PROGRESS

Reading your article in February 2020 magazine was a very interesting experience. It is obvious you have long time know-how to back up your core message. I do really agree in what you are saying here, and the only reason could be, as you mention, the



Sony SA-Z1 desktop loudspeakers. "Complex speaker boxes with built in DAC and power amps plus a ton of features" says Kim von Essen.

demand from customers asking for more information in the higher frequencies at lower listening levels.

But when one is forcing higher volume, the 2000Hz to 8000Hz information is hitting the ears with full force. I myself get very tired and cannot sit for longer sessions.

The other day a device caught my interest and an order was made over the web. It is named Calmer and is a single piece hearing device that you put in the ear. It is like a silicon tube that will filter some of that high frequency, which the company refers as distorted and I quote; in frequencies 2000-8000Hz.

It is too early for any feedback, but it is directly obvious for me that I hear fewer high frequencies listening to my high-end gear. On the other hand, it seems stupid that I should buy a filter for my ears, taking out some of these harsh tones coming from modern speakers! But for use outside, I think they really could help, lowering stress factors from high frequencies.

What will be tomorrow's new speakers? I read the other day of a new near field system Sony SA-Z1 which caught my interest. It got appointed as best Desktop System 2020 in The Absolute Sound. The complex speaker boxes with built in DAC and power amps, should be placed no further apart than 0.7 m and no more than 0.15 m out from back. Driver array is like full range drivers, with an array of 3 tweeters and a ton of other special features, like digital time alignment, one axis signal arrangement and so forth.

Comment from one of the persons at Absolute Sound: "This is crazy, listening for the first time was like stepping into a room that contained a really great system. Sony has always gone their own path regarding high-end gear, and this is really outside the box".

Could this be tomorrow's new speaker system we see and hear? If you

could test it as high-end system in your excellent magazine it would be very interesting! The Sony SA-Z1 costs around 7000 euro, so this is serious gear.

Best regards

Kim von Essen
Sigtuna, Sweden

Hi Kim. The old fashioned solution was to stuff cotton wool into the ears! Studio engineers would alternatively put a tissue over any tweeter that offended them: plenty of simple solutions to excessive treble. No doubt that an excess of sharp highs is wearing after a while. Manufacturers like Quadral (Germany) make treble level switchable – something that is easy and cheap to do. I wish others would do this too, then no need for ear defenders. **NK**

LEAK REBORN

Your recent review of "new" Leak audio equipment caused me a huge rush of nostalgia! When I was barely knee high to a woofer I became obsessed with a single of Kenneth Mckellar singing "A Scottish Soldier". The only excuse I can offer is that I was about five at the time and didn't know any better! I used to play this aural delight repeatedly on my grandparents Garrard record deck which played through a Leak preamp, TL12 power amp into a massive corner reflex unit with Wharfedale drive units (15 inch bass, a midrange cone and small cone tweeter).



"I have recently purchased the wonderful Audio Origami PU7" says Anthony Parkin.

If memory serves me right it sounded great so despite my choice of music my interest in hi-fi was born. My parents had a similar set up with a TL12 and corner reflex unit with 12 inch Wharfedale bass unit and similar mid range and tweeter. In the late sixties my parents decided to upgrade to the latest Leak Stereo 30 and Stereofetic tuner. Somehow the sound lost much of its magic despite the fact that they now had the best transistor amplifier

available (according to the dealer who personally installed it).

Even worse was when he suggested they upgrade the mono corner reflex to KEF 104 ABs. I remember telling him that I didn't like the sound and being told that I didn't understand! The old valve amps and Wharfedale units could run rings round the new stuff in my teenage opinion. What it is to be wise in retrospect!

I inherited all of the old Leak valve gear and Wharfedale drive units which I sold for 40 quid. Can't remember what I bought but it was a big mistake. I suspect that many of your readers can remember Leak amplifiers from their youth with similar affection.

In the mid 70s I bought a Leak receiver expecting magic but getting only indifferent sound from my Garrard DD75. This then triggered a sequence of upgrades starting with a Linn LP12 with SME 3009 and Shure V15 III cartridge. 45 years later I am still using an LP12 in very different guise and am currently happily listening to my valve amplifier playing through high efficiency speakers.

The magic has returned but fortunately not Kenneth Mckellar. I do wonder if I may inadvertently have lived through the most exciting period of hi-fi development.

Passing on to another comment I noticed in the mag recently, I agree that SME deciding to only sell their arms as part of their complete decks is a disappointing decision. There are however

superb alternatives. I have recently purchased the wonderful Audio Origami PU7 with titanium arm tube and stainless steel pillar. Heaven with my Koetsu Rosewood.

Suffice it to say hi-fi is a great and absorbing hobby which is proving even more valuable in this time of minimal live performances. Thanks for everything. Best wishes,

Anthony Parkin.



Audiovector's affordable QR1 ribbon loudspeakers enter the ribbon race for fast highs, says Noel Keywood.

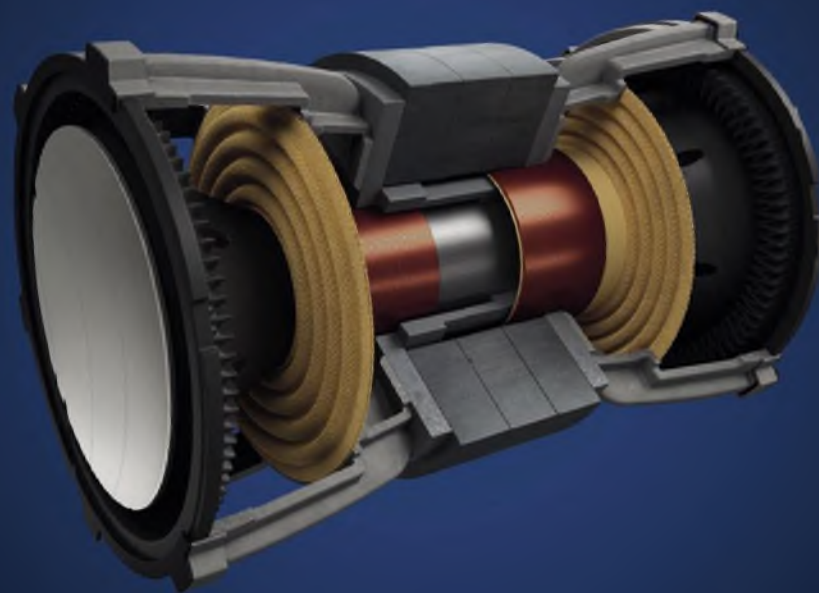
Racy Ribbon

I always like to review a loudspeaker with a ribbon tweeter, since they give fast, clean treble. And Audiovector's QR1, price around £1000, parades its ribbon proudly. With a gold plated grille and machined aluminium surround this drive unit is meant for display: it looks intriguingly hi-tech as our pictures show. So potentially here is a compact loudspeaker different to

the norm, looking good at the price.

Accompanying the tweeter in this compact design from Denmark is a "6in" (152mm) bass/midrange that sits below. Because ribbon tweeters use a lightweight alloy foil they're commonly matched to an alloy midrange unit and that's what Audiovector have chosen to do in the QR1. They say this unit has a three-layer "sandwich" construction comprising alloy layers

with damping membrane between them, for piston motion. The difficulty here has always been to get a midrange unit able to reach high enough to match a ribbon, as I'm aware from wrestling with a Tonigen ribbon back in the 1990s where bridging the gap was difficult for our first KLS1 loudspeaker, inspired to some degree by the Heybrook Sextet (designer Peter Comeau) that brought my attention



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An attractive front panel with alloy drive unit surrounds, an AMT ribbon tweeter at top and "6in" bass/midrange unit below. The latter uses a metal sandwich cone for light weight and stiffness, plus good damping to minimise colouration. At bottom lies a slot port.

to the Tonigen.

Back then, ribbons did not go low, ignoring a Celestion ribbon designed by Graham Bank that I have no experience of. But ribbons have always had a good reputation for sound quality and I see Audiovector label this one an AMT in their specs, short for Air Motion Transformer (invented by Oscar Heil). It's a slightly different way to use a ribbon, concertina form adding mass to give better downward frequency extension – and that's what the QRI exploits. Audiovector state crossover frequency as 3kHz, meaning their AMT reaches down as low as a dome tweeter – and our measurements confirm this. Making its subjective contribution obvious.

The bass/midrange unit is loaded by a cabinet measuring 325mm high, 190mm wide and 232mm deep, with a slot port on its front face – not the rear. Front ports can deliver box colouration direct to a listener, which is why they are usually sited at rear. And indeed this port did deliver unwanted output measurement

showed but its effect was slight. Not a big issue in the scheme of things methinks.

Audiovector use a real wood veneer they say, for White Silk, Black Piano and Dark

res DAC, connected to the Creek through a QED Quartz glass fibre optical cable, for electrical isolation. A MacBook Pro delivered in hi-res from an Audirvana Plus software player, providing PCM and DSD digital.

With its attractive front fascia I started out with grilles off, but as

"this recording suited the QR1s, making them sound easy going yet insightful; guitar strings were deliciously sweet"

Walnut finish options and our review samples were Dark Walnut. It's important

to mention that they come with magnetically attached grilles that, although using a light material, do affect high frequency output from the tweeter to a useful degree. I found the grilles consequential in listening.

At rear there are single terminals that negate bi-wiring, probably not an issue for most users. With no rear port the loudspeakers can be used against a rear wall and they have been designed for such placement, to best use the acoustic characteristics of a room to strengthen low bass.

SOUND QUALITY

The QR1s were driven by a Creek iA20 amplifier, connected through Chord Company Signature Reference cables. Our Oppo UDP-205D universal player was used as a CD transport and hi-

measurement suggested the QR1s were not only bright up top but had treble spit, Willy DeVille's sibilants into the microphone, singing Spanish Harlem (CD), having a piercing quality. We ran in the QR1s for 72 hours but I and others in the office found them harsh when used like this all the same.

Attaching the grilles usefully reduced treble presence, allowing me to move my attention to what the loudspeaker was doing



A machined and well finished alloy surround frames the Air Motion Transformer (AMT) ribbon tweeter that sits behind a gold finish protective mesh grille. This tweeter covers a relatively wide frequency range, reaching down to 3kHz Audiovector say.



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Global Launch

Listen and believe





A clean rear face, without the usual port. This seemingly eases placement against a rear wall. However, terminals with 4mm plugs still impose a gap sufficient to avoid port chuffing.

elsewhere.

And as Audiovector say "music sounds warm": there was a pleasantly soft balance caused by the midrange dip. This made vocals less forward than with many of today's loudspeakers, Skin sounding almost gentle shouting out from Skunk Anansie's Hedonism. I like this sort of presentation, better gentle than fierce, but the QR1s were obviously a tad soft at times, ignoring the tweeter that did its own thing up top.

Generally, the 'speakers have an even but not fulsome balance, coming over as clean and concise. With Josefine Cronholm's In Your Wild Garden the bass line was light in timbre, with little low end power. But there was air and space around her vocals. Our listening room is large (6550 cu ft) and the QR1s were a bit lost here: they need a small-ish room where what's known as 'room gain' will raise bass presence, giving a balanced sound, whilst minimising room boom.

There was good insight into the strings of Antonio Forcione's guitar with Tears of Joy, helped by swathes of high detail. I got to hear right into what his fingers were doing and percussion came

over as clean and airy. Audiovector's ribbon unit showed its worth here, giving a sense of concise treble beyond that of domes.

Spinning Loreena McKennitt's Gates of Istanbul (CD) her vocals were mildly clear and easy on my ear, but the rumbling bass intro was on the dry side and not overly expressive; I wanted to hear a bit more from low down as even small loudspeakers can manage.

Turning to LP, with an Audio Technica VM750 SH moving magnet (MM) cartridge connected directly into the Creek, the QR1s changed

for the better. Spinning Mark Knopfler's True Love Will Never Die, from Kill to Get Crimson, the intrinsic warmth and body of this recording suited the QR1s, making them sound easy going yet insightful, guitar strings were deliciously sweet. Where CD delivers quantisation distortion a ribbon tweeter brutally highlights, LP gives easier analogue and here Audiovector's ribbon came on-song, making plucked strings enjoyable. There was still a mild delivery of vocals though. Running through a wide selection of LPs with volume up I became aware of some slight box boof, likely coming from the front port.

CONCLUSION

Audiovector's QR1s offered a gently clean and easy sound, albeit with a ribbon tweeter that is forward with grilles off, but civil with grilles on. Then they shone. With excellent build quality and a high standard of finish, at the price they have a lot to offer and are certainly worth auditioning.

MEASURED PERFORMANCE

With grille on and measured 20 degrees off-axis our analysis shows the bass/midrange unit of Audiovector's QR1 covers a wide range, from 50Hz to 2.5kHz, but high frequency output rolls down above 1kHz to produce a midrange dip that will soften the sound. Rivals give stronger output here for more intense detail and the sudden change in output level between bass/midrange and tweeter will reduce subjective coherence between the two.

The ribbon tweeter has +2dB lift with grille off – enough to make it

subjectively obvious, giving the loudspeaker a bright sound balance. The grille usefully reduces output by -1dB and off-axis listening reduces the 16kHz peak to give the acceptably flat response shown.

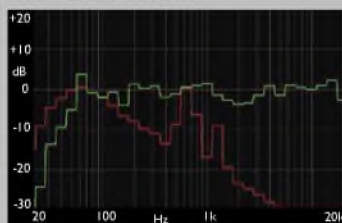
The bass/midrange unit provides reasonably smooth output down to 50Hz, aided by the front-firing slot port (red trace) that has a resonant frequency of 55Hz. There is a strong peak at 600Hz from the port, suggesting colouration. With no lift in output across the lower midband the QR1 will lack warmth; it is best used against a rear wall to exploit room gain for bass support.

Sensitivity was good for a small cabinet, measuring 87dB sound pressure level (loud-ish) from one nominal Watt (2.8V) of input at 1 metre distance, making a 60 Watt+ amplifier best suited. Impedance measured 6 Ohms using pink noise, d.c.r. being 3.6 Ohms (nominally 4 Ohm bass unit). Our impedance trace shows a classic two-way with port dip at 55Hz and crossover peak at 2.5kHz where the tweeter starts to draw current, impedance decreasing.

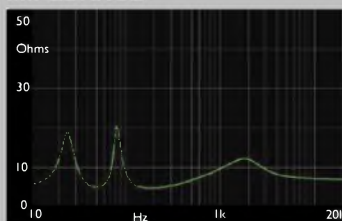
The Audiovector measured well except there's a classic crossover dip and to avoid sharp sound the grille must be on. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



AUDIOVECTOR QR1 £1000



EXCELLENT - extremely capable

VALUE - keenly priced

VERDICT
Well made and finished, with obvious ribbon treble for a fast sound.

FOR
- appearance
- easy sound balance
- fast ribbon treble

AGAINST
- sharp sound with grilles off
- mild vocal delivery
- no bi-wire

Audio Vector
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Black again!

Martin Pipe tries the latest 'S' incarnation of Black Rhodium's Stream mains cable.

A few months ago, I tested the awesome Charleston DCT++ CS speaker cables from Graham Nalty's Black Rhodium. The Derby-based firm also produces interconnects - and mains cables, like the Stream S reviewed here. Nalty is keen to point out that "all sound improvements in cables can be explained by understanding the laws of physics". During the process of developing the Charleston, he claims to have identified seven such laws that influence the "flow of current in a wire, and ultimately sound quality".

He went on to develop "about 20 different engineering applications" for his hand-built cables. Much of the research that culminated in the flagship Charltons has now trickled down to newer ranges of Black Rhodium products. Among these is the Stream S, which replaces the original 'Stream' IEC mains cable. Launched in 2017, the £450 Stream was particularly interesting insofar that you could only buy it in one length - 1.7m (having said that, longer versions were available for an extra £100 per metre).

Such customi-

sation was dropped for the new £600 'S' version, which is only available in that unusual 1.7m length. So, why that magic number? The explanation given is very interesting. When developing the Stream, Black Rhodium tested one of its most popular power cables in several different lengths and, through listening tests, consistently found that the best



sound quality was obtained from cables cut to 1.7m – which, Nalty explains, is the quarter-wavelength of the 50Hz mains frequency.

Hang on. According to a basic physical law ($\lambda = v/f$) that expresses the relationship between frequency (f) and wavelength (λ), where v is the speed of light (approximately 300,000,000 metres per second), the quarter-wavelength of a 50Hz mains voltage is approximately 1,500km. Now, that's a helluva mains cable! In other words, there must be another reason for the positive showing of 1.7m cables in Black Rhodium's subjective tests.

Nalty explained that it's "about the speed of sound (a lowly 343 metres per second) and not the speed of light". But surely we're talking about the passage of electricity – not

soundwaves? He suggests that the observed effect was probably due to vibrational effects (i.e. more acoustic than electrical) that may occur when a mains cable is carrying a substantial 50Hz signal. He also expects slightly-shorter cables to sound better in countries (like the USA) with a 60Hz mains frequency (and a different mains plug).

Moving to more tangible matters, the 13A plug of the Stream S has silver-plated metalwork. At the other end of the cable, the conductors of the chunky round-barrelled 'Power' IEC plug have been plated in the rhodium that gives the manufacturer its name. For the cabling that interconnects them, Black Rhodium has specified three (live/neutral/earth) conductors made up of nineteen 0.3mm-diameter silver-plated copper strands. These wires are insulated with silicone rubber of the appropriate colour.

Steps have been taken to

reduce the effects of external interference – the overall cable is covered by a heavy braided screen, while ferrite beads have been fitted to all conductors at both ends of the cable. Black Rhodium's 'DCT' (Deep Cryogenic Treatment) process isn't applied here. The Stream S isn't 'burnt-in' at the factory, but Nalty suggests that the cable will perform at its best after

"about 100 hours" of use.

I mostly used the Stream S with a Cambridge Edge NQ streamer and Edge A amp driving Quadral Aurum Wotan VIII speakers, although I did try other gear like a Prism Callia DAC, Arcam A49 integrated amplifier and Focal Utopia headphones. Equipment was powered via the Stream S directly from a wall outlet on the ringmain, rather than distribution boards or spurs – yes, you can hear a difference! Contrary to my expectations, the cable gave its best with source components (the NQ) rather than power amplification.

Having said that, instruments at the lower end of the musical spectrum (for example the Moog bass of Boogie On Reggae Woman, from a CD FLAC rip of Stevie Wonder's 1974 classic Fulfillingness' First Finale) did sound perceptibly more articulate when the Edge A (and, at another stage of my testing, the Arcam) were fed with mains via the Stream S. Used with the NQ though, a more general range of benefits were apparent.

Listening to David Bowie's Lazarus (Blackstar, 24/96), I became more aware of subtleties that tend to be buried in the background. For example the sax line could be followed with greater ease, despite the dominant percussion. Classical also fared well, the palette of tonal colour making up the *Jeux de vagues allegro* movement of Debussy's *La Mer* (Singapore S.O./Lan Shui; BIS/eClassical, 24-bit/88kHz) came across as richer and better-defined. With live classical performances, among them concerts carried via Radio 3's 320kbps stream, the space between movements seemed quieter and more believable. I was made acoustically more aware of the venues in which the music was being played – this was also true of some minimalist Blue Coast recordings (such as Greeninger/Kai's *Looking For A Home*).

CONCLUSION

Some interesting ideas underpin the design of this mains cable, which delivers audible benefits to the musical experience. I personally found that it works at its best when used with source components, but you won't regret using it with amplification either.

BLACK RHODIUM STREAM S £600 (1.7M, IEC TO 13A MAINS PLUG)



EXCELLENT - extremely capable

VERDICT

Well worth considering, if you want to get the last drop of performance from your hi-fi system.

FOR

- noticeable improvement in definition and insight

AGAINST

- the 1.7m length might not suit everyone

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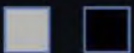
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On the straight and narrow!

Martin Pipe rewinds to 1980, and the LP jacket-sized Technics SL-7 linear-tracker.

Back in 1979, when Japanese firms dominated the hi-fi industry, Technics launched the SL-10 turntable. The £300 SL-10

wasn't the world's first linear-tracker – that honour probably falls on Edison's cylinder phonograph. 19th-century miracle it may have been, but that phonograph was hardly hi-fi. Moving closer to this definition were the parallel-tracking arms introduced, in one form or another, during the 1950s. The first such arm to be accepted by audiophiles was probably the SL-8, from US firm Rabco. This arrived in the late 1960s, a couple of years after Marantz attempted to market a complete linear-tracking turntable – the innovative but flawed SLT-1.

Early into the following decade, Rabco partnered one of its arms with a turntable, the ST-4. Then came Bang and Olufsen's Beogram 4000 (1972) and the Harman-Kardon/Rabco ST-7 (1975). Throughout this time, Japanese operations were aware of the situation and deciding how to respond. Technics answer was the neat-looking SL-10, which combined the linear-tracking principle with a direct-driven platter; direct-drive

as we know it was a Technics innovation.

In this case the motor drive was quartz-locked, using the same chipset that you'll find in the famous SL-1200 Mk2. The SL-10, with a frontage not much larger than the LPs it played, was intended for use with the sophisticated mini-systems that were becoming fashionable at the time. But in the end the SL-10 achieved much wider appeal, Technics selling all it could make.

As with the B&O 4000, a special 'plug-in-and-play' cartridge system was used for ease of installation; the SL-10 was one of the first decks to support it. Unlike the proprietary B&O system, though,

the T4P 'P-mount' system embraced by Technics caught on and became an international standard. Throughout the 1980s, pretty much every mass-market Japanese turntable used a P-mount cartridge. Even today, you can buy new ones from a variety of sources. As standard the SL-10 was fitted with an exotic P-mount MC and Technics even built in a (switchable) head-amp to match its output to MM levels.

The SL-10 was arguably responsible for popularising





Underneath, four sprung feet provide a degree of isolation. The deck is fitted with a captive signal that makes upgrading difficult. The more expensive SL-10 boasts a pair of phono socket outputs. Both SL-7 and SL-10 mute the audio signal, using relays, whenever the arm is raised. A large threaded bush facilitates vertical mounting.

the linear-tracking turntable. Its tonearm followed the same path as an LP cutter, eliminating tracking-error distortion and ensuring a cleaner sound. But what sold it to the masses was Technics' carefully-engineered pushbutton-driven close-and-play user-friendliness, which paved the way for the imminent digital wonders of CD, allied to reliability and a well thought-out design. With this linear-tracker, records and stylus were in safe mechanical hands. The SL-10 could even be used vertically with a matching table stand - and brackets enabled it to be wall-mounted!

Technics wasn't resting on its laurels. The SL-10 was followed by a slew of models, ranging from budget belt-driven versions - the SL-3, for example - to esoterica like the SL-M3, a more conventional turntable equipped with a linear-tracking

arm. Also worthy of mention is the SL-15, which offered CD-like track-by-track programmability...back in 1981.

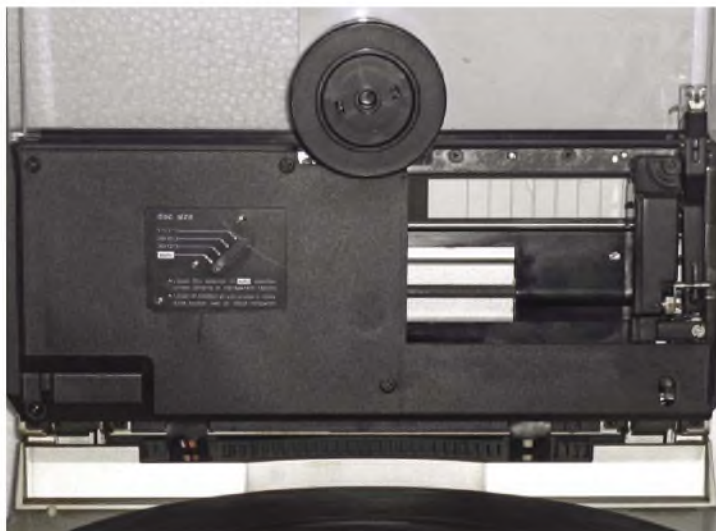


Essential controls can be operated when the lid is closed. A 'rep(eat)' button returns the stylus to the beginning of the record as soon as it reaches the lock-out groove. The SL-7 continues to play a side until the function is cancelled.

advanced P-mount MM device with a boron cantilever, terminated in an elliptical diamond tip.

In other respects, the unit offers much of the similarly microprocessor-driven SL10's functionality. Its key controls are identical - prominent buttons for repeat-playback, up/down cueing and start/stop buttons that, with the arm raised, double as manual track-seekers, with LED pointer and scale as an aid. As with the SL10, the 33rpm/auto/45rpm speed switch is under the cover; neither deck provides pitch control. In 'auto' mode, the speed at which the record turns depends on its diameter; manual override enables the deck to cope with, for example, 12in. singles.

Other similarities? The clamp that holds a record in place when the lid is closed is embossed with a strobe for speed-checking. Directly underneath, the aluminium platters of both SL-7 and SL-10 incorporate a 'pop-up' 45rpm adaptor for singles. And like the SL-10, the SL-7 will run from 12V DC sources like



A switch allows the diameter of a record to be manually specified, needed because some records, such as transparent vinyl and shaped picture-discs, can fool the automatic detection system - a system of infra-red LEDs, sensors and 'light guide slits'. Also visible is the rod on which the arm moves, and the puck that holds the record in place.

Here I'm talking about the SL-7, a more-affordable second-generation model dating back to 1980. To save costs, the on-board MC amp was removed; its build quality, while still excellent, doesn't match that of the 'statement' SL-10. Instead of the original deck's EPC-310MC cartridge the SL-7 was fitted with a EPC-P202 - an

car batteries.

Both decks use a system of infra-red LEDs, sensors and 'light guide slits' in the platter and captive turntable mat to automatically-determine record diameter - 7, 10 or 12in. - and prevent accidental stylus damage. Exclusive to the SL-7, though, is a switch, inside the lid, that allows the diameter



Technics fitted the SL-7 with an EPC-P202 MM P-mount cartridge with a boron cantilever, fitted with an elliptical diamond tip. Technics was one of the first manufacturers to adopt the T4P 'P-mount' pluggable cartridge system, which is still supported today. The arm-lock lever is also visible here.

of the record to be manually-specified. Technics provided this 'over-ride' because some records (among them transparent vinyl and shaped picture-discs) can fool the detection system!

Another significant difference is that the SL-10 presents the relay-muted output of the cartridge to a pair of phono sockets. The SL-7, on the other hand, has a captive cable that makes upgrades difficult. Despite this, many reviewers of the time contended that the SL-7



The fragile lid catches can break if not treated with care, then the lid won't close properly. To minimise the risk of reducing the deck to this state, the latching system must be used carefully.

sounded better than the SL-10.

And the SL-7 is not only foolproof in operation, but a lot of fun! With the EPC-P202, you get a musically-enjoyable sound that even today can impress with its lively pace and precise timing. Bass is tight and well-controlled, although midband elements like

voices and guitars are perhaps a little forward. The lack of rumble and fantastic speed stability, benefits of well-designed quartz-locked direct-drives, are always obvious. This deck adds nothing to the quiet passages and run-in grooves of well-pressed (and well looked-after!) LPs, while sustained piano and sax notes do not - to borrow from a contemporaneous lager ad - waver by so much as a quaver. The lack of harshness with inner LP tracks, that inherent advantage of linear-trackers, is also noteworthy.

On the whole, a good showing



Raising and lowering the tonearm is by push-button at left. At right are the start/stop buttons that, with the arm raised, double as two-speed manual track-seekers. As with the SL10, the 33/45 speed switch is under the cover.

for a turntable that was sold more on its convenience than its audiophile credentials; evidently, ease of use and sound quality do not have to be mutually exclusive. I'd love to hear this deck with a 21st-century P-mount cartridge; maybe I'll cover this in a future column.

Problems to watch out for? There are surprisingly few, for what is internally a very complex machine - pretty good going for a consumer product that's over forty years old. The most common ailment is a stuck tonearm, which is usually caused by a worn or deformed arm-drive belt. If the deck hasn't been used for a while, the associated motor hasn't been unknown to seize up. Thankfully, it can usually be freed up by manually-rotating its pulley - just as well, given that the chances of finding a new replacement motor are negligible.

A metal rod, along which the stubby tonearm glides under microcomputer control, is coated with a grease that can harden over time - remove and renew it, if this is the case. Note that the catches

built into the spring-loaded lid of an improperly-treated SL-7 will probably break - it hasn't been unknown for users to hold the lid down with a heavy book or two! To minimise the risk of reducing the deck to this state, use the latching system carefully - hold down the button when gently-closing the deck, releasing it only when the lid is home.

On eBay current SL-7 prices vary widely. A tatty non-worker can be yours for £60 or so, while a serviced example in pristine condition will attract more than £200 - approximately the same

price as a new one in 1980.

If you buy a SL-7 ensure the arm's transit lock is engaged prior to shipping - assuming the seller no longer has the 'tonearm protection spacer'. Note that genuine Technics styli for the EPC-P202 are now virtually-unobtainable, and very



The SL-7 - like the SL-10 - has a 'pop-up' 45rpm adaptor. Note that the platter mat is fixed so cannot be replaced.

expensive when they do surface. Most of the aftermarket items offered online (usually with no technical details) are cheap and nasty; they won't realise the cartridge's full potential - better to replace the cartridge altogether.

Hemp high

Martin Pipe meets the Hemp – a highly-distinctive take on a familiar Grado design.

Grado's circumaural open-back headphones have a distinctive house style – a time-honoured design and appearance that immediately identifies their origin. The New York firm is now going one step further with its limited-edition Hemp, the cups of which are formed from the material that gives the 'phones their name. It's

a wood that's made by compressing a mix of hemp fibres and bonding agent. Claimed by some to be the "world's most environmentally-friendly" timber product, hempwood – certainly as deployed here – has visually-distinctive grain patterning. This varies from sample to sample, ensuring that every pair of Hems will be unique.

Acoustic properties did, of course, influence Grado's decision to use the material. "The highly-compressed hemp" I was told, "creates a 'damping effect'

between their fibres...producing a fuller sound". Through "trial and error" Grado also

introduced maplewood into the design so that it could achieve the desired sonic balance.

Glued into the cups are the 'de-stressed' 40mm dynamic drivers, which Grado claims to match within 0.05dB.

Presenting a nominal 38 Ohm impedance to your amplification, and responding to frequencies from 13Hz to 28kHz, they're of average sensitivity at 98dB/mV. My FiiO X3 personal player had no trouble driving them, though.

The hefty 8-conductor cable, which is approximately a metre and a half long, terminates in a personal-friendly 3.5mm plug (with 6.3mm adaptor). It's alas not detachable,

and so can't be upgraded – or easily repaired! Nor can you experiment with balanced-output headphone amps. The Hems use the same time-honoured sprung-steel headband and simple-but-effective head-size adjustment of its brethren. Grado's easily-replaceable earpads – 'F-cushions' – are made from dense foam. They are comfortable initially, but can irritate after a while. As an open design, sound leakage is quite significant – these probably aren't the best phones to wear on public transport, unless you want to share your musical tastes with others in the immediate vicinity.

SOUND QUALITY

Driven by headphone DACs like the Prism Callia and Chord Hugo TT, fed from a Cambridge CXN digital source, I found that the Hemp is musically-believable - yet the same time 'big' and engaging in its presentation. Some previous Grado efforts have been described as being a touch bass-shy and overly bright. Not so here; the Hemp is on the whole well-balanced, but with a slight midrange bias that seems to – for example – bring out the strings of Venus, the Bringer of Peace (Holst's Planet Suite, Rattle/BPO) from the mix. The percussive 'voices' of the drumkit in Simon and Garfunkel's America, as played by session musician Hal Blaine, were phenomenally-detailed for sub-£500 headphones. It was also easy to pick out and follow the small pipe organ that bubbles through the track. Complex pieces like the Holst left me with no reservations about the Hemp's ability to create a tangible



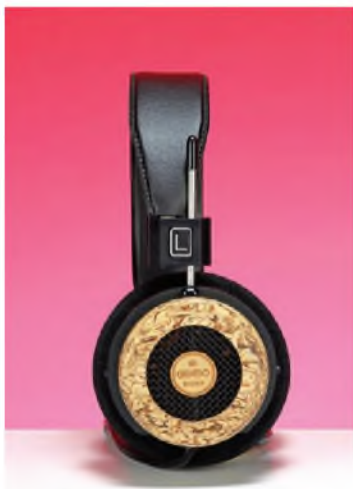
stereo image between your ears.

The guitar tone, pedal steel and vocal of David Elias's *Crossing: Morning Light Western Town* (DSD64) were easily resolved, thanks to this forward character and ability to communicate where it counts. Also played on this recording is a double-bass, which here sounded deep and controlled – yet convincing. America's bass-drum was also given a satisfying kick, while electronic low-frequency excursions – among them, Pye Corner Audio's *Remanence* and Underworld's *River of Bass* – were given all the space they needed. Rhythm was well-defined and paced well, as Talking Heads' *Born under Punches...* (from *Remain in Light*) amply revealed.

I then switched to a mixtape of '90s-era hip-hop from Brooklyn – the New York borough where Grado's headphones just happen to be hand-built. Raps from the likes of Mos Def, ODB and Big Daddy Kane flowed here with unambiguous clarity, and I marvelled at (and attempt to guess the origins of) their inventive jazz-rich musical backdrops. Midrange colouration (Amir Said's *In Brooklyn rap*,



The highly-distinctive patterned finish of the Hemp is obvious here. On the right, we have removed the foam earpad – which can be uncomfortable after wearing the headphones for long periods – to reveal the 'de-stressed' 40mm 38 Ohm dynamic drivers, which Grado claims to match within 0.05dB. They're of average sensitivity (98dB/mW), but in practice aren't difficult to drive.



As with other Grado headphones, the Hemp uses this simple (and proven!) system to accommodate different head sizes. The two cups are attached to adjustable rods, which are stiffly-threaded through plastic blocks at either end of the covered sprung-steel headband. Sensibly, these blocks are embossed to clearly identify the channels. The gauze is a tell-tale sign of the Hemp's open design – sound leakage is not insignificant.

for example) was down to the recording, and not the 'phones – Radio 4 speech exonerated the Hemp here. This musical genre is also known for its percussive sounds and basslines, which were here correctly-proportioned rather than emphasised – as is frequently the case with the headphones associated with another well-known rapper.

CONCLUSION

On the whole, I loved these distinctive full-bodied 'phones –

and I'm sure you will. No substances were consumed while preparing this review, although Grado admitted to "stock(ing) up on more snacks at the office". Unfortunately, Grado only produces its limited editions for "exactly one year" – its PR also told me that it doesn't work to "exact numbers". With this in mind, let's hope the Grado's staff can be persuaded to keep off the substances until the run ends in the summer, and follow the Hemp with 'phones of similar character.



According to Grado the unusually thick cable, which is approximately 1.5m long, accommodates 8 conductors internally. It's terminated with a moulded 3.5mm plug for personal players – the 6.3mm adaptor you see here is also supplied (although a carrying case isn't). The cable is not detachable, making repairs or replacement difficult – as well as preventing the use of dedicated balanced headphone amps.

GRADO HEMP £480



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

A 'big' sound – but not too big.

FOR

- incredibly enjoyable, in musical terms
- good looking and well built

AGAINST

- cables fixed and cannot be replaced
- ear discomfort during long listening sessions

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nucleus

by

roon



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Caught in the Net(work)

Martin Pipe grapples with the Shawline Streaming, an Ethernet cable from Chord Company.

For some time many hi-fi systems have had a wired network link; wi-fi is slower and less reliable. The Ethernet cables needed are categorised according to speed. CAT-5e cables are suitable for 1Gbps Ethernet, while the newer CAT-6 types are certified for 10Gbps.

But that's only part of the story. Inside an Ethernet cable are four twisted wire pairs that carry data in balanced form, done to make the connections resistant to extraneous noise.

The cheapest Ethernet cables are unshielded. These are known as 'UTP', which stands for 'unshielded twisted pair'.

Where cables must pass electrically-noisy industrial machinery, screened Ethernet cables are available. The individual twisted-pairs in these cables may be shielded with foil ('FTP' - foiled twisted pair), or there may be a screen around the lot ('S' prefix).

In highest quality Ethernet cables a combination of both construction techniques will be employed.

With 'Shawline Streaming' Ethernet cable, a recent addition to Chord Company's mid-range proposition, but the manufacturer's description there are "individually-shielded twisted conductor pairs with overall shield and FEP insulation". So, in functional Ethernet terms, it must rank highly.

With silver-plated copper wiring for the shielded pairs, terminated at either end in plugs with 24k gold-plated contacts and shielded surrounds fashioned from zinc, Chord has gone much further than the average IT supply company. Resplendent in 'Shawline crimson', this Ethernet cable is – as you'd

expect for £300 (3m) – well-made and attractively-finished.

However, there's a problem. Those zinc Chord Company plugs are considerably wider than the ones fitted to IT-grade cables. With most if not all routers and switches – including, with delicious irony, the English Electric Switch8 sold by Chord Company itself! – the practical upshot is that the adjacent socket can't be used. Stick with Shawlines and your Switch8 becomes (at best) a Switch4, as a publicity picture on the English Electric website shows!

SOUND QUALITY

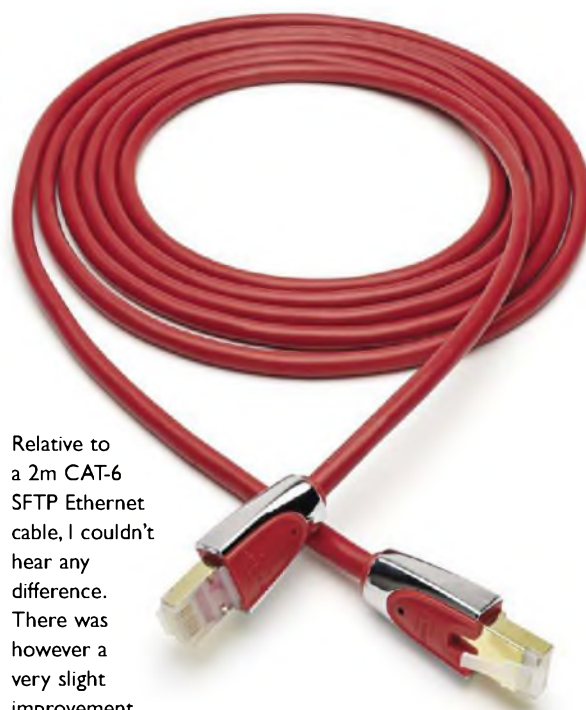
So how does the Shawline Streaming perform? The 3m review sample was used to connect a Cambridge Edge Q streamer, which feeds Quadral Aurum Wotan VIII speakers via the matching Edge W amp, to an enterprise-grade HP switch in my listening room. This is in turn connected, via a long run of SFTP CAT-5e cable, to a Synology router and broadband router.

As professional IT kit, the HP switch has numerous Ethernet sockets and so the wider-than-RJ45 plug wasn't an issue as there were plenty of spares.

This sort of thing isn't however a particularly domestic proposition. If you're plugging into more consumer gear – a 4-port router or 8-port switch – you might need to sacrifice connectivity to other devices around the house, or install extra kit.

CHORD COMPANY SAYS -

"For the best audio results, most people would install a switch...so only two of the four sockets would be used. This greatly reduces crosstalk...not important in computing, but important for streaming". We were also told that for "optimum audio performance from the EE switch spaces should be left between connections where possible".



Relative to a 2m CAT-6 SFTP Ethernet cable, I couldn't hear any difference. There was however a very slight improvement, in terms of space and timing, over an old 30m CAT-5 UTP cable I found in my IT pile...but that's a chalk-and-cheese comparison.

I then went to the trouble of carting the bulky Edge Q to the other end of my house, so I could plug it directly into the router. I listened to the streamer via a Chord Electronics TobyTT and Focal Utopia headphones. If there were any differences between the Shawline Streaming and a high-grade Ethernet cable, they alas once again passed me by. Even tweaks to the digital filter settings of a DAC, which can be incredibly subtle, had more effect. But perhaps because there was no local interference to eliminate. Some swear by high-spec heavily screened ethernet cables; it's likely down to local conditions.

If you can borrow a Shawline Streaming Ethernet cable from your friendly local retailer, or buy one on the understanding that you can return it if no positive audible difference is forthcoming, go for it!

CUSTOM LENGTHS ALSO AVAILABLE

0.75m, £200
1.5m, £250
5m, £400

THE CHORD COMPANY SHAWLINE STREAMING £300 FOR 3M



GOOD - worth auditioning

VERDICT

No worthwhile improvement in my situation. Narrower plugs needed too.

FOR

- impeccable construction
- looks great

AGAINST

- plug wider than standard so valuable ethernet ports wasted
- minimal improvement

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"a lovely valve amp was smashed to pieces by the courier"



Noel Keywood

Here's the most boring column I have ever written. It's about packaging. But I'm becoming besieged by packaging that somehow gets into the house and has to be thrown away in huge quantity, as has never happened in the past. And then there is the lavish packaging of some hi-fi products that come in for review.

The cardboard cases and bits of foam etc that cosset a large loudspeaker to prevent damage in transit come in at around £200. Buy a large loudspeaker, throw the boxes out and you have just thrown £200 of your own hard earned money away. Madness.

I got to know about this from frantic 'phone calls with manufacturers about the well being of their products sent in for review – and could we please ensure the packaging wasn't casually discarded. Tannoy were especially affected, with giant loudspeakers like the GRF.

I also got to know about it when running World Audio Design where we were sending heavy valve amplifiers to Australia in significant quantity, and packaging became a major issue. As well as a significant cost that had to be factored into final sale price. We all pay for packaging, it doesn't come free.

I never saw packaging as sexy. I still don't. But nowadays YouTube carries videos of the unpacking experience that suggests it is sexy (if you'll pardon the expression). Having unpacked SME arms long ago that put me in suitable awe, I understand this. But I don't think it's something to be encouraged. Rather something that needs to be understood as an aspect of consumerism that's best held in check. Hi-fi manufacturers should not over-package for display and to meet the "unboxing experience".

The ever more heavily packaged

hi-fi products that we receive are costing us all in the direct sense, adding to final selling price by significant amount, and in indirect sense in that this packaging must be discarded and (hopefully) re-cycled.

It's bizarre that as a general cry goes up about the waste we produce and how to deal with it, I see growing mountains of cardboard boxes and packaging in the street awaiting collection Monday morning.

The New York Times illustrated this issue by running an article on the re-start of a shuttered U.S. cardboard mill to supply the demand of direct-delivery operations like Amazon. So that's where all the cardboard accumulating in my house comes from!

More seriously, the re-started plant provided needed jobs. And cardboard packaging can easily be recycled. Paper and cardboard come from managed forests, in places like Finland, that understood way back in the 1930s when paper demand had become prodigious for the production of newspapers (and this magazine) that trees had to be grown and managed on industrial scale to supply demand. Ironic that as demand for print paper declines, demand for packaging paper – cardboard – increases. Who would have ever predicted that Amazon, seemingly one of the world's most advanced commercial operations, would almost alone revive the dying production of paper.

The packaging of hi-fi products comes into this picture. Excess packaging is a waste of time and resources, but at least low-tech cardboard can be re-cycled easily.

Packaging isn't just about refuse and its cost though. It is also about getting goods transported without damage. And here costs and angst rise more. I've just had a long conversation with our columnist Dave

Tutt about this. He's involved with receiving goods in for repair from around the world, and sending back repaired items to their owners. On occasion, a disaster.

The underlying problem here is that the carriage of goods is a violent process! Lorries are loaded by people throwing boxes without any consideration of content – and I mean that literally as in throwing boxes from the backs of lorries onto the road.

To withstand this sort of treatment requires exquisite packaging, especially when heavy objects like mains transformers are present. Our massive World Audio Design mains and output transformers would punch their way through anything unless deeply bubble wrapped (large bubbles) to absorb their gravitational momentum. Valves could not go into the same box; they would be smashed.

Dave Tutt tells me a valve amp he repaired was lovely, but smashed to pieces by the return courier.

How to deal with this I do not know. Ever more packing to deal with "errant behaviour"? Or insurance perhaps.

Insurance should cover losses but it adds to cost and is a bureaucratic complexity. You hopefully get some money back but not the item you wanted, perhaps valued for your own reasons. At this level the issue of packaging for shipping gets emotional. Perhaps a treasured item from your youth? Perhaps a family heirloom? An item shipped may be something the family has enjoyed for generations – only to be casually destroyed. The shippers will blame the packaging as inadequate. Glib.

Writing about packaging must be the most boring subject ever, but it's costing us all dearly in one way or another and needs to be kept under control. ●

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"The results – a string of bloated, conceited, narcissistic, self-satisfied rubbish"



Paul Rigby

I have found myself developing a soft spot for the CD. Maybe it's because the format is now veering towards underdog status, bringing out my paternal side. And also because it has improved in quality.

I remember chatting with an Abbey Road mastering engineer a few years back and complementing him on the sound quality of one of the company's then recent releases.

Like the modest troupers they are, he didn't say "Oh well yea, that's down to the sort of talents and powers you tend to only find within the cast of a new Marvel Superhero movie". Oh no. What he said was something like "Eh, yea. That's the new analogue-to-digital convertors we've just installed". Bless 'em.

But there's more. I find the recently released CD players on the market - and there's a few - sound rather good. The growing preponderance of CD transports is also a push towards sonic nirvana. And there is growing talk about manufacturing methods and how Philips got it right back in the day. That's because they used to punch out the holes on CDs for greater precision, apparently lessening the influence of jitter that is, so I hear, almost baked on current discs via lesser manufacturing methods. Wherefore art thou, Philips?

But maybe boutique pressing plants might yet step in, when CD becomes a niche market and (thank goodness) drops from its strained mass market position.

The growing move away from the jewel case and into digipak plus similar packaging territory has also aided its aesthetic issues while its oft inclusion as a bundled format into vinyl packaging is also welcome. There's life in the old

format yet and I'm going to keep a close eye on it during the future. And it does have a future.

Even so, that's not what I want to talk about in this column although CDs are core to the following subject. CDs are great. But vinyl is better.

I remember writing a piece for a monthly called DJ Magazine. This is going back many years. At that time, around the year 2000 or so, apart from the odd, desultory 7", I was the only UK journalist actually reviewing vinyl in national UK music mags (I kid you not. The only one) and I was desperately trying to promote the format in the face of the download fad that was raging at the time.

At that time I was listing why vinyl was (and is) such a unique format and why it demanded the reader's attention. The list offered classic 'pros'. Well, classic to me, I was repeating them in every music magazine I could lay my hands on with a sympathetic editor. They included:

1: The obvious sound quality. I tended to inwardly sigh, a while back, when people agreed with me on this but then added "Yes, it's sounds so warm. I love that. I wanted to rage in response that yes, thank you for your support and encouragement but no, that's not what I meant, the sound is so much more than this cliched 'warm' thing and...But kept my mouth shut while I was ahead.

2: The fact that you own your music. Back then it was downloads but it still holds true. Streaming services allow you to rent music. You never own it. There is always a risk that streaming music will be withdrawn if the host runs into bankruptcy or a label contract goes south. There's no guarantee

that your music will still be there tomorrow. Think Netflix. How often does its content disappear overnight? Owning physical product does offer that guarantee and I will be damned if some spotty erk dares to curate my musical tastes. Humph.

3: The LP produces beautiful limitations in terms of time. Space restrictions on an LP are such that you have to self edit, prune, double check and make sure of your art, if you want to release it on vinyl. If your album rambles on and on, it won't fit. And if you want a second disc, then you need to put your money where your mouth is to back up your case that a second disc is worth it. Really worth it. Because, if the public don't agree, you'll be financially burned.

CD was supposed to 'cure' this limitation by offering musicians a massive 70 or so minutes of easily accessible, relatively cheap running time. The results were often depressingly predictable: a string of some of the most bloated, conceited, narcissistic, self-satisfied rubbish I've ever heard. Seventy plus minutes that needed to be pruned down to thirty? Oh yes. Often.

4: There's a satisfaction in physical product and a pleasant weight in a vinyl album. You pay your money. You pick up this heavy thing. There's large sleeves, there's often large-format inserts and booklets and possibly multi-folding sleeves. You immediately think. This thing has value. I've never thought that about downloads, streaming or - too often - even CD.

But there's more! And some less than well-trodden points, that have emerged since those early days. I'll get to those in another column, 'cos I see the end of this one is coming up fast. ●

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Ortofon's philosophy is to play the recorded sound as accurately as possible, without colouring the sound to the detriment of the original recording. That's why the top-of-the-range 2M Black cartridge is engineered to a level that it can comfortably outperform many more expensive cartridges, including moving coil designs.

The 2M Series has been designed using Ortofon's easy to understand colour scale. Ascending through Red, Blue, Bronze and Black models, you get a different type of performance as you rise through the ranks. But with interchangeable styli, there's also a more affordable upgrade path available when the time is right.

2M truly sets the standard for affordable analogue audiophilia.



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Blue

An affordable step up in the range, which adds a greater resolution, dynamics, and detailed sound thanks to the Nude Elliptical stylus.



Bronze

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

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 is truly the best MM has to offer.

"Soundwise, this unorthodox arrangement trounces the average DAB tranny!"



Martin Pipe

Many years ago, I wrote an article that would today be seen as sacrilegious. I explained how and why better-quality music-centres – those horizontal acrylic-capped monstrosities of the 1970s, with amp, tape, turntable and tuner functions – could be dragged into the CD era. Better than throwing them away and they'd make useful secondary audio systems.

If they had an Aux line input and there was shelf-space for a shiny new CD then connect 'em up. And if not? My suggestion was to replace the superfluous turntable with a plywood platform, on which a slimline or personal CD player could be placed. I recommended putting aside the record deck just in case records became fashionable again...

The story that follows is not as provocative as the one above, but similar in nature. It revolves around a Denon UD-M50 CD changer/receiver mini system, from the late 1990s. Once seen alongside speakers that were specially-made for Denon by Mission, I spotted one amidst a mound of rubbish sacks and broken furniture. A sad end for a once-prized item, another victim of the throwaway consumer society. Why, I wondered, had this Denon been so casually-discarded?

Back at the ranch, the reason was obvious. The 3-disc changer was no longer functional; indeed the previous owner of this UD-M50 had slammed one of its CD trays irreparably into the mechanism. One read-error too many? However, the amp and tuner sections both worked. Furthermore, everything could be operated without the remote control; just as well, as I couldn't find that in the

trash pile.

Nowhere to be seen either were Mission's matching speakers, which I've seen without UD-M50s at boot-sales (I use two pairs of these MS-50s to good effect with a Pioneer quad receiver). For all this, the unit had potential. CDs are being killed off by streaming...so no need for the CD changer anyway.

I had, earlier during lockdown, found a Chinese Bluetooth module on eBay. This miniature device is basically a circuit board, built around a single 'jungle chip' and mounted behind a front panel. It's intended for applications like sending in-car music to Bluetooth equipped headphones. With remote control and wiring harnesses it was mine for a fiver (see <https://bit.ly/36vrMxh>). As well as Bluetooth, it offers playback of 16-bit audio (MP3, FLAC and even Monkeys Audio .ape files) on USB sticks and SD cards. These usually offer much higher storage capacity than CDs, so any legacy discs I want to hear can easily be ripped with the Exact Audio Copy Windows freeware (<https://bit.ly/3jcKorm>) and turned into FLAC files. And as if that wasn't enough, there's also an FM tuner.

Could this module replace Denon's changer? I disconnected and then physically removed the latter, to discover whether the UD-M50 could work without it. Answer: affirmative! Using a signal injector I then located the points on the main board where stereo audio from the CD changer's DAC used to feed the source selector; a +12V supply rail and convenient ground-point were also identified. I measured the DC conditions of the module's output and the Denon's 'CD' input – the latter had a +3V offset so I used electrolytic capacitors to couple them. All worked well,

except for one thing – constant and annoying low-level background hash, introduced by a ground loop.

This is to be expected, given the cheap design, likely with no separate digital and analogue grounds. Such noise can be eliminated through the use of balanced connection, 1:1 transformer isolation devices, called 'ground-loop isolators' are available for this purpose. Alternatively, an electrically isolated DC-DC converter or an independent power supply can be used.

My solution was to power the module independently via a hacked wall-wart supply, wired in parallel with the big rear-mounted power transformer. This is only energised when the unit is in use (a smaller transformer keeps the thing ticking over in standby) and so the module is only operational when it needs to be.

Some scrap plastic was knocked into a front-panel mounting that covered the CD tray-shaped hole. The result doesn't look pretty...but it works surprisingly well and, with a pair of Acoustic Solutions mini-bookshelf speakers (as dumped outside the local Cash Converters last year) now performs music duties in my kitchen.

Soundwise, this unorthodox arrangement trounces the average DAB tranny! Bluetooth allows me to listen to digital/Internet radio via my smartphone, while a single SDHC card will hold all of the music I need. Playback of tracks/folders is continuous and sequential. All you can do with the device's primitive user interface is step one track forwards or back... not ideal, but certainly acceptable for 'background music'! A fiver, and some good fortune, nevertheless gave a perfectly-usable stereo system a new lease of life. ●

v40s



Shadow Edition

Enjoy the warm, clear sound of valve amplification from all your audio devices with the v40s from Blue Aura.

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v40s

Blackline



"This time it lasted five weeks and about three gigs apparently"



Dave Tutt

An unusual job this week. I have done work for this customer before when I worked on a power amplifier for his studio. It involved purchasing a case for a Chameleon Ruby amplifier that, as you might expect, had a ruby coloured case. Having dropped this amp. whilst trying to install it was a bit of a disaster for my customer – but fortunately there was only minor external physical damage. He had six of them back then – but times move on and now his studio has gone.

Afterward, he found a rather more hi-fi use for the large room above a triple garage – namely as a music room for his own use. To fill this huge space originally there was a small control room and the rest was a studio proper. Now, as one room, it needed some good 'speakers and some power to fill it properly. To this end he had purchased four JBL active subwoofers "to augment the bottom end" as he put it.

These 18 inch JRX118sp boxes sounded great – or at least three of them did. Number four was very dead. It isn't unusual for active 'speakers of any make to die. I have had everything from cheap ones to boxes up to £6k a piece – they all fail.

Curiously, there isn't any obvious reason why in most cases. The first one of these I repaired, a later model if I remember correctly, had blown its amplifier module. It was, at that time, a really nasty construction that from a repair point of view was impractical to work on, so as part of the insurance arrangement with the owner a new module at £360 was purchased which was fitted and went back into service – only to blow again some

10 weeks later!

A second discussion with the insurance company ensued and another new module duly arrived and my bank balance shrunk again even before the payment for the first one arrived. This time it lasted five weeks and about three gigs apparently. That was as far as I was prepared to go as it was just too expensive to keep it running.

Back to Jon and his four units. These were all getting on in years, being from around 2004, so I have to say this model was reliable and long lived compared to other makes or different models from the same manufacturer. That is most probably because the Class D output stage was powered by a non-switched conventional power supply, which to be honest is the only way to make these reliable. 16 years or so is pretty good – and far better than the 16 months you can expect from a modern switch-mode equivalent!

So Jon's broken one was a simple case of blown fuses due to MOSFET output stage failure. The four output transistors and their drivers were all replaced, along with what seemed to have been the cause, a pair of protection diodes blown off the board. Some clean up of the burns on the printed circuit board and of the soldering as it was showing its age – and it was time to switch on again.

With anything designed to run at high power you want to be able to do a staged start up but it isn't all that easy, especially with anything that uses switching technology. If it doesn't get the right input voltage then all sorts of other nasty things can happen because oscillators don't start and things that, at high frequency look like normal components, can look like a dead short and a new big bang arrives without switching drive. It's

one of the great draw backs of any switching circuitry in that it cannot be easily tested without clear instruction from the manufacturer as to how you do the pre start-up testing, making the process a very unpredictable thing.

So...hey presto! Turned it on and it worked a treat. I have to say that compared to a hi-fi sub the internal method is somewhat different and to get the best from it there needs to be a decent level of drive but subjectively it's quite a dynamic solution. Whereas a hi-fi sub may have a precision crossover point the PA solution is somewhat more casual.

There is also an issue with the very bottom end as a sub can be quite murderous when uncontrolled. Even some large PA subs limit the very bottom end to around 40Hz and hope that anyone using them will not expect true subsonic rumblings – of the sort more often heard or felt with horn loaded speakers and 30kW PA rigs. You still get big bass though. Hi-fi bass tends to go much lower but ultimately is nowhere near as loud or dynamic. Of course, as with all audio, it is all down to personal preference.

Returning the unit and getting it powered up was quite an impressive feat. Jon plays a black Yamaha grand piano that sits proudly in the room. Listening to his recordings of a three piece jazz performance with him and bass and drums it was clear that Jon's ears know a thing or two about sound. The bottom octave of the piano was deliciously recorded, as was the double bass: it all came through superbly. Likewise the brass band that I remember he demo'd with the Ruby's years ago sounded terrific. I just wonder how they lifted that grand into the room! Good to get his subs back working again I thought after hearing this. ●

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Achromatic scale

The Achromatic update to Atlas's Element range has made an excellent budget interconnect even better, reckons Martin Pipe.

A decade or so ago, Kilmarnock-based Atlas introduced its Element Integra – a worthwhile buy, when it came to budget RCA/phono interconnects. So well-received was the Integra that Atlas has only just announced its replacement, the Element Achromatic. This is the entry-level member of the new Atlas connectivity family, of which the recently-reviewed Ailsa represents the midrange, and indeed both cables are fitted with the same plastic-shrouded (non-magnetic) Achromatic phono plugs. The stuff between them is very different, though, as you would expect given that the same money you'll pay for a pair of Ailsas will buy you four pairs of Elements (a full system's worth!).

The Element cable is noticeably thinner and lighter than the Ailsa's, but then again they are somewhat dissimilar internally; they do, however, share the same basic coaxial construction. Instead of the Ailsa's OCC copper signal conductor, wrapped-PTFE dielectric and esoteric copper wire/foil shielding, the 7mm-diameter Element relies on a simpler oxygen-free copper (OFC) braided screen and environmentally-friendly Polyethylene Furanoate (PEF) dielectric.

Atlas however still specifies OCC (Ohno Continuous Cast) copper for the all-important signal conductor, which is ultimately responsible for transporting the signals representing your audio from source to destination. As with other Element interconnects, the plugs are 'cold-welded' (crimped) rather than soldered to the cable.

Atlas recommends that its cables are burnt-in before use – and I note that some of its dealers will do this for you, free of charge. This was however a factory-fresh review sample and so I had to do the job myself. For this purpose I used interstation pink noise, courtesy of an old FM tuner that was plugged into my Arcam A49 integrated amp and Quadral Aurum Wotan VIII speakers. After the burn-in period (Atlas recommends 72 hours) the tuner was swapped for a more orthodox programme source in the form of a Cambridge Audio Edge NQ network streamer. As with the Ailsa, construction quality was fine – the plugs were a reliable fit, with excellent signal integrity.

Achromatic means free of colour(ation) – a desirable property that the Element will hopefully share with its more exotic

define the instrumental layers, even during the song's resonant break, while Beck's vocal was also distinct and locked into the image. Indeed, it was difficult to tell apart the two cables.

Listening very carefully the Ailsa revealed a touch more finesse on occasions. This was noted with the triangle, cymbal crashes and brass parts of Sibelius' Finlandia (Sir Malcolm Sargent, Wiener Philharmoniker, a 1993 CD FLAC rip). That's not to criticise the Ailsa – it's fully deserving of those five globes – but it will certainly give you an idea of how good the Element is in its price range.

CONCLUSION

A fantastic showing for its asking price, the Atlas Element Achromatic does not disgrace itself – even when partnered with some exotic equipment. It's refreshing to note that Atlas even lists the measured technical parameters of this interconnect on its website, and that it's available from some sources in lengths ranging from 0.5m to 5m.

relative. And these two Atlas cables do indeed sound similarly neutral when used in their intended role as line-level interconnects, with no tonal imbalance whatsoever.

The bouncy synth-driven energy of the Chemical Brothers' Wide Open (from a FLAC rip of the Born in the Echoes CD rip) was carried intact. It was easy to

ATLAS ELEMENT ACHROMATIC £86
(1M PAIR, AS TESTED)



OUTSTANDING - amongst the best.

VERDICT

Most of the sonic advantages of midrange interconnects, at a budget price.

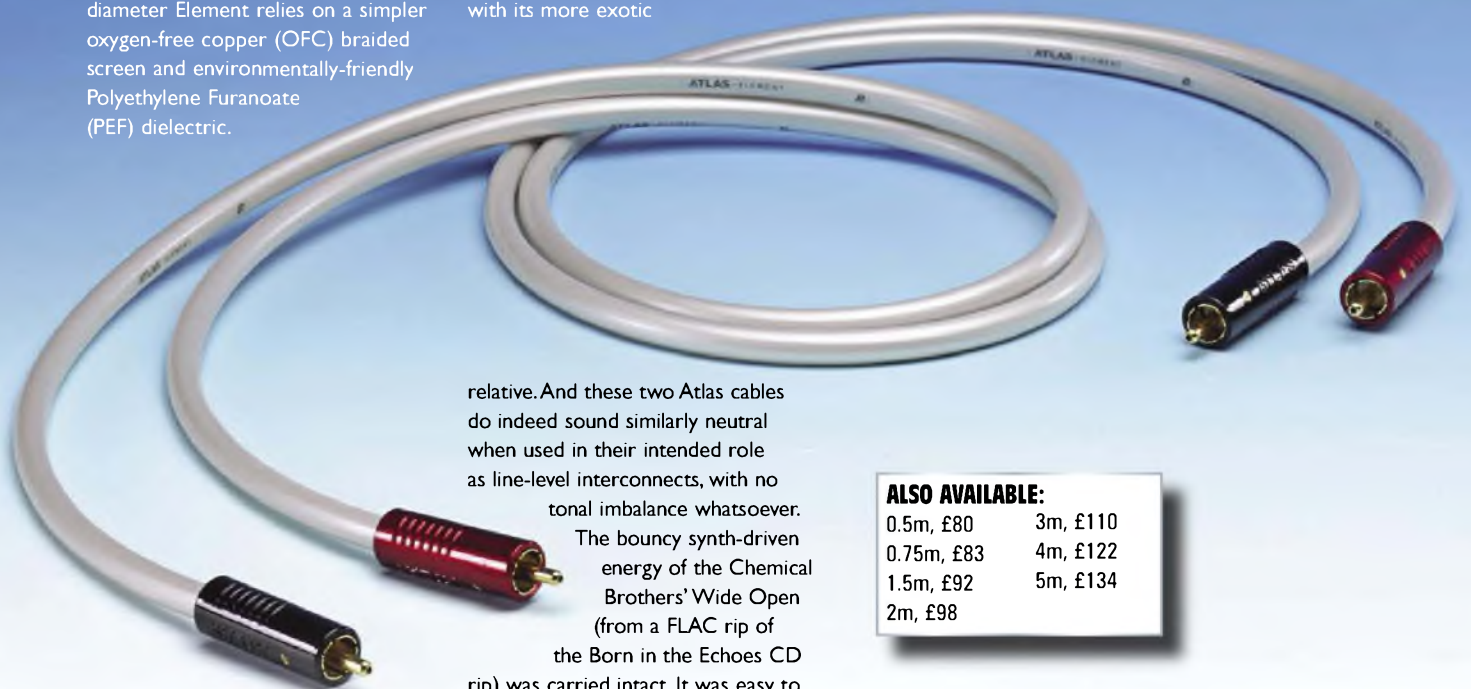
FOR

- tonally neutral
- well-constructed

AGAINST

- little at the price

Atlas Cables
+44 (0)1563 572666
www.atlascables.com



ALSO AVAILABLE:

0.5m, £80	3m, £110
0.75m, £83	4m, £122
1.5m, £92	5m, £134
2m, £98	



**ROCK AND ROLL VIXENS
NO.1 & NO.2**

**25 Black Women Singers, Movers
& Shakers
Koko Mojo**

I want to look at both of these CD titles but I also want to talk about other new label releases and the label as a whole.

Previously known as Rockstar Records, the company was founded in 1979 so has an appreciable history. If there's one thing I can call Rockstar, it's 'authentic'. The music they produce is core material. There's no messing around. For the Koko-Mojo imprint (www.Koko-mojo.com), the company produce "killers" (they say) while they let other labels "...produce fillers". Cocky devils, they are too then.

But there's plenty to back up their boast because they tend to go towards the dark side of rock'n'roll. They go for raw. They go for the nasty. Often mixing R&B, blues and soul along with that rock. This is hard-drinking music.

Primarily compilations, the label select prime cuts that, unless

you're an aficionado, most people will have never heard of.

There are twenty-five tracks on each of these single CDs from the early-fifties to the mid-sixties, contained within gatefold digipaks, displaying evocative images featuring the likes of Lillian Childs, Helen Bryant, The Cookies and Jay Duvalle. The music is meaty and full of compressed gravel. Witness Sinner Strong's energy-packed rocker as a prime example.

There's plenty of other volumes to enjoy here though: the 'Rock'n'Roll Kittens' series, 'Southern Texas Bred R&B Rockers', 'Let's Throw A Rockin' Soul' and the mean 'Boss Black Rockers' series. All span multiple, separate volumes and all are right there, in yer face, challenging and poking a finger in your chest. Just listen to Sapphire on the 'Boss' volume. A vocal-chord shredding, paint-stripping, performance. Phew!

AUDIOPHILE CD



BARBARA THOMPSON

**Live at the BBC
Repertoire**

She plays both sax and flute and has been at the forefront of British jazz and jazz-rock for decades – in the twin roles of band leader and co-conspirator with many other artists. Also the wife of Colosseum drummer John Hiseman, performing with her husband's band.

She also accompanied Neil Ardley around the mid-sixties and was part of the important United Jazz + Rock Ensemble, alongside iconic figures like Ian Carr, Kenny Wheeler and Hiseman.

Gaining confidence, Barbara Thompson then launched her own groups. Paraphernalia was active in the nineties and noughties. The group, Jubiaba was another venture, with Latin vibes.

Thompson has a classical background and is not afraid to retain contacts with that work. Her theatre productions are famed.

This, despite struggling with

Parkinson's disease. There's a biography on the way and a new album due this year featuring "up and coming musicians".

This 14CD box set ranges from 1969-1990 and includes a live concert by the New Jazz Orchestra, introduced by Humphrey Lyttelton, in February 1969, plus a set by Paraphernalia, featuring Jon Hiseman and keyboard player Peter Lemer, dating from June 1990.

There's a host of rarities here. For example 'Five Movements for Jazz Ensemble' (1971), conducted by Neil Ardley and introduced by Ian Carr, several broadcasts from the mid-1970s by Jubiaba and many sets by Paraphernalia. Jazz critic, broadcaster and saxophonist Dave Gelly adds thirty-six pages of liner notes.

It's a magnificent set packed with insight, creativity, delightful performances and basic great value over twenty-seven radio shows.

Toe Fat are one of those bands that you think you know, you've heard of in passing, you've read about them... somewhere, you have a memory. Maybe. Toe Fat were never front and centre as stars but they were there.

As such, I'm not being purposely negative when I refer to the band as rock journeymen: they were solid performers and were part of the core of the genre.

The band began in 1969 by ye olde beat rocker, Cliff Bennett. Bennett was an experienced performer, even then. Blimey, the guy was there with the Beatles in Hamburg as part of the Rebel Rousers. His band was managed by Brian Epstein and backed by Parlophone. They even had a big hit with The Fab's 'Got to Get You Into My Life'. Bennett should have been a big star. And yet.

He teamed up with ex-

members of the Gods, called his band Toe Fat (A bad move that, surely? What were the thinking?) and launched into a combination of blues rock and early prog.

The music wasn't exactly commercial while the bands' presentation was worse. The sleeve art was a right turn off. After band shuffling, the group lasted until 1972 with singer Ken Hensley and drummer Lee Kerlake moving on to form Uriah Heep while bassist John Glascock ended up in Jethro Tull.

This multi-gatefold release features two CDs: Toe Fat 'I' (1970) & 'II' (1971). The former looking back to '60s blues-based rock and less to the oncoming hard rock wave. The first LP is nevertheless melodic and it rocked, in a Steve Marriott kinda way. The sequel may have lacked the direction of the debut but there's still much to admire here in terms of the album's energy and passion.



TOE FAT

Bad Side of the Moon: An Anthology 1970-1972
Esoteric

AUDIOPHILE CD

Magnum, eh? Sheesh. Blimey. It's been a while. Emerging, soot ridden, from the chimney-strewn bowels of Birmingham back in 1979, with the tones of hard rock shining in their flowing locks and on nodding terms with the New Wave of British Heavy Metal, the band hit gold with the album 'Chase The Dragon' in 1982. Hits followed, Magnum were a 'thing'. Their star rose during the eighties after the release of several albums, only to quit-and-split during 1995.

Then they decided that, actually, 1995 was a bad idea after all. So they got back together for 2002's 'Breath of Life' and added a pop tinge from their earlier side project, Hard Rain. Sure, the line up experienced a reshuffle. These things happen.

It's been a long road folks, from the Brummie night club, the

Rum Runner, back in 1972 when they used to back Del Shannon.

So here we are in 2021, sans pop tinge, and a new album. This one looks at live material and radio edits that range from 2014 to around about now (including a CD first for 'On Christmas Day' and 'Born to be King'), polished and remastered, plus rarities. It's a companion to 2017's more balladic 'Valley of Tears', if you will.

Some will cry foul because a few of these tracks have appeared as bonus cuts in other sets but this collection notes that fact. This release is a round up of those rarities and is ideal if, as a fan, you only wanted the rarities and not the other original content.

So yes, one for the fans and yes, half of the rear-printed track listing is too small to read, but it remains a solid and intriguing collection.



MAGNUM

Dance of the Black Tattoo
SPV

X1

Pro-Ject
AUDIO SYSTEMS

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In 1991, Pro-Ject Audio Systems started a revolution in the HI-FI world with the introduction of the Pro-Ject 1 turntable. A new high-end, low budget turntable at a time when CD was king. Against all odds, we were creating interest in analogue audio at a time when others were turning their backs.

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The X1 is available in three finishes to suit any home décor; a premium walnut wood veneer or luxurious black or white eight-layer gloss paint.



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for 33, 45 and 78 RPM

8.6" carbon/aluminium
sandwich tonearm



Pick-IT S2 MM cartridge
designed by Ortofon

Belt-driven acrylic
platter supplied



Hook Shawline and sinker...

Thanks to a new offering from Chord Company, Martin Pipe discovers that USB cables do matter.

USB-equipped audiophile DACs, decent media-player software and the enormous storage capacities of hard drives have turned the modern desktop or laptop computer into a great music source for any hi-fi system.

With the rise of serious computer audio, a digital interconnect from specialist audio cable manufacturers – the USB cable – was inevitable. One of the first to enter this market was from Chord Company, their USB cables intended to help listeners squeeze every last drop of potential from the computer/DAC link. Its latest product here is the £200 (for 1m) Shawline USB.

With its bright-red woven-nylon jacket and custom silver-plated plugs – USB-A for the PC, and USB-B at the DAC end – it's obvious that we're no longer in high-street PC retail territory. The cable linking these plugs together is of particular interest, because it's of completely-

different internal construction to the cheap commodity stuff that interfaces your PC to a printer. Like the plugs, the four internal connections – ground, power and two for differential (balanced) serial data – are silver-plated, and a special type of polyethylene used for insulation.

Then there's an overall shield, which prevents high-speed USB data from contaminating nearby analogue audio signals – and to prevent unwanted interference from the outside world corrupting the digital datastreams. Chord Company has applied its 'Tuned ARAY' conductor geometry, found in its expensive

Signature range, to the similarly-handbuilt Shawline USB cable. Extensive listening tests then helped refine its basic design.

With a Chord Electronics Hugo TT DAC and Focal Utopia headphones, fed by a bog-standard Dell i5 Windows 10 PC running the suitably-configured (Class 2 audio drivers for hi-res and DSD-over-PCM) Foobar2000 freeware player, the improvement relative to a £5 computer-type USB cable was obvious – even if common sense (it's only digits, right?) tells us there shouldn't be any difference! With a variety of musical genres, more refinement was on offer; listening carefully to a good recording, I

found it even possible to distinguish between a variety of different string tones that would otherwise be merged. Brass instruments seemed more vivid, while a tad more energy and flow was bestowed on rhythms. A fine USB cable – well worth a listen.



THE CHORD COMPANY SHAWLINE USB £200
(CUSTOM LENGTHS ALSO AVAILABLE TO ORDER)



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

For the serious computer audiophile. Give it a try...or miss out!

FOR

- impeccable construction
- soundwise, improvements all round

AGAINST

- due to the plug/sleeve design 120mm of clearance needed

The Chord Company
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www.chord.co.uk

vinyl section

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APRIL 2021

www.hi-fiworld.co.uk

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The latest vinyl releases for you, from Paul Rigby.

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A new high-end moving magnet cartridge with boron cantilever, reviewed by Noel Keywood

PRO-JECT RPM 9 TURNTABLE 69

Carbon fibre tonearm and massive platter, belt driven from a d.c. motor. Noel Keywood reviews a top turntable.

GET BALANCE 73

Balanced turntable connection, by Noel Keywood.



HUBRO

New from Hubro (www.hubromusic.com) is 'Bones' from Erland Dahlen. Experimental rock, jazz-infused beats, synth-based infusions, this album has the lot. Moody, atmospheric and featuring a series of fascinating melodic structures, it's a little cracker.

The unlikely monickered Voices & Strings & Timpani offers a series of tracks on their self-titled new outing, blending soundscapes and organic structures, sometimes from a world music perspective but often folded into more western-oriented genres. An intriguing mix.

news

LOVE AFFAIR

Featuring Steve Ellis, this 'Best of' (*Demon*; www.demonmusicgroup.co.uk) is pressed on gold vinyl. This is a double album in a single sleeve. Side One features all five hits (including a re-mastered version of 'Everlasting Love') plus the single unreleased at the time, 'Time Hasn't Changed Us', after which Steve Ellis left the band. Side two features Ellis' solo highlights.



NINJA TUNED

From the Belfast-born duo, Bicep 'Isles' (*Ninja Tunes*; ninjatune.net) starts off with a track that sounds distinctly early Future Sound of London with slices of Orbital forked into the mix. This love letter to classic intelligent techno (to use an old phrase) is a pure delight and whisked me off on a 90s nostalgic trip. A time when wrapping yourself in foil at one in the morning, to keep warm, at Tribal Gathering seemed like a good idea...



It arrives as a double album, double album picture disc, 3LP special edition, CD and yes, cassette.

BANDCAMP BABES

Martin Perret's L'Anderer offers the LP 'Junctures' (*martinperretslanderer.bandcamp.com*), a modern jazz-based release that is generous enough to play off some hook-laden melodies while continuing to display innovative tangents, this jazz piece can get introspective too.



From the Seafarers comes 'Orlando' (seafarersmusic.bandcamp.com/album/orlando) a lazy, meditative, introspective folk outing with pastoral overtones from its female vocal. So when it does kick on...it's a bit of a shock. This one's in no hurry and neither should you be when you hear it.



BLACK PISTOL FIRE

'Look Alive' (*Black Hill*; blackhillrecords.com) the new album by the Arctic Monke...er, Black Pistol Fire has a slightly compressed vocal, raw rock roots, energetic, blues infused rhythms and splashy cymbals. Worth a listen.





KT TUNSTALL

The 'Ultimate Edition' of her 2007 album, 'Drastic Fantastic' (Jaydone - which is part of Universal), this double album gatefold, the pop-oriented sequel to the rather more low-key debut, is pressed on vinyl with a bonus 10" adding four new, unreleased remixes of the album's singles: 'Hold On', 'If Only', 'Little Favours' and 'Saving My Face' under her remix moniker, Tunnelz.



FIELDS OF NEPHILIM

Beggars Arkive (archive.beggars.com) has released the 30th anniversary vinyl reissue of the goth rocker's album, 'Elizium', arguably their best. Originally released by Beggars Banquet in 1990 and mastered by Geoff Pesche at Abbey Road. Pressed on dark green vinyl, its gritty, passionate vocal fronts a rich gothic maelstrom.

GEARBOX

Binker and Moses' 'Escape the Flames or Journey to the Mountain of Forever, Live' (2017) is a modern jazz outing via the tenor sax of Biker Goldring and the percussion from Moses Boyd. This double album six tracker is taken from their 'Journey to the Mountain of Forever' album launch and is a new interpretation of the studio album. Limited to 500 copies on clear vinyl it is packed with innovation, exploration and sudden right turns. The journey is very real.



BEAR FAMILY

'Cool Tom Cat' (Bear Family; www.bear-family.com) is the name that adorns this 10" hillbilly bop release from Bill Carter. This country swing artist was also a DJ, he knew both sides of the turntable and the wax that fills this disc is packed with songs, twelve in all with more on an included CD covering his work from 1953-1961. Rockabilly fans need this one too because Carter would venture into the genre later in his career.



FIREBALL XL5

Remember Gerry Anderson's children's TV show, 'Fireball XL5'? A mono 7" single of the Barry Gray TV theme is now out via Silva Screen (www.silvascreen.com) with 'Zero G' on the flip, on transparent amber coloured vinyl. Plus a delightfully illustrated sleeve.



...AND FINALLY

Mastered at Abbey Road, singer-songwriter Jennifer Kowa's 'Slow Down' (Sireena, www.sireena.de) delivers a smooth vocal with up-tempo jazz-infusions.

The soundtrack for 'Star Wars: The Empire Strikes Back' (Walt Disney) is out as a two-disc gatefold via John Williams and the London Symphony Orchestra. And a lovely edition it is too.

From Ed Cosens comes 'Fortunes Favour' ([Distiller: distillermusic.com](http://Distiller:distillermusic.com)) and a sixties pop-esque sound that is as bland as a bowl of boiled spuds.

From the Julian Taylor Band, the double album gatefold release, 'Desert' (Aporia; www.aporia-records.com) touches on soul, a bit of blues with rock accents. It's full of energy but never really stands out. It stands in a queue with a thousand others.

Azmari's psychedelic jazz-funk has a new LP, 'Sama'i'. Slightly trippy, quite hypnotic at times, the instrumental music meanders and roams.

250 Today

Ortofon's new 2M Black LVB 250 MM cartridge has a boron cantilever. Noel Keywood is on his mettle.

Ortofon's update of their top moving magnet (MM) cartridge, the 2M Black, was interesting to me; our in-house 2M Black has held its own against all-comers over the years. An update had to be good. Surprising to find then that we reviewed it in the November 2007 issue; this is a cartridge with a history – a very successful one. The new 2M Black LVB 250, price £830, has just been released and we got an early sample you can read about here. Since the original 2M Black remains available for £500, this is quite a price hike.

Ortofon like to name their top cartridges after greats in the Classical music world, MC Anna being named after Russian soprano Anna Netrebko. The LVB suffix of this new cartridge refers to Ludwig Van Beethoven, born 250 years ago. The name change is not the only change, as you might hope. Ortofon now fit a boron rod cantilever, carrying a Shibata stylus as before. The new cantilever gives “transparency, speed and responsiveness” they say, and is their preferred high-end cantilever type, as I know from speaking to them about it long ago. They're not alone of course: Audio Technica also like to use boron rod cantilevers on top models.

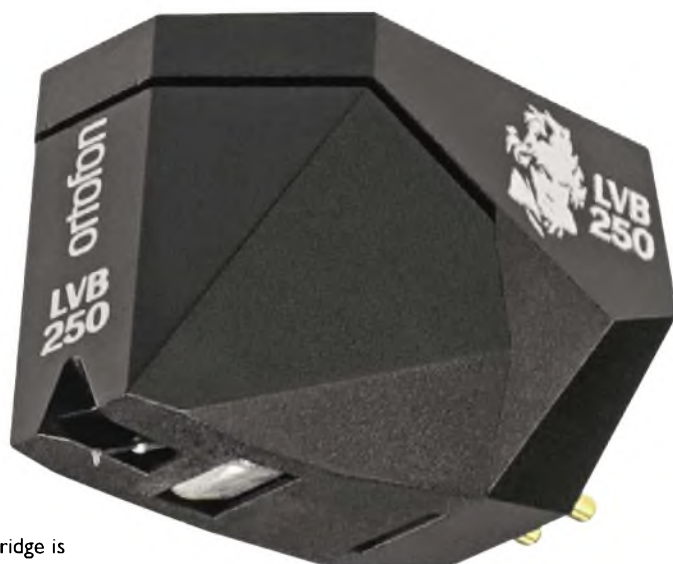
When I told Ortofon I preferred the sound of tapered alloy cantilevers, as used in their Cadenza Bronze MC and by Audio Technica in their VM750 SH Shibata tipped MM cartridge, they said “ah, you like a romantic sound”. I'll be forever puzzled by that comment, but it is true I grudgingly admit. That's why, as another way of

seeing it, I prefer valve amplifiers: give me natural and easy. All of which is a small pre-amble up to the point that the boron cantilever of the new 2M Black LVB 250 does impact sound quality, as I'll explain later.

The working end of every cartridge is its stylus tip and here the picture changes. There are more insightful tips than the 1970s Shibata profile, developed for CD-4 four-channel LPs. Audio Technica's SLC (Super Line Contact) tip delivers even more from a groove, but more can be too much from old LPs, or even modern ones pressed from mediocre vinyl. The Shibata gives superb insight in a balanced manner and it always was a plus point of the 2M Black; in fact Ortofon were early to use this reincarnation from the 1970s, others are catching up. I'm no fan of boron cantilevers, but a good Shibata tip is top – and an asset to the new 2M Black.

Like all moving magnet cartridges this one has a removable stylus assembly, for quick and easy replacement if all goes pear-shaped. The body weighs 7.2gm, right in the centre of the 6-12gm weight range most arms can cope with, so no problems here.

I was a bit puzzled by the tracking force Ortofon think this cartridge needs. The small booklet enclosed with cartridge says “1.5 g”, the website recommends “1.6 g” and quotes a range of “1.5g-1.7g”. I played safe and used 1.7g when measuring and listening. The long contact surface of a Shibata tip is able to distribute pressure on a vinyl groove, making



1.7 g best choice for secure tracking, as measurement confirmed. With this the cartridge sailed through top torture tracks, showing it was up with the best.

The body has integral threads for the fixing screws, making attachment easy. There's a knack to getting the



The removable stylus assembly surrounds the body but can be pulled forward for replacement.



Rear pins are colour coded and an earth plate connects the screen to Right channel (green) ground.

stylus guard on and off: the front must be positioned first then the rear pushed upward until it clicks into place. Not the easiest procedure I've come across.

SOUND QUALITY

Initially I used the 2M Black LVB 250 in Pro-ject's RPM9 turntable,



The stylus assembly parted from the body. Parallel body sides aid alignment in the headshell.

connected via the supplied balanced cable to their Phono Box RS2 phono stage. It fed a Creek i20 amplifier through Chord Company Epic balanced cables. Loudspeakers were Martin Logan ESL-X hybrid electrostatics connected via Chord Company Signature Reference cables. This then was an all-balanced system at the front end.

And it sounded balanced too. Not only was there a deathly silence, meaning no hiss or hum, but there was a stark clarity to the sound, a removal of hash and muddle, that balanced working offers. This made the fast drum work in Sing Sing Sing from the Syd Lawrence Orchestra's Big Band Spectacular come across as tightly focussed and dynamically lithe. The stylus came into play by delineating clearly between instruments in the brass section and sending out cymbals with strength yet finesse. There's nothing quite like a good Shibata tip – I live by 'em – and that fitted to the Black is superb. My notes say bass was fast rather than deep though.

In The Mood continued this picture, trombones stabbing out of a slickly wrought canvas that was richly detailed. Overall balance was not a warm one: in this set-up think quite a light patina.

Selecting 45rpm, Dire Straits Brothers In Arms re-master from Mobile Fidelity confirmed a less warm balance than I know it from our own Timestep Evo Technics SL-1210 Mk2 turntable with SME309 arm and 2M Black – and this I suspected was largely down to arm differences. But



Boron rod cantilever with a cleanly attached Shibata stylus.

with Walk Of Life ride cymbals jumped out of the mix, clear and bright: again a great stylus and fantastic high frequency resolution from balanced working throughout the system. Where I'm usually aware of the big bass line and Mark Knopfler's preferred warm balance to his high quality recordings, here my notes were more about sparkling treble detail and resolution. As Ortofon claim, their boron cantilever gives a fast sound, one that's cool in nature and – as they inferred – not "romantic". It's a highly analytical cartridge, that's for sure.

I know the sound of Ortofon's original 2M Black well and this wasn't as my memory recalls it. So I changed things around a bit by transferring the cartridge to our Timestep Evo modified Technics SL-1210 Mk2 Direct Drive, with SME309 arm, connected unbalanced direct into the Creek i20 through its internal Sequel IV MM phono stage.

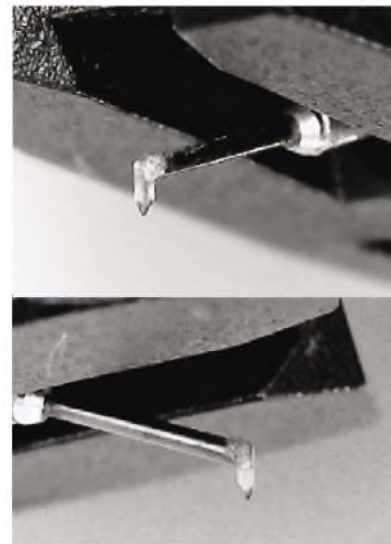
This changed the sound completely. Suddenly, there was a powerful kick drum and follow on bass line to Walk of Life (as well as Hugh Masekela's Uptownship), the LVB 250 now sounding full bodied. But the sense of forensic mid-band

clarity receded, to be replaced by a smooth, silky quality that wasn't as impressive perhaps, according to personal preference. Stereo images softened out too.

Obviously, I needed to run our SME309 balanced – but it wasn't to be. Pro-Ject's balanced cable appears to use an SME-style 5-pin arm connector: they look identical. But it refused to fit. The plug went into the hole, guided by a small key, but the pins would not mate; there was a millimetric difference somewhere.

CONCLUSION

Ortofon's 2M Black moving magnet cartridge set a new standard for sound quality long ago and has gathered a deserved reputation over the years for its accuracy and superb insight from a Shibata stylus. Ortofon's update in the LVB 250 adds to its fundamental strengths, bringing in extra speed and incision through use of a boron cantilever. It remains a top MM cartridge, one demanding of a high quality arm, turntable and phono stage to get the best from it.



Ortofon use a finely polished diamond rod stylus our close-ups show.

MEASURED PERFORMANCE

Our frequency response analysis, measured with JVC TRS-1007 – an industry standard test disc – shows the 2M Black LVB 250 measured flat from 20Hz to 20kHz with little variation, making it very accurate.

The Shibata stylus traced inner grooves very well the red trace shows, with no loss right up to 20kHz – an extraordinary result. So no dullness at end of LP side but inner grooves in bad condition will have problems exposed.

Tracking was very good at the (light) recommended downforce of 1.5gms, a high 63µm cut being cleared securely, but there was mistracking of the top 90µm cut of CBS STR-112 test disc (300Hz). Increasing downforce to 1.7gm the cartridge cleared 90µm, so Ortofon's quoted 80µm is correct. The top torture track of B&K QR2010 test disc (25cms/sec, 1kHz) was cleared with only slight mistracking, an excellent result.

Channel separation averaged out at 24dB and output averaged out at 5mV (3.54cms/sec), both normal values.

Distortion measured a low 0.6% lateral (CBS-STR112, 45µm) – good. This rose to 5% on vertical modulation due to a measured vertical tracking angle (VTA)

of 25 degrees (DIN 45 542 test disc). The ideal is 22 degrees.

The 2M Black LVB 250 measured well if not perfectly with our early sample. It has flat frequency response for accurate sound balance and superb tracking. NK

Tracking force	1.6gms
Weight	7.2gms
Vertical tracking angle	25degrees
Frequency response	20Hz-20kHz
Channel separation	24dB

Tracking ability (300Hz)	
lateral	90µm
vertical	45µm
lateral (1kHz)	25cms/sec.

Distortion (45µm)	
lateral	0.6%
vertical	5%
Output (3.45cms/sec rms)	5mV

FREQUENCY RESPONSE



**ORTOFON 2M
BLACK LVB 250
£830**



**OUTSTANDING - amongst
the best**

VERDICT

Deep insight and precision sound. A top moving magnet cartridge.

FOR

- ease of fitting
- superb tracking
- deep insight

AGAINST

- awkward stylus guard

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Carbon Crusader

Pro-Ject's RPM 9 Carbon turntable with balanced output gets close attention from Noel Keywood.



Superficially about Pro-Ject's high-end RPM 9 Carbon DC turntable (£1999), this review is also about the whole idea of junking the conventional way of connecting a turntable for a better one that eliminates noise, hum and other rubbish. Additionally, importers Henley Audio fitted Ortofon's latest top moving magnet cartridge, the 2M Black LVB250 (£830). So here's a top turntable and a new Ortofon

cartridge, all connected up in pristine fashion through balanced cables.

I have been running an SME 312S arm with balanced cables for a long time and this is the only way to go. But to avoid techno-twaddle in this review I'll concentrate on the turntable – the practicalities and benefits of going balanced exiled to a box-out.

Main difficulty: to connect up a turntable using balanced cables you must have a phono preamplifier with

balanced inputs – these are rare. Pro-Ject recently introduced the Phono Box RS2 (£1300), reviewed in our March 2021 issue, and I inevitably used it in this review. The RS2 then is an integral part of what is being reviewed here.

The RPM 9 Carbon turntable is, I'll warn, specialised. You get bags of bits and there's a lot to set up, all in old-fashioned style, notably weight-on-thread to apply outward bias to the arm. Confusing to me

was the presence of no fewer than four counterweights where most arms need one and our SMEs two. The platter weighs a heavy 4.5kg and needs careful handling when lowering onto the bearing, since there is a thrust ball at top. A sturdy but compact plinth also carries the arm. There is no motor on the plinth, so no mains power, no electrical connection and therefore no possibility to set up a hum loop. Just platter and arm.

The motor is a separate unit entirely, free standing and connected only by a slender rubber O-ring drive belt. To give it mass and stability the motor has its own heavy base with rubber feet, and can be switched to 33rpm or 45rpm by a



Pro-Ject's balanced cable has XLR plugs at one end (left) and an SME-style arm plug at the other with two balanced lines and central earth.



The carbon fibre arm has an integral headshell, making cartridge fitment awkward. The cartridge stylus guard is best used during this procedure. Note flat finger lift at right.

small button on its top face, LEDs confirming speed-lock. Being a d.c. servo motor it has an external power supply delivering d.c. through a slim cable. Its on-board electronic servo-system senses when correct speed has been reached, flashing LEDs turning steady.

There is a motor set-up



Outward bias to the arm (anti-skating) is applied by a weight-and-thread assembly, shown here. It works but it is fiddly.

template to get positioning correct, giving a spindle-to-spindle distance of 214mm. Our Wow&Flutter meter with connected spectrum analyser showed the mechanism works best with the belt running slack, drawback being there's slippage at start-up, making start-up slow. A flat, precision ground drive belt offers better performance than an O-ring and at the price the RPM9 would be better fitted with one I believe.

The arm is of wrapped carbon fibre construction, with integral carbon fibre head shell. Without removable head shell cartridge changing is difficult, as with all one-piece arms. Arm height can be adjusted to change cartridge vertical tracking angle (VTA) and the arm tube can be unclamped and rotated to change cartridge azimuth. A weight and thread apply bias (anti-skating). Four counterweights cope with all cartridge weights.

The head shell has no parallel sides to facilitate cartridge alignment and unsurprisingly the Ortofon 2M Black LVB250 cartridge in our sample was badly misaligned, being set at front of the headshell to produce 1.8% tracking distortion;

moving it to the back this fell to a low 0.6%. The flat finger lift has no clearance above LP surface to slide a finger underneath – and it slips out of finger grip in any case. I hand cue only so this arm was a no-no for me. Improvement in headshell geometry and an upward curved finger lift would both help; such finger lifts can be optional, as with SME. The arm was a loose fit into the rest clip, allowing it to be knocked out accidentally; a clip of some sort is common here; I used a tie-wrap for safety.



A solidly built arm pillar and crucial lift/lower lever. The arm rest clip was a slack fit on the tube and had no locking clip.

The arm has a socket at the base of its pillar that carries signal leads and earth. It lies deep in a recess and is difficult to see and reach, something best done with platter removed. Fitment of a socket allows leads to be changed: conventional unbalanced with RCA phono plugs; or balanced with XLR plugs; we were supplied both.

SOUND QUALITY

The Pro-Ject RPM 9 Carbon was



An clear plastic alignment guide locates the free standing motor relative to the platter, imposing a spindle-to-spindle distance of 214mm.

connected to their Phono Box RS2 phono stage using the balanced cable supplied. Since the Ortofon 2M Black LVB250 cartridge is a moving magnet (MM) type, the RS2 was set for balanced input and minimal capacitive loading. Output from RS2 was delivered by balanced Chord Company Epic cables to a Creek i20 amplifier's balanced XLR input, that was in turn connected to our Martin Logan ESL-X hybrid electrostatic loudspeakers via Chord Company Signature Reference cables. This was an all-balanced system then, at least in its connection methodologies, the Creek being a conventional unbalanced amplifier internally.

Pro-Ject's heavy platter, large main bearing and solid plinth worked together well to give strong dynamics, the fast drum work in Sing, Sing, Sing from the Syd Lawrence orchestra having speed and strength. I fancied there wasn't the low bass power our SME309 arm supports however. Jackie Leven's Men In Prison had Jackie starkly clear centre stage, with fine delineation of instruments around him and the production techniques being used; echo tails faded out clearly, because of balanced working I suspect, where such low level effects become obvious.

Hugh Masekela's trumpet at the start of Uptownship, from the LP Hope, glared out strongly and hand drums came over as cleanly fast; there was superb mid-band sound staging – but I fancied opening kick drum strikes lacked the low-end weight I am used to from our SME309 arm, and the following bass line was also reticent.

Spinning a wide range of high quality cuts, the Pro-Ject with Ortofon 2M Black LVB250 showed

itself to be clean and analytical, digging out a wealth of fine detail and placing it on a lavishly broad sound stage. My only wish was for more low end weight. I say more about this in the Ortofon 2M Black LVB250 review where the RPM9 Carbon together with balanced connection gave an entirely different sound to our own turntable, it's midband clarity and sharpness of sound stage imaging being vivid. It is highly analytical, but not especially warm or fulsome and a bit more low-end heft would have been nice.

CONCLUSION

The Pro-Ject RPM9 Carbon with its external d.c. servo-motor is strongly built, relying on a sturdy plinth with large main bearing and massively heavy platter. The accompanying carbon fibre arm needs careful set-up and I found it difficult to use, since I hand cue. An arm clip with lock is needed too. Whilst the arm gave great mid-band insight it was less enthusiastic in producing deep bass, resulting in an analytical sound balance lacking vinyl warmth or weight. More a CD type of presentation I'd suggest, yet analogue done

well is always more dramatic and enjoyable than CD – and when fully balanced from cartridge to phono stage as the RPM9 Carbon is able to offer, a dramatic experience. In all then, a sound that was deeply revealing, shining a spotlight onto all areas except bass.



The headshell lacks a face parallel to the cartridge axis, making tracking alignment very difficult.

MEASURED PERFORMANCE

The 3150Hz test tone of a DIN 45-452 test disc measured 3186Hz on our Wow&Flutter meter, a speed error of +1.1% which is high.

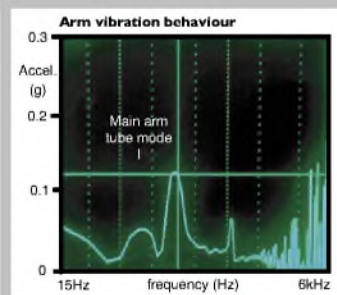
After a 24 hour run-in W&F measured a low 0.08%. Our Speed Stability spectrum analysis shows

the main rotational variant at 0.55Hz (33rpm) is low and there was little flutter, making the Carbon RPM9 speed stable. Best results were with a very slack belt where the motor was not dominating the platter and the O-ring belt had little impact (inferior to flat ground belts, but cheaper). This allows platter mass to determine speed stability. Total Wow&Flutter (DIN weighted) measured 0.05%, a very good result. Measured to the Japanese JIS Standard the figure was 0.03%, JIS always giving a lower reading than German/European DIN. These figures are up with the best.

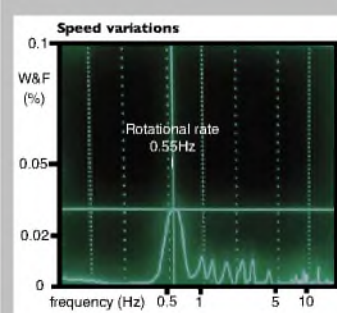
The arm had a first bending mode at 180Hz, our analysis of vibration, using a Bruel&Kjaer accelerometer on the head shell, shows. This is a classic tube resonance. There's a second-order resonance at 350Hz too, both appearing as blips in the 2M Black's frequency response trace.

The turntable measured well but the arm was mediocre by modern standards, due to obvious bending modes. NK

ARM VIBRATION



SPEED STABILITY



Speed error	+ 1.1%
Wow	0.08%
Flutter	0.03%
Wow & Flutter (DIN wtd.)	0.05%

PRO-JECT RPM 9 CARBON DC £1999



OUTSTANDING - amongst the best.

VERDICT

High resolution, specialised turntable capable of forensic insight.

FOR

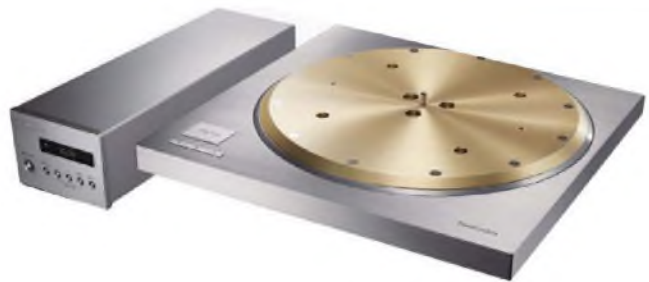
- revealing mid-band
- fully balanced working
- silent

AGAINST

- lacks bass weight and warmth
- difficult to set-up
- fiddly to use

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Hi Fi News said:

Any great turntable gives you a certain frisson when you hear it. It's that old 'shivers down the spine' feeling, a sense of being let into a world to which you had previously not been privy. This is a remarkable turntable, and arguably the apex of vinyl playback. It's difficult to see how the SP-10R motor unit can be improved upon. It is a definitive statement of engineering prowess, and marks the return of direct drive to the top tier of turntables.

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Going Balanced

Why connect up a turntable through balanced cables? Noel Keywood explains.

Pickup cartridges produce such small voltages, in the region of millionths of a Volt – just about any external signal can interfere with them. That's why hum and buzz are common – and they can pick up radio signals too, as those living close to a powerful transmitter like London's Crystal Palace will know. There's a way to eliminate external interference: the use of balanced connecting cables.

In outline it is easy to connect up any turntable with balanced cables, but a Phono preamplifier with balanced inputs is needed and these are rare. So a chicken-and-egg situation exists: without available preamps balanced turntables are unusable.

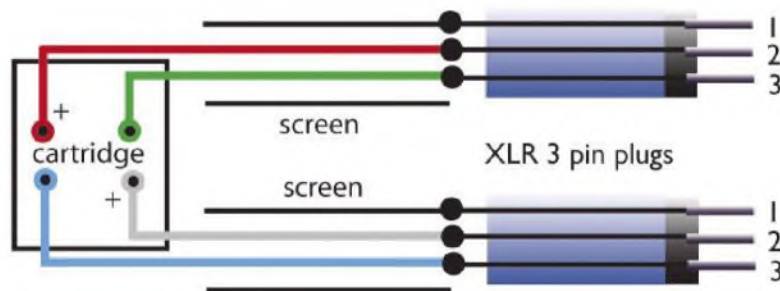
Where most turntables are hard-wired to be unbalanced, having conventional RCA phono plug output leads, high quality pickup arms commonly have a multi-pin output connector that can deliver a balanced signal to XLR plug terminated output leads – and this is what Pro-Ject offer with their RPM 9 turntable. It can be connected up unbalanced

or balanced, just by plugging in the appropriate cable they supply.

Hard-wired turntables, which most are, have to be re-wired and this is a job for someone who knows what they are doing. A hard-wired balanced output turntable can be used unbalanced with adaptor leads, as I have been forced to do, but this means soldering up such adaptors.

external shield. It's a more complex cable but a better way of sending millionths of a Volt from cartridge to preamplifier.

The extra complexity is not costly either, although once turntables go balanced (highly likely methinks) then some very fancy cables like Star Quad become possible (see our June 2019 issue)



A balanced cable separates the cartridge's electrical signal from the screen of a connecting cable. This gives it a clean run, free from earth currents and the potential of a hum loop to induce hum and buzz.

Our diagram shows how a balanced connection is configured. Instead of earth and signal currents passing through the screen of an unbalanced cable, the delicate signal currents are separated out so they don't mix. They have their own lines, and both are protected by the cable's

and cost could potentially become 'interesting'.

What to expect? Balanced cabling gives a more sharply composed sound that comes over as clinically clean. The elimination of hash removes a subliminal haze, improving focus, analysis and sound stage image definition. It also removes obvious hum and buzz; all goes silent.

Balanced working does not necessarily remove hiss. Moving magnet cartridges produce hiss (thermal noise) from their signal coils that will always be heard if volume is cranked right up. Moving coil cartridges produce no hiss at all, but their output is so minuscule that transistor hiss in the preamp can be audible, again only if volume is taken up to max. – unless the preamp is inherently noisy.

Generally though, with good modern equipment, connecting up balanced results in deathly silence. And this quality persists into the music: there's a sense of pristine cleanliness. Balanced working works.



Pro-Ject's balanced cable for their RPM 9 turntable and arm. The arm plug at right has five sockets, two for each channel and one for ground. At left are large balanced XLR plugs.

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RUSS ANDREWS TIPTONIC £11

Keep those records as clean as you like, but you'll only get the full benefit if regular attention is also paid to your stylus. Any unwanted dirt will come between its tip and the grooves it's tracing, resulting in audible nasties like distortion, vague imaging and loss of information.

Hence Russ Andrews' 'TipTonic', a cleaning solution that's applied to your stylus via the supplied nylon-bristled brush. I asked Russ Andrews PR for details of TipTonic's chemical composition, but none were forthcoming. However, the solution doesn't smell alcoholic and is therefore unlikely to attack plastics (or, worse still, the cartridge's rubbery cantilever suspension). All we're told is that Tiptonic is 'organic-based'.

A couple of drops is sufficient for a clean; on this basis, the 15ml bottle should last for ages. The idea is to gently work the brush down from the cartridge end of the cantilever (it's amazing how much dust can accumulate there!) towards the stylus. The whole process takes mere seconds. I recommend, if at all possible, detaching the headshell and placing it on its back so that the cantilever and stylus face upwards. The improved accessibility makes

your cleaning job a good deal easier. If my experiences are anything to go by, such effort is worthwhile – Tiptonic definitely works.

Records are cleaner-sounding – and a jeweller's eyeglass reveals the naked diamond in all its delicately-cut glory. Hi-fi grade styli are of course incredibly-fragile, and if you're not careful there's a risk of causing expensive damage. Those who aren't steady with their hands are steered towards Audio-Technica's pricier but easier-to-use AT617a. Lower your stylus into this pot of gel, and the crud is left behind. The A-T product gets rid of most of the dirt, but I found that Tiptonic was better at removing more resilient deposits. You pays yer money... **MP**

(£29 with Stasis Super Clean Brush – to be reviewed next month)

[Russ Andrews, +44 (0)1539 797300
www.russandrews.com]

SOUNDBITES



STASIS GROOVE CLEANER BRUSH £24.99

"A typical LP" explains turntable accessory supplier Stasis, "carries a groove that's about half a mile long". Stasis then asks you to "imagine the damage being done to your record and stylus", should dirt be "dragged and scraped" along that half-mile groove. Carefully-cleaned records will not only sound better, but last longer and reduce stylus wear into the bargain. The firm acknowledges that wet-cleaning benefits new as well as second-hand vinyl, and should "always come first". So, is this building up to

a review of a Stasis record-cleaning machine? Alas not.

Instead, Stasis is drawing our attention to the 'Vinyl Records Groove Cleaner' as featured here. It's a brush that – funnily enough – is sold as being suitable for dry, as well as wet, cleaning procedures. A tough nylon handle, with ergonomically-moulded fingergrrips, is impregnated with no fewer than 30 densely-packed bunches of 50-micron nylon bristles. The latter are, Stasis proudly informs us, "chemically-inert...and specifically-designed to fit inside record grooves". And the brush

performs its duties admirably. Even used dry, it did a sterling job at gently sweeping away dust and hairs from my records.

During the review period, I also successfully tried the brush with Keith Monks Prodigy and Pro-Ject VC-E 'wet' cleaning machines – in the spirit of Stasis' spiel. Indeed, I actually preferred it to the wand that's supplied with the Prodigy. The bristles are soft enough to avoid introducing any audible micro-scratches and fine enough to penetrate the grooves. They remain attached too, no stray white 'hairs' showing up on any of the records I cleaned. The Groove Cleaner may not be the cheapest of its breed, but it's effective in use and evidently built to last a lifetime. Given the price, though, I'm surprised that Stasis doesn't supply a case to protect the brush when it's not in use. **MP**

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Hidden Story

Paul Rigby reviews a book about the sexuality of music business movers in the Swinging Sixties.

THE VELVET MAFIA The Gay Men Who Ran The Swinging Sixties Darryl W Bullock Pages: 348

An intriguing book and a new take on the influential music movers and shakers of the fifties and sixties that I've never seen before. At least in this format.

Bullock has reportedly undertaken a range of new interviews and investigated contemporary reports to take a closer look at a range of important and talented creators, who happened to be gay.

So who are we looking at exactly? Iconic figures such as Brian Epstein, Larry Parnes, Joe Meek, Robert Stigwood and the outsider of the bunch, at least in terms of where he primarily plied his trade, Lionel Bart. There are many others included here, though.

Bullock wanted to show how this group of men supported each other during this time, a time when being gay was indeed dangerous. Society in general didn't just look down on gay men, they were actively hostile. That included high-ranking politicians and policemen of the time. Prison was a very real possibility, if a gay man was forcibly outed.

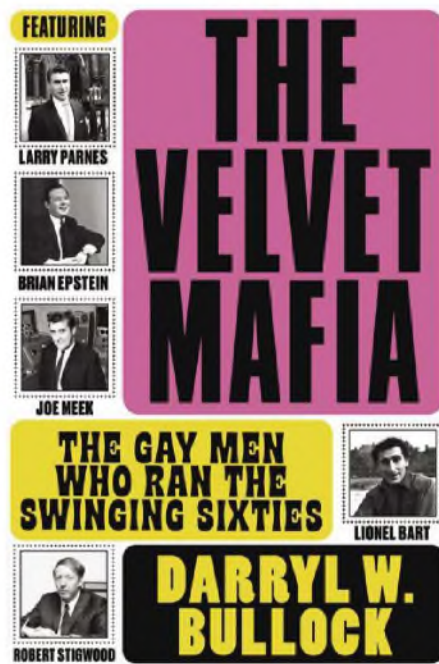
I don't normally feature author quotes in these book reviews but Bullock's thoughts were interesting: "I'd heard rumours about how everyone worked together and I talked to musicians who told me about their experiences with gay men. But until I began looking into the lives of people like Larry Parnes and Beatles' lawyer David Jacobs I hadn't realised the extent of the support and encouragement they

offered each other". Neither had I.

Apparently, some of the first-hand recollections have never been committed to paper before. They included songwriter Alan Blaikely who penned numerous No.1 hits such as 'Have I The Right?', song-writer Ken Howard, singers Mike Berry and Norman Scott, Muriel Walker who was Larry Parnes PA and more.

Although the focus of the book is this gay fraternity, the issue of sexuality is not the only subject under discussion. There's much general music-based history here to savour. For example, one of the featured gay figures Joseph Lockwood (officially described as a "bachelor who draws refreshment from solitude") got to grips with a failing EMI in the early fifties, turning the company around and making it a profit-making outfit. He liked to involve himself in the creative process and would always look at homosexual artists with sympathy and give them a fair break. He could be tough, though.

He never forgave George Martin for not signing Tommy Steele and in Christmas of 1956, Martin was the only A&R man not to receive a bonus. Martin never forgot that, later encouraging Brian Epstein to sign The Beatles' rights to Dick James rather than EMI's in-house team. This move ultimately proved disastrous to Lennon & McCartney.



While Lockwood adopted a benevolent attitude towards gay artists on his EMI label and Columbia imprint, author Bullock suggests that music manager, Larry Parnes' sexuality sometimes got in the way. Apparently his eye was taken by two young men. The first, the Latvian-born film-maker Viktors Ritelis who Parnes first saw with accompanying Tommy Steel on tour in Australia and a Steele backing dancer, a Canadian.

Subsequently, Parnes failed to organise the recording of a Lionel Bart-penned song with Steele because of this. While the studio guys waited around and twiddled their thumbs, Steele was left rehearsing a pantomime in Liverpool instead of recording a possible "massive Christmas hit".

The personalities intertwine in and around the story so you have a continuous narrative in which big names come and go like the tide, keeping the reader's attention. Also, the span of the stories told here is wide indeed, touching on everyone from Judy Garland to The Kray Twins.

There is indeed much to learn from this book. **PR**

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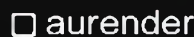
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...and much more.



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SAM COOKE

AIN'T THAT GOOD NEWS ABCKO



"Sam Cooke is the only man I know that stand flat footed and kill you with one song"

Originally released in 1964, this was Cooke's final commercial LP. He promised much with this album but, as with any artist who is taken from us in his prime, on a purely selfish level as a music fan, my frustration was that he never got to develop any future ventures.

He opened musical doors with this album but he never went inside and explored and played with those new ideas. We are left with lots of 'if onlys' but also a superb album in and of itself.

It's interesting that one of the songs on this album was the gospel track 'A Change is Gonna Come' because gospel was Cooke's stock-in-trade during his early life. Gospel was his world in musical terms. Mostly because his father was a minister and he was thoroughly and whole-heartedly exposed to the church and the gospel singing within. He worked with other gospel singers for around five years before he decided to venture out on his own. He hit the floor running with his single 'You Send Me'. He stated that he only moved from gospel to pop because "of my economic situation".

Once Cooke felt settled in terms of that economic situation, he found the pull towards his roots irresistible. 'A Change is Gonna Come' was a song he enjoyed singing – and his performance is all the more noteworthy because of it.

This album was full of emotion, channeled into the song selection here but fuelled by the tragedy of the drowning of his 18-month old son, just six months before this LP was released.

Maybe this is one reason why he took songs like the potentially staid and overly trad Tennessee Waltz and totally transformed it. Owned it. This one track – and like the accompanying folk ditty, the Riddle Song – fully exhibited why the man was a consummate song interpreter. A skill that's a lot harder to do properly than one might think.

Then there's 'Good Times', a party piece stood on its head with contemplation and soul searching.

One possible reason for his successful

musical interpretation was because he was receptive to his audiences' needs. "I think the secret is observation" he said. "If you observe what's going on and try to work out how people are thinking...I think you can always write something that people will understand".

His brother, L.C. backed that up: "He would read and Sam would say as long as you read, you can stay current and you can always write. He would write about what's going on today because yesterday was already gone. What made him such a good writer is the fact that he read a lot. Sam would read every day".

During this period, he travelled less, stayed home more, wrote and produced while working with other singers. He was developing his art, this LP was the first of a new contract that allowed him more room to manoeuvre and more room to express himself. But we would never see or hear the fruits of that.

How good was Sam Cooke? The great James Brown had this to say: "Sam Cooke is the only man I know that stand flat footed and kill you with one song. If I had half the voice that Sam had, I wouldn't dance".

Mastered by the great Bob Ludwig and with the production involvement of another archival great, Teri Landi, this is a fine release.

But this LP is part of a trio of releases. The restored Sam Cooke 'At The Copa' (recorded live at the Copacabana, New York City, 8 July 1964), the vinyl edition has been out of print since 1987.

Also look out for 'Keep Movin' On', released on vinyl for the first time since its original 2001 release on CD. This is a 23-track rarities collection spread over two discs, plus an essay by Sam Cooke biographer, Peter Guralnick.

In some ways, what makes this LP special, in fact all of Cooke's LPs special, is the effort and drive and creativity that he placed within it. What I mean is that the soul market was a singles-driven genre. Most pop was, of course, but soul especially so. Hence, LPs were not really expected to excel. They were more of a singles vehicle. Not Cooke's LPs though and certainly not 'Ain't That Good News'. Quality is written all over it. **PR**

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