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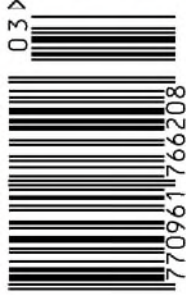
- B&W 603 S2 ANNIVERSARY LOUDSPEAKERS
- NOVAFIDELITY N25 NETWORK AUDIO STREAMER
- EARMEN EAGLE/SPARROW PORTABLE POCKET DACS
- ATLAS HYPER ACHROMATIC BI-WIRE SPEAKER CABLE

EXCLUSIVE EXCLUSIVE



MARCH 2021

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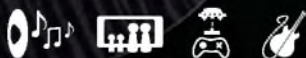
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Paul Rigby, Martin Pipe, David Tutt,
Chris Frankland, John Pickford.



Fascinating to see two loudspeakers that look so alike, the B&W 603 S2 Anniversary on p16 and the Triangle Borea BR08 on p46. You'd think they sound the same, but no – they are quite different. Their designers have differing views on what sounds good, or perhaps – more cynically – just what sells well. We were divided over these loudspeakers. Both were impressive in their own way, enjoyable in their own way. I hope you find what we thought, put through my own words, illustrates their individual qualities and strengths.

Two radical amplifiers this month: Pro-Ject's Phono Box RS2 all-balanced phono stage on p72 and Anthem's STR Pre/Power on p32. Completely different in purpose but stand-out different.

If you want the best from LP then going balanced is unquestionably the path to take. Until now phono stages with a balanced input barely exist. So record decks don't have balanced phono leads. Hopefully this impasse will be broken by Pro-Ject – who have the ability to break it by supplying decks to match their RS2.

Anthem's amplifiers are radical in offering loudspeaker/room tuning. Readers often ask us about this and it does work, but the results aren't quite what you might expect, or wish for. Reading through Anthem's guidance on their complex ARC tuning system I see them trying to explain that the big boom you get from a room isn't good bass, it is boomy bass. Good bass sounds more constrained. What? Their latest Genesis tuning system comes with extra tweakability to raise bass level. I hope you enjoy reading about it.

Reviewer Chris Frankland bumps into yet more ESS DACs on p21 with Eagle and Sparrow portable converters, and p21 with NovaFidelity's N25 streamer. When will the ESS phenomena fade? Not soon I suspect. This California company have taken over the digital space – and rightly so. I love the smooth ESS sound.

The world of hi-fi moves on and this issue has products that suggest a better technological tomorrow. I hope you enjoy our insights!

Noel Keywood
Editor



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verdicts

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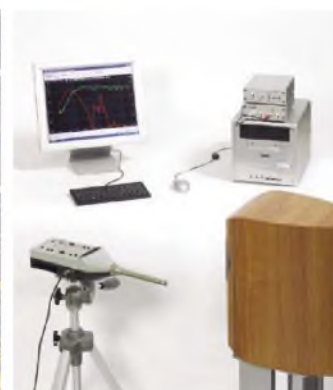
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To ensure the upmost accuracy in our product reviews, *Hi-Fi World* has extremely comprehensive in-house test facilities, and our test equipment - from big names like Rohde & Schwarz and Hewlett Packard - is amongst the most advanced in the world.

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

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

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



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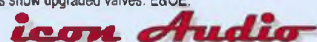
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news



ROLL OVER BEETHOVEN

Ortofon A/S, one of the world's leading pick-up cartridge manufacturers, has announced a new flagship moving magnet cartridge, which also serves to celebrate the 250th anniversary of the birth of one of history's greatest composers – Ludwig Van Beethoven. The 2M Black LVB 250 will join the range in 2021 as a new flagship cartridge, sitting above the hugely popular 2M Black in the range.

The standard 2M Black cartridge from Ortofon is widely acknowledged as being one of the best MM cartridges on the market, but that does not mean the Danish cartridge experts cannot offer better. The 2M Black LVB 250 draws inspiration from the superior Cadenza Black design to create a moving magnet cartridge of distinction, featuring a Nude Shibata diamond stylus mounted on a boron cantilever. A new rubber compound has been developed for the suspension system and a replacement stylus is available.

The 2M Black 250 LVB retails at £829; the price of the replacement stylus is to be announced.

Further details www.henleyaudio.co.uk



LIVING IN HARMONY

Whole Note Distribution, based in Angus, Scotland, specialise in bringing unique brands to the UK. Their latest acquisition is Boenicke Audio for distribution in the UK & Ireland.

Founded in 1998 by owner and Chief Designer, Sven Boenicke, the Swiss-based company produce speakers designed to sound as good as they look. The result is a collection of speakers aiming to capture the tone and harmonics of a live performance. Sven has many years working in concert halls recording performances and this experience is directly transmitted to his loudspeaker DNA.

With four models in the range, prices start at £4895 for the W5 and rise to £39,995 for the range-topping W13 SE+.

David Graham, MD of Whole Note Distribution comments "I use Boenicke speakers in my own reference system, and have a great relationship with Sven whom I've known for a few years. When the opportunity to work together arose I grabbed it with both hands".

Further details info@wholenotedistribution.co.uk

GETTING HEADPHONES IN BALANCE

Erzetich has been offering high-end audio solutions since 2012.

Founded by Blaz Erzetich, the company's new Medousa is a fully balanced headphone amplifier, featuring a stainless steel chassis alongside artificially aged wooden sides. Medousa blends all the advantages of valve and balanced amplifiers, including a gain stage with a high-quality double triode valve tube followed by a solid-state current buffer. Medousa offers consistent power, regardless of whether high or low-impedance headphones are in use and four mono-block modules optimize the symmetry between the four available channels. The company's products have been used by names as well known as Nile Rodgers, Imogen Heap and Bill Gould of Faith No More, so may appeal to lovers of pop, rock and disco. Price is listed as 3,500 EUR.

Further details <http://www.erzetich-audio.com/>



PUT ON YOUR FLARES

Elipson unveils its 1970s monitor inspired Heritage XLS15 loudspeakers. Vintage in design but versatile in function, it is supplied with two different bases and one optional Norstone stand, enabling the sound to be directed towards the discerning listener.

This 3-way loudspeaker is a bass reflex design with front-firing flared port that can be plugged for low frequency adjustment.

Driver complement includes a new 30cm diameter cellulose coated bass unit with high power magnet, a new 55mm diameter treated dome mid-range driver covering nearly three octaves and a 22mm diameter silk dome tweeter. A fine adjustment of 2dB allows mid and high frequency levels to be trimmed, to suit listening room or music genre.

Retailing at £1,790 per pair, vintage stands will be £199 per pair.

Further details neil@ioscompany.co.uk



ENCORE! ENCORE!

Following on from the fully configurable multi-channel Ncore MA-01, KJF Audio introduces a new stereo amplifier, the SA-01. Built around a choice of Hypex Ncore MP modules offering a range of power outputs from 100 Watts to 500 Watts across six different modules, it can be configured for stereo or monoblock operation.

The new SA-01 features phono connectors alongside the company's usual XLR connectors, with a high quality sealed switch to select the preferred connection type.

Improving on the MA-01's utilitarian casework, the SA-01 is available in a range of finishes, with a choice of cool anthracite aluminium or solid

wood in Walnut, Sapele, Cherry and Maple.

The package is topped off with a simple but intelligent user interface that indicates if the amplifier is clipping, overheating or there are problems with the modules or power; the amplifier will shut down when protection is needed and highlight the fault. Prices start from £465 plus VAT.

Further details www.kjfaudio.com



ON THE MOVE

LA-based Ausounds, which recently launched in the UK, has released its latest premium earphone product. The in-ear AU-Stream Hybrid Earbuds are designed to produce a powerful, high quality sound and feature cutting-edge noise cancelling technology. With a noise reduction of 25dB the earbuds actively reduce the ambient noise in the user's surroundings.

Ultra-lightweight, the earbuds include a cordless rapid charging case that offers up to three hours play time after 15 minutes charge, with total charge time only 1.5 hours. The compact hybrid design allows the earbuds to fit completely in-ear, sitting comfortably without risk of falling out, even on the move.

Featuring tech such as 9mm AU-Titanium three-layer composite film drivers for incredibly accurate sound reproduction, the earbuds are IPX5 rated and will hold up against natural elements such as wind and rain without comprising sound quality. Available in four sleek colours – red, gold, black and grey – with a RRP of £199.95.

Further details www.iamaudio.co.uk

ALL ABOARD!

Audio Physic announces their new Cardeas loudspeakers, the first of an entirely new generation that incorporates the brand-new Audio Physic PowerTrain™ technology.

The loudspeaker is designed from scratch to get the most out of the PowerTrain™ and deliver unparalleled sound performance. This technology includes various innovations and improvements that have not yet seen the light of day.

The Cardeas is a four-way speaker using their new multi-sandwich enclosure. Its tweeter unit HHCT III+ is separated for effective decoupling. The new HHCM SL midrange driver operates without a centering spider. The new double surround woofers and mid-woofers also work without a conventional centering spider.

The connectors are newly developed and equipped with WBT PlasmaProtect™ contacts. All capacitors are newly developed and have a copper foam coating.

The Audio Physic PowerTrain™, with its newly centred drivers at its heart, transfers kinetic energy in an efficient way, resulting in unprecedented dynamics and resolution, they say.

Further details www.audiophysic.com



ON THE SHELF

Bassocontinuo, the specialist Italian equipment support manufacturer, has launched a new range of entry-level measurement-backed equipment supports, the Classic Line 2.1. Full modularity enables owners to build a bespoke equipment support specific to their needs; additional shelves can be added in the future to accommodate growing systems.

The five-strong Classic Line 2.1 comprises hi-fi and A/V racks, plus turntable wall shelves and power amp platforms, in a range of leg heights from 90 mm to 290 mm. The shelves are 25 mm thick with a load capacity from 60 kg.

The Classic Line 2.1 also offers additional shelf-height adjustment, thanks to the use of removable leg cylinders. A key feature of the Classic 2.1 line is the new 'zero-shaking' clamp system, which adds considerable stability compared to the previous design.

Further features include a new cosmetic tie-rod cover made with Delrin, plus a new spike design with a stabilising washer for fine-tuning. The Classic 2.1 line has been fully tested by an independent laboratory in collaboration with the Politecnico di Milano. Priced from £440 per tier.

Further details info@finesounds.co.uk

THE ONLY GAME IN TOWN

German high-end specialists T+A elektroakustik expand its portfolio of headphones. The Solitaire P-SE has been designed using the original Solitaire P as the base and has retained key design elements such as chamfered ear cups. T+A have replaced aluminium parts with high quality synthetic compound to reduce production costs and overall weight. The P-SE features a new transducer unit (the TPM 2500) with new membranes and filters.

The TPM 2500 (Transducer Planar Manufacture) is based on the single-row magnet array of the TPM 3100, as featured in the Solitaire P, but the development team turned to a membrane and filters that are completely new developments. "We certainly intended to differentiate the Solitaire P-SE from its big brother, but not just by its external appearance" explains Project Manager Sebastian Kobelt. "That's why we introduced a modified transducer in addition to the external changes".

The Solitaire P-SE is hand made in Herford Germany and is available in a black matt finish, price £3,000.

Further details www.ta-hifi.de



BRIDGE THE GAP

The new Chord Company Bridge is a high-quality British designed and engineered shorting plug, created to reduce high-frequency noise.

It offers protection from noise on the critical signal ground for devices with unused power supply upgrade ports, such as Naim Audio's NDX and NDX 2 network music players.

The Bridge is an upgrade on the basic unshielded shorting plugs supplied with audio equipment.

A high-quality heavy-gauge machined aluminium chassis gives both acoustic and electrical isolation, with proprietary Taylon® insulation material throughout the internal wiring. Resin-damped internals further increase acoustic isolation.

The Chord Company Bridge is available now priced at £500.

Further details www.chord.co.uk



Easy Voyage

Noel Keywood lives with the new Creek Voyage i20 amplifier and finds it easy going.



Creek's latest Voyage i20 amplifier I'm reviewing here reminded me of their first amplifier, the CAS4040 from 1982. What that simple but clever design did was reproduce music without nasties – no gritty transistor distortion. The Voyage i20 carries on the Creek sound with exemplary ability.

And there's good reason. It is Mike Creek. Still very much in charge today, his knowledge of audio amplifier design is extraordinary – as I know from long and intense explanations to me about where every electron was going and how it should behave!

In the new Voyage i20 that's a lot more places to go and many more ways to behave – and there is big price increase as a result, to £4495. Where Creeks have been affordable in the past, £99 for the CAS4040 in 1982 equating to £352 today (Bank of England inflation calculator) and our Evolution 100A costing £1499 when reviewed in our March 2015 issue (£1674 today), the new i20 has

become in Creek's own words "a premium product".

This is a powerful 'digital' amplifier, meaning it has an on-board digital section, unlike the Evolution 100A we have heavily used as a reference amplifier from some years now. I've been writing about 'digital' amps recently as they are morphing into an interesting place to be. Until recently their on-board digital-to-analogue convertors (DACs) have been a low-cost addition unable to compete with more sophisticated and expensive external DACs, but that is changing. Audiolab, Quad and Leak are all now using acclaimed ESS DAC chips, whilst Creek have chosen to use an AK4493EQ DAC chip from Asahi Kasei Microsystems (AKM, Japan) they tell me. This is a premium chip, part of AKM's Velvet Sound range that I know well justifies the title; they are even more "velvety" in sound than ESS chips, albeit by minor degree. But a top chip all the same, with quoted 123dB dynamic range – as you might hope in a premium priced amplifier.

From a compact chassis measuring 430mm wide, 80mm high and 350mm deep the i20 delivers 120 Watts into 8 Ohms and 225 Watts into 4 Ohms our measurements showed – in line with Creek's claimed power output. As today's loudspeakers are rated as 6 Ohms nominal make the power figure 155 Watts then – more than enough to go very loud.

But hey! The i20 is smaller than our 100 Watt Evolution 100A. How come? Purists will need to take a deep breath: it uses a switch-mode power supply. No big toroidal mains transformer any more, with consequent



shrinkage in weight and size. It's a custom design they told us, allowing the amplifier to handle low loads with ease, with minimal power reduction.

In keeping with price, the i20's front panel is slickly sculpted and finished, a work of art. The rear case is a conventional pressed steel type with heavy folded steel cover. There's a master power (rocker) switch at rear and a soft-start at front on the left rotary control. These functions also exist on a supplied remote control. The left rotary primarily selects inputs, but it has a push-to-

strongly rolled off upper treble, Slow and Slow+ were less aggressive at doing so, whilst Sharp and Sharp+ extended response to 21kHz with just slight roll down to take out the sting out of CD. The lack of correlation between handbook and production suggested to me the i20 was being built and programmed by a sub-contractor and a quick ferret around revealed it is made in the Czech Republic.

What I noted immediately is that the single pair of XLR-socket balanced inputs now run through

Pro) brought up a declared menu from the AKM chip that 768kHz sample-rate is available: I'd suggest setting a Mac to 96kHz output sample-rate in its AudioMidi Setup menu. But good to see the abilities of the AKM declared and available; the TOSLINK optical inputs work up to 192kHz I found during tests, important to avoid silence from – say – a digital portable player optically connected (e.g. Astell&Kern) and playing a 192kHz sample rate file.

The volume control at right can be pressed to Mute and the remote



select function that brings up a Menu on the display panel with various adjustable settings. Those that caught my attention were five PCM digital filters (Sharp, Sharp+, Slow, Slow+, Natural), plus two DSD filters (Wide, Narrow). There are also gain settings to increase sensitivity, only available in start-up mode, not in main Menu.

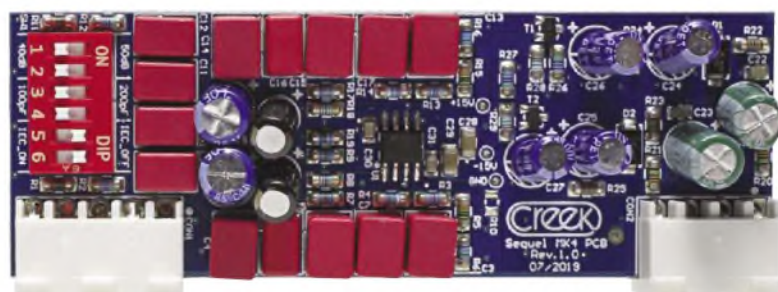
Some peculiarities. The i20 has an optional plug-in phono stage board for LP and ours was so fitted. The website mentions "RIAA filtering, to reduce disc warp frequencies" but this is not available from the Menu (software control), only on the internal Phono circuit board (hardware control), meaning the cover must be removed to get at it – best left to a dealer.

The Manual says there are six PCM filters but our full production sample had five, with different naming. Changing filter produced no effect; it appeared stuck on Slow under tests, when I was using the rotary selector at left. The remote control did, however, work and measurement showed that with CD, Natural most

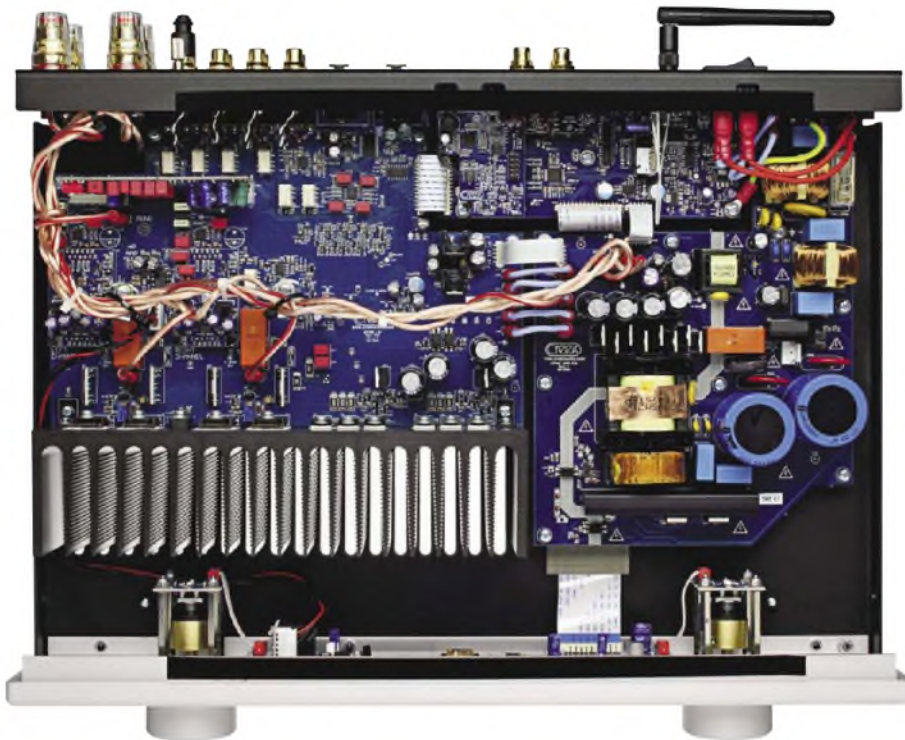
the volume control (they did not on the Evolution 100). There are four standard (unbalanced) Line inputs, one of which is occupied by the Phono stage board when fitted. Digital inputs comprise two opticals (TOSLINK), two electricals (phono sockets) and one USB. The AKM DAC chip has on-board DSD decoding, only accessible by using DoP over the USB link. You'll need the Audirvana+ computer music player or similar to manage this.

Connecting up via USB (MacBook

also provides this function. There is a balance control too. You get a standard 1/4in (6.3mm) headphone socket on the front panel driven by its own amplifier, with the ability to mute the loudspeakers whilst headphone listening. Geeks can even check out heatsink temperature, 28 degree C in our case, the thermal limit being 90 degrees C. Protection circuits guard against overheating, d.c. offset and over-current. The output stage is Class G, meaning a small amp supplemented by a larger one to



The Sequel Mk4 MM phono board, fitted to our sample. DIP switches at left set capacitive loading and IEC warp filter on/off. The board is best removed to set.



Creek's custom design switch-mode power supply (right) is substantial, but still lighter than transformers. It delivers a voltage-regulated supply. At top left sits the Phono board and below lie heatsinks for the Class G amplifier that uses Sanken output transistors.

handle peaks, a small G logo lights up in the display when this happens; I got it to do so, but only at shatteringly high volume.

There's a Bluetooth short-range radio link that connected immediately from my iPhone 10X with no codes or difficulty.

SOUND QUALITY

I ran the i20 with our Martin Logan ESL-X hybrid electrostatic loudspeakers and also used it with the B&V and Triangle loudspeakers in this issue, to see how it fared with different loads. A useful feature of the Evolution 100A as a review amplifier was its compatibility with all loudspeakers.

Source was our Oppo UDP-205 D universal player acting as CD transport, connected by a QED glass fibre optical cable (I use optical rather than

electrical to avoid earth loop noise). Hi-res digital was fed in via USB from a MacBook Pro running from battery (no charger connection), again to avoid earth loop noise that measurement shows degrades DAC dynamic range. I used the Audirvana+ player to deliver DSD.

It's sort-of difficult to describe a Creek amplifier. "Quietly powerful" perhaps. A small start and steerage in the right direction. Creek amplifiers were never a sonic assault course, so much as a refined way to listen to music, underpinned by bass strength that gives a sense of underlying power – and the i20 stated its ability here immediately. With one of my bass test tracks, Safri Duo's Samb Adagio (CD), the pounding synth was as heavy and solid as I could wish for – and there was a feeling of subsonic power to it as well. Although the amplifier has a very high damping factor it didn't sound dry and tight as

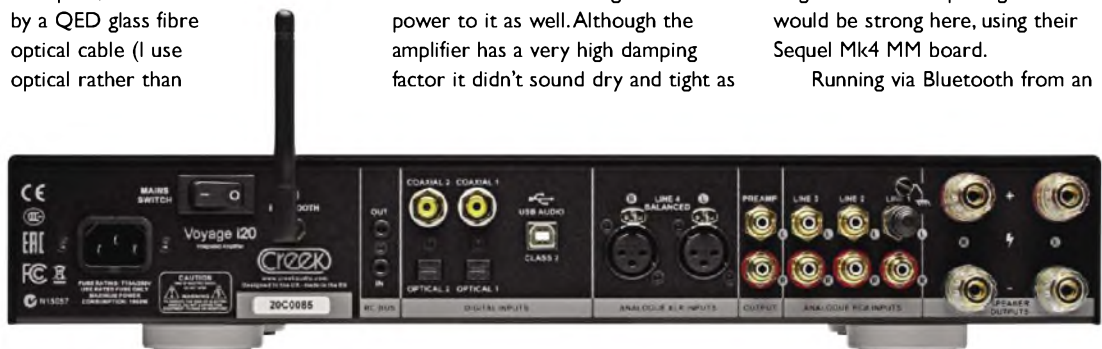
many do, just thunderous. There was good bass control and expression, obvious in string bass lines with humans involved, such as that behind Holly Cole singing the laconic Train Song. Here the amplifier dug out some texture in the bass as well as giving it strong dynamic push.

Plenty of fine detail was mined from the vivid guitar of Nils Lofgren's Keith Don't Go, our ESL-X XStat panels loving what they were fed. The furiously strummed strings slashed out of the 'speakers, as they should, but the Creek sounded deliciously sweet; I believe AKM's Velvet Sound DAC contributed strongly here.

At this point I was also aware of a solid, cohesive sense to the sound that comes from a good digital amplifier with DAC tightly connected to the amplifier stages, with no intervening cables and connectors that hamper an external DAC. The only caveat here being I hear this on the XStat panels that are free of loudspeaker phase anomalies, but not on conventional dynamic loudspeakers that are just a hopeless mess in this respect. If you have a panel loudspeaker though, Magneplanar or Martin Logan perhaps, this is a digital amplifier worth hearing.

Spinning LP was a must, so I connected up our Timestep Evo modified Technics SL-1210 Mk2 Direct Drive turntable, with SME309 arm and an Audio Technica VM750 SH moving magnet (MM) cartridge. There was total silence until needle hit groove and I got to hear a rich rendition of Dire Straits Brothers In Arms (Mobile Fidelity, 45rpm) with firm bass line underpinning Ride Across The River. Hugh Masekela's Uptownship, from his LP Hope, came across as vividly clear and punchy yet confidently relaxed, the bass line striding along with easy strength. Since Creek also make fine phono stages it was unsurprising the i20 would be strong here, using their Sequel Mk4 MM board.

Running via Bluetooth from an



A neat rear panel with Bluetooth aerial, mains power master switch, digital inputs, balanced XLR inputs and a single pair of loudspeaker terminals.

Onkyo player on my iPhone the sound was a tad bland, likely from the compression Bluetooth uses, but I noticed it was slightly warmer and fuller than from the other digital inputs or LP, the Creole singers behind Mercedes Sosa in Misa Criolla occupying what seemed cavernous warm space behind him.

DSD from the MacBook Pro brought up clear indication that the i20 was receiving DSD64 or 128 on its display (I didn't try any higher) and Diana Krall's Narrow Daylight was, on Wide filter, more sharp edged and vivid than I recall, but Narrow filter brought back the usual easy balance here. However, I preferred Wide – and as always with DSD well resolved (Japanese chip – they take it seriously) there was a subtly more even and expansive delivery of analogue nature than PCM. Digging out more edgy detail in this smoky performance that slid out from our electrostatics.

It's a good heads-up to talk about negatives, but there are none other than the i20 is not dry and tight like amplifiers from Chord Electronics, Musical Fidelity, Yamaha and others. It has great bass grip



Part of the Menu list, showing PCM and DSD filter options.

but also warmth – and it thunders better: Willy DeVille singing Spanish Harlem loomed large in front of me, less chiselled in outline and hard in definition, more full bodied and organically natural. Neil Young's acoustic guitar in After The Goldrush was conspicuously fleshed out to have body and scale. An easy but satisfying sound I felt, but then, being a valve amp man, you might expect that.

Bringing up another small observation. The Creek had a similar milieu to our Icon Audio Stereo 30SE single-ended valve amplifier. It has a broad timbral palette – broader than most – plus an easy naturalness. Both also have a sense of warmth and body in their sound, something that is apparent with string instruments such as Nigel Kennedy's Stradivarius violin playing Massenet's Meditation, as well

as a range of close-miked acoustic guitars of Rock that I span through the system. Transistor amps don't have the spaciousness of valves, but that apart the two were quite close in basic character.

CONCLUSION

I think the Creek i20 justifies being in the 'premium product' category. It offers a svelte alternative to others around it, and the digital section is well honed. Tis a pity that at the price it slips out of easy mortal grasp, unlike the CAS4040 I well remember – and was so popular in its time. But that amplifier introduced the fluid Creek sound and the new i20 continues the tradition, now with a lot more wallop and fancy digital technology. Certainly an amplifier to hear for its smooth charms and thunderous sound.

MEASURED PERFORMANCE

The Creek Voyage i20 produced 120 Watts into 8 Ohms and 225 Watts into 4 Ohms – powerful considering its compact dimensions. Output impedance measured 0.04 Ohms giving a very high damping factor of 180, suggesting well controlled bass.

Frequency response of the amplifier via Line input ran from a low 2Hz to 53kHz our analysis shows. Distortion was low at 0.007% in the midband, rising to 0.1% at 10kHz, some crossover distortion appearing at and below 1 Watt.

Input sensitivity was low at 700mV via Line in and 1.4V via XLR in. However, gain can be increased by up to +12dB (x4) bringing Line to 175mV – very high sensitivity.

The digital section was strongly band limited to 20kHz (-1dB), output rolling down to the 96kHz upper limit for 192kHz sample rate PCM via both optical and electrical S/PDIF inputs with all filters. This will give a mild subjective balance.

With CD (44.1kHz PCM) the filters had substantial effect, 'Natural' rolling off treble to -1dB at 10kHz.

Distortion (24bit, -60dB) was low at 0.04% from both loudspeaker and preamp outputs, and EIAJ Dynamic Range high at 116dB via both outputs – good if not up

to the 123dB figure quoted by AKM for the AK4493EQ DAC chip.

The MM phono stage was insensitive, needing 6mV for full output, falling to 1.5mV with +12dB gain selected. Equivalent input noise – a true measure of perceived noise – was normal enough at 0.47µV. Frequency response was flat from 10Hz to 20kHz without the IEC warp filter, or -1dB at 50Hz with warp filter, giving -14dB attenuation at 5Hz to suppress warp signals.

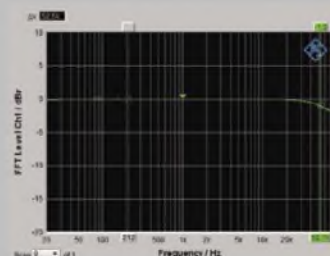
The compact Voyage i20 was powerful and measured well all round, if with digital dynamic range below that possible from the AKM DAC. **NK**

Power 120W
Frequency response (-1dB) 2Hz-53kHz
Distortion (10kHz, 1W) 0.1%
Separation (1kHz) 94dB
Noise (IEC A) -106dB
Sensitivity 700mV

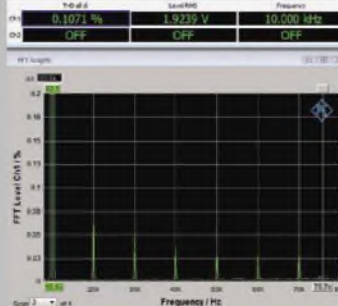
DIGITAL
Frequency response (-1dB) 5Hz-20kHz
Distortion (1kHz, 5mV in) 0.04%
Separation (1kHz) 78dB
Noise (IEC A) -114dB
Dynamic range (EIAJ) 116dB

PHONO (MM)
Frequency response (-1dB) 10Hz-20kHz
Distortion (1kHz, 5mV in) 0.02%
Separation (1kHz) 68dB
Noise (IEC A) -90dB
Sensitivity 6mV
Overload 90mV

FREQUENCY RESPONSE



DISTORTION



CREEK VOYAGE i20 £4999



OUTSTANDING - amongst the best.

VERDICT

Big bass and almost eery smoothness, with relaxed rhythm and insight, from all inputs including digital. A class act, if at a price.

FOR

- smooth fulsome sound
- bass dynamics
- superb digital
- small size

AGAINST

- poor LP warp filter
- gain setting in start-up only
- filter selection from amp unoperative

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Going For Silver

B&W use a silver finish cone in their latest 603 S2 Anniversary loudspeaker. Noel Keywood enjoys the shine.

B&W have moved on from using attractive dark yellow Kevlar cones to a new silver-finish synthetic material in a midrange unit they call Continuum. Point being their recent 603 S2 Anniversary floorstander I am reviewing here moves even further into synthetic fibre cone technology for squeaky clean sound devoid of colour – and certainly not yellow. Brace yourself then for what I found to be a very B&W-ish loudspeaker, forthright – but with deep, powerful bass.

And the good bit is a price of £1499.00. But for me there was a wrinkle that I cured with a soldering iron and a few resistors, more of which later.

Floorstanders come in standard pattern at 1 metre high or thereabouts and the 603 S2s didn't break convention, measuring 1055mm high on the plinth supplied, 190mm wide (excluding plinth) and 370mm deep including plinth. Weight was high-ish at 24.1kg, making them feel heavy and solid, if not impractically so; I could just about lift them and easily walk them into position. Bringing my attention to the attractive light Oak veneer finish on our samples, with Black and White as alternatives. Spikes are supplied for firm floor standing, but also hemispherical soft feet for those who'd rather not puncture the floorboards, in mimicry of woodworm. A hex key is also provided to bolt the stabilising plinth to the loudspeaker.

What you get here is a bright silvery Continuum synthetic-cone midrange unit that's large at 150mm (6in), dominating the front baffle. Above it lies a 'Decoupled Double Dome' aluminium treble unit, as B&W describe it. They work together via the upper bi-wire terminals, the lower ones feeding two 165mm (6.5in) paper bass units. In single-wire use links on the rear terminal

assembly connect the two sections together. Crossover from bass units to the midrange+tweeter was around 600Hz our measurements showed, so the paper bass units handle lower midrange frequencies of this loudspeaker, giving a darker sound than that from the sheeny midrange+treble assembly.

What we have then in the 603 S2 Anniversary is at least one paper-cone bass/lower-midrange unit, a Continuum synthetic cone upper midrange unit and an aluminium dome tweeter – an unusual line-up attempting to blend three different materials. So perhaps expect unusual sound?

Since I'm starting to talk about sound quality whilst describing physical make up, perhaps best to move onto to how they sounded.

SOUND QUALITY

Being a modern loudspeaker with no hint of past values, I hooked up the B&Ws to an Audiolab 6000A Play amplifier, through Chord Company Signature Reference loudspeaker cables.

CD and hi-res were fed into the Audiolab's on-board DAC from our Oppo UDP-205D Universal player acting as CD transport, connected through a QED Quartz glass optical cable for electrical isolation – and it was interesting to hear the sound stage cleaned and composed slightly when I removed the alternative electrical interconnects from Oppo analogue output to Audiolab analogue input. Earth current noise is an issue in high-performance digital systems, giving the curious old TOSLINK optical digital connection useful advantage in electrically isolating player from amplifier to eliminate such noise – why I prefer an optical digital link. The Audiolab 6000A amplifier with its on-board ESS ES9018 DAC gives a fast and intensely detailed sound, one that would match these 'speakers I felt.

B&W's Kevlar cones needed

long run-in and we similarly ran the 603 S2s for 72 hours to ensure they were on-song. I span a rake of our high dynamic range (uncompressed) review CDs and the overall impression was one of superb insight, with swathes of well lit fine detail. There was an engaging sense of depth to the sound too.

Very obvious however was that the tweeter delivered remorseless treble. The effect was to sharpen sound stage images, giving them pin sharp precision to solid effect: every fine cymbal tap in the Pink Panther Theme was thrown out in bright, hard light. But Dadawa's voice crackled in Canton Story, where it is normally a hushed soft whisper and this just wasn't right. But I had the grilles off.

Measurement had shown the grilles reduce treble by -1dB or so and putting them on ameliorated these effects; still bright and sheeny balance but acceptable. This is a "modern sounding" loudspeaker shall I say.

Measurement showed that linking the bi-wire terminals with 2 Ohm resistors soldered to 4mm banana plugs, replacing the shorting links supplied, brought the tweeter into correct alignment without affecting the upper mids and this gave a welcome easing of high frequency attack. OK, seems a bit left-field, but a mod like this is easy for a dealer to do, or can be done at home with 2 Ohm – preferably carbon film – resistors. You don't even need a soldering iron, they can be simply hooked onto the terminals in place of the bi-wire links.

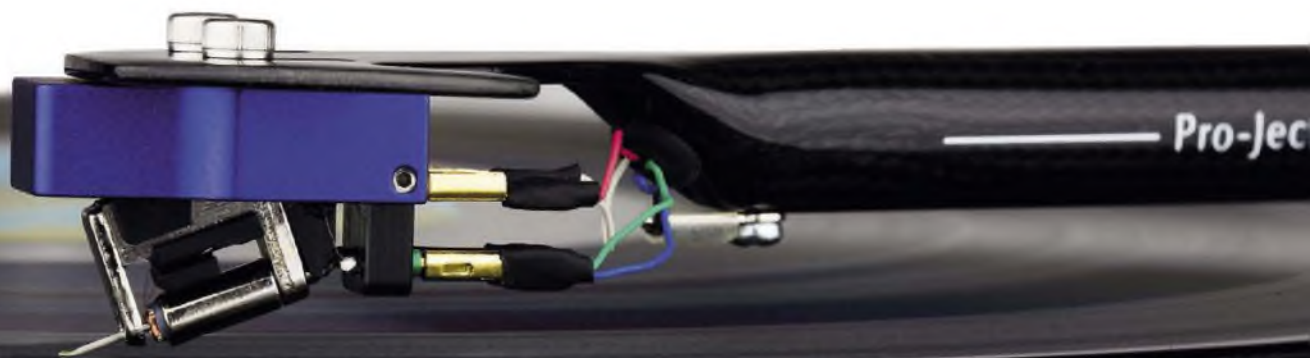
With these resistors in place the



The twin bass units have paper cones and work up to the lower mid-band, around 600Hz.

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603 S2s remained crisp and bright, but the tweeter was brought into correct balance. The reason I did this was to more readily appreciate the B&W hard rock sound that underpins their reputation. From the off, with Safri Duo's Samb Adagio the 603 S2s delivered powerful bass that ran subsonically deep: our room thundered and I could feel the lows hitting me. Better, their bass was tight and rhythmic, not soft and bloated. The intro bass line in John Campbell's Down In The Hole had fluid power; no one would not like this, I thought. I had some suspicions however.

Delivering male vocals from a paper cone bass/mid driver, I span a few fulsome male vocals and Elvis Presley's Fever showed the 'speaker sounded rich, revealing and fulsome

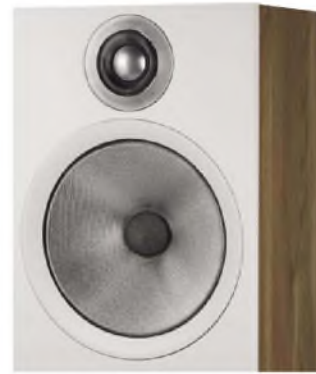
lower down. There was some box thrum, as is to be expected, but it wasn't a no-no like excessive treble.

Replacing Elvis with Sinead O'Connor however changed the picture. Opening Bodrans of the Chieftains moved the room in inspiring fashion, at the start of Foggy Dew. There was insight aplenty and a great sense of drama – this is the B&W sound. But Sinead O'Connors vocals had hard tone at times, "to die beneath an Irish sky" moving towards edgy.

At all times the 603 S2s imaged very well, setting up a sharply defined sound stage that ran in rainbow image between the cabinets. This helped toward their drama.

CONCLUSION

B&W have world-wide reputation for producing a dramatic sound – and this their 603 S2 Anniversary loudspeakers managed. Deep, fast and impactful bass was a big draw.



The upper-midrange 150mm Continuum unit works in conjunction with an aluminium tweeter, both fed by the upper bi-wire terminal.

Excessive treble with grilles off was not; they need grilles on or the tweeter brought into line with a 2 Ohm resistor. A very characterful loudspeaker then and one that I suspect many would love for its sense of lithe power. But best to listen first in a demo. as it is sparkingly forward.



An optional stabilising plinth is supplied, with spikes and/or soft feet to prevent floor damage.

MEASURED PERFORMANCE

Frequency response of B&W's 603 S2 Anniversary is fundamentally flat but there is variation around the tweeter's 3kHz crossover frequency and upward into its working region. Also, with grille off tweeter output was raised by +4dB at 10kHz – enough to make its contribution conspicuous. With grille on this was usefully reduced by -1dB or so. As the Continuum bass/midrange unit provides strong output up to 3kHz, peaking slightly at 1.5kHz, projection of detail and apparent insight will be strong. So in all, a bright and forward sound with strong detail.

There is no lift in output toward lower frequencies, from the bass units and Continuum midrange unit; the 'speaker runs flat down to a low 40Hz. This will result in a lack of warmth or body to the sound, giving a dry analytic approach. But the 603 S2 reaches low, its port being tuned to 35Hz our impedance trace shows. Acoustic output from the port is strongest from 35Hz down to a very low 20Hz, giving the potential to produce very deep baas, deeper than most other floor standers of the size.

Bass is traded for sensitivity and at 88dB the 603 S2 is reasonably sensitive, but not up with 90dB rivals. However, 88dB from one nominal Watt is loud, making the 603 S2 suitable for low power amplifiers; 40+ Watts is sufficient. Like most modern loudspeakers it is low impedance,

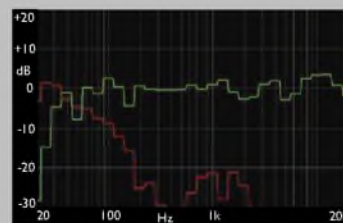
measuring just 5 Ohms overall with pink noise, in order to draw current. The bass unit measured 4 Ohms. Amplifiers are designed to handle a 4 Ohm load nowadays, so no problem here.

Fitting 2 Ohm resistors in place of the bi-wire links usefully brought down high treble to give a flat response, whilst not affecting output from the Continuum midrange unit, which is part of the high-pass network.

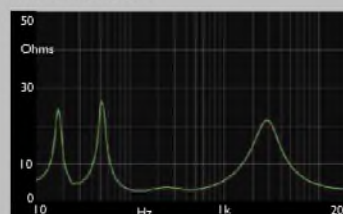
The 603 S2 has strongly raised tweeter output and will sound bright. The Continuum midrange plus bass units run flat but very low, to give a dry sound with deep bass. A good set of results, if 'distinctive'. **NK**

FREQUENCY RESPONSE

*Green - driver output
Red - port output*



IMPEDANCE



B&W 603 S2 ANNIVERSARY £1499



EXCELLENT - extremely capable.

VERDICT

Engaging sound with seismic bass and sheeny, revealing midrange. Overly strong treble though.

FOR

- clear, concise midband
- precision sound stage
- powerful deep bass

AGAINST

- excessive high treble
- hardness of vocal tone

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Birds Of A Feather

California-based EarMen offer two portable pocket DACs barely bigger than a typical USB stick. Will they significantly improve your listening experience from a phone? Chris Frankland finds out.

Almost everyone you see walking down the street has headphones on, streaming their favourite tunes. No surprise then that portable devices are one of the fastest-growing sectors in the audio market.

Set up to cater for this demand, EarMen specialise in portable DACs. The company is based in California and was started in 2019 by Milomir Trosic, who, in 2013, founded high-end manufacturer Auris Audio in Serbia, making high-end tube headphone amps.

Though based in the States, EarMen says all of its products are made in Europe “to ensure the highest standards in... manufacturing”. They make three ‘pocket’ DACs. Least expensive are the two reviewed here – the Eagle at £109 and the Sparrow at £189. The more expensive TR-Amp at £229 has a built-in amplifier.

The Eagle and Sparrow are intended for use with a computer or smartphone and connect between the device and your chosen headphones. They measure just 8mm deep by 22mm wide and 55mm long, connecting to your phone through its USB socket. Both offer a higher-quality DAC and should be a logical upgrade for someone looking to improve the sound from their portable devices.

EARMEN EAGLE

In spite of its low price the Eagle uses a ESS ES9281 DAC chip, designed specifically for use in USB devices. This boasts a high dynamic range and low total harmonic distortion. It supports playback of all 32bit/384kHz

formats: PCM, DXD and DSD. It is also said to use 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. It is housed in a CNC-milled aluminium case that should stand up to everyday use.

SOUND QUALITY

To find out if the Eagle really would deliver the goods, I used it with my Samsung smartphone to stream from Tidal to two sets of headphones – the in-ear B&O BeoPlay H3 (£130) and conventional closed-back over-ear Sennheiser HD599 (£179).

I started by streaming the title track from guitarist Peter White’s superb ‘Groovin’ album. From the first few bars, it was clear that listening through the Eagle gave better definition on his guitar – the notes were crisper and his playing more fluid and

melodic. Drums and percussion were crisper, punchier, while Rick Braun’s trumpet had better focus and power. The Eagle certainly captured the feel of this breezy and melodic track





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Listen and believe





EarMen Eagle has a CNC-milled aluminium case and connects via USB.

better than the DAC in the phone.

One of my favourite jazz/bebop singer/songwriter/pianists is Ben Sidran and next up was 'Broad Daylight' from 'The Doctor Is In'. His vocals were more open and articulate using the Eagle DAC and piano sounded more natural, revealing how hard each note was struck. No doubt that the energy and rhythm of the track was more persuasive on the Eagle.

Guitar ace Al di Meola was next with his high-energy, lightning-fast 'Roller Jubilee' from 'Splendido Hotel'. The track is 100mph stuff and his blisteringly fast play was much better conveyed through the Eagle. Straight from the phone, it all sounded a bit of a mess.

There is no doubt that the sound, when decoded through the Eagle, was substantially better than straight from the phone's in-built DAC. Was the difference worth £109? Absolutely.

EARMEN SPARROW

Housed in the same case as the Eagle, the more expensive Sparrow is 13mm shorter in length as its input is via a USB-C socket as opposed to the Eagle's protruding USB-A male connector. It uses a high-spec ESS DAC chip (the ES9281PRO) and is



EarMen logo on front of Sparrow and Eagle glows green for normal playback and magenta when streaming MQA.



EarMen Sparrow uses same size aluminium case as Eagle but gains a 2.5mm jack balanced output.

said to be able to 'unfold' MQA hi-res files. The main light will glow magenta to indicate MQA playback.

An iPhone plays MQA without user intervention, but for a Mac or PC computer, if you stream from, say, Tidal, settings must be adjusted to select the device and also 'Exclusive Mode'. From an Android phone or tablet, playback of MQA is not possible without an aftermarket app, such as USB Audio Player PRO (at £6.99). I understand this problem is not unique to the Sparrow.

The Sparrow also differs from the Eagle in having a balanced output via a 2.5mm jack. A special adaptor

would be needed to use this feature, but none is supplied.

As well as MQA, the Sparrow allows playback of all PCM, DoP, DSD64, DSD128 and MQA formats and, like the Eagle, also uses super-low ESR tantalum capacitors and a gold-plated PCB.

SOUND QUALITY

Comparing the Sparrow with the Eagle was interesting. On 'That'll Be The Day' from Linda Ronstadt's 'Hasten Down the Wind', I found her

vocals more open and articulate on the Sparrow – and the woodblocks really resounded. The rhythmic push of the track was also much better on the Sparrow.

On 'G Bop' from saxophonist Kenny G's 'Breathless', the bass synth line that keeps the track pumping along was tighter and bouncier, while his soprano sax sounded more real with better note definition and dynamics.

Going back to good classic rock with 'Five Long Years' from Colin James (eponymous), the Eagle well conveyed the urgency, dynamics and energy of the track, while James's vocals were open, articulate and expressive. But the Eagle was rather more forward and bright in its presentation, whereas the Sparrow was nicely balanced and easy to listen to. That said, the Eagle still trounced the standard phone sound every time.

For only £80 more than the Eagle, the Sparrow's extra musical integrity is worth having and its balance and presentation should make it easy to listen to for long periods.

CONCLUSION

Both Eagle and Sparrow are fine portable digital converters, based on renowned ESS DAC chips – a big plus point. Superb sound and great value. Thoroughly recommended.

EARMEN EAGLE £109



EXCELLENT - extremely capable.

VALUE - keenly priced.

VERDICT

A step up from built-in DAC in a phone or laptop. A big improvement for not a lot of money

FOR

- sound quality
- solidly made
- plug-and-play simplicity
- uses ESS Sabre DAC

AGAINST

- minimal instructions

EARMEN SPARROW £189



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

A worthwhile improvement over the Eagle for just £80 more. Excellent sound and MQA compatibility.

FOR

- sound quality
- build quality
- ESS 9281PRO Sabre DAC
- plug and play

AGAINST

- no adaptor for balanced output
- no MQA playback from Android 'phone
- unhelpful minimal instructions

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accuracy in sound

CADENZA

The Cadenza Series of high-end Moving Coil (MC) cartridges allow you to get the most from your vinyl records. By carefully implementing cobalt-iron pole pieces, using new improved winding processes on the armature, and employing an extruded aluminium housing - amongst other changes - the Cadenza Series is able to out-perform all those that came before it.

The name *Cadenza* comes from the Italian word for cadence, which refers to a soloist during an orchestra performance where they play alone in an elaborate manner. It therefore seemed fitting that such a capable and nuanced cartridge series should use the same name.

Like other modern ranges, the Cadenza Series is structured in Ortofon's preferred colour-tier nomenclature; so there are Red, Blue, Bronze, and Black variants available to suit varying budgets and tastes.



Red

This MC cartridge and introduction to the series features a Nude Fine Line stylus which delivers open, dynamic sound with a touch of warmth.



Blue

Featuring much greater dynamics and resolution, the sound is more open and reproduces more accurate details thanks to the Nude FG 70 stylus.



Bronze

A step up in the range, this cartridge boasts a Replicant 100 stylus to produce stereo imaging capabilities that illuminate the farthest corners of the soundstage.



Black

Flagship of the range, the Cadenza Black is simply the best and features a Nude Shibata stylus which guarantees amazing tonal neutrality, dynamics and purity of sound.



WIN
A SUPERB PAIR OF
SPENDOR CLASSIC 4/5
LOUDSPEAKERS
WORTH £1600
IN THIS MONTH'S
GREAT GIVEAWAY!
www.spendor.co.uk

Here's your chance to win the superb Spendor Classic 4/5 loudspeakers we reviewed in the December 2020 issue. Read the review excerpt below and answer the questions.

"Spendor doesn't trumpet the Classic 4/5's BBC heritage even though the company is steeped in its history. Founder Spencer Hughes was a BBC Research and Design Engineer in the 1960s and later, along with several other manufacturers, Spendor built the LS3/5a under licence.

There are still official LS3/5a models available today, but there

are other loudspeakers – Harbeth's P3ESR springs to mind – that seek to improve on the original design, as does the Classic 4/5 I'm reviewing here.

Measuring 308mm high, 190mm wide and 165mm deep, the Classic 4/5 is almost identically proportioned to the LS3/5a, being a fraction less deep. My review samples looked traditionally smart in their Walnut finish – Cherry is also available – and the nicely angled gold-plated terminals are of a much higher quality than you would find on any of the historic BBC derived designs.

All of the Beeb's LS series of monitors were designed for use

with grilles in place, however the Classic 4/5's magnetically attached grilles can be removed for critical listening. Leaving them on will not completely hamper performance but expect a slight veiling of treble frequencies, something these speakers can do without.

What you see is a 22mm polyamide dome tweeter sitting above a 150mm EP77 polymer woofer. These proprietary drive units are the product of Spendor's own R&D department, so as much as they owe to vintage design, the Classic 4/5 is very much its own loudspeaker".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 5th March 2021 to:

March 2021 Competition,
Hi-Fi World magazine,
Studio 204,
Buspace Studio,
Conlan Street,
Notting Hill,
London W10 5AP

QUESTIONS

[1] Spencer Hughes was -

- [a] a financier
- [b] a BBC R&D engineer
- [c] a freelance designer
- [d] a rocket scientist

[2] Finishes are -

- [a] Chromium plate
- [b] White vinyl fleck
- [c] Mock flock
- [d] Walnut and Cherry

[3] The dome tweeter is -

- [a] polyamide
- [b] titanium
- [c] annealed copper
- [d] fine wool

[4] The woofer is -

- [a] treated steel
- [b] Perspex
- [c] EP77 polymer
- [d] spun aluminium

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DECEMBER 2020 WINNER: CHORD COMPANY EPIC XL LOUDSPEAKER CABLES
Mr. Philip Carter of Somerset

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 JAMES DOUGLAS, Letter of the Month winner in our February 2021 issue.

Letter of the Month

TALK ABOUT MAGGIE

I have only had the Magneplanar LRS speakers (Maggies) for a few weeks and already there is so much I could write about these speakers that I don't know where to start, except to say that I agree with everything Noel says in his review (HFW Jan 2021) and more. I can only give first impressions, but the 'speakers easily justify the Award of 'Best Loudspeaker' and I consider them to be the hi-fi bargain of the decade.

So far I have mainly listened to the LRS using an Auralic Aries Mini streamer via a Topping E30 (AK4493 'Velvet Sound') DAC and the Prima Luna Dialogue Premium HP (EL34) amplifier which is very similar to the award winning Prima Luna Evo 400 (HFW Jan 2021).

The first thing to note is I use the 'ultralinear' setting (70 Watts). Normally I use the 'triode' setting (35 Watts) but the LRS responds to the extra power and this does give more 'bite' to the sound. I fully intend one day to hook up the LRS to my Quad Artera power amp (140 Watts) and Audiolab M-DAC+ but that is way in the future. Also, I have not spent any time fine tuning the placement of the Maggies. They sit two metres apart (centre to centre), slightly toed in, at the front of a 2.6 metre wide

1.5 metre deep bay window and about 2.2 metres from the listener, forming an almost equilateral triangle.

The first thing I noted (and loved) is that 'seamless' quality you get from a planar driver (just like the Quad ESL63 I own) and one MP3 download to demonstrate this: Angela Hewitt's brilliant piano playing of Bach Keyboard Concertos with the Australian Chamber Orchestra. The LRS gives a perfect balance between orchestra and piano, no instrument over or under emphasised – near perfect at capturing nuance and ambience and micro dynamics (within a certain range) and micro detail and natural 'flow'. Gentle when needed. Dramatic when needed. Perfect decay of notes



Magneplanar LRS. "There is so much I could write about these speakers that I don't know where to start" says Mike Tartaglia Kershaw.

and reverberation. No deep rumbling bass – but the bass that is present in my sixteen foot room is so stunningly clean and accurate that it is perfectly satisfying (and this is from MP3). The bass is always sufficient to give instruments solidity in space.

Even though the LRS produces a wide and deep sound stage it also has an overriding intimate quality that is near perfect for any form of vocals, especially subtle harmony, such as with The Corrs (44.1kHz/16bit FLAC). I think this may be in part the 'spotlighting' mentioned by Noel.

Another thing that really stood out for me with The Corrs album (and many others) was the detail in the drum kit. The speaker is 'fast' and agile and picks out every subtle brush stroke and bass thud, even the power of huge kettle drums in classical music.

One of the first albums I bought was Crosby Stills and Nash in 1970. I have been listening to this album regularly for fifty years. I played the CD version in an Audiolab 8300 CD player and was staggered to hear details in the impeccable harmonies I have never heard before. I was even more staggered to hear depth and a subtle detailed texture in the bass line I have never heard before. The bass is 'set back' spatially but is easy to follow and also seems deeper at times. I think this may be because each instrument or voice, particularly in quieter passages, stands in its own space: again the 'spotlighting' that Noel mentions.

In short the speaker is perfect for small Baroque orchestras, classical guitar, and early classical music (Bach, Vivaldi, Mozart), pop, blues, folk, and well recorded rock. It is brilliant at separating out all the strands in the complex orchestration in quieter movements of more Romantic music like Tchaikovsky (Serenade for Strings). It tends to flatten dynamics at crescendos (just like the Quad ESL63s) but this is only noticeable in very dense passages with large orchestras, like the finale of Tchaikovsky's 1812 Overture or very heavy rock.

As I own a pair of Monitor Audio Gold 200 speakers with all metal drive units I am able to agree with Noel's comment that the speaker has a slight 'metallic colour' but only in recordings with a certain treble emphasis. I do not find this an issue compared to all the other glorious subtleties of the LRS sound quality. The Monitor Audio bass does go deeper than the LRS but I do not miss this at all when listening to the LRS. Incidentally the metallic speaker drive units in the Monitor Audio speakers also provide an agile and analytical 'airy' sound quality very similar to the LRS, but at more than twice the price.

The Magneplanar LRS fully meets the 'wife acceptance factor'. My wife described the sound as 'subtle' and the bass in Crosby Stills and Nash as



Prima Luna Dialogue Premium HP valve amplifier. "The first thing to note is I use the 'ultralinear' setting (70 Watts)" says Mike Tartaglia Kershaw.

'subliminal'. She thinks they actually look smaller in the room than might first appear. This is because they are angled backwards and slim, and because they are always 'toed in' you can see the elegant oak edging strip. The Quad ESL63s have always been relegated to my attic 'den' but the LRS has been accepted into the main house. Many owners keep their 'Maggies' against a wall and lift them out and 'place' them to listen.

It is very hard to put into words the revelatory sound of this 'instant classic' speaker but I have a feeling that the real magic is how it illuminates music that you have heard many times. The LRS shines a fresh light into well known recordings by highlighting small details whilst remaining wonderfully balanced and never losing the overall flow of the music. I often see the word "revelatory" used in this context and it seems a perfect word for the Magneplanar LRS when hooked up to a quality amplifier that works well into a 4 Ohm load.

Type 'Magneplan' or 'Magneplanar' into Google and You Tube and you will be assailed with reviews and video advice about how fussy 'Maggies' are, how to get the best out of them and recommendations for the best amplifiers to match them. It is true that they are chameleon like in the way they respond to different ancillary equipment and placement, but even plonked in a typical arrangement like I have, and with a good quality amplifier, they sound rich and mellow, but with lots of micro detail for

each instrument and/or voice, plus the ambience of the recording venue and any studio techniques employed.

This cannot be easily described in words but I think Noel comes close with his final word: the Magneplanar LRS is "riveting".

You can buy these speakers first and then upgrade everything around them year by year and they just get better. It doesn't seem to matter if it is DXD, DSD, CD or MP3, the LRS extracts maximum detail from every recording whilst remaining balanced and mellow and never harsh. I can now hear why so many audiophiles fall in love with Maggies. They are also perfect replacements for ageing Quad ESL63s for those on a limited budget.

Heavy Metal lovers can ignore all



"Monitor Audio Gold 200 bass does go deeper than the LRS" says Mike Tartaglia Kershaw.

the foregoing and just enjoy the "2001" YouTube video advert for the LRS below:

<https://www.youtube.com/watch?v=HyjMuetVxJM&feature=youtu.be>

Many audiophiles recommend that you buy Maggies first as the bass is room dependent and then choose an amplifier to match them in your room. It is almost impossible to demo the LRS at a dealer as there seem to be so few dealers and, anyway, they will probably sound different when you get them home. In this regard I am a great lover of the YouTube 'Car Wow' reviews by Mat Watson. He often ends a review with: Should you? Avoid, Consider, Shortlist, or Buy. In this case: Buy (and then ask for home demos of amplifiers). Best wishes,

Mike Tartaglia Kershaw.

Hi Mike. Good to hear your experiences with these budget (£995) open panel, magnetic planar loudspeakers. As you say Maggies have a dedicated following but as a reviewer I always wonder how others, used to box 'speakers, will receive them. Another view is always welcome, so thanks for your experiences, ones I hope other readers will enjoy. **NK**

MUSIC FIRST

Even though your response to Phil Bull's letter didn't mention it, I guess that the picture of a Music First Passive preamp (p29 Feb 2021) was a hint in Phil's direction. But I have a less expensive version of this preamp (the MF Baby Classic) whose sonic performance is just as good, but equipped with only two inputs

Following your glowing recommendation of the MF Silver Classic in World Standards, I auditioned the Baby Classic last year, and decided that I preferred it to my Naim NAC282 pre-amp. I had been running the NAC 282 with a HiCap power supply in conjunction with a NAP250 power amp. However, to extract maximum benefit from the NAC282, I had the option of upgrading from the Hi-Cap to the Naim Supercap power supply. This would have raised the amount spent on pre-amplification to a total of around £8000, compared to £1800 for the MF Baby Classic.

Music First passive preamps have no electronics, use no power, and there is very little that can go wrong with them. They act rather like a volume control knob for whatever device is fed into them. In my case, one input is for a Linn Linto phono stage; the other is for



Music First Passive Preamp. "I have a less expensive version of this preamp, the Music First Baby Classic, whose sonic performance is just as good" says Peter Ruane.

a Chord Electronics Qutest DAC. Based upon a pair of coupled transformers, the Baby Classic has no electronic (sonic) footprint whatever. Moreover, it combines extremely well with my now upgraded NAP250 DR power amp.

Although the Baby Classic has just two inputs, the Qutest has more. So I use one Qutest input for the digital output from my Naim CD 5XS and another for wifi streaming from an LG V30 phone to an iFi Zen Blue whose digital output is connected to the Qutest. Thus, courtesy of the Qutest, I now effectively have three inputs to the Baby Classic.

So what is the purpose of this letter? First, it is to point out the cost effectiveness of this MF passive amp compared to the Naim preamplifier, which it replaced. Second, to ask, since you rate MF passive amps so highly, why do they feature so rarely as a key component in one of your reference systems? After all, the caption to your photo of the Music First Audio amp states that it 'provides totally lucid preamplification' and has 'no equal'. I entirely agree.

**Peter Ruane,
Chelmsford.**

Hi Peter. As you say the Music First magnetic preamps have no sonic character at all. Gain is limited to x2 (+6dB) as a switched option. We should indeed use our sample more often, but most times a volume control exists either on the source (e.g. Oppo UDP-205D CD player/DAC, Icon AudioPS3 Mk2 phono stage) or on the power amplifier (Creek Evolution 100A, Icon Audio Stereo30 SE) so no need for another control. Where in-built controls do not exist however the Music First preamp takes precedence. **NK**

CARTRIDGE QUESTIONS

I'm in the fortunate position of being able to retire in a few months time, and therefore I will have some money to splash out on what may be my last major upgrade. Well, that's what I keep promising myself!

Because of space limitations, I have my record deck going into an AV amplifier which performs film and TV duties. So, I have a Michell Gyrodec with external power supply, a Michell TechnoArm, equipped with an Audio Technica AT-OC9/III into a Leema Elements phono stage (the early version,



"Courtesy of the Chord Electronics Qutest DAC, I now effectively have three inputs to the Baby Classic" says Peter Ruane.

not the Ultra featured in your World Standards), then feeding an Arcam AVR850. That in turn drives a pair of PMC GB1 floorstanding speakers, which sadly are no longer made. However, I love their sound and the speed with which they deliver the music. I have the centre 'speaker and surrounds to match, but because we live in a Victorian terraced house, no subwoofer. Suspended wooden floors and not-too-thick walls would somewhat upset the neighbours with really deep bass, I think.

I listen to a reasonably broad selection of music, from Carole King

Graham Slee Accession MC and also the iFi Zen you gave the 2020 Award to recently. I remain sceptical that a £149 phono stage can compete with something costing £1,000+, but I'd value your opinions. Incidentally the AVR850 doesn't have balanced inputs, so that would mean it would be hard to get the best out of the iFi Zen.

Also, if you think a change in speakers would help, rather than the front-end, I'm all ears, as it were.

The biggest problem I have is that getting a demonstration in these pandemic days isn't easy, and finding a



The slightly more expensive Ortofon Cadenza Bronze MC cartridge has powerful bass and also sweet treble.

cartridges you mention I suggest not the Cadenza Blue, but the slightly more expensive Cadenza Bronze. It has powerful bass but also very sweet treble, courtesy of a good stylus on a tapered alloy cantilever.

Upgrading to a valve phono stage like the Icon Audio PS3 Mk2 we use will transform your vinyl listening; I strongly recommend this move – no equivocation! **NK**

COIL QUERY

You have provided me with valuable insights and recommendations in the past so I am hoping for your assistance with a further matter. I currently use an Ortofon 2M Black MM cartridge and a Dynavector 10x5 MC high output, both of which I find to be excellent transducers. I am now considering upgrading to either the Ortofon Quintet Black or the Dynavector 10x5 Mk2. I understand that both sport a Shibata stylus as does my 2M Black but, whereas the output of the 10x can be fed straight into the phono input of my Quad Vena II, the Quintet will require either a phono stage or a step-up transformer, thus adding to the overall cost. I understand that Ortofon make an SUT to match the Quintet series but I have also read good things about the Rothwell MCL SUT.

My question is: which cartridge would you recommend and if the Quintet is there any particular preference regarding phono stage or step-up transformer?

My speakers, also acquired under



Icon Audio PS3 Mk2 valve phono stage will transform Gordon Robinson's vinyl experience.

through to Prince and Janelle Monae, with a recent discovery of contemporary female vocal. I also enjoy Pink Floyd, Led Zeppelin, the astonishingly lo-fi Motorhead and the rather wonderful Nick Mason's Saucerful of Secrets band. (As an aside I thought the recent album review was a wee bit harsh!). There's a little bit of Frank Sinatra and other swing vocalists on the side, and the Syd Lawrence Orchestra record you recommended gets a regular outing too, as do various British Indie bands from the 1980s and 1990s.

So now is a time to upgrade. I think a new cartridge and phono stage would give me the change I'm looking for, but I'm willing to be swayed. The Audio Technica is a bit polite for my tastes and doesn't give me the visceral impact a Goldring 1042 in the same setup gave me with early house and disco, albeit lacking detail compared to the AT. I'm looking for attack and slam, but detail too in the less hectic music. I have a budget of around £3,500 for this upgrade.

I've been considering various cartridge options, like a Rega Apheta 3, the Benz Micro Glider or the Ortofon Cadenza Blue. For a phono stage I looked at the Icon Audio PS1, the

dealer with the appropriate combination of kit available is something of a Sisyphean task. Any advice you could give will be gratefully received.

Thanks for your help, and keep up the good work. It's good to have a magazine like yours working hard for hi-fi.

Kind regards,

Gordon Robinson

Hi Gordon. Audio Technica cartridges don't have the deep bass slam of Ortofon's, but they do have superb styli, giving fantastic insight. Of the



Michell Gyrodec. "Should I buy a Rega Apheta 3, the Benz Micro Glider or the Ortofon Cadenza Blue?" asks Gordon Robinson.

LS50 Meta

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Listen and believe

KEF



Dynavector 10x5 Mk2, a high output moving coil cartridge with Shibata III stylus.

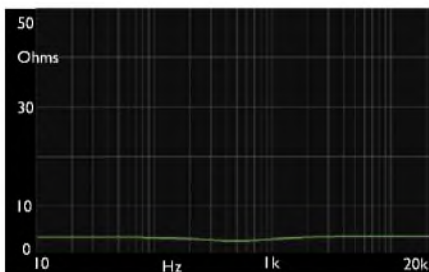
your recommendation, are Quadral Chromium Style 8s. My vinyl collection is mainly classical and jazz.

Many thanks and kind regards,
John Arnold.

Hi John. The easy way forward is to go for the Dynavector with its Shibata III stylus. Unfortunately, you don't say what deck and arm you are using so this is my safe recommendation as it were. Moving up to low output MC cartridges will be extra cost and ideally you should have a Rega or SME arm to get the best from them. Perhaps a deck change then? See the previous letter from Gordon Robinson for more ideas.
NK

AMPLIFIER BRIDGING

May I offer a note of caution to Graham Taylor (Mail, December 2020) about bridging his Rotel RB 970 BX amplifiers when driving the Magneplan LRS speakers. It is true that in bridged mode the power output will double, but bridging achieves this by doubling the voltage swing across the speaker, the available current remains the same.



"The LRS is effectively a frequency independent 4 Ohm load" says Keith Stickels, as our impedance analysis shows.

Thus the 110 Watts into 4 Ohms rating for each channel of the Rotel becomes 220 Watts into 8 Ohms when in bridged mode. As the LRS is effectively a frequency independent 4 Ohm load, each amplifier section when bridged will behave as if it is connected to a 2 Ohm load. The Rotel may or may not

be happy with this, depending on how stiff the power supply is, what level of derating is applied to the output devices, and the point at which V/I limiting (protection) starts to take effect. While it nearly doubles the power output going from 8 Ohms to 4 Ohms, I would think it highly unlikely that it could do the same again into 2 Ohms, so the power output will droop from the 220 Watt figure and distortion is likely to increase when in bridged mode. With the apparent resolving power of the LRS, distortion may become audible. In any case, I would be very careful with the volume control until I was happy that that the arrangement was satisfactory.

Kind Regards
Keith Stickels

Hi Keith. Indeed. It all sounds frightening! As you say though, providing volume is kept to normal levels the current through the speaker will be well within the capabilities of the output stages. Current and hence power limitations lie in loudspeakers more than amps. The LRS is current hungry at 4 Ohms flat, but the d.c.r of most modern loudspeakers is 4 Ohms and overall impedance 6 Ohms so I believe Graham will be OK providing he doesn't want to run a disco. **NK**

POWER DOWN

I'm with Noel on this. Years ago I built a version of the Mullard 5-20 valve amp partly inspired by your very first DIY supplement (I kept them all for reference purposes). I used it to drive Castle Pembroke and never ran out of power in either pentode (20W) or triode (12W?). It always sounded better using the 4 Ohm tap.

20 years passed and I decided to investigate chip amps, settling on the lm3886. After another 10 years (where does the time go!) my final iteration uses a 160VA 12V transformer giving (calculated) 15-ish Watts into 8 Ohms and 20W continuous into 2(!) Ohms. I use a lot of capacitance (50000uF) only to keep the ripple voltage low. Driving Quad S-4 there is no shortage of power and the lm3886 sounds better with a low PSU voltage. Conclusion: available power is largely irrelevant, normal listening levels use as little as 1 or 2 Watts per channel, it's the amps ability to deliver it that counts.

Regards
Aaron Proctor

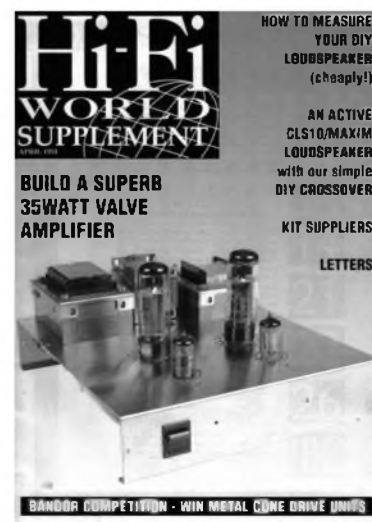
Hi Aaron. Thanks for your experiences. Nothing easily matched the glories of the 1960's Mullard



Mullard's seminal book on valve amplifier design and build. Complete with chassis plans and wiring diagrams. Top of the tree and considered powerful in its time (1963) was the 5-20, delivering 20 Watts.

5-20 20 Watt valve amplifier until much water had passed under the technological bridge, as it were. Transistors made practical sense but they just didn't sound very good until fairly recently I suggest – in the last 10 years or so – when the smoothness provided by valves has been approached. But as you say, normal use demands just a few Watts for quite high volume. Around 40 Watts is plenty enough for normal high volume listening. Keeping power within real life limits makes for better amplifiers all round.

Another point to bear in mind is that today's floor standing loudspeakers can be very sensitive, up to 90dB sound pressure level (loud) from just 1 Watt. A good modern loudspeaker does not need high power. **NK**



Our first (well, 2nd!) DIY Supplement, April 1993, with updated Mullard 5-20.

In Tune

Anthem's STR Pre and Power amplifiers come with loudspeaker room tuning. Noel Keywood enjoys the challenge.



As Anthem (Canada) say on their website, this is a system that gives you “more” – including ARC loudspeaker tuning for all those fascinated by the idea, something I will cover in detail later. Most of the “more” lies in Anthem’s STR preamplifier (£3500) but you also get plenty more (power) in the accompanying STR power amplifier (£5200). It’s an expensive combo, that’s for sure, but a fascinating one.

To kick off, I’ll note that the preamp with its microprocessor and loudspeaker tuning function can be used with any power amplifier; it is not inextricably linked to the hugely powerful 450 Watt STR power amplifier. So you could conceivably buy the STR preamp alone and hook it up – say – to a 9 Watt single-ended valve amplifier. At this point many

readers will suggest I’ve gone mad – arguably correct – but I’m just trying to illustrate a point here! The STR preamplifier is certainly complex, so I’ll tip straight into it, trying to keep things simple.

But “simple” is hardly the right word to use. Much like A/V receivers, at heart the STR Preamplifier processes all signals digitally, meaning analogue inputs are converted to digital through an on-board Analogue-to-Digital Converter (ADC). This gives it enormous functionality in terms of filters, tone adjustment and such like, but it is also necessary for loudspeaker tuning because the filters are digital, set in a Digital Signal Processor (DSP). As with most A/V receivers there is a bypass function that avoids turning everything digital, but you lose functionality.

Being a hi-fi product, with a nod to A/V in its handling of subwoofers,

conversion quality is high at 24/192 it says in the handbook (but the display says 32/192). It is necessary to use 24bit for high quality vinyl replay especially, which this product has.

The usual drawbacks to this approach are noise and distortion from the ADC, plus early input overload, but I checked all this under measurement and performance was beyond easy criticism. Since once you turn everything to digital it must all be converted back to analogue through a DAC, there is one of those on-board too, meaning the unit accepts digital inputs direct.

There are two Line inputs via the volume control and two XLR balanced inputs but they are for HomeTheatre, connecting direct to output when the preamp is switched off; there are no balanced XLR inputs that run through the volume control.

Analogue input levels can be

adjusted by +20/-20dB (massive) to cater for sources, including differing pickup cartridges.

Vinylistas will appreciate a further two inputs, one for moving magnet (MM) phono cartridges, one for moving coil (MC) cartridges, so two turntables can be connected – one for the kids perhaps, the other for dad. With these inputs the internal Digital Signal Processor (DSP) can apply corrections other than RIAA and there's a Rumble (warp) filter. A bypass function exists for those who'd rather not digitise their vinyl but you lose the Rumble filter and alternative EQs.

Balanced XLR outputs feed the STR power amplifier and there are parallel RCA phono socket unbalanced outputs to feed power amplifiers lacking balanced XLR inputs. Included are subwoofer outputs, balanced and unbalanced for a Home Theatre set-up and there are oodles of associated filter functions.

Two S/PDIF digital optical inputs work up to 192kHz measurement showed, accompanied by two S/PDIF electrical (phono socket) inputs and an AES/EBU balanced XLR input. There's also a USB input that runs to 384kHz it's DAC declared to my Mac, and it happily ran 24/192 PCM and DSD64/128 I found, using the Audirvana+ software player that sends DSD via DoP over a USB link. Anthem suggest PC users install Foobar for this purpose. They say all inputs are upsampled and re-clocked to provide a consistent input to the DAC.

Unlike most A/V receivers the STR Pre treats vinyl seriously, the only disappointment here being it does not make a digital output available via USB for recording purposes. What you do get however, are six EQ curves in addition to RIAA, a Rumble (warp) filter that eliminates out-of-phase vertical warp signals only, tuneable from 50Hz down to 10Hz, and enough gain to cope with the lowest output MCs. Input impedance for MC is 100 Ohms and for MM 47k Ohms. Gain can be adjusted by +/-20dB on these inputs for level matching and there are bass and treble controls (that also work on all other inputs).

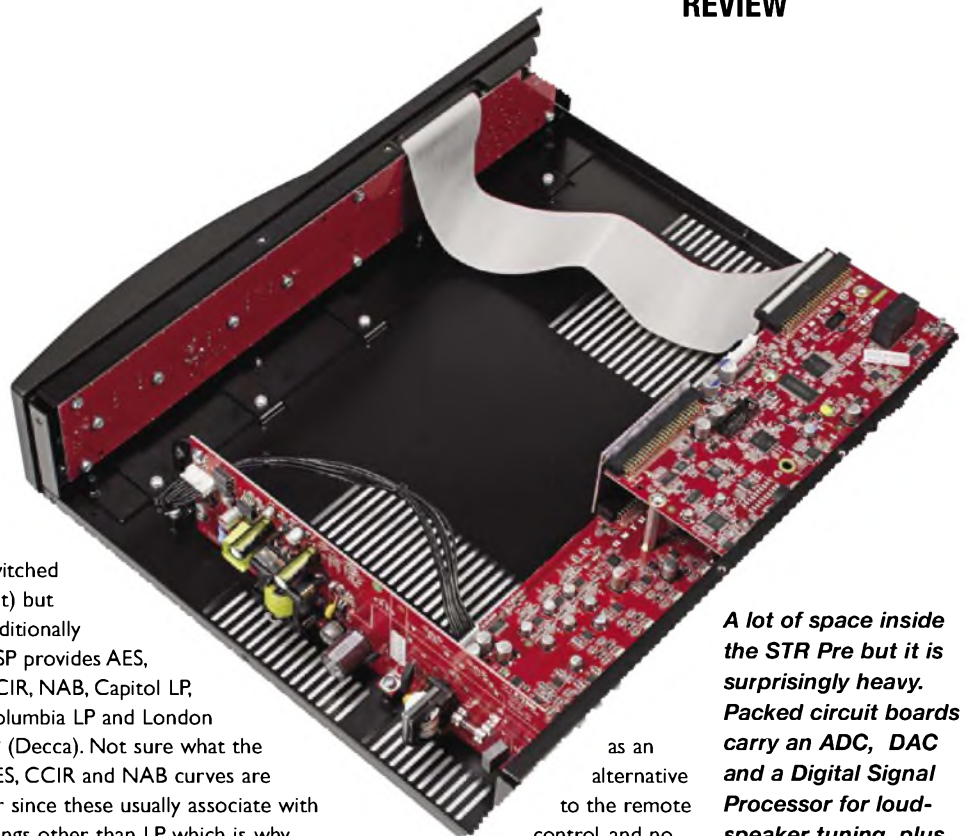
Default EQ for Phono inputs is RIAA (the only EQ available when DSP is

switched out) but additionally DSP provides AES, CCIR, NAB, Capitol LP, Columbia LP and London LP (Decca). Not sure what the AES, CCIR and NAB curves are for since these usually associate with things other than LP, which is why the LP suffix is used with Columbia, Capitol and London I suspect.

I found front panel controls awkward in their operating modes, but the STR Pre's small remote control provides input selection, volume and setup functions and was easy to use. Big, bright display info, was easy to see at a distance when using the remote; Anthem have put thought into this. I could make adjustments from a settee 8ft (let's say 2.5m) away, not just of volume but of input status such as DSP/ Direct. With dimensions of 432mm wide, 377mm deep and 100mm high it easily fits a standard 19in rack, but weight is substantial at 7.6kg.

Although the STR Pre connects to a home network (ethernet only) this is for linking to a wi-fi connected iPhone (or Android) that can carry out simple, fast loudspeaker tuning using its on-board microphone and Anthem iOS software, or to a PC/Mac running the ARC Genesis software measurement system.

There is no control app.



A lot of space inside the STR Pre but it is surprisingly heavy. Packed circuit boards carry an ADC, DAC and a Digital Signal Processor for loud-speaker tuning, plus much else.

as an alternative to the remote control, and no streaming input from

a PC using DLNA music server, nor from external music services like Spotify. Nor does the STR Pre have Bluetooth to stream from a mobile phone, unlike so many other amplifiers nowadays. The firmware is updateable over the internet however, or can be loaded manually from a rear USB port.

Loudspeaker tuning is a subject in itself and I cover the mechanics of Anthem's system in our box-out to give some idea of what's involved. There's plenty more about all this on the 'net, including YouTube videos, if you want to spend a long and exciting night in!

There are three basic tuning options: run their free app on an iPhone that's wi-fi connected into the home network, using the mobile's internal speech microphone; run the app with an ARC measuring microphone digitally connected to the 'phone; use the Professional approach of an ARC IM tuning kit with measuring



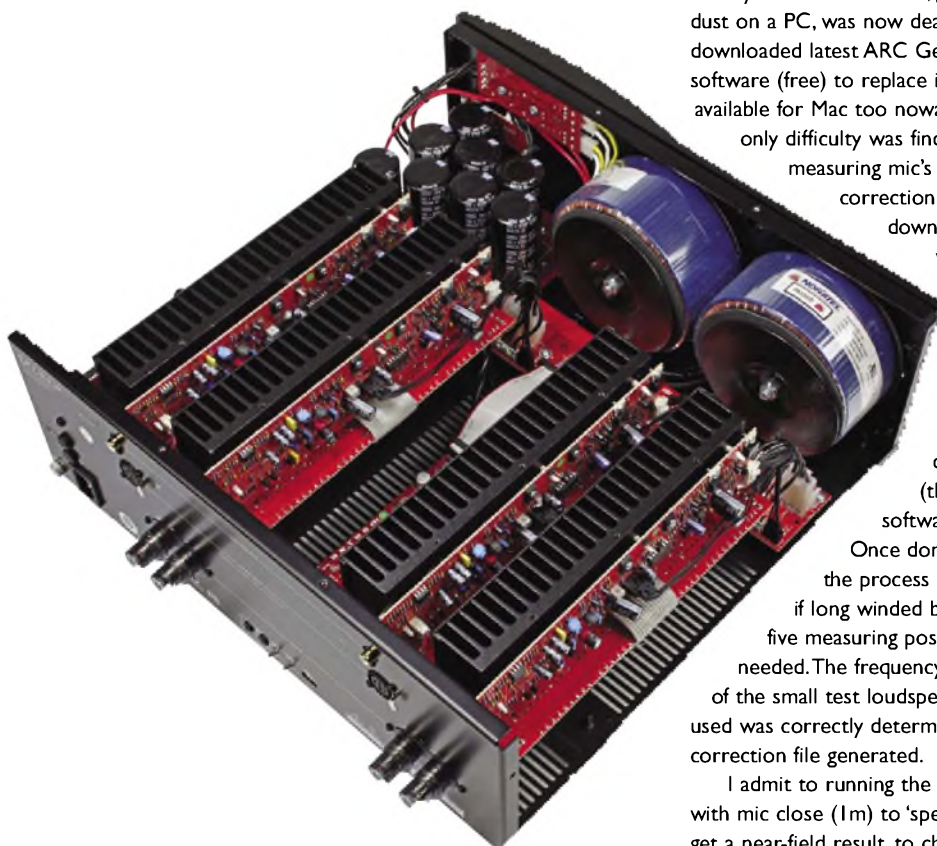
The STR Pre rear panel carries Home Theater (HT) balanced XLR inputs and outputs, which consume a lot of space. At top are the digital S/PDIF inputs plus a USB computer input (it offers no output). At right are separate MM and MC phono inputs.



Both Anthem STR units come with bright display panels, legible at a distance. At top a scrolling input display pictures each connector to make clear its identity and purpose.

The STR Power amplifier display panel (below) shows a power meter by default but can reveal working conditions too.

microphone, stand and cables, price £250. This makes adjustment of frequency response and the



The power amplifier has a linear power supply with separate toroidal transformers, one for each channel, explaining its weight. Also, four black alloy finned heatsinks to keep the output transistors cool. Temperature is monitored and shown on the front panel display.

download of data easier but is most expensive.

I've run the ARC IM system before with Martin Logan loudspeakers and it worked well, but my old ARC software, gathering dust on a PC, was now dead. I downloaded latest ARC Genesis software (free) to replace it, but it is available for Mac too nowadays. The only difficulty was finding the measuring mic's software correction file after download; there was no confirmation of download nor its destination (the software folder). Once done however the process was easy if long winded because five measuring positions are needed. The frequency response of the small test loudspeakers I used was correctly determined and a correction file generated.

I admit to running the system with mic close (1m) to 'speakers to get a near-field result, to check its accuracy and usability. The gliding tones used run to 20kHz and correctly identified a prominent tweeter, so you get to see an accurate view of the loudspeaker, but correction is applied only at low frequencies; the tweeter peak was

not corrected.

The massively powerful STR power amplifier was a bit of a beast. Weighing 27.3kg it was a two-person lift unless your surname is Schwarzenegger. Compensation comes from its audacious light displays that show (digitally) analogue power meters, complete with moving needles and a small peak hold indicator. Yes, I did like it! Fascinating to see how I couldn't get much past 4 Watts in our large listening room (6550cu ft). The display is interestingly calibrated in 4s, so 400mW, 4V, 40V, 400W being maximum. Generally it hovered around 4 Watts – and that was very loud. But there's more if you want it. Dimensions were 432mm wide, 470mm deep and 172mm high, so 19in (483mm) rack mountable with help.

SOUND QUALITY

The Anthem duo fed our Martin Logan ESL-X hybrid electrostatic loudspeakers through Chord Company Signature Reference loudspeaker cables. Sources feeding the preamp were an Oppo UDP-205D universal player acting as a CD transport, connected by QED glass fibre optical cable, making it electrically isolated. A MacBook Pro working on internal



The small but sturdy remote control carries few buttons but is easy to use, especially in conjunction with the large display panels that feedback response.



At rear the STR Power amplifier carries just two pairs of loudspeaker outlets, so there is no loudspeaker switching. Inputs at top are XLR and phono-socket types.

battery so as to be fully isolated fed in hi-es and DSD. Turntable was our Timestep Evo modified Technics SL-1210 Mk2 with SME309 arm and Audio Technica VM750 SH (MM) and OC9X SH (MC) cartridges.

With Antonio Forcione's Tears of Joy, followed by Nils Lofgren's Keith Don't Go, both tracks (CD) with close-miked guitar strings containing high frequency harmonics the Anthem combo was almost puzzlingly mild mannered, even a tad soft. From other massive power amplifiers, Chord Electronics and Musical Fidelity for example, I've come to expect sharper transients. That's not to say it lacks dynamic contrasts or big bass though, just that it is easy going, relaxing in fact. It took me a while to run through a rake of CDs, LPs and high-res tracks to find that, actually, this combination offers smooth listening of a type I recall getting from my Quad 33/303 combo from long ago, albeit with much better insight and detail than the Quad. I owned amps clearer than the Quad – Cambridge P50, then when it blew up a Luxman – but the Quad just got on with the job and was both reliable and relaxing. I can't comment on reliability of the Anthem combo of course, but I would describe it as relaxing: it didn't come at me.

Where Sinead O'Connor was full bodied if mild mannered singing Foggy Dew, the Bodrans of The Chieftains thundered out with room shaking low-end power; there's plenty of bass heft. Wasn't quite certain Sinead was as clear as I have heard her, but on listening to Josefine Cronholm's In Your Wild Garden I suspected the Anthem amps were, in truth, gently revealing limitations in the recording of Foggy Dew. By contrast Ms Cronholm was deliciously clear centre-stage and the

dominant plucked bass at track start came across as both powerful and timbrally identified. Subtle strengths that don't shout so much as become slowly apparent.

Running through a collection of DSD Classical tracks the sound was similarly engaging, kettle drums in Mars, from The Planets, having

with DSD) and the violin of Marianne Thorsen playing Mozart Violin Concertos (2L of Norway) was sympathetically reproduced, with smooth strings and fine timbral retrieval of the violin's body. Switching out conversion to digital made little difference: the STR Pre has a very good ADC, lacking the coarse and grey sound of 16bit converters.

CONCLUSION

Massively powerful and with loudspeaker bass tuning to correct for room acoustics, Anthem's STR Pre and power amplifier have massive ability. Conversion of analogue inputs to high resolution 24/192 digital allows the Pre to use Digital Signal Processing to broad effect, with tone controls, gain adjustment and



The STR Pre (top) provides a wide range of loudspeaker set-up conditions associated with room tuning, bass management of subwoofers, levels and turnover frequencies – made possible by turning all inputs to digital and processing them in a DSP.

scale, whilst strings of the London Symphony Orchestra stretched out wide between the XStat panels of our electrostatics, sitting on a stage with convincing sense of depth.

Sound quality from LP differed little in character to that from digital sources. With Hugh Masekela's Uptownship there was plenty of push to hand drums and Masekela's trumpet blared out smoothly, sounding convincingly brassy. The bass line strode along firmly. Ignoring ticks and pops, I think LP handles Classical better than digital (arguable

filtering – especially with LP – that other preamps cannot match. The power amplifier has meters and even operating temperature readout that make for interesting viewing.

A mild but revealing and full bodied sound made for easy listening with both Rock and Classical, from DSD, PCM hi-res and LP.

Complex certainly, especially when it comes to the loudspeaker room tuning process, but easy to operate otherwise. A great combo then, no more pricey than simpler alternatives. Well worth considering.

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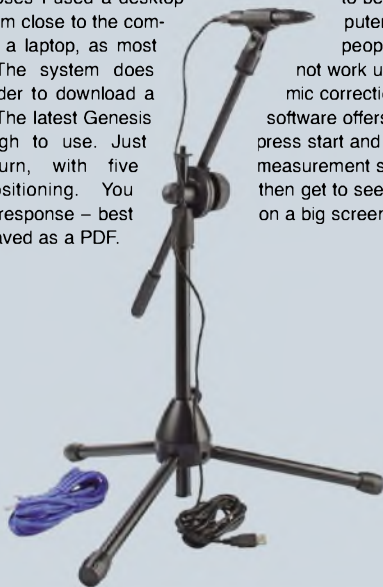
ANTHEM ROOM CORRECTION

This system corrects the low frequency response of loudspeakers to give cleaner bass. It reduces peaks and fills in dips; best to be aware it gives more even bass, rather than heavier bass, reduction of room peaks subjectively giving a lighter sound, but one that is less boomy. The correction curve can be manually adjusted to tweak the final result.

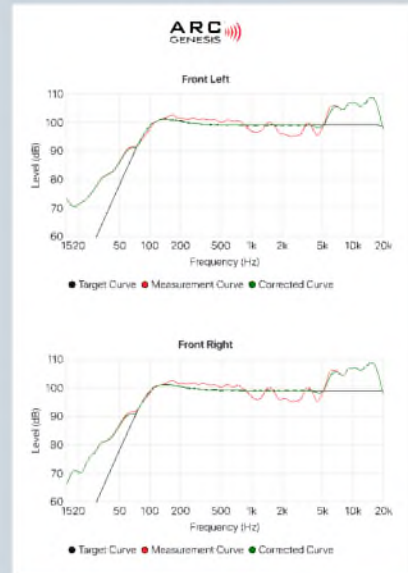
Anthem's system is more complex than that of AV receivers, where a tiny mic on long lead plugs into the receiver direct and it simply auto-tunes – an easy process. By way of contrast the Anthem system uses external computer processing to generate a response correction curve, either on an iPhone or home computer, Mac or PC.

The Anthem measuring mic comes with a USB lead that must be plugged into the computer, and the computer must be linked to the STR Pre through a home network (wired ethernet only) to send sweep tones and upload the correction data. Since the mic lead is 9ft long, the computer must either be close to the listening position or a network connected laptop used. To check the system for review purposes I used a desktop system close to the computer, as most people would I suspect.

The system does not work until a six-digit mic serial number has been entered in order to download a software offers more adjustment than in the past and it is easy enough to use. Just press start and it sends fast sweep tones to each loudspeaker in turn, with five measurement sequences, a pause between them being for mic re-positioning. You then get to see the measured response, the correction curve and final response – best saved as a PDF.



Anthem's ARC 1M tuning kit comes with special measuring microphone, corrected by a downloadable calibration file, plus a stand and long cables. The stand is placed at the listening position and moved around to get an average of conditions. Interestingly, the mic must be pointed at the ceiling for some measurements.



Our in-room response plots with small bookshelf 'speakers having raised tweeter output. The ARC system gives an accurate response plot from a fast swept gliding tone (chirp) and corrects response below 1kHz. The Genesis system produces a PDF of results, including the graphs shown here, to provide useful record.

MEASURED PERFORMANCE

The Anthem STR power amplifier produced 465 Watts into 8 Ohms and 730 Watts into 4 Ohms, its electronic display meters clearly showing these levels. Output impedance measured 0.06 Ohm, giving an unusually high Damping Factor of 133.

Distortion measured 0.005% in the midband and 0.025% at 10kHz at 1 Watt output; there was no crossover distortion our analysis shows. At high power (-1dB below full output) the figures remained the same. Input sensitivity was low, 2.2V being needed for full output (XLR and Phono).

Frequency response measured flat from 1Hz to 37kHz (-1dB), with a slow roll-down just above the audio band.

The accompanying Anthem STR preamplifier converts all inputs to digital through a 32/192 ADC, but there are bypass options. Gain from Line 1 to XLR out was high at x8 (18dB) with gain adjust at 0dB, but there is a massive +/-20dB of adjustment. Input overload via ADC was good at 2V and max output normal enough at 7V. Frequency response via ADC was broad, running from 3Hz to 62kHz (-1dB) as shown, and flat to

100kHz with Direct.

Both MM and MC phono stages were accurately equalised, running flat down to 5Hz with Rumble filter out. The filter can be adjusted in frequency from 50Hz to 10Hz and affected out-of-phase signals (vertical warp info). Gain was very high overall but can be adjusted by +/-20dB. NK

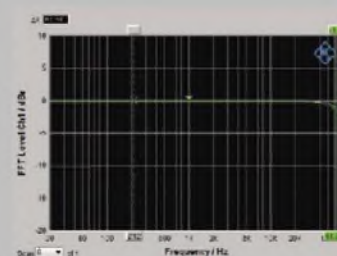
POWER AMP 465W
Frequency response (-1dB) 3Hz-36kHz
Distortion (10kHz, 1W) 0.02%
Separation (1kHz) 96dB
Noise (IEC A) -103dB
Sensitivity 2.2V
Damping factor 133

PREAMP (via ADC)
Frequency response 4Hz-62kHz
Distortion (24bit) 0.003%
Gain x8 (18dB)
Overload 2V in / 7V out
Digital
Frequency response 4Hz-73kHz
Distortion (24bit) 0.024%
Dynamic range (EIAJ) 114dB

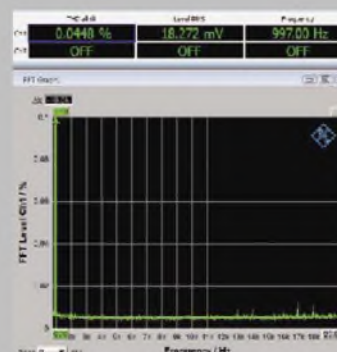
Phono
Frequency response 5Hz-20kHz
Distortion (24bit) 0.12%

Gain (MM/MC) x475 / x4500
Overload (MM/MC) 38mV / 4mV
Noise (MM/MC) -79dB/-63dB

FREQUENCY RESPONSE



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- easy but revealing sound
- superb LP processing ability

AGAINST

- large, heavy power amp
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Beta Test

Martin Pipe tries the Esprit Beta, a mid-price interconnect cable from the middle of France.



New to my ears are Esprit, who have been making cables in rural central France for a quarter-century. As is so frequent in this industry its founder, lifelong “music and hi-fi fan” Richard Cesari, was inspired by a desire to satisfy his personal requirements. His modus operandi was to “select the best materials for every part of each type of cable, and then assemble them in the best possible way”. Cesari draws an analogy with that other great French export, cuisine: “If you don’t know how to combine the ingredients, you can have the

best produce available...yet get it all wrong”.

Evidently, he got the recipe right. Friends and local enthusiasts heard the difference those home-made interconnects made to Cesari’s hi-fi system and, impressed, asked him for ones of their own. As the word spread, Cesari - whose daytime job was in ‘electro-mechanics’ - decided to turn his hobby into a business. Twenty-five years later and Esprit is responsible for no fewer than nine hand-made ranges that cover all bases – power, ‘speakers and interconnects both digital and analogue. At the top of the tree is the

“laboratory-standard” Gaïa range, where a 1.8m pair of phono-to-phono interconnects will set you back a jaw-dropping £15,800!

We’re however looking at the more modest ‘Beta’ range - one step up from Esprit’s entry-level ‘Alpha’ proposition. A 1.8m pair of Beta phonos, as reviewed here, works out at a rather more affordable £540. They are, within the constraints of their pricing, designed to deliver a “neutral but fluid sound, combined with accurate details”. To meet this objective for the Beta, Cesari specifies 5N copper (“99.999%

pure OCC”) for the conductors, structured “symmetrically” (rather than coaxially) for the best result. In other words the individually-insulated signal and ground wires are laid side-by-side, giving the Beta an ‘oval’ cross-section. For the insulation, Esprit research determined that the use of two different synthetic materials - “one soft, one hard” - worked best.

Also unique to Esprit is what Cesari calls “progressive shielding” - an



innovation that has trickled down from the firm’s higher-end ranges. The goal is to combine the best of shielded and unshielded cabling to optimise factors like dynamics, tonal balance and noise. And how is this achieved? “On the first third of the cable”

we’re told “there is no shielding. One layer of shielding covers the next third...while on the final third, two layers of shielding are used”. The result, Cesari claims, is a “true combination of the qualities of shielded and unshielded cables in terms of silence, bandwidth, dynamics and details”.

That’s possibly why the Beta is a rather substantial interconnect - with woven nylon outer jacket, it’s 12mm wide and rather heavy. Take care if you’re using it with, say, a headphone amplifier or phono stage as small items could be dragged to their deaths! The ‘lockable’ silver-plated phono plugs fitted to both ends of the Beta are of excellent quality.

Here, the plug’s collar is rotated to ensure a tight fit to the socket barrel. In my case, the sockets belonged to an Arcam A49 integrated amp, and thence Quadral Aurum Wotan VIII speakers.

Sources locked to the other end of the cable - which is fitted with a ferrite RF noise canceller at the output end - included a Chord Hugo TT DAC, fed from a PC via asynchronous USB, and a Cambridge Audio Edge NQ Network streamer. Another was an analogue FM tuner, which was used - in addition to Radio 3 listening - as a quick and easy source of interstation pink noise for a day or so run-in. Not a musical experience, admittedly, but recommended nevertheless; I was told that although Esprit products “have been run in at the factory in France, they take a bit of burning-in” to give their best.

This done, I could now enjoy the music. The claims made by Esprit can be justified, the Beta being able to convey micro-details without compromising neutrality. The maverick screening approach taken by Esprit works, no problems with induced noise being evident - even during quiet passages. Lead guitars, vocals and the sheer range of keyboard instruments played by Rick Wakeman in the timeless Yes recording of Close to the Edge (24-bit) were effortlessly-communicated. Yet for all this, no tonal imbalance that may favour midrange frequencies is introduced.

Furthermore, Wakeman’s pipe-organ solo, which was recorded in Barbican’s medieval St Giles-without-Cripplegate Anglican church, sounded palpably richer and fuller than I’ve heard via some other interconnects. A 1993 recording of Sibelius’ Finlandia (Sargent/Vienna Philharmonic, CD rip) and Radio 3 concerts left me with the distinct impression that the Betas can convince in imaging terms, while Talking Heads’ Remain in Light (24-bit) proved - and compellingly so - that they are no slouch when it comes to pace and timing either.

CONCLUSION

I haven’t come across Esprit cables before, but am glad I did. The Beta, which eschews traditional coaxial practice, is a fine musical performer and worthy of consideration if you’re after a mid-market phono interconnect.

ALSO AVAILABLE
 £300 (0.6m);
 £420 (1.2m);
 £660 (2.4m)

ESPRIT BETA (RCA) £540 (1.8M VERSION, AS REVIEWED)

OUTSTANDING - amongst the best,

VERDICT
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 - excellent build quality

AGAINST
 - rather heavy
 - impractical for smaller items

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Gratefully yours!

Martin Pipe revisits Nakamichi's 550 'Dual-Tracer' portable cassette deck – the source of many a bootleg.



Way back in the 1970s, bootlegging Grateful Dead concerts had become a serious pastime for a fair few of our American friends. Fans went to a considerable amount of trouble to get battery-powered recording equipment into venues. The band seemed to turn a blind eye to the practice, not least because the bootleggers followed an unwritten 'code of honour' as to what they did with their recordings. Tapes of live performances could be traded between fans - none of whom could have been expected to attend every gig - but not sold for profit. A number of other bands were similarly-permissive. Non-commercial bootlegs, as they saw it, were a valuable promotional tool that 'spread the word', thereby helping to sell records and future concert dates.

Making bootlegs – 'recordings of independent origin' – of acceptable quality had been relatively-easy since the mid-1980s, thanks to a succession of hardware including the Sony Walkman Pro, Minidisc personals

and solid-state digital recorders. Some bootleggers managed to sneak in more capable recording gear - a machine like Sony's TC-152SD portable stereo cassette deck, together with the necessary microphones, wasn't unknown. The results of their efforts can be astoundingly-good; fitting into this camp is my copy of a November 1976 Nottingham concert by Tangerine Dream - famous, like the Grateful Dead, for improvised jams that you won't find on albums.

By the mid-1980s the Grateful Dead went to the trouble of establishing a 'tapers' section'. Within these defined areas, recording enthusiasts with special tickets could set up their microphones and tape machines before the concert began. As a result, recording enthusiasts with a penchant for the Grateful Dead's flavour of rock were not afraid to bring along more exotic and valuable equipment.

And that brings me to the robustly-constructed Nakamichi 550 'Dual-Tracer' cassette deck, which was the de facto choice of

serious enthusiasts for several years. Bootlegging apart, applications of the 550 included capturing the sounds of nature, real-life and special events 'in the field', audio documentaries, reportage, home movies and pre-Walkman 'on the move' listening with headphones.

By the time the 550 was launched in 1974 Nakamichi was already famous for making what was then arguably the best cassette deck in the world - the 'Tri-Tracer' 1000. Nakamichi quality could now be enjoyed on the move; the 550 had the Japanese firm's unique "focused-gap crystal-permalloy" head technology, although unlike the 1000 it was a 2-head implementation (hence that 'Dual-Tracer' moniker).

At a not-insignificant £300 or so in 1977 the 550 was much cheaper than professional recorders and could yield 45 minutes of uninterrupted recording from a C90 cassette. As it neared the end, the tape could be quickly flipped over or swapped for a fresh one during the audience applause so you needn't miss anything.

With decent chrome tape ('SX' in Nak-speak), most listeners would be unable to tell a 550 recording apart from one made with a quality reel-to-reel. Its 40Hz - 17kHz (+/- 3dB) frequency response and 2% THD (0dB) specs were outstanding for the time, bettered only by the 1000. Meanwhile, the wow-and-flutter spec (0.13%, peak-weighted) of the servo-motor driven transport was comparable to that of many domestic reel-to-reels.

The 550, released long before pure-metal formulations came along, also caters for ferric ('EX') tape. It boasts Dolby B noise-reduction and an adjustable headphone amp for monitoring - no inbuilt speaker, as found on the contemporaneous TC-152SD - as well as an effective 'limiter' to prevent sudden peaks from overloading the microphone preamp and saturating the tape. This could be problematic when recording live music with a wide dynamic range, such as orchestral works.

Also contributing to the 550 legend are onboard unbalanced preamps of more than competent design - they are low-noise and have decent dynamics. A quarter-inch jack caters for a third mono 'blend' mike, which is intended to 'fill in' the centre of the stereo image or highlight soloists.

Along with large peak-reading meters with a 45dB range, such well thought-out features helped to endear the 550 to recording

enthusiasts. Said meters could be backlit at the push of a button to check on recording levels - which are adjusted with concentric knobs for the left/right channels, and a separate control for the blend mike - in the dark. Another neat feature for the clandestine taper is the 'programming timer'. Set its duration with a slider just above the tape counter, and



The neat internal layout of the Nakamichi 550. At top can be seen the battery compartment containing eight 'D' cells giving a total of 12V. Directly beneath is the metal box that contains the motor control and DC-DC conversion circuitry. Such screening is necessary to prevent interference from contaminating low-level audio signals.



Nakamichi's well-engineered transport features a large flywheel, belt-driven from a servo-controlled motor, and the manufacturer's proprietary tape heads. Nakamichi used the same mechanism in the machines that it made as an OEM (Original Equipment Manufacturer) for the likes of Fisher, Elac, Sansui, Sonab and Concord...as well as Leak and Wharfedale.



The Nakamichi 550 is built entirely around discrete components. This is a good thing, because it's easier to find substitutes for old transistors than source long-obsolete integrated circuits! This picture shows the long spring-loaded record/play switch, the 'fork' of which comes into contact with a prong on the deck, and the plug-in Dolby B board.



On the rear panel 400Hz tone generator and level presets (separate ones for normal/EX and chrome/SX tape) are used to calibrate the deck's Dolby circuitry. To the right are DIN and phono sockets that allow the machine to interface with conventional hi-fi or other tape decks.

Nakamichi intended the deck to be used as much in the home as outdoors, courtesy of the (supplied) 12V mains power unit that plugs into the 4-pin DIN socket. There's also a switchable multiplex filter, to avoid audible 'beats' when recording from stereo FM tuners lacking a 19kHz mpx filter.

a front panel LED starts flashing after the preset time has elapsed. Judiciously-used, it will warn you when your tape is about to run out.

On the back of the unit are level-calibration presets for EX and SX tapes (a 400Hz oscillator is provided for the job). However, the machine would need to be optimised by a

supply voltage (17V) needed to power circuitry at least as good as you would find on a contemporary mains deck. Yet the 550 can deliver 15 hours of use from a single set of batteries!

Even today, the 550 can still make fine recordings with an engagingly 'analogue' and open sound - if, that

Until recently, Walkman Pros and Nak 550s could be picked up for less than £100. The trendy cassette revival seems, alas, to have ended the bargains. Both of these fine machines now routinely fetch more than £300 second-hand. And if you have to choose between the two? Bigger is better, to these ears!



This circuit board, which is screened by a metal box, contains the motor speed-control servo and DC-DC converter. It generates 17V from the batteries (or alternative 12V DC power source). The 550 can nevertheless deliver an impressive 15 hours of use from a single set of batteries.

dealer for your choice of tape (unless you're using the tapes for which it was set up) as no user fine-bias adjustment is available.

Phono and DIN sockets connect the 550 to a hi-fi system, a switchable multiplex (19kHz) filter being available for taping concerts from FM radio without 'whining'. Like many homedecks, the solidly-built 550 is a heavy machine. Without batteries, it weighs over 5kg; no wonder Nakamichi supplied a substantial shoulder strap!

Talking of which, the 550 can be powered from no fewer than eight 'D' cells of the sort you might find in an old-fashioned torch or, courtesy of a 4-pin DIN socket, a 12V power unit or car battery. Inside the machine is a shielded DC-DC converter, for which Nakamichi claimed 90% efficiency. This generates the higher

is, you can still find decent tape. I took out my 550 to make 'ambient' recordings with a decent Sony stereo mike, and the result - played on a modern hi-fi system - was most satisfying.

Thanks to Nakamichi's proprietary record/playback head, pre-recorded tapes benefit from a surprisingly extended top-end and deep, articulate bass. Pitch stability is also excellent, thanks in part to the transport's substantial flywheel. Indeed, this old machine can actually outshine the WM-D6C Walkman Pro - which I examined in Olde Worlde several years ago. Sony's finest is however considerably lighter (640g) and less bulky (181x40x95mm, against the 550's 311x89x350mm) than the Nak. Furthermore, the newer machine also includes Dolby C and is compatible with metal tapes.



The programming timer is an unusual recording aid. Judiciously-used it will warn when the tape is about to run out. Each notch on the slider corresponds to 5 minutes - and a front panel LED starts flashing after the preset time has elapsed. Simple but effective - like the mechanical tape counter, which does not forget where it is when the deck is powered down.



Gallic charm

The Borea BR8 floorstanding loudspeaker from Triangle of France charms Noel Keywood.

Long ago Triangle (France) made loudspeakers that scythed the ears, there was so much treble. Then, I was told, the founder/designer was invited to relinquish his post when funding came in from an industrialist who owned a few chateaus and accompanying vineyards. Their speakers changed overnight to become both more sophisticated and accurate, garnering a string of top reviews from us. With this as background we were pleased to secure their recent Borea BR08 floorstander for review, price just £999.95.

That the BR08 looks much like B&W's 603 S2 also in this issue is pure happenstance. We didn't deliberately select floor standers that look alike, more that a white baffle against a light oak veneer cabinet is current trend – and it does look smart, that's for sure. Beneath the skin there are technological differences, but the biggest and likely most influential to most potential buyers is price, the Triangle is inexpensive by market norms and 30% cheaper than the B&W – quite a saving.

The BR08 has a similar array of drive units, comprising silk-dome tweeter to handle highs, a synthetic cone midrange unit and two synthetic cone bass units. Triangle quote their operating ranges as up to 215Hz for the (black) bass/midrange units, the (white) midrange unit extending this to 1.5kHz above which it rolls down smoothly measurement showed, the tweeter handling all above. Making this a three-way floorstander with two bass units and the potential for powerful bass.

The bass units are loaded by a reflex port that sits on the front baffle, not the rear as is usual. This potentially sends internal cabinet colouration direct out to listeners, the reason front ports are rarely used, but measurement showed Triangle's port was free of such

colouration.

Standing 1020mm high, 206mm wide and 314mm deep the cabinet is sizeable, weighing a reasonable 18.85kg. There are optional pedestal plates for better stability, and soft feet or spikes that screw into the cabinet direct or the pedestal plates to give the 'speaker firm placement.

The finish of our samples was superb, their light oak veneer having a coarse wood grain. I've been told in the past that what I thought was artificial veneer was in fact real wood veneer with protective matt lacquer (whoops — my mistake!) and Tannoy supplied a tub of beeswax to be rubbed into their veneered monsters, suggesting real wood veneer needs protection. So the raw wood finish here is certainly a draw, possibly with drawbacks.

Connection is through single-wire terminals, so no ability to bi-wire or bi-amp. – or to reduce treble with 1-2 Ohm resistors as I tend to do.

Finally, the specs claim a massive 92dB sound pressure level (very loud) from 1 Watt and that's what we measured. Meaning the BR08s need little power, 40 Watts being more than enough. You can drive a loudspeaker this sensitive with 9 Watts from a single-ended valve amp for example. The Triangles are more sensitive than all others of their size and type, being comfortably ahead of rivals in this respect.

SOUND QUALITY

Initially I drove the BR08s from an Audiolab 6000A Play amplifier, through Chord Company Signature Reference loudspeaker cables but the sound was a tad lifeless and puzzlingly "not right". Swapping over to a new Creek Voyage i20 brought instant happiness: now the BR08s sounded lovely. Being sensitive I could not help but hook up our Icon Audio Stereo30 SE single-ended valve amplifier afterward and this

combination was superb, showing just how good the Triangles can be.

Like all synthetic cone loudspeakers the Triangles needed a long run in; we gave them 72 hours. As measurement suggested they were tonally quite dry – no warmth – but even and clean. What initially confused me was they seemed a tad soft, almost veiled, but this was after using the B&W 603 S2s of which I had retained memory I suspect. The Creek amplifier showed that they were not veiled, but mild yet revealing in a very subtle way. As I settled into this delivery, supported by the superb Creek (well, it is £5000 against £500 for the Audiolab) my listening notes became studded with the words "smooth" and "svelte". Josefine Cronholm's vocals were silky yet I could hear right into what was



Two synthetic cone bass units work in conjunction with a front firing port to cover bass frequencies up to 200Hz.

going on, without having it all thrown at me as modern shouty 'speakers tend to do. The BR08s were both relaxing and revealing at the same time.

The deep bass line in Holly Cole's The Train Song came over well, being in good balance, but there was some boxiness here when I wicked up the volume. And with Loreena McKennitt's Gates of Istanbul I felt bass became a little soft and



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ponderous as volume went up, likely due to port distortion since the port is relatively small.

This isn't meant to be a comparative review against the B&Ws, but it was interesting how they had better bass quality but were not as slickly smooth as the Triangles. Loudspeakers are a terrible set of trade-offs: choose your poison! No doubt the B&Ws were most dramatic, but no doubt the Triangles were more sophisticated.

And with our Icon Audio Stereo30 SE valve amplifier they really shone. Now I was getting the dynamism and spaciousness of the valve sound, but the Triangles



A synthetic cone midrange unit is complemented by a silk dome tweeter. The midrange unit works from 200Hz up.

were conveying the music with slick and easy precision. So glad I bothered to change amps with these 'speakers because they are mild and gentle, yet quietly revealing and – got to use the word again – svelte. No crash-bang here, just a nicely correct view of the music, un-enhanced. I think that is why I needed a high quality amplifier with similar properties, ones the BR08s could both reveal and support.

There is a suggestion, from measurement, that deep subsonics are available. In our large room (6550 cu ft) I did not get to hear them, but I suspect in a room 18ft long with a first mode at 31Hz the Triangles would rumble when placed against an end wall.

CONCLUSION

Quietly impressive is how I'd sum up the sound of Triangle's BR08 loudspeakers. Coolly accurate, subtly smooth and easy on the ear; no shouty midrange, no piercing treble, just the music. Add in attractive styling and finish, enormous sensitivity making 40 Watt amplifiers more than enough, plus a price just under £1k and I can't help think that Triangle may be pitching these as loss-leaders to gain traction in the UK's saturated loudspeaker marketplace. Quite a bargain – and well worth hearing.



A simple rear panel with no port (it's on the front) and single mono-wire terminals, so no ability to bi-wire.

MEASURED PERFORMANCE

Triangle's Boreo BR08 has impressively smooth frequency response, our third-octave pink noise analysis shows, with grille off. This is best-case, which was 20 degrees off-axis. When measured on-axis treble rises by +2dB above 10kHz, giving a slightly brighter sound when toed in toward listeners; the BR08 is best pointed straight down a room. It retains strong upper mid-band and treble output for good delivery of detail and sharp imaging. With grille on, the upper midrange dipped slightly (-1dB or so) around 6kHz.

Further down the frequency range the lower midband rises a little, the front port (red trace) contributing to output around 200Hz. It also delivers very broad output from 100Hz down to a low 30Hz, this breadth of bandwidth suggesting very strong damping across the bass region. The impedance curve confirms this by absence of high peaks around port resonance (40Hz), making the 'speaker a 5 Ohm resistive load with minimal reactance (energy storage). This is a notionally ideal situation as an amplifier

load. Likely it is front firing because of its contribution.

Front firing ports carry a potential penalty in making box-boom colouration obvious, but the red port trace shows little output above 200Hz, suggesting little of this effect.

Broad bass output peaking at 30Hz from the port suggests strong but well damped deep bass from the Boreo. As low bass output does not rise, it is probably best positioned close to a rear wall, in a medium (16ft long) or larger room.

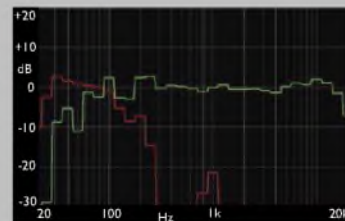
Sensitivity measured a massive 92dB from one nominal Watt (2.8V) of input, meaning the BR08 will go loud from just a few Watts: just about any amplifier would suit, 40 Watts being plenty enough. Overall impedance measured 5 Ohms, using pink noise to represent music, with d.c. resistance of 3.9 Ohms (set by the bass units) and our impedance trace shows this.

Triangle have engineered the Boreo's front facing port to play a strong role in

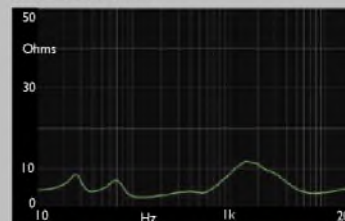
bass control and output, tuning it to run very low for deep bass. Further up the band output is smooth and accurate. **NK**

FREQUENCY RESPONSE

*Green - driver output
Red - port output*



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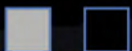
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"You can't get an accurate cake, you can get an accurate loudspeaker"



Noel Keywood

In the last issue I said the term Reference Monitor was of little useful meaning, having become de-based. But any showroom needs a useful reference loudspeaker so listeners can hear what correct balance sounds like.

So here's a funny for you: Wharfedale's uber-budget Diamond 12.1 reviewed in the next issue can be used as a reference monitor. Meaning if you want to run through a listening session with loudspeakers at a dealer, this little thing can be used by which to judge others. I'm not trying to promote the Diamond 12.1 here, so much as weave an argument – discussion – around the whole topic of loudspeaker accuracy and why you may – or may not – want it.

Weirdly, a reference monitor might not sound so good to you – and this is where the issue gets peculiar, even difficult. It's a reference for what? Usually frequency response, so lows and highs are all in correct proportion. But there's more to consider.

I recall hearing huge IMF transmission line Reference Monitors back in the 1990s. These ground shakers, with the rumbling bass of a Tube Train, were indeed accurate, but their sound was so unique that they could not be a reference standard. Nothing was going to sound the same in a showroom, so no point in wheeling them in for this purpose.

Big transmission lines go very low so you might think they'd be a good bass reference – but I was using unique Celestion SL6000 open baffle subwoofers at the time that went lower – but had no cabinet. Chalk and cheese. Little point in a reference that no other loudspeaker could mimic and was challenged by other ways of producing bass.

So first hurdle is that a Refer-

ence Monitor needs to be reasonably representative of everyday loudspeakers, meaning those with a ported (reflex loaded) cabinet of domestically acceptable size.

That eliminates big transmission lines and big Tannoys for a start. They may have flat frequency response and sound fantastic in a big room but they are far from ideal as references in a dealer showroom. More a source of confusion I'd suggest.

A loudspeaker I would use as a quality reference is Martin Logan's Classic ESL-9 with its 12in wide XStat panel. An extraordinary loudspeaker for its deep revelation, lack of colouration, phase coherence, stereo imaging and much else. This is a loudspeaker with which you can truly judge source quality, aided by the fact that electrostatic panels produce around 0.1% distortion where conventional loudspeakers hover around 0.3% my measurements show.

Trouble is an electrostatic panel does not sound like a box loudspeaker: being an open panel there are no internal cabinet reflections to give the box sound. Worse, and a complicating factor, Martin Logan do not engineer for flat frequency response, especially in their big panels, because they would sound too bright. Reason being the whole panel radiates treble, it's not coming from a tiny one-inch (25mm) dome tweeter. This makes radiated power higher and it must be reined back by rolling down the pressure response slowly and smoothly.

All very different to a normal box loudspeaker and unrealistic as a reference because of this. No loudspeaker in a showroom demo will sound the same.

The BBC once produced a reference loudspeaker, the LS3/5a, and here we are getting into a more realistic incarnation of a useful reference.

It was for outside broadcast work in cramped conditions, meaning small broadcast trucks. Still not representative of typical domestic listening conditions, but closer to everyday experience than so many other reference monitors methinks.

The small Wharfedale Diamond 12.1 has similarly been tuned for accuracy, which surprised me. These days most loudspeakers come with added treble for extra zing. It won't give 'reference bass' but otherwise is a useful guide to accuracy in a showroom, price being no barrier to its presence; any dealer – perhaps every dealer – should have a pair.

But do you want "perfect" sound? Hmmm... We all think we do and that is the background mantra, but in real life what most listeners want is visceral excitement: fast tight bass and ringing cymbals, vocals that jump out.

An accurate loudspeaker does not do this, inaccurate ones do it better. Raise bass output a bit, lift the upper mid-band (today's latest design idea) and make certain the tweeter can be heard tweeting.

I've done all this in the past when designing loudspeakers and it is very simple: just tweak the crossover components. It's a bit like cooking: you have plenty of ingredients: choose them and use them for best taste.

But not everyone else may agree. The cooking analogy breaks down here: loudspeakers should ideally reproduce what pressure sensitive microphones pick up and to do this they need to be accurate. You can't get an accurate cake, but you can get an accurate loudspeaker.

Whether an accurate loudspeaker is a Reference Monitor is hard to say, but some designers still cling to the idea of accuracy and I for one are glad they do. ●

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"Sales have rocketed – last year's 4.3 million sales figure will be beaten"



Paul Rigby

Right now, because of the Pandemic, many musicians have seen their live work killed, stone dead. Some are looking to find other ways to keep cash coming in by digging around their attics to see what rare pieces of memorabilia can be sold for extra pennies.

Artists are finding it tough but those who think on their feet are finding a way. Artists have been performing for fans on social media from their home. I saw one artist who actually did go on tour...around his house. The first concert was his living room, then the kitchen and so on. He even had a T-shirt printed with the classic dates and venues format you might expect to see, printed on the back. And each venue on that T-shirt was a room in his house!

High St. shops who think on their feet are also doing OK. A contact from the UK record distributor Little Amber Fish, told me of one record shop who does door-to-door deliveries during Lockdowns (and who can tell when the next one will pop up out of the woodwork, eh?). His customer base supports him because he is flexible in his business practices. Apparently this chap also delivers turntables to your door, from his shop. And good for him.

That was confirmed by the BBC. Interviewing an independent record shop, Banquet Records in Kingston, the owner, rather than look to re-open his shop, decided to deal with its customers...in the car park.

The owner, Jon Tolley, said that having to restrict customers' browsing in his "small and dingy" shop felt "too regimented and not what we're about. We're still serving people, just differently" he told the BBC.

Speaking of direct sales, vinyl is often sold directly from artist's websites to their fans.

Actually vinyl in itself is going great guns. Overall sales are up by 10% with vinyl sales due to break through the £100m mark by the end of 2020. That figure will be a best reported income on the format since 1990.

What's even more interesting is that the sales of physical formats took a dive in March when the Lockdown was first imposed. Since that time though, sales have rocketed which means that last year's 4.3 million sales figure will be beaten.

Another source of vinyl sales, Discogs, also reported that vinyl sales had risen by 33% during January and June of this year, when compared to the same periods last year, while CD and cassette sales weren't too far away either, at 31% and 30%, respectively.

"As sellers onboard more stock to the Marketplace, buyers turn to e-commerce with a desire to support small business and music fans dig further into their own collections, visibility and availability are greater than ever" the report said. "This trend should continue to grow as new customers become part of the Discogs Community and buying habits shift for the long term".

Discogs shops and suppliers also added to their catalogues: "We saw an average yearly 30% increase in submissions every month since March 2020".

According to my contact at the label Music on Vinyl, pressing plants can't cope. They are "...completely rammed with a long waiting list". When the Lockdown occurred my contact exclaimed "it was as if someone turned on the tap". Sales shot through the roof and while High St. stores found it tough

because footfall dropped, Internet-based retailers did and are doing good business.

Talking to the Guardian, Drew Hill, managing director of Proper Music, the UK's biggest independent distributor of vinyl and CDs said "We have seen 250% growth from the bottom of lockdown to where we are now. I thought it could be catastrophic for the industry but during lockdown the kind of people buying records also probably went to a lot of gigs. They can't do that so it seems fans are spending the money they used to on going to gigs each month on records".

And the artists themselves are seeing the fruits of that upturn. "Mail order has been a saviour for stores" said lead singer for the band The Charlatans, Tim Burgess, who launched his solo album 'I Love the New Sky' recently. "I'm so thankful to all the shops that mailed out my record".

"Record shops have had a hard time over the years, they've had to adapt to streaming and the digital world" said Burgess. "This is another tough thing for them but records are very resilient and so are the people who work in record shops".

Burgess signed up to become ambassador for Love Record Stores, a 24-hour "online party" designed to encourage music fans who can't get to a store to shop online with their local independent retailer (www.loverecordstores.com).

More than 130 stores offered exclusive, limited edition vinyl on their online platforms from the likes of Oasis, Radiohead, Robyn and John Grant.

Of course, times are still tough and the music and retail industry depends on the support of you and each other but, for those prepared to change and adapt, they're hanging on in there. ●

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"Early laserdiscs deteriorate with age due to laser-rot"



Martin Pipe

Maintaining vintage gear gets more difficult as the years pass, even if it's in full working order. CD players, turntables and tape machinery are one thing – but what about kit that relies on services?

My WorldSpace satellite radio is today only worth keeping for the FM/AM coverage its manufacturer also threw in, seemingly as an afterthought. Analogue satellite TV and DSR (Digital Satellite Radio) set-top boxes are completely useless today, because there's nothing for them to receive any more. Until Sky Digital took over, millions of analogue Astra systems (hello Amstrad!) must have been sold in the UK. What has happened to them all?

An earlier saga can be recalled by anyone lumbered with BSB (British Satellite Broadcasting) kit after the service 'merged' with its rival Sky Television in late 1990. After a short period, during which BSB's channels were replaced by their nearest Sky equivalents, transmissions ceased...and screens went blank.

To recover losses, BSB sold BSB's Marco Polo satellites to Scandinavian operators; I campaigned, through Maplin's magazine, for the BBC and IBA to take them over instead. BBCs 1 and 2 (without regional opt-outs), a 'composite' ITV and Channel Four could have been beamed into homes across the nation. Those plagued by 'ghosts', or too far from terrestrial transmitters, would get fantastic pictures courtesy of BSB's then state-of-the-art D-MAC technology.

The NICAM digital audio that also formed part of BSB's high-tech proposition was also better and, as it supported multiple sound channels,

national radio could be thrown in.

Although nothing came of my suggestion, the BBC started carrying analogue radio via Astra satellites a year or so later; television eventually followed in 1998, when UK digital broadcasting began.

Some BSB receivers did however get a stay of execution. Enthusiasts modified them for European services using the slightly-different D2-MAC; all you had to do was replace the EPROM chip containing the operating software. Aim a suitable dish at the relevant satellite and additional viewing choice was yours.

I acquired a BSB box in the early 1990s for peanuts and carried out the necessary conversion. Among the D2-MAC channels I could now receive was MCM. This was basically France's equivalent of MTV, the iconic pop channel that Dire Straits referenced in Money for Nothing. Music benefitted from the digital stereo audio, which sounded cleaner and fuller than MTV's companded analogue soundtracks. But it didn't last. When satellite channels migrated to digital, that venerable BSB box finally became useless.

With older tech, things are easier. AM and FM radios may be living on borrowed time, but relatively-simple modulators will keep them going on a 'closed-circuit' basis.

Enthusiasts are reviving Teletext, the pre-Internet TV information service. Replacing the bulky minicomputers that underpinned Ceefax and 'Oracle' is a Raspberry Pi running teletext software under Linux. Vintage teletext is however locked into home recordings of TV programmes. They have written software to capture data and recover pages, which represent a fascinating glimpse into life at the time – as well as pop charts, and music reviews.

A more reliable (for now!) source of teletext is the BBC's David Attenborough-narrated 'British Garden Birds' analogue laserdisc. Evidently, 'Auntie' had sussed that the LP-sized format could carry error-free teletext data, as well as near-broadcast video. Those with compatible TVs could 'dial up' info about the bird currently onscreen, via contemporary Ceefax pages. I'm trying to capture this data for posterity, as early laserdiscs deteriorate with age due to laser-rot.

Even 'DiY Nicam' isn't impossible. Affordable UHF modulators with Nicam-728 encoders are pitched at budget cable headends, and at least two companies are producing Nicam encoder boards. I hope to get hold of one, and bring my old Nicam VCRs and TVs back to life. When Nicam was new, I retrofitted a Ferguson 3V43 hi-fi VCR (Olde Worlde fodder?) with a Maplin decoder. I'll never forget the thrill of hearing stereo TV sound for the first time!

New encoders aren't the only route to Nicam nirvana; decommissioned broadcast kit occasionally surfaces at amateur radio rallies. However it tends to be bulky, power-hungry and often in need of external signals that aren't easily-obtained at home.

Consumer electronics is becoming increasingly-dependent on sophisticated online services, and so future problems are inevitable. Devices become redundant when services evolve beyond their capabilities or disappear altogether... unless, that is, third-parties can provide alternatives. There's still value in vintage gear but I wonder how today's kit will fare as apps and such like expire. After all, software goes out of date too. ●

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"How does the Pioneer SA-9100 sound after repair? Well, pretty good actually"



Dave Tutt

I wonder how many Pioneer SA-9100 amplifiers are left in the world? This is a 1974 brick, being heavy, brushed aluminium, festooned with controls and made much like higher-end hi-fi of the time, with loads of internal screening and the popular Teak wooden-wrap case.

What else? Well, switching for three pairs of 'speakers and two MM turntables and two tape recorders, microphones – the works. It was probably a bit of a classic of its time although somehow I doubt anyone would look at it twice today.

I have one here in bits because its power supply regulator circuit has been fried, requiring a rebuild. The result was that there was a 10 volt offset on the output of both left and right channels and so it was obvious that the protection circuit was sort of working as the 'speakers were isolated by the relay.

I couldn't get sound out of it because there were so many poor capacitors, along with suspect transistors that were wrong types. The protection circuit had been got at, as had other parts of the amp., but once the limitation of what had been done to it by a previous repair had been identified, it was easier to see what needed to be done.

The power supply board, as is common with a lot of power circuitry that is 40 plus years old, was roasted. Paxolin is not a good long term solution with hot or warm circuitry and after 40 years you can't really expect it to survive without some sort of damage. However, the burns were just below the larger resistors that had to be swapped out (there wasn't a lot left of them) so replacement resistors, in this case a double resistor to spread the heat dissipation over a larger area, and replacing the entire capacitor collection on the board

seemed a sensible step.

It also seemed sensible to replace those on the protection board too, along with suspect transistors.

I wondered what else might be wrong at this point. There are another five capacitors on each of the power amp boards that should be fixed as they are known to cause issues, but getting to the preamp caps. could be more difficult so I decided to leave these until I had worked on the rest.

After quite a lot of work and many component changed it was time to switch on and see what was happening. Not quite sure how the front panel lights work but the protection light came on, then flickered and went off as the relay for the speakers clicked in so at that point it was clear that the outputs were connected through to the speaker terminals. Hmm...

Some measurements were required. First the regulated power lines all measured okay, 16 Volts, 42 Volts, 24 Volts, 35 Volts and 13 Volts all present and correct and not much more than 100mV on the speaker terminals – a good start. Input and 'speaker connections told me that the right channel was still not right but the left was loud and clear – and I mean loud! Bottom-end welly for a single channel driven was out of all keeping with the 60 Watts or so power.

So what was wrong with the right channel? Pin 16 on the power amp board was open circuit which being the collector of the PNP output transistor wasn't going to help. A little soldering on the wire wrapping terminals made the amp properly alive.

What to do next? Well, it needed to be run for a while to bed in the capacitors. It also needed a little adjustment of the output stage

DC offset and possibly the standing bias current as with all the years on its clock there may be some drift. Bias setting was different on the channels but it was easy to set, as was the DC offset.

I also applied rather a lot of switch cleaner as there are a huge number of open switch wafers with years of dirt on their contacts. The tone controls and filters are extensive, though not very severe and all switched rather than more usual potentiometers – somewhat unique.

I have to say that amps of this age with all that tinned copper wire, plus wire wrapped terminals on printed circuit boards that cannot be worked on without some lengthy disassembly does stretch the temperament somewhat!

I also saw the two core mains cable was not double insulated so that most definitely had to come out with a replacement in keeping with modern safety requirements. The 2 pin flat unswitched American power outlets on the back need to go too.

One remaining issue was the lack of a power-on light. This was an 8 Volt wire-ended bulb running with a.c. so some rectification and a white LED in the front panel made more sense.

So having got to more or less the end of the repair how does it sound? Well, pretty good actually. I can't say it has a modern sound but it is certainly powerful, warm in a semiconductor sort of way with plenty of bottom end power – with or without tone controls engaged. It is quiet on all inputs, being pretty much noise free.

If you find a working Pioneer SA-9100 amplifier it is worth giving a try. There may be plenty to fix, as I found, but it is an old classic and satisfying to own. ●

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Bi-wired for sound

Martin Pipe bi-wires his 'speakers with the latest version of the Atlas Hyper Achromatic Bi-wire Z 2-4 cable.



Last month, we reviewed the £350 Ailsa RCA interconnect from the Kilmarnoch-based firm Atlas. As well as interconnects, Atlas designs and makes speaker cables from scratch. One of their latest is a new version of its Hyper Bi-wire, that carries the "achromatic" (free of colouration) branding, fitted with cold-welded (crimped) 'Z' banana plugs; spade tags can be fitted to one or both ends if desired. Choice of terminations must be specified when ordering, along with length (our £450 review pair was 3m).

The Atlas bi-wire construction is interesting. At one end of the cable

are separate pairs of plugs for the LF and HF sections of a bi-wireable 'speaker. Loudspeakers bridged with wires or plates must have them removed before Hyper Bi-wires cables are installed.

At the other end of the Hyper Achromatic Bi-wire Z 2-4, to give the cable its full name, is a single pair of Z plugs (or spades). What lies between is what makes the cable special. The whole point of bi-wiring is that you can use cable optimised for carrying treble/upper-midrange and lower-midrange/bass. What's best for one range is not necessarily good for the other. Atlas prefers to use solid-core for the former, and

stranded conductors for the latter. In both cases, UP-OFC (ultra-pure oxygen-free copper) is used.

The clever bit is accommodating both sets of fluorinated ethylene propylene (FEP) insulated conductors within the same PVC outer jacket, which is covered in patterned woven-cotton. Cotton filler forms a part of the construction.

At the amplifier end, both solid-core and stranded wiring terminate in the same plug. At the other end, the two varieties are separated and routed to separate plugs - intricate rubber 'booting' makes the job look neat and professional. Another version (the Bi-Wire 4-4) has LF and HF plugs at both ends.

Atlas has, I was told by managing director Kevin Kelly, been using the same basic technique for the past twenty years. The design is proven. The Achromatic Z plugs are described as being of "low-mass, self-

the review cables. At the amp end of one cable both plugs came off, revealing the combination of solid-core and stranded wiring. Atlas was very apologetic, and rushed me a replacement pair - which have proved fine. Kelly admitted that my situation was "extremely embarrassing" and reckons that the "incorrect ferrule" had been accidentally-fitted during manufacture. I'm happy to put my experience down to a rogue sample.

I could not fault the sound, with the aforementioned 'speakers and two different varieties of

prominent. Midrange, via the Atlas, also impressed with its ability to communicate. Vocals, for example, were immediate...and with some music intimate. In this respect, the Hyper Bi-wires didn't disgrace themselves in exalted company.

However, my physically-larger and more expensive cables were noticeably better when it came to lower frequencies, as the extra energy and definition bestowed on bass synths and kick drums revealed. Given that they're a fraction of the price, though, the Hyper Bi-wires



cleaning, solder-free construction".

Simple and effective in design, the Z plugs were a positive but not impossibly-tight fit for the terminals of the two speakers I mated them with - Rogers G55s and Quadral Aurum Wotan Vllls, both full-range floorstanders.

And it was here that I encountered my only trouble with

Cambridge amps - the budget-priced but nevertheless capable AXR100 receiver (mostly for 'burning in') and at the other end of the scale the mighty Edge W. The latter was driven by the matching NQ streamer, which could draw on an extensive library of hi-res material and lossless CD rips. Usually, the Edge is connected to the Wotans via esoteric cables vastly more expensive than the Hyper Bi-wires.

And there was an obvious difference in presentation between the two. The Atlas cables brought treble to the fore, more percussive snap and upper-string sweetness being evident. To be fair, high frequencies, as conveyed via the high-end cables I usually use, were just as agile...only not quite so

nevertheless acquitted themselves well.

When these audiophile Atlas cables were replaced with a cheap (£2 per metre) PVC-insulated 0.4 mm² copper type, losses were immediate. The overall sound took a turn for the worse, a coarseness and smearing of detail being audible at both frequency extremes.

CONCLUSION

Although our first sample suffered a manufacturing fault, don't let that put you off. This latest incarnation of the Atlas Hyper Bi-wire favours treble clarity and midband intimacy, making it a particularly worthwhile choice for bi-wireable bookshelf speakers without prodigious low-frequency delivery.

ALSO AVAILABLE -
2m, £400
5m, £550
7m, £650

HYPER ACHROMATIC BI-WIRE Z 2-4
£450
(3M PAIR, AS TESTED)



EXCELLENT - extremely capable.

VERDICT
A likeable and communicative cable for those with bi-wireable speakers.

FOR
- treble clarity
- instrumental definition and delineation

AGAINST
- problems with review sample
- some rivals deliver more bass impact

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



JEWEL

**Pieces of You
Craft**

Jewel Kilcher had a pretty tough upbringing in Alaska, singing in tourist attractions in her home town of Homer and watching her parents divorce. She toured with her father and performed with him, then moved in with her mother, decided to dedicate herself to her career and moved into a van. There she lived and by which, she toured. Her poetry books didn't amount to much, her pop pretensions fizzled but she kept on keeping on. Then Atlantic offered a contract.

That's where this album emerged from. It was the first fruits of that contract and the first outpourings from her early days. And it didn't really catch fire. I remember first receiving the original release as an editor of a UK national music magazine with a distant lack of any hoopla or headlines and more than a little 'ho hum'.

The good thing about Atlantic

at that time was that the label and Jewel herself was prepared to work at making the album a success. That, they certainly did. This is a relatively simple collection of songs. Sure it's 'produced' but Jewel is given space to perform and emote. You'll often hear her with a piano as accompaniment or she will be strumming her own guitar. The production isn't stripped so much as simplified.

Her own style isn't at all like Joni Mitchell but then sometimes, it is. There can be an intimate, almost musing aspect to her delivery, as on 'Morning Song', which can sound like you're intruding upon private thoughts, spoken aloud. 'Adrian' is another example of that. A soft sound. Like she's talking to herself as she looks out of the window onto a rainy afternoon.

This new 25th anniversary Edition arrives in a long-form book packed with four CDs and including B-sides, rarities and demos.

AUDIOPHILE CD



PANTERA

**Reinventing the Steel
Elektra**

You wouldn't think that Pantera used to be a glam-inspired hair metal band in the eighties would you? Not if you knew anything about this metal outfit. In fact the band tend not to talk about it. Bit embarrassing. Pantera made a big splash in the nineties though with the addition of lead vocalist, Phil Anselmo and with the releases of the albums 'Cowboys from Hell' (1990) and 'Vulgar Display of Power' in 1992 which outed the band right up there with the likes of Megadeth and Slayer.

More success followed until 1996 when the band started to crack at the seams and Anselmo over-dosed on Heroin and tensions grew in the band as a result.

Further projects stumbled out on the shelf and then this album staggered onto the market place, the band's final studio release.

From there, the band split to form a range of individual projects such as Down and Damageplan.

This was a 'back to the basics' attempt. The Pantera sound with a full on, in yer face assault. It's shock and awe-type rock, basically. It begins like that. The middle is exactly the same. And then the end continues the theme. And then it ends. And then you go for a bit of a lie down to recover.

And as you might expect from that description, the band try almost too hard to find their lost mojo. They ultimately fail to find their art. Hence, the album ends up being a little tense in presentational terms - which was where the band's heads were at that time, to be frank. It does retain the group's signature sound though.

This 3CD edition features the original album, a new 2020 remix, radio edits, album tracks and "rough mixes". And ideal collection for the fans.

If you like your R&B groups – and I’m talking about outfits like the Moonglows, the Ravens, the Orioles, Drifters, people like that – then you need to check out this lot. If you haven’t already had the pleasure.

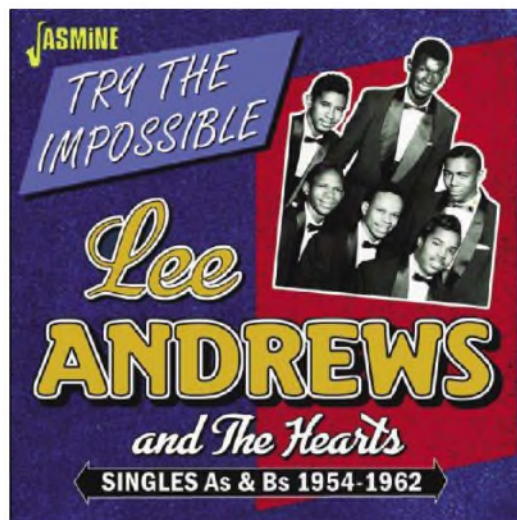
Lee Andrews fronted the group with a smooth and crystal clear delivery that might have been as open and lucid as Nat “King” Cole but was rather more focused and nimble in its ability to tackle pop ditties. His group added a superb harmonic structure that allowed their music to flow with some panache and flair.

After a certain amount of frustration, hitting their collective heads against various masonry, the group’s big year was 1957 to 1958 and that period is covered in this CD compilation of twenty-eight tracks. The track Long Lonely Nights reached No.45 with an R&B chart rating of No.11.

Working for the label Mainline, ‘Teardrops’ was chosen by Chess for distribution where it reached No.20: the group’s biggest hit. Then it reached No.4 in the R&B charts. But they weren’t done quite yet as ‘Try the Impossible’ was released for the United Artists label, reaching No.33 in the pop charts.

Sadly though, the group would never chart again, after such a successful and intense period. The fact that the group toured to market their hit records, attempting to cash in on their chart success, created stress and tensions which pulled the outfit apart.

Andrews decided to go solo although the group would reunite briefly in 1962 with the track, Together Again. That release is also featured on this CD. An excellent collection of an important yet oft forgotten group, this is a worthy reminder of the beating Hearts.



LEE ANDREWS AND THE HEARTS

Singles As & Bs 1954-1962
Jasmine

AUDIOPHILE CD

And now more of the same but also something completely different. That is, from ‘in yer face’ metal assault to a more symphonic and almost neo-classical flavour of metal via this Austrian outfit that swivels on the focal point of the lady herself, Sabine Edelsbacher’s lead vocals. The band are into big ideas and big presentation. To give you an example, Edenbridge, who hit the scene in 2000, like to perform while fronting an orchestra – gives a big clue to the epic sound this group like to produce.

We’re talking big sounds here, with liberal sprinklings of heroic majesty interspersed with imposing and rather exalted theatre. Grand, you might say.

Back in 2007, the band discovered their navel. They decided upon a sort of retrospective. They stopped, turned around and considered where they had come

from. This triggered a release based upon their first five albums. Entitled ‘The Chronicles Of Eden’ it was apparently created after a fan vote for favoured tracks. The best of the batch occupied the CD. This content creation has once more been applied to this new release which takes a look at albums five through to ten.

According to the band “The voting was not a major surprise and is more or less identical to the songs we would also have chosen. Therefore four tracks of each album could be covered along with some older all out of print bonus tracks”.

The group can’t resist adding a few extra, though. That is, there are a couple of bonus goodies for the fans. Hence, newly recorded acoustic versions of the tracks ‘Higher’ (a slightly jazzified outing) and ‘Paramount’ are included here, as is the ‘Easter Version 2020’ of the song ‘Dynamind’, re-recorded by Sabine Edelsbacher.



EDENBRIDGE

The Chronicles of Eden Part 2
SPV

Super Nova's a real star

The new Novafidelity N25 network audio streamer may be its entry-level option, but it packs plenty into its slimline box. Chris Frankland checks out what it can do.

Streamers and network players come in all shapes and sizes, offering different capabilities and facilities depending on what you are looking for.

Some products are more aimed at CD ripping and storage, but in the N25 Novafidelity have concentrated

on producing a comprehensive streamer that offers access to a wide range of digital music sources, while not neglecting audio quality.

The N25 uses a dual-core ARM Cortex A9 CPU running at 1GHz and a high-quality ESS ES9018K2M Sabre32 Reference chip for its DAC. It connects to your network via the

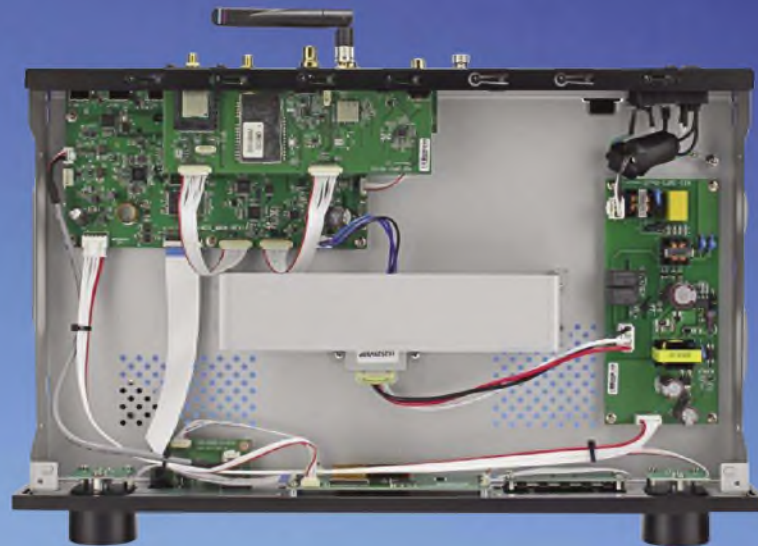
usual Ethernet cable, or you can pair to the N25 via Bluetooth (aptX and aptX HD), thanks to its on-board receiver. Alternatively, if a wired connection is not possible, you can buy the optional wi-fi USB dongle for an extra £30.

As well as access to online



music streaming services such as Tidal, Qobuz, Deezer, Amazon Music, Napster and Spotify, the N25 also allows users to enjoy the world of internet radio as well as FM and DAB. It can also play back stored music from a NAS drive or USB stick. It supports all formats, including DSD, DXD, PCM, FLAC, WAV, ALAC, AIFF, HD FLAC, and HD WA, as well as MQA.

This slimline unit measures 73mm high by 440mm wide and 260mm deep. The front panel sports a volume control to the left, a large central colour LCD display, and to the right of that two rows of five buttons, the top four of which provide presets for FM and DAB radio, while the leftmost button on the bottom row is used to activate the presets above. Next to that is a button to select the INPUT, then RETURN takes you back a step; next to that is STOP and



N25 uses a dual-core ARM Cortex A9 processor and ESS ES9018K2M Sabre32 Reference DAC chip. They take up little space!

then a MENU button. To the far right is a large knob that allows the user to scroll menus and select options on the LCD screen. There is also a USB input that can be used to plug in a USB stick or hard drive.

A compre-

hensive remote control is supplied, but most users would be better off downloading the free Novatron MusicX Neo app and then controlling everything from their smartphone.

On the back panel, the N25 provides digital inputs via RCA, Toslink, HDMI and USB. The USB input supports up to PCM 384kHz/32bit,



transmitter module.

But there is no CD player in the N25. While it allows you to rip CDs and comes with a two-year free licence for Gracenote for sleeve artwork and track info, you'll need to buy a separate USB CD drive. Novafidelity's own X14 is £35. The N25 has no storage either, so you'll need a USB or NAS drive.

Unusually, the N25 had an FM tuner built-in and a 'piece of string' aerial is provided, although I found reception patchy and anyone seriously intending to use this option

would be well advised to buy a separate aerial. DAB radio is also provided, but the same goes for that, if not more so, as the aerial provided did not manage to pull in any DAB signal at all.

The first thing I did was download the free Novatron MusicX Neo app. This installed with no problems and my Android phone soon found the N25, which showed up as Cocktail Audio N25, as that is the name Novafidelity sells under outside the UK. You can change that name if you want to.

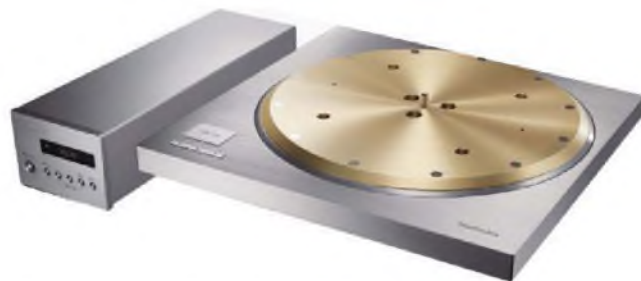
The app was easy to



Remote control is comprehensive but most users will probably control the N25

DSD 256 and DoP128. There are digital outputs via RCA and Toslink and an analogue output via RCA phono sockets. There are also connections for Bluetooth, FM and DAB antennas. A Bluetooth receiver is built in, but if you want it to stream to your Bluetooth headphones or wireless speaker(s), you will need to shell out a further £70 for the optional plug-in

THE VINYL REVOLUTION



The EVO and the new EVOke Now you have a choice of *any* SL-1200! The new **EVOke** has world beating performance figures that are comparable with the world's most expensive turntables. The ability to fit any arm or cartridge to any SL-1200 new or old, means you can now have the **EVO** that you want at the price you want.

The **EVO** was used by Hi-Fi World to evaluate the Beatles In Mono records and is now used as their everyday reference. The **EVO** comes fitted with a tonearm of your choice and a cartridge of your choice.

We have worked with direct drive turntables and moving coil cartridges for nearly 40 years. We can supply completely new units with 6 year guarantees, used ones with 5 year guarantees, or we can convert your own.

Technics SP-10R & SL-1000R Many combinations available
Hi Fi World said:

This is a spinner of vinyl for the serious, where you just want to punch a button and get on with it. It offers a degree of unarguable perfection for professional studios and anyone working with vinyl. If you want such unerring focus on the basics of playing LP it's time to check the piggy bank.

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.

Miyajima - Stereo - Mono - Denon DL-103 - Audio Technica AT33 & OC9

Turntables & Tonearms - Technics SL-1200 & SP-10R - Furutech - Klipsch - 78rpm - SL1200 Mods

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A wide array of digital inputs and outputs are provided via USB, RCA, HDMI and Toslink. Our unit was fitted with the optional Bluetooth transmitter module.

use and navigate around and the distributor provides a very helpful video on YouTube (<https://youtu.be/gkcXYkXovc>). Under its main menu, I soon found INTERNET SERVICE, where your streaming services are located. I just clicked on Tidal and I was in business (obviously, you need a Tidal account!). You will also find your internet radio stations under this same menu tab.

SOUND QUALITY

I started out with some very pleasant internet radio listening (under the High Quality section) on Linn Jazz and then did a search to find one of my favourite stations, KEXP in Seattle. Findings both took literally seconds. Podcasts are just as easy to find.

But the bulk of my listening was through Tidal. I also had on hand as a benchmark a Pro-Ject Stream Box S2 Ultra (£599), which I fed into the digital input (DAC) of the N25.

First up was an MQA version of my favourite Poco album, Rose of Cimarron. I listened to Starin' at the Sky and was immediately impressed by the crispness, dynamics and sheer presence of the guitar and mandolin. Vocals were clean, open and well articulated and the track flowed well and was enjoyable to listen to. Did it compare well with the Pro-Ject? Well, yes it did and, to be honest, I thought the differences were small. If pressed, maybe the guitar and mandolin were slightly more open and expressive on the N25.

Moving on to Groovin' from guitarist Peter White's album of that name, the two were again broadly comparable. White's guitar was beautifully conveyed by the N25 with superb note shape and body resonances, while his phrasing and fluidity were a delight. I felt maybe drums and percussion were a little more recessive in the mix on the N25, but White's guitar was nicely handled by both.

As I rattled through favourite tracks from John Mellencamp, Kenny G, Buddy Holly and Earl Klugh, the

N25 continued to win me over with its sound quality – detailed, dynamic, with great subtlety and no nasties. A very creditable performance, which it repeated when I played back some hi-res tracks from Eric Clapton (Lay Down Sally) and Stevie Wonder (Master Blaster) from a USB stick. The Clapton track moved along beautifully with its great drum and bass line, and the Steve Wonder track had real rhythmic impetus.

CONCLUSION

If you are in the market for a versatile, powerful all-in-one-box network streaming solution that won't break the bank, look no

further than the N25. It's an impressively comprehensive package for the price.



Most cloud-based music streaming services are catered for by the N25 – all controllable from the free app.



Home screen gives access to the music database of ripped and stored music, CD playback and ripping (needs external USB CD drive), playlists, the setup menu and 'group play' for multi-room systems.

MEASURED PERFORMANCE

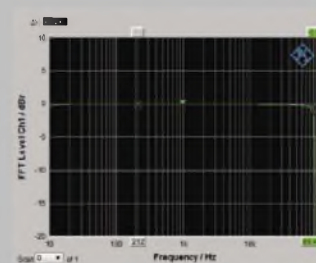
Measurement revealed the presence of an ESS Sabre ES9018K2M DAC by a set of superb figures. Most impressive was an EIAJ Dynamic Range value of 118dB – very high for Network Player where around 114dB or so is common. There were no spurious products to affect the result, just a small amount of noise setting the value.

Our distortion analysis shows this situation, the noise floor at the bottom on the analysis having no spikes from distortion harmonics. A figure of 0.03% distortion at -60dB with a 24bit resolution digital signal was low, if not quite as low as possible from dedicated ESS based DACs that manage 0.02%. Close all the same and showing the N25 is able to resolve inherent DAC qualities.

Frequency response with a 192kHz sample rate PCM input reached 90kHz, close to the theoretical 96kHz limit, due to a very 'sharp' filter, as our response analysis shows.

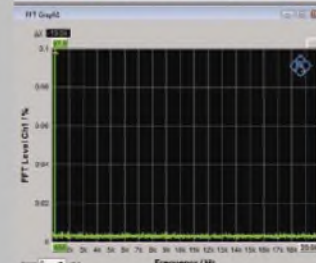
A fine set of results. NK

FREQUENCY RESPONSE



DISTORTION

THD+N	0.0277 %	Level	2.1277 mV	Frequency	997.00 Hz
IMD	OFF		OFF		OFF



NOVAFIDELITY N25 NETWORK AUDIO PLAYER £1099



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

A one-box solution that sounds good and won't break the bank. Stonking value for money – it packs a lot into one box

FOR

- easy-to-use app
- packed with features
- wired, Bluetooth or wi-fi [with optional dongle]
- ESS Sabre ES9018K2M DAC

AGAINST

- FM aerial supplied inadequate
- DAB aerial ineffective

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+44 (0)3301 222 500
www.scvdistribution.co.uk

vinyl section

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MARCH 2021

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VINYL NEWS 66

The latest vinyl releases for you, from Paul Rigby.

GOLDRING ETHOS CARTRIDGE 68

A classic moving coil cartridge with smooth sound, reviewed by Noel Keywood.

PRO-JECT PHONO BOX RS2 72

Want a fully balanced, all-discrete audiophile phono stage? Here it is – reviewed by Noel Keywood.

AUDIOPHILE BOOK 77

'Overpaid, Oversexed and Over There' a book on UK bands in the U.S. – reviewed by Paul Rigby.



PETER GABRIEL

PG has been busy releasing live works of late via Realworld (www.petergabriel.com). Two more skidded to a halt on my desk.

The first, 'Secret World Live', over two discs, was compiled from two dates (16th and 17th November 1993) with a rare appearance of the song, 'Across the River'.

The second, 'Growing Up', again over two discs, is another two-night compilation from 2003's FilaForum concert in Milan, Italy. It features PG's daughter, Melanie on backing vocals.

news



DEMON DELIGHTS

From the UK audiophile outfit (www.demonmusicgroup.co.uk), it's great to see the company rediscover the lost art of the comedy album. A genre that I thought was lost forever. I recently received The League of Gentlemen's 'Series Four: Anniversary Specials' (1996) pressed over two discs and three sides on "snow globe vinyl" plus a laser-etched fourth side.

There's also Not The Nine O'Clock News' over two discs. 'The Memory Kinda Lingers' (1982) features Series Four and 'Live on Stage'.

It's the first time on vinyl for The Durutti Column's 'Love in the Time of Recession' (2009). A lovely line up of melancholia and memories - witness the tribute to the late Tony Wilson.

Also look out for Gene's 'Drawn to the Deep End' (1997) pressed in a gatefold, and Heaven 17's 'Naked as Advertised: Versions '08' (2008) featuring reinterpretations of Human League and Heaven 17 classics.



SPEAKERS CORNER

New from the German audiophile outfit (www.speakerscornerrecords.com) is The Butterfield Blues Band's 'East West' (1966), arguably Paul Butterfield's best mixing of blues rock with jazz, Indian raga and psyche. Features the guitars of Mike Bloomfield and Elvin Bishop.

From jazz alto legend Sonny Stitt, here he runs with 'The Top Brass' (1963) via varied arrangements from Tadd Dameron or Jimmy Mundy. A superb release.

John Lee Hooker's 'Don't Turn Me From Your Door' (1963). Nicely recorded and mastered, audiophiles looking for a standout compilation from Hooker should check this one out.

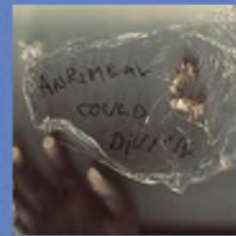
Also look out for Buddy Guy & Junior Wells's 'Play the Blues' (1972) which features the talents of Eric Clapton and J. Geils.



BANDCAMP BABES

On yellow vinyl from Jack Cheshire, Black Light Theatre (*Loose Tongue*; jackcheshire.bandcamp.com). I'm more interested in this singer-songwriter's backing than him. It jumps from surf to proto-rock'n'roll to jazz.

From *Could Divine*, 'Anrimeal' (<https://anrimeal.bandcamp.com/album/could-divine>), Ana Rita de Melo Alves deals in minimalist folk...almost pagan...of the earth...music. Primal stuff you might find sung in a temple.



VINYL MOON VINYL CLUB

I checked out a range of releases from the Vinyl Moon vinyl club (vinylmoon.co). You pay per month/quarter/year from \$27-\$30 per box.

That includes a curated vinyl compilation, a set of "mix tapes" of newly discovered musical goodies of varying genres. They throw in art and inserts within a highly presentable package and you can buy add-on accessories like a turntable mat, notepads and so on. The samples I saw included a triple gatefold, multi-colour vinyl plus inserts called the 'Love Stack'. A pop-oriented compilation offering upbeat, light, fluffy, catchy, melodic, hook-laden ditties. Ideal to dance around the room while eating granola during breakfast.

Other genres range from indie rock to electro and more.



ANDY WHITE

From Irish singer-songwriter, Andy White's new LP, 'Time is a Buffalo in the Art of War' (www.andywhite.com). He's been at it since the eighties. This new release shows that he still has the energy as it looks at the political and social – with attractive melodicism.



MUSIC ON VINYL

A trio of Record Store Day releases from Holland and the major minor label (www.musiconvinyl.com) includes Billy Jones & The Stars' 'Love is Gonna Rain on You', a soul/funk outing from 1970, originally released on Catfish.

The George Baker Selection's funky, Europop outing 'Little Green Bag' (1970) may be familiar because Quentin Tarantino used it in his film 'Reservoir Dogs'. Also look at 'Jazz Behind the Dikes Vol. 1', a Dutch jazz outing featuring the Rob Madna Trio and the Tony Vox Quartet.

THIRD MAN

Blimey, this label is on form this month. From Third Man (thirdmanrecords.com) comes North Americans' latest, 'Roped In'. A quite gorgeous release featuring acoustic guitar and harp, producing lo-fi soundscapes and sweeping drones. Thumbs up to Patrick McDermott & Barry Walker.

Next? A stunning compilation of shoegaze/dream pop and space rock over two LPs from Detroit: 'Southeast of Saturn'. Bands include Fuxa, Windy & Carl, Glider, Caliope, Majesty Crush and more. If I had any more thumbs, they be up too.

Onto psyche/pop now – oh the variety! Heather Trost's 'Petrichor'. Fans of A Hawk And A Hacksaw will know Trost but here she offers floaty vocals over a spacious backing adding an ethereal twist.



...AND FINALLY

From The Pineapple Thief (*Kscope*; kscopemusic.com) comes 'The Soord Sessions Volume 4' a vinyl version of recently streamed live sessions of new and old tracks.

From Bear Family (www.bear-family.com) comes 'Draggin' with Curtis Gordon' a rockabilly and country pioneer. This 10" features twelve rockabilly songs from 1955-59.

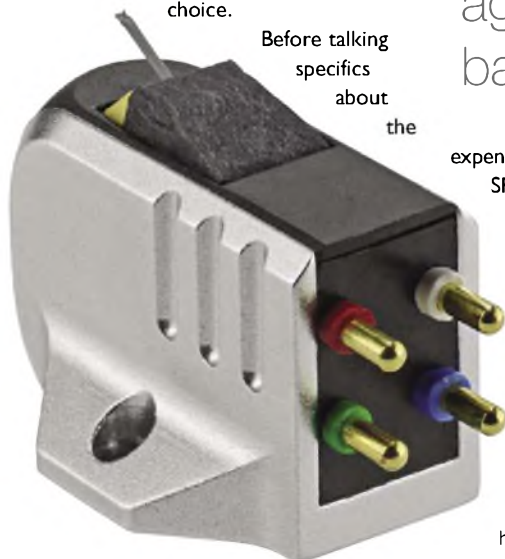


Take It Easy

For an easy sound Goldring's Ethos moving coil cartridge has little competition, says Noel Keywood.

Once upon a time moving coil cartridges were rare. Ortofon's SPU is the best known. Released in 1958 it was a heavy-weight beast, difficult to use as a result – and because output was low. All the same it gathered a reputation for sound quality, so much so that Ortofon still build a wide range of variants today, some coming in at the cost of the Goldring Ethos moving coil cartridge I am reviewing here, £895.

Goldring, established even earlier in 1906 they say, have also been making phono cartridges for a long time, and today have many moving coil types. But these days the moving coil has become a lot more popular: it is, relatively speaking, now within financial grasp – and bulky, expensive step-up transformers are unnecessary; transistors do the job instead. That means there are a lot out there, giving buyers broad choice.



Gold plated output pins were fractionally larger diameter than many, needing a firm push to get the connectors on.

Before talking specifics about the



Ethos, I need to put it into market context. Moving coil cartridges always had the advantage of flat frequency response and therefore a more insightful sound than less

MC – no vinyl warmth.

What to do if you want a bit of vinyl warmth? There aren't so many choices left. Shure's M97xE is one way to go, another being Audio

"The Ethos worked its way through confidently: Rosella Caporale was in firm form against a smooth, silent background"

expensive moving magnet types. The SPU was used in professional environments like broadcast radio stations as a result.

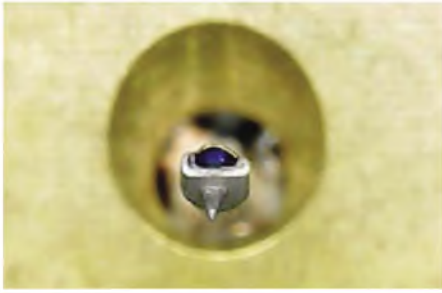
Until recently it was moving magnet cartridges that gave the classic warm sound of vinyl, because their output falls away at high frequencies. MCs gave a clearer, more accurate sound.

Modern moving magnets have closed the gap, aided by stronger magnets – especially Neodymium – so differences are not so great any more. For example, the Audio Technica VM750 SH MM I use is every bit as flat in response as an

Technica's AT-3600. Drawback? They are both budget MMs. For those after the more spacious moving coil sound, where stage depth and clarity come to the fore, there's just about nowhere to go because moving coils don't come with warm vinyl sound.

Except here: Goldring's Ethos. Before getting onto sound quality then I've let the cat out of the bag, necessary with the Ethos because as moving coil cartridges go it is sonically different.

Like so many others now, the Ethos comes in a machined alloy body with tapped screw holes for easy fixing. The holes are open-ended so long screws can be used if need be. Goldring supply 6mm long screws



A front view of the Vital diamond stylus shows cleanliness of bonding to the crimped cantilever end.

as standard, plus very short 4mm screws, both stainless steel with hex heads and accompanying hex key. The long screws suit SME, Rega type headshells, the short screws thin pressed metal headshells; those with thick wood headshells will need to buy longer screws.

Fixing the Ethos was easy enough, but with a few wrinkles. The connecting pins seem to be a bit on the big side – I had to push hard to get our SME connectors to fit, using fingers to feel the force needed and prevent damage. The use of snip-nosed pliers would likely lead to bent pins.

Then, after getting the Ethos into place, I attempted to pull the stylus guard off and it promptly sprang back; for a short moment I thought the stylus cantilever was a gonner, but luckily it wasn't. This strange behaviour was down to a thin, clear elastic band holding the clear plastic guard to the body, not something I've come across before. If the band had been red or black I would have seen it.

Such funnies apart, the weight of

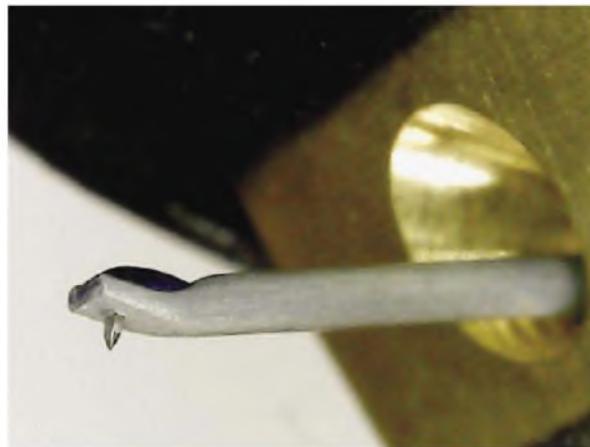
7.5gms is perfect for arm compatibility: it can be balanced out in just about any arm since they all accept 6gm-10gm weight range. Parallel sides made alignment in the headshell easy too. The stylus cantilever is a straight aluminium tube, with a Vital profile stylus for accurate groove tracing; it worked well on the short mechanical wavelengths of inner grooves measurement showed. Tracking force is quoted as 1.75gm optimum with 2gm maximum. Tracking was good at 1.75gm but I chose 2gm for a little bit more security in the groove.

SOUND QUALITY

I fitted Goldring's Ethos to the SME309 arm of our Timestep Evo modified Technics SL-1210 Mk2 Direct Drive turntable. Connection was to our Icon Audio PS3 Mk2 valve phono stage with MC input transformers. Loudspeakers were Martin Logan ESL-X hybrid electrostatics driven by our Icon Audio Stereo 30SE single-ended valve amplifier. I also used the Pro-Ject RS2 phono stage feeding a Creek iA20 amplifier for a more representative solid-state sound.

Aware Goldring MC cartridges have tight, punchy bass I put on Sing, Sing, Sing, a live direct-cut from the Syd Lawrence Orchestra, from their LP Big Band Spectacular. The live-

miked (no synths!) fast drumming presents a challenging test, one the Goldring managed very well. Helped, I suspect, by its one-piece alloy body, the drums were engagingly dynamic and powerful, inevitably sitting in clearest studio space (the band recorded this live in a studio, direct cut to disc) through our minimalist valve system. Drum strikes were solid if a tad softer than I am used to; cymbals rang sweetly but did not jump from the mix. Straight away I flagged up "easy going" in my mind, but with fluid bass and a deep sound stage revealed by the valve system. Subsequent measurement confirmed what was sonically obvious, rolled down upper treble.



Our close-up side view shows clearly the stylus is neatly bonded into place on a parallel sided aluminium cantilever tube.

With Neil Young's After the Goldrush, a recent all-analogue re-master from master tapes, Tell Me Why had his vocals clear centre stage, against a lullingly quiet background, the stage having good sense of depth in true MC fashion. This LP has quite a bright balance, making his (Nils Lofgren's?) close-miked guitar strings vivid – extraordinary considering it's a 1970s recording. I know the strings on this outer groove cut out, but the Ethos muted them, making for easy listening. The flip side to this was similarly muted groove noise and unintrusive ticks and pops.

This suited Marianne Thorsen playing Mozart Violin Concertos, where LP surface noise – what little there is of it on a fine recording from 2L of Norway – was barely apparent. For Classical enthusiasts then the Ethos is a very good choice, since Classical has less high frequency energy than Rock, being less obviously affected by the high



The cantilever tube is a conventional lightweight aluminium type. Both Ortofon and Audio Technica, amongst others, now offer more advanced tapered tubes and Boron rods.

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www.clarityalliance.co.uk





An attractive milled aluminium body with open-ended, threaded screw holes – no nuts needed. Parallel sides make alignment easy.

easy going nature of the Ethos was a hidden benefit: if you love vocals and don't want to be shot at by ticks and pops this is your man (or woman!).

Certainly, I heard total contrast to Audio Technica's Super Line Contact (SLC) top stylii that make a tin hat necessary with noisy LPs, but difficult to choose between the two approaches. Goldring's Vital tip profile retrieves high frequencies but with level -5dB down compared to MCs from other manufacturers it is inevitably going to sound reticent in delivery – and it did. Of course, if you have a bright system it will help balance things out.

CONCLUSION

Goldring's Ethos is a moving coil cartridge unlike most else. It offers



Short (4mm) and long (6mm) stainless steel fixing screws. Thick wooden headshells will need a longer screw.

moving coil clarity and stage depth but has a lullingly smooth sound, as we know it from vinyl days of yore. A good performer all-round, with fine tracking, it's an alternative to the more challenging sound of today's current crop and worth considering.

frequency roll down..

The Vital stylus traces inner grooves well measurement showed – and I heard this with my favourite inner groove test track, Time To Say Goodbye from the LP Two Countries One Heart. A superbly balanced recording from HiFi Direct of Italy, the Ethos worked its way through confidently, delivering Rosella Caporale in firm form against a smooth, silent background. Again, the



A clear shot of the aluminium cantilever shows how these items are made, having a crimped end to accept a bonded nude stylus in this case.

MEASURED PERFORMANCE

Our frequency response analysis, measured with JVC TRS-1007 – an industry standard test disc – shows the Goldring Ethos measured flat from 20Hz to 1kHz before rolling down slowly above this frequency to become -2dB down at 10kHz and -6dB down at 20kHz. Since today's MCs commonly run flat to 20kHz the Ethos will subjectively have a less bright sound than most.

The Vital stylus traced inner grooves very well the red trace shows, with no loss up to 10kHz and just -1dB above that. However, output is still -6dB at 18kHz so there will be warmth in the sound, if little inner groove distortion due to absence of harmonics.

Tracking was very good at the recommended 1.75gm downforce, a high 63µm cut being cleared, but there was some mistracking of the top 90µm cut of CBS STR-112 test disc (300Hz). Increasing downforce to 2gms minimised this.

The top torture track (1kHz) of B&K QR2010 test disc few cartridges clear but the Ethos stayed in the groove

and mistracking was slight with 2gm downforce. In all, good results.

Channel separation averaged out at 26dB and output averaged out at 0.4mV (3.54cms/sec), both reasonable figures. Output is not high but sufficient for modern MC phono stages.

Distortion measured 1% lateral (CBS-STR112, 45µm) – good. This rose to 3% on vertical modulation due to a high measured vertical tracking angle (VTA) of 28 degrees (DIN 45 542 test disc). The ideal is 22 degrees.

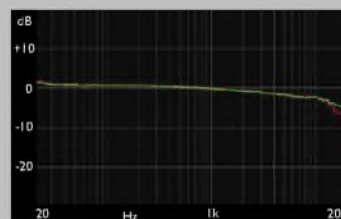
The Ethos measured well but it will have a perceptibly soft sound due to high frequency roll down. NK

Tracking force 1.75gms
Weight 7.5gms
Vertical tracking angle 28degrees
Frequency response 20Hz-10kHz
Channel separation 26dB

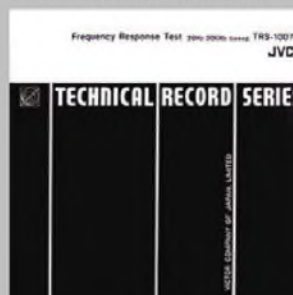
Tracking ability (300Hz)
lateral 63µm
vertical 45µm
lateral (1kHz) 20cms/sec.

Distortion (45µm)
lateral 1%
vertical 3%
Output (3.45cms/sec rms) 0.4mV

FREQUENCY RESPONSE



JVC TRS-1007 test disc



GOLDRING ETHOS MC £895



OUTSTANDING - amongst the best

VERDICT

Easy, smooth vinyl sound from a well engineered moving coil cartridge.

FOR

- classically smooth vinyl sound
- arm compatibility
- easy fitment

AGAINST

- soft treble
- lacks speed

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Keeping Balance

Pro-Ject's Phono Box RS2 gives Noel Keywood balance issues.

This, for me, is a deeply exciting product – a balanced Phono preamplifier for LP. And that means – specifically – with balanced inputs. I designed one some time ago because it's the only way to go for top quality sound, especially from moving coil (MC) cartridges. Pro-Ject now offer one in their RS2 that I'm reviewing here, so hang on to your seat for some deep discussions about all this!

The RS2 is a fully discrete, fully balanced amplifier with no OP amps

(silicon chips) Pro-Ject say. Designing such an amplifier is an analogue horror story only the best design engineers can tackle. That's why they are so rare – both the amps and the engineers! You'll see from our internal pic a massively complicated circuit board, explaining its price of £1300. A bargain methinks, considering the sweat to design such a thing. But why would you want it?

In a nutshell, a pickup cartridge is a fully floating generator that is best connected into a balanced input to cancel noise and interference.

Meaning no hum, no common-mode RF interference or other nasties. With a low output moving coil cartridge this is potentially a great benefit.

So far, so good, but there is another more prosaic difficulty – turntables do not come with balanced output wiring terminated with XLR plugs. It only takes a nifty re-wire to do this but that means either a DIY job or a dealer able to do so, or even our columnist and repair man Dave Tutt (see his column for contact details). Importers Henley



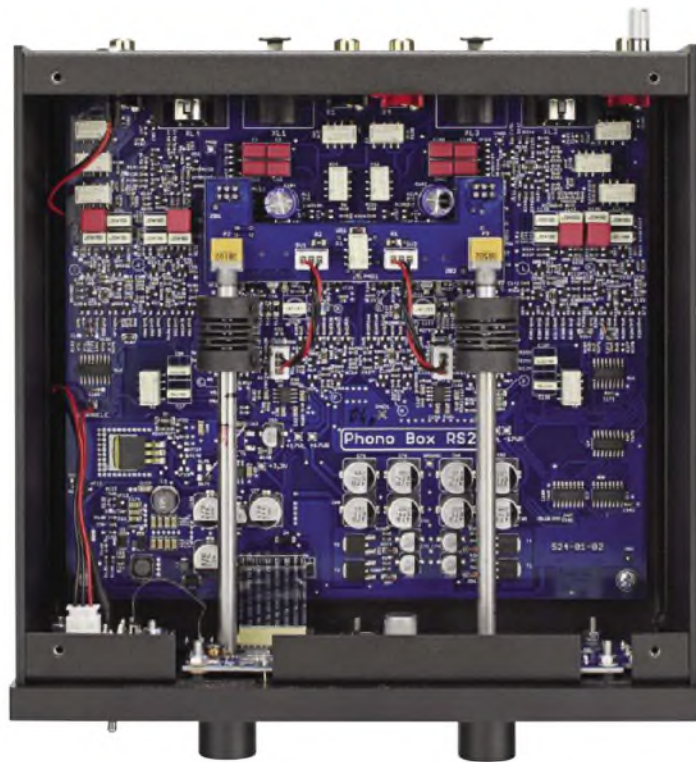
Audio, based in Didcot (UK), work closely with Pro-Ject (Austria) and can also provide solutions; perhaps best to phone or e-mail them about this unusual issue if running a balanced record deck interests you.

I run a Garrard 401 with SME312S arm that I wired balanced long ago for my own prototype balanced preamplifier – so was very happy to receive the RS2. My prototype was just that: designing the servos to keep discrete transistor pairs balanced was going to take more time than I had available; it never reached completion. Also, being a valve man, I ran the output at high voltage (50V) to avoid gain switching and needed to use a four-channel switched-resistor volume control to handle it, a serious complication. The RS2 does not have a gain/volume control, avoiding such difficulties, but that does mean it cannot drive a power amplifier direct.

What does it have? The exciting bit was balanced XLR input and output sockets on the rear panel! But there was no disappointment either at all its facilities and the user interface, which was slick beyond all else.

Moving magnet (MM) and moving coil (MC) cartridges can be handled. There are four gain settings for each that cover all possibilities. Curiously, the specs say XLR adds +6dB but measurement showed it doesn't, gain being identical from XLR-in to XLR-out, or phono-in to XLR-out. XLR has double the output swing so gives +6dB greater overload margin, but in this design gain remains the same.

The XLR output maintains low noise through a balanced cable to an accompanying amplifier, good for long



A heavily populated internal circuit board full of discrete components, but some chips also (bottom right), likely for control purposes. The unit works from 20V d.c. of external power, so no internal power supply.

loading from 10 Ohms to 1000 Ohms. Best to set it at 100 Ohms and turn down slowly for a better damped sound (volume will decrease slightly), but I have never been convinced by low loading an MC, the few times I have done it. It may well be that some MCs will benefit.

No need to turn loading up except for high output MCs (e.g. Clearaudio) that need a 300 Ohm load. Good to have the ability to make such a continuously variable

The RS2 measures 206mm wide, 72mm high and 200mm deep, so it is compact. There is an external power supply of usual switch-mode type that runs from 110V-240V, 50/60Hz, delivering 20V at 3A through a slim cable. Distance from mains plug to the RS2 input plug is 2m with cables supplied, so this is maximum distance from a mains outlet unless a longer mains lead, terminated in a two-pin calculator plug, is used. Weight of the RS2 alone is 1.6kgs.

"a richly detailed, natural and engaging sound, free from sharpness or sheen"

cable runs especially, but that does mean to best appreciate the RS2 it needs an amplifier with balanced XLR inputs that run through a volume control (some do not). There is a conventional RCA phono socket output too.

For MM cartridges load capacitance values can be selected, from 50pF to 400pF. For MC cartridges there is a continuously variable control to set resistive

adjustment available all the same, unique to the RS2 I believe.

Another nice touch is a switchable balance control to compensate for the differing left/right outputs of pickup cartridges. And there is a sharp roll-off switchable warp filter that does not attenuate low bass, plus Decca EQ for old Decca London LPs, as an alternative to RIAA. This is a very well thought out phono stage, that's for sure.

SOUND QUALITY

I used the RS2 with the Creek iA20 amplifier also reviewed in this issue, fed from our Timestep Evo modified Technics SL-1210 Mk2 Direct Drive turntable. Connection from RS2 to iA20 was through Chord Company Epic balanced XLR-terminated cables. Loudspeakers were Martin Logan ESL-X hybrid electrostatics. The Evo has conventional unbalanced phono plug terminated cables, as it must for review purposes. Cartridges used were an Audio Technica VM750 SH MM and OC9X SH MC.

To assess the balanced inputs I ran the unit at home with my Garrard 401 and SME3012S arm that has balanced cables, plus an Ortofon Cadenza Bronze MC cartridge. The



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A simple rear panel that almost uniquely carries balanced XLR input sockets for connection to a turntable wired with a balanced output cable. There are conventional phono socket connectors too. The balanced XLR outputs have higher overload (x2) than the phono socket outputs, so are best used.

amplifier was a World Audio Design 300B (valve) feeding Martin Logan Electromotion hybrid electrostatics. Unbalanced Chord Company Epic cables connected the RS2 to the amplifier.

Here's the basic outline: the RS2 offers a richly detailed, natural and engaging sound, free from sharpness or sheen, a tapestry of analogue detail. Also, bass quality is superb.

Ignoring bass quality for the moment I'll talk about the LP that nailed a lot of what it does – Marianne Thorsen playing Mozart Violin Concertos, backed by Norway's Trondheim Soloists. This is a very high quality recording (DXD 386) from 2L of Norway, and Thorsen is a sublime player. The RS2's contribution was to reveal her violin as a strongly embodied instrument, one with a feeling of weight and size, as well as tease out all the textural detail within its body and strings. I got to hear a large and fruity rendition then, backing strings of the Trondheim Soloists similarly having a weighty presence. When they suddenly pitched in behind her, there was a sense of strong dynamic push to an orchestra comprising humans with instruments! The RS2 resolved the dynamics of this performance nicely, making for an engaging listen and my listening notes talk about "rich insight into strings".

I started out however with Hugh Masekela's Hope LP (Analogue Productions) and Abangoma showed the RS2 delivers a strong, expressive bass line. Uptownship confirmed this, revealing air around the miked-up hand drums. Kick drum strikes were weighty and well resolved; I again got to hear the timbral properties of the instruments better than usual. It was a sophisticated sound.

Spinning Jackie Leven's Young Male Suicide Blessed by Invisible Woman, from Forbidden Songs of the

Dying West, his big-man vocals were just that: rich and full sized in front of me.

As I moved through our high quality review LPs it was clear that the RS2 has bottom-end power, the rolling drum work in Sing, Sing, Sing, from the Syd Lawrence Orchestra (a live recording) moving our listening room nicely due to easily expressed dynamics, but there was also atmosphere from the studio microphones. The brass section blared out, individual instruments being discernible.

All the above was from our in-house turntable connected unbalanced.

At home, using the balanced XLR inputs, all the strengths of the RS2 were magnified. There was greater

clarity and a sense of precision timing unbalanced never seems to quite manage, no matter what the context. With Ortofon's bass-powerful Cadenza Bronze in a Garrard 401 the RS2 was able to resolve their massive bass power and pace, making for dynamite dynamics. The 300B better resolved a sense of air and space the RS2 was able to offer.

CONCLUSION

A highly sophisticated phono stage, fully balanced and with all-discrete circuitry, for MM and MC cartridges, with loading options for both, the Phono Box RS2 has no equal. For those interested in running a fully balanced turntable to eliminate hum and noise this is the one. Great sound quality and easy to use as well.

MEASURED PERFORMANCE

Frequency response of Phono Box RS2 ran flat from 3Hz to 20kHz with MM and 8Hz-20kHz with MC at full gain – where gain loss can curtail subsonic response, but not here as our analysis of MC at full gain shows. The warp filter introduced sharp cut-off at 40Hz, attenuating warps signals at 8Hz by a massive -30dB.

Gain values were exactly as indicated, up to 50dB for MM (x316) and up to 70dB for MC (x3162). With 10V output available from the unbalanced phono sockets this gives input overload as 32mV and 3mV respectively, but double the values from the XLR output able to swing 20V. Good figures, raised by lowering gain as always.

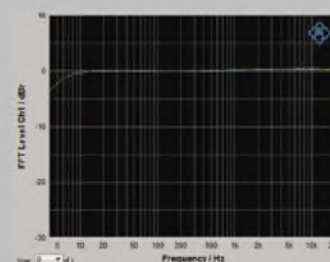
Equivalent input noise (MC at 60dB gain) measured 0.13µV, where 0.1µV is as good as it usually gets. So very good and good enough for hiss to be inaudible.

The Phono Box RS2 measured superbly well in all areas. It has been expertly engineered. **NK**

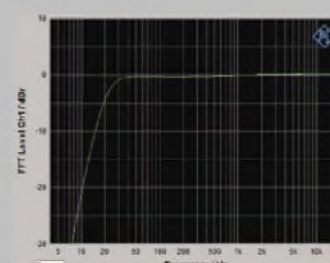
Frequency response 5Hz-20kHz
Distortion (24bit) 0.02%

Gain (MM) up to x316/50dB
Gain (MC) up to x3162/70dB
Overload (phono/XLR) 10V/20V out
Noise (MM/MC) -80dB/-78dB

FREQUENCY RESPONSE



WARP FILTER



PRO-JECT PHONO BOX RS2 £1300



OUTSTANDING - amongst the best.

VALUE - keenly priced

VERDICT

An advanced and superb balanced-input phono preamplifier with deeply insightful sound. A must-have for top quality vinyl replay.

FOR

- clear, clean sound
- cartridge matching for MM & MC
- balanced inputs and outputs
- warp filter

AGAINST

- no volume control

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Over there

Paul Rigby reviews a racy look at British bands that hit it big in America from 1964 on.

OVERPAID, OVERSEXED AND OVER THERE

Author: David Hepworth

Publisher: Bantam

Price: £20

Pages: 314

Magazine publisher and editor (Smash Hits, Mojo, etc.) and 'The Old Grey Whistle Test' presenter, Hepworth is a music enthusiast, knows his stuff and likes a good story.

And that's this book in a nutshell.

That is, this book is full of music-based history. Yet, it is not a music history book.

What I mean by that is, the book - subtitled 'How a few Skinny Brits with Bad Teeth Rocked America' - is in no way a work that even approaches academia. Hepworth won't have it. That would harm the pace of the prose. And pace is what this publication is all about.

So what you get is the story of how British music artists took, in the majority of cases, American-sourced music "and sent it back with a twist" in Hepworth's words.

The result was the British Invasion of 1964, spear-headed by The Beatles - and then how that invasion evolved and mutated to finally fizzle out, somewhere around 1983, according to the author.

Stars of the show, apart from the ever-present Fabs, include The Rolling Stones, Led Zeppelin, David Bowie, The Who, Elton John and all the way up to The Sex Pistols, Elvis Costello and Culture Club.

Hepworth talks about how the artists changed the nature of American music and the music business, but also how American music and its inherent business culture changed the Brits. Sometimes

for the better (The Beatles?) but not always (Rod Stewart?).

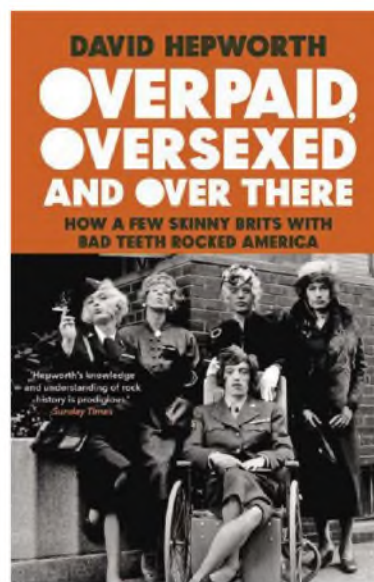
Hepworth loves a good yarn and there's plenty of music stories here that will entertain and make you smile. He's in such a rush, though that he does trip up over the history sometimes. For example, Hepworth states that Bowie wrote the song 'Andy Warhol' from the LP, 'Hunky Dory' after his 1971 jaunt to the USA. Hepworth also states that Bowie failed to meet Warhol while there.

Yet there is an easily sourced piece of original footage on YouTube (posted 2007) showing Hunky Dory-era Bowie standing next to Warhol

"This is a book of entertainment, generally connected to facts"

himself in 1971. While, in another video on YouTube (posted 2013) Bowie is on record saying he wrote the song before he met Warhol. Then played it to the man himself ("a lethal Svengali figure") who responded with, "Oh, oh, oh, yea. That's great". While placing a worried hand under his chin "I don't know if he ever liked it or not," said Bowie.

I get the feeling that Hepworth has breezed through the principle biographies of the figures in his book



to gain basic ammunition and a rough outline of each life story - and left it at that.

This can result in issues such as the Bowie situation noted above. He also states that Britt Ekland met Rod Stewart at a party hosted by Joan Collins and husband. Maybe that's the case but the internet also hosts information stating that Stewart met "...the Swedish actress Britt Ekland when she comes backstage after his concert at the Los Angeles Forum". In a 2010 interview with Wales Online the interviewer stated as background "When Britt and Lou [Adler] split in 1975, Elizabeth Taylor introduced her to Rod Stewart to cheer her up".

There's no discussion of the alternatives on the meeting and no dissection of which one could be correct or not.

But look, why should there be, eh? Why should he even bother? Because, if he did the pace of this book would grind to a complete halt and the reader would suddenly start looking at his watch and wondering about the next bus.

This is a book of entertainment, generally connected to facts. The sort of stories you'd swap with friends while down the pub. It passes the time and does a great job in doing so.

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GRATEFUL DEAD

AMERICAN BEAUTY

WARNER



"the band's live work was so free flowing and magical in creative terms"

If you have followed the spiralling, twisting, crazy biography of Grateful Dead, you will know that story reached new heights of absurdity after the death of former band leader, Jerry Garcia in 1995. Central to those events was the newly divisive bass player, Phil Lesh who appeared to harbour rather negative feelings towards his fellow band members. Some will have seen Lesh as the baddy in that band's later story.

And yet. And yet. His rare song writing outing on this album, 'American Beauty', a song called 'Box of Rain', a co-written ditty penned with Robert Hunter, was written with Lesh's father – then dying of cancer – in mind. The song remains a sheer delight and one that you could imagine being sung by Crosby, Stills and Nash.

This song is but one gem from this album, which has now reached its 50th anniversary and has been released as a special edition.

Often seen as the band's best studio album – the band were not noted for hitting their creative heights in a studio setting – it was viewed as a creative shift, a change in direction. One that had begun with 'Workingman's Dead' (1970).

Talking before the album was even released on the streets, Jerry Garcia said that "A Grateful Dead record will be out in a week, 'American Beauty'. It's further developments of 'Workingman's Dead' but a lot more homogenous. I just finished a record with Howard Wales, the organ player – very free, improvised music. Then I've been working with [David] Crosby on his album, which is getting near to being completed...".

The Crosby mention was a nod towards the Dead's movement towards vocal harmonies that would fill 'American Beauty', adding a sense of softness to the LP's delivery that also arguably allowed a more subtle application of emotion to the lyrics. The sense of the spiritual was certainly resident here.

The instrumental backing reflected that direction, with acoustic work and pedal steel guitar from Garcia a dominant facet.

And those lyrics arguably reach a peak with the penmanship of Robert Hunter in full sway.

Garcia was full of admiration for Hunter as a lyricist. He commented on Hunter at the time of this album's release "Well, see, we work at any number of ways, man, sometimes I'll have like a melody, you know a whole complete melody including phrasing and I'll like sing a wordless song you know, and I'll put it on a tape for him or something like that and he'll listen to it and listen to it, and it'll creep in and out of his head for weeks maybe and pretty soon he'll write you know, several alternative possibilities of songs that it could be and I'll go through 'em, you know. It's kind of like really a good relationship, Hunter's a great guy to work with because he goes in every direction, he's completely flexible".

This collaboration also produced the band's highest charting single 'Truckin'. A laid-back rocker, the song was a perfect epitome of the band and its followers, with its paean to the inherent nomadic counterculture the group supported and were best known for.

The album has now emerged as a CD special edition. As a three-CD set it includes the original album with newly remastered audio plus an unreleased concert recorded on 18 February 18 1971 at the Capitol Theatre in Port Chester, NY. The show was mixed from the 16-track analogue master tapes by Jeffrey Norman at Bob Weir's Marin County TRI Studios and mastered by David Glasser.

David Lemieux, Grateful Dead archivist and this set's producer commented "The 50th Anniversary Deluxe Edition includes one of the first and best live performances of 1971, just a couple of months after the release of American Beauty and the five live debuts in the show demonstrate that the spectacular creativity of 1970 was no fluke".

Indeed – but this album was also, to some extent, an anomaly. The band attracted an increasingly devoted fanbase who wouldn't only follow their work but would traipse after them, across the country and from country to country. A devotion that verged on the fanatical. Partly because the band's live work was so free flowing and magical in creative terms. Something that was largely missing from the group's studio works. American Beauty managed to buck this trend though.

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