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& Record Review

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STEREO SPIRITS

Raidho's TD2.2 floorstanders blend thunder with finesse

Lumin D2 Network-attached DAC

Vinnie Rossi L2i-SE amplifier with triode tubes to taste

Budget Esoterica iFi Audio's pocket rocket ZEN DAC is a bargain buy!

Musical Fidelity

Flagship M8xi integrated amp... rock with the melodic monster



EAT's starter spinner
The B-Sharp turntable package

R



- OPINION 12 pages of letters & views VINYL RE-RELEASE Edgar Winter Group ... At Night 180g LP
- FROM THE VAULT Krell PAM-3/KSA-100 amplifiers VINTAGE REVIEW Philips CD960 disc spinner
- SHOW BLOG We report from Athens' Hi-Fi Show READERS' CLASSIFIEDS Hi-Fi bargains galore



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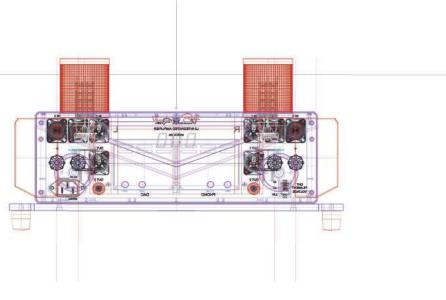
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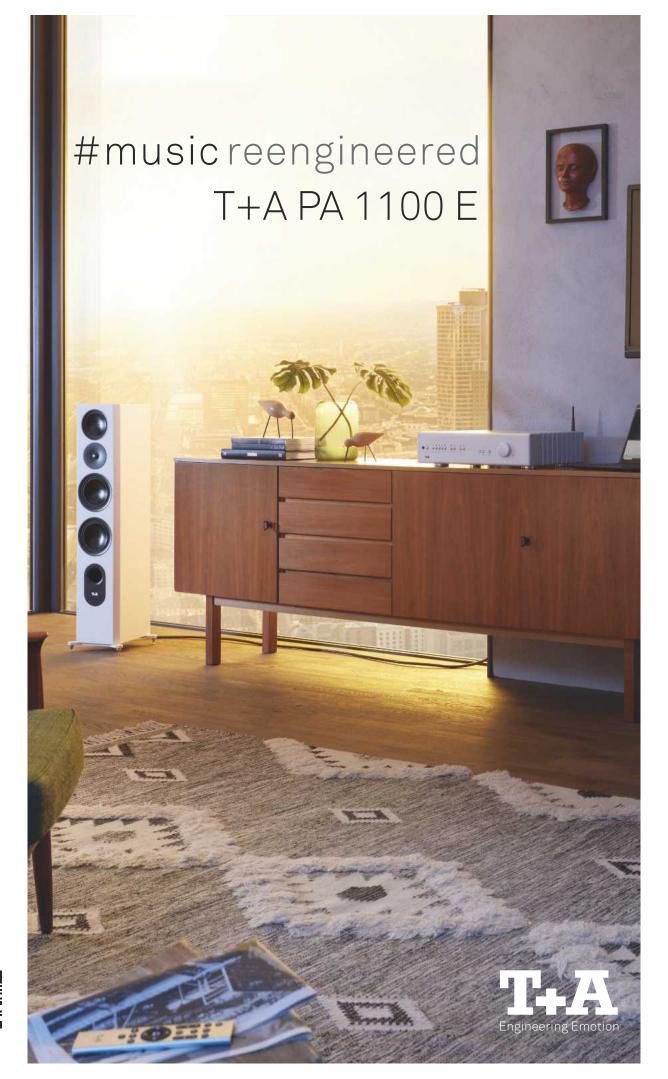
Martin Colloms, HIFICRITIC OCT | NOV | DEC 2019



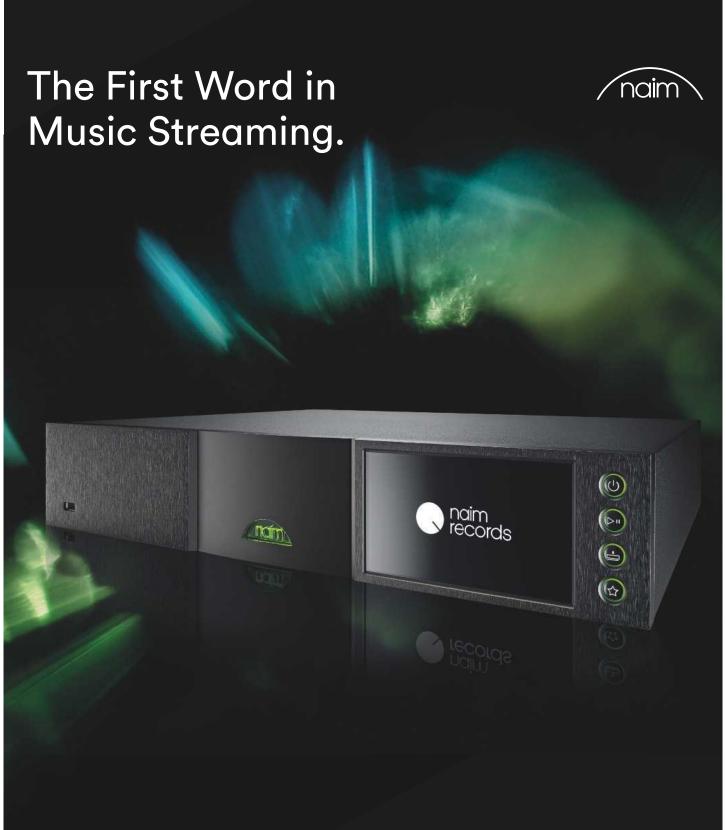
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Awards for NDX 2













33 Revelations Per Minute



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The MoFi UltraPhono redefines what you get for £500, even if you don't factor in what is a mighty fine headphone section. The cartridge matching facility ensures that audiophiles-on-a-budget needn't go without, while the sound quality banishes any thoughts of compromise.... • HiFi News, March 2020



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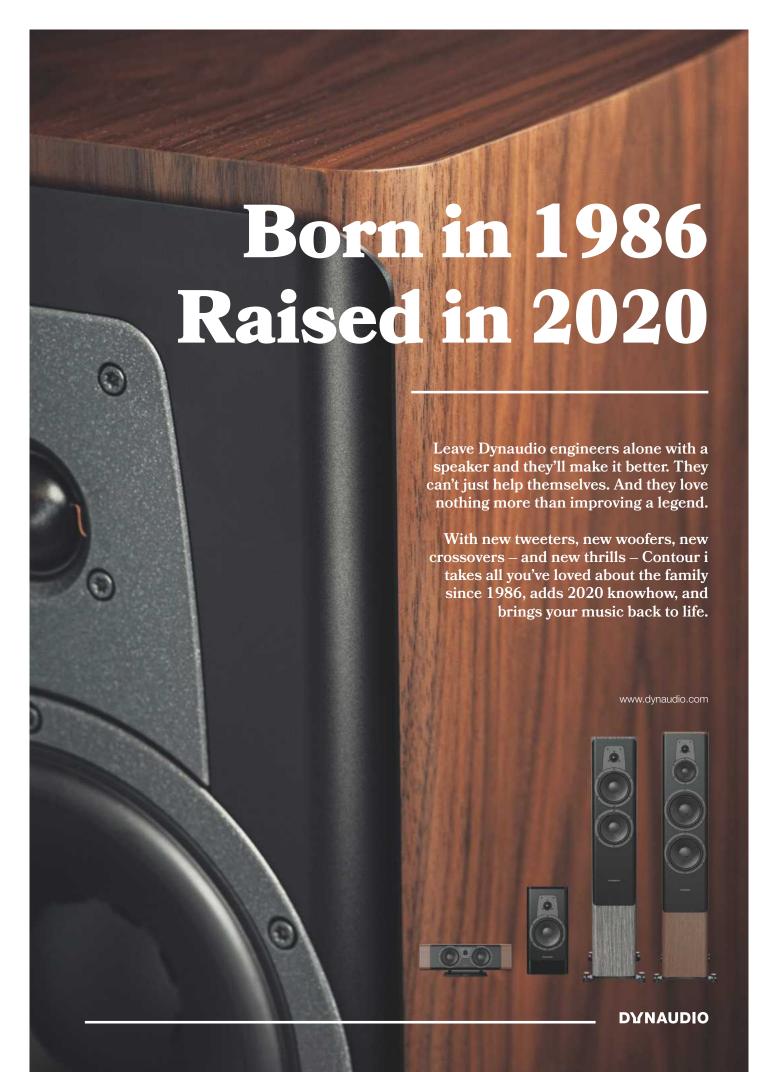
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RIGHT: Best of both worlds? Vinnie Rossi's L2i-SE integrated amp includes transistors or triode tubes to taste, p48



ABOVE: Don't let the deceptively elegant appearance fool you, for Lumin's D2 is a powerful app-driven network-attached DAC. See p44



MUSIC: Eurythmics' No 1, platinumselling album Touch is our Vinyl Icon (p78) while Steve Sutherland examines the 'strange' Edgar Winter Group as ...At Night is re-released on 180g LP (p76)

RIGHT: Hi-Fi News & RR is the UK's representative of EISA's Hi-Fi Expert Group. Editor Paul Miller took over as EISA's President in June 2016



s one more issue of Hi-Fi News goes to press under lockdown we give thanks not only to the frontline workers but also to the gift of music recreated by the equipment at the heart of our shared passion. This is a time to count our blessings and appreciate that ours is a 'home hobby' - to tweak, to play and to listen... and to keep us all sane.

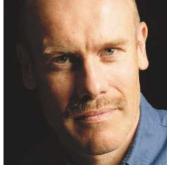
Publishers across the board have been forced to make tough choices, as have very many businesses, but I took the decision at the outset that none of the editorial staff working across our three UK titles would

be furloughed. Hi-Fi News will continue to offer everything that our loyal readers have come to expect: the highest quality

writing, fully independent lab testing, in-house photography and top-notch production values.

But not everything can be brought under control, as the Government's scientific advisors are keen to point out at the daily press briefings. So as social distancing gives way to a more generalised social disruption, nobody can predict what the 'new normal' will look like.

This is specifically important to hi-fi enthusiasts because, as a community, it directly impacts the possibility of us meeting and sharing the experience of



great gear and great sounds at our favourite hi-fi shows. Our own high-end event - the UK Hi-Fi Show *Live* – may offer vastly more open space and fresh air at the Ascot Grandstand than an archetypal show in the stale atmosphere of a crumbling hotel, but it will still involve visitors, many from vunerable

'Listening to amazing systems and seminars is all part of the fun'

demographics, sitting close together in enclosed rooms.

Listening to amazing systems and enjoying seminars together is all part of the fun and while I remain committed to bringing you all a bigger and brighter UK Hi-Fi Show Live, I am keener still not to put any audiophiles at risk. So this year's UK Hi-Fi Show *Live* is not cancelled, merely postponed until we can meet and celebrate in safety. And when we do, it will be the biggest party the UK hi-fi industry has ever thrown!

PAUL MILLER GROUP EDITOR

HI-FI NEWS' EXPERT LINE UP: THE FINEST MINDS IN AUDIO JOURNALISM BRING THEIR EXPERIENCE TO BEAR ON ALL AREAS OF HI-FI & MUSIC



BARRY FOX Investigative journalist supreme, Barry is the first with news of the latest developments in hi-fi and music technologies



DAVID PRICE An avid collector of audio treasures, and life-long hi-fi addict, DP lends his ears and experience from analogue to digital



KEN KESSLER is a long-serving contributor, luxury goods writer and champion for the renaissance in valves and 'vintage hi-fi'



MARK CRAVEN Editor of our sister title Home Cinema Choice, Mark's passion for music extends from stereo to multichannel and Dolby Atmos



STEVE HARRIS Former Editor of this very title from 1986 through to 2005. A lifetime in audio and a love of iazz makes Steve a goldmine



ANDREW EVERARD has reviewed hi-fi for over 30 years and is still effortlessly enthusiastic about new technology, kit and discovering new music



STEVE SUTHERLAND Editor of Hi-Fi Choice, Steve was at the helm of NME through the Britpop years. Steve brings a unique slant to our music features



Stellar integrated



Newly announced by US brand PS Audio, the £3000 Stella Strata integrated amp combines numerous technologies leveraged from its costlier models. These include the 'GainCell' preamp/volume stage [see HFN Apr '20] coupled with a wired/wireless-capable streaming facility that features a tried-and-tested ESS Sabre DAC. While PS Audio's recent M700 and S300 power amps have used Class D modules, the class or type of amplification behind the Strata's quoted 200W/40hm output is not clearly specified. Its broad range of inputs look generous, however, and include balanced (analogue) XLRs, with digital sources supported by optical and coaxial S/PDIF, asynchronous USB and I2S. The PS Connect app acts as a controller for streaming from Tidal, Qobuz, Spotify and other platforms. PS Audio, Colorado, US, 07738 007776; www. psaudio.com, www.signaturesystems.co.uk



TALKING TONEARMS

Talk Electronics has announced two new tonearms, the £350 A500 and £600 A600. Compatible with Rega turntables as standard and with mounts available to order for 9in, 10in and 12in Jelco and SME fittings, both models are uni-pivot designs (with hardened stainless steel pivots points) and can be fitted with the user's own choice of cable. The pricier A600 replaces the aluminium arm tube of the A500 with carbon fibre. www.talkelectronics.com

TUNGSTEN TOES

Available in 33mm-high and 47mmhigh versions (£1350 and £1750, respectively), TungstenGroove's vibration isolation feet are designed to stabilise hi-fi components without requiring removal of the original feet, and combine an inner chamber filled with dense tungsten powder between tungsten alloy end plates. A 'Speaker Edition' of the larger foot allows for custom-sized threads to accommodate different models. www.tunastenaroovesaudio.com

System Audio

Danish speaker manufacturer System Audio is the latest addition to distributor Karma-AV's stable, with the latter announcing UK availability of System Audio's full range of floorstanding, standmount, on-wall and subwoofer models.



These include the Legend Silverback active towers with driver-dedicated amplifiers, priced from £2400 to £7000 per pair; passive Legend speakers (£1450 to £5000 per pair); and the 11-strong entry-level passive Saxo range [the SA Saxo 60 is pictured here]. To streamline the active set-ups, System Audio also offers a 192kHz/24-bit capable wireless hub (WISA certified) for analogue and wired/ wireless digital source connection. System Audio A/S,

Denmark, 01423 358846; www.systemaudio.com, www. karma-av.co.uk.

Glittering all-in-one

Gold Note has revamped its DS-10 DAC/streamer/preamp, launching a 'Plus' version priced at €2890. While key elements of the DS-10 Classic, such as the AKM AK4493 DAC, Bluetooth 5.0 specification and balanced XLR output remain unchanged, the addition of a 3.5mm analogue input to its existing roster of USB, optical, coaxial and AES/EBU digital connections means the DS-10

> Plus can now be paired with the brand's PH-10 phono stage, or other analogue sources.

Says the Italian marque: 'Standing between the worlds of digital and analogue music, the DS-10 Plus now offers the best of both.' Other features of this compact all-in-one include Roon Ready certification, Wi-Fi and wired Ethernet, 6.35mm headphone jack, and access to hi-res streaming platforms through its GN Control app. Its brushed alloy chassis comes in black, silver or gold finishes. Gold Note, Firenze, Italy, 01420 544140:

www.goldnote.it,

www.audiopinnacle.co.uk



Mini Maggie

MAGNEPLANAR LAUNCHES ITS 'LITTLE RIBBON SPEAKER'

Minnesota brand Magnepan has debuted a new entry-point to its range of 'Maggie' flat-panel electromagnetic speakers. and is making it available to UK customers through distributor Decent Audio. The LRS (Little Ribbon Speaker) is a two-way design with a rated response of 50Hz-20kHz (no limits) and a claimed sensitivity of 86dB (at 500Hz) – that Magnepan believes gives buyers a taste of what its higher-spec 20.7 [*HFN* Apr '18] and 30.7 models can achieve. More

compact than those floor-to-ceiling flagships, it measures a little over 1.2m high. The £995 ticket (which includes delivery) suggests affordability, but Magnepan recommends consideration is given to partnering electronics: 'While it will still perform nicely with an integrated amp, it will really give you what you came for with some high-end, high-current amplification'. Finish options are natural or black solid oak, with off-white, grey or black fabric. Magnepan Inc., USA, 05602 054 669;

www.magnepan.com

www.decentaudio.co.uk

English Electric reborn



Cable specialist The Chord Company has launched its first ever electronics component, and in doing so has revitalised the brand name English Electric (to avoid confusion with the entirely separate Chord Electronics Ltd). The 8Switch is an eight-port Gigabit Ethernet hub designed for network audio streaming, and boasts a machined aluminium chassis and resonance-damping feet

to combat unwanted vibration. Targeting EMI are an external 'medical grade' power supply coupled with noise isolation on both the power supply and clock regeneration circuits. Overload protection is fully integrated. Priced £450, the 8Switch is supplied with a (typically £40) Chord Company C-Stream Ethernet cable.

English Electric/Chord Company Ltd, 01980 625700; www.englishelectric.uk

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Athens Sound & Vision

Words & pictures: Fotios Fotiadis



Now in its seventh year, the Athens Sound & Vision Show – also known as the Hxos Eikona Show – took place at the Hotel Stratos Vassilikos in the centre of the city on January 25th-26th. Organised by Greek technology and hi-fi magazine HXOS+ in tandem with online audio site hiendnews.gr, the medium-sized event still managed to attract many thousands of visitors.

Among the products exhibited were components from stalwart specialists such as Wilson Audio and dCS while local distributors showed a rich variety of exotic products, including designs There was no shortage of vinyl too, with turntables from EAT, Horning and Clearaudio while amps with glowing valves lit up many a room.

a wide variety of its speakers. Models on display included (l-r) the Minorca MC40 and Murano standmounts along with the Jersey MC170, Murano Alto and Iroise 3

floorstanders. Music was served up by Cambridge Audio's CXN (V2) streamer. Also on display to one side of the room was the company's wireless active Pearl model. www.cabasse.com



Triangle took centre stage in this set-up with its Delta Signature [left] and Borea BR08 floorstanders. Amplifiers were Primare's 115 Prisma [HFN Oct '18] and PRE35/A35.2 pre/power combo [HFN Dec '19] while the turntable was a Clearaudio Performance DC [HFN Jun '17] with Tracer 9 tonearm. www.trianglehifi.com





Here's ProAc's K6 speakers driven by Musical Fidelity's NuVista 600 amp. Sources included Métronome Technologies' CD 8TS and Le DAC with EAT's Forte S turntable [HFN Dec '10] and VdH Crimson XGW Stradivarius pick-up [HFN Jul '17] heard via MF's NuVista Vinyl phono stage. www.proac-loudspeakers.com



A real treat for the ears were loudspeakers hooked up to Burmester 911 monoblocks. turntable [*HFN* Sep '09] with two arms – the tangential TT2 with a Goldfinger Statement cartridge and the pivoted Universal 9 with a DaVinci V2 pick-up. Digital front-end comprised the dCS

SHOWBLOG Sights and sounds from around the globe

Industrial designer Kostas Metaxas is renowned for his unique audio creations and the Athens event saw the debut of his 'portable' T-RX recorder [far right]. Also on show was the radically-styled Perambulator turntable [right], made from a block of solid 6061 aircraft grade aluminium and seen here sporting two amplifier [HFN Sep '17]. www.metaxas.com





Yet another novel-looking design, only this time from the pen of George Kazantzis, founder of AKu Audio, the 1400mm-tall Talos speaker comprises four drivers - a 305mm woofer, two 178mm midrange units and a 34mm tweeter - each housed in its own chamber. The enclosure is described by the company as being of 'multilayered proprietary body construction' while the stand is made out of 6mm highstrength steel. Active onboard DSP and six channels of Class D Ncore amplification complete the package. www.aku-audio.com







Local company Nexus Acoustics introduced a new reference digital-to-analogue converter it calls the Xaitas RD-500. The DAC employs 2A3 tubes from JJ Electronics and is a Class A design. It comes in an attractive wooden case and offers a USB 2.0 input up to 384kHz/24-bit alongside an S/PDIF input up to 192kHz/24-bit. www.nexusacoustics.com



A real eye-catcher were these Virtuoso M loudspeakers from Audio Solutions, driven by a pair of M350 monoblocks and C1800 preamp from Canary turntables – an Origin Live Resolution equipped with an

Illustrious arm and a Reed playing via a Canary Audio MC10 phono stage. Also in use was a SOtM sMS-200ultra music server and Holo Audio Spring 'Level 2' DAC. www.audiosolutions.it

There were more sweet sounds to be enjoyed from these Horning Eufrodite speakers, which ran on the end of ML2.2 tube monoblocks and an L2.1 Reference preamp from LAMM Industries. A Horning SATI Reference turntable was used to spin vinyl via a Thöress phono stage while Horning's SATI tube DAC was also on display. www.horninghybrid.com







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Audiojumble, Tonbridge

Words & pictures: Ken Kessler



Just before the lockdown in the UK rendered such gatherings impossible, the February 2020 Audiojumble took place and was a huge success. The irony is that this lift in everyone's spirits could be the last for some time, as there's no certainty the autumn event scheduled for Tonbridge on the 27th of September this year can take place.

What was important about the latest event was the shift in emphasis and attendance. There was an increase in younger attendees, the selection of gear had a different 'vibe' and the numbers arrived despite the lousy weather. If anything, the braving of the elements proved that one's passion for hi-fi is a force with which to reckon.

Plenty of 'beater' reel-to-reel decks could be found for those interested in dipping a toe in the open-reel waters without going broke. This TEAC A-1030 is a fine candidate, but I didn't ask how much because I wouldn't have been able to resist. Clean ones on eBay fetch £250-£400.



Super-rare, and a refurbishing project for a tube-devotee: a nice pair of Dynatron LF-15 monoblocks from 1959-1962. Good for 10W each, they used

EL84s in ultralinear mode. This pair appeared to have original Mullard valves in place. A single amplifier recently appeared on eBay for over £400.

Japanese-made gear from the '60s to the '80s is enjoying a revival, but not often seen are Rotel's RT-1024 AM/FM tuner (though knobs and toggles are missing) and a clean RA-1412 amp. Online, mint examples of the tuner fetch £500-£1000, and the amp is a £1000-plus item.





As is now the norm, plenty of interesting turntables were on offer. This fine Goldring-Lenco GL-75 in custom-made, yacht-ply plinth was fitted with an unusual arm and cartridge. Prices for these are on the ascent, as a couple of professional restorers in Switzerland are snapping them up, but good ones are out there for £150-£400.



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REX 3 DAC, Hi Fi News May 2020



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WBLOG Sights and sounds from around the globe



This one drew the crowds, being a super-rare, linear-tracking, direct-drive, quartz-controlled Mitsubishi LT-20 turntable, fitted with an Audio-Technica cartridge and supplied with record puck. Fully overhauled, with instruction booklet and service manual, this utterly clean example was being offered for £350, or around £100 below a lesser LT-20 seen online.



Probably not being sold as a pair, but certainly a viable package for a retro system. Intriguingly, the Quad 34 preamplifier – an underrated vintage buy - could probably power amp from the late '80s. They're products of two audio legends: Peter Walker for the former and David Hafler for the latter. The XL-280 was born of the era when the company was undergoing a sounding mighty fine.





The kind of stack that makes my fingers itch, containing not one but two hugely desirable Tascam professional recorders. On top is the CD-RW901 CD recorder, on the bottom the DA-30 DAT recorder, and sandwiched in between them, a Technics SU-V707 90W/ch integrated amp. The CD-RW901 wrote and played CD-R/ CD-RW discs and featured a 24-bit DAC. The DA-30 supported 32kHz, 44.1kHz and 48kHz, and blank tapes still turn up.





It doesn't get more deliriously retro than this creamy eyeful of, yes, not one but two RCA Orthophonic LM1 32215 control units and [inset] two mono LM1 32216 power amps, all in magnificent condition. This was museum-worthy stuff, the units dating from 1955-1959. The power amp was said to be capable of delivering a serious 20W from KT66s. How amazing to

system! This utterly gorgeous, covetable and, in all likelihood, unrepeatable pre/power package was on sale for £2400.



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LINDEMANN.

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Sights and sounds from around the globe



I get all nostalgic when early US-made gear turns up at Tonbridge, given how scarce it was back in the day. This Fisher Statesman 202-T AM/FM tuner/preamp would have cost a bundle back in 1961/2, such that the *Hi-Fi Yearbooks* of that period listed Fisher prices on application. The follow-up cost around £175 a year or so later – or £3700 in today's money.

And another I had to resist as I was involved in the design of this deck, flying to Acoustic Research in Massachusetts with the late Mike Bartlett of AR to relaunch the company's classic LP spinner as, simply, The AR Turntable. This one has been modified, but sigh - I'd just love to have one in the collection.



Another item I refused to ask about due to temptation, as I once owned a Thorens TD-125 MkII and would love to have one again. I seem to remember that reviewers in the UK were unimpressed by the TD-125 MkII because it had electronic control, but it's now recognised belatedly as a real gem. It certainly saw off the lionised Linn LP12 whenever I A-B'd them. platter material, but it represents the transition between the company's platter-less Planet [inset], when they were being made for Alan Sugar and Amstrad, and the legendary Planar 2. It's an absolute rarity and so a real find for some lucky punter.





This stunning Revox A700 open-reel tape deck with branded spools, professional deep-dish NAB adapter was certainly not short of admirers. Not only is it one of the most desirable of used semi-pro tape decks, but this one was clean, complete and yours for a bargain price of only £850. have been a no-brainer for me. But enough!

month

Next

THEULTIMATE





MUSIC PLAYBACK

MATERIE ARE 1



record player and Audio Physic Tempo speakers

Hi-Fi @ Home revisited

Steve Harris talks to a reader whose system we first featured in 2010. Before we find out what changes he's made, here's how things were...

BELOW: Bestselling author. Yorkshire TV broadcaster and Hi-Fi News reader. Ian Clayton



or Ian Clayton, as he says, 'It's not just hi-fi. It's the stories, the music, the original recordings. The way it all connects together'. lan's best-selling book, Bringing It All Back Home, is a story of a life entwined in music, a story we can all relate to.

He's an incorrigible collector, an authority in several genres. You realise how serious he is when he shows you a rare single-sided Billie Holiday test pressing from the mid-1930s, or joyfully plays

you a priceless 78 of Sonny Boy Williamson. Above all, he believes in the healing power of music. When we meet we are joined by lan's 13-year-old son Edward, a budding pianist and another lover of music.

SERIOUS SEPARATES

How did Ian's interest in hi-fi start? 'I came from a noisy family, who always had a radio or a record playing. We had an old Decca record player in a blue and cream box. My dad had worked on a fairground,

so he was used to the loud rock 'n' roll they played on the waltzers. My mum was a big Shadows fan, and Buddy Holly. But the first serious hi-fi separates I bought were from a back-street shop in Castleford. It's one of the famous old-fashioned hi-fi stores, Eric Wiley, and they still sell top quality gear today!

'I first went there in the winter of 1979. I would have been 20 years old. I bought a NAD 3020 amp, Mission speakers and a Dual turntable. I wanted a Dual CS505

belt-drive but they didn't have that one in, so I got the direct-drive 606.

'That was my first serious hi-fi, and I adored it. At the time I was listening to a mixture of punk and bands like Wishbone Ash and Jethro Tull. But buying those hi-fi separates had me searching out other kinds of music that might sound good.

'That Dual deck ended up at my brother's, and he broke it! The Mission speakers later went to him as well. The NAD 3020 I've still got, and it still works. It's up in the loft.'

And then? 'Well, I used to go to York a lot, and there was a hi-fi shop there called Sound Organisation. I told them that I'd got this Dual deck, but I'd saved up for a Linn Sondek. Because I'd read so much about it! And they told me I'd do no better.'

LINN OR NAIM?

'I listened to a Linn with a Naim pre and power amp combination. I couldn't afford both the Linn and the Naim, so I bought the Linn and continued to use the NAD. And when I'd saved up again, I went back and bought the Naim.

'That coincided with CD taking hold in the late 1980s. I held back, because I had so much vinyl. But then I was walking past the Bang & Olufsen shop in Leeds, where they were demonstrating this beautifullooking CD player. I bought it, but I never really got on with it for some reason. I don't know why.

'So eventually I went back to Sound Organisation, and they introduced me to the Meridian 200 series CD player. And I swapped the B&O machine for the Meridian.

The last link in the chain was the speakers. At that point I still had my old Missions. So I went to Sound Organisation again. I listened to several speakers, and couldn't get on with any of them. So they said "lan, we're going to bring you a pair of third-hand Isobariks!".

'They brought the Isobariks to the house, and I loved them and I got them, at a good price. So now, I had the Linn Sondek with Lingo, Naim pre- and power, and Isobariks. And I suppose I was satisfied then.

'But then something else comes along. Come the new millennium, and I'd been reading about a Danish CD player from Copland, and how good it was. And one of the few dealers in England was just six miles **RIGHT:** Elegant and mellowsounding, the **Pathos Classic** One hybrid amplifier replaced a valvehungry Kora Design 50. To the right of the Classic One sits an Ion Systems FMT 1 FM tuner





ABOVE: View from the balcony shows the high ceiling in lan's listenina room while to the bottom left of the picture can be seen the Illingworth gramophone with its built-in horn, made in Bradford in the early 1930s

away from my house. He was Colin of Premier Audio in Sandal, near Wakefield. When I phoned him, he said he didn't have the

Copland player in at the moment but after asking me what I liked, said, "If I were you, I would go for some new speakers, before you do anything else".

.....

'He said that some of the new generation of speakers could far outdo the Isobariks, good though they were and he brought over the Audio Physics Tempos.

'There was a very discernible difference! Now, it was like being at a concert. Everything seemed to be where it should be. The vocals came in at you from some space in the middle between the loudspeakers.

'My ears really tuned into that. The music wasn't just firing off in every direction. You could almost see the musicians! So I bought them.

'After that, Colin told me that he thought the Naim was all right. but there was a great trend back towards valve amplifiers. He brought over the Kora Design 50.

'We listened to it and I loved it. In a way, I wish I still had it hooked up now. But it was so expensive on tubes. The Svetlana valves were nearly £30 a piece, and there were four. I replaced them three times in three years. But it's a nice thing, and I've kept it as I'm going to use it again at some point.'

BRIGHT 'N' BRASH

"Buying hi-fi

is sometimes

like buying

a painting"

'A little later Colin suggested I start looking at replacing the Meridian, as it was a bit outdated. And he came up with a Shanling player. You don't always pick the right music when auditioning something. The Shanling came with a demonstration

> disc of Chinese orchestral music, and it sounded fabulous. I listened to that. and it made a real impression on me.

'But when I started playing my own CDs on it, over

the weeks and months afterwards, I never got that same "Wow factor" I'd had with the Chinese music. And it seemed quite bright and brash. I don't know whether it was the looks of it that made me think that, because it's a silver thing with lots →



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of lights and a row of buttons. But I went off it quickly. So Colin said, "Well, the new generation of Italian stuff that's coming is so mellow and beautiful sounding; it's the kind of thing I think you'll like". I listened to the Pathos Digit, and it was.

'I view buying hi-fi as sometimes like buying a painting. I've got a lot of paintings in this house. And you don't *need* 'em, like you don't need to have ridiculously expensive hi-fi. But there's great satisfaction to be had from something that is well made, beautifully designed and worth having in your house. I buy beautiful German pans, ridiculously expensive, but I enjoy them. And they'll be there for ever. My lad will be using them in 40 years' time.'

PURE EMOTION

'So there's far more to it than technical specifications. I'm relying on emotion, I'm relying on memory, I'm relying on sentimentality and nostalgia. All these things that add up to making enjoyment are far more important to me, really.

'A lot of things in my life are connected to the story, and I always go back to that, the pulse of life to me is the story. If I pick up a record and put it on a decent hi-fi, I'm not just picking a record up, I'm picking a memory up, I'm picking an emotion up, a place and a time and what that meant to me. And when I listen, not only am I listening to it

in real time, at 33 and a third, I'm also listening to it at a time long ago.

'It might be - I don't want to get too fancy about it but it might be – that I'm going all the way

back to what my forebears listened to as well! The kind of rhythm, the metre and the melody that they might have been enjoying. Because I think although we learn a lot, a lot of it is in us, and how we respond. I might be listening to my dad's fairground waltzer experience.

'I enjoy all the different technologies as well! When I listen to my old George Formby records, I listen to 'em on a wind-up gramophone. There's something right about that, to me. I've even got some of George Formby's dad's records. He was one of the ultimate

entertainers, he was the man who brought music hall up out of the gutter into being a big theatre thing.

'Now, I've actually got some of his records on a CD, but they don't sound half as good as they do on the clunky old 78s that were made before the First World War. Likewise, when I listen to Dusty Springfield,

"I love listening

to Dusty on a Dansette, or my Hacker"

I love listening to Dusty on a Dansette, or my old Hacker record player. A piece of art that was made in the 1960s, to me, is lovely when it's played on 1960s

technology, and I don't need it on CD or as a download.

'I first bought a gramophone, a 1920s portable, just to play some old 78s I had – Elvis Presley, Louis Armstrong, Billie Holiday. When it broke, I had it restored at a place in Sowerby Bridge in Pennine Yorkshire. The shop is called Talking Point and it's owned by a guy called Paul. It's a box of delights, that shop.

'And there was one machine, called the Illingworth, which he told me had been made in Bradford. I used to admire it, and think "Could I really?". Then he told me to ignore

ABOVE: Audio **Physic Tempo** loudspeakers and [top right] a 1930s portable gramophone and 1960s Hacker record player

BELOW: lan's Linn LP12 with Lingo PSU. Linn Ittok LV III arm and Linn K18 II cartridge

the price on it and he offered it to me for a lot less, and I said I'd have it. And he said, "Now you're having it, I want to tell you that it's my own personal machine. I restored it, brought it back to life. I hope you'll give it a good home". And it's an incredible machine. It's everything that a piece of 1930s music reproduction should be.'

ORIGINAL BLUES

'I'm also an avid collector of original recordings. And because I'm a great blues fan, I try to collect original blues recordings. I've visited the Mississippi Delta three times, and I go into old shacks in the middle of nowhere, trying to find if they've got any old records. Usually, they have. And there's one label that I'm very fond of, and that's the Trumpet label, run by Mrs McMurray, who recorded Elmore James in 1951.

'My searches have been in vain for Elmore James originals, but I have got some very rare Sonny Boy Williamson originals on the Trumpet label. So my Bradford Illingworth is what I use for playing my Trumpet records. I keep it for best!' 🖰











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HI-FI @ HOME - CATCHING UP TEN YEARS LATER...

still have the Linn Sondek and the Lingo box,' says Ian. 'I still play my vast album collection on it. And I've still got my old record players as well. And my Illingworth gramophone, and a Morning Glory horn!'

Ten years ago the Linn LP12 turntable was running without the lid - making it rather a dusttrap. The cartridge was a K18, Linn's more expensive version of the original entry-level K9, still based on the Audio-Technica AT95 but with a tapered aluminium cantilever and a bolt to keep the stylus assembly firmly in place.

DIGGING THE DIGIT

However, Ian soon upgraded to the K18 II, which has an improved suspension inside a red stylusholder body. And the LP12 now does have a cover, as Ian managed to get some working hinges for it.

Having not enjoyed several CD players before it, Ian loved the mellow sound of the Pathos Digit player from the start. So when it went wrong he chose to have it repaired rather than replaced, and it's still going strong too.

RIGHT: lan looks on as his son Edward. then a budding musician, plays Miles Davis's 'All Blues' on the piano during our visit in 2010

RELOW RIGHT

Edward on stage with British band **Glass Caves at** a concert in Nottingham last year. He's now a touring musician, playing in the UK and abroad



He did try the Kora Design 50 amplifier again when a friend managed to get him some new 'After a year they were gone!', and the amp was set aside once more.



Back in 2010, Ian had an iPod but he didn't get on with it: 'I don't like things near my ears and I don't like things dangling under my chin!', he told me then. So had he got any further into the new world of digital audio now? 'Hmm, not really...', he said. But he waxed lyrical about his son Edward's Ruark all-in-one player/ streamer, bought at Eric Wiley in Castleford, where Ian got his own first hi-fi 40 years earlier.

While the hi-fi hasn't changed much, lan and Edward are both more involved in music than ever. lan's writing work recently included his enthusiastic collaboration on a long-overdue musical autobiography.

'I received an email from lain Matthews. First of all I said, are you the Iain Matthews I think you are? I used to sing along to "Woodstock" on my way to school!'

It was indeed Iain Matthews of Matthews Southern Comfort, who'd had that huge hit in 1970, walked out on stardom but then gone on to pursue his career in the USA for 30 years before returning to Europe.

'lain lives in Holland now and he said how much he'd enjoyed the music book I'd written, Bringing It All Back Home. And he said, next time I'm touring England, can I visit vou?

'He came over, and we were having tea at the kitchen table, and then he said "I'd like someone to

write my life story. Would you consider doing it?".



Eventually, after many conversation sessions in Holland, Thro' My Eyes was published in 2018.

'We did a tour last year we called the Words & Music Tour, I read from the book and he played the appropriate songs.'

When I visited back in 2010, 13-year-old Edward

sat at lan's upright piano and played us Miles Davis's 'All Blues'. But more recently, Edward has been touring at home and abroad as the keyboard maestro with a York-based rock band - 'They were on Dermot O'Leary's show on Radio 2 this morning'.

Last year, Ian was surprised and chuffed to win a prize for his latest book It's The Beer Talking: Adventures In Public Houses.

'It's a kind of a paean to localism, if you like, wherever local is, I've taken the pub as a symbol, or a metaphor if you like, as somewhere good to go that is local, with the idea that my favourite pub is always a local one, wherever I am.'

lan went to the 2019 British Guild of Beer Writers' awards dinner in London with no expectations.

'I thought, I've no chance, because they were all experienced writers about beer. But I was the only one who'd written a book that was nominated for the Best Writer About Pubs award – and I won!' ()





Russian tubes, but as before, he was put off by the need to replace them:





The 30.7s deliver sound quality competitive with (and in some respects superior to) loudspeakers ranging from two to nearly ten times their price.

- Chris Martens, HiFi+



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Raidho TD2.2

Danish-based Dantax Radio reinvents a classic: a rework of the Raidho D2.1, now fitted with tantalising drivers Review: Andrew Everard & Paul Miller Lab: Keith Howard

éjà vu, all over again? Very recently we were playing 'spot the difference' with the Scansonic MB5 B floorstanders [HFN Jun '20], a superficially lookalike but substantially revised version of the old MB5 and one of the latest from Dantax Radio's growing GamuT/Raidho/Scansonic family. This month the focus is back on Raidho itself, with the arrival of a new version of the D2.1 speaker [HFN May '18] where, as with the M5/M5 B, there's quite a bit of visual similarity between old and new.

The TD2.2 we have here, selling for £38,000 a pair depending on finish, is the smallest of four floorstanding designs in Raidho's TD (Tantalum Diamond) range. Standard finishes are piano black or walnut burl veneer, but emphasising the craftsman-built ethos of the range, you can also have 'any colour to order'. Below this sits the £20,000 TD1.2 standmount, while the lineup stretches out through the £56,500 TD3.2 and £85,000 TD3.8, before peaking with the TD4.2 at £102,000, standing an imposing 1.55m tall.

CHOICES, CHOICES...

As you step up through the range, the size increases and so does the driver complement: the TD2.2 is the first to use separate midbass and bass drivers, and by the time you get to the top of the line, you're treated to four bass units and two midrange, straddling the ribbon tweeter that's a constant in so many of the Dantax brand's designs [see boxout, p37].

The kind of personalisation list you might expect on an upscale car is offered on the speakers. For example, the TD2.2 can be ordered with black aluminium trim fins on the rear for €600, with matching screws for a further €180; replace the standard aluminium feet with 'diamond' ones for a cool €5000 or so, and if you want a custom paint finish, that will set you back a further €4500. Go crazy on the options list, and you could easily be looking at a near-£50,000 pair of speakers.

Oh, and if your head is spinning with all those numbers, it's perhaps worth noting

that the TD2.2 is only a fiver more than the model it replaces, despite the arrival of all-new drivers.

Ah yes, the drivers: the D-Series was already using Raidho's 'Diamond' technology, in which around 1.5 carat of industrial diamond material is applied to each alloy/ceramic driver cone to increase stiffness. As Raidho put it when launching the D-Series, 'Applying the diamond structures has moved the membrane resonance frequency up where we cannot measure. Does it matter? Oh yes, it does! Is it costly? Don't ask...'

TANTALISING METAL

For these latest TD models, while the base alloy cone material is retained, the ceramic and diamond laminate is supplemented with a layer of tantalum, a rare, dense and inert metal. This new addition to what is now a five-layer composite provides a better matrix onto which the diamond layer is deposited, the company claiming this delivers 'high internal damping and excellent acoustical properties'.

The use of tantalum may allow the cone to accept more diamond, but the process for making the drivers, in-house of course, is sufficiently demanding that you're unlikely to see it trickling down to its Scansonic models any time soon. And yes, it does account for at least some of the cost of the speakers – we're a long way from off-the-shelf drivers here.

Two 6.5in/165mm drivers are used in the TD2.2's 2.5-way design, both handling the bass and the other midrange above 400Hz before crossing over to the familiar corporate quasi-ribbon tweeter at 2.4kHz. The midbass and bass drivers are mounted into hefty aluminium modular baffle sections for reinforcement and also ease of replacement. Naturally, there's a deal of Raidho technology in the basket,

RIGHT: Supported on an alloy base with four stabilising outriggers, the curved cabinet/ alloy baffle houses a sealed isodynamic/ribbon tweeter, a 115mm 'Tantalum Diamond' (TD) mid driver and 115mm TD bass driver







REALISTIC RIBBONS

The vast majority of loudspeakers are equipped with a dome tweeter of 25mm diameter or thereabouts for reproducing treble frequencies. The dome profile offers good directivity and, particularly when fashioned from the lightest,

stiffest materials, enjoys low distortion with breakup resonances pushed out to ultrasonic frequencies. Oldschool ribbon drivers, where the diaphragm was also the electrical conductor, have fallen out of favour because they are typically very fragile and require a matching transformer to isolate the amplifier from its vanishing low electrical impedance. Few amplifiers relish driving a near-shorted load...

A more realistic alternative to pure foil ribbons are 'pseudo-ribbon' drivers like Raidho's tweeter. This is an isodynamic driver with a thin polymer diaphragm carrying a flat, zig-zag shaped 'voice coil' etched from a conductive coating on one surface [see inset pic]. Raidho claims to have reduced the membrane's mass to just 20mg while enhancing the

unit's waveguide, the rear panel and magnets that form the encompassing field. There's no suggestion of tantalum being employed in this latest generation of Raidho's tweeter but sensitivity is improved by a claimed 3dB and distortion reduced by a massive 35dB [see Lab Report, p39].

these Raidhos as

far as they will

comfortably go'

suspension and motor system, including titanium voice coils and underhung highpower (1.1 tesla) magnets.

The substantial black-anodised baffle is also angled to optimise the speaker's 'impulse alignment', while the curvaceous cabinet tapers down towards the rear, in what has now become an almost commonplace 'lute' or 'hull' style, reinforced here by a thick alloy spine that hosts 'Gorillaz takes three bass reflex ports.

Also fully integrated into the speaker's exoskeleton is a solid alloy base with outrigger feet already attached, which is handy when one considers

the logistics of upending a 45kg speaker to fit them. The feet themselves are of an extremely neat design - ceramic balls provide internal decoupling, and there's none of that fiddling about with a spanner as you simply turn the uppermost disc on each foot to level the speaker.

🚺 A RELAXED RIBBON

Raidho is no less particular about the placement of its floorstanders than sister brand Scansonic, writes Editor PM, although it recommends the TD series speakers are located further away from side walls, and with a greater degree of toe-out, than you might anticipate. I duly capitulated, although I also discovered the TD2.2s were mercifully tolerant of being parked fairly close to the rear wall.

Auditioned with appropriately costly and very capable Constellation Inspiration monos [HFN Oct '19], these pre-run-in TD2.2s very rapidly came on song to deliver a robust but exquisitely composed sound. The pseudo-ribbon tweeter, in particular, which in the past had a tendency to sing out with a 'look at me' pizzaz was now seamlessly integrated with the new 'stiffer'

> bass and midbass units. Whether Raidho's recent updates have resulted in a slightly sweeter, smoother-sounding ribbon or faster cones with a better sense of subjective snap, the end result is a more joined-up

performance where a firm and extended bass meets an insightful midrange and deliciously creamy, airy treble.

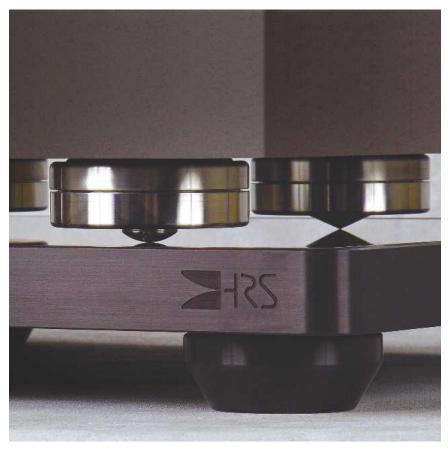
Spin up Gerry Rafferty's evergreen 'Night Owl' [Sleepwalking; EMI Gold 0724357608923] to hear this unification in action as his voice and quitar fill out the mid and presence, the harmonies sequeing perfectly into Raphael Ravenscroft's Lyricon solo some few minutes into the track. As the sound of this early, breath-controlled synthesiser fills the room, the pin-point patter of percussion proves the perfect counterpoint - a blend of sweet and citrous that's entirely complementary.

And bass? Neither the cabinet volume nor drivers are especially capacious but the TD2.2 still digs impressively deep while very rarely biting off more than it can chew. →

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HRS system components will prove to be an essential collection to remove noise from your hi-fi. And less noise, of course, means more music.

Paul Rigby – The Audiophile Man, Dec 16



The signature drum programming that powers Gorillaz' 'Dracula' [G Sides; Parlophone, 44.1kHz/24-bit] takes these Raidhos as far as they will comfortably go, while the opening of 'Faust' moves them just a little bit further still - no overt

LEFT: Crossing over at 400Hz, the lower 'Tantalum Diamond' bass driver works out of three vents in the rear spine of the speaker. Despite its three-way crossover, the TD2.2 does not support bi-/tri-wiring

bloom or boom here but there is some loss of rhythmic composure. Time to back off the volume control.

The TD2.2s seem otherwise quite at home penetrating and untangling the densest of mixes. Their ability to convey energy without chaos was ideally suited to a session listening to Jimmy Page's latter-day remastering of Led Zeppelin's Presence, the band's seventh album also produced by Page back in 1975-76 [Warner Music 0081227955724; 96kHz/ 24-bit]. The album, free of keyboards, still sounds raw but the multiple, over-dubbed guitars have a greater clarity in this 96kHz rendering – a quality not lost on the TD2.2s.

LABOUR OF LOVE

Once again, the speakers delivered a very complete and continuous picture of the musical event as their blend of moving-coil and 'ribbon' drivers joined in a partnership as convincing as the performers on stage (and basement studio).

It seems very clear from their sophisticated and informative sound that the TD2.2s are, indeed, the product of much development and, I suspect, even more listening tests. It would be interesting to learn what partnering equipment was used during this period, though I remember they sounded especially fine at our UK Hi-Fi Show Live 2019 with amplification from both Esoteric and Audio Analogue. \oplus

HI-FI NEWS VERDICT

Raidho takes its name from Norse mythology and the 'journey of life', and in the right system these TD2.2 floorstanders have every chance of completing your path to the ultimate hi-fi experience. There are caveats, however, not least in the costly toll taken by its enhanced in-house engineering, exotic driver materials, Nordost internal wiring and extruded alloy cabinet parts. An extended personal audition is a must.

Sound Quality: 83%



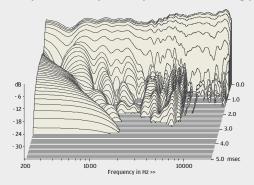
RAIDHO TD2.2

Raidho claims 88dB sensitivity for the TD2.2 but our results come in a little lower. While a simple mean of the FFT data gets quite close at 87.3dB, the pink noise and 'music' figures of 85.6dB and 85.4dB indicate that an 85.5dB specification might be nearer the mark, though this is around 2dB better than achieved by the D2.1. A nominal impedance of 60hm isn't quite justified either, given that this suggests a minimum modulus of 4.80hm whereas we measured a minimum of 4.4ohm. Impedance phase angles are moderately high, and although the EPDR falls to a minimum of 2.1ohm at 94Hz, this suggests that the TD2.2 is slightly easier to drive than typical modern speakers of its form factor.

Forward frequency responses [see Graph 1, below] were measured at 1m on the tweeter axis and show a hint of a 'BBC dip' centred on 2.5kHz, followed by a mildly shelved-up treble. Because of the latter, and a dip of unknown origin at 375Hz, response errors are on the high side at ±5.2dB and ±4.5dB, respectively. Pair matching over the same 200Hz-20kHz frequency range is fair at ±1.0dB and improves to a fine ±0.6dB below 16kHz. Diffraction-corrected nearfield bass measurement showed the LF output to decline gently below 100Hz before steepening to the expected fourth-order roll-off below 35Hz, with a creditable 37Hz extension (-6dB re. 200Hz). As we have seen before with isodynamic tweeters, THD at 10kHz was a little high at 1.1% although past experience has also shown that these can give variable distortion results when measured nearfield. The treble resonances visible in the CSD waterfall [see Graph 2, below], which would usually be ascribed to breakup modes in the bass-mid driver, are lower than seen in the D2.1. KH



ABOVE: 375Hz dip is unexpected as is the slight uppermid depression, but presence/treble return strongly



ABOVE: Cabinet modes are well controlled but cluster of resonances at 3-8kHz is linked to bass/mid driver

DI MINUC COPCIDIO MILONIC

HI-FI NEWS SPECIFICATIONS	
Sensitivity (SPL/1m/2.83V – Mean/IEC/Music)	87.3dB / 85.6dB / 85.4dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	4.4ohm @ 125Hz 30.0ohm @ 23Hz
Impedance phase: minimum & maximum (20Hz–20kHz)	-51° @ 69Hz 31° @ 20Hz
Pair matching/Resp. error (200Hz-20kHz)	±1.0dB/ ±5.2dB/±4.5dB
LF/HF extension (-6dB ref 200Hz/10kHz)	37Hz / >40kHz/38.6kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.5% / 0.1% / 1.1%
Dimensions (HWD) / Weight (each)	1055x200x520mm / 45kg

Web: www.musicalfidelity.com; www.henleyaudio.co.uk Price: £5649



INTEGRATED AMP/DAC

Musical Fidelity M8xi

A new big beast stalks the integrated amplifier jungle, courtesy of the refreshed Musical Fidelity brand. Armed with ears and test gear, we track the M8xi to its lair... Review & Lab: **Paul Miller**

If you are into fancy-looking hi-fi with machined fascias and decorative meters then the £5649 M8xi integrated amplifier is not for you. 'Sorry, that's the way it is', says Musical Fidelity, though I suspect this declaration of intent for the entire M8 series owes more to Musical Fidelity's founder than the new owners, Audio Tuning Vertriebs GmbH, of which vinyl evangelist Pro-Ject Audio Systems is another division.

So 'Made in Wembley, England' is now replaced by 'Made in Austria' on the packaging even though the engineer behind some of MF's earlier and iconic big amplifiers, Simon Quarry, has returned to deliver us more than a taste of the old Musical Fidelity magic in this new M8xi integrated model. The promotional flyer for the M8xi reminds us that MF's journey into the realm of the 'super integrated' began way back in the early '90s with the A1000 [HFN May '93] although, in practice, what it describes as 'the latest and best of the breed' arguably owes as much to the design of its more recent, very high output power amplifiers [see boxout, p41].

BRIDGED BEHEMOTH

Whatever its heritage, the M8xi is certainly big and weighing in at some 46kg it's not especially comfortable to hump about if grasped by those effective but utilitarian heatsinks. Siting the amplifier takes some thought too as the M8xi is a full 485mm wide, 180mm high and 500mm (that's half a metre) deep. Big? It's a beast!

Rated at a not inconsiderable 550W/80hm per channel, but capable of rather more [see Lab Report, p43], the high (67V) voltage output is achieved by bridging a pair of output stages, the two 'sides' of each mono bridge comprising three pairs of high-current power transistors. This is not a new solution for Musical Fidelity, its

RIGHT: Inside the M8xi shows a dual-mono design with two PSU transformers [centre] feeding two bridged power amps with six pairs of output devices per channel [on heatsinks, left and right]. USB DAC/pre board is new [bottom]

engineers having refined this balanced/ bridged output topology, with a trick or two of their own, for well over a decade. Nevertheless, because the red and black speaker terminals are floating, care needs to be taken not to connect the M8xi to a powered/earthed loudspeaker, or certainly not before consulting your dealer.

Otherwise, scale notwithstanding, the appearance and features of this dual-mono integrated amplifier are all by-the-numbers. Two huge rotaries dominate the extruded alloy fascia, catering for input selection and volume, while the results of each are indicated on a bold central display. There's no headphone socket here as Musical Fidelity would probably rather you bought its separate £500 MX-HPA preamp [HFN Apr'15], but if the front panel looks a little

sparse then that's because all the real action is hosted at the rear of the chassis and via the M8 series remote [p43].

KEEPING IT SIMPLE

Inputs extend to four single-ended on RCAs, including one HT bypass, and two balanced on XLRs – even the preamp outputs are both single-ended and balanced. There's also a fixed RCA line output and two sets of very substantial 4mm speaker cable terminals to service partnering loudspeakers with split/bi-wire crossovers.

Meanwhile digital files up to 192kHz/ 24-bit are accommodated on pairs of coaxial and optical S/PDIF connections plus a single asynchronous USB-B port. Musical Fidelity's choice of DAC, the TI/Burr-Brown PCM5242, is part of that company's







'DirectPath' series of monolithic converters (its small VQFN package ideal for use in smartphones), but the chip does not support DSD. Hence, neither does the M8xi which rather puts it on the digital back foot if you're the kind of audiophile with a big

library of very high-res DXD and DSD music files. On the other hand, you might view this USB input as an optional extra rather than a core feature - the M8xi is all about power, lots of power, not digital audio after all.

More surprisingly, perhaps, neither is there an MM/MC input, but then, once again, Musical Fidelity and Pro-Ject combined have more than a few outboard phono preamps to keep you busy. Indeed, Pro-Ject's Tube Box DS2 phono stage is reviewed in this issue [see p62].

TRUE GRIP

'The M8xi

amplifier isn't

just heavy, it's

also fast...'

It's been my experience that the best audio engineers not only have great production

> skills but also have an instinct for how circuit layout and component choices will impact on the subtleties of sound quality. Simon Quarry has proved his worth in the past, so I'm glad to say my expectations for the M8xi were fully

realised once I had it hooked up to my B&W 800 D3 loudspeakers [HFN Oct '16].

The M8xi, sitting toasty warm behind me, immediately went about the business ABOVE: Flywheel-effect input and volume knobs are both rotary-encoders while the large display indicates source and level. It is difficult to gauge the sheer size of this 46kg integrated from a pic!

of demonstrating what a truly powerful and capable amplifier it is - cueing up Massive Attack's 'Unfinished Sympathy' (what else?) [Blue Lines 2012 Mix/Master; Wild Bunch Records, 96kHz/24-bit] had those rigid sandwich bass cones reach down as low and far as they might without popping the end stops. Nelson's voice soared, the sampled bass and percussion powered and sparkled in turn while the orchestral strings – recorded at Abbey Road Studios – possessed all the lush richness that I've come to expect from this track when played to its fullest.

> Fortunately this is no onetrick pony. Sure, the M8xi sounds 'big', boasting

> > tremendous weight, extension and a pneumatic grip over bass notes that powers the deepest rhythms through your rib cage and beyond, but its repertoire is both more varied and extensive in

its resolution of colour, timbre, dynamics and ambience.

SON OF TITAN

If you want to trace the genesis of the M8xi then look no further than Musical Fidelity's Titan power amp [HFN May '10], pictured here. This bridged power amp delivered 1050W/80hm and 1996W/40hm with a dynamic output of 5900W/10hm (76.8A). Sure enough, the M8xi's dynamic delivery of 880W, 1740W and 1300W into 8, 4 and 20hm is lower, and its 26.8A current capacity

deliberately limited, but key features of the design are carried over. While the M8xi's output stage uses a newer version of Sanken's STD03N/03P Darlington power transistors (with built-in compensation diodes) it shares an idea from the Titan: each transistor is powered via its own dedicated 4700µF/80V reservoir capacitor. With three pairs of transistors per side of the bridge, or six pairs in total per channel, this gives 12 reservoir caps per channel, and these black/grey cans are clearly visible in our lid-off shot [adjacent, p40].

The preamp and digital circuits owe more to MF's Encore 225 streaming amplifier [HFN Dec '16] though the M8xi's USB input is a superior XMOS-based implementation. The 'Encore' line preamp has an improved layout in the M8xi and now has both balanced inputs and outputs even though, in practice, the preamplifier is single-ended in design. And that huge volume knob does not drive an analogue potentiometer – it's a rotary encoder (with no hysteresis, I might add, so spinning it quickly does not speed the volume change up or down) linked to a digital-governed volume control from Texas Instruments. PM

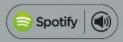
PEDAL TO THE METAL

Most striking is this amplifier's speed as transient details fly from the speakers with a fleetness that you'd perhaps not anticipate from a great lump of an amplifier. The M8xi isn't just heavy, it's also fast... This combination of weight, scale and zip is beautifully illustrated by the truly massive orchestra that powers the drama of Wagner's Symphonic Ring [Duisburg Philharmonic/Darlington; Acousence ACO21309, 192kHz/24-bit]. Recorded with Neumann mics, Apogee converters and a →

NOVAFIDELITY

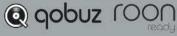
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ABOVE: Five line ins (three on RCAs, two balanced on XLRs), USB-B and pairs of coax/ optical digital ins are joined by balanced and single-ended pre outs (XLR/RCA), one fixed line out (RCA) and coax/optical digital outs. There are two sets of floating (live negative and positive) 4mm speaker outlets per channel for easy bi-wiring

Merging Pyramix workstation, this fabulously detailed rendering finds harps and flutes still tonally vivid in a sea of strings stirred by no fewer than 30 first and second violins.

Multiple tympani and percussion underpin this ambitious festival of sound and through it all the M8xi keeps its cool, resolving the lyrical simplicity and delicacy of 'Forest Murmurs' with the same deft touch that it develops the scene of deep, fast-flowing water in the Das Rheingold Prelude. I have heard this soundscape sound grander still, but only with the likes of D'Agostino's Relentless monoblocks, masterworks in their own right [HFN Mar '20], but from an integrated? Never.

The M8xi is versatile too. As Diana Krall sashays her way through The Eagle's 'I Can't Tell You Why' [Wallflower; Universal/Verve 4701861, 48kHz/24-bit] the M8xi sheds its bulk and gets into the swing of things, lifting this vaguely melancholic ballad by illuminating both the brushwork percussion and accompanying piano.

This album had a very mixed reception from the critics on its release in 2015, not least because there's little sign of the fireworks Krall has brought to bear on some of her previous outings. But here

the depth of detail, and seemingly natural composure of the performers in what is a very relaxed acoustic ensured the album was rarely less than captivating if not especially invigorating. LEFT: Blue buttons on the M8 series

MUSICAL FIDELITY

M8

remote cover off amp functions including input select, volume, mute and display brightness

Faithful to the tone of the message, perhaps, but not ideal listening for the times...

THE USB OPTION

Nevertheless this was one of many albums I used to compare the sound of the M8xi through its analogue XLR and digital USB inputs, via a Melco N1ZS20/2 server [HFN Jun '17] and dCS Vivaldi One player/DAC [HFN Feb '18]. Simply put, the M8xi's USB input is good, very good, but an external high-end DAC will still have the edge, revealing the M8xi, in purely analogue guise, to be capable of a slightly more insightful sound with deeper, darker backgrounds and a subtlety that belies its brutish, no-nonsense apparel.

So the brush-like percussion from Carman Lundy's Self Portrait [JVC Victor VICJ-5152; ripped from K2 CD] is not a million miles off that from Krall's album, but in both cases the analogue input saw the M8xi paint performances that were just that bit smoother, more liquid in tone and delivery. Free of stress, strain or any suggestion of subliminal background hash, the sound was both inviting and enveloping, spilling from the speakers and washing away minutes and then hours of my listening time. Not that I was complaining. \circ

HI-FI NEWS VERDICT

If you're of the persuasion that no amount of power is ever enough, or perhaps simply want to futureproof yourself against the unlikely purchase of impossibly insensitive speakers, then Musical Fidelity's M8xi is your man. But this integrated amp, bluff exterior and all, is not only capable of driving a short piece of damp string, but does so with a dexterity and fleetness of foot that utterly belies its bulk. Chalk one up to Austria.

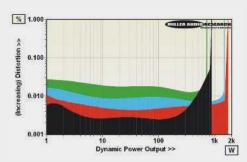
Sound Quality: 88%



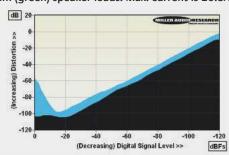
MUSICAL FIDELITY M8XI

Care needs to be taken with the bridged/floating output of this very high power amplifier - it must never be connected to an active or grounded speaker/sub solution or either one may be damaged. Standard passive speakers are just fine, of course, where the M8xi sails past its rated 550W/8ohm output to deliver 640W/8ohm and 940W/4ohm with sufficient headroom to accommodate peaks of 880W, 1740W and 1300W into 8, 4 and 20hm loads under dynamic conditions [see Graph 1, below]. There's a sensible current limit of 26.8A (<1% THD) so power is 'restricted' to 720W/10hm. The overall gain of the M8xi is also 'sensible' at +37dB, lower than the +43dB typically encountered, but yielding a far more useable volume range with standard 2V line level sources. The A-wtd S/N ratio is a little above average at 86dB (re. 0dBW) and distortion very low at 0.0009-0.0035% (10W, 20Hz-20kHz), although there is a slight increase in THD at low power levels (~0.004% at 1kHz/1W/8ohm) and progressively higher power levels from 0.0015%/10W to 0.003%/100W. 0.005%/250W and 0.006%/500W (all 1kHz/8ohm). The frequency response is not quite as flat as MF's spec. suggests, but -0.4dB/ 20Hz to -0.25dB/20kHz and -4.1dB/100kHz is still fine.

Maximum (DAC) line output here is 1.9V from a 50ohm source impedance (rising to 220ohm/20Hz), the stage offering a generous 107dB A-wtd S/N ratio and a response that extends to -0.05dB/20kHz with CD/48kHz media and -0.9dB/45kHz (96kHz files) and -3.1dB/90kHz (192kHz files). Jitter is well suppressed (typically 10-200psec) and distortion is held to 0.001% across the top 30dB of its dynamic range through bass and midrange, rising to 0.005-0.1% at 20kHz [Graph 2, below]. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 10hm (green) speaker loads. Max. current is 26.8A



ABOVE: Distortion vs. USB 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	640W / 940W
Dynamic power (<1% THD, 8/4/2/10hm)	880W 1740W 1300W 720W
Output impedance (20Hz-20kHz)	0.039-0.11ohm (48-220ohm, line)
Freq. resp. (20Hz–20kHz/100kHz)	+0.0 to -0.3dB/-4.1dB
Digital jitter (USB at 48kHz/96kHz)	<10psec / 210psec
A-wtd S/N ratio (re. OdBW/OdBFs)	85.9dB (Analogue) / 107.1dB (Dig)
Distortion (20Hz-20kHz; 10W/–3dBFs)	0.0009-0.0035%/0.0008-0.11%
Power consumption (idle/rated o/p)	133W / 2.1kW
Dimensions (WHD) / Weight	485x180x500mm / 46kg

MUSIC SERVER/DAC

Network-attached player/DAC Made by: Pixel Magic Systems Ltd, Hong Kong Supplied by: Select Audio, Blackpool, Lancs Telephone: 01900 601954 Web: www.luminmusic.com: www.selectaudio.co.uk



Lumin D2

This is not quite the most affordable of Lumin's network-attached players, but the D2 looks good, is sensibly priced and – thanks to a super-slick app – is a delight to use too Review: Andrew Everard Lab: Paul Miller

s the model number suggests, the £1845 Lumin D2 is the latest version of the company's affordable network audio player, the entry point for a range that started with the A1 back in 2012. And while the range has expanded, and some things have changed, much still seems the same: the D2 is compact, at just 30cm wide and a mere 6cm tall, and so light at 2.5kg that my stiffish Chord Company interconnects almost lifted it off its feet!

Unlike its predecessor, the D1, which used a computer-style offboard power supply, the D2 – available in matt black or natural brushed aluminium - now has a shielded switchmode PSU onboard [see inside shot, below], and a conventional IEC mains socket on the back. Neither is this the most affordable Lumin option, even though it's a fraction of the price of the range-topping X1, which sits at £11,595, and about a third of the cost of the current version of the A1, now selling for £5495.

Below the D2 sit two more Lumin products, in the form of the digital-out-only U1 'mini audiophile network transport', at £1695, and the even more intriguing £1495 M1, which not only includes DACs but also a 60W Class D amplifier, making it a complete 'just add speakers' system.

FLEXIBLE FRIEND

In fact the Lumin catalogue now runs to ten products, including a more upmarket 'network transport' and the L1 music library, available with either 2TB or 5TB of internal storage at prices starting at £895. They're all the products of Hong Kong-based Pixel Magic Systems, which was founded as a maker of AV products, developing the Crystalio range of Linuxbased video processors along the way, and is now the territory's biggest supplier of HD digital TV receivers/recorders.

RIGHT: Fed from a screened PSU [far right] the D2's mainboard processor lies under a heatsink [centre] adjacent to a Wolfson S/PDIF output chip [bottom] and balanced analogue output board with WM8741 192kHz/24-bit DACs

From the start the Lumin range has been DSD-capable, and that's still the case all the way down to the M1 and D2. In fact, although the D2's DAC isn't what you'd call cutting-edge, with one Wolfson WM8741 chip for each channel used to feed the balanced circuitry – further up the range the ubiquitous ESS Sabres start

to be brandished – it's still able to handle files at up to 384kHz/32-bit and DSD128, whether from network sources or USB storage. It also allows the upscaling of lower-resolution files, with those up to 96kHz resampled to 192kHz or DSD.

So, while the D2 may be small and neat, complete with its rear casework overhang to hide messy connections, it's powerful and flexible. As well as UPnP streaming over the network, it supports online services including Qobuz, Spotify, and Tidal (with MQA decoding), Apple AirPlay, will deliver Internet radio via TuneIn and is Roon-ready,

so can be combined with other Roon-ready products in a mixed-brand network.

PLAYING IT STRAIGHT

On which subject, network connection is via wired Ethernet only, though the absence of Wi-Fi or Bluetooth functionality is no great loss in a product at this level.

> This is a straight down the line audiophile network player - just smaller - and does all the basics most users will ever need, to a very high standard. And of course, as is the nature of products like these, it's firmware is upgradeable

via its network connection, meaning it's always possible that added features and capability can be integrated into the player at a later date.

Apart from the network connection and a brace of USB-A ports, the D2 keeps things pretty simple. There's a choice of either balanced or unbalanced analogue outputs,



'It's a real riot

of a listen, the

volume control

inching up'





the former being preferable given the all-balanced internal layout, offering a choice of 'Normal' or 'Low' level, and a volume control governed via the app. In addition there's a single BNC digital output, limited to 192kHz/24-bit and DSD64 via DoP – and that's just about all you get.

You'll search in vain for anything much more than the mains lead in the box with the D2, and the hunt for any controls on the front of the unit is equally fruitless. Flip the power switch beside the mains input on the rear to its 'on' position, and you've done all the hands-on stuff possible.

HIDDEN EXTRAS

There's a bit of a pause while the player initialises, showing just a blue simulacrum of the company logo on the display set deep into the front panel, and then that display comes to life, showing a simple two-line indication of the content selected.

Beyond that, you're in the hands of the Lumin app, which fortunately is excellent [see boxout, below]. This will handle not just the day-to-day operation of the D2 but also allow a wide range of set-up options and open up extras such as the multiroom capability should you have a home with more than one Lumin player in operation.

To allow that, 'multi-room' needs to be enabled on all the Lumins, and then one player is designated as the master, or

'sender', which all the others, designated as 'receivers', will follow. Multiroom operation is at 192kHz/24-bit maximum, with the sender downsampling higher rates, and converting MQA or DSD files, for transmission to the receivers.

Describing that process brings me to one criticism, which is far from unique to the D2 – there's no printed instruction manual provided beyond a single sheet quick start quide. Yes, this sheet is enough to get the player up and running but, to probe deeper into its facilities and capabilities, reference is needed to the information on the Lumin website, which is in form of a series of FAQ topics.

I know about saving shipping weight and trees and all that, but there are times when a comprehensive manual wouldn't go amiss, for the D2 may be simple on one level, but so much of what it does is hidden away in menus some users may never find.

If, like me, you have a huge stored music collection then you may find the D2 chugs away indexing all the music on your server before it is ready to play, showing 'Analyzing' and a spinning wheel. I suspect it's only a one-time set-up condition but, even after that, when I could start playing some music, it was still spinning and adding albums. It also seemed somewhat ill at ease with the Asset UPnP software on my server, and worked much

ABOVE: Available in black or natural finishes there's not much to see on the front of the D2. Even the deep set display can be extinguished, but all the controls are in the company's app

better with the MinimServer package I run as an alternative. Again, this isn't unknown with players like this, but it confirms my suspicion that UPnP isn't quite as universal as some would have us believe.

By the way, for those who bridle at the thought of a switchmode PSU in an audio product, it's possible to use a third-party kit to attach an external linear supply, such as the Sbooster sold in the UK by Signature Audio Systems. Sbooster makes a kit to adapt the D2 for use with its BOTW P&P ECO 12-13V MKII power supply, and has step by step instructions, but of course this will involve disassembling the D2 and some internal reconfiguration, which is perhaps not consistent with the D2's ease of installation (or hardware guarantee!).

REAL PUNCH

Unsurprisingly, given its balanced design, the D2 sounds best when connected up using its XLR outputs, but even via its unbalanced RCAs it rapidly reveals itself to be a very capable network player, whether with upscaled CDs, hi-res PCM files or those full-fat double-DSD releases. This isn't the →

LUMIN APP

How comprehensive is Lumin's control app for its network products? Well, if you want to bring yourself up to speed with what it does and how to use it, you'll find everything online at luminmusic.com/support-app.html. There you'll see that the 'manual' for the app is more comprehensive than that for the player itself – which admittedly wouldn't be hard as all you get for the hardware is a quick start quide, and if you look up 'Lumin Settings' on the company's support page, it begins 'All settings are accessed through the app'. And you'll need these instructions for the app, for while it works very effectively it takes a little time to acclimatise - there's a lot of functionality crammed in there, from UPnP streaming to Qobuz, Tidal and so on. And while the icons used to navigate these options are small on a decent-sized tablet, they're positively tiny on a smartphone [see screenshots, right]. However, once you find your way around, the app is excellent - at least until you try using the D2 with Roon, from which I suspect you'll never go back.





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MUSIC SERVER/DAC



ABOVE: Simplicity itself as the diminutive D2 offers two USB-A ports and one wired Ethernet input (384kHz/32-bit; DSD128) alongside an S/PDIF output on BNC (192kHz/24-bit) and balanced/single-ended preamp outputs on XLR/RCAs

most overtly detailed or upfront network player you can buy, but it has a fine sound, with warmth and generosity combined with sweetness in the treble and an entirely naturalsounding midband, making it easy to enjoy and extremely involving, whatever one chooses to play.

There's nothing over-lush or soft about this player, as is clear with rhythm-driven music such as the Victor Wainright And The Train set [Ruf Records RUF1254; 96kHz/ 24-bit]. The D2 powers the bass and drums along with real punch, while also rendering the instrumental and vocal lines with a wide-open sense of timbre and texture. But most of all, it's a real riot of a listen, of the kind that finds the volume control inching up inexorably.

IAW DROPPING

That's what the Lumin D2 does so well, and what's especially impressive given the price. In common with some of the higherend network players, it goes further than just delivering a recording, instead getting the listener into the heart of the music. That's readily apparent with the intimacy of David Elias's Crossing album [David Elias Music; DSD64], which is a typically simply-miked, 'straight to recorder' set, here presented with all its vitality and spontaneity intact. If you want the impression of real live musicians plonked in the room in front of you, the D2 delivers.

And the same applies to The L.A. Network's Ella On Our Mind album [2xHD 2XHDRE-T1168; DSD128], recorded directly to Nagra hardware with no EQ or compression, then transferred to DSD using custom electronics. Here the Lumin D2 brings out all the atmosphere and ambience of the studio, and really shines with the voices, especially the luminous tone of Aubrey Logan.

So it goes with anything it plays – Alison Krauss and Union Station's Live album [Rounder SARR 515; DSD64] has that real 'in the audience' sense via the Lumin D2, with both the singer's gorgeous voice and her accompanying musicians rendered with bags of emotion and expression. And boy, does Krauss do emotion, with her vocals here frequently jaw-dropping, helped - as if they needed it - by the D2's unforced and totally natural presentation of the music.

But in case you were thinking this player was all about delicate voices and minimal recordings, play the '1941 March' from the Jerry Junkin/ Dallas Wind Symphony on John Williams At The Movies [Reference Recordings RR142SACD; DSD64], and you'll hear just how well the Lumin D2 lets the track build from almost inaudible woodwind all the way through to full band and drums bombasts, while at the same time keeping the rhythms tight and crisp.

Rhythms are also to the fore in the Philip Glass score for the opera-ballet The Witches Of Venice [Orange Mountain Music 0031], and the clarity of the Lumin D2 enables it to keep the various instrumental and vocal lines easy to follow, while delivering fine low-end extension of the synths to room-filling effect. \circ

HI-FI NEWS VERDICT

Good things, small packages you get the idea: while the D2 may be compact, lightweight and unassuming (albeit in a very classy manner), the sound it delivers is big, rich and dramatic when required, then at the next turn refined and intimate. If you're not swayed by equipmentrack swagger, just want good sound at a very sensible price and can spend some time navigating its flexible app, this is a fine buy.

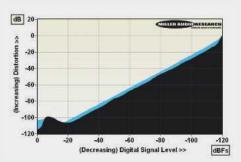
Sound Quality: 86%



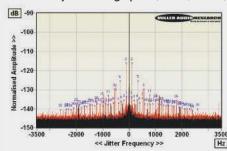
LUMIN D2

Thanks to Lumin's balanced analogue output stage and custom digital processing, the performance of the D2 is not wholly determined by its choice of Cirrus Logic (née Wolfson) WM8741 DAC, albeit one per channel. Maximum output is a healthy 4.1V from a usefully low 10ohm source impedance while the A-wtd S/N ratio is a very wide 115dB, via both network and USB-A inputs and over all sample rates. Distortion is very low too with a minimum of 0.0003-0.0006% achieved between 20Hz-20kHz at its peak output [see Graph 1, below]. This is unusual these days when most DACs typically enjoy their lowest THD from -10dBFs to -20dBFs, but is testament to the quality of the analogue stage as much as the legacy WM8741 DAC(s). The latter is limited to 192kHz but will handle DSD64 either natively or in a 'DSD Plus' mode where the bitstream is converted to LPCM. The DAC also offers a range of advanced digital filters although, in the D2, a standard, sharp-roll linear phase filter is employed for the lower (44.1kHz/48kHz) input sample rates. Stopband rejection is an almost absolute 122dB here while the frequency response shows a very mild treble lift of +0.1dB/20kHz.

Higher 96kHz/192kHz sample rates have a slightly earlier roll-off than anticipated at -3dB/42kHz and -3dB/50kHz, respectively, although the rejection of alias images is no less impressive than with the lower 44.1kHz/48kHz rates. Jitter is very low too though, once again, this shows some difference with increasing sample rate – from a vanishingly low 15psec at 48kHz to 50-55psec with 96kHz/192kHz inputs. In all cases the level of phase noise or noise-like jitter is almost entirely eliminated [see Graph 2, below] which typically bodes well for stable, pin-sharp stereo images. Crosstalk is also very low at <-100dB. PM



ABOVE: Distortion vs. 48kHz/24-bit digital signal level over a 120dB dynamic range (1kHz, black; 20kHz, blue)



ABOVE: High resolution jitter spectrum via network (black, 48kHz/24-bit; red, 96kHz/24-bit with markers)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	4.08Vrms / 10ohm
A-wtd S/N ratio	114.9dB
Distortion (1kHz, OdBFs/–30dBFs)	0.00032% / 0.0011%
Distortion & Noise (20kHz, 0dBFs/–30dBFs)	0.00065% / 0.0019%
Freq. resp. (20Hz-20kHz/40kHz/75kHz)	-0.0 to +0.1dB/-1.1dB/-8.0dB
Digital jitter (48kHz / 96kHz / 192kHz)	15psec / 50psec / 55psec
Resolution (re. –100dBFs / –110dBFs)	±0.3dB / ±0.9dB
Power consumption	20W (1W standby)
Dimensions (WHD) / Weight	300x60x244mm / 2.5kg

INTEGRATED AMP/DAC

Integrated amp with triode stage. Rated at 100W/8ohm Made by: Vinnie Rossi, Holden, MA, USA Supplied by: Elite Audio Ltd, Fife Telephone: 01334 570 666 Web: www.vinnierossi.com; www.eliteaudiouk.com Price: £18,995 (£25,985 with phono and DAC modules)



Vinnie Rossi L2i-SE

Can't choose between tubes and transistors? Vinnie Rossi may have the answer with the L2i-SE integrated amplifier, which deals with that conundrum in a unique manner Review: **Ken Kessler** Lab: **Paul Miller**

o overwhelming is the matter of choice when putting together a system that it can cause as much anguish as pose a fun challenge. What type of speakers? MM or MC pick-up? Integrated or separates? These usually sort themselves out due to space or budget, but 'tubes versus transistors' almost calls for a leap of faith – unlike 'digital versus analogue' because most enthusiasts can manage two sources. The valve/solid-state conflict, though, may find a cure in the Vinnie Rossi L2i-SE integrated amplifier, the 'SE' standing for 'Signature Edition'.

Until this came along, addressing the matter usually involved either a hybrid product, eg, Radford's pioneering TT100 with solid-state input and tube output, or pairing a valve preamp and transistor power amp (or less often, a solid-state preamp and tube power amp). Vinnie Rossi's one-box solution may not be cheap at £18,995 in line-level form, or £25,985 with phono stage and DAC, but it is so clever and truly fascinating on an intellectual level that its absolute performance may even be secondary. I know that is near-heresy, but hear me out.

GLASS TIGER

Simply stated, this can be used as a strictly solid-state integrated amplifier or with a valve 'element' that can be switched in [see PM's boxout, p49, for full details]. My initial reaction was to recall Musical Fidelity's X-10D 'tube buffer' of 25 years ago, which injected euphonic tube colour into one's system. I loved it, but then I have my own peculiarities. The X-10D, though, was fun, inexpensive and thus a godsend for impoverished hobbyists.

Vinnie Rossi's concept is more complex, but also difficult to assess because switching from solid-state to 'plus valves' nearly triples the gain, as well as applying

RIGHT: Independent (dual mono) linear PSUs [top] feed a J-FET preamp with 64-step volume control and MOSFET output stage [on heatsinks]. Note MM/MC phono stage [bottom left] and AKM AK4497-based DAC module [bottom right]

the tube traits, so one needs to be careful when comparing the two. Swapping between them is fiddly, so A/B comparisons are not possible unless you have two units and some form of comparator to switch between them. The swap requires the removal of the two 300Bs, flicking the internal 'DHT' (Direct Heated Triode) toggles next to each valve base, refitting the tubes and then switching the amplifier back on. And there's also a warm-up pause to add to the delay.

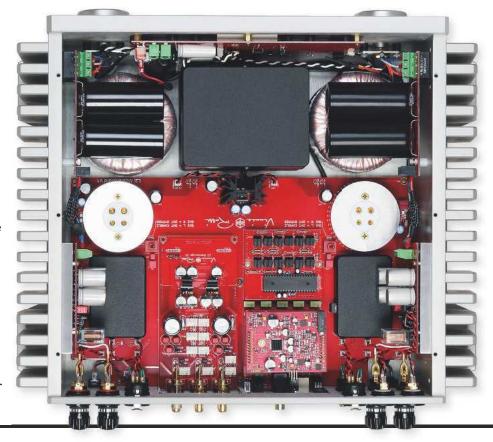
I asked company owner Vinnie why he made it such a lengthy procedure, instead of fitting a front panel selector with level compensator. He explained, 'The unit needs to be powered off when you flip those switches, otherwise you'll get a big pop from your speakers. I actually never intended that switch to be used often. It's more like a tool to evaluate what the

triodes are adding to the sonic landscape – so you can hear what you have been missing without them'.

FULLY LOADED

It's easy to see his logic, for unlike the front-panel facility for bypassing the power amp for use as just a preamp, which might be used frequently but threatens no risks, I suspect that users will prefer one mode over the other and leave it that way. I spent several days with the unit in solid-state mode, but after injecting the tubes, I never went back. Long-term readers have already surmised that I would prefer to have the triodes in circuit, given my known passion for glassware. No surprises there, then.

Even for those who acquire the L2i-SE because of tube-vs-tranny indecision, it is still unlikely that switching between them will be a regular occurrence. If this raises







the question of it being too elaborate a feature if it's only to be used rarely, I prefer to look at it this way: the mere option of being able to choose between valves and solid-state alone is precisely the reassurance one needs if one

genuinely is unable to make a permanent decision.

Now that you know the L2i-SE's main party trick, let's not let this aspect of the design overshadow the rest of what is on offer, especially in fully 'loaded' form. I loved

having three phono inputs - one MM and two MC, with adjustable gain - and the ability to alter the load via remote, a musthave when assessing new cartridges. The DAC module also accepts three sources, and the remote allows you to play with the digital filters and invert phase from the hot seat. As for line sources, the L2i-SE handles two single-ended and one XLR balanced. Then there's the preamp output option.

That is self-explanatory, and worth having if you're the sort who wants to dig

> out an old amp that's lying around, or to upgrade the amp section sometime in the future. But it also serves another purpose, which I learned of when I asked Vinnie why there was no headphone output in this day and age of headphone

dominance (and of late the increase in headphone usage during lockdown to prevent domestic warfare).

Vinnie said, 'Adding a headphone jack to the front panel did not visually appeal to me, especially the balanced, 4-pin XLR jack that most people want with the higher

With that out of the way, I found nothing else to question. I even got a kick out of the company name, which sounds like a gunsel for Tony Soprano. The L2i-SE worked faultlessly, the quality of the construction and components was first class, especially the multi-way speaker terminals, the display was informative and I loved every second I spent with it. But to

> get to the heart of this, we must first address solid-state-only versus the 300Bs in operation.

TUBES TO TASTE

As discussed, even without the DAC and phono stage options, the L2i-SE has a split personality. With the tubes switched out it's a J-FET/MOSFET integrated amp that offers plenty of power, low distortion and very low noise [see Lab Report, p53]. Switch the 300B tubes in-circuit, however, and while adding an extra 8.7dB of voltage gain (32.8dB from 24.1dB)

into the preamp circuit, they also bring a wealth of, well, 'colour'. Even allowing for the increased gain, the A-wtd S/N falls from 96.5dB to 82.5dB (re. 0dBW) and while there's no significant change in response the increase in distortion is typically a thousand-fold! The Graph [inset] compares distortion vs. frequency at 10W/80hm with the triodes in [red] and out [black] of the signal path.

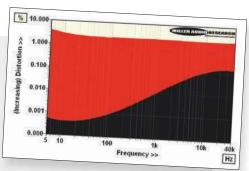
'After injecting

the triode

tubes. I never

went back'

Tube stages can be designed for both low noise and low distortion but VR's triode implementation is single-ended (necessarily Class A) and without compensatory feedback, so THD is very high. Remember - these tubes are in the preamp, so the distortion and noise are 'created' before the (music) signal hits the solid-state power amp. As a result, while distortion increases with power output, this is just a reflection of distortion increasing with the voltage output of the tube preamp. The ability of the power amp to 'drive' the speakers has not changed. In practice, THD is already at 1% by 1.5W, reaching 2% at 8W, 3% at 20W and 5% at 78W (all 1kHz/8ohm). PM



performance headphone models. However, there is a "secret" with the L2i-SE: with the use of an adapter cable, one can connect to the balanced XLR output jacks and convert it to a 4-pin XLR, and it drives most headphones with ease. You simply press the 'AMP' button on the front panel to turn off the speaker outputs. We do not sell the adapter cable, but Moon Audio in the USA has been making them for our customers'.

TOTALLY HOOKED

Because the amp was in solid-state mode when it arrived from Editor PM, I tried that first. Here I must make a confession for I knew in my heart-of-hearts that my deep-rooted prejudices would have me preferring the triode mode, that I would switch to it after my time with the solid-state listening and thus would not have to

go back and forth. However, what I wasn't anticipating was that I would actually be charmed by the solid-state-only session.

Because I purchased The Kinks' Arthur (Or The Decline And Fall Of The British Empire) in both LP [BMGCAT407LP] and CD [BMGCAT407BOX] form, I was able to set up both and cue them 'just so', thus allowing A/B switching between LP and CD, with levels matched. With either digital or analogue sources, the nature of the amp was obvious and consistent enough to deem both the phono stage and the DAC of astonishing capability. From the →

















































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'Just a few bars

of drumming

stopped me dead

in my tracks'

opening notes of 'Victoria', with acoustic and electric guitars and deliciously splashy drumming, I was totally hooked.

MASSIVE ATTACK

Inescapably evident, after a mere ten minutes with this amp via CD, were three

exceptional qualities. The first, and most vivid, was speed, the attack of both the guitars and percussion reminding me of much bigger beasts, such as the D'Agostino Momentum Stereo amp [HFN Aug '12], which remains my solid-

state reference. The L2i-SE doesn't match its sense of forcefulness, but neither does it lack power in any sense. Whether driving Wilson Sasha DAWs [HFN Mar '19] or ornery loads like LS3/5as, the crispness and clean transients were realistic, never sounding exaggerated nor too abrupt.

One word kept entering my head: 'sparkling'. If a system can sound as effervescent as a glass of Prosecco, this is it. And I don't say that just because Vinnie Rossi is of the Italian persuasion, but stop me if I

compare the depths of the rhythmic bass retrieval to a glass of Aldo Conterno Barolo.

Second was the openness, and here was one of the areas where LP proved audibly superior to the CD. Not a cause for fretting, for the impression of scale was almost identical, but the added hygiene of digital somehow altered the perception of space. I did play with the filters, preferring the

> default 'filterless' state. despite appreciating the value of switching in the Minimal Phase digital filter. I certainly preferred coaxial S/PDIF, connected via BNC.

The third quality was an extremely

wide soundstage, obviously part of the openness, but I am talking 'Denon DL103' width. Both of these were revealed in the second track, when the opening drum segment for 'Yes Sir, No Sir' revealed itself to be of such a high standard via this remastering that it should be an audiophile demo staple, its 'air' stretching across

> the room. I am almost at a loss to define the majesty and authenticity of what is at first merely a martial drum progression. So simple, so minimalist, it was disconcerting →

VINNIE ROSSI

Editor PM caught up with Vinnie Rossi during 'lockdown' on both sides of the pond, intrigued to discover VR's earliest influences.

'I studied electrical engineering in the '90s while working as a test engineer for a major telecom giant', Vinnie began, 'but I was also an audio hobbyist and so, in 2004, I followed my passion and established **Red Wine Audio where I focused** on battery-powered components. However, in 2014 I introduced a modular integrated called LIO that had an ultracapacitor supply, and the move away from battery PSUs prompted a change in brand name'.

And direct-heated triodes - where did these spring from? 'I used 8 and 9-pin indirectly heated triodes in my linestage designs before seeking the "holy grail" of valves - the 4-pin directly heated triode (DHT)', says Vinnie. 'Once I began listening to them, I was quickly put under their magic spell. The L2i-SE's DHT preamp is convertible and accommodates numerous 4-pin DHTs including the 300B, 2A3, 45, PX4, SV811, 71A, T-100, 101-D and 205-D - all via the filament voltage selection switch on the rear panel.'

A quick glance at the L2i-SE might suggest it's a 300B SET amplifier, but these tubes are not driving speakers, they are in the preamp stage. So why the high distortion? 'My preferred topology features no driver tubes, no feedback, no output transformers, and just 6 to 9dB of gain, depending on the tube used. It sounds simple, but designs like this are rare, and very challenging to implement with low levels of noise.







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ABOVE: Three line inputs (inc. one balanced XLR) are joined by single-ended (RCA) and balanced (XLR) preamp outputs with 4mm WBT Nextgen speaker outlets. The MM/MC phono and optical/coaxial/USB-B digital modules are optional extras

that a few bars of drumming could stop me dead in my tracks.

Turning to a well-recorded-andremastered live experience, Jimi Hendrix's Songs For Groovy Children [Sony Legacy 19075982772] provided a real, as opposed to studio-created, space and the L2i-SE again proved adept at transporting the listener to the musical event. But another area of excellence emerged conveying the textures of Hendrix's guitar playing, ranging from fluidity to screech to staccato in a single break, 'Foxev Lady' on CD3 left me stunned. But it was time for tubes.

EAR CANDY

Again referring to PM's elucidation, the triodes here are not performing as they might in a standard hybrid amp, but perhaps more like a valve preamp-plus-solid-state-power amp. Yet however optional their role, added gain aside, their presence is undeniable. As the triodes operate in single-ended, Class-A mode with no feedback, so one might anticipate a whiff of classic SET romance,

especially with Rossi stating that the harmonics 'will certainly be 2nd order, 4th order, etc'.

Repeating The Kinks tracks with the triodes switched into the circuitry, I was hit with additional revelations. I am no bass fetishist,

LEFT: VR's weightv remote offers control over volume, mute and balance, input selection, display mode, MM/MC loading, DAC filter and (absolute) phase

but the bass guitar on 'Drivin" enjoyed added body and texture... and that was via CD. Switching to LP, it was even more palpable, with added atmosphere.

I was starting to suffer that feeling of being overwhelmed by a surfeit of delights, a kid in a candy store. Exposed was a newfound liquidity to Dave Davies' lead quitar on 'Mr Churchill Says', even more body to the bass playing throughout the album - I had to keep telling myself that, as with the Musical Fidelity X10D, 'this is added artifice. It is a layer of coloration, of increased distortion'. I didn't care.

Then came the barrage of sound effects: Kazoo. Harpsichord. Trashy drumming. Tooting horns. These are what made 'She's Bought A Hat Like Princess Marina's' even more of a 'music hall' facsimile than The Beatles' 'Honey Pie'. It leapt from the speakers. Suddenly, I realised something so telling that I was embarrassed for not grasping it earlier - of course I would fall for the L2i-SE. Vinnie Rossi and I both use Falcon Acoustics' LS3/5as [HFN Jan '19]. As Stevie Wonder sang, 'I was made to love her'. In this case, 'her' is the Vinnie Rossi L2i-SE. ()

HI-FI NEWS VERDICT

An upside to being a downsizing pensioner: I'm not buying any more gear. But if I needed a new amp, I'd be splashing out on a Vinnie Rossi L2i-SE because I simply adore it. The build, ergonomics and features leave nothing to be desired, and it was a joy to use the entire time it was in my system. I even loved just staring at it! But forget all that. Ultimately, this is about sound. And it was 'Bellissima'.

Sound Quality: 88%

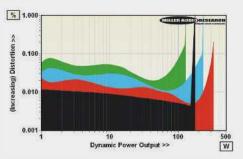


REPORT

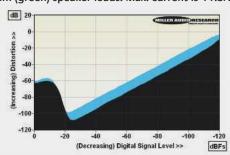
VINNIE ROSSI L2I-SE

Tested without the 300Bs in-circuit [see boxout, p49 for details of the directly-heated tube mode], the L2i-SE put in a sterling performance. Power output is comfortably higher than its 100W/ 80hm rated specification at 2x130W/80hm and 2x210W/40hm and there's sufficient in reserve to accommodate 180W. 333W and 234W into 8, 4 and 20hm loads, respectively, under dynamic conditions [see Graph 1, below]. Power is limited to 128W/10hm (or 11.3A). Distortion trends downwards with increasing output from ~0.01%/1W to 0.009%/10W and 0.0055% at the rated 100W (all re. 1kHz/8ohm) but increases at higher frequency from 0.1%/10kHz to 0.2%/20kHz (all re. 10W/80hm) [see black trace, Graph, p49]. Gain is low at +24.1dB, but ideally suited for use with 2V line output sources, and the S/N is fabulously wide at 96.5dB. The response shows a subsonic rolloff of -0.1dB/20Hz and -6dB/2Hz while extending out to -0.1dB/ 20kHz and -1.0dB/100kHz.

Measured via its balanced preamp, VR's AKM AK4497-based DAC stage offers a maximum 4.6V output, and 108dB S/N ratio, from a low 25ohm source impedance. An acceptable ~125psec jitter rejection is achieved (all sample rates) while distortion falls to a minimum of 0.00035%/1kHz and 0.00055%/20kHz over the top 30dB of its dynamic range [see Graph 2], albeit peaking at 0.1-0.15% over the top 10dB. The default NOS filter offers responses of -5.0dB/20kHz, -5.4dB/45kHz and -6.9dB/90kHz with 48kHz, 96kHz and 192kHz files, respectively, trading a very limited alias rejection for zero time distortion. The minimum phase filter offers a superior 70dB image suppression and flatter -1.8dB/20kHz, -2.7dB/45kHz and -4.1dB/90kHz responses. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 10hm (green) speaker loads. Max. current is 11.3A



ABOVE: Distortion versus 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	130W / 210W
Dynamic power (<1% THD, 8/4/2/10hm)	180W / 333W / 234W / 128W
Output impedance (20Hz–20kHz)	0.01-0.019ohm (25ohm, pre)
Freq. resp. (20Hz–20kHz/100kHz)	+0.0dB to -0.1dB/-1.05dB
Digital jitter (48kHz/96kHz)	125psec / 125psec
A-wtd S/N ratio (re. OdBW/OdBFs)	96.5dB (Analogue) / 108.0dB (Dig)
Distortion (20Hz-20kHz; 10W/–3dBFs)	0.0004-0.15% / 0.105-0.11%
Power consumption (idle/rated o/p)	88W / 460W
Dimensions (WHD) / Weight	438x222x368mm / 23kg

Belt-driven turntable with electronic speed control Made by: Furonean Audio Team. Austria Supplied by: Absolute Sounds Ltd Telephone: 0208 971 3909

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EAT B-Sharp

Despite shedding all 'non-essential cosmetic adornments' EAT's B-Sharp still cuts a dash in the world of plug-and-play turntable solutions. Does it sound as slick as it looks? Review: Ken Kessler Lab: Paul Miller

onditioning has, I believe, led the cynics among us to assume that 'plug 'n' play' is a sexy euphemism for 'lowest common denominator' or 'user-friendly-enough for anyone to appreciate'. After all, this is what freed normal souls from going crazy with pre-USB computer peripherals. Today, it welcomes newcomers to vinyl, referring almost exclusively, in a hi-fi context, to turnkey turntable/arm/cartridge packages, because every other audio source has always been plug 'n' play.

While EAT's £1198 B-Sharp turntable is nearly as pluq 'n' play as it gets, this is still a true audiophile item, with all the tweaking and upgrading potential usually eliminated by sealed systems. Of course, no turntable/arm/cartridge since the days of the Technics SL-7/SL-10 is truly straightout-of-the-box plug 'n' play because you have to fit the counterweight and balance the arm, though market leader Pro-Ject has come as close as any to eliminating even that stage of set-up.

The B-Sharp, offered in gloss black or white, with or without a pre-fitted Ortofon 2M Blue MM cartridge, requires less assembly than an IKEA bookshelf, while the instructions are as thorough as a LEGO kit.

PLINTH OF TWO PARTS

A proponent of the school established years ago by Rega, the B-Sharp does without a spring-suspended subchassis requiring complex adjusting but differs from the Prelude, the EAT model below it and which resembles a Rega Planar 3 'slab', in the design of its plinth. This is a two-part, low-profile affair with an MDF top-plate that rests on thermo-plastic elastomer (TPE) cones within in a frame. This frame plays host to the AC synchronous motor and also features three adjustable feet, which can then be used to level the deck.

RIGHT: A lightweight, reinforced sub-platter is belt-driven via an AC synchronous motor (supplied by Pro-Ject). Three bolts secure the MDF top plate during transit - once released it rests on three TPE balls, affording some isolation

Follow the instructions and set-up is a mere ten minutes. It's a familiar drill, and every necessary tool is supplied. Remove transit screws. Slide sub-platter/bearing spindle into place. Fit belt, main platter and felt mat. Fit counterweight to arm, balance and apply tracking force with the supplied Pro-Ject stylus balance, or do one better

and use an aftermarket device. Fit dust cover and level the deck. Connect the high-quality, supplied leads to the nicely-made phono sockets at the back and connect the earth lead. Connect to your phono stage or preamp. Plug in

the external mains adapter. Put on an LP, screw-down the clamp and you're away.

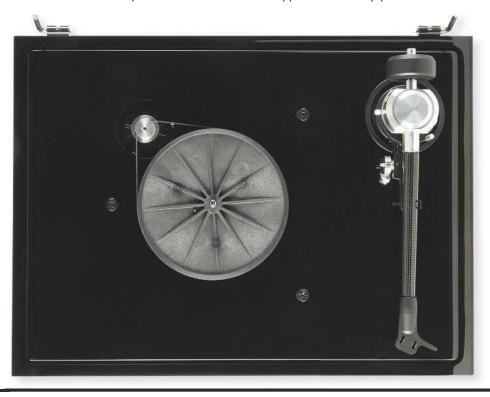
Yes, you read 'high-quality, supplied leads' and 'clamp' and 'stylus balance' this really does come with everything to get you up and running, aside from a spirit level. The threaded LP spindle and screwdown, aluminium clamp preclude an extra purchase, the felt mat is probably the most popular type out there, and the leads look like they cost £150 on their own.

INFINITELY TWEAKABLE

And yet designer Jozefina Lichtenegger is such a hardcore audiophile and knows her

clients so well that she has ensured the deck is still infinitely tweakable. It starts with the arm, which looks too complex to be fitted to so affordable a platform. It features a conical carbon fibre tube, with aluminium headshell,

a 'cardan' bearing in the horizontal axis, with hardened tips sitting in a 'zircon bowl', and ABEC7 ball-races for the vertical axis. The counterweight is damped with the same thermo-plastic elastomer used to damp the (underside) of the alloy platter and support the MDF top-plate.



'I had to hear

how it handled

an LP that cost

10% of the deck'





While I first used this arm with the rather fine Ortofon 2M Red [HFN Oct '08] - and I do not recommend buying the deck with pre-fitted 2M Blue cartridge, as it costs more than buying the cartridge separately and fitting it yourself - I was eager to listen to it with a cartridge surely destined for the B-Sharp: the EAT Jo N°5 moving-coil at £799 [HFN Dec '18]. OK, that seems a lot to pay for a cartridge in a £1200 deck, but the B-Note arm is exceptionally welcoming, with fullyadjustable VTA, SRA and azimuth, and it is easily capable of dealing with cartridges way above its price category.

While the nylon thread's loop for the anti-skating is a touch fiddly to attach, the system works perfectly, and adjusting the little weight to one of its three positions is a matter of sliding it along. Attesting to the universality of this arm, EAT can also supply a heavier insert for the counterweight, held in place by magnets, to accommodate extra-heavy cartridges. Speaking of magnets, the armrest contains one to hold the arm when in the resting position.

OOZES AUTHORITY

Attesting to how this deck can operate 'way above its pay grade', I used it initially with a system of its price sector, an old Cambridge A1 integrated amp, JBL 4321M speakers and Pro-Ject Tube Box DS2 phono stage [see p62]. When the Vinnie Rossi L2 'Signature Edition' integrated amplifier arrived [p48], I couldn't resist feeding it into that august unit, auditioned through Falcon Acoustics LS3/5as [HFN Dec '18]. Trust me: the B-Sharp performed admirably.

It started with an album that seems to have slipped past too many, when it is, indeed, an historic musical event and something to be treasured. Stills & Collins' Everybody Knows [Cleopatra/Sony 19075801061] finds the former lovers reunited after a half-century, performing a ABOVE: Seen here in its gloss black finish and complemented by the alloy/carbon-fibre B-Note tonearm, this looks both a sleek and purposeful package. Gloss white is also offered [see below]

mix of classic rock and folk-rock numbers. Aside from the momentousness of the occasion - I suppose you have to be over 65 to appreciate it – the pairing is a delight to match the Lou Rawls/Dianne Reeves duet of At Last for contrasting voices.

Stills' voice, always distinguished by a minor rasp, is showing the years, and he has acquired a slight impediment. It is still rich and characterful, while Collins' remains the model of distaff vocal clarity. At the risk of delving into the sort of pretence best left to Spinal Tap bassists – you won't wrest from me any 'fire and ice' analogies – the two singers manage to juxtapose textures so disparate that only an audiophile would consciously listen to them as a measure of a sound system's capabilities. For the B-Sharp, with either Ortofon 2M Red or EAT

Jo N°5, both were conveyed with

every nuance intact.

What proved so marvellous about the experience was hearing how they blended and complemented each other. They shared a clearly defined, if studio-devised space, while the sound was coherent regardless of the accompaniment. Notable

was the acoustic guitar work on their magnificent interpretation of Tim Hardin's 'Reason To Believe', delicate, airy and just 'woody' enough to bely the mid-fi price sticker. This turntable oozes with authority.

Turning to something more raucous, and far removed from the gentility of Stills & Collins, was the Tina Turner album →

EAT TO THE BEAT

In just over a decade, EAT has gone from a maker solely of luxury replacement tubes to a champion of analogue with a catalogue encompassing cartridges, tonearms, turntables, phono stages and, as of 2019, a valve amp. Founder Jozefina Lichtenegger has over 20 years' experience in the high-end, starting in

the late-1990s with VAIC valves, but her love is the vinyl LP. It is this which led her to develop a range of ten record decks. Her debut model, the Forte, was notable for its external twin-motor layout with two belts. Since then, she has added models below it in price, including the single-

chassis Forte S, as well as a series of turntables down to the sub-£1000 Prelude; the B-Sharp [pictured here, with lid, in its white finish] is one up from that and just may be the 'sweet spot' in the bottom half of the catalogue. The most recent addition to the line, the Fortissimo, appears in the upper reaches of the

catalogue, and is the latest incarnation of the original Forte.

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ABOVE: The B-Note arm's counterweight is damped by a soft TPE polymer while the nylon thread for the bias outrigger connects into the base of the bearing. The tonearm cable RCAs, ground post and PSU socket are all located under the deck

Simply The Best [Parlophone 0190295378134]. Her remake of 'Nutbush City Limits', while not a patch on the original, still exudes power and the woman is incapable of whispering even when performing a love song. This track, as well as the revamped 'River Deep, Mountain High', is a cornucopia of sounds, the kind of recording which suits a quickie demo in a hi-fi store on a Saturday afternoon because it lacks only the kitchen sink.

Attack could be assessed through powerful percussion and ferocious guitar transients, while the bottomend was full and responsible for impressive weight, even through small two-way speakers.

MIRACLE MAKER

Another attribute of the B-Sharp is its scale and openness, Tina's most deliberately epic cut – 'We Don't Need Another Hero' – was positively majestic in its presentation, and the live version of 'Addicted To Love' had all of the touches one needs to recreate a concert atmosphere.

Ultimately, I turned to the Yes album Fragile [Mobile Fidelity UD1S 2-012] because 1) 'Roundabout' is one of those all-time great audiophile demo tracks with nearuniversal approval, 2) One-Step pressings are unfailingly quiet and 3) I had to hear how the B-Sharp handled an LP that cost 10% of the deck itself. I wasn't merely impressed: I was overwhelmed, as the previous play of this LP was on the TechDAS Air Force III Premium [HFN Jun '19], and – as expected via that source - it bordered on the lifechanging. (I only say that because I am old enough to recall the first time I ever heard Fragile in late '71.)

The EAT B-Sharp managed to capture what I will define, through an admittedly, wholly arbitrary

measure, around 85% of what the TechDAS front-end delivered. The latter comes in at a price of over £60,000 for deck, arm and cartridge. Even if you fully accept the Law of Diminishing Returns, the B-Sharp's delivery is thus nothing short of miraculous.

Above everything, 'Roundabout' features exceptional details that listeners love to focus on, all the while marvelling at what is a succession of heart-stopping transients. The opening swell, the delicate quitar work - the build-up promises a musical 'happening' rich with ornate keyboard figuring, robust percussion, lush harmonies and just about every sonic trope that would help define prog-rock.

This track, however, eschews the pomposity that would render the genre a self-parody. And if there's a reason that the B-Sharp turntable does so well with the complexity of 'Roundabout', especially Rick Wakeman's virtuoso work at the organ, it must be Jozefina Lichtenegger's overriding passion for classical music - her gauge for everything. It shows. \oplus

HI-FI NEWS VERDICT

When one lives with costly gear while reviewing something affordable, it takes self-discipline to judge the latter in context. The EAT B-Sharp, however, is so musical, user-friendly and resistant to obsolescence that I had to keep reminding myself of its price. For novices, it is an elevated place to start. For veterans on a budget, it's free of compromise and I'll now use one as my sub-£2500 reference.

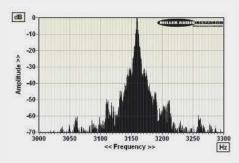
Sound Quality: 88%



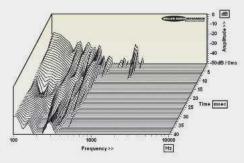
EAT B-SHARP/B-NOTE

Measured directly through its relatively basic hardened steel bearing, rumble is a little higher than measured with EAT's C-Sharp [HFN Feb '15] at -67.3dB (DIN-B wtd, re. 1kHz/5cm/sec). However this figure improves substantially to -71.3dB (through groove), and further still to -72.1dB with the lightweight screwdown clamp, thanks to the isolation afforded by the felt mat and the polymer-damped alloy platter. Also, the lightweight plastic sub-platter and 1.85kg main platter assist in the swift ~4sec start-up time and while the (Pro-Ject) M-500 'synchromotor' runs slightly fast at +0.3% its speed stability is truly excellent. So, peak wow is a very low 0.02% [see sharp central peak, Graph 1] while flutter effects are limited to sidebands clustered around ±12Hz, ±28Hz and ±50Hz, the latter contributing to a peak-wtd 0.04%.

The partnering B-Note 9in tonearm is clearly derived from EAT's earlier fat-tubed carbon fibre models, including the 10in C-Note that featured what EAT describes as a 'traditional Cardan bearing', or pin and block unipivot. The B-Note offers similarly good stability and low friction (<10mg) in both planes but with a simpler bias mechanism and slightly lower 12-13g effective mass, enhancing its compatibility with popular pick-up partners like the Ortofon 2M Blue. The B-Note's tapered carbon-fibre tube and bonded alloy headshell have a main bending mode around 110Hz [see Graph 2, below] with another mode at 235Hz and harmonics/twisting resonances at 280Hz, 300Hz, 345Hz, 375Hz and 410Hz, all quelled by the tube's internal damping (carbon tubes can exhibit high-Q resonances if undamped). The sharp mode at 1.2kHz seems to be linked to the alloy headshell and fingerlift, but is short-lived. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division)



ABOVE: Cumulative tonearm resonant decay spectrum, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.43rpm (+0.29%)
Time to audible stabilisation	4sec
Peak Wow/Flutter (Peak wtd)	0.02% / 0.04%
Rumble (silent groove, DIN B wtd)	-71.3dB (-72.1 with clamp)
Rumble (through bearing, DIN B wtd)	-67.3dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-60.5dB
Power Consumption	6W (1W standby)
Dimensions (WHD) / Weight	460x142x435mm / 8.5kg

Integrated amplifier. Rated at 120W/8ohm Made by: Arcam, Waterbeach, Cambs Supplied by: Arcam (Harman International Industries Ltd) Telephone: 01223 203200 Web: www.arcam.co.uk

NETWORK-ATTACHED AMP

Arcam SA30

Arcam's flagship integrated amplifier combines Class G amplification with features including network streaming, AirPlay 2 and offboard Dirac Live room correction EQ Review: Mark Craven Lab: Paul Miller

rcam is still headquartered in Cambridge, from where it took its original name, but the audiophile marque is now part of Samsung's global consumer electronics empire, through the latter's acquisition of Harman International, which had added Arcam to its portfolio in 2016. And amid these management-level changes, Arcam's product line has also undergone a refresh. The brand has withdrawn, for the time being, from the peripherals market, jettisoning its R series of docks and DACs.

Its current commitment is to traditional hi-fi, with a new 'HDA' series of disc players, power and integrated amps. First to launch was the affordable Class AB SA10 (£700), followed more recently by the Class G SA20 (£1000) and, on test here, the rangetopping SA30. At £1995, it represents a considerable price hike over the SA20. But it's also considerably more advanced...

DIGITAL DIVA

From the outside at least, this full-width stereo integrated looks conventional. Available only in a matt grey finish, it's styled to be an aesthetic match for Arcam's other HDA components, all of which freshen up the designs of the outgoing FMJ range, adding features such as a chrome trim ring around the LCD display, and a flush-fit oversized power button.

Owners of the 2015-era FMJ A39 will still find it visually familiar however, and on the surface it appears little different than the SA20, only a touch larger. Yet Arcam has endowed the SA30 with new technologies that place it firmly in the streaming amplifier category. And the implementation of the Dirac Live room optimisation system [see boxout, p59), keeps it toe-to-toe with more overtly styled streamers like NAD's Dirac-equipped Masters Series M10 [HFN Jun '19].

RIGHT: The Wi-Fi/network/USB digital board [top] has its own regulated PSU as does the switched-rail Class G power amplifier [on heatsink, bottom left], all fed from a large toroidal transformer [bottom right]

The SA30's back panel shows Arcam has been busy since releasing the A39. Not only does this amp add S/PDIF digital inputs (two optical, two coaxial) for the first time - labelled AV, BD, Game and Sat, hinting at the product's potential use as a multimedia system hub - it also carries an HDMI eARC connection for use with a flatscreen TV. It also packs a USB Type-A input for file playback from flash storage.

Additionally, there's a five-strong bank of stereo RCA inputs, with options for both MM and MC phono, plus a stereo pre-out to use the SA30 with alternate amplification. A 3.5mm aux input and same-sized headphone socket are located on the front panel. On the wireless side, the spec sheet includes Chromecast Audio integration and Apple AirPlay 2, but not Bluetooth. Wi-Fi enables hi-res streaming from networked storage (as does the wired Ethernet, along with system control) through Arcam's somewhat barebones MusicLife app [HFN Jun '20], or a third-party UPnP app.

This expanded feature set naturally makes the SA30 more complicated to

operate, but Arcam has decided against adopting a touchscreen control, or fullcolour display to present album artwork. Navigation around its menus is via the bundled IR remote [p61], with a simplistic tiered hierarchy allowing access to network settings, digital filter selection (Apodising is the default), input management, and so on. Thankfully the largescale nature of the display makes this text-heavy UI easy to read, while the remote has a touchsensitive backlight that's useful if you like to listen with the lights low.

GEE WHIZZ

The SA30's Class G amplification is conservatively rated at 2x120W/8ohm [see PM's Lab Report, p61]. Class G technology, first used by the company in its AVR600 home cinema receiver [HFN Jul '09], aims to improve power efficiency over Class AB designs, aping the low consumption of Class D without introducing the latter's 'engineering foibles'. Whereas the output transistors of Class D technologies are fully on or off, Class G employs a conventional







output stage fed from two (or more) power supplies, the secondary ones held in reserve according to signal demand, switching in once the audio output rises above a certain level. At low levels it operates in an enriched Class AB mode.

To enable Dirac Live's digital correction

across the SA30's digital and analogue inputs, the amp uses an ADC for the latter, in advance of the DSP engine and ESS Sabre ESS9038 32-bit DAC. Selecting the amp's Direct mode bypasses the ADC, and the user menu allows

for inputs to be assigned accordingly.

BODY AND SOUL Arcam's Class G implementation

underwrites the SA30's performance. This is an amplifier that combines power when needed with a pleasing delicacy and precision. It demonstrates control of the rhythmic parts of a track, revelling in complex percussions and basslines, while at the same time giving impressive body and clarity to vocals and midrange details.

To skirt around the amp's digital architecture, which is in use by default regardless of input choice and even if a

> Dirac profile hasn't been uploaded - Direct mode has to be selected. But even when not using all the SA30's tech toys, it remains beguiling. With 'Ramblin' Man' by The Allman Brothers Band [Brothers And Sisters;

Capricorn Records 531 262 2], the SA30 offers an expressive and unerringly accurate performance. Dickey Betts' vocal commandeers the centre stage, cleanly separated from Greg Allman's harmonies, and it becomes impossible not to sit back and enjoy the ebb and flow. The twin guitar melody and bluesy solo

ABOVE: The bold (dimmable) display delivers crisp, clear information from a softly-contoured fascia, complete with inset keys for menu, Dirac [see boxout], input selection, balance and mute

that carry the track to its climax are then brought forward, rich and resonant, but avoiding a bright, fatiguing edge. There's a smoothness that's immediately likeable, Arcam's SA30 proving as easy-going as the country-infused composition itself.

SLICE 'N' DICE

'Rocks Off', The Rolling Stones' frenetic opener from Exile On Main Street [Virgin 7243-8-39503-2-4] is more of a challenge, it being a swirling, almost low-fi mélange of multiple guitar tracks, brass fanfares, rolling piano, tambourine-led rhythms and Mick Jagger's rasping rhyming couplets.

Through the SA30 it sounds better organised than it was perhaps ever intended. Keith Richards' quick-fingered riffs slice and dice through the ragtag accompaniment, the SA30 showing an ability to grab hold of the finest midrange details and elevate them to prominence, all the while keeping trebly hi-hats and cymbals distinct. It's a track that arguably favours an amplifier more inclined to cut →

DIRAC LIVE

For the SA30, Arcam has borrowed a feature from its home cinema AV receiver lineup. Dirac Live, from Swedish company Dirac Research, is a versatile room acoustics optimisation tool that, unlike rival 'onboard' room EQ systems such as Audyssey, uses an external PC or Mac for all the number-crunching. Running

'There's a crisp

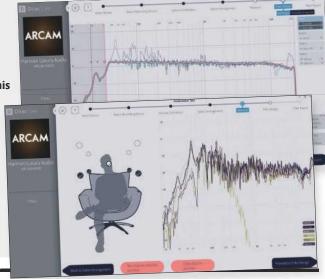
edge to the

snares and

faux handclaps'

Dirac isn't a quick process either, requiring the setup of a (free) account, downloading the calibration file for the supplied mic or third-party alternative, and taking multiple measurements - the suggested minimum is five – around your listening position. Once achieved, the software provides a graphical representation of both the in-room frequency response of your speakers and a postcalibration target curve [see screenshots, right]. Customisation of this target curve allows for specific cut-offs to be set, useful if you want Dirac Live to only address low frequencies. The post-EQ profile is then uploaded to the SA30, and enabled on inputs of your choice. It's easy to switch on and off, too, enabling A/B comparisons.

For environments where speaker placement isn't ideal, or where acoustic treatments haven't been used to address reflections/room modes, the effects of Dirac Live can be marked. In my experience the most obvious was a tightening up of low frequencies, and a smoother progression into the midband. Vocal definition was also improved. It's worth experimenting with, and your Arcam dealer should be happy to run the set-up for you.





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ABOVE: Comprehensive functionality is reflected in the three line/two phono inputs, two optical and two coax S/PDIF inputs, dual Wi-Fi antenna, wired network (for home automation/streaming) and USB-A (external HDD playback) ports, plus HDMI (ARC)

loose, but there's no denying the cohesive nature of its presentation.

With something gutsier, and more demanding of full-range speakers, the SA30 seems to grow in stature and low-end grip. 'Madness' by Muse [The 2nd Law; Tidal Masters] lays on a stop-start electronic bass motif that has weight but also texture - it sounds gritty and rough rather than boomy and ponderous. The staccato synthetic drum pattern hits hard, with a crisp edge to the snares and faux handclaps.

At this stage, everything is mixed to be tight and immediate particularly the solo that clearly pays homage to Brian May – and this amplifier does it justice, managing to target your listening position without feeling shut in.

WICKED EDGE

Towards the end, however, the track transforms from edgy disco to soaring love song and the SA30 absolutely nails the shift in tone and scale. There's an even greater feeling of depth to lower registers, but it's joined by a deliciously lush sense of space as the soundstage expands before your eyes.

Range right on the Arcam's volume control to fully savour

Muse's operatics and it happily obliges. At high volumes the SA30 remains utterly in control and free of distortion. Indeed. throughout my listening I never felt it struggled regardless of the demands made.

LEFT: Arcam's backlit universal remote will cater for up to eight devices. All the SA30's inputs and features, inc. the digital filters, may be navigated and controlled from here

Arcam's Class G implementation works as advertised - confident both at tick over and full-throttle.

Streaming via Chromecast brings the Arcam's DAC into play, benefiting from the SA30's organised nature, but not at the expense of its tonality. Dire Straits' 'Private Investigations' [Love Over Gold; Tidal Hi-Fi download], is a track that isolates instruments and focuses your ear. Mark Knopfler's acoustic guitar stood out here, the SA30 revealing every string slide, bend and finger pick while the singlenote bassline thumped along in the background. And the amp sparks into life when the electric guitar rages in, serrated but undistorted with a wicked leading edge.

In fact, this track best exemplifies the SA30's most admirable traits. There's a palpable depth and breadth to its imaging that creates cavernous space between the calland-response interplay of quitar and marimba. The ominous, isolated thuds of a floor tom arrive with a startling dynamic punch, as do the forceful piano chords that signal the climax. But the quietest moments are teased out with a fine touch, and importantly the transition from gentle to menacing is effortless, the sonic equivalent of an Olympian performing a gold medal deadlift. \circ

HI-FI NEWS VERDICT

More all-in-one than conventional integrated amp, Arcam's SA30 finds the brand embracing modern trends and features, if not the Bluetooth functionality and fashionista stylings of some rivals. It's a timely and welcome update, offering source flexibility and clever digital EQ to the purposeful and revealing sound of its Class G power plant. Arcam may be streamlining its product range, but hasn't lost its focus.

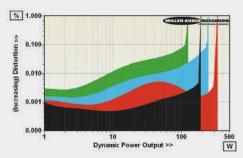
Sound Quality: 85%



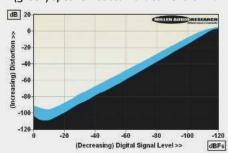
ARCAM SA30

Tested in 'Analogue Direct' mode (bypassing the input AK5552 ADC) the gain of the SA30 is as high as many MM phono stages at +49.2dB, though this reduces slightly to +47dB when the line input is digitised at 192kHz/32-bit. The SA30's response is not appreciably different in 'Direct' or 'digitised' mode, the former extending down to -0.3dB/1Hz and up to -0.25dB/20kHz and -4.6dB/100kHz. The 192kHz ADC cuts this off at -10dB/87kHz and -30dB/92kHz. Noise is exceptionally low and the A-wtd S/N ratio some 10dB wider than average at 94.5dB (re. 0dBW) while distortion is also a low 0.0003-0.002% (20Hz-20kHz, 10W). Distortion is fairly constant between 1-10W before rising with output to 0.001%/30W, 0.002%/50W and 0.0035% at the rated 120W/80hm. In practice the SA30 delivers 2x145W/80hm and 2x220W/4ohm with the Class G power amp supporting peaks of 190W, 339W, 247W and 130W under dynamic conditions into 8, 4, 2 and 10hm loads [see Graph 1, below].

Testing the digital stage via the pre outputs is limited to 1.1V because the power amp remains in circuit and, even unloaded. still clips. At 1V/OdBV output, the ESS9038K2M-based DAC stage offers a 104dB A-wtd S/N ratio and minimum 0.00035% THD over the top 10dB of its dynamic range [see Graph 2]. Jitter is suppressed to ~50psec via all sample rates while the rejection of alias images, the amount of pre/post ringing on transients, and the frequency response(s) all depend on your choice of filter. With 48kHz files 'Apodising' gives -1.0dB/20kHz; 'Min. Phase Slow', -5.2dB/20kHz; 'Min Phase Fast', -0.2dB/20kHz; 'Linear Phase Slow', -3.7dB/20kHz; 'Lin. Phase Fast', -0.2dB/20kHz; 'Corr. Min Phase', -12.3dB/20kHz and 'Brickwall', -4.2dB/20kHz. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 10hm (green) speaker loads. Max. current is 11.4A



ABOVE: Distortion versus 24-bit digital signal level over a 120dB range (1kHz, black; 20kHz, blue)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	145W / 220W
Dynamic power (<1% THD, 8/4/2/10hm)	190W / 339W / 247W / 130W
Output imp. (20Hz–20kHz, Pre/Amp)	226ohm / 0.071-0.090ohm
Freq. resp. (20Hz-20kHz/100kHz)	+0.0 to -0.25dB/-4.6dB
Digital jitter (USB / S/PDIF)	50psec / 55psec
A-wtd S/N ratio (DAC/Amp)	104.1dB (OdBFs) / 94.5dB (OdBW)
Distortion (DAC, OdBFs/Amp, OdBW)	0.0015-0.002% / 0.0003-0.002%
Power consumption (idle/rated o/p)	41W / 408W (2W standby)
Dimensions (WHD, each unit)	433x100x323mm / 12kg

PHONO PREAMPLIFIER

MM/MC phono preamp with triode tubes Made by: Pro-Ject Audio Systems, Austria Supplied by: Henley Audio Ltd, UK Telephone: 01235 511166 Web: www.project-audio.co.uk



Pro-Ject Tube Box DS2

Alongside its range of turntables, Pro-Ject's diverse Box series of hi-fi separates – from streamers to phono preamps – has come to define the 'world vision' of its founder Review: **Ken Kessler** Lab: **Paul Miller**

ne of the nicest by-products of the vinyl revival is the constant flow of affordable phono stages, essential to allow newcomers to adapt to LP playback the line-level-only integrated amps that have proliferated since 1983. Thorens, Mobile Fidelity, Musical Fidelity, NAD, Cambridge – there are too many to list, but the go-to brand for me is the one that also 'owns' the entry-level turntable market: Pro-Ject.

Among the 16 phono stages in its catalogue is a 'sweet spot' model at £550, the Tube Box DS2. Available in black or silver, with a choice of wooden side cheeks, and with those triode tubes sprouting out of the top, it was the perfect yin to the MoFi UltraPhono's solid-state yang [HFN Mar '20]. And unbeknown to editor PM as he organised a product for this review, I already owned one: I needed a phono stage that did everything, but cost well under £1000 so I could use it with entry-level cartridges and turntables.

LET THERE BE LIGHT

This product actually fits in the middle of the six-range Pro-Ject catalogue. If your budget won't stretch to this model, there are plenty from £60 on up. If you want something a bit more lavish, there is the RS range. The Tube Box DS2, however, will address all of your audiophile needs, and a bare bones description will have you salivating if you need a phono fix without having to break the bank.

Let's dispense with the back first.
Unusually for a phono amp at this – or any – price, the Tube Box DS2 accommodates two turntables, offers two sets of RCA outputs, has power from an 18V 'wall wart' and features 12V trigger input/outputs. This tells you that you can integrate it into most systems with auto-power-on and you have the choice of two decks if so inclined.

RIGHT: Inside the Tube Box DS2 a volume pot [bottom] provides the variable MC loading while gain is switched via a sequence of [white, top] relays. The ECC83 triodes provide gain 'inside' the passive RIAA and are fitted with alloy coolers

While the front panel looks like you might want a trip to the owner's manual, it's actually intuitive and user-friendly. Press the tiny button on the left and it switches on, a blue LED lighting up above the button. Other LEDs come on at this

point to show which input has been chosen, whether or not the subsonic filter is engaged and which loading, capacitance and gain settings have been selected by the user. Then, for precisely 30

selected by the user.
Then, for precisely 30
seconds, the on/off LED
flashes during the warm-up period, the
muted output preventing any nasty pops
from greeting the user at switch-on. To
demonstrate just how closely Pro-Ject pays
attention to the tiny details, even with
cost-effective models such as the Tube Box
DS2, the LED that shows which output has

honeyed voice'
recommendation to to when I hook
MC cartridge
To the rig
buttons in a
or 2, Output

been selected doesn't light up until the warm-up period ends.

PLAY BY EAR

'That tube-y

warmth worked

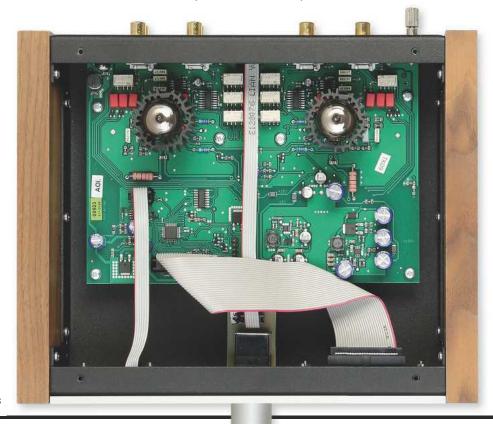
magic on her

Dominating the fascia is the big rotary control that serves to dial in MC pick-up

loading from 10-1000ohm. It lacks detents, so you will be setting this parameter by ear, but that's no bad thing for, in my experience, most cartridges exhibit a window of a few ohms either side of the manufacturer's

recommendations. Its range all the way down to 10ohm certainly proved useful when I hooked up my favoured EAT Jo N°5 MC cartridge [HFN Dec '18].

To the right of this knob are three buttons in a vertical array to select Input 1 or 2, Output 1 or 2, and the subsonic filter.







LEFT: A far cry from the ultilitarian Tube Box DS, this v2 model trades manual jumper connections for front-panel switching of load and gain. The variable MC loading potentiometer allows tweaking 'on the fly'!

The top button chooses between 47kohm loading for MM cartridges (or suitable high-output MC types), or 'Variable' for accessing the rotary. Below it are MM capacitance settings of 100pF, 220pF or 320pF, and the gain selector in dB. All it lacks is a remote, which would let you play with the loads and levels from the hot seat.

Editor PM advises that the first three gain settings of 40dB, 45dB and 50dB work ideally for MM cartridges, with 60dB and 65dB as best for MCs [see Lab Report, p65] though I was surprised by some of the settings I arrived at after trial and error.

TUBES FOR EVERYMAN

During the year I have been using it, I have also fed the Tube Box DS2 with the Ortofon Concorde in Pro-Ject's Yellow Submarine deck (I couldn't resist...), Decca Gold and Ortofon 2M Red [HFN Oct '08] MMs, and EAT Jo N°8 [HFN Dec '19], Koetsu Urushi [HFN Nov '19], Denon DL-103 and TechDAS TDC01 Ti [HFN Sep '14] MCs, in addition to the Jo N°5. I have spent more time with this product, prior to writing the review, than pretty much anything I've ever assessed.

This isn't the least expensive tube phono stage on the market, and Amazon will sell you some oddity, eq, Nobsound's Little Bear T7 for as little as £49. For all I know, it might be a gem. But Pro-Ject's Tube Box DS2 is the real deal for audiophiles on a budget - I had one of its earliest tube phono amps over 15 years ago, and it was a dandy. But this is something special.

Experience notwithstanding, PM explained to me why I made such an easy transition going from EAT's E-Glo Petit (at twice the price!) to the Tube Box DS2. EAT and Pro-Ject are sister brands, and he explained that the Tube Box DS2's design exhibits parallels with the E-Glo Petit phono preamp [HFN Feb '19], which also mixes transistors and ECC83 tubes. In both cases, the 'headamp' is a low-noise J-FET stage with the first triode in cascode, leveraging a substantial 70dB overall gain.

PM adds that 'much of this is lost through the passive RIAA EQ that follows - there's even a second tube gain stage between the two halves of the passive network. Thus the maximum gain available to the user is +65dB [see Lab Report, p65], just about spot-on for the vast majority of sane MCs. Furthermore, Pro-Ject is smart enough to ensure the Tube Box DS2's compatibility with likely partnering amplifiers by buffering its output, not via the triodes, but with a solid-state Burr-Brown op-amp'.

It's worth adding that, in addition to the above list of cartridges, my Tube Box DS2 has hosted, in addition to the aforementioned Pro-Ject Yellow Submarine. the EAT B-Sharp [see p54] as well as two MoFi decks [HFN Jul '19 and Jan '20], the TechDAS Air Force III Premium [HFN Jun '19] and a venerable Thorens TD-150.

GENTLE GIANT

Listening to the remastered edition of James Taylor's *Greatest Hits* [Warner Bros R1 3113/603497852543], I was reminded of one of this phono stage's greatest qualities – quietness. I arrived at this through familiarity, because achieving this requires only the judicious application of the gain settings, to find the optimal amount relative to one's preamp or integrated amp and speakers.

Ordinarily, I am not too taken with the thought that 'Something In The Way She Moves' and 'Carolina On My Mind' were re-recordings rather than the Apple originals, but the openness of the Tube Box DS2 let me listen into the recording with 'new ears' - and a new pressing.

As I have quite a few hours on the EAT Jo N°5 via this phono stage, it was a case of reaffirming what I already knew. And, lo and behold, the next tracks were my old friends, 'Fire And Rain' and 'Sweet Baby James', the original recordings remastered. With all respect to the MoFi UltraPhono, which I find to be an incredible device, the addition of that tube-y warmth worked magic on a voice that's already so honeyed as to border on the calorific.

But these are gentle recordings that do not tax a system, beyond demanding finesse. Asked to rock out, with Mobile ⊕

TUBES 'N VINYL

As valves-vs-transistors perfectly parallels the analogue-vs-digital dichotomy, it seems logical that tube phono stages would better complement LPs than solidstate. This is not to say I'm an absolutist: my entry-level reference phono stage is the tubeless-yet-magnificent MoFi UltraPhono [HFN Mar '20]. As for the rest, I prefer the bloom or warmth associated with valves, rightly or wrongly. (See the review of the Vinnie Rossi L2i-SE, p48, for a practical testing of this belief.) My work requires phono stages at assorted price points, to address the needs of a reviewer who insists on assessing products in context, eg, a £700 moving-coil through a £7000 phono stage is an unlikely pairing. And all of mine are valve.

Pro-Ject's Tube Box DS2 has seen sterling service in my system for over a year, long before I knew I would review it. Next is the astonishing EAR PhonoBox [HFN Dec '19], tied with the similarly-priced EAT E-Glo Petit (£1200-£1500 depending on accessories). I keep both because while the PhonoBox includes fixed MM/MC gain and loading the EAT E-Glo Petit [HFN Feb '19] has adjustments on a par with the Pro-Ject Tube Box DS2. For ultimate testing? I stay with the flagship EAT E-Glo which eschews any semiconductors in its signal path in favour of four ECC83s and two ECC88s - it's among the best phono stages I've ever used.



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PHONO PREAMPLIFIER



ABOVE: The Tube Box DS2 will accommodate two turntables/cartridges with separate, but switched, RCA inputs and outputs. 12V triggering facilitates a degree of system automation while the 18V wall-wart PSU invites user-driven upgrades

Fidelity's superb new version of Twisted Sister's 1984 album Stay Hungry [MFSL-1492], 'We're Not Gonna Take It' (a song as familiar as the James Taylor tracks) enjoyed all of the overwhelming force a heavy anthem demands, and there was just enough softness at the upper reaches of the treble to add a frisson of 'tubeness' – arguably as much of a raison d'être for buying the Tube Box DS2 as its raft of facilities.

ROCK SOLID

This is not, however, to suggest for even the most fleeting of moments that one should 'de-raunch' (or should that be 'Dee-raunch'?) something as inherently and deliberately aggressive and volatile as Twisted Sister's harder-than-nails glam-metal. Bass was rock-solid and extended, as it was throughout the remastered James Taylor LP.

Moreover, the whole thing held together beautifully even during the most frantic moments, which is all the more surprising given that Pro-Ject's founder, and hard-core classical devotee, Heinz Lichtenegger probably knows about as much heavy metal as I do Andalusian poetry.

Another new arrival made me fall in love all over again with the Tube Box DS2, although my ardour hadn't waned at all over the past year. Al Di Meola, a quitarist of sublime subtlety as well as speed, recently released his second homage to The Beatles, Across The Universe [E-A-R Music/Edel 0214706EMU]. If you have no problem with instrumental covers of The Beatles' canon - and I clearly don't, owning a few hundred of them - this album of 14 tracks played in the Spanish guitar manner will surely dazzle you.

OK, so part of the challenge is keeping up with his runs, which have been accused of including too many notes, but this is like a demo LP for transient attack and detail. No blues, no smears, and a waft of the air and woodiness associated with acoustic quitar. The latter quality was never more pronounced than on, appropriately, 'Norwegian Wood', with tabla stage right to add some percussion in the spirit of the era.

This album, as did the James Taylor collection, provided the Tube Box DS2 with the opportunity to display its chops with soundstage. The width is broad enough to honour a Denon MC, but its big sister, the E-Glo Petit, just beats it for stage depth, audibly and repeatedly.

Then there's the bass: on 'Strawberry Fields Forever', it offers mass of Kodo proportions. Up top, it never sounds nasty or raspy, or comes across as too soft. There was gain a'plenty, but I'm sure there may be some oddball MC needing more. If there's anything else to criticise, I've yet to uncover it. 🖰

HI-FI NEWS VERDICT

Here the verdict is a fait accompli as I have been using the Tube Box DS2 for over a year as my budget reference phono amp. It was enough that it handles two decks, has two outputs and adjustable loading to match any cartridge likely to cross my path. Above all, though, is the sublime valve-y sound: it's an absolute knock-out, even proving itself in an uberhigh-end £100k system with a £10k MC. This is a killer.

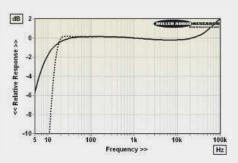
Sound Quality: 86%



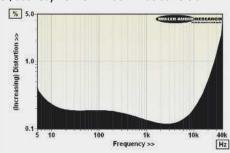
PRO-JECT TUBE BOX DS2

This little box is best described as a 'hybrid', combining a J-FET/ triode gain stage with passive RIAA eq and an op-amp-based output buffer. The latter brings with it a modest 96ohm source impedance and a substantial 7.4V maximum output but, arguably, a higher distortion than might have been achieved with the solid-state electronics left 'naked'. However, with 0.12-0.5% (20Hz-20kHz, 0dBV) whatever modest colour the two-stage ECC83s might have introduced is still lower than the distortion we typically measure from any MM/MC pick-up under real world conditions [see Graph 2, below]. The freq. response [see Graph 1] is also subtly shaped with a very gentle rise of +0.13dB between 50Hz-300Hz, an equally subtle dip through the presence, followed by a lift of +2dB at an ultrasonic 100kHz. The subsonic filter steepens the LF cut to -11dB/10Hz and -35dB/5Hz.

Pro-Ject claims +40dB, +45dB and +50dB gain (which I took as default MM settings) with +60dB and +65dB notionally for MC, values that were closely matched on test at +40.5dB, +45.1dB and +50.1dB for MM, and +60.0dB and +65.1dB for MC. In practice, the lowest MM gain offers a 9.45mV sensitivity (good for high output MMs) with the highest MC gain equal to 0.56mV (556µV – and with a minimum 10ohm load option, useful for mid-output MCs). The Tube Box DS2 carries enough headroom to maintain input overload limits of 72mV, 51mV and 31mV (MM), and 10.5mV and 6.1mV (MC), which are just sufficient to accommodate the 'hottest' > 16dB groove modulations (re. 11.2µm/300Hz). Fortunately the tube RIAA stage clips very gracefully so there's some additional margin with the first three (MM) gain settings. The A-wtd S/N ratios are also superior at 83dB (MM) vs. 63dB for the last two (MC) settings. PM



ABOVE: RIAA-corrected frequency response (subsonic filter, dashed) from 5Hz-100kHz at 0dBV via MM



ABOVE: Distortion extended frequency (5Hz-40kHz) via MM input re. 0dBV (1Vrms) output

HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	47kohm / 10ohm–1kohm
Input sensitivity (re. OdBV)	9.45mV–556μV
Input overload (re. 1% THD)	72mV/51/32/10.5/6.1mV
Max. output (re. 1% THD) / Impedance	7.4V / 94–96ohm
A-wtd S/N ratio (re. OdBV)	82.7dB / 62.7dB (MM/MC)
Frequency resp. (20Hz-20kHz/100kHz)	-0.3dB to +0.13dB / +2.2dB
Distortion (20Hz-20kHz, re. 0dBV)	0.12-0.51% (MM)
Power consumption	10W (1W standby)
Dimensions (WHD) / Weight	240x93x239mm / 2kg



USB DAC/HEADPHONE AMP 🥖

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iFi Audio ZEN DAC

With its eye-catching looks, flexibility, solid engineering within and a remarkably grown-up sound, this entry-level DAC from iFi Audio is a conspicuous hi-fi bargain Review: **Andrew Everard** Lab: **Paul Miller**

e've come a long way since iFi Audio was started as an offshoot of high-end brand Abbingdon Music Research, building its initial reputation with its 'Purifier' products, designed to clean up digital signals. And if anyone was labouring under the delusion that these were devices designed to tackle non-existent problems - you know, the old 'digits is digits' thing - the company has since expanded into making everything from complete systems to some of the most cost-effective DACs and headphone amps around. After all, its excellent xDSD [HFN Jul '18], was a 2018-19 EISA Award-winner, following on from the 2014-15 winning footsteps of the nano iDSD [HFN Dec '14].

Headquartered in Stockport, Merseyside, and using a number of outside consultants as well as its own team to design and engineer its products in the UK, these days iFi Audio has expanded its catalogue, which now runs to some 30 components. It includes the striking-looking bamboo-clad, architect-inspired Aurora all-in-one network system alongside no fewer than eight DACs in the lineup. The most recent arrivals are the tiny pocket-sized hip-dac (£149), designed for music on the move, and the very affordable ZEN models, including the £129 ZEN DAC that we have here.

TRIPLE SURPRISE

Sitting at the 'even more affordable' end of the iFi Audio range, the compact ZENs show that building down to a budget doesn't mean the company cuts corners, whether on the engineering or industrial design. Built for desktop use, both the ZEN DAC and its Bluetooth counterpart, the ZEN Blue [see boxout, p67] have a striking look unlike anything else in the company's range. They're clad in high-quality aluminium casework that not only looks good but feels remarkably substantial for

RIGHT: Underside of the PCB reveals the XMOS USB input [top] and TI DSD1793 DAC [centre] with two crystal clocks [adjacent]. Headphone amplifier [lower left quadrant] is fully balanced products so compact. Indeed, the ZEN DAC stands just 30mm tall.

Despite the toy-like dimensions, this is actually a potent and flexible digital device, both in its handling of data and its ability to fulfil its dual functions of DAC and headphone amplifier. Actually, make that triple functions as, due to its variable-level analogue outputs, it could even be used

straight into a power amp or a pair of active loudspeakers, hilarious though the combination of this tiny unit and a hulking great power amp might seem. Indeed, iFi Audio's preferred analogue output is the tiniest connection here, a little

2.5mm socket on the rear panel that can be broken out into a pair of balanced XLRs via a suitable (third party) adapter cable.

Most users are more likely to use the ZEN DAC's entirely conventional unbalanced RCA outputs that can be set to fixed or variable, the latter under the control of the front panel knob. Also on the front panel are the headphone outputs comprising a standard 6.35mm unbalanced connection or a 4.4mm 'Pentaconn' type for balanced headphones.

POWER MATTERS

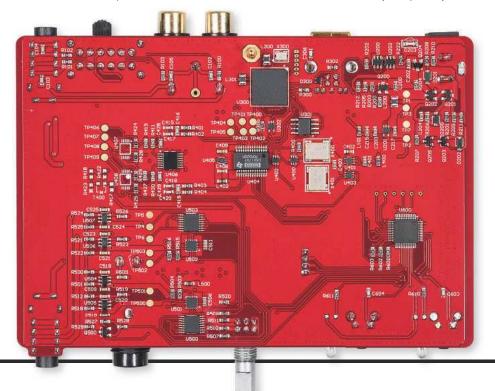
The sole input here is a USB 3.0 Type-B socket, of the 'double-decker' kind rather than the smaller USB 2.0 square design

more common on USB DACs, and a suitable A-to-B cable is included.

The USB connection also carries 5V power for the ZEN DAC but there's a separate DC input on the back of the unit should you wish to upgrade with an

aftermarket 5V/500mA supply. You could use a simple plug-top PSU (such as that provided with the ZEN Blue DAC), with such devices available online for around £10 or so, but iFi Audio also offers two upgrade power supplies, the iPower and iPower X, at £49 and £99 respectively. In practice the ZEN DAC's maximum (headphone)







power output [see PM's Lab Report, p69] can only be guaranteed with an external PSU because computer USB hub reserves can vary quite widely.

Within, the ZEN DAC certainly belies its budget pricing, and not simply by virtue of that balanced topology. Designed with substantial input from industry designer John Curl, who joined the company as a technical consultant last year, it employs Burr-Brown/Tl's DSD1793 'True Native' DAC, downstream of a customised XMOS USB input, enabling it to handle LPCM at up to 384kHz/24-bit, as well as DSD256/11.2MHz 'quad DSD' in native form, and also MQA-encoded data.

FIRMWARE OPTIONS

A small LED next to the volume control changes colour to indicate the incoming file format. It glows green for LPCM up to 96kHz, yellow for 176.4-384kHz, cyan for DSD64/128, blue for DSD256, and magenta to indicate MQA. It's also possible

to download different firmware options from iFi Audio's website to optimise the DAC in various ways, and experiment with alternative digital filter settings.

Some of the filters originally used in the company's Pro iDSD [HFN Sep '18] can be downloaded as part of firmware 5.3C, and it's also possible to load v5.2 'Limoncello', which removes MQA capability, but makes it possible for the ZEN DAC to handle DSD512. Such firmware changes are carried out via the USB connection.

The ZEN DAC also offers two further adjustments, accessed via front-panel buttons. 'Power Match' switches the headphone amp's gain, boosting output for use with more demanding on-ear/over-ear headphones while the lower default setting should be used with in-ear monitors. This is something of a broad-brush recommendation, especially given that the unit can deliver high basic levels – caution should be taken with the volume control when experimenting with this setting.

ABOVE: Elegant, formed alloy case is fronted by a bold volume dial. Balanced 'Pentaconn' (4.4mm) and single-ended (6.35mm) 'phone outs are joined by a bass boost (Truebass) and a high/low gain option (Power Match)

The same goes for iFi Audio's 'TrueBass' circuit, a development of the company's XBass system. Implemented in the analogue domain, this endeavours to enhance low frequencies without muddying the midband. While it's certainly effective with bass-light headphones being driven at low levels, in my experience it can still become a little overbearing at times [again, see PM's Lab Report], and was left off for most of my listening.

DRIVE ALL NIGHT

The term 'small wonder' rather undersells the ZEN DAC for this tiny unit is capable of a startling performance. While I wouldn't recommend it as the only digitally-equipped preamplifier you'll ever need – whether connected to power amps via its RCA outputs or rigged for balanced connection – that it puts up a more than respectable showing when so connected is testament to the engineering within.

As a very good little headphone amp it has much to commend it, despite using a lower-powered output stage than the £399 xDSD, as PM notes in his Lab Report, and as one might expect given the huge price differential. That it's also usable as a line-out DAC for use into a conventional amp or system also does its value for money proposition no damage whatsoever. In fact, during testing I used \hookrightarrow

ZEN BLUE

There's a second string to the ZEN bow, in the form of the ZEN Blue [pictured, below], aimed squarely at those who prefer their music streamed wirelessly from a smartphone or tablet rather than played from a computer via USB. The price is the same, and so is the attention-grabbing casework, and indeed the ZEN Blue has both balanced and unbalanced line outputs, as well as optical and coaxial digital outs, with a switch to select between these analogue and digital modes.

Powered from an offboard plugtop supply (we don't have wireless power over Bluetooth yet!), it uses the latest Qualcomm QCC5100 Bluetooth chip to support standard aptX as well as the Low Latency, Adaptive and HD variants. It also supports Sony's LDAC and Huawei's HWA Bluetooth audio coding regimes along with AAC and basic Bluetooth SBC, though Qualcomm's integrated

DAC is replaced in the Blue by a tried-and-tested ESS Sabre converter. The result is a Bluetooth solution with not only wide flexibility but also a persuasive sound: wireless transmission still leaves something to be desired, but the ZEN Blue makes the most of what's delivered, both in terms of weight and scale and the detail on offer.



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FINISH





USB DAC/HEADPHONE AMP



ABOVE: USB-hub powered (or via an external 5V PSU), the ZEN includes a USB-B digital in with both fixed/variable single-ended (RCA) and balanced (2.5mm) outs

it as a convenient 'computer DAC', connected into both my desktop and main systems, as much as I did to power a range of headphones.

Using earphones including a long-running pair of Phonak Audeos, some inexpensive SoundMagics and a decidedly superior model from Astell & Kern and headphones ranging from B&W P5 to the P9 Signature [HFN Mar '17], Focal Clear [HFN Mar '18] and – to test the balanced output - Oppo's PM-1 [HFN Jul '14], the ZEN DAC proved its worth by driving everything I threw at it. I didn't have to use the 'Power Match' boost, and only with the least expensive models did 'TrueBass' come in useful, and then only at very low levels.

FRANKLY AMAZING

Playing Sam Amidon's often chaoticsounding The Following Mountain set [Nonesuch 7559793801; 44.1kHz/24-bit], the ZEN DAC does a great job of bringing out the studio atmosphere, complete with its intertrack noise, buzzes and chatter. It all adds to the improvised feel here, from 'Gendel In 5' with its multilayering to the jam of 'April' closing the set, which just has that vibrancy of free association and interplay. This kind of ambience and immediacy would be impressive in a high-end DAC; that iFi Audio's ZEN manages it for less than many would pay for a digital cable is frankly amazing.

Up the scale of recording to Sa Chen's dramatic, sweeping reading of Rachmaninov's Piano Concerto No 2 with the Orquestra Gulbenkian conducted by Lawrence Foster [Pentatone PTC5186444; DSD64], and the ability of this little DAC/ headphone amp to deliver both the scale of the orchestra and the detail of the solo instrument is never in any doubt, whether the music is played through headphones or into an amplifier in DAC mode.

And if you want any more demonstration of its speed, definition and ability with timbral textures, look no further than harpist Claudia Lucia Lamanna's performance of Mchedelov's 'Variations on a theme of Paganini' [from Linn CKD646; 192kHz/24-bit]. Here the sound is appropriately crisp and tight, yet with a wonderful sense of the strings in motion and notes decaying into the acoustic.

Meanwhile, playing the first scene of Mascagni's Cavalleria Rusticana [Dresden Philharmonic/Janowksi: Pentatone PTC5186722, DXD live recording] shows the effortless way in which the ZEN DAC makes music, from the subtle chimes to the rhythm of orchestra and chorus, not to mention a spot of percussive thunder. It's all rather wonderful, and totally involving.

Mind you, the same goes for 'Unbroken Chain' from The Grateful Dead's From The Mars Hotel set [DSD64 from MFSL UDSACD 2196], in which every instrument is allowed to shine without impeding the goodtime flow of the whole piece but then I could say the same for the way the Zen DAC plays the whole set. What a bargain! \oplus

HI-FI NEWS VERDICT

Yes – a startlingly high sound quality score, but then the ZEN DAC is a remarkably capable, fine-sounding piece of equipment and something very special for just £129. It goes to show that desktop audio doesn't have to be the poor relation of 'proper' hi-fi, and that there are still giantkillers out there. Buy this to boost the sound of your computer, and you may well find you're listening to it most of the time.

Sound Quality: 87%

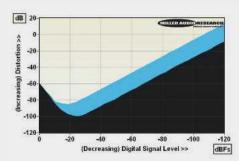


IFI AUDIO ZEN DAC

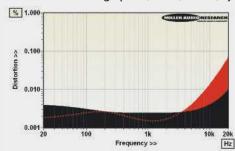
This high-value product employs the same TI (née Burr-Brown) DSD1793 DAC as iFi Audio's EISA Award-winning xDSD [HFN Jul '18], albeit with a lower-powered headphone amp in tow here. The DAC's default linear-phase digital filter offers a 53dB alias image rejection and excellent jitter suppression to <15psec (all sample rates). With a OdBFs input, the RCA line outs are just clipped at 3.3V. The S/N is a wide 108.3dB and distortion falls to a minimum of 0.0011% over the top 30dB of its range [Graph 1].

There's much common ground between the DAC/line out and DAC/headphone out, including a response that's ruler flat to 20kHz ±0.02dB with CD/48kHz inputs, just -0.6dB down at 45kHz (96kHz files) and downsampled to a -6dB/48kHz bandwidth with higher rate files. Tested with the ZEN Blue's PSU, there's almost no change in response with loading (10mW/ 32ohm), partly due to the ZEN's impressively low 400mohm output impedance (the RCA outs are a higher 94ohm), but THD does increase with both loading and frequency [Graph 2, below]. Here, loaded or unloaded, the low 0.002% bass/midrange THD increases to 0.013%/10kHz and 0.075%/20kHz (10mW/32ohm).

Maximum output depends on iFi's 'Power Match' facility: switched on, this is 3.32V (18mW/600ohm) and achieving a single-ended 200mW/32ohm at 1% THD. Switched off there's a 10.1dB drop to 1.03V, or 1.8mW/600ohm, which is sensible for high impedance ear buds. Also from the standpoint of sensitive 'phones, levels of residual noise are very low at -98dBV (13μV), while the A-wtd S/N ratio is a wide 94dB (re. 10mW/32ohm). Take care with the 'TrueBass' feature, however, because this progressively boosts the ZEN's LF response from +1dB/235Hz, +3dB/120Hz, +6dB/60Hz and a whopping +10.6dB/20Hz. PM



ABOVE: Pre (RCA) distortion vs. 48kHz/24-bit digital level over 120dBFs range (1kHz, black; 20kHz, cyan)



ABOVE: Distortion versus frequency from 20Hz-20kHz (black, 1V into 600ohm; red, 10mW into 32ohm load)

HI-FI NEWS SPECIFICATIONS

Maximum output (<1% THD into 47kohm)	3310mV (RCAs)
Maximum power output (<1% THD)	200mW / 32ohm
Output Impedance (20Hz-20kHz)	0.4-0.5ohm (94ohm, RCAs)
A-wtd S/N ratio (re. 10mW/0dBV)	94.0dB / 108dB
Distortion (20Hz-20kHz, re. 10mW/0dBV)	0.002-0.075%/0.006-0.009%
Frequency resp. (20Hz-20kHz/45kHz)	+0.dB to -0.02dB/-0.55dB
Digital jitter (48kHz / 96kHz)	13psec / 15psec
Power consumption	2W
Dimensions (WHD) / Weight	100x117x30mm / 800g



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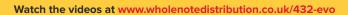
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Factory-terminated interconnect cables Made by: Atlas (Scotland) Ltd. Kilmarnock Supplied by: Atlas Cables Telephone: 01563 572666 Web: www.atlascables.com Price: £500 (1m stereo set, terminated in XLRs)

LOUDSPEAKER CABLE

Atlas Equator XLR



Recognising that mainstream gear is being equipped with both RCA and XLR sockets, Atlas has developed a 'balanced' version of its Equator cable. Review & Lab: Paul Miller

udging by the increased number of XLR sockets seen on hi-fi separates in recent years, 'balanced' is rapidly becoming the new black. Balanced signal transmission has its benefits over long runs in suppressing commonmode interference and maintaining the topology between a balanced pre and power amp, for example, although many would debate that the extra circuit complexity outweighs the benefits.

That's a discussion for another day as, here, we look at a new Atlas interconnect that illustrates the industry trend towards XLR-equipped cable derivatives. In this case Atlas's new Equator XLR is a symmetrical/balanced version of its longstanding and well-reviewed Equator Integra RCA interconnect.

COLD WELDING

Within the Atlas hierarchy the Equator XLR sits between its Element XLR, the base model, with Hyper XLR at the top of its hi-fi range (the Ascent/Mavros/Asimi cables occupy the 'high-end' range). Prices start from £500 for a 1m stereo set, increasing by £50 per stereo metre (so £600 for a 3m stereo set).

While Atlas's Element XLR uses OFC conductors and XLR pins, and a foamed polyethylene dielectric, the Equator XLR uses OCC (Ohno Continuous Casting) copper conductors and silver-plated OCC pins, plus the same dielectric. There's no soldering here as the OCC-to-OCC connections are all cold welded.

The internal geometry is very straightforward - both the signal (L) and return (R) cores are a twisted pair, comprising 2x60x0.1mm strands, while the screen (the 'X' in XLR) is a combination mylar/aluminium foil plus woven OFC braid, terminated at both ends of the cable. The Equator interconnects are not marked for directionality although slow-drawn OCC copper directly embraces the concept. Either way, a cotton filler holds all the cores in place, reducing microphony, before the entire cable is jacketed in a soft, pearl white PVC.

BELOW: Sheathed in an ivory white soft PVC jacket, the Equator XLR features OCC copper in both its conductors and XLR pins OCC copper may have fewer grain boundaries than an equivalent-purity OF

copper but the 75mohm/m loop resistance remains unaffected as does the low capacitance and series inductance of 75pF/m and 0.40µH/m, respectively. This is another Atlas cable suitable for long runs.

AROUND THE WORLD

I had the opportunity to compare these new balanced Atlas Equators with the brand's costlier Mavros Ultra cables [HFN Mar '16] as well as the stratosphericallypriced silver/gold Absolute Dream from Crystal Cable [HFN Jun '12] and, in no respect, did the Equator XLR come up embarrassingly short. Laced between my dCS Vivaldi One player/DAC [HFN Feb '18] and Constellation Inspiration monoblocks [HFN Oct '19] the Equator XLR offered a slightly more rounded view of musical events, trading some micro-detailing for a smoother balance that, potentially, will find a very sympathetic home in a slightly brighter-sounding system.

Yello's limited edition 'Virtual Concert' DVD-A issue of Touch [N/A cat no; 48kHz/ 24-bit] provided a focused example of how the Equator XLR succeeds in taking the edge off the liveliest percussion while still retaining the body and ambience of the performance. The Equator XLR

ensured that Dieter Meier and Boris Blank's energy, power and enthusiasm was retained on their virtual stage, while avoiding any opportunity for grit and grain to aggravate what might already be a forward-sounding amp or speakers. The sound remains nimble too, the bass unmuddied and quick where it needs to be or heavy and extended where the recording demands. It's a very realistic upgrade from basic XLR interconnects. ()

HI-FI NEWS VERDICT

I have described the influence of Atlas's Equator XLR interconnects as one of remedy, a very subtle emollient that trades crystalline, forensic insight for a sound that is both forgiving and musically compelling. There are 'brighter sounding' interconnects available, but do not read the Equator XLR's story as a euphemism for 'dull' or recessed, for these are shrewdly balanced to reward without stripping your music to its roots.

Sound Quality: 82%





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lassical Companion

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Seiji Ozawa Conductor

One of the few Japanese musicians to have made a long career in the West, with a Boston tenure of 29 years. Christopher Breunig looks at his life and wide discography

tough game of rugby football put an end to the hopes that a young Japanese boy would become a concert pianist. Seiji Ozawa, then 15, was mad about the game but severely damaged his hand in a scrum. When his piano teacher suggested he might think of conducting instead, he had never even seen a symphony orchestra, live or on television.

His parents were living in Japanese-occupied Manchuria when Seiji was born, on 1st September 1935, and when he was six they came to live in a Tokyo suburb. His mother had given his older brother an accordion which sparked his interest in music and he began piano lessons at ten. There was no piano at home but you can see, in a Classic Talk TV interview [www.youtube. com/watch?v=yXg9m2X0ZrY], the old Yamaha upright that his brothers

Early Ozawa 2LP set for RCA, Messiaen's Turangalîla Symphony, had pop artwork by Robert Indiana



trundled in a handcart from a distant

relative's – a two-day trek!

He went with his mother to Seiji Ozawa the renowned teacher Saitō will be 85 Hideo, whom she knew, and after studies won first prize at the 1959 Besançon Young Conductors Competition. There, the conductor

> would take him on as a pupil. 'No,' said Munch but he promptly contacted Madame Koussevizky at Tanglewood in the States (Munch

Charles Munch was adjudicating

and a star-struck Ozawa asked if he

Boston Symphony) and Ozawa was able to go there. She offered him a choice: working with George Szell at Cleveland or Leonard Bernstein in New York. Ozawa says he didn't know of Szell and had

no idea where Cleveland was, so he became an assistant to Bernstein.

Ozawa had also won an award to study with 'Maestro von Karajan' (as he still respectfully calls him). He found him shy – self-contained, in contrast to the affable 'Lenny'.

At that time he made his concert debut with the San Francisco Orchestra in 1962. The next year he made a lauded Ravinia Festival debut with two concerts with the Chicago

SO and a few months later took up the appointment of the Festival's music director. His first recording was with the CSO: Rimsky-Korsakov's Scheherazade [Angel Records].

BOSTON (LONG) TEA PARTY

With engagements in Berlin, Paris, Vienna and the States, Ozawa now looks ascance at his own neglect of languages. 'It was a joke,' he says, 'though not a joke at the time!' (He had of course quickly to switch from speaking Chinese to Japanese as a very young boy.)

But back home things had gone less well with the NHK Symphony Orchestra, where he had a sixmonth contract in 1962, several players refusing to play under him, finding him brash. Instead he went to the Japan Philharmonic (a Tokyo broadcasting orchestra), although this ran out of funding and was replaced by the New JP with Ozawa working alongside Naozumi Yamamoto, who had first tutored him under Hideo's supervision.

Much later (in Sep '84) Ozawa was then principal conductor for the ifounded the Saito Kinen Orchestra,

'Ozawa had

no idea where

Cleveland

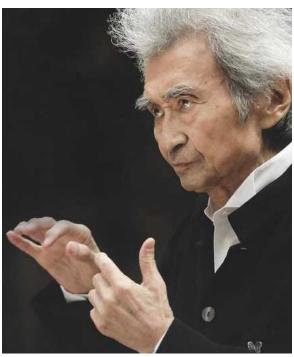
was, then'

named after his mentor and at first comprising former students but then engaging international players. Only one other conductor, Daniel Harding,

has recorded with them - Strauss's Alpine Symphony, but that's surpassed by Ozawa himself, but with the VPO [Philips 483 0113].

After four years with the Toronto SO and seven in San Francisco, Ozawa moved to Boston in 1973, staying there for an even longer time than the great Serge Koussevitzky, until giving as his 2002 farewell concert Mahler's Symphony : No 9. That year he was invited to





be the principal conductor at the Vienna State Opera.

In December 1998 the critic Greg Sandow wrote a withering overview of Ozawa's Boston years for the Wall Street Journal, which you can find on line along with response and counter-response - ironically he concluded with a post-script hurrah that James Levine would take over!

'He still dances on the podium with his trademark pixie charm... [but] I have no idea what Mr Ozawa thinks of the music, or what he is trying to express,' he wrote. Incidentally, Ozawa mostly conducts with his hands but a 1991 YouTube Tchaikovsky Serenade with his Saito Kinen strings shows him using a baton with vigour.

More seriously for Ozawa, he was diagnosed as having early stage oesophageal cancer in 2010 He's recovered but works less than before, here and there sharing concerts. With money from Kyoto's ROHM electronics company Ozawa



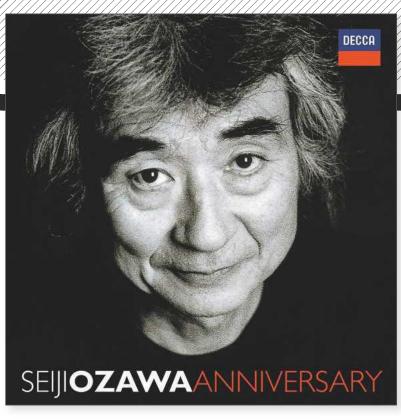
has been able to work with Asian music students where, rather than choosing the symphonic repertory, he has coached them in opera - requiring shared attention to conductor and singers, and asking them to be conscious of the emotional current of the drama.

With the Boston SO he wanted to move away from their acclaimed French style (under Munch and, earlier, Pierre Monteux) and develop a darker, heavier sound. Reportedly, the leader Joseph Silverstein felt this led to muddiness.

I mentioned their early '80s Ravel orchestral series for DG in my Investigation piece [HFN May '20]. Eloquence now has these as a threevolume set, while Mother Goose and three short pieces are remastered by Pentatone [PTC5186204] from the multi-channel tapings. L'enfant et les Sortilèges marked his return

Decca's 11CD compilation issued to mark Ozawa's 75th birthday has a wide range of his best recordings with various orchestras and soloists

Ozawa gives a masterclass for young musicians, held at the **Louis Vuitton** Foundation in summer 2015



to conducting after surgery [see Essential Recordings boxout, below].

BARTÓK ON REPEAT

It's the colourful scores and 20thcentury music where Ozawa is heard at his best, rather than in the heavyweight symphonic repertoire, even though his considerable discography (EMI/Warner, Philips, DG, RCA, Sony and Decca!) spans from Bach's St Matthew Passion to works by fellowcountryman Toru Takemitsu.

Karajan may have been his rolemodel but in the music of Bartók it's Ozawa who is generally his superior. In Chicago he made the first of his three recordings of Concerto for Orchestra, and in Boston the Music for Strings, Percussion and Celesta

(later redone in Berlin) but the 2004 Saito Kinen versions supersede those, not least because they are live [Decca 478 2472 download see also Essential Recordingsl.

I remember with affection the Boston LP versions of Brahms's Symphony No 1 and Tchaikovsky's No 5. These were passed over in favour of later alternatives in the CD boxes but you can still download them. His earlier Mahler 1 too, with the 'Blumine' movt DG added later.

Surprisingly, the conversation book with Haruki Murakami [Absolutely On Music; Amazon.co.uk] suggests Ozawa felt hardly any need to delve into Mahler's personal background when studying the nine Symphonies for performance. \circ

ESSENTIAL RECORDINGS

Beethoven with Argerich

Decca 483 2566

Ozawa with the Mito CO in 2017: Beethoven's First Piano Concerto and Symphony No 1. But BR Klassik has a 1983 Concerto performance with Argerich and Ozawa [403571900701].

Liszt: Piano Concertos Nos 1 & 2; Totentanz

Krystian Zimerman's 1987 Boston recordings are second only to the Richter/LSO/Philips.

Ravel: L'enfant et les Sortilèges

Decca 478 6760

Magical performance of the opera from the 2013 Saito Kinen Festival. With Susan Graham in Shéhérazade; Alborada del gracioso too.

Tchaikovsky and Sibelius Violin Concertos

Philips 4647412

Viktoria Mullova's enduring 1985 Philips debut, with Ozawa and the Boston SO.

Neujahrskonzert 2002

ArtHaus Musik 109315 (DVD)

Ozawa and the VPO in an almost completely popular Strauss-family programme: over one-million copies were sold worldwide.

Seiji Ozawa Anniversary

Decca 478 2358 (eight CDs)

Outstanding Bartók MSPC and Concerto for Orchestra, the VPO Scheherazade and Strauss Alpensinfonie, the San Franciso West Side Story Dances, and Poulenc are highlights here.

Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Edgar Winter Group They Only Come Out...

Take one pale Texan and a band of top talent and you have an LP ready to rock the charts. Steve Sutherland assesses a 1972 album destined for reissue on 180g vinyl

ay what you like about Quentin Tarantino, but one thing's for sure: the man's got great taste in movies. Listed among his favourites are the obvious (Apocalypse Now, Fight Club), the not so well known but fantastic (Takashi Miike's Audition, Bong Joon-ho's The Host) and one that especially concerns us here, Richard Linklater's Dazed And Confused.

Released in 1993 but based in the Summer of 1976 as high-school breaks up, it's the coolest, cutest, cleverest teen drama in the whole world ever, with a stunner of a soundtrack to match.

SASSY RENAME

Principal among the songs that accompany the jocks and stoners as they cruise their way through all the comings of age are a handful that punk really should have seen off for dead, but which sound, if anything, even more poignant, partying and alive than they even did back in their

day. There's Aerosmith's mighty 'Sweet Emotion', ZZ Top's saucy 'Tush', Lynyrd Skynyrd's elegiac 'Tuesday's Gone', Foghat's bitchin' 'Slowride', Kiss's dandy 'Rock And Roll All Nite', Rick Derringer's funky 'Rock 'N' Roll Hoochie Koo', and last but most certainly not least, The Edgar

Winter Group's monumental 'Free Ride'.

Viewed through the movie's heartwarming nostalgic haze, these tunes bestride the world like groovy beflared cheeseclothshirted giants, all big grins

and horny struttin' stuff with flame paint jobs and throbbing engines. Longhair Quaalude heaven.

Edgar's the one we're here to prostrate ourselves before. Born albino in 1946 in Beaumont, Texas, the younger brother of likewise albino blues guitar legend Johnny, Edgar Winter spread his considerable



Steve edited NME from 1992-2000, the Britpop years, launching NME.com and reviving the NME Awards. Previously he was Assistant Editor on Melody Maker. Among his many adventures he has been physically threatened by Axl Rose, hung out awhile with Jerry Garcia and had a drink or two with Keith Richards...



talents across keyboards, saxophone, percussion and quitar, releasing his solo debut album, Entrance, in 1970 to appreciative reviews. A year later he formed the wonderfully named White Trash, which he then almost immediately

> dumped in favour of the less imaginatively titled but considerably sassier Edgar Winter Group.

And in 1973, it was this aggregation - quitarist Ronnie Montrose. drummer Chuck Ruff and bassist Dan Hartman -

under the leadership of Mr Winter who recorded the album for which he's most famous, They Only Come Out At Night.

REBELLIOUS VIBE

"I think great

bands are

always about

the chemistry"

They were a strange band, to say the least, and not entirely like-minded, as Mr Winter recalls. 'When you're putting a band together, you have to look at the chemistry. I liked the idea of having a wild and crazy guy on guitar, and Ronnie always brought spontaneity to the music. What I loved about him, he was just a live wire and really unpredictable. He had this rebellious rock vibe that I loved. It was

> just loved pop music and his music had almost a carefree innocence to it, then Ronnie's stuff had this edge. 'So it was a good chemistry I think great bands are always about the chemistry, the

contrast, and how it all fits together.' The album featured Edgar on the stunning cover, topless

in bright red lipstick wearing a neck tiara of jewels. It was produced by the aforementioned Rick Derringer who





Winter in 1974 and (far right) in a shot of the band from 1975 with Rick Derringer (second from left) – the single 'Frankenstein' (inset) sold over a million copies



Priced £19.99, the 180g vinyl reissue of They Only Come Out At Night can be pre-ordered at www.whatrecords.co.uk

would replace Montrose on guitar soon enough, and become famous for essentially two American classics: Hartman's breezy car/sex anthem 'Free Ride', featuring the bassist author on vocals; and 'Frankenstein', a lumbering instrumental that, amazingly, went to No 1 in the US charts.

FINDING NEW SOUNDS

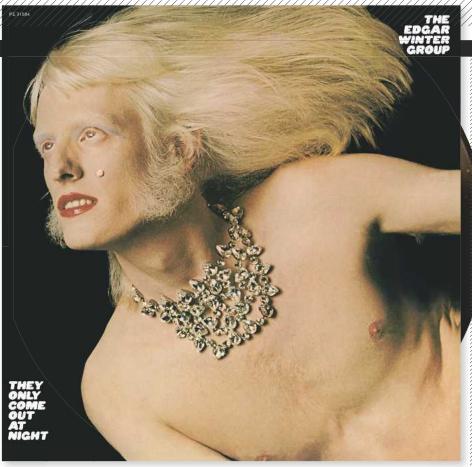
It began life a few years earlier as a jam vehicle for when Edgar joined his brother onstage at gigs. They referred to it as 'The Double Drum' song and it hung around all of Edgar's bands, transforming itself into a vehicle to test out techniques on this newfangled instrument called the synthesiser.

'When it first came on the scene, the synthesiser was a very controversial instrument,' he recalls. 'I have been both accused of and acclaimed for ushering in the era of the synth. People saw it as putting musicians out of work, for dehumanising music, etc.

'But I was always interested in seeing what the instrument could do. There were people using the synth to simulate the sounds of already existing instruments, others were more like programmers than musicians, creating loops. But I looked at it from the viewpoint that I always liked science fiction, soundtracks like the sounds of the Theremin in Forbidden Planet and things like that, so I wanted to see if I could create some never-before heard sounds.

'That was, and remains, my approach. Using the infinite flexibility of a synthesiser - modulating, vibrato and pitch bend - I think that all makes it the most human of instruments really.'

'Frankenstein' found its way onto the album due to Derringer insisting that they could condense something solid from all their jamming. 'I thought it was a crazy idea, but I like crazy ideas. It was a crazy excuse to get more blasted than usual and have a big end-of-the-project editing party. The version we had was like 15, 20



minutes long. There were so many sections because, every time a new sound would come to me, we'd create a new section.

'And the only way to edit something, back then, was to physically cut the master tape, which was a harrowing experience. It was much like cutting a diamond - if you messed it up then it was over, you lost it. We picked our edit points and the tape was lying all over the studio, draped over the backs of chairs and lying on the console. We were trying to put it back together. Chuck, the drummer, came in, saw us putting all this together and mumbled the immortal words, "Wow, man, this is like Frankenstein - taking an arm from here and a leg from there". As soon as he said those words, we had the name of the song. The monster was born!'

It wasn't supposed to be a single. They slapped it on the B-side of another track, 'Hangin' Around', but the deejays started to flip the disc and before they knew it, the monster became... yup... a monster.

And along with it came a true monstrosity. The album may have sold over two million copies on the back of the two hits but it also spawned a grotesque beast, second only to the headless bass as a curse on the whole of music-kind. Mr Winter unleashed the synthesiser from its very moorings and sashayed forth to boogie...

'I happened to be the first guy to get the idea of putting a strap on the keyboard.

It's such an obvious idea, yet one that no one had thought of. When I saw that the Arp 2600 models were one piece of machinery, but it was in two pieces, and was relatively lightweight - the brains of the thing was a mad scientist contraption console with all kinds of knobs and sliders.

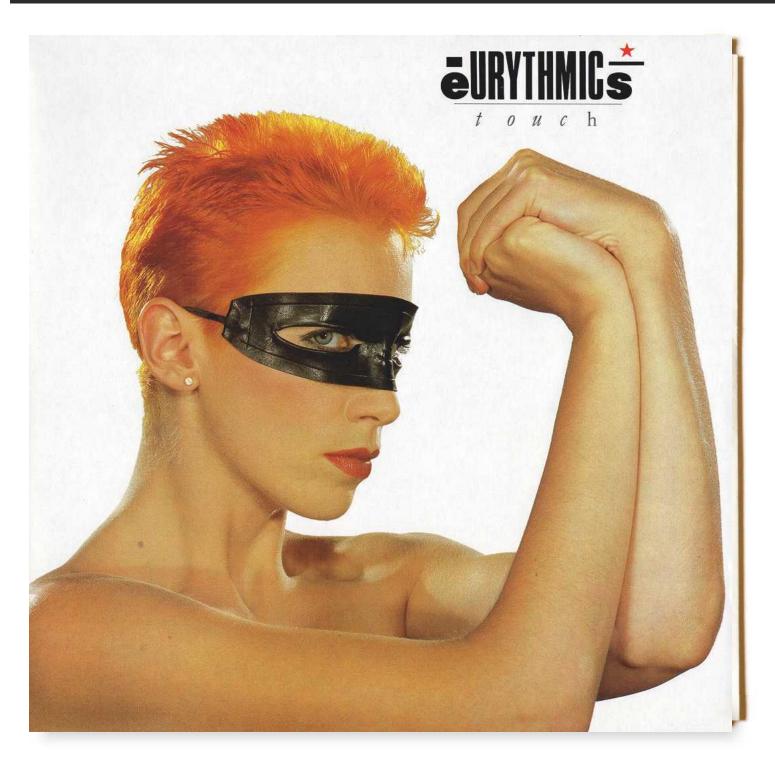
'I thought, "Hey, I think you could put a strap on this thing and play it like a guitar", which is exactly what I proceeded to do. I will never forget that moment, the first time I walked out with the keyboard on a strap, the audience went crazy. It was one of those wild rock 'n' roll moments.'

RE-RELEASE VERDICT

Produced in autumn 1972 by Rick Derringer for the Epic label [EA 31584; UK EPC 65074] this was Edgar Winter's third studio album but the first by his Edgar Winter Group. It came hard on the heels of *Roadworks*, released earlier the same year. They Only Come Out At Night spawned two singles, 'Frankenstein' and 'Free Ride', while the LP reached No 3 on the Billboard 200 chart. Music On Vinyl is reissuing the LP on 180g vinyl [MOVLP2570] in a gatefold sleeve on July the 24th. HFN

Sound Quality: 85%





Eurythmics Touch

Released in November 1983, the band's third album for RCA Records went to No 1 in the UK, No 10 in the States' *Billboard* chart and was later certified platinum. Not bad for an LP recorded and mixed in part of a North London church in just three weeks...

Words: Mike Barnes

n the postpunk era of the late '70s many ēurythmicš new wave groups chose a name beginning with 'the' to differentiate themselves from what had gone years before. And often their choices were deliberately low key, which gave us names like The Trainspotters, The Members and The Tourists.

TOUCH

The Tourists formed in 1976 and come 1979 they seemed to be going somewhere with two hit singles, a brash cover of Dusty Springfield's 'I Only Want To Be With You' and 'So Good To Be Back Home Again', written by their main songwriter Peet Coombes. But many critics were dismissive.

The general consensus was that they were rather uncool and effectively new wave by default, and it came as little surprise when it was revealed that bearded and moustachioed quitarist Dave Stewart had once been in the folk rock group Longdancer.

END OF THE TOUR

Their second album The Reality Effect reached No 23 in the charts at the end of that year, although when their third and last album Luminous Basement was released in 1980, the review in NME described it as 'selfconsciously quirky, a cloying mixture of platitudes and pomposity'.

The Tourists split up in Bangkok at the end of a lengthy tour at the end of 1980. Coombes went on to form The Acid Drops with bass guitarist Eddie Chin, while Stewart and lead singer and (classically trained) keyboard player Annie Lennox announced that they were forming a new a group called The Eurythmics. RCA kept its option on

Side 1 label for the 1983 Touch LP and (right) Dave Stewart and

Annie Lennox pictured in 2018 Stewart had proposed marriage The

Tourists in the '70s (I-r): Jim 'Do It' Toomey, Dave Stewart, Eddie Chin, Annie Lennox and Peet Coombes

'Here Comes The Rain Again' was a US 12in single in 1984 and a 7in disc in the UK and Europe

them, though it did so without a great deal of enthusiasm or investment.

Early on in the life of The Tourists. Lennox and Stewart had been in an intense relationship

at their first meeting in a vegetarian restaurant – but they broke up when The Tourists imploded. But despite some inevitable difficulties they managed to continue in an intense creative partnership. Now they had the space to write and record their own material, and the concept of The Eurythmics was that they would keep creative control, while inviting other musicians to participate.

To help start afresh, the pair decamped to Cologne that year to record In The Garden with Conny Plank, a respected figure who had produced bands from the so-called Krautrock scene including Neu!, Cluster and Kraftwerk's

> 1974 album Autobahn. Musicians: on the sessions included exmembers of Can, Blondie

drummer Clem Burke and German trumpeter Markus Stockhausen.

Lennox and Stewart were reaching for an original form of self-expression without quite grasping it.



'The song

came after an

intense row

in the studio'

They pursued this electronic tack in their own studio, situated above a picture framing shop in Chalk Farm, London. It was here that in 1982 they recorded their fifth single, the haunting 'Love Is A Stranger', on

> an 8-track machine, releasing the song later the same year.

Many of the male synth-pop artists at the time purveyed an image of rather mannered coldness and alienation, but

Lennox's technically impressive singing and vocal ornamentation mixed a certain froideur with influences from soul music.

It sold relative modestly, but this combination was refined on the single 'Sweet Dreams (Are Made Of This)', released in January 1983 along with the album of the same name. They had composed it quickly after an intense row in the studio. It was the song that launched them, ⊖



















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VINYL ICONS

PRODUCTION NOTES

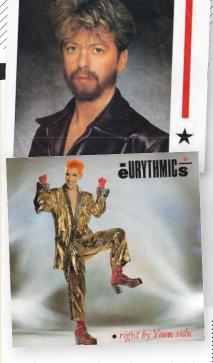
Dave Stewart and Annie Lennox initially had a small studio in Chalk Farm, but moved in 1982 into a church in Crouch End, North London. Their new space was initially rentfree and was situated in a ground floor cloakroom, and here they finished recording 'Sweet Dreams (Are Made Of This)' using an 8-track Soundcraft desk. They were offered a larger upstairs room, traded in their old desk and acquired a 24-track Soundcraft desk and started working with the engineer, Jon Bavin. Touch took only three weeks to record over the summer of 1993.

Among Stewart's studio hardware was a Bel noise reduction unit to compress Lennox's vocals, a Roland Space Echo and a Klark Teknik DN50 spring reverb. He also spent £2000 on a rare Mk I Movement Systems MCS Percussion Computer (only around 30 were ever built). This could also be hooked up to a Roland SH-101 synth to sequence bass lines. Other analogue synths that Stewart used included the Oberheim OB-X, a Juno 60 and that staple of bedroom synth players, an EDP Wasp.

Space was still limited when arranger Michael Kamen and the string players from the British Philharmonic Orchestra turned up to record their parts for 'Here Comes The Rain Again'. Stewart had forgotten to tell Kamen that they only had four mics and there



was a problem accommodating the musicians with any sort of separation. Eventually the cello players were stationed in the toilet and the violins in the corridor, with Kamen conducting from a spiral staircase. The tracks were mixed down to mono, but, in Stewart's words, 'It sounded bloody incredible'.



and went on to be an international hit, reaching No 2 in the UK and No 1 in the US. It felt as if the duo had found their true voice at last.

ANDROGYNOUS LOOK

'We were in a little bubble away from anything that was going on in the pop music world. So that's

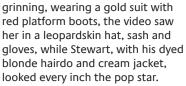
why we didn't sound like anybody in the pop music world at the time,' Stewart told Sound On Sound magazine in 2018.

While fronting The Tourists, Lennox's peroxide blonde hair had provoked some admittedly rather spurious claims for her and the group as 'The British Blondie'. In Lucy O'Brien's 1991 book Annie Lennox, the singer was said to have

declared: 'I wanted to get rid of the woman completely and killed 'Annie of The Tourists' stone dead'. She certainly never reappeared.

Now Lennox was seen in publicity shots in a masculine-looking suit and with a dyed ginger crop. This invited similarly lazy comparisons with Grace Jones, but while the Jamaican-American singer also purveyed an androgynous look, her image was far more severe, while Lennox came across as a rather more capricious character who enjoyed rummaging through the dressing-up box.

The early 1980s was the time when MTV was really taking off and videos took on a greater importance. And while the cover of The Eurythmics' early 1983 single 'Right By Your Side' featured Lennox



But, more importantly, this song was a lot more direct in its delivery than anything they had released before. It was a colourful. exuberant calypso-like creation with horns and synthesised steel

'The cello

players were

stationed in

the toilet'

drums and marimbas. It was also included on the album Touch that was released in Nov '83 and in his review for Rolling Stone magazine **Christopher Connolly** singled out the song as

being 'appealingly melodic, lyrically intriguing and truly inventive'.

MELANCHOLIC TINGES

The lyrics carried references to inner states, and Lennox explained the song's darker shades of meaning to Mat Snow of Q in 1991: 'Music should express a whole spectrum of emotion. Why should it be miserable

in order for it to be meaningful? Does it mean when it's happy that it's mediocre?

'But if you listen to the words, they say "When depression starts to win/I need to be right by your side". In retrospect, everything I've done has been tinged with irony - or melancholia.' 👄



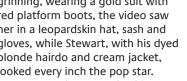
Dave Stewart as seen on the

'Right By Your Side' was the second single from the album

The Church - the studio in **North London** used for the recording

Annie Lennox on stage at the 1987 Rock Am Ring













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.





The Eurythmics at the 1987 Nürnburg Rock am Ring festival and (below) Dave Stewart and Annie Lennox in an RCA publicity shot

A similarly wide combination of lyrical and musical moods informed 'Who's That Girl?', which Lennox wrote while she was in love. although it deals with unrequited love. In the video she further blurred lines of gender, playing a nightclub singer in a blonde wig, who leaves with a man whose part she also played, while Dave Stewart is filmed swanning in with male pop star Marilvn on his arm.

The third single from Touch 'Here 'This prompted Comes The Rain a characterful Again' was released in 1984, and is the performance album's highlight full of yearning' with its synths and sequencers punctuated by big

guitar chords and a brilliant string arrangement. In his review, Connolly also praised the sounds Stewart created as opposed to the 'blowsy' efforts of some of his synth pop peers. It also had a bittersweet twist.

'It has a mixture of things, because I'm playing a B-minor, but then I change it to put a B-natural

in it, and so it kind of feels like that minor is suspended, or major. So it's kind of a weird course,' Stewart told Carl Wiser of Songfacts in 2008.

DAZZLING SETTING

'That starts the song, and the whole song was about that undecided thing - like here comes depression, or here comes that downward spiral. But then it goes, "So talk to me like lovers do".' And this dazzling musical

> setting prompted one of Lennox's most characterful vocal performances, which is full of yearning. Touch was internationally commercially successful, reaching

No 7 in the US Billboard chart and getting to No 1 in the UK.

The Eurythmics continued until 1990, re-forming in 1999 until 2005, and Lennox and Stewart still play occasional one-off shows, a career path that even the most perspicacious seer would have been unlikely to predict back in 1981. \circ



Alternate Format Discography

ORIGINAL VINYL

Touch was released in November 1983 in the UK and Europe on RCA, pressed using the Direct Metal Mastering technique [PL70109]. The front cover featured Annie Lennox, while the white rear cover showed the tracklisting. Dave Stewart's portrait photo was relegated to the inner sleeve, the other side of which had the credits and collage artwork.

The LP had one black and one white customised record labels. The US and Canadian versions, meanwhile, both sported all white labels, with catalogue number AFL1-4917.



8-TRACK AND CASSETTE

The only 8-track cartridge release was manufactured for the US market in 1983 in a cream shell with programme breaks across 'True Blue' and 'The First Cut' [S163879].

The US cassette had pale grey shells with details printed onto the shell [AFK1-4958]. The UK and Europe saw a black shell with white labels [NK90369].

COMPACT DISC

Touch had an early release on CD, coming out simultaneously with the vinyl LP in 1983 in European territories on a silver disc with black writing [PD 70109] and in the US with blue. Some of the later editions were released in longbox format.

There was an unusually long time before the album was remastered, which took place at Metropolis Studios in Chiswick, West London. The remastered European CD came out in 2005 on Sony BMG/RCA [82876 561162]. It included seven bonus tracks. These were the B-sides and 12in tracks 'You Take Some Lentils And You Take Some Rice', 'ABC (Freeform)',



'Plus Something Else', 'Paint A Rumour (Long Version)' and 'Who's That Girl?' played live.

Two other tracks were previously unreleased, a live version of 'Here Comes The Rain Again' and The Eurythmics' take on David Bowie's 'Fame'. The remastered US CD came out on RCA Legacy [8287656116 2].

COLLECTOR'S ITEMS

One of the most interesting and obscure collector's items is Classic Albums: Touch on the BBC World Service/Radio International label [TCD-1118] from 1996. This is a 61-minute interview and music promo CD in which DJ Richard Skinner talks to Dave Stewart before playing each track. Strictly speaking, copies are the property of the BBC!

Also of interest is a limited edition picture disc on RCA [see below], showing Annie Lennox on side one and Dave Stewart and the tracklisting on side two. This was released in the UK in 1984 [PLP 70109].



AUDIOPHILE LPS

Two different newly remastered LPs were released in 2018, one on 180g vinyl for UK and Europe and one for the US and Canada, on standard weight vinyl, which is a half-speed remaster. Both have the catalogue number 19075811621.

Meet the Producers

Frank Zappa

'Anything, anytime, anyplace and for no reason at all...' was how Frank Zappa described his musical style, but how did he set about achieving his production goals when working the studio faders? **Steve Sutherland** reveals the method behind Frank's fruitcake facade

■ ince lockdown you will doubtless have failed to escape the endless, and really rather tedious, Facebook/Instagram invitations to make lists. First Gig Attended. Ten LPs That Changed Your Life. Best Guitar Solo Of All Time. Yadda yadda zzzzz. Anyway, if you can't beat 'em... I'm joining the party fashionably late. Try this one on for size. List the Ten Weirdest LPs Ever Made and why they are so weird. I'll get you going if you like.

TROUBLED SOUL

Number One on my list is An Evenina With Wild Man Fischer by Lawrence Wayne aka, obviously, Wild Man Fischer, Lawrence was something

Frank Vincent Zappa poses for a publicity shot in the 1970s. He produced most of the 60-plus albums that he released with The **Mothers Of** Invention and as a solo artist





of a troubled soul, a schizophrenic Los Angelean who threatened to kill his mother with a kitchen knife and, having spent a fair amount of his teens in mental institutions, wound up homeless on Sunset Boulevard where he proceeded to serenade passers-by with a cappella made-up songs for a nickel a go.

Something of a local celebrity, he talked himself into a few club support slots with The Byrds, Bo Diddley and Iron Butterfly which in turn led to the recording of An Evening With Wild Man Fischer, a

Sleeve and label for the 1968 double album An Evening With Wild Man Fischer on the Bizarre imprint, with Lawrence Wayne pictured on the cover

double LP released in 1968 on the Bizarre label. Listen to it and you may feel like one of those 18th century toffs who handed over a shilling or two to peer through

the bars at those poor unfortunates incarcerated in Bedlam.

Accompanied by rudimentary guitar and/or percussion as well as a cappella, Larry sings songs and tells stories, one of which takes up a whole side and recounts happenings in his life, year by year. It's fascinating and unsettling and pretty much nobody bought it.

Number two on my list is Captain Beefheart And His Magic Band's Trout Mask Replica [HFN Aug '14 & Jan '20] a completely undefinable work that's as jazz as it is blues as it is rock as it is field

holler. The Captain - Don Van Vliet - had imprisoned his band in a commune-like situation and drilled them incessantly, military style, in the art of this extreme cacophonic strangeness. Inspirational, exuberant and chilling in equal measure, it was a double LP released in 1969 on the Straight label. Not too many folks bought that one either.

UGLY BUNCH

My third and final album to get you started came out on Verve in 1968. It's called We're Only In It For The Money and it's by The Mothers Of Invention, a threateningly unkempt and ugly bunch if the photos of them in women's clothing that adorn the cover and gatefold sleeve is anything to go by. Basically it sets out to take the rise out of The Beatles' Sqt Pepper and everything it holds dear. Then it goes further.



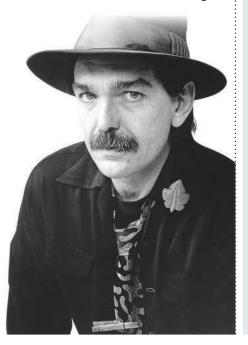
Hippies get roasted, cops get lambasted, parents get mocked and the Vietnam War is satirised. It's sort of unpleasant but in a jolly kind of way involving doo-wop, psychedelia, musique concrète, you name it.

It was conceived as part of a project called No Commercial Potential that also involved albums called Lumpy Gravy and Uncle Meat. Needless to say, it didn't exactly set the world on fire.

FREAK BEATS

By now you've probably twigged that what this trio of freak beats have in common is that they were all produced by Frank Vincent Zappa. This should come as no surprise because he was, as they say, nutty as a fruitcake and also he produced over 60 albums during his career, most of them released under his own name or that of his band, The Mothers Of Invention.

Staying for a moment with the few he produced for others, Frank discovered the Wild Man busking,





Publicity photo of Frank Zappa and The Mothers Of Invention issued in 1971

The **GTOs** in 1969 (I-r): Miss Christine, Miss Cynderella, Miss Sandra, Miss Mercy, and Miss **Pamela**

Label for the GTOs' 1969 LP Permanent Damage, released on the Straight Records label

Don Van Vliet, aka Captain Beefheart, pictured in

did the first album then ditched him when Larry, in something of a funk, threw a bottle which damn near decapitated Frank's baby daughter,

Moon Unit. The Captain was an old friend from teenage days. Another was 1969's Permanent Damage by a band called The GTOs (Girls Together Outrageously), a collective of female groupies from the LA

area Frank happened to know, which included Miss Mercy, Miss Pamela, Miss Sparky and Miss Cynderella.

SUGGESTIVE TAPE

OK, on to Frank... A self-taught musician who'd been composing orchestral scores since his teens, Zappa began producing and engineering records in the early 1960s, mostly at Paul Buff's Pal Recording Studio in Cucamonga, CA. In 1962, he took over Pal, renamed

it Studio Z and moved in, 'beginning a life of excessive over-dubbage nonstop, 12 hours a day'. Pal just happened to boast the world's only staggered head, five-track, ½in tape

standard was mono, and work was steady until Frank got busted for 'conspiracy to commit pornography' and briefly jailed. Apparently he'd

been set up by an undercover cop who commissioned a suggestive tape for a stag party, and then arrested Zappa for producing it.

Frank moved to LA and this is where

he embarked on producing the seemingly infinite list of projects that took up the rest of his career.

Talking to Rolling Stone magazine in 1968, he explained: 'It's all one album. All the material on the albums is organically related, and if I had all the master tapes and I could take a razor blade and cut them apart and put it together again in a different order, it would still make one piece of music you can listen to. Then, I could take ⊝



recorder when the industry

'Studio work

was steady.

until Frank

got busted'

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MEET THE PRODUCERS

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



1968

A merciless dig at the '60s Hippie counterculture, The Mothers Of Invention's We're Only In It For The Money peaks at No 30 in the Billhoard 200 album charts



1969

Using prototype 16-track gear, Zappa records Hot Rats, a pioneering fusion of iazz and rock that is revered today. On release it barely scrapes into the Top 200 in any charts



1969

Another music milestone. Trout Mask Replica was recorded at Whitney Studios in California with Zappa at the controls. The LP failed to appear



The Mothers of Invention's Weasels Ripped My Flesh sees Zappa mix live recordings with studio material. A chart placing this time, at 189



1971

Produced by Zappa and mixed by Toby Foster, The Mothers' live concept album Fillmore East. June 1971 is a Top 40 hit



1973

Some praised it, other's found it puerile, but Frank Zappa and The Mothers...', Over-Nite Sensation still b peaked at No 32



1975

The last studio album by Frank Zappa and The Mothers of Invention, One Size Fits All is a Top 30 hit. A quadraphonic LP was advertised. but not released

that razor blade and cut it apart and reassemble it a different way and it would still make sense. I could do this 20 ways. The material is definitely related'.

Using the editing suite as a compositional tool, Zappa developed a technique he called Xenochrony, named after Xeno, the Greek word for strange or alien, and Chrono, Greek for time.

GOING LIVE

Basically, what he did was extract a musical part from its original context : and place it into a completely

different song or, as he put it, 'in this technique, various tracks from unrelated sources are randomly synchronised with each other to make a final composition with rhythmic relationships

unachievable by other means'.

It made its presence felt in 1969, when Zappa released probably his most famous LP, Hot Rats, which extensively used overdubbing and varispeed effects to create dense and unusual keyboard and woodwind arrangements. Then, entering the '70s, he released a raft of Xenochronic albums which were fairly successful commercially - Over-Nite Sensation ('73), Apostrophe ('74) and One Size Fits All ('75).

The latter saw Zappa take a guitar solo recorded live in Helsinki and embed it into the studio track of 'Inca Roads', a trick he used often thereafter to increase

the spontaneous feel of studio-bound productions, employing a ready library of prerecorded live solos, often inserted into tracks from different songs.

'You should be able to organise any kind of a sound and put it into your music', he said at the time. 'So, I wound up with a style of music that has snorks.

"My style has

snorks, burps,

nice tunes

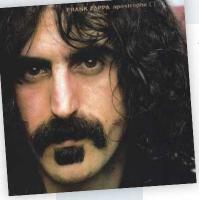
and triads"

burps, dissonant chords, nice tunes and triads and straight rhythms and complicated rhythms and just

> about anything in any order and the easiest way to sum up the aesthetic would be: anything, anytime, anyplace for no reason at all. And I think with an aesthetic like that

you can have pretty good latitude for being creative.'

By the end of the decade, having fallen out with a variety of record companies and managers and striving for complete artistic freedom, Zappa built himself a large stateof-the-art studio at his home in the Hollywood Hills called The Utility Muffin Research Kitchen at a cost of some \$3 million. He also bought a recording truck off The Beach Boys, totally refurbed it, named it the UMRK Mobile, and



Zappa pictured on the front cover of his 1974 album Apostrophe

Sony's PCM-3324 digital recorder cost over \$130k on launch. Zappa bought two of them

captured his every show. In 1983 he travelled to London to record the 105piece London Symphony Orchestra performing various classical works that he'd composed over the years, on a soundstage at Twickenham Film Studios, using Sony's new PCM-3324 digital recorder. It was a frustrating process,

involving about 1000 edits, but Zappa was sold on the digital medium, buying two Sony machines so that all his new studio and live recordings were digital from then on.

ANOTHER EXCUSE

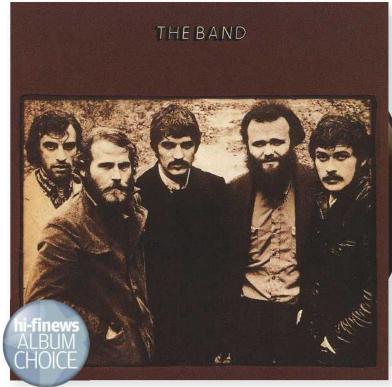
He also started working with the Synclavier DMS, an all-digital sampling computer that was right up his street, and when CDs started to take over the market, it gave him yet another excuse to go back and fiddle with his earlier recordings, remastering to render them sonically appropriate to the current trends,

a process that was only curtailed when he succumbed to prostate cancer in 1993.

Such was his fanatical workload that some 50 Frank Zappa albums have been released posthumously.

'If you just want to do what everybody thinks music ought to be, then... get another career', he once remarked. 'I want to find out...' 🖰

AUDIOPHILE: VINYL



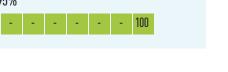
THE BAND

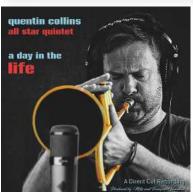
The Band (50th Anniversary Deluxe Edition)

Capitol 00602577842832 (two 45rpm LPs + two CDs + Blu-ray + 7in single)

My go-to LP for visceral bottom-end impact, peerless musicianship and transcendent material has been 'audiophiled' so often, it may have beaten The Allman Brothers' At Fillmore East. Somehow Capitol managed to squeeze out a bit more, for an ultra-vivid 'Rag Mama Rag', 'Up On Cripple Creek' and their other classics - but not enough to justify purchase should you own the stunning MoFi LP. That said, this set is gorgeous. Bettering the extras in the Music From Big Pink box, the vinyl is joined by a CD version with six bonus tracks, a CD of the band's Woodstock performance, a 7in single and a Blu-ray with the album and bonus tracks in stereo and 5.1 surround, plus a documentary. Bliss! KK

Sound Quality: 95%





QUENTIN COLLINS ALL-STAR QUINTET A Day In The Life

Chasing The Dragon VALCO13 (direct-cut LP)

Talk about a throwback! This vinyl release is pure 'circa-1979 Audiophilia' and the content, as well as the sound quality, adheres to the formula that fuelled a dozen labels way back when, like Sheffield Lab, M&K RealTime and too many others to list. I will reserve comment on the merit of the jazz quintet's material, as jazz aficionados are tetchy listeners at the best of times and Quentin Collins - not to be confused with the vampire in ABC's Dark Shadows - is a fine trumpeter who's listened to a lot of Miles. But that's by-the-bye: this will be purchased for its genuinely glorious sound, as will be the inevitable digital and openreel editions. KK

Sound Quality: 90%





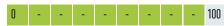
THE GRATEFUL DEAD

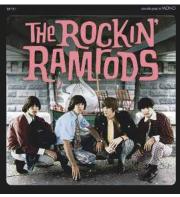
Blues For Allah

Mobile Fidelity MFSL2-483 (two 45rpm LPs)

As the Dead were so prolific, to put this into context, note that this 1975 issue was their eighth studio album and the third on their own label, recorded during a lull in the band's heavy touring schedule. And it's a mixed bag, indeed, in which moments of early Dead tropes, blues snatches and whiffs of country mix with Middle Eastern and jazz influences. This, of course, matters not to Deadheads, who would rave about Lou Reed's Metal Machine Music if you said Jerry Garcia was on it. While I admit to a soft spot for some of this, the real concern is the sound, because the Dead are, like Queen, Dylan, Bowie, etc, beyond criticism. And the sound is terrific. KK

Sound Quality: 90%





THE ROCKIN' RAMRODS

The Rockin' Ramrods

Beat Rocket/Modern Harmonic BR151 (coloured vinyl)

Along with The Lost and a bunch of others, The Ramrods were one of the first of the Boston bands - and I admit to bias, having seen them numerous times over 50 years ago. Nuggets-grade proto-punk as good as any you'll find, it's a snapshot of the times. As far back as '64, they covered Lennon/ McCartney's, 'I Wanna Be Your Man' and the obscure 'I'll Be On My Way' (a Billy J Kramer & The Dakotas B-side), plus two Dave Clark 5 album tracks, attesting to the following that band had in Beantown. Their original material stands up well, and this LP's 16 tracks give a fair representation of the top regional talent in the USA when the British Invasion was in full swing. KK

Sound Quality: 85%

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AUDIOPHILE: DIGITAL















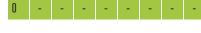
BLOOD SWEAT & TEARS

Mirror Image & New City

Vocalion CDSML 8572 (multi-channel hybrid SACD)

Timely, this, as I've been rediscovering BS&T through open-reel tapes of their earlier, hit albums, but this pair from 1974/5 finds the band slightly past it. Their most distinctive element, vocalist David Clayton-Thomas, was missing for the more funk-oriented Mirror Image but he returned for New City, and the generic sound came back with him. Even so, as of the mid-1970s BS&T still vied with Chicago as 'Best Big Band Rock Outfit', and this will certainly please completists, but few are the moments to match their first four LPs. Amusingly, one of them is a dandy cover of The Beatles' 'Got To Get You Into My Life' - which could have been written for BS&T. KK

Sound Quality: 85%





MARILLION

Script For A Jester's Tear – Deluxe Edition

Parlophone 0190295316679 (four CDs + Blu-ray)

Here's where it all started, the 1983 debut album for that marvellous throwback to prog-rock, an anachronistic genre even 37 years ago. Script stands up well, though, and one can hear why it helped spawn neo-prog, which this scribe finds slightly less pretentious than the excesses of ELP. This set offers a remix and rarities galore, including a stereo remix of the rare Market Sauare Heroes EP, the Marquee Club gia of Dec 29th, 1982 (before Script was released) with live versions of all six album tracks, and a Blu-ray with 96kHz/24-bit stereo versions of the three, plus a 5.1 DTS-HD Master Audio remix of the album proper, promos and a new documentary. KK

Sound Quality: 90%





ELVIS PRESLEY

Back In Living Stereo

Memphis Recording Service MRS10060066 (six discs) Here's where the vagaries of international copyright law and one's conscience clash. Memphis Recording Service has no connection with the Presley Estate, RCA or Sony, yet it has issued a superbly-packaged, fabulous-sounding, pedantically-curated 6CD set with accurate title and sub-title: 'The Essential 1960-62 Masters, Rare Outtakes & Home Recordings'. This is, of course, post-rocking/pre-Vegas Elvis, when his films grew increasingly risible, but it was also the era of stunning songs like 'Fever', 'Are You Lonesome Tonight', 'Girl Of My Best Friend', 'Suspicion' and others which belie accusations of vapidity. Strictly for hardcore fans... but, oh, the sound! KK

Sound Quality: 85%

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THE FLYING BURRITO BROTHERS

Burrito Deluxe

Intervention Records IR-SCD8

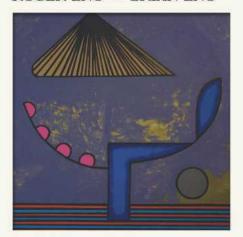
If you want to wind up Gram Parsons fans, just tell 'em you prefer this to the band's debut, The Gilded Palace Of Sin. I did 50 years ago and still do, falling in love with it even before discovering that 'Wild Horses' was lifted from The Rolling Stones, who'd release their version a year later. Purists aren't enamoured of Burrito Deluxe because it's less 'Parsons' and more 'the rest of the band', but it's still a prime example of undiluted country-rock, with the requisite Bob Dylan cover - a fine 'If You Gotta Go' - and enough nods to The Byrds (and foreshadowing of The Eagles) to ensure its permanence in the pantheon. If you adored its predecessor, this second release from the Burritos truly is Gilded Palace 2. KK

Sound Quality: 90%



HI-RES DOWNLOADS

ROGER ENO AND BRIAN ENO



MIXING COLOURS

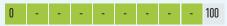


ROGER ENO & BRIAN ENO Mixing Colours (44.1kHz/24-bit, FLAC)

www.highresaudio.com; Deutsche Grammophon 483 777 1

A collaboration between the Eno brothers, in a sequence of what can only be called 'tone poems' evoking various hues. Sounds pretentious? Well, the result is much more successful than one might have dreaded. It's a mix of past experiments in ambient music, with compositions mainly by Eno R produced and processed by Eno B, giving the whole project a sound that's at times relaxing, at others slightly unsettling. You find simple layers of instrumenting complementing and layering over each other. So it's hardly 'get the party started' stuff, but in what one seems to have to call 'the current situation' I found it both calming and worthy of repeated listens. New details emerge each time from the beautifully judged sound here, so whatever may be colouring your mood right now, the light and shade with Mixing Colours might be just the tonic you need. AE

Sound Quality: 90%





VPO/HERBERT VON KARAJAN

Tchaikovsky: Nutcracker Suite (96kHz/24-bit, FLAC)

www.highresaudio.com; Decca 485 0869

Recorded at the Sofiensaal in September 1961 and produced by John Culshaw, this remains the most enjoyable of Karajan's four recordings of the Nutcracker excerpts - Philharmonia 1952, Berlin 1966/82 (this last a rather unpleasant sounding digital remake). Remastered, it comes as a 'bargain' download at £6.40 and, out of interest, I compared the sound with a WAV rip from the 1995 CD transfer. The new version is marginally more open and set back, smoother - the 'Russian Dance' no longer edgy – with correspondingly more pinpointing of instruments, eg, celesta in 'Sugar-Plum Fairy'. There was always plenty of stereo information in this recording - and you might pick up occasional imperfect ensemble. But less welcome are minuscule silences at the ends of tracks and, 54s into the 'Waltz of the Flowers', what sounds like a new edit in the harp writing. CB

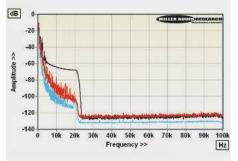
Sound Quality: 85%



OUR PROMISE

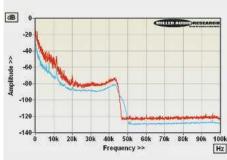
Following our Investigation feature [HFN, Jun '11] in which we examined the claimed quality of high-resolution downloads, Hi-Fi News & Record Review is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of information for those seeking new and re-mastered recordings offered at high sample rates and with the promise of delivering the very best sound quality. (Note: asterisk in headings denotes technical reservation explained below.) PM

LAB REPORT



This is a 44.1kHz/24-bit file and so while bandwidth is necessarily restricted to ~20kHz there's potentially more dynamic range than CD. In practice the range is good (peak-to-RMS typ. 17dB) but some clipped samples on trk3 [black trace]. PM

LAB REPORT



With peak levels varying from a low -8dBFs (Russian Dance) to a very low -20dBFs (Arabian Dance), this is a very 'quiet' analogue-to-digital remastering, but dynamic range is still good. However, much above 20kHz is purely noise. PM



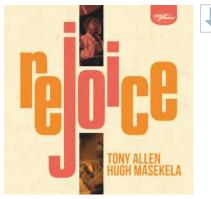












TONY ALLEN & HUGH MASEKELA

Rejoice (96kHz/24-bit, FLAC)

www.highresaudio.com; World Circuit WCD094 If ever there was an album with an appropriate title, this exuberant set, bringing together Nigerian trumpeter Allen and the late trumpet great Masekela is it. Recorded in 2010, decades after the two were introduced by Fela Kuti. the sessions were produced by Nick Gold, who was responsible for the Buena Vista Social Club's rise to fame, but the tapes sat unfinished until Masekela's death in 2018. Working with his estate, Tony Allen and Nick Gold got together last year in the same London studios where the original recordings were made, bringing in extra musicians to complete the project. The result is a cracker, with fabulous sound and musicianship, not to mention sheer joy, and it really swings. If all you know of Masekela is endless repeats of 'Stimela' at hi-fi shows, this jazzy, boppy set is a fine place to start a further exploration. AE

Sound Quality: 85%



10k 20k 30k

Recorded hot (-0.4dBFs) there's certainly a deal of energy in this 96kHz rendering even if much of the ultrasonic content looks to be distortion from the trumpet and percussion feeds, or compressors/ limiters downstream. Still fun though! PM

40k 50k 60k 70k 80k 90k



MALIA

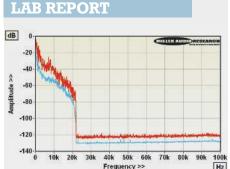
The Garden Of Eve (48kHz/24-bit, FLAC)

www.qobuz.com; MPS 0214360MS1

What you might not be expecting here is not just a tribute to the blues, but a superb album in its own right. Recorded 'as live' – that's to say in performances, not mixing-desk assemblies – it has a vitality and freshness about it that's highly attractive. What rough edges there are to the sound only add to that sense of immediacy, so this is not a piece of buffed-up audiophilia, but rather an album with real guts, soul and spirit. You feel that right from the opening track, 'Hope', which was released ahead of the album at the end of last year. Malia's voice is attractive and powerful, and the musicians assembled here are of high quality and real grit. You know what? This might go on to be a firm demo choice, even though it's so much better than that. In a world of overproduced, compressed and 'commercial' albums, The Garden Of Eve has a very welcome authenticity to it. AE

Sound Quality: 85%

100



While the bandwidth (response) of this 48kHz file is only slightly beyond that of CD at ~22kHz, the digital rendering is free of clipping (max -0.3dBFs) while the peak-to-RMS range is typically around 12dB. Nothing untoward here. PM



MONA ASUKA

Mozart: Piano Works (96kHz/24-bit, FLAC)

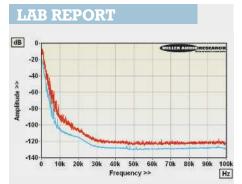
www.highresaudio.com; Hänssler Classic HC19082

Mona Asuka Ott is a Munich-born German-Japanese artist who made her concert debut in 2004 aged 13 - she's the younger sister of the better-known pianist Alice Sara Ott. Her first studio CD was on the Oehms label in 2007 (Liszt and Schubert), while here she plays - on a 1928 Bechstein - the 'Paris' Sonatas in A-minor, K310, and in F, K322: K545 in C: the A-minor Rondo, K511: and the Minuet in G. written when Mozart was about five. Perhaps it was unfortunate that the recital starts with the 'Sonate facile' (K545) where the playing is neat and all the repeats are properly observed, but that's about all. The Rondo, which Claudio Arrau saw as a deeply tragic piece, is much the same. Asuka is at her best in the scampering finale of K322; but in K310 if you go to Lars Vogt [HFN Nov '19] a world of colour, light and shade opens out – very different from the narrow view here. CB

Sound Quality: 70%

100





Recorded, edited, mixed and mastered at Digital Natural Sound in Piding, Germany, this is a clean rendering with more than enough bandwidth (~45kHz in theory, but only 30kHz used here) to capture the ~12kHz range of the vintage piano. PM



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JARV IS

Beyond The Pale

Rough Trade RT0129CD (LP: RT0129LP; cassette: RT0129LPE2)

This new project - Jarvis Cocker's first new





music in over a decade - is an inspired, freshsounding set and a career highlight. Recorded live in 2017 and then overdubbed, the sixpiece band plays it lean and syncopated, with electronics, keyboards, guitars, drums and violin occasionally tightening up into propulsive rock grooves. The female backing singers are a perfect foil to Cocker's lead vocals, echoing and answering his proclamations. His witty, pithy lyrics deal with existential topics, like human development and the misfits of society. On 'House Music All Night Long' he is partying alone and his take on evolutionary theory finds him 'Dragging my knuckles, listening to Frankie Knuckles' on 'Must I Evolve?' MB

Sound Quality: 95%























KAVUS TORABI

Hip To The Jag

Believers Roast BR23CD (LP: BR23V)

Guitarist and vocalist Kavus Torabi is best known for working with The Cardiacs, Knifeworld and more recently the version of Gong that continued with the blessing of founder Daevid Allen, who died in 2015. But this is a strictly solo effort, vividly recorded at Torabi's Skyhenge studio. With harmonium and santoor - an Indian hammer dulcimer - woven into guitars, synths and occasional percussion, it's a personal and reflective form of psychedelia, with an exultant, acoustic guitar-based song, 'Cemetery Of Light' and the elegiac moods of 'Break My Fall'. 'Slow Movements' a panorama of juddering synth drones closes the album in spectacular fashion. MB

KAVUS TORABI

HIP TO THE JAG

Sound Quality: 90%













BMG 538600762 (2LP: 538600810)

It's astonishing to think that Ron and Russell Mael's sibling pop combo was first recorded in 1971 and almost inconceivable that on this 24th album their chemistry remains this potent. Production-wise it's brash and punchy, with big guitar and synthetic string chords set around Ron's keyboards. 'Nothing stays the same as it was', sings a youthful-sounding Russell on 'I'm Toast', but much here will feel familiar, particularly the brothers' brand of archness and drollery. They address technological envy in suburbia reaching absurd levels on 'Lawnmower', the language barrier on 'Onomata Pia', and the classical composer recast as pop star on 'Stravinsky's Only Hit'. MB

Sound Quality: 85%



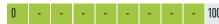
THROWING MUSES

Sun Racket

Fire FIRE 574 (LP: FIRELP 574)

Guitarist and vocalist Kristin Hersh's songs for Throwing Muses have always been full of dark and surreal images that hint at mental turmoil, but the Boston trio's third album since re-forming in 2003 is also one of their more approachable and melodic sets. She accurately describes it as being made up of 'two disparate sonic vocabularies one heavy noise, the other delicate music box', and on 'Bo Diddley Bridge' her guitar sound is dense and gnarly, with drummer Dave Narcizo and bassist Bernard Georges a powerful rhythm section. By contrast, 'Upstairs Dan' is a sparse, waltz-time song with twangy, reverbed guitar and ghostly, multi-tracked backing vocals. MB

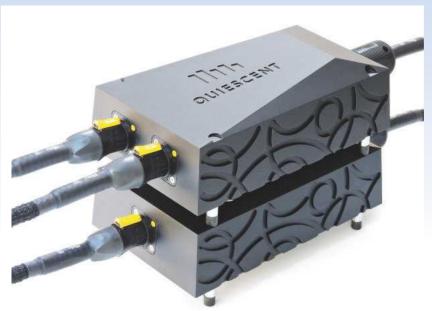
Sound Quality: 85%





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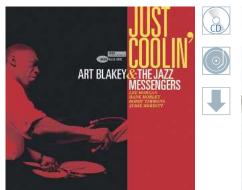










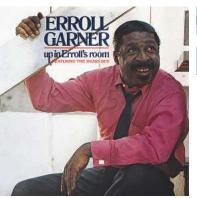


ART BLAKEY & THE JAZZ MESSENGERS Just Coolin'

Blue Note 64201 (CD and 180g LP)

A 'lost album' from the Blue Note label's heyday. Blakey and The Jazz Messengers cut these six tracks in Rudy van Gelder's studio on March the 8th, 1959. But then label boss Alfred Lion recorded the band at Birdland in New York, and the live double At The Jazz Corner Of The World was issued instead of the studio session. One of the two previously-unheard compositions here is pianist Bobby Timmons' jaunty, quirky 'Quick Trick', while the uncredited 'Jimerick' is a fast if shapeless flag-waver that has Timmons showing off his fast-fingered Bud Powell side rather than his soul-jazz block chords. With Hank Mobley and Lee Morgan stretching out, this is a great set. SH





ERROLL GARNER Up In Erroll's Room

Mack Avenue MAC1164

We now have reissues Nos 7, 8 and 9 of the 12 albums the late great pianist made for his own Octave label. There's the livesounding That's My Kick from 1966 and 1969's Feeling Is Believing, which includes Garner's robust attacks on pop hits like 'For Once In My Life' and 'Yesterday'. But Up In Erroll's Room, uniquely, offers Garner with a brass section, brilliant arranger Don Sebesky deftly adding his orchestrations at a later session, just as he'd done with Wes Montgomery, to fit round Garner's improvisations. Standards old and new got this treatment, from 'Watermelon Man' to 'The Girl From Ipanema' to 'All The Things You Are'. A fascinating period piece. SH

Sound Quality: 80%





TONY KOFI

Another Kind Of Soul

The Last Music Co LMLP217

Alto saxophonist Tony Kofi's past collaborations have ranged from The Monk Liberation Band to Chris Biscoe's tribute to Eric Dolphy, to Arnie Somogyi's Mingus Project and harpist Alina Bzhezhinska's Coltrane celebration. But here he leads his quintet in a live salute to his own biggest early influence. Trumpeter Andy Davies, pianist Alex Webb, Andrew Cleyndert and drummer Alfonso Vitale all shine in this gutsy, atmospheric set, opening with Webb's 'A Portrait Of Cannonball', which Kofi says would have been the album's title if Adderley hadn't used it himself. Of course, Nat Adderley gets celebrated too, with the title tune and an exuberant 'Work Song'. SH

Sound Quality: 85%

0	100
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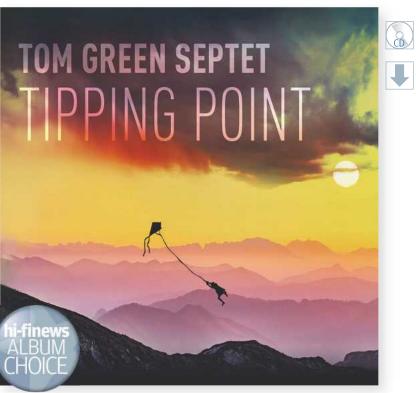
TOM GREEN SEPTET

Tipping Point

Spark! 008

Gifted trombonist and award-winning composer Tom Green launched his Spark! label back in 2015 with the Septet's first recording, Skyline. With only one change of personnel (altoist Tommy Andrews replacing Matthew Herd) the new album is a promise fulfilled, as Green's 'chamber jazz' writing is stronger and fuller-sounding than ever. On bass is Misha Mullov-Abbado, to whose 2015 debut album Green contributed, while on trumpet is Tom's friend-since-schooldays Jim Davison. Like drummer Scott Chapman, he's also a member of Misha's band. These close-knit colleagues put Green's music over with verve and aplomb, the horns often sounding like a much bigger band, but with delicacy and subtlety too. SH

Sound Quality: 90%















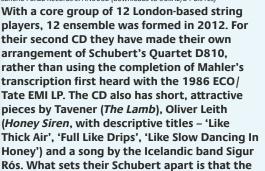






'Death and the Maiden' Quartet, arr strings

Sancho Panza Records SPAN0002 (downloads to 96kHz/24-bit res)



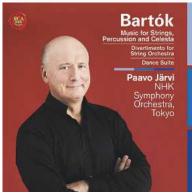
Sound Quality: 95%



sound is more akin to a chamber group than a mass of strings. The playing is incisiveness and

the engineering outstanding. CB







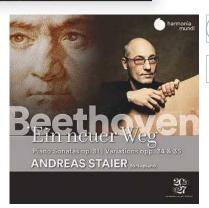
Dance Suite; Divertimento; Music for Strings, Percussion and Celesta

NHK Symphony Orchestra/Paavo Järvi

RCA 19439721812 (downloads to 96kHz/24-bit resolution) Taken live from concerts given in the Suntory Hall in Sep '17, this CD comes with an enthusiastic note by Järvi - he's opted for a big string complement for the Divertimento, which bloats the music (compare the exemplary Barshai/Decca). He stresses so much the 'Hungarian-ness' of these pieces you might wonder how his predominantly Japanese players could cope. Perfectly well of course - like the Ozawa/ Saito Kainen MSPC on Decca – and rarely has the first movt of that work sounded so beautiful. A pity then that the opening xylophone taps in (iii) are barely audible. CB

Sound Quality: 75%

100





ENSEMBLE

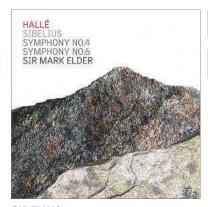
Piano Sonatas Op.31:1-3; Variations Op.34 and Op.35 Andreas Staier

Harmonia Mundi HMM90232728 (two discs)

These works, all published in 1803, come with the cover line 'A New Way', as Beethoven, threatened by deafness, then told a friend he wanted to take a different musical path. Staier plays a Mathias Müller fortepiano (c.1810), wonderful in its timbral colours - still musical with Beethoven's forte chords in Varn.IX from the 'Eroica' set! Here and there in the sonatas Staier arpeggiates a chord but the sheer intelligence and sensitivity of what he does - he's Kempff-like in the meandering Adagio grazioso of Op.31:1 and brings freshness to the well-worn 'Tempest' makes these two CDs unmissable. CB

Sound Quality: 95%





SIBELIUS

Symphonies Nos 4 and 6 Hallé Orchestra/ Sir Mark Elder

Hallé CDHLL7553 (downloads to 44.1kHz/24-bit resolution)

Powerful accounts of the two symphonies needed to complete this Hallé cycle, and recorded in Manchester's Bridgewater Hall in Aug '18/Jan '19. Not the most popular of the seven but arguably the greatest, especially No 4. Here, Sir Mark Elder takes a convincingly contrary view - as in 'different', not 'awkward' – finding positivity where others, Karajan especially, portrayed bleakness. It's doggedly determined right to the end. In No 6 the Hallé Orchestra meets all the required transparency of the scoring ('Cold spring water' was Sibelius's summingup) and this is the more affecting of these two recordings. CB

Sound Quality: 85%

0	-	-	-	-	-	-	-	-	100
٠									100



Technology journalist

Put to the test

Frustrated to see claims in an ad for a Bluetooth product that he believes might well mislead consumers, **Barry Fox** seeks a ruling from the Advertising Standards Authority. But no luck...

n my February column I reported that KEF's MD Grace Lo and Futuresource's Director of Research Simon Bryant warned at the Audio Collaborative industry conference held in London last November that there was nothing to stop anyone describing just about anything as 'Hi-Res'. So I decided to run a test case through the Advertising Standards Authority (ASA) to see how hi-fi consumer protection works in practice.

The ASA's mandate is to ensure that advertisements are 'legal, decent. honest and truthful'. By chance I had already queried claims made by one hi-fi company that a Bluetooth wireless turntable with aptX HD codec 'streamed... 48kHz/24-bit Hi-Res... to any Bluetooth receiver... [with a] guaranteed authentic vinyl experience'. However, I had been brushed off by its marketing and communications people.

KNOW YOUR CODECS

So I put this claim to the ASA instead, focusing on the simple fact that to get full quality from an aptX HD transmitter you need to be using a matching aptX decoder, not 'any

Bluetooth receiver'. Other receivers will just default to bog-standard low-res Bluetooth stereo (SBC/ A2DP). No big red flags will pop up to warn the listener, who may or not want to admit they have spent their hard-earned dosh on Hi-Res

gear that sounds curiously Lo-Res.

Within a few days an ASA Complaints Executive replied, saying he wouldn't be taking 'specific action'. Why not, I asked. Because, said the ASA, 'the majority of consumers who were looking to purchase a product of this quality would appreciate issues such as this... therefore, the advert was not likely to be misleading'.

So was the ASA saying it is up to all customers to know all about codecs? The variety is growing rapidly, with several different quality flavours of aptX, and other proprietary systems such as Sony LDAC and Huawei HWA, and AAC for Apple iOS devices. The only thing they have is common is defaulting to low quality SBC/A2DP with a mismatch.

The ASA exec then justified his decision by citing a pair of Audio-Technica headphones that support aptX HD. So what? There are a gazillion other cans, including models from A-T, that don't support aptX HD. So what is the ASA's

working definition of Hi-Res, I asked? A more senior Operations Manager then admitted the ASA doesn't have one. 'We don't have a position on how Hi-Res is defined, as it's not a matter we've considered formally before - yours is the only complaint we've had about this.'

After my experience of dealing with the ASA - which stretched over six

'The ad stayed

stuck at the

promise of

48kHz/24-bit'

months - I would not be surprised if no-one else has been daft enough to persist past the first rapid rejection. However, after I'd laboriously explained to the ASA why not all codecs are equal, the Authority did tell the advertiser to amend its ad

'to make clear... that the quality of the stream would be dependent on the user's Bluetooth device'.

But the ad stayed stuck at the promise of 48kHz/24-bit quality from 'any compatible Bluetooth receiver'. How is the public supposed to know what's 'compatible' if it's not made clear, I asked. The advertiser 'acknowledged' the ASA's request for a further change but made no change. So I contacted the ASA's Chief



ABOVE: Young visitors to a show in China in 2019 sample Hi-Res audio - but all the links in a hi-res chain must match

Executive. He shunted the matter to the Head of Casework, who shunted it to the ASA Council. The ASA Council's decision was that the ASA would 'not be enforcing the last suggested change'.

Why not? 'The product was aimed at those with a keen interest in audio technology and they... would likely understand the limitations of any Bluetooth speaker which might be paired with the product.'

FACTS OF LIFE

In its wisdom the ASA decided early on that it was going to handle my complaint informally, rather than publish a ruling. In cases like this the public has no way of knowing that a complaint has been filed, and no opportunity to know what changes the ASA has asked for. So, in this case, no chance to learn about the basic need to match an aptX Hi-Res transmitter with an aptX Hi-Res receiver.

A look at the rulings that the ASA does publish is revealing. Few if any refer to anything technical. Who knows how many other complainants have laboured in vain to explain basic facts of tech life to it. I might now see what Trading Standards Officers think about Hi-Res. \circ



Journalist for top American audio-video publications

Industrial evolution

Why use vintage components when their modern equivalents are so much more advanced, asks **Barry Willis**, as he compares a tonearm still in production with a model from hi-fi's past?

orty-some years separate the tonearms shown here – the Pickering 190D and the SME Series V, which debuted in 1986 after years of exhaustive research and development. The two couldn't be more different in fit-and-finish, but they share commonalities the way all automobiles do, regardless of purpose or price.

The most obvious is that designers of both arms chose to concentrate mass near the horizontal pivot, so minimising the strain on a cartridge as it pulls the arm across a record. The 190D's massive counterweight is very near the pillar, secured by a screw accessible only when the arm is detached from its turntable.

The counterweight can be moved back-and-forth within a couple of millimeters, but not when mounted. Meanwhile, vertical tracking force (VTF) is via a spring attached to the cartridge carrier, its tension adjustable by a thumbscrew under the arm.

WELL HUNG

The Series V employs a 'resonance controlled' spring to apply VTF in small

increments up to three grams. Its counterweight is hung well below the arm itself to give the entire assembly a centre of gravity that's near the platter's surface, which is not the case with the Pickering 190D. Other shared features include

low-friction bearings - in the 190D's base, a circular race that's like a wheel-bearing - and one-piece construction. The Series V's arm/headshell is a single unit of pressure die-cast magnesium alloy, while the Pickering arm is basically a box beam made of folded pot metal, rigid but bulky.

For cartridge mounting, both arms have pre-drilled holes at standard ½in spacing, offset for minimum tracing error, and both may be height-adjusted by

RIGHT: The SME Series V arm [top] was introduced in 1986 and featured Litz wiring and a magnesium arm tube cast in a single piece. Relow this can be seen the 190D arm from Pickering & Co of New York with its counterweight near the pillar



moving the arm assembly up and down the pillar. The Pickering 190D's height adjustment range is less than one inch, which means it has limited compatibility with many turntables.

ON THE RAILS

'SME worked

tirelessly to

eliminate

resonances'

On the other hand, the SME Series V is well known to work happily with almost every turntable ever made. With it, precision drilling of a table's plinth isn't really necessary for all that's needed is a reasonable approximation and room for the arm's base, whose rails enable easy

> precise adjustment of the pivot point-to-record radius distance. Every other arm adjustment most of them critical for maximum performance are a breeze with the SME Series V.

Perhaps the major shortcoming with the

190D is its lack of vertical pivot bearings. All it has in this regard are two small bolts retaining the cartridge carrier, which doubles as a finger lift. With VTF properly set, the act of lifting the arm retracts the cartridge into the arm just enough to clear a record's surface, perhaps the cause of many broken styli.

The great leap forward with the SME Series V was that its engineers recognised that many of the annoying artifacts of

vinyl playback were caused by mechanical resonances in arm tubes, headshells, bearings, etc – resonances that combine to impose audible glare and haze on recordings. They worked tirelessly to eliminate these. Sonically neutral in the extreme, the SME Series V debuted when vinyl was just past its peak of popularity, a piece of technology equal to every precious recording. Many consider it the finest pivoting arm ever made.

RUST IN PEACE

I live in a town in the midst of a huge agricultural area of apple orchards, dairy farms and innumerable vineyards. A nearby ranch has a daunting collection of antique farm equipment displayed along a mile or so of country road. You can see tractors, backhoes, ploughs, tillers, aerators, and other devices so rusted and consumed by overgrowth that their original purpose is hard to discern.

Many of these litter the property like abandoned sculptures, but it's safe to say that they were all abandoned for good reason: their replacements were much better. Old tractors were rough and unreliable. Their modern counterparts have high-efficiency engines, good suspensions, and environmentally controlled cabs with high-tech comforts such as satellite radio, nice sound systems, and cushy seats. No farmer in his right mind would prefer an old one. \circ

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Andrew Everard

Reviewer/writer

Andrew Everard has reviewed consumer electronics for over 30 years and is still effortlessly enthusiastic about new developments, discovering new kit – and music

House music

It used to be the case that unless you had a fortune to spend, you could either have your music at its best, or have it all around your home. But that's been changing of late, says **Andrew Everard**

ur millionaire friends' – that's how they would always be described. Not by me, I hasten to add, but by an acquaintance of mine, and though I met the couple in question on a few occasions, I can't for the life of me remember their names now. Probably for the best...

What I do recall was the one time I got to visit their house, when I discovered it was shrine to Bang & Olufsen. Not in the 'big, odd-shaped speakers dominating the living room' sense – though truth be told I'm not sure I got much beyond the 'servants' quarters' – but in that there were slender examples of the Struer art concealed among the ceiling beams and in corners, and seemingly unfathomable remote controls here and there.

LIVING THE DREAM

They knew what I did for a living, and I'd recently visited the Bang & Olufsen factory and been conducted through the archive collection, in those days genuinely in a subterranean tunnel behind a blast-proof door. So, in an attempt to make conversation, I asked how long

they'd been fans of the brand – which is when I discovered they were just about the company's dream customers.

'We were out one Saturday afternoon and just happened to wander into a Bang & Olufsen shop because we liked

the look of a loudspeaker thing in the window. Well, one thing led to another, and soon the chap from the shop was here, and we just told him we wanted music in every room of the house.' I sort of assume nothing as grubby as a budget was ever mentioned.

That used to be the way these things happened: unless you were willing to spend serious money – usually involving having wires pulled through walls,

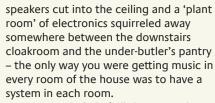
RIGHT: Multiroom needn't be mediocre – priced £1399, the Aurora system from iFi Audio is not just a striking example of an all-in-one wireless music system but multiple Auroras can be linked together for music around the house. For more see www.ifi-audio.com

'Nothing as

grubby as a

budget was

ever mentioned'



I was reminded of all that recently while listening to the Aurora system from iFi Audio. As if it wasn't striking enough with its bamboo-clad body suspended from a slender aluminium frame, iFi Audio mentions almost in passing that multiple

Auroras can be linked together to create a multiroom system. As if it were the most natural thing in the world.

Thing is, these days the kind of DIY multizone audio once only achievable by running cables round

the house between Bose Lifestyle systems or AV receivers can now be achieved with nothing more than a couple of suitable devices, and an app on your iPhone, Galaxy S20 or whatever. And just as the ease with which multiroom can now be implemented means suitable products come in all shapes and sizes, so it's now perfectly possible to include your main hi-fi system in a whole house system without any compromise on quality.



Yes, you may be an ardent believer in the 'man cave' theory of hi-fi enjoyment, complete with a designated listening room heated by a massive set of valve amplifiers, speakers that don't pass the 'wouldn't give them house-room' test of elegance. And, of course, a highly complex turntable – or, if that isn't awkward enough for you, a vintage openreel tape deck that once saw duty in a long-forgotten recording studio – on the front end. But even this kind of system can be dragged into the multiroom age.

SIMPLE SOLUTIONS

The likes of Bluesound, Bowers & Wilkins, HEOS, Sonos and Yamaha all sell simple boxes offering 'Wi-Fi in, audio out' connectivity with their respective housefilling multizone music systems.

What's more, in general they all sound pretty good, several even offering a digital output so you could feed them through your DAC of choice if you wish. I'm not suggesting they should become your source of choice, but as a useful interface between your 'big system' and the rest of the household, they have much to commend them.

Excitingly, you can even use these add-ons to issue simple voice commands to your system: 'Alexa, play "Keith Don't Go" in the listening room'.

Ah. I'll get me coat... 🖰

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lım Lesurt **Science Journalist**

Real-world radio

It would be easy to draw the wrong conclusions if reading old technical reviews of vintage FM tuners because they don't always reveal the complete story, as **Jim Lesurf** explains...

while ago I found myself in a discussion about the way the BBC still uses NICAM3 to distribute stereo to its FM transmitters. This set me thinking about the issues involved, given that most audio enthusiasts still tend to prefer FM stereo broadcasts to DAB broadcasts. Indeed, people often assume that the FM radio system is 'analogue', and that's why it can sound superb - at least if you're listening to Radio 3 - whereas DAB tends not to be so well regarded by enthusiasts.

Sadly, you don't see many new high-quality FM tuner designs released these days. As a result, you rarely get the chance to read about them or find a detailed technical report on one in a magazine. However, thinking again about the reviews of past decades it occurred to me that it would be easy to draw the wrong conclusions from what they reported – for the simple reason that a test-bench isn't the 'real world'.

DIRECT ACTION

The key thing here is that test-bench measurements on an FM tuner tend to involve directly connecting a VHF signal

generator to the tuner using a short cable. This dodges some significant factors because it prevents that tuner from being exposed to various reception problems.

For example, a decent outdoor VHF antenna doesn't just collect the

wanted signal for the station you wish to hear. It also collects background noise from the general environment, plus various sources of interference such as distant stations on the same channel, or stations operating at frequencies very close to the one you have tuned into.

This tends to increase the noise and interference level inflicted on the stereo audio output. As a result, you can get



ABOVE: Behind a flap on Yamaha's CT-7000 'super tuner' from 1975 can be found a switch for wide and normal IF mode - the latter trades reduced noise and interference for reduced 'stereo'

actual performance which is poorer than the bench test results would imply. To make things worse, there is a trade-off which I have experienced myself many decades ago, when I was tweaking various tuner designs in order to try to optimise the performance.

To help prevent interference and lower the noise level, you might want a narrow filter that helps exclude the unwanted rubbish. Alas, FM demands a price for this in the form of reduced stereo separation.

'A decent VHF

antenna doesn't

just collect the

wanted signal'

The textbook ideal for FM is actually to use an infinite bandwidth. As soon as you limit the bandwidth of the received FM transmission vou create non-linearities (distortions). This stems from the basic

mathematics involved and why some of the old 'super tuners', such as the Yamaha CT-7000 - one of my all-time favourites offered a choice, and let the user switch between 'wide' and 'narrow' filters.

But this doesn't totally cure the problem, particularly when you recall that FM sound broadcasting was originally developed for mono. Getting stereo FM to work in a way that is compatible with

mono radio sets essentially forced a quart into a pint pot. As a result the actual levels of distortion generated during stereo broadcasting and reception are higher than you might think when looking at the old test-bench measurements.

All too often they measure and quote a 'stereo' distortion value. But this usually meant they simply ensured the stereo decoder was operating but then played a mono test tone! That largely dodged the effect of the limited bandwidth on genuine stereo material.

AGAINST THE ODDS

So - as with the stereo LP - the actual technical performance isn't as impressive as some may believe. Yet it can still sound excellent, regardless. And in much the same way, the NICAM3 system uses an almost laughably low number of bits per sample at just 32k samples per second.

On the face of it, you'd assume that would surely degrade performance. However, in reality it actually serves remarkably well in terms of allowing the FM part to work as ably as it does. Hence, against all the apparent odds, both BBC FM stereo and NICAM3 have lived on for decades and they've succeeded on an, 'If it ain't broke - then don't fix' basis. And they can deliver superb results. \circ



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steve Harris

Contributor

The Wright lines

Transmission-line speakers had their ancestry in America with Stromberg-Carlson's Acoustical Labyrinth, but the classic IMFs, says **Steve Harris**, were the work of one great British designer

here was a point back in the mid-1970s when the big IMF transmission lines were just about the most dreamed-of loudspeakers in this country. American reader Allen Edelstein's 'Sound Off' letter [HFN May '20] only reminded me once more of the glory that was IMF.

Of course, the initials and the brand name were American, as they belonged to the late Irving M ('Bud') Fried. Perhaps few UK enthusiasts were aware of this. Anyway, times changed, and the 1980s saw big, multi-way speakers going out of fashion – IMF all but disappeared.

GREAT PIZAZZ

Then in 1985 came TDL. The name was new, except to industry insiders, but the speakers were IMF reincarnated. Even the literature looked the same, with cutaway drawings to show the wonders inside. This was less surprising once you knew that the man behind TDL was John Wright, who'd designed the classic IMFs.

Before that, Wright had created a unipivot arm with mercury-bath contacts, and a record-cleaning machine, both subsequently marketed by Keith Monks. He was also responsible for the Hi-Fi Sound audio test LPs HFS69 and HFS75.

In the late 1960s, when working as a consultant for Goldring, he met Bud Fried, who'd been importing British hi-fi to the US since 1957. Fried had registered

his IMF brand in 1961, applying it to various imported products, and was now Goldring's US agent.

Fried had wanted to market Arthur Radford's transmission lines, but this hadn't happened. John Wright, following Radford and Bailey, had designed and built his own transmission-line speakers for demonstration purposes. Fried saw these and took them up immediately.

So it was that in 1970, with great pizazz, Fried launched the IMF Studio speaker. Back in High Wycombe, John Wright and two partners set up a business to build speakers for Fried to sell, calling their UK company IMF Electronics Ltd.

John Wright gave a detailed account of work that had gone into his design in 'A Monitoring Approach To Loudspeaker Design' [HFN Jul and Aug '70].

NEW TRANSMISSIONS

Later, when Fried introduced some unrelated speakers under the IMF name, the British partners objected and took legal action. Eventually, as Bud Fried expressed it, a 1976 decree

in the US District Court 'separated the two parties and permitted the British company to license Mr Fried's trademark "while they remain in the loudspeaker business".'

But the story of TDL, Transducer Developments

Ltd, begins before this split. Initially, IMF used mainly KEF drive units. But then Wright approached Elac (not the German company ELAC) and TDL was set up as a joint venture to build hi-fi drivers not just for IMF but other companies.

In 1980, Wright left to pursue other interests. Without him, and now a subsidiary of Elac, IMF declined. In 1984 Elac asked Wright to return and help rescue the business. So the IMF name was dropped in favour of TDL, and



ABOVE: The TDL Reference loudspeaker and (right) a cutaway showing its inner complexity

Wright introduced new transmission-line designs to carry on where IMF had left off. In 1989 Elac was acquired by Harman, but Wright negotiated a buyout of TDL

'Fried saw

John Wright's

speakers and

took them up'

with all its assets. By the beginning of 1993 he was happily back in High Wycombe, and employing more than 20 staff.

Sadly, after only a few more years, John Wright's health failed him - he passed away on the 1st of June, 1999. But the

old IMF and TDL transmission-line designs seem to be immortal. You can find drive units and capacitor sets at Falcon Acoustics, and ample information at www.imf-electronics.com.

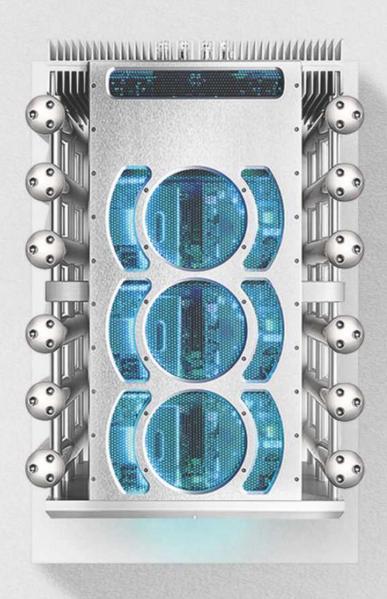
Also online you'll find 'TDL DIY Guy', building his own version of the TDL Reference Standard, inspired by a 1987 DIY feature found in German magazine Klang+Ton. Such dedication is a tribute to John Wright's work. I think it would have gladdened his heart to have seen this. \odot



ABOVE: The Hi-Fi Sound test LPs HFS75 and HFS69 which were devised by John Wright



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DCKDOWN LETTERS THE 'STAR' SYSTEM DECADES IN THE MAKING...

In his May 'Welcome' page, editor Paul Miller invited readers to share their hi-fi journey, as we all 'lockdown' in our homes. I've been to countless gigs over the last 50 years. I've seen Bob Dylan play no fewer than 36 times, in both the UK and Europe, and Led Zeppelin on three consecutive nights at Earls Court. Great memories!

As for hi-fi, I bought my first real system back in 1972. It consisted of a Pioneer PL-12AC turntable. Trio KA-2000A amplifier and a pair of Wharfedale Denton speakers. I soon invested in a pair of Sennheiser headphones, which had earpads made of yellow foam! I was thrilled with this system, and it lasted me about ten years.

Later components to find a home in my system included the first Cyrus One amplifier, a Linn LP12 turntable, Sugden A 21 amp and Spendor A6R speakers.

My wife and I are both now retired and reside in Cornwall. My current system includes a Rega Planar 6 turntable with Aria MC cartridge playing into a Rega phono stage, a Naim Uniti Star all-in-one player, ProAc Response D20R loudspeakers, Sonorous VI



ABOVE: Reader Martyn's Sonorous VI headphones from Japanese brand Final

headphones from Final, a Chord Mojo DAC [HFN Jan '16] and Oppo UDP-203 4K Blu-ray player. The electronics are all displayed on an Atacama Evoque rack while cabling is Atlas Hyper.

I'm extremely pleased with this system. I must admit to missing my Sugden A 21 amplifier, but it made practical sense to invest in the Naim Uniti Star, a bonus being that this has enabled me to back up my large collection of CDs.

Martyn Vale, via email



ABOVE: ProAc Response D20R loudspeakers flank Rega, Naim and Oppo electronics

Strange brew

AN UNLIKELY COMBINATION DELIVERS UNEXPECTED RESULTS

'Why not try out some weird and wonderful hi-fi combinations?' said Paul Miller in his June Welcome page, when discussing the continued 'lockdown'. Well, for the past few months I've been trying to ignore how good my secondary set-up sounds. It's a Denon DM41 DAB mini system connected to Tannoy Mercury F1 Custom standmount speakers. So, with time on my hands, I unhooked the DM41 DAB and deposited it in my listening room with my Wharfedale Diamond 230 floorstanders [HFN May '13]. These are usually driven by my Yamaha AS-501 amp.

I've read many times that power ratings are not always a deal breaker when it comes to sound quality, so I settled down to some A/B testing. Surely the little DM41 DAB with its claimed 30W per channel into 60hm would be no match for my 85W-per-channel into 80hm Yamaha AS-501? I was wrong! To my ears, the Denon mini system sounded every bit as powerful as my Yamaha integrated. What's more, the sound was lovely and mellow. Now it could be that my 3.3x2.9m listening room better suits the Denon/Wharfedale combination and that I prefer a more rounded sound, but either way it was an ear-opener.

Steve Dodson, via email

OUR HI-FI WORLD THROUGH THE EYES OF WHITWORTH



"MY NEW LOCKDOWN HI-FI COMES WITH OWN STAND - IT

French connection

HOW LESS CAN BE MORE WHEN IT COMES TO REDISCOVERING THE JOYS OF MUSIC

Okay I messed up! I find myself in lockdown at my weekend home without my children, because they are in a different country. The result? I am alone in the French countryside with no invasive audible interference! At first I planned to fix up the barn before repairing the garage door. But then the lure of unadulterated selfish listening pleasure proved too much and I gave in to temptation.

I have been consumed by the 'audiophile' addiction ever since I was 14 years old and my father would turn down the volume a notch or two on the family system. This had me dreaming of my very own set-up in my bedroom. Somehow I managed to purchase a Sansui integrated amp, Celestion speakers and a Thorens turntable. I was in heaven.

In those days listening to music meant listening to music - in the foreground and with absolute attentiveness. Taking cassettes and LPs to play in the homes of my classmates made me appreciate the subtleties of different systems.

Moving countries, buying my first home and receiving a stunninglooking Michell Hydraulic Reference turntable as a 21st birthday present led to a new phase in which I equated the physical beauty of a system with the quality of the sound. This then pushed me further into new and devastatingly ruinous territory: the £1200 Meridian CD player I bought in 1988 could not be connected to my Sansui integrated! I needed a Quad system at the very least, and



ABOVE: Clearaudio Concept turntable and Cyrus integrated amp and CD player

so the adventure commenced. Now, some 30 years later, I have at last achieved absolute audio nirvana with my Soulution, Stenheim, Simon Yorke, Nordost Odin and Valhalla set-up.

But that system - my 'Uber Set-Up' - is in another house. So as I write, confined and without my family, I find myself listening to a sparse collection of CDs and LPs on a decades-old Cyrus system. The speakers are mounted too high and there are bare floorboards with no thick curtains to absorb unwanted sound reflections.

And guess what? I am absolutely adoring the music; it simply moves me. I can listen to it loud, find myself dancing without being mocked by my children and have realised that ultimately, this is what only matters the pure unadulterated enjoyment.

Paul Yanacopoulos-gross, via email



ABOVE: Paul's 'Uber Set-Up' of Stenheim speakers, Soulution amps and Simon Yorke deck



Yes and no: Using the same equipment and a quality DAC, a 24/96 file (for example) will always sound better than a CD 16/44.1 file ... but, even a single JitterBug will often allow a CD file to be more musical and more emotionally stimulating than a Hi-Res file without the benefit of a JitterBug.

Noise is the problem. Real noisethe kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

Problem noise is essentially random, resonant or parasitic energy, which has no meaning. It can't be turned into discrete sounds, but it does compromise signal integrity and the performance of everything it touches.

JitterBug's dual-function line-conditioning circuitry greatly reduces the noise and ringing that plague both the data and power lines of USB ports, whether on a computer, streamer, home stereo or car audio front-panel USB input.

A single JitterBug is used in between devices (i.e., in series) as shown below. For an **additional "wow" experience**, try a second JitterBug into another USB port on the same device (such as a computer). Whether the second port is vacant, or is feeding a printer or charging a phone, JitterBug's noise-reduction ability is likely to surprise you. No, the printer won't be affected—only the audio!

While a JitterBug helps MP3s sound a lot more like music, high-sample-rate files have the most noise vulnerability. Try a JitterBug or two on all your equipment, but never more than two per USB bus. There is such a thing as too much of a good thing.





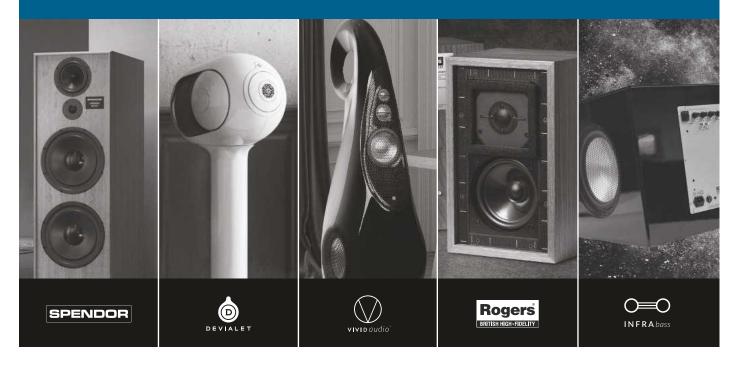


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IS YOUR SYSTEM SOUNDING BETTER DUE TO LESS DEMAND ON THE MAINS?

My hi-fi system seems to be sounding particularly good at present, there being an increase in stage width and depth, not to mention a general feeling of greater transparency. I'd be interested to know if fellow readers have experienced similar improvements since the lockdown.

If it is indeed the case that others are finding that their systems sound better, could it be that the mains supply is now more 'robust', due to the reduction in industrial usage of electricity since the lockdown began? It will be interesting to hear if anything changes in this respect when things get back to normal.

As for my system, I have a pair of PMC twenty.21 loudspeakers [HFN Apr '12] mounted on glass shelves embedded in the wall, with each speaker sitting on a sheet of sorbothane for isolation. I also have a BK Electronics XLS200 MkII subwoofer, driven via an Anti-Mode 8033s-II DSP unit also from BK. The sub is located to the right of my sofa and the DSP delay puts it, acoustically, about where the main loudspeakers are situated

I also have an Innuos ZENith streamer/server with 2TB of SSD storage. This is located in my study under the desk, wall mounted, and supported on large isolation pods.

Power for the system comes from a dedicated mains spur. fed via an MCRU DC blocker, with a Russ Andrews Silencer, to a 1500VA balanced transformer. Lots of ferrite rings complete the set-up.



ABOVE: Sew solid - the Naim Uniti player underneath a Singer sewing machine table

Regrettably, perhaps, my original Maplin bi-wire OFC speaker cables remain in use after 20 years. The reason is that they go under the floor and, where they pass under the hearth, they have now become stuck. and there is no room to bypass them.

Finally, my main system also includes an original Naim Uniti all-in-one player, which is resiliently mounted underneath a Singer sewing machine table! I should also perhaps mention my Rega P25 turntable, which is equipped with an Ortofon 2M Black cartridge [HFN Mar '11] and connected to a battery-powered Graham Slee Genera preamp.

I don't listen to records any more but instead use a Focusrite Scarlett 2i2 ADC to convert my LPs to 48kHz/24-bit digital files. I find that converting them in the quiet of my study reveals details in the sound I don't hear when playing the LPs 'live'.

Denis Hollidav, via email





ABOVE: One of the PMC twenty.21 speakers and the XLS200 MkII sub alongside the sofa



Vinyl will always be king

HOME CINEMA, VALVES AND THE WORLD'S FIRST CD PLAYER, BUT RECORDS STILL RULE THEM ALL

My own particular 'audio odyssey' began when I bought an Akai system in 1978. I started work soon after, which meant I then had sufficient disposable income to allow for upgrades. A NAD 3020 amp and a pair of B&W DM10 speakers were added. I was hooked!

Next followed an Acoustic Research AR turntable and my first CD player a Sony CDP-101 [HFN Jan '12]. Over time I moved to Audiolab 8000A and 8000P amplification and KEF Q80 loudspeakers, plus a Meridian 506 CD player. Feeling the sound was a little on the bright and clinical side the 8000A was swapped out for a Conrad Johnson PV10 AL and the joys of a valve preamp were immediately apparent. There soon followed a secondhand Linn LP12 turntable and Linn Kaber speakers.

Via an Arcam Diva AVR350 receiver. which at the time enabled me to integrate my hi-fi with home cinema electronics, I progressed to a Musical

Fidelity M6i integrated amp, Rega Apollo CD player and Revel Performa F206 speakers, which I auditioned and purchased after reading the review in Hi-Fi News [HFN Apr '14].

Yet I still hankered after the difference that the addition of the PV10 AL made to my system all those years ago. So after considering many options, the M6i was replaced with a Musical Fidelity Nu-Vista 600 integrated amp. So now I am back to the desired valve/transistor sound and, thanks to the 600 amp's home theatre function, seamless hi-fi/ home cinema integration

Future developments? Vinyl will always be king with me so the LP12 has a couple more upgrades to come. And once I reach retirement I am tempted to convert the cellar in my house to a dedicated listening room and install a valve-based retro system down there. using some of my older equipment.

Mark Buffey, via email



ABOVE: Mark's LP12 turntable, hooked up to a silver Linn Uphorik phono stage (third shelf)

E in the pack...

WHAT IS YOUR BEST HI-FI PURCHASE? JAZZ LOVER HIGHLIGHTS HIS CHERISHED COMPONENTS

The equipment making up my system is modest when compared to many of the expensive and beautiful pieces of kit you regularly review in HFN. Yet I'm more than eager to read about them, in the hope that perhaps one day a lottery win might come my way! In the meantime, I've spent the last few weeks of lockdown tracking down and buying albums, both on vinyl and CD, that I've been trying to locate for a while. And devoting extra time to listening to music.

Radio is now something of a lottery, with repeated tracks and monotonous voices having taken over many stations. I now find myself having to search the Internet for radio stations able to deliver the eclectic mixes that I crave. Streaming is a great option, of course, and I've tried the various free trials from Qobuz, Tidal, Deezer and Amazon HD. Though I've yet to sign up to one, I'm leaning towards Qobuz.

Currently I have a Moon Neo ACE amplifier, which I love. It has been the best purchase, hi-fi wise, I have ever made. I've also changed how I wire-up my Totem Arro speakers - attaching the



ABOVE: Peter's Arcam UDP411 BD player (top) and Moon ACE integrated amplifier

positive speaker cable to the speaker's top red terminal and the negative to the black terminal below. The interlinks between the two sets of terminals are also made using speaker cable. I'm now hearing far more detail and depth.

Meanwhile, I play CDs via an Arcam UDP411 BD player. If funds permit I may at some stage buy a dedicated CD transport, perhaps an Audiolab 6000CDT. As for my original Technics direct-drive turntable from the 1970s, I recently had this repaired as the lift system failed. It

appears to be a common problem on the SL-1400Mk2 and at the same time I took the opportunity to change the original phono leads to new Chord Co ones and added a new Audio-Technica AT-VM95ML cartridge. The turntable still works very well indeed.

I have also added a digital optical cable link between the Arcam UDP411 and the Neo ACE as this enables me to compare the two DACs - the one in the Neo Ace and the other in the UDP411. This has thrown up some intriguing results, with some tracks sounding better via one DAC than the other, depending on the quality of the recorded material on the CDs used.

I also love live gigs, especially jazz, hence the Arro speakers which are amazing with well recorded jazz. Female vocal is another area in which the Arros excel. If you were to ask me what my favourite CD/LP is at the moment it would be a difficult question to answer, but I recently found a used LP of Sammy Davis Jr and Laurindo Almeida in mono, which simply sounds sublime.

Peter Davies, via email

journey takes shape

In response to editor Paul Miller's call for readers to share their hi-fi journeys, I thought I'd describe mine. Looking back, it appears distinctly U-shaped. Something, I suspect, other readers might recognise. Rapid system building took place early on, which was followed by a period of inactivity as family and work drained all my available resources. Emerging out the other side, I now find myself fully immersed in hi-fi once more.

My story starts back in the 1980s when I moved from the 'tower system' behind a smoked glass door' to separates. These comprised a Philips CD player (out, mistakenly, went my vinyl), a NAD 3020 amp and a pair of Monitor Audio R252 speakers.

The Philips CD player was later replaced by a NAD 5425 (mainly for aesthetics!) before the whole lot was despatched to the loft to be replaced by a Naim CD3.5 player, NAC92/NAP90 pre/power amplifier and KEF Q35.2 loudspeakers. It all sounded wonderful and, apart from adding a Rega P3 turntable with Elys cartridge and a Naim FlatCap PSU and Headline headphone amp, little changed for the next 15 years as all my energy was taken up elsewhere.

Then, a few years ago, I decided I needed to change something in order to reinvigorate my interest in audio. I replaced the KEF Q35.2s with a pair of Neat Motive SX2s and it felt like the early days again. There then followed a Technics SL-1200GR turntable [HFN Nov '17] and streaming via a Bluesound Node 2, which soon morphed into an Auralic Vega G1.

The latest addition is an Innuos Zen Mini running Roon. I love the end result, although I don't think the end is anywhere in sight just yet. My biggest lesson has been to hold onto the gear you love if you are able. The NAD 3020, Node 2 and KEF Q35.2s now work beautifully as a second system in the house, powered by Roon.

Richard Helyar, via email

Paul Miller replies: Once again I must thank all our wonderful readers for taking the time to share their stories with their fellow audiophiles, and persevering with us as we try to direct your photography from a distance! Great to hear that so many of you are experimenting with old and new components, and dreaming up ostensibly Frankenstein systems that turn out sounding more like Cinderella. There are no 'rules' except to enjoy the process and have some fun in a period when levity is in short supply.

Denis [plll] makes an interesting observation about reduced industrial activity rewarding us with potentially 'cleaner' AC mains, to the benefit of sound quality. I always use a PS Audio Powerplant regenerator for our reviews, so I cannot say that I've noticed, but if you concur with Denis, please let us know.



ABOVE: Neat Motive SX2 speakers with Naim electronics and a Technics SL-1200GR deck

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Philips CD960 CD player

While its looks belie its flagship status, this '80s CD player was designed with just one aim in mind: bring credibility to Philips' cutting-edge tech. How does it sound today? Review: Tim Jarman Lab: Paul Miller

he Philips CD960 of 1987 was part of a range that included the FA860 amplifier [HFN Feb '20]. As one of the company's occasional flirtations with the top end of hi-fi, this series was intended to demonstrate that the Dutch brand could offer components capable of state-of-the-art performance, as well as provide a boost in status to the more affordable models in the range.

With CD having by then become a highly competitive marketplace, Philips had been compelled to innovate to maintain the leadership its players had enjoyed during the first few years of the format. Back then, most Japanese equipment offered just a single DAC, time-shared between the two stereo channels, allied to an analogue filter. By contrast, Philips fitted separate left and right DACs and a fourfold oversampling digital filter to all its models.

SWEET SIXTEEN

There was a catch though, for the Philips DACs had a basic resolution of 14-bits, when all the Japanese players offered the full 16. It could be demonstrated that the oversampling system effectively recovered the lost detail, but in marketing terms, such intricacy was difficult to communicate effectively to the buying public.

The solution was to design a 16-bit DAC to work with the fourfold oversampling digital filter. This was by no means a simple task, but once completed the new '16x4' package put Philips at the forefront of CD player design once more, confounding the Japanese who by this stage were just coming up with 2x oversampling 16-bit machines.

Sadly though, as the electronics inside the new Philips players improved, the quality of the cabinets and mechanical parts used failed to keep up. Older models, such as the CD104 [HFN Apr '14] from 1984,

RIGHT: A publicity picture of the CD960 makes it clear that this was a 1980s high-tech product. Note the concealed controls inside a small slide-out drawer



were built on a sturdy die-cast alloy chassis, but this had now been replaced with lightweight plastic mouldings as part of the CD/CD (Compact Disc/Cost Down) project.

To compound the problem, the top-ofthe-range CD650 shared so many common parts with lesser models, such as the entry level CD160, that it was obvious that the two were simply variations on a theme. The result was that is was difficult to justify charging a premium for the pricier model when it didn't offer much that was greatly different. A more credible flagship was needed, which was the role of the CD960.

As with the FA860 amplifier, the design and assembly of the CD960 was done in Japan by MJI (Marantz Japan Incorporated) which at that time was a Philips subsidiary. However, unlike the FA860 amp, extensive use was made of Philips components and technology, including the complete 16x4 chipset and TDA1541A dual 16-bit DAC.

EXOTIC PARTS

When it came to the transport, Marantz decided not to opt for the latest Philips CDM4 deck, with its resin chassis and integrated servo electronics, and instead

> took a step back, selecting the CDM1 optical unit, as was used in some of the company's 14-bit models.

Since the tray mechanism of the Philips players of the day had attracted particular criticism (it was variously described as being flimsy, slow and noisy), the CD960's CDM1 deck was fitted to a Marantzdesigned loader, which operated quickly and smoothly.

The open-and-close key was located on the door of the tray, exactly as it was on the Sony CDP-101 [HFN Jan '12]. This in turn was mounted in a cast alloy chassis,







like that found in the CD104 but bigger. The rest of the build followed accepted Japanese high-end practice, using many locally sourced components. This included a generous power supply system with separate sections for the analogue, digital and mechanical parts of the machine.

Meanwhile, the DAC and analogue sections received a large dose of exotic

Japanese parts, though it's worth noting that the critical components which defined the working points of the filters were left unchanged from the basic Philips specification. Rather, sensible improvements were made, such as the use of separate

op-amp chips instead of combined ones, to reduce crosstalk, and the selecting of film capacitors instead of ceramics for use around the DAC to eliminate microphony something that would become a standard tweak for anyone designing a high quality player around the TDA1541A DAC.

One small break from the Philips pattern could be found in the servo section, where instead of the standard ICs a custom circuit was built onto a small extra PCB using miniature surface-mounted components.

Outwardly, the CD960 retained the European look but the silky black alloy front panel and carefully weighted controls were way ahead of those of the creaky, clumsy CD650. A ledge at the bottom of the fascia housed some of the control keys, as did a hidden drawer, which concealed the less

'The '16x4'

package put

Philips back

at the top'

frequently used functions. Enhancements included full infrared remote control: **Favourite Track Selection** (FTS), which could be programmed to remember the owner's favourite songs on up to 227 different discs; and what was claimed to be

a hi-fi headphone amplifier, which boasted its own slider volume control.

None of this came cheap: the CD960 cost £699 at launch - a whopping £300 more than the CD650. Yet it sold well, if the numbers that remain in circulation today are anything to go by. At the same time, Marantz released its own version, the CD-94. Although outwardly quite different, the two models were identical inside.

ABOVE: At a glance this could be any one of many late '80s Philips machines, but in the flesh it is much larger and heavier than all the others. Note the volume slider for the headphone amp

From across the room the CD960 is an initial disappointment. It looks just like a CD471, a slightly later popular model that sold for around a quarter of the price of the CD960. Up close, though, the similarity vanishes, for the CD960 is a big, solid lump (it weighs 10kg) and absolutely looks the part. The level of fit and finish is at least comparable with its natural rivals from Sony and Technics – the CDP-502ES and SL-P1200 [HFN Aug '13] respectively which isn't something you could ever say about the CD650. And while clearly a product of the 1980s, it still looks attractive in a serious, functional way.

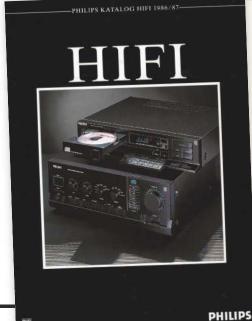
LOGICAL THINKING

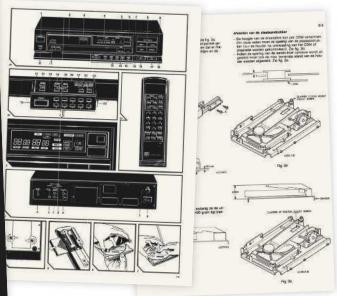
The way the drawer works eclipses any arrangement Philips had before (or would have again) and the way the whole player operates is simple and logical - never a certainty with Philips! The remote control handset is a stock (European) Philips part, which doesn't really complement the way

the rest of the package is presented, but it works well enough and offers every function that you could possibly need.

As for the player's connections, these are the same as those you'd find on a player today, and include digital outputs in both coaxial and optical →

LEFT: Philips literature, including the launch brochure (with the FA960 amp also on the cover), the multilingual user manual and the service sheet, here showing details of the disc tray







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VINTAGE HI-FI

RIGHT: Interior view shows the swing-arm CDM1 mechanism [top right] and TDA1541A DAC chip [centre left]. Note too the generous power supply and green custom servo unit

form. A separate DAC was made available in both the Philips and the Marantz ranges in 1988, but since it contains an identical circuit to the one employed in the CD960 itself its advantage is a dubious one.

TIM LISTENS

Given that the CD960 design represents a final polishing of the Philips 16x4 package rather than a total re-think, it comes as no surprise to find that the sound of this player is essentially familiar. This is no bad thing given that even the entry level CD160 was a very decent machine, and pretty much unbeatable at its price. It was just a bit rough around the edges for the most discerning listener.

Compared with the best of the older 14-bit Philips players – for example, the CD303 [HFN Nov '13] – the CD960 offers a drier take on the bass and has sharper, better focused treble. By any other standards this is still a rich-sounding machine, but those searching for the romantic, LP-like sound of the Philips first generation will not necessarily find it here.

One thing that does remain is the huge amount of space that Philips players

traditionally generate in and around the music. The wilting late summer cool of Chris Rea's 'Miles Is A Cigarette', from his 1992 album *Gods Great Banana Skin* [East West 4509-90995-2], filled the space in my listening room when

played on the CD960, complete with the trademark cymbals that shimmered and didn't splash – during the 1980s only Philips really knew how to do that. Compared to the tangled mess that many



single-DAC Japanese players produce with this album, and others like it, the super-sized soundstage that the big Philips could render gives truth to the

company slogan at the time: 'Simply years ahead'.

What really impresses about the CD960, though, is how it ensures that all the various parts of a musical performance meld together into a realistic whole. Many players don't

do this so well and can sound forced and 'mechanical' as a result. To hear the Philips machine glide through a recital by The Dutch Swing College Band [PMF Records 90.794-2] is an utter delight.

Yes, there isn't quite as much bass as the earlier Philips players would have been capable of delivering (even the first 16x4 ones), but the treble has been noticeably improved. The slightly pushed forward midrange is still in evidence, but it's now sufficiently smooth to no longer draw attention to itself. The result is that the album's opening piece 'Hello Mary Lou' is just so jaunty and brisk on the CD960 that it's hard to keep still as it plays. What's more, the brass and woodwind sections remain vivid yet the 'fingernails down a blackboard' harshness that some lesser players can give them is avoided.



Complex, multi-layered mixes don't catch the CD960 out either. Dodgy's 'Staying Out For The Summer' [A&M 5810872] is separated cleanly into distinct instrumental sounds even as the track spans its noisy crescendo. Comfortable listening even at high volumes is another CD960 virtue; the top-end polish makes even this track's jangling, grinding guitars easy on the ear (and the tweeters!). Again, a little more bass would perhaps make this machine the perfect choice for rock music, but the extra amount required is so slight that it could (see the complex conditions).

LEFT: Even though it wears the Philips shield the CD960 was really made by Marantz in Japan. At the same time, one could also buy Marantz players that were made by Philips in Belgium...



'It's so jaunty

and brisk it's

hard to keep

still as it plays'



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VINTAGE HI-FI

PROJECT SEPTEMBLE PROJECT SEPTE

ABOVE: A comprehensive set of connections at the back, including both coaxial and optical digital outputs and a loop-through for the Marantz system remote control

easily be compensated for elsewhere in the system chain, by choice of matching amplifier or loudspeakers, or simply by pushing the speakers into the corners of the room.

Otherwise, I found my wish-list of sonic improvements to have been fulfilled – an unusual outcome when testing a product now over 30 years old. Just to confirm my findings, I directly compared the CD960 against my own Technics SL-P1200 and a borrowed Sony CDP-502ES. All audio equipment is a balance of different compromises and all these very fine players have their individual strengths. But as an overall package the CD960 was clearly the best. The SL-P1200 was a trifle coarsesounding in comparison while the CDP-502ES was a bit bland.

BUYING SECONDHAND

PHILIPS

8

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The use of the durable CDM1 mechanism means that the chances of finding a working CD960 today are good – contrast this with the top Sony machines of the era, which are now often sidelined due to worn-out optical assemblies. Many of the key ICs are also common to the rest of the Philips range, meaning in many

cases replacement parts are not too difficult to find.

Without a doubt the most troublesome area is the player's tray mechanism, which uses four belts and two motors. Despite being thick and heavy the belts do not last long, the

LEFT: The remote was a standard European Philips part matching those supplied with its TVs symptom being the inability of the machine to complete the loading cycle. Replacement kits are available but vary in quality, meaning that several may have to be tried to find a type which is suitable. Ensuring all the other parts in this complex arrangement slide and turn smoothly will lengthen the useful life of the new belts once installed.

Another fairly common problem is that the adhesive used to secure some of the components and wiring on the DAC PCB becomes corrosive with age, dissolving the track-work and damaging some smaller parts. The faults that result are often baffling, so it's a good idea to remove as much of this material as possible. Heavily rusted component leads found beneath the goo are often a pointer as to what has failed.

Finally, one often sees poorly implemented modifications in CD960s, often involving unsuitably large capacitors and the use of different op-amp chips in the analogue sections. Such things are best avoided. A few years ago these players could be had for pocket change, but not any more. Grown-up budgets are now required to secure a well cared for example. (b)

HI-FI NEWS VERDICT

When this player was launched it was a range-topping machine and on hearing this sample it's easy to hear why. The CD960 remains a reference-class player of the highest quality, and even today is difficult to fault. Similar comments apply to the Marantz CD-94, which is the same machine inside. It's just a shame the Philips CD960 has become expensive again secondhand after years in the doldrums – start saving!

Sound Quality: 85%

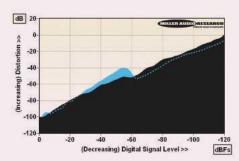


LAB REPORT

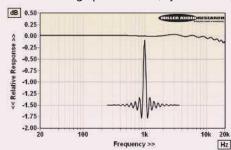
PHILIPS CD960 (Vintage)

Comparisons with Philips' 4x oversampled 14-bit players, the CD100 [HFN Oct '11], CD104 [HFN Apr '14] and CD303 [HFN Nov '13] are of academic interest, but the CD960's family tree really begins with Philip's CD450 [HFN Aug '14] launched a couple of years earlier. Both players use the classic SAA7220 4x oversampling filter and two-channel TDA1541 16-bit DAC, but the CD960 uses a superior CDM-1 transport and 'A' version of the DAC. The digital filter – a moderate roll-off linear phase type – offers a modest 41dB rejection of stopband images but a much reduced passband response ripple, down from ±0.25dB in those earlier players to just ±0.03dB here [see Graph 2, below]. By modern standards this is still a high figure, but in 1987 was state-of-the-art for 4x oversampling at a 16-bit wordlength!

However, the CD960's analogue stage and TDA1541A DAC brings a real uplift in performance over the CD450. The maximum output level is not dissimilar at 2.3V but the output impedance is lower at 54-59ohm and the S/N ratio improved by 2dB to 110dB in the CD960. Few modern players will match this! Distortion is lower too, and jitter suppression excellent at 160psec, although the THD versus digital level trends [see Graph 1, below] clearly illustrate that the SAA7220/TDA1541 chipset still lacks the uniformity of modern DAC solutions, as does its -2dB offset in linearity at just -90dBFs. More positively, from a subjective standpoint, distortion is not only low at 0.0004% at OdBFs, rising to 0.0024%/-10dBFs and 0.021%/-30dBFs, but this trend is well matched at low, mid and high frequencies. So the CD960's 'colour' is very uniform across the audible spectrum, and beyond. Finally, ultrasonic noise is low (lower than the PDM/ PWM DACs that were to emerge from 1989 onwards). PM



ABOVE: Distortion versus 16-bit CD digital signal level over a 120dB range (black = 1kHz; cyan = 20kHz)



ABOVE: Frequency (magnitude) and impulse (time) responses. Note ±0.03dB response ripple

HI-FI NEWS SPECIFICATIONS

2.29Vrms / 54-59ohm
109.9dB
0.00039% / 0.021%
0.00065% / 0.030%
+0.0 to -0.17dB
160psec
-2.0dB / -2.1dB
13W
420x100x378mm / 10kg

Two Konnektikut Yankees

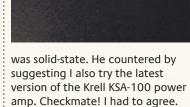
John Atkinson lives with Krell pre- and power amplification

treetwise. Now there's a word. I suppose you could say that in a hi-fi context it means being aware of the unwritten myths, such as 'image depth is due to microphony in valve amplifiers' or 'Class A amplifiers sound better than ones operating in Class B' or 'the only truly great preamplifiers use valves'.

Such myths don't necessarily have to reflect reality to be credible, but I became sufficiently convinced of the truth in the last two that I spent a lot of money putting together a system based on a Class A transistor amp - a Krell KSA-50 - and a valve preamp - an Audio Research SP-10.

STATE OF FLUX

The result was literally music to my ears, so I looked forward to living happily ever after. Then one day Absolute Sounds' Ricardo Franassovici rang me: did I want to listen to the Krell PAM-3 preamplifier? I explained that it



The PAM-3 is a low 19in-wide preamp, with its thick front panel blue-anodised to match the rest of the Krell range. Each channel has its own remote power supply, these being rather plain rectangular aluminium boxes with a red LED on the front. Each of these houses a 30VA toroidal transformer from Avel Lindberg and delivers unregulated

but well-smoothed (4x4700µV caps) ±28V voltage rails via a lead fitted with a three-pin Lemo connector, Each channel then has the supply for each gain stage individually

regulated to ±16V within the preamp proper, with hefty decoupling (8x2200µV caps) and dual-mono layout on the militaryspec double-sided board.

Circuitry is fully complementary, using discrete transistors, and the output runs in Class A, the transistors being mounted on the same individual blue-coloured heatsinks that support the regulator transistors. Construction is to a

ABOVE: Inside the Krell PAM-3 preamp - note high quality, full-sized components

breathtakingly high standard with metal film resistors and polystyrene and polypropylene dielectric capacitors used throughout.

HIT THE SWITCH

'There's enough

current to run

in Class A to

100W/80hm'

Meanwhile, all the signal sockets are Goldilocks (Tiffany) gold-plated phonos, and the volume control is a rotary Penny & Giles conductive plastic stereo fader, the channel

> matching on this being to within 0.06dB over nearly all its range, and still just 1.29dB adrift 60dB down.

The only front panel controls apart from volume are a

switched attenuator for balance (the far left and right positions turning off the other channel), and separate selectors for listen and record. (Two tape recorders are catered for.)

The disc input is used for both MM and MC cartridges, internal DIL switches being used to change gain and also to vary the MC loading from 47kohm down to 5ohm in nine steps. Internal switches also provide full double mono operation as well



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as stereo with reduced width. Tuner and tape inputs go straight to the high-level section of the circuitry, but the CD input also provides adjustable high-frequency group delay equalisation. Again this is set with internal DIL switches.

The KSA-100 is a twice-the-power version of the company's KSA-50 in the same case as the mono KMA-200. Internal layout is similar, apart from the use of two heatsink/fan assemblies rather than one.

Separate Avel Lindberg toroidal transformers are used for each channel, each feeding a high power bridge and 2x40,000µF reservoir with a plated brass bus bar across the top of the pair of the capacitors forming the ground reference point.

The output stage has sufficient standing current to run in Class A up to 100W output into 80hm. However, into lower loads, the first 100W will be in Class A but then the upper or lower pairs of bipolar output transistors will cut off, giving super-enriched Class A/B operation. Input sockets are gold-plated Tiffany while the loudspeaker outputs are gold-plated five-way binding posts.

The circuitry, meanwhile, has been revised since the first Krell generation. Although still fully complementary, FETs are now used in the front-end and the fuses in the outputs have been replaced with high current, hard silver-plated relays. These turn on after a short delay and provide DC and RF protection.

OVER THE TOP

I first used the KSA-100 with a SP-10/LP12/Ittok/Asak or Koetsu Red front-end, later substituting the PAM-3 for the SP-10. Speakers were in the main Apogee Scintillas in 10hm mode, with considerable listening also done with Celestion SL600s. The PAM-3 and KSA-100 preamps were also used to drive Magneplanar MGIII loudspeakers in our Penta Show listening tests.

Compared with the KSA-50, there are two noticeable improvements with the KSA-100. The bass is much drier, more 'tuneful' even; the '50, though very tight, nonetheless sounded warmer. If you take the 12in of Tina Turner's 'We Don't Need Another Hero', this ends with a totally over the top bass note that mightily stresses the amplifier

concerned. Even when delivering the same measured power as the '50 on this note, the '100 stays more in charge of what is going on. Couple this aspect with the greater dynamic range and the ability to deliver shocking currents into awkward loads and you have an amp for all seasons.

The second aspect concerns the depth of image. Again, although the KSA-50 is excellent in this respect, the '100 is that little bit more transparent without pushing information forward at the

listener. I found this to be surprising, generally having found that bigger amplifiers seem to trade-off this aspect of reproduction against greater power delivery.

Yet if you take my Chopin piano recording on the 1985 HFN/RR Test CD, the character of the hall ambience surrounding the piano is very subtly encoded, and is easily obscured/destroyed.

The '100 allows you to hear



ABOVE: Krell co-founder and amp designer Dan D'Agostino (right) pictured in 1980 with a very early version of the KSA-100 Dan founded Krell with his wife. Rondi

its case has a 10ohm groundlift resistor: main system earth is thus at the power amplifier where the most current flows to ground.)

There is no mains on/off, the preamplifier being left on all the time, the case getting very slightly warm to the touch. I found that it took around 24 hours

after switch-on for the sound quality to reach optimum, presumably due to the need for the electrolytics in the power supply to reach operating temperature. Be aware of this if you audition the PAM-3 at a dealer. (Most transistor preamps benefit from a warm-up period, in my experience.)

DECIDING FACTOR

Ergonomically, the preamp was a delight to use, the separate source and record selectors proving

all the more clearly the 'walls' of the hall. It doesn't guite have the midrange resolving **ABOVE: The** power of the Audio Research D-115 power amplifier, but on the other KSA-100 reviewed hand it can drive loudspeakers with here came in a

more authority. The 'slam' with which it drove the Maggies at the Heathrow Penta, while still holding on to the midrange detail, had to be heard to be believed.

Hooking up the PAM-3 didn't give any problems, it being possible to connect the earths on both pre- and power amplifier leads to the mains earth without hum. (The preamp is effectively double insulated and

gun-metal grey finish and a fascia with rounded edges. It was originally released in 1980 in the US with a sharp rectangular fascia and a brushed silver-coloured finish

useful, as did the mute position which is next to phono on the switch. Disc listening was done with a 100ohm input impedance, the higher values giving a slight EHF edge to the sound, and taking the cover of the amp off to change internal switch settings took only a minute or so.

The primary characteristic of the sound via LP is a 'coolness'. It does not sound 'transistory', neither does it sound unmusical or brash in the manner of, say, the original Musical Fidelity The Preamp. Rather, it is →

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TECHNICS SL1210 Mk7 complete with Ortofon 2M Ruby cartridge. Boxed, as new, £650. Tel: 0208 8825703

11. SYSTEMS

ROTEL RCD-965 BX CD player, remote, black. Pioneer A400 integrated amp, black. Acoustic Energy Aegis 2 speakers, beech. All owned from new, original boxes and instructions. Unmarked, little used. Am able to demonstrate, £250. Email: norbertstefan@yahoo.co.uk. Tel: 0770 4145987

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REEL-TO-REEL 20 Maxell and TDK tapes on NAB reels. Mostly unused and still wrapped. Offers? Fairly heavy so collection in person (Midlands) would be easiest. Email: patloe@tiscali.co.uk

PHILIPS 4307 4-track tape recorder with microphone and instructions. Working, vgc. £70. Email: norbertstefan@yahoo.co.uk. Tel: 0770 4145987

ABYSS AB-1266 Phi headphones deluxe package. Includes additional cables, box, leather case. Mint. RRP £5850. £2500. Tel: 07939 596474

ELROG ER300B valves. Matched pair, test hours only, boxed, £1050 ovno, plus postage at cost. Tel: 07799 475 301

PIONEER CT959 cassette deck with instructions and in excellent condition. £250 collected from Diss, Norfolk. Tel: 07384 46027

13. WANTED

TANDBERG TCD310 Mk2 cassette deck. Either working or non-working. Tel: 01758 613790

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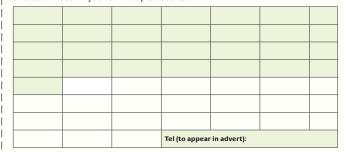
FAULTY amps and CD players from brands such as Cyrus, Arcam, Linn, Naim, etc. Email: arfer67@ gmail.com. Tel: 07506 793547 evenings or weekends

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FROM THE VAULT

like a tidier Naim 32/5 with greater extension at frequency extremes (the measured RIAA response shows a -0.5dB shelf above 5kHz). If you take the Hi-Fi Today Nimbus recut of Vaughan Williams' Tallis Fantasia, the lower strings in this close-ish (Kingsway Hall?) recording are given their due weight, without either confusion in the midrange or overemphasis at high frequencies.

Compared with the similarlypriced SP-10, the valve preamp is more transparent. The PAM-3, however, has even more low bass authority than the SP-10 and is very much quieter on its disc input; the latter may well be a deciding factor for some audiophiles.

VICIOUS LOADS

Using my Marantz CD-63 CD player, Isoplatted and Flux Dumpered, into the Aux inputs, the sound was nothing to write home about, although substituting a passive pot for the PAM-3 significantly degraded the sound quality. Taking the CD player into the PAM-3's CD input and setting up the DIL

switches for a Philipstype player gave a sound very much more like that which would be expected from an audiophile system. There was now a slight HF rolloff - I still feel

that a flat frequency response on CD is not what is needed when so many engineers seem to balance rock recordings to sound too bright - while the HF group delay added to the sense of 'space'. Our measurements show a phase change of -155° (Sony) and -119° (Philips) at 20kHz, with associated amplitude changes of -5dB and -3dB.

I must point out that sheer value-for-money considerations are not relevant with this kind of product. The Law of Diminishing Returns applies as strongly in hi-fi as anywhere else and only the



customer can decide if the real improvements offered are worth the asking price. However, I have no doubts about recommending the KSA-100 to anyone who wants a power amplifier approaching the best valve designs when it comes to imagery and presentation of musical detail but with the transistor amplifier's ability to drive vicious loads such as the Scintilla. (Current

'It's an amp

approaching

the best value

designs'

production KSA-50s also feature the revised circuitry.)

The PAM-3, however, is more problematic. After all, pricewise, it is up against strong competition from the

Audio Research SP-10, which costs another £500, and I am told that the latest Conrad Johnson Premier Three preamp is also a strong contender at this level.

If you feel that valves are not the way to go, though, then the PAM-3 will give a less incisive but still musical performance. However, those advocates of the silver disc would do well to check out Krell's less expensive but similarly-styled PAM-5 preamp, which has a mono power supply and simpler tape arrangements, but features the useful phase EQ on the CD input. ()

TOP: Original pages from the Jan 1986 issue of HFN in which editor John Atkinson checked out two solid-state amplifiers from Krell. The lid-off shot of the PAM-3 on the cover attempts to reflect the preamp's US origins by revealing the 'Manhattan' style layout of its printed circuit board. The two remote power supplies can be seen top right

BELOW: The PAM-3 preamp offered MM/MC phono, aux, tuner and CD inputs. The latter included 14 different analogue filter settings. via internal DIL switches, to 'tune' the sound of early **CD** players



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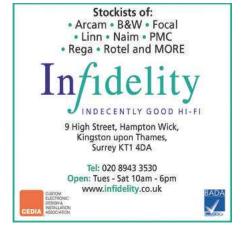






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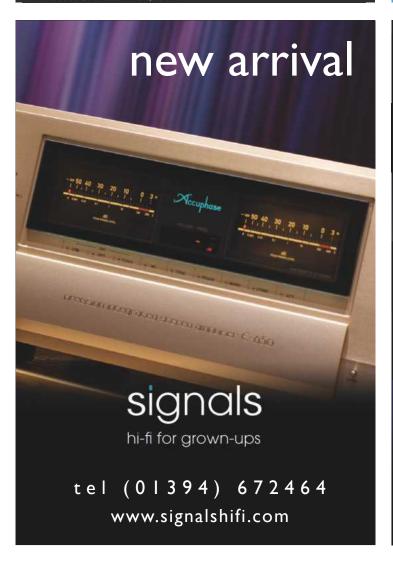
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ockdown continues and looks set to carry us, in some form, through to the end of the summer. Our editor doubts that there will be any hi-fi shows during 2020, and I will most mourn my three favourite audio events should they not happen: the autumn Tonbridge Audiojumble and the high-end shows in Warsaw and Tokyo. I still haven't gotten over the demise of TopAUDIO in Milan, dead since 2011, so I anticipate a bleak year ahead.

SOFTWARE PLETHORA

That said, I am loving lockdown (sciatica aside) because I'm growing increasingly misanthropic in my dotage. I am ploughing through thousands – literally! – of unplayed LPs, tapes, DVDs and Blu-rays, piled up over

the years. From what I can gather, I'm not alone in this. But while millions are box-set bingeing due to lockdown, hard-core audiophiles have a cooler avenue of release: digging out old components.

While few hi-fi enthusiasts keep unused hardware the way the Japanese are alleged to – they are rumoured to hang on to everything, rather than trade in when it's time to upgrade – I believe that few veteran British audiophiles lack any spare kit. Leaving myself out of the picture as I am a reviewer and was once an undisciplined collector, most of my audiophile pals who are not in the business iteration)

have all manner of older components they

won't part with. Take my weekend meeting group, the Saturday Sad B*******s, among them a retired plumber, another a watchmaker. Neither has ever worked in the hi-fi business. Both are adept with a soldering iron and both are old enough to remember when The Beatles walked the earth, thus ensuring that they 'get' LPs and tape, and have, between them, over a century as audiophiles, so one can only imagine what components have passed through their hands.

Currently, the two of them own at least two pairs of LS3/5As (15ohm originals, naturally), at least eight open-reel tape decks, four or five cassette decks, four FM tuners, two sets of Radford valve amps, Thorens, Lenco, Micro-Seiki and Technics

> turntables, Lord-knows-howmany cartridges (including Grado, Koetsu and Decca), a Dynavector tonearm, a pair of Quad ESL-57s, a Goodmans FM receiver, MartinLogan Motion 15s, a pair of Diapasons, assorted CD players, countless pairs of

headphones and much more.

'Hardware left

for a decade

slowly comes

We all own Variacs, so that hardware that might have been untouched for a decade can be slowly brought back to life. We are all rediscovering the greatness of past purchases, not least our LS3/5As (of which I now own at least five pairs to cover every iteration). And while I am not about to tell you that any of us have suddenly decided to

ditch our most up-to-date systems, our revelations are legion.

Due to my current state of immobility, I have set up a temporary system on the kitchen table – simply to listen to while I cook. It is a mish-mash which no sane individual would ever assemble unless he or she bought the stuff off the back of a lorry, or put it together while drunk. Nothing about it makes sense, save for the choice of turntable and phono stage(s).

TASTIEST MISMATCH

My last-ever hi-fi acquisition is the EAT B-Sharp turntable, which so dazzled me when I reviewed it [see p50] that I had to get one to serve as my 'affordable reference' record deck, especially for reviewing entry-level cartridges and phono stages which would be ludicrous to test on the TechDAS Air Force III [HFN Sep '16]. I fitted the deck with the EAT Jo N°5 moving-coil cartridge [HFN Dec '18], fed into the Pro-Ject Tube Box DS2 phono stage [see p62].

I also swear by MoFi and EAR-Yoshino entry-level phono stages, each of which suits different types of cartridges. The Io N°5 seems to work best with the Tube Box DS2, while its sibling, the EAT E-Glo Petit [*HFN* Feb '19], unfortunately breaks my rule for 'entry-level' as it costs over £1000.

This front-end feeds an aged Cambridge A1 integrated amplifier that I bought from an Oxfam shop, with a US-region Samsung Blu-ray player I picked up at Best Buy in the USA for \$39 to play American discs. Here it's serving as a CD player. The amp feeds JBL 4312Ms or (just temporarily) a pair of Falcon Acoustics' stunning LS3/5As [HFN Jan '19].

What's so embarrassing about this is that I am deriving more pleasure out of the most mismatched system I can imagine than I would ever have expected. I am soon going to fire up a Radford STA15 which hasn't seen action in a decade, play with my 11 Decca cartridges and have a go at the ESL-63s.

I may not have anything to say that will calm your concerns in these uncertain times, but I can assure you that rediscovering some old piece of equipment you have hidden in a cupboard will prove to be as much fun as cracking open a fresh Lego kit. Try it. (My LEGO Fiat 500 arrives next week...) ©

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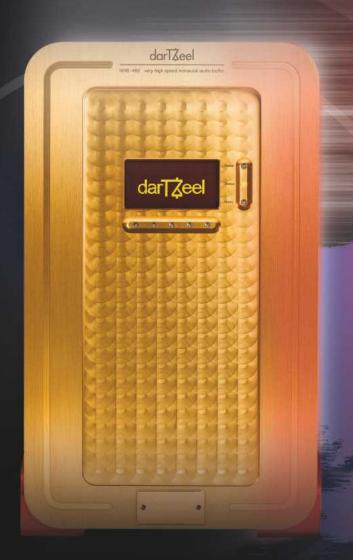
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